

CURRY COUNTY

Curry County lies in the extreme southwestern part of Oregon, is bounded on the south by California, on the west by the Pacific Ocean, on the north by Coos County, and on the east by Josephine County. Its length north and south is 66 miles, its greatest width 36 miles. The area is 1,612 square miles (1,031,680 acres).

Topography: Curry County is generally mountainous, with mountain ridges and peaks of rugged contour forming a part of Klamath Mountain Province. Although the altitude of the higher peaks seldom exceeds 3500 feet, the bases of the mountains are often but a few hundred feet above sea level, making a relief frequently greater than 2000 feet.

Generally the river valleys are narrow with precipitous slopes and, where the rocks are resistant, the streams flow through picturesque canyons, such as those of the Rogue, Illinois, and Elk Rivers.

With the exception of the Rogue River and the lower part of its tributary, the Illinois, all streams rise within Curry County and all discharge directly into the Pacific Ocean on the Curry County coast with the exception of the North Fork of Smith River which flows southward into California.

The coastal plain and the adjacent marine terraces vary from narrow widths up to four miles wide and usually lie at 100 feet or more above sea level. The chief terrace area is from Port Orford to the Coos County line but narrower coastal plains are found south of Port Orford, especially south of Gold Beach. These plains rarely slope uniformly but are in terraces which represent old seacliffs with remnants of ancient beaches sometimes at their bases. Such wave-cut terraces are found at 500, 1000, and as high as 1500 feet above sea level, although the latter is less distinct than those of lower elevations. These elevated ancient sea beaches are of economic interest in that they sometimes contain metallic gold as do portions of the present beach.

The successive uplifts of the land indicated along the coast by the series of raised ocean terraces is reflected inland by the broken erosional cross-sectional profiles of the streams tributary to the Rogue and Illinois rivers. These valleys usually show a series of two or more high benches or "prairies" above steep canyon gorges developed after the last uplift.

Cultural features: With the exception of coastal regions and along some of the streams, Curry County has extremely few inhabitants. Its population probably does not exceed 4,000. There are no railroads in the county, but the paved Coast Highway extends from north to south with county and forest roads branching inland for varying distances. A road extends from Powers to Illahe and Agness on the Rogue River and south of Agness up the Illinois for about four miles. One from Glendale lies along the north county line, with a branch to the mouth of Mule Creek on the Rogue River. On the south the old Oregon Mountain road now replaced by the Redwoods Highway crosses the south-east county corner with short branch roads entering the county from the south. Agness is reached by power launches on the Rogue River, but except for those roads and the river, the rest of the county is accessible only by trails.

Many of the mountain slopes are heavily timbered with various conifers, including Port Orford cedar and occasional redwoods; much of the area is very brushy. The rough country and heavy brush have retarded prospecting and other development. There is plenty of game, and fishing is excellent; the region is a sportsman's paradise.

Geology: The oldest rock of the region is the Colebrooke schist, classed by Diller (03) as pre-Cretaceous and possibly pre-Devonian. This highly metamorphosed schistose sediment covers large areas in the county, especially north of the Rogue River. Next oldest is the Dothan formation, occurring largely in the eastern and southern parts and consisting of shales, sandstones and cherts. Stratigraphically above the Dothan, but in some localities at least closely associated with it is the Myrtle formation, classed as Cretaceous, and made up of conglomerate which stands up in prominent bluffs, sandstone, and shale. The Myrtle is more widely distributed in the county than any other formation. Eocene sediments consisting of shales and sandstones as described under Coos County overlie the Myrtle, and in places are distinguished from it with difficulty. Coal is found in them on Shasta Costa creek.

Miocene sediments are represented by small strips of the Empire formation along the coast. Also, as in Coos county, Pleistocene alluvium and marine sands occur in stream valleys and near the coast. Ancient beach sands are found at points several miles back from the present coast line.

Igneous rocks as dikes and flows are represented by four general classes, namely: dacite porphyry, basalt, gabbro, and serpentine. The serpentine has been derived from peridotite and occurs in various stages of alteration. Extensive serpentine areas occur in the Iron Mountain region, along Lawson Creek to Snow Camp Mountain, and from Red Mountain and Chetco Peak south to the State line.

Gold is found in lodes and in stream gravels, as well as in the ancient and present beaches. Native copper and copper sulphides occur chiefly associated with serpentine. Some of the placer gravels contain platinum, presumably derived from serpentinous rocks. Chromite is found in pods and lens-shaped bodies in serpentine; also as one of the components of the black sands in placer deposits. Magnetite occurs as boulder deposits in serpentine and as bedded deposits in Colebrooke schist; one deposit, outcropping between two greenstone dikes east of Horse Sign Butte, has been described (Butler and Mitchel. 14) as an impregnation in Myrtle sandstone.

Gold is found in lodes, in stream gravels, and in the ancient and present beaches. Both native copper and copper sulphides are found chiefly associated with serpentine. Platinum is found in placer gravels draining serpentine areas. Chromite is found in serpentine and associated rocks and in placer deposits draining serpentine areas. Coal is found in the Eocene sediments. Magnetite occurs as "boulder" deposits in serpentine, as bedded deposits in Colebrooke schist, and in any impregnation in Myrtle sandstone between two greenstone dikes easterly from Horse Sign Butte. Manganese is found replacing cherts in the Dothan formation at Wakeup Riley, and east of Signal Buttes.

Long Canyon, Franklin
NE of Hope, S. in B. Ark.

Oct 7, 1942

Sta 1-0 (pace = about 5' in this survey)

250' 50 paces due W to black sand

N 25 225 paces NNE to break off of ridge

Sample No. 3 may be all black sand
of greenstone fracture fig. + faulting ll to ridge,
i.e. N 20° E

2625' 525 paces NNE to break off + saddle

Rock is the same type throughout
the ridge's length. Diving (?) water
may occur at break in ridge

Sample 4 Diving + greenstone

400' 80 paces due W to contact (fault?) of
black sand + greenstone (No. 5)

100 paces SW to greenstone knoll

Fault strikes N 25° W

150' 30 paces N from crest to end of
black sand

Ridge extension to SW is separated
sheared in a dominantly NNW trend

After contours to fit, 30° slope

Topography - early maturity

Streams rejuvenated to youthful stage

rock

Side below deposits

On slope both down & up S.O

S 50° W to Sta. 2-0

33. pure $\approx 500^\circ \text{N}$ to black

58 pacs to W Knoll + edge

Spaces to top of knol' Sta. 2-0

1000' \pm S 50° W to saddle

S 50° E to pinnacle

95 pieces \$ to Cut Noise Wedge of Sleep

No. 4 17 pieces E of 10

4 an E of 2000

108 pgs S to No. 3 (S of N. 5)

At Cut No. 3 500' S of crest 250' below

The deposit may extend 25' further to the S but there a greenstone (No. 8) + ~~amultabasic~~ ^{+ assoc. ~~sediment~~ No. 9} rock crop out. Cuts No. 2 + 1 No. 1 below + to the S. show no black sand in place. Likewise Cut A below them.

At Cut No. 3 the sedimentary origin of the deposit is established by the occurrence of flattened elongated pebbles up to 3 inches in diameter. Judging from the attitude of the 3 inch zone which includes them although this locality is likely subject to creep effects, the strike of the bedding is N55°W + the dip 30° to the SW. The pebbles show various types of rock (Sample No. 10) Except for some fracturing the rock appears little affected other than by weathering effects though the inherent nature of the deposit may explain this in part. This black sand deposit seems to have been laid down on an uneven surface of the greenstone which forms the surrounding high points. The rock to the W ^{on slope} appears to be a badly altered agglomerate + the black sand

could not be picked up on that slope. The occurrence of black sand float on the W side may be an erosional remnant or if Sample No. 5 proves to be a metasediment then the black sand may extend thru the knoll top. The much lower elevation of the deposit on the S slope may be accounted for either by the deposit or its erosion on an uneven surface.

Pinnacle Sta. No. 3

To Sta. 1-0 N10°W

Rock here sheared in nearly vertical
N65°E & N-S vertical direction
& NW dipping 50° to the SW

20°-25° slope up to Sta. No. 1

25°-30° " " Sta. No. 2

90° 16° passes N to Sta. No. 2 mostly
badly altered greenstone

25° passes N to Sta. No. 2 $\frac{125}{5}$

Strike of deposit N-S $\frac{625}{5}$

Sta. No. 1 may be on a wet sediment

1951

Report of reconnaissance made by F. W. Libbey and H. M. Dole April 14, 15, and 16 in the coastal area of southern Coos County and Curry County.

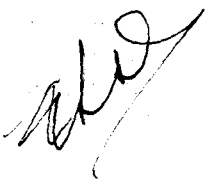
April 14 a reported manganese occurrence was investigated east of Myrtle Point approximately 2½ miles and just south of Sugar Leaf Mountain. This occurrence was called to our attention by Mr. Sibert of Myrtle Point. Mr. Sibert had assays blanks showing results of 45 percent manganese. The specific location from which the manganese was obtained for these assay results was never found. The area investigated is one of Dothan(?) sandstones and shales with chert and basaltic intrusives. It is quite possible that manganese does occur in the locality but none was located. The area is about a mile to a mile and a half north of the Guerin manganese deposit.

The afternoon of April 14 the terrace east of the Bandon golf course was investigated at the request of the owner of the property. It was reported that a man was periodically taking these sands and selling them when he "needed spending money". The owner was curious as to the values. The terrace is at approximately 50 feet and nothing unusual was noted about it. A screen was found but no pits (which had been reported) were seen. Mr. Libbey took two samples (P-11035, P-11036) from the terrace bank where there was some limonite staining. These samples are to be panned by Mr. Libbey. Results = Trace

April 15 automobile traverses were made up Fourmile Creek, along the ridge east of Langlois and up Floras Creek. Approximately 3 miles up Fourmile Creek, south of the road and across the creek is a landslide area that shows considerable chert, some of which is manganese stained. The area is terribly torn by landslides. No manganese was seen in place. It is doubtful that this location is worthy of further prospecting. Country rock is mainly sandstone and shale of the Dothan(?) formation. Regional trend could not be determined. A traverse was made on the road which goes east out of Langlois and up toward Round Top Mountain. Approximately 5½ miles east of Langlois and along the ridge top is an outcrop of calcareous silicified shale. This is just south and slightly east of the McAdams manganese occurrence on Bethel Creek. A sample (P-11056) was taken of this outcrop and a spec is to be run on it. Here, too, the rock apparently is Dothan formation. The traverse was continued for approximately another 5 to 5½ miles to the Hilderbrand manganese occurrence. Most of the way the sediments were typical of the Dothan formation; however, there were several outcrops in the vicinity of Bennett Butte that could be of Cretaceous rocks. The Hilderbrand manganese occurrence was sampled (P-11037). The report by Brown to be found in the Curry County binder was confirmed. Another traverse on the road just south of this one and going up the north side of Floras Creek was made in the afternoon. A chert and serpentine

occurrence was investigated approximately 3 miles east of Highway 101 up Floras Creek. Here again there was some manganese staining but certainly nothing of economic interest was noted. This occurrence reminded me of the Colegrove manganese deposit in that schist, apparently formed from the metamorphism of sandstone, was found adjacent to chert. Evidently the chert zone was one of weakness and allowed intrusion of serpentine which altered the sandstone. Similarity between the rocks seen on this traverse and rocks of the Dethan formation is striking.

April 16 the reported limestone occurrence on Bear Trap Creek (south of Port Orford and just behind Hunbug Mountain) was investigated. The limestone is on the property of Ray Fromm, Port Orford. Mr. Fromm reports analyses of "almost 100 percent". The limestone lens was not found; however a dioritic intrusive, probably a dike, was found and considerable contact metamorphic rocks were noted in the area. Three samples were taken (P-11057, P-11058, P-11059) and specs are to be run on them. Mr. Fromm is to be contacted by letter requesting a sample of the limestone. The age of these rocks is in question.



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STATE DEPARTMENT OF GEOLOGY AND
MINERAL INDUSTRIES

STATE ASSAY LABORATORY
400 EAST 1 STREET
GRANTS PASS, OREGON

October 2, 1940

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OCT 3 1940
STATE DEPARTMENT OF GEOLOGY
& MINERAL INDS.

Mr. F. W. Libbey, Mining Engineer
State Department of Geology and
Mineral Industries
702 Woodlark Building
Portland, Oregon

Following are the results of assays made on sand samples
from the coast of southern Oregon:

Office number	Sample number	Description	Gold oz./ton	Platinum oz./ton	Chromic oxide percent
AG 1265	1	Pioneer Mine	Trace	Trace	20.7
AG 1266	2	Rogue River #1	Trace	None	0.1
AG 1267	3	Rogue River #2	Trace	None	Trace
AG 1268	4	Ophir section	Trace	None	8.2
AG 1269	5	Parker, surface	Trace	None	12.4
AG 1270	6	Parker, U. W.	Trace	None	9.7
AG 1271	7	Parker, clean-up	2.40	Trace	15.2
AG 1272	8	Parker, clean-up	0.01	Trace	14.3

Handwritten notes:
AG 1268: { off present beach E side of pit - 10 ft - 5 ft, in
AG 1269: { Parker, surface
AG 1270: { Parker, U. W.
AG 1271: { Parker, clean-up
AG 1272: { Parker, clean-up
tail and sluice box

Other handwritten notes:
AG 1266, 1267, 1268, 1269, 1270, 1271, 1272: }
AG 1269: mag-
AG 1270: under
AG 1271: head
AG 1272: lower
AG 1272: sand -

.....
Albert A. Lewis
Analyst

Note: Under gold, oz./ton; a trace could amount to several cents
per yard of material.

see FWL letter to Lewis 9/9/40



STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

May 14 1951

General Laboratory Number P-11056

Date received _____

Spectrographic Laboratory Number _____

Sample received from _____

H. Dub

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.

Sr Al

2. Elements present in concentrations 10% - 1%.

Fe Ca Na ~~Al~~ Mg

3. Elements present in concentrations 1% - 0.1%.

Ti

4. Elements present in concentrations 0.1% - .01%.

K Mn V Sr

5. Elements present in concentrations .01% - .001%.

Zr Cr Cu Ba Ni

6. Elements present in concentrations below .001%.

B

Au and Pt not run.

Thomas C. Matthews, Spectroscopist

7 Ch

STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

May 14 1951

General Laboratory Number P-11057

Date received _____

Spectrographic Laboratory Number _____

Sample received from H. Dole

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.

Si Al

2. Elements present in concentrations 10% - 1%.

Fe Ca Na

3. Elements present in concentrations 1% - 0.1%.

Mg K

4. Elements present in concentrations 0.1% - .01%.

Ti Cr V Cu Ba Sr

5. Elements present in concentrations .01% - .001%.

Mn Zr B

6. Elements present in concentrations below .001%.

Ag Ni

Au and Pt not run

Thomas C. Matthews, Spectroscopist

TCH



STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

May 14 1957

General Laboratory Number P-11058

Date received _____

Spectrographic Laboratory Number _____

Sample received from H. Dole

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.

S. Al

2. Elements present in concentrations 10% - 1%.

Fe Ca Na

3. Elements present in concentrations 1% - 0.1%.

Mg K Sr ~~Fe V Ca~~

4. Elements present in concentrations 0.1% - .01%.

Ti V Cu Ba

5. Elements present in concentrations .01% - .001%.

Mn Zr Cr B

6. Elements present in concentrations below .001%.

Ni

Au and Pt not run

Thomas C. Matthews, Spectroscopist

TCM



STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

May 14 1957

General Laboratory Number P-11059

Date received _____

Spectrographic Laboratory Number _____

Sample received from H. Dole

QUALITATIVE SPECTROGRAPHIC ANALYSIS
(Quantities estimated to nearest power of ten)

1. Elements present in concentrations over 10%.

Al Si

2. Elements present in concentrations 10% - 1%.

Fe Ca Na

3. Elements present in concentrations 1% - 0.1%.

Mg K

4. Elements present in concentrations 0.1% - .01%.

Ti Cr K Cu Ba

5. Elements present in concentrations .01% - .001%.

Mn Zr B

6. Elements present in concentrations below .001%.

Ni

No Au or Pt
test was run.

Thomas C. Matthews, Spectroscopist

TCH

Curry County

Gale Beach Sect

Weddowburn Trading Co (Beach Placers-Chumate) Gale Beach Sect

This trading company has many sections of land on both sides of the Rogue River and along the coast north and south of Gale Beach. This company does not mine but will lease its placer deposits and its claims to interested persons under proper safeguards

Collins Mine (Beach Placer)

Quartz Parker and Smith, page 58

In October 1908 E. Kingwell of the U.S. Bureau of Mines was working the mine using a 50-ton amalgamator. This is an experimental operation and at that time had not progressed far enough to determine results

Idaho Mine (beach placer) Quartz Parker and Smith, page 127

Red Hat Placers

Quartz Parker and Smith, page 127

Birdsbeig Beach Placers

Quartz Morrison report

Star (McKeeley) Reef (copper)

Quartz Parker and Smith, page 127

Mineral Resources of Curry and Southwestern Coos Counties
Prepared by L. Ramp, Dept. of Geology & Mineral Ind., Grants Pass
1/26/61, Revised 2/5/63

Introduction: Mineral resources of the area are still relatively undeveloped. Some of the known mineral occurrences are shown on the accompanying map. Early gold production which came mainly from placers outranks other mineral production in the area.

Black Sands: The black sand deposits are believed to represent the greatest potential source of gold and platinum as well as other minerals including chromite, zircon, garnet, ilmenite, magnetite, rutile, etc., in the area. Most of the black sand deposits are relatively thin and covered, but quite extensive laterally (see map). The work done by ~~Albert~~ Griggs (1945) is the most complete reference on these deposits. The black sands have been worked in several places mainly for gold and, in a few places in Coos County, for their chromite content. The black sands contain from 3 to about 20 percent chromite, up to 1.9 percent zircon, up to 7 percent ilmenite, and up to about 10 percent magnetite. The most recent work on the black sand deposits was in the vicinity of Cut Creek north of Eureka where a complete processing plant was erected by the Mineral Sands Company in 1956.

Iron: The occurrence of magnetite disseminated in pyroxenite near Tincup Peak is also of interest. Other bodies of similar ultramafic rocks in the area may contain similar and possibly higher grade occurrences. Further exploration for iron in this area is believed warranted.

Mount Emily: The Mount Emily area is of interest due to its varied minerals, the syenite, and the related intrusives. Zinc, molybdenum, cobalt, nickel, and gold have been reported to occur at Mount Emily. Perhaps the most interesting of these occurrences is the disseminated molybdenite reported by Butler and Mitchell (1916, p. 113).

Nickel: Considerable testing work has been done in the Red Flat area by the State of Oregon Department of Geology and Mineral Industries (Libbey, et al, 1947) and the U. S. Bureau of Mines (Hundhausen, et. al, 1954): These residual surface deposits of low-grade nickel-bearing red soil represent a fairly large reserve for possible future mining.

Coal: The coal occurrences shown in Curry County are of low rank and fairly high ash content according to Diller (1903). He reports the most promising occurrence a few miles southwest of Eckley (map No. 67). More extensive deposits of fair quality coal occur in the Eden Ridge Coal Field (Map No. 65) where the Pacific Power and Light Company has recently completed an extensive exploratory program with plans to supply coal for a proposed steam electric generating plant.

Industrial Minerals: The field of industrial rocks and minerals is ~~the most rapid growing of Coos County mineral industries. The demand for~~ building stone, road aggregate, roofing granules, jetty rock, and sand and gravel for suitable concrete aggregate is constantly increasing. Rocks suitable for most if not all these uses are available in the area.

Addendum: Some future use may be found for the extensive deposits of mica schist mapped by Diller (1903) as Colebrook schists and by Wells and Peck (1961) as Calice formation--gneiss and schists. Wright (1957, p. 359) reports of sericite schists mined in California that are similar by description to schists in Curry County.

Chrysotile asbestos is known to occur in minor amounts in Curry County, but to date none of commercial quantity is known. The possibility of finding a large deposit of this short-fiber asbestos in some of the numerous serpentine areas in Curry County has not been eliminated as yet.

Large deposits of massive pyrite are presently being sought in Josephine County with the hope of developing a sulphuric acid plant. Curry County

should not be overlooked in the search for potential reserves of pyrite. Many of the occurrences listed below and spotted on the map probably have very little commercial significance, however, they serve to designate mineralized areas where further exploration may be warranted. It should also be noted that not all of the known prospects or occurrences are listed.

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Mineral occurrences Curry County and S.W. Coos County

	Mineral or Metal	Name	Location			Reference
			Sec.	T.S.	R.W.	
1	Chromite	Trails End	26	31	14	Dept. Bull. 52
2	"	White Rock	21	37	12	" " "
3	"	Independence	23	33	12	" " "
4	"	Rock Creek	33	33	12	" " "
5	"	Big Cat	9	34	12	" " "
6	"	Last Chance	24,25	33	12	" " "
7	"	Edna Fry & North Star	14	34	12	" " "
8	"	Foster Creek (Illahe)	12	34	12	" " "
9	"	Agness Group	?	35	12	" " "
10	"	Signal Buttes Area	29,30 31,32	36	10	" " "
11	"	No Name (float	8	36	14	" " "
12	"	Black Rock #31	35	35	12	" " "
13	"	Black Rock #10	5	36	12	" " "
14	"	Collier Creek Craggs	3	37	12	" " "
15	" & copper	Collier Creek Copper	16	37	12	" " "
16	"	Lena Claim	29	37	12	" " "
17	"	Upper & Lower Pines Chromite	11	38	12	" " "
18	"	Gardner Chrome	10	39	11	" " "
19	Copper & Gold	Moss Rose (Axtel)	16	33	14	Dept. Mine Files
20	" "	Copper King	33	33	12	" " "
21	" "	Fine Flat	26	35	12	" " "
22	" "	Hessler & Fry	22	36	12	" " "
23	" "	Margahonus	22	32	12	" " "
24	"	Collier Creek Copper	3	37	12	" " "
25	Copper, Cobalt, Pyrite	Cobalt Group	28	36	11	" " "
26	Copper & Cobalt	Bonanza King	1	37	12	Butler & Mitchell (1916)
27	Copper	Bunker Hill	20	37	12	Dept. Mine Files
28	"	Star Group	21	38	13	" " "
29	"	Christa Costa	1	38	11	" " "
30	"	No Name	10	31	15	Assay only (NG-241)
31	Copper & Gold	Mac Baby	23	32	13	Assay only (P-10106)
32	" "	No Name	36	35	14	Assay only (P-15629)
33	Gold & Chromite placer	Independence	19	33	11	Bull. 14-C, Vol. 1
34	Gold Placer	Madden	4	32	15	" " "
35	Gold, Moly, Zinc, Syenite	Mt. Emily Group	7	40	12	Butler & Mitchell (1916)
36	Gold, Silver, Copper (placer & lode)	Wildcat Group	4	34	12	Dept. Mine Files
37	Gold lode	Bear Cat	22	32	13	" " "
38	Gold placer	Big Sunshine Placer	13	33	14	" " "
39	Gold lode	Butcher Hill	21	32	13	" " "
40	Gold - Beach placer	Cape Blanco Mine	1,12	32	16	" " "
41	Gold lode	Cliffslide lode	7,8 17,18	33	14	" " "
42	Gold lode	Combination	22,27	32	13	" " "
43	Beach sands placer	Crystal Creek	2	32	15	" " "
44	Gold placer	Elkhorn Group	23	33	14	" " "
45	Gold placer	Inman Mine	12	32	14	" " "
46	Gold-Silver lode	Jupiter Group	2,10	32	13	" " "
47	Iron-low-grade	Tineup Group	32	37	10	" " "
48	Gold placer	Flossom Bar	18	33	10	" " "

- 3 -

Mineral occurrences Curry County and S.W. Coos County

No.	Mineral or Metal	Name	Location			Reference
			Sec.	T.S.	R.W.	
9	Gold lode	Marigold (Tiny H)	33	32	10	Dept. Mine Files
10	" "	Donoghue (Yellow Moon)	32	32	10	" " "
11	" "	Golden Cargo	21	32	10	" " "
12	" "	Golden Cabin	32	32	10	" " "
13	" "	Golden Economy	29	32	10	" " "
14	" "	Keystone	17	33	10	" " "
15	" "	Lucky Strike	31	32	10	" " "
16	" "	Mule Mountain	17	33	10	" " "
17	" "	Paradise	27	32	10	" " "
18	Gold placer	Paul Junior	9	23	10	" " "
19	" "	Red Dog	9,10	33	10	" " "
20	Gold lode	Hammoth	3,4	33	10	" " "
21	Manganese	Black Bear	13	41	11	U.S.B.M., R.I.-52
22	"	Long Ridge	14	38	12	" " "
23	"	McAdams	20	30	14	" " "
24	Chromite	Sourdough	35,1	40,41	11	Dept. Bull. 52
25	"	Pearson Peak area	2,11	38	10	" " "
26	Gold placer	M & B	15,16	38	10	Dept. Mine Files
27	Gold lode	Peck Mine	23	38	10	" " "
28	Nickel	Red Flat Area	19,30	37	13	Mine Files & Cre-27
	Nickel	Red Earth Prospect	28,32,33	33	12	Vol. 9, No. 3
	"	No Name	9(?)	38	13	Personal communication
	"	Red Flat	32	37	13	Assay only
	"	No Name	9	35	14	Mine Files & USEM R.I. 52
						Assay only

Non-Metallics

Coal	Eden Ridge Field	--	32	11	Dept. Mine Files
"	Agness	--	35	11	Diller (1903)
"	Upper Sixes	--	31,32	13	" "
Borax	Lone Ranch prielite	22	40	14	Butler & Mitchell (1921)

State Department of Geology and Mineral Industries

Curry County Reconnaissance Re-Geologic Map

702 Woodlark Building
Portland, Oregon

RECONNAISSANCE SURVEY U.S. HIGHWAY 101 GOLD BEACH to STATE LINE

The period of May 10th to May 13th was spent in getting from Grants Pass to Gold Beach and returning; the field time of two days being spent in the survey. This work was done for the proposed Geological Map of Southwestern Oregon. Butler's Geologic Map for the old Bureau of Mines publication on Curry County was used as a base. Certain discrepancies seemed evident and it was deemed advisable to check these before the maps could be presented at Corvallis on June 14th.

It was found that the Eocene formation should be re-mapped as Myrtle; that the Greenstone area between Pistol River and Thomas Creek should be re-mapped as Myrtle and Serpentine; The Rhyolite areas were extended in size; and several Terrace areas were added.

The work indicates that Butler's map is a very poor excuse and is in urgent need of revision. It is requisite that it would be very difficult to do the Geology of this Quadrangle as a portion of this area is still unsurveyed, and there is no adequate base map. However, the work could be started and I would like to suggest as a source: a detailed survey beginning at latitude 42° 30' working southward along Highway 101 coupled with excursions along the base, plus cross-country trips between the two, and also to the east of the highway. We should be able to secure alignment and profile from the State Highway, which, with G L O maps would give an adequate base. The later data could be added from certain roads and trails that penetrate the back country. This would give a very good start to the revision of the map.

This survey might also be used to further advertise the department. I found that by parking along the highway, people were caused to stop and ask questions, and to discuss various Mineral problems. The Good Lord knows that we need more publicity in Curry County.

Mr. John Johnson who lives in a cabin at Hunters Creek, contacted me. He claims to be an assayer and working for the Underhill Engineering Company of Los Angeles. He has a number of these on which he has data. Chrome, Manganese, nickel, Quick-silver and assorted and miscellaneous Minerals. I promised to return later on in the summer and go into some more of these in detail. He appears to be somewhat of a crack-pot. But some of his ideas are sound. I think it would be advisable to attempt to win his friendship and cooperation, rather than give him the brush-off, as he seems to drag a lot of water locally.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

I also met Carl Smedderg and John Schoff from Red Flats. Schoff is the man who relieved Shannon, and believe you me, he's a smooth character. I talked to them somewhat as follows; that so far, the results of our sampling and the sampling of other agencies have not shown Quick-silver in the amounts that they report. As long as they contend that they are right and we are convinced that we are right, then the burden of proof rests, I think, on them. I further suggested that the best way to prove their case is to get into production, more, that Quick-silver has a high enough price so that it would be far-sighted in operating, particularly as they were convinced they had the Ore. They took this suggestion rather gracefully, but I doubt if they will follow it. I also mentioned that Mr. Libbey and I would be up some time in the near future to give their property another sampling, as Fay has indicated that he wanted to visit Red Flat with me this Spring, as well as visit the Mount Emily Molybdenum. I had suggested that we make arrangements for this trip and to the Mount Emily, Red Flats and John Johnson together.

Rac C. Treasher
Field Geologist

CONFIDENTIAL

RCT:ws

RECONNAISSANCE GEOLOGIC SURVEY IN CURRY COUNTY ALONG COAST HIGHWAY
FROM GOLD BEACH TO CALIFORNIA STATE LINE*

Ray C. Treasher

Curry County, in extreme southwestern Oregon, has a total population less than that of a small sized town, and it contains some of the roughest, wildest, and most inaccessible territory in the West. Development of the county's resources reminds one of the story of which came first, the chicken or the egg - because there are very few roads, development is retarded, and because there is such a lack of development, there are very few roads.

The county is part of the Klamath Mountains physiographic province, and so the topography is characterized by high mountains with deeply incised, steep walled streams. The relief in many places may exceed 3000 feet. The coast line is rugged, the mountains coming down to the ocean's strand line, and harbors are almost non-existent. The coastal area contains a series of wave cut terraces up to elevations in excess of 1500 feet.

Transportation is limited to the Coast Highway, U. S. No. 101, which skirts a rugged coast line throughout the length of the county. Several Forest Service roads pierce the back country, but most of them are passable for only a few months of the year. Boat service is maintained on the Rogue River from Gold Beach to Illahe. There are no railroads in the county.

The mineral resources were reported upon in 1916 by Butler 1/, who published the only geologic map of the area, except for a portion of the Port Orford Quadrangle 2/. The fact that Butler's map is highly generalized is no discredit to his ability, as his allotted field time was inadequate, he had neither topographic maps nor even an accurate base map, and portions of the country were (and still are) inaccessible. In 1940 the Oregon State Department of Geology and Mineral Industries published a mines catalog of Curry County 3/. In 1943 the writer began compiling a geologic map of southwestern Oregon, and used Butler's map as the only available source of material for most of Curry County. Certain features of Butler's geology did not check with casual observations made along Highway 101, so in May two days were spent in making a reconnaissance survey of the Coast Highway from Gold Beach to the California state line. These observations, coupled with a certain familiarity with the formations, suggested that a general revision of the existing geologic map was necessary.

Butler recorded the following formations along the Coast Highway: Myrtle formation of Jurassic or Cretaceous age north of Gold Beach; serpentine in a large mass intrusive into the Myrtle formation in the northern half of the area; greenstone between Pistol River and Thomas Creek, correlating with Diller's 2/ gabbro in the Port Orford area; Eocene sediments throughout the length of the county; rhyolite of undetermined age in the southern portion; and Quaternary beach terrace deposits north of Gold Beach.

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The Myrtle formation consists of dark colored shales, fine-to-coarse grained arkosic sandstones, conglomerate which lacks the characteristic quartzose pebbles of the basal Eocene, and variously colored cherts. The formation is well indurated, and locally the shales may be altered to slates. High grade metamorphism may be effected close to intrusives, with resultant glaucophane and amphibole schists.

The serpentine intrusions are not large, but they are close together and the outcrop relationships are very complex. The serpentine may be altered to the slick, light greenish material locally called "serpentite". Weathered serpentine is frequently light brown, producing the "buckskin rocks" of the area.

The sedimentary formations south from the Port Orford Quadrangle are more characteristic of the Myrtle formation than of the Eocene sediments. The degree of induration, the complex serpentine relationships, the presence of chert, and the absence of "basal Eocene" all confirm the conclusion that the material mapped by Butler as Eocene actually belongs to the Myrtle formation. Minor changes have been made in the contact relationships.

No indication of Butler's greenstone area could be found. The rocks between Pistol River and Thomas Creek to the south check lithologically with the Myrtle formation and with the serpentine, and have been so re-mapped.

The rhyolite areas south of Whalehead Creek are identified megascopically as dacite porphyry, because of their similarity to Diller's dacite porphyry in the Port Orford Quadrangle. One large elongated mass parallels the highway between Whalehead Creek and Black Mound. A small mass straddles the road between Black Mound and Harris State Park, and another one crops out at Harris State Park. Three very small outcrops were found south of Harbor, two of them east of the highway and one to the west. From their relationships it is concluded that the dacite porphyry is slightly younger than the serpentine, and should be correlated in age with the granitoid intrusions of the late Jurassic or early Cretaceous.

A greater extent of beach terraces are mapped than were shown by Butler. The first group extends from the northern boundary of the mapped area southward past Gold Beach to the mouth of Hunter Creek. The second group extends from the mouth of Pistol River to Mack Arch. This group is characterized by sand dunes, of which those west of the highway are active at the present time. An extensive terrace begins near Cape Ferrelo and continues southward into California.

Except for minor modifications in its western boundary, the large serpentine mass east of Gold Beach is left unchanged. Serpentine masses within the Myrtle formation are usually small; this fact suggests that such a large mass as shown by Butler does not exist intact. However, time did not permit a careful examination of that particular region, so the areal distribution is temporarily left as Butler mapped it.

The results of the hurried reconnaissance survey suggest that the geologic map of Curry County is badly in need of revision. However the area is without both topographic maps and adequate planometric base maps, and as the territory is still difficult to enter, it is doubted that a satisfactory geologic map of Curry County can be made until some of these difficulties can be overcome.

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ROGUE-ILLINOIS PLANNING UNIT

BY

NORMAN PETERSON

State Department of Geology and

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SISKIYOU NATIONAL FOREST

The Rogue-Illinois planning unit generally includes the north-central part of the Siskiyou National Forest. This area of about 850 square miles (2,200 square kilometers) is most of the drainage area of the lower Rogue River (west of Marial) and the lower Illinois River (west of Upper Oak Flat). It also includes the northern part of the Kalmiopsis Wilderness (that part north of the Chetco River). Like the Chetco planning unit to the south, the Rogue-Illinois unit is in both the Coast Range Geomorphic Province and the Klamath Mountains Geomorphic Province. The topography is generally similar throughout the unit, with steep-sided mountain peaks and narrow ridges separated by narrow steep-walled canyons. The summits of the irregularly shaped ridges and mountain tops are relatively accordant (3,500 to 4,500 ft.) and are probably the result of a dissected plateau.

The geology of the Klamath Mountains and Coast Range Province has its origin in the tectonic environment of a convergent plate margin during Late Jurassic and Early Cretaceous times. The geology is extremely complex and is continuously being reinterpreted. The earliest published geologic work was done by J. S. Diller (1902, 1907) in which he discussed the geology of the Port Orford quadrangle and the Mesozoic sediments of southwestern Oregon. Several of the north-south trending belts of rocks were described as formations and were named in these early studies. Wells and Walker (1953), Wells and others (1949), Coleman (1972), Ramp (1975), and many other authors have also described parts of the geology of the Klamath Mountains and Coast Range Province. As noted above, the structural trend of the rocks in southwest Oregon is in northeast-trending arcuate belts of a complex nature. In the Rogue-Illinois planning unit, the easternmost belt has been called the Western Jurassic belt. It underlies the eastern third of the planning unit and consists of metamorphosed volcanic rocks of the Rogue Formation, metasedimentary rocks of the Galice Formation, a narrow zone of metamorphic rocks (Briggs Valley amphibolite), and narrow sheets or dike-like masses of serpentinite and peridotite. A large north-trending pluton of gabbro-diorite (Illinois River Gabbro Complex) is also present and extends from the northern part of the Kalmiopsis Wilderness to the Soldier Camp area.*

* A tectonically deformed and displaced mass of Illinois River meta-gabbro also makes up the Big Craggies.

This complex belt of rocks is perhaps the most important source of metallic minerals. Gold, silver, and base metal sulfide mineralization occurs with the clastic volcanic rocks of the Rogue Formation and the metamorphic rocks of the Briggs Valley amphibolite. Chromite has also been mined from the ultramafic rocks, mainly in the Chrome Ridge area.

The central one-third of the planning unit is underlain by the Dothan Formation which is mostly graywacke sandstone and mudstone of marine origin. This formation also contains some minor marine deposits, lava flows, chert layers, and conglomerate. Other than minor occurrences of manganese, no metallic minerals of economic importance are found with the Dothan Formation.

The western or coastal third of the planning unit is underlain by rocks both younger and older than the Dothan Formation, and the geology and structure are no less complex than in the rest of the unit. The Colebrooke Schist of unknown age covers a large area from just west of Agness, both north and south of the Rogue River, and it extends to the western boundary of the National Forest. The Colebrooke Schist rocks are predominantly silvery gray to black phyllite or quartz mica schists with abundant narrow veins and veinlets of quartz. They are believed to be metamorphosed equivalents of the Galice Formation that have been thrust westward over the Dothan to their present position. Coleman(1972) has described the Colebrooke Schist and associated rocks in detail. Few metallic mineral occurrences are known from the Colebrooke Schist.

Beneath and adjacent to the Colebrooke Schist along the north and northwest part of the planning unit, there are small areas of rocks of a variety of compositions and ages. They include typical siltstones and sandstones of the Galice Formation; marine graywacke sandstone and mudstone of the Otter Point Formation, which is described as a melange, a sheared and deformed rock unit equivalent to the Dothan Formation; and Cretaceous age conglomerate, sandstone, and siltstone that are called the Myrtle Group. Narrow zones and detached masses of serpentinite separate and overlie the rocks described above. The largest, or most numerous of these serpentinite masses, occurs in the Signal Buttes area; a north-trending zone extends from near Collier Butte to Agness and beyond. Serpentinite also occurs in the Bonanza Basin-Ophir Mountain area. The presence of serpentinite implies intense tectonic forces and usually zones of major faulting. The ultramafic rocks have occurrences of chromite, nickel, and copper.

The youngest bedrocks of the planning unit are Tertiary sandstone and shale (Fluornoy Formation, Tyee Formation) deposited in a near-shore marine environment. These Eocene sandstone, shale, and conglomerate rocks extend southward from the Eden Ridge area into the planning unit and cover quite a large area, on both sides of the Rogue River from Clay Hill to Agness, and extend southward across Raspberry Mountain to the vicinity of Collier Bar on the Illinois River. It includes the black sand deposit near Horse Sign Butte which contains iron, chromium, and vanadium. A few patches of river channel gravel deposits are present; i.e., Gold Basin, York Butte, and Flat Top Butte. These deposits

were a minor source of placer gold, and erosion of the deposits has concentrated gold in the present channels of some minor streams such as Red Dog Creek and Briggs Creek.

Mineral Resources

Gold and Silver have probably been the most important metallic minerals produced in the planning unit, and small lode mines and seasonal placer operations will probably continue. In the eastern part the Rogue, volcanic rocks, and the Briggs Valley amphibolites have quartz veins and sheared zones with gold, silver mineralization. The Lost Flat Mine, Howland Mine, and Old Glory Mine on upper Galice and main branch of Silver Creek are typical lode mines.**

Many of the smaller tributary streams such as Briggs Creek, Onion Creek, West Fork Taylor, Galice Creek, and Silver Creek were placer mined in the late 1800's, again in the 1930's and will probably continue to produce some gold. In the far northwest corner of the planning unit, gold mineralization is associated with the Galice Formation, with metavolcanics and diorite intrusive rocks in the upper Boulder Creek-Bonanza Basin area.

Small amounts of fine gold are continuously distributed by the Rogue and Illinois Rivers and minor concentrations occur just below the mouths of tributary streams. Early day placer mines at Marial, just below Mule Creek on the Rogue, and Panther Bar, below Briggs Creek on the Illinois, are examples.

There has been no significant production of copper from the planning unit. In 1908, minor amounts of hand-sorted ore were packed from the Collier Creek copper occurrences, where the mineralization occurs with serpentinite. Copper and cobalt mineralization is also reported just below Collier Bar in sec. 28, T.36 S., R.11 W. In the eastern part of the unit, as much as 100 tons of copper ore were mined and shipped in the early 1950's from the Onion Falls Mine near the head of Taylor Creek. Copper also occurs at the Buckeye Mine and other places in the area around Onion Mountain, upper State Creek, and upper Shan Creek.

Chromite occurs in a rather narrow serpentinite-peridotite mass that covers about 25 square miles in the Chrome Ridge area. Massive chromite from relatively narrow layers has been mined at times during World War I, World War II, and in the mid 1950's during the chromite stockpiling program. Total products from the area, which includes about 20 small mines and prospects, are estimated to be about 2,500 tons. The increased price of chromite and the unstable political situation in foreign countries that are prominent suppliers have created current interest in

** There are also a few occurrences of lode gold associated with the Rogue Formation in the lower Mule Creek-Mule Mountain area, and the mineralized zone extends southward across the Rogue River between Inspiration Point and Blossom Bar to Pinnacle Point.

chromite exploration. This interest should continue for the foreseeable future.*** There are other scattered chromite occurrences in central and western Curry County, mainly in the Ilahee-Agness area to the headwaters of Collier Creek. Production of a few hundred tons from about a dozen small mines is reported.

Nickel is concentrated in the residual laterite soils developed on some peridotite and serpentinite soils in the planning unit. A study of nickel resources of southwest Oregon is in progress and several areas have been indicated as having a potential. They include: Collier Creek, Upper and Lower Lawson Creek, Gray Butte, and the south end of Iron Mountain.

Magnetite, an ore mineral of iron, is common in the gabbro, pyroxenites, and some metamorphic rocks of the planning unit. Concentrations of large crystals also occur and the large area of pyroxenite between Tincup Peak and Gold Basin contains 15 and 25% magnetite. Similar magnetite rich rocks occur on the east slope of Mt Billingslea and at Granite Butte.

*** Another area with chromite production is the Sourdough Flat area in the northeast part of the Kalmiopsis Wilderness. Chromite occurs in a large landslide mass of the Pearsoll Peak ultramafic body. About 1,500 tons were produced from 8 to 10 closely spaced mines and prospects.

Small amounts of chromite (200 to 400 tons) were also produced in 1941 from mines and prospects in the Signal Butte area on the west edge of the planning unit.

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Marine Science Tour of A Small Portion of Curry County

This road log points out some interesting marine, geological, botanical, and historical sites, on a driving tour that starts from the north end of the Lobster Creek bridge, goes 75 miles, and ends at the same place. Stops for viewing and/or collecting are underlined.

Curry County lies at the western margin of the Klamath Mountains province, a region composed of some of the oldest rocks in Oregon. Tremendous forces within the earth's crust have made mountains out of rocks that were once sedimentary and volcanic materials on the sea floor. Metamorphic recrystallization and intense folding, faulting, and shearing have altered these rocks to varying degrees. In general, the more ancient the rocks, the more severely they are disrupted and altered.

Since recrystallization hardens rocks, and shearing and fracturing weaken them, the combined effects produce extremes in rock durability. This largely accounts for the differential erosion of bedrock along the coast of Curry County and the resulting ruggedly beautiful scenery.

Most of the bedrock exposed along the County's shoreline is of Mesozoic age, ranging from Late Jurassic (150 to 160 million years old) through Late Cretaceous (65 million years old). Much younger, relatively unaltered bedrock, comprising dikes, sills, and sedimentary beds, of Tertiary age is exposed in a few places. The youngest units are unconsolidated sands and gravels of Quaternary age which lie on marine terraces and along the beaches and rivers.

Mileage

What to See

- | | |
|-----|---|
| 0 | North end of Lobster Creek bridge. |
| .1 | Cross Lobster Creek. |
| .3 | Looking to the east you can see Lobster rock, sometimes also called "Massacre Rock". During the Indian Wars of 1856, a party of volunteers ambushed a group of sixteen Indians in their canoes coming down the Rogue River. Eleven of the Indians were killed and the rest escaped.

Lobster rocks are a part of the Colebrook Schist formation. This formation is made up largely of gray and white quartz-rich phyllites that are, in many places, intricately foliated. This is the oldest rock formation in the area and it was formed by tectonic (pressure) metamorphism in a thrust fault environment. |
| .4 | The log style house was known as the Sturdevant house prior to the flood of 1964. The '64 flood reached the ceiling of this house as well as covering the deck of the Lobster Creek bridge just up-river. |
| .6 | Across the river is Lobster bar, a favorite fishing spot of many. Fishermen spend days there around their campfires fishing for steelhead or salmon. The growth on the bar is sweet clover.

Along the north bank Rogue River Road, you'll find profusions of tanoak, digitalis, myrtlewood, Douglas fir, and many other plants. |
| 1.6 | Orchard hole is another favorite fishing spot of local people. |
| 2.1 | Gillespie Riffle is one of the favorite fly fishing areas for summer steelhead fishermen. |

- 2.8 The present location of Lucky Lodge Trailer Park was formerly the location of a Rogue Indian village. These were the Mikonotunne people, which translated means "people who live among the white clover roots". It was here that Captain E. O. C. Ord, for whom Fort Ord, California, is named, won the first successful attack on the Indians during the Rogue Indian Wars of 1856.
- 3.1 Huntley Park is a free campground owned and operated by Champion Building Products of Gold Beach.
- 4.1 Tu-tu-tun Lodge is one of the luxury resorts in the area and is named for one of the lower Rogue Indian tribes. The spelling of the name varies, depending on who heard it from the Indians. The name Tututunne was grunted out and each person interpreted it as they heard it.
- 6.2 Behind these houses is the Ferry Hole. This was the location of the old Bagnell Ferry that was the only means of crossing the Rogue River on the old highway in early days. Across the river is Champion Building Products (formerly U. S. Plywood) the largest employer in the Gold Beach area. Also near the Ferry Hole is Clarno Springs which was an encampment of volunteers during the Indian Wars and the Indians were variously claimed to have been over at the site where Champion Building Products is located and further down river below Clarno Springs. It was here that the Indians attacked the volunteers on Washington's birthday, 1856, and precipitated the final battles of the Rogue Indian Wars.
- 6.6 A quick look to the left and you'll see a small field of Easter lilies. Easter lilies are a one million dollar industry in Curry County and while most of the lilies are grown in the Harbor bench area in the south end of the county, two growers are in the Gold Beach area. This is one of them.
- 7.2 Junction with old highway 101 at Rogue River Park. Turn right and follow the Edson Creek valley out to new highway 101.
- 9.6 This is the junction of U. S. Highway 101. Turn left.
- 9.8 Turn right into Giesel Monument (restrooms are located here). Giesel Monument is in memory of John Giesel and his three sons who were massacred, by the Indians who made his wife and two daughters watch, on February 22-23, 1856.
- A smaller enclosure near the highway is reported to contain the remains of a group of Indians who had been captured at the end of the Indian Wars and were being marched up the coast. The "fire eaters", a local group of volunteers, ambushed them and massacred them in retaliation for the Giesel massacre, and they were buried on the spot.
- 10.0 Back on 101. Turn right and head toward the south.
- 11.8 Turn right where the finger sign indicates "Old Coast Road". This will take you to Otter Point, our next stop.
- 12.0 Once again, turn right on a one-way gravelled road to Otter Point itself. Park in the parking lot and you'll walk from here. Otter Point is a remnant of a pleistocene terrace underlain by late Jurassic deposits. It includes sedimentary, igneous, and metamorphic rocks such as sandstone, volcanic rocks, conglomerates, and imbedded cherts.

To the north you'll see a little mound called Hubbard Mound. This was once a sea stack before the shoreline raised. Further north on the horizon, you'll see Humbug Mountain which is a large mass of conglomerate. On the north side of Otter Point is Agate Beach and you might find some good agates here. A trail goes down on the south side of the parking lot to Agate Beach. Otter Point is an ancient marine terrace and you can see many evidences of old beach rocks and sand overlaying the rock underneath. You may wish to walk south from the parking lot. Take the dirt road to the headland. Out at sea is a part of the Rogue River Reef. You'll see Needle Rock and many other sea stacks. As you walk out the road past the barricade, take the right fork and walk across the crowberry carpet to look on the north side of the point. In one place you'll find a large piece of imbedded chert on top of the rock at the right side of the arch. If you take the narrow trail, you'll see wind swept Sitka spruce and many other interesting plants such as wild strawberry, crowberry, thimbleberry, cats ear, Indian paint brush, coyote brush, salal, wax myrtle, and others. Slip under the barricade that's right near the neck of the point and if you look down the cliff to the left, you'll see pillow lava. You'll also see the complex mixture of folded and sheared mudstone, sandstones, conglomerates, and volcanic rock just off shore from the pillow lava. To the south is Bailey Beach, a good beach for clam digging, mining, and beach combing.

About half way up the hill to the east is the remains of an old radar station that was constructed during the last part of World War II. Coast Guard and Army troops were stationed in the Gold Beach area to repel a possible Japanese invasion.

From here head back to the Old Coast Road and follow it parallel to Highway 101 along the beach.

- 13.3 A trail to the beach, followed by a cattle guard on the Coast road
- 13.7 Another trail to the beach.
- 14.2 A beach access by vehicle. Also at this spot to your east is the location of Fort Miner. This was a fort that was hastily constructed at the beginning of the Rogue Indian Wars in 1856 and became the home for all of the settlers and miners in the Gold Beach area for over a month in February and March, 1856. The Indians camped on the hills to the east and continually harassed the occupants of the fort. The siege was not lifted until soldiers and militia from Crescent City and Fort Orford came to the rescue.
- 14.7 Knox Building and Farm Supply and a beach access.
- 15.5 Turn right to the north jetty. Here you will find restrooms, good beach access and will probably see sea gulls, sea lions, and other activities in the lower Rogue bay. Just across the river is the sand spit that causes considerable problem in shoaling at the mouth of the Rogue. Up-river is the beautiful Rogue River bridge and across the river is the Port of Gold Beach. You also get a good view of Gold Beach from here -- from the Wedderburn side of the river. The headland to the far south on the horizon is Cape Sebastian. You'll be there shortly after leaving here. Wedderburn was named by R. D. Hume, a pioneer in salmon canning and culture, for his ancestral home in Scotland.

- 16.1 The Rogue Coast Guard patrol is located here each summer during the fishing season. Now you have a better view of the Rogue River bridge. It was built in 1932 and is exactly 1932 feet long. It is the Isaac Lee Patterson bridge that replaced an old ferry that ran across the river above the bridge after the Bagnell Ferry was closed.
- 17.1 South end of the Rogue River bridge. Notice the large rock in the slide just as you cross the bridge. This rock is different from the surrounding material and was probably brought down by a slide of the serpentine material.
- 17.5 Gold Beach Port, the Rogue Bay Fish plant, and restrooms are located here.
- 17.9 Curry County Courthouse is to your left. Now you'll be traveling through the City of Gold Beach.
- 18.5 Gold Beach High School, the home of the Gold Beach Panthers, 1976 class AA state football champs. This team was known as the "Dirty Dozen" because twelve boys played both offense and defense for most of the games.
- 18.7 Curry County Historical Society Museum. If you have time, you'll want to stop here on your way back to camp.
- 19.1 As you leave Gold Beach you can see Cape Sebastian in the distance and another large outcropping in the foreground called "Kissing Rock".
- 20.1 At "Kissing Rock" you'll see lots of geological features. At the base of the rock is a material called tuff, a volcanic material. You'll also find agglomerate, conglomerate, calcite in some of the harder rock, serpentine, and what is known as a "paved beach". (A paved beach is one with small gravel covering the entire area.)
- 24.5 Cape Sebastian is to the right. If you want to drive to the top, you can see the Rogue River jetties, Humbug Mountain, Port Orford, and parts of coastal California. No mileage is figured for leaving highway 101 and returning, to the top of Cape Sebastian, so adjust your speedometer for this side trip.
- 26.5 Hunters Cove is the south side of Cape Sebastian. The island off shore is known as Hunters Island and it is the location of the wreck of the Washcalore. Sometimes you can find parts of the Washcalore along the shore. Hunters Island has a fresh water spring on it.
- 27.0 Myers Creek. The beach from Myers Creek up to Hunters Cove is an excellent one for clam digging. At Myers Creek you will find lots of serpentine outcropping on the east side of the highway.
- 27.5 This is a good parking lot to take a walk to the cluster of large sea stacks and arches that can be reached at low tide by a sand connection from the mainland. These arches are of the Otter Point formation.
- 28.3 A mile long lagoon lies behind a beach barrier north of the present outlet of Pistol River. Just east of the large rock which was previously the outlet to the ocean, is the location of an Indian village. These were the Chetl-essen-tans. It was this village that was raided by volunteers coming from the south to lift the siege at Fort Miner that precipitated the battle of Pistol River.

- 29.5 Pistol River was named after a lost revolver. In this valley is some of the rich agricultural land in this area. The historical sign commemorates the battle of Pistol River. If you look on the northeast bluff above the bridge you'll see rock that indicates that the river was once at that level. From Pistol River for a mile or so south, you'll be going through what remains of active sand dunes. These have been primarily stabilized in this area.
- 32.3 There's a little slot that provides parking for two or three vehicles and through which you can see Mack Arch. This is a part of Mack Reef which consists of Otter Point conglomerates and basalts. The arch through the rock is over 100 feet high and is one of the famous landmarks of Curry County. Mack Arch is the end of a fault through which volcanic material intruded.
- 34.0 The Burnt Hill slide is a road construction man's nightmare. It's underlain with serpentine and continually slides into the ocean causing the highway to drop. You probably are on about six or seven layers of highway right now. The most recent one was a fill of about fifteen feet.
- 34.3 The northern boundary of Samuel H. Boardman State Park. Sam Boardman was the father of the Oregon State Parks system and Boardman Park runs almost all the way to Brookings to commemorate this man's foresight in setting aside some of this land as a State Park. We'll park here and walk down to the Whiskey Creek tidepool area, one of the finest tide pool areas on the entire Oregon coast.
- 34.4 Hooskanaden Creek was named for a small band of Indians that lived in this area.
- 35.0 Arch Rock point is a good place to stop to see some of the geology, birds, and wildlife of the area. This area is also part of the Otter Point formation. Arch Rock, just off the coast, was probably a sea cave when Arch Rock was still part of the mainland.
- 36.2 Natural Bridge Viewpoint, probably one of the most beautiful spots on the southern Oregon coast. You can see five tunnels or natural bridges in this area. The bowl behind the natural bridges was probably formed by the collapse of roof rock of intersecting sea caves. The natural bridges are what is left of the roofs of the caves.

From here you can head back to camp and if you have time be sure to stop at the Curry County Museum or spend some more time in the places you want to visit as you head back to Camp Lobster Creek.

Back Country Tour of a Small Portion of Curry County
Prepared by Walt Schroeder, Curry County Extension Agent

July 1977

This road log points out some interesting geological, botanical and historical sites on a driving tour that starts from the north end of the Lobster Creek bridge and after approximately 80 miles ends at the same location. Stops for viewing and/or collecting are underlined.

Mileage Things to See

- 0 The starting point is at the north end of Lobster Creek bridge. Just under the north end of the bridge are two large rocks. These are known locally as "Lobster Rock" or "Massacre Rock." During the Indian wars of 1856, a party of volunteers ambushed a group of 16 Indians in their canoes coming down the Rogue River. Eleven of the Indians were killed and the rest escaped.
- Flood waters in 1964 covered the deck of the Lobster Creek bridge.
- On Lobster Creek and on up most of the Quosatana Creek road, you are in the Colebrook schist formation. This is made up of gray and white quartz-rich phyllites that are in many places intricately foliated. This is the oldest rock formation in the area and it was formed by tectonic (pressure) metamorphism in a thrust fault environment.
- All along the south bank Rogue River road you will see such plants as digitalis, tansy ragwort, alder, myrtle, Douglas fir and occasionally tanoak, madrone and Port Orford cedar.
- 3.6 Quosatana Creek road. Take this road up the hill and be prepared for dust during dry weather. Quosatana Creek is named for an Indian tribe that lived in this area. To your left as you start up the hill you'll see Skookumhouse Butte.
- 4.2 Alder at the lower elevations gives way to more tanoak, madrone, Douglas fir and rhododendrons.
- 4.3 Skookumhouse Butte may be seen to the left.
- 5.1 This area was logged several years ago and now a new stand of Douglas fir is growing. You'll occasionally find coyote brush and ceanothus thyrsiflorus (blue blossom ceanothus) growing along the roads here.
- 6.3-6.4 This is a good collecting place for azalea, madrone, Port Orford cedar, Canyon live oak, tanoak, coyote brush and blue blossom ceanothus.
- 8.5 The tanoak in this area is more typical of the tanoak growths in much of Curry County. This is also a good rhododendron stand. If you look to the north you'll see several of the prairies on the hillsides on the north bank of the Rogue River.
- 9.1 At this location you will see Innominata Iris, Douglas iris, sedum whipple vine and several other plants.
- 9.7 You've just entered a transition zone that is underlain with serpentinite and peridotite. In this area you'll find cats ear flowers, Innominata iris, California coffee berry, Kinnikinnick, hairy manzanita, Jeffery pine, prostrate juniper, beargrass, Oregon grape, squaw carpet ceanothus, tanoak, service berry, Douglas fir and blue belly lizards, flowers, serpentinite and peridotite rocks.

- 10.0 Leave this transition zone and back into the Douglas fir.
- 10.7 At this location you'll see sticky leaf ceanothus, Jeffrey pine, *Innominta iris*, tanoak and madrone.
- 11.1 Serpentinite is exposed here in a sheer zone.
- 11.4 Quarry.
- 11.6 You've just reached the junction of 3506-E. This is a deadend that we will take down to the "Indian Amphitheater". You can also see the prairies on the north side of Rogue River from here. The two sharp pinnacles on the north side of the Rogue River are Sawtooth Rocks. At this location we'll be driving through Douglas fir reproduction.
- 13.7 What is the material in the blue-green slide on the left of the road?
- 13.9 "Indian Amphitheater". We'll stop here and see this geological phenomenon where the topography is characteristic of a slide area. All the loose debris on the steep slope has been moving down hill from time to time and at varying rates. Other slide features include hummocks, benches, basins and ridges and these can be found on down the slope. The idea that the Indians used this as an amphitheatre is just a "paleface" misconception. This is a good place to collect Canyon live oak, tanoak and madrone.
- 16.3 We've just rejoined the Quosatana Creek road and will head up to the top of the divide. The large butte to our left is Quosatana Butte. It is an altered volcanic rock of the Colebrook formation.
- 16.7 Here we reach the junction with the Hunter Creek road that comes up from south of Gold Beach.
- 17.5 On top of Quosatana Butte you'll see Colebrook phyllites and knobs of relatively hard to very hard stack-like masses of volcanic rock. These volcanics include flows, agglomerates and tuff breccias formed in an oceanic island arc environment. They are now altered to greenstone and quite hard.
- 18.4 Trail to Quosatana Summit. Here you will find chinkapin, Sadlers oak and knobcone pine. The hike is about 3/4 mile long and provides spectacular views of the countryside many miles in each direction.
- 19.1 If you look carefully to the left of the road you'll see evidence of corridor logging where a yarder was placed at the edge of the road and logs were dragged into a corridor from each side and then brought up the corridor to the yarder.
- 19.7 Alder Springs. A favorite stop for fresh water.
- 20.3 The Wildhorse road takes off here and heads back down to the Rogue River road. We will be taking this road on our return from Game Lake. The road from here follows the old trail up toward Snow Camp Lookout. You occasionally will see insulators hanging from the trees along the trail. This was for the old telephone line that connected lookouts to the guard station.
- 23.3 Junction of the Snow Camp Road with the deadend road that heads down to Snow Camp Meadow.

23.8 If you look up on the hill you'll see Snow Camp Lookout that is now abandoned but served a vital role in fire control, in past years.

24.4 Here we will park and walk into Snow Camp Meadow. This will be an opportunity to collect specimens of Port Orford cedar, incense cedar, knobcone pine & Western white pine. It's a 400 yard walk to the edge of the meadow. You will also have an opportunity to see lots of flowers in this area.

On the way into Snow Camp Meadow you'll encounter red lateritic soil and peridotite rubble. Snow Camp Meadow is a very large landslide feature made up mostly of peridotite and serpentinite rubble and lateritic soil and saprolite (weathered peridotite) that contains interesting residual concentrations of nickel. The meadow was once occupied by a fair sized slide pond or small lake. You can find exposures of pale green clay layered-like sediments along the banks of the small gully draining the meadow to the south. Most of the grassy area was at one time under water.

25.8 Now we're back at the junction with the Snow Camp near Fairview. If you look to your left front you'll see Collier Butte, a small intrusive igneous mass of quartz diorite. Looking down the hill you'll see a little pond used as a "pump chance" for fire fighting.

26.2 Fairview Camp on the right and the building on the left are the headquarters of the Gold Beach ski club. Yes, we do have skiing in Curry County and an active group runs these slopes every weekend when snow is on these slopes.

26.6 Junction of the Snow Camp Lookout Road. We will be going up this road to the lookout.

26.9 If you'll watch along the road you'll see an abrupt change from the Colebrook schist formation to the peridotite and serpentine formations.

27.4 The mountains to the left are the Big Craggies.

27.9 Junction of the road that heads down to the Chetco River through some early cretaceous shale and pebble conglomerate. This is one of the youngest rock formations in the immediate area and in the shales, if you have lots of time, you can find some of the small marine fossils, *Buchia concentrica*, about 130 million years old.

28.2 We'll park here for a short walk to the lookout atop Snow Camp Mountain. The crest of Snow Camp Mountain is a sheared altered volcanic rock of the Colebrook formation very similar to Quosatana Butte. The elevation of Snow Camp Lookout is 4,223. (Here you will find a restroom.) From the lookout you can see 360° of some of the interesting background of Curry County and as far as the Shasta Trinity Alps. At 20° is Horseshoe Butte, about two miles past Game Lake. At 40° is Collier Butte, the quartz diorite or granite intrusive igneous mass. From 60° to 100° are the Big Craggies. These are Gneissic metagabbros that are a part of an upper plate overriding the Dothan formation. At 120° you can see Windy Valley, a beautiful green spot in the middle of the mountains. This is a favorite camping spot for many local people. Windy Valley is underlain by early cretaceous shale and pebble conglomerate and at one time was also a lake. If you spend one night in Windy Valley you'll know why it's called by that name. The wind rushes over the trees over your head almost all times of the year. On this same compass bearing you can also see the Quail Prairie Lookout that is manned on the Chetco River and beyond those,

the Trinity Alps. At 160° is Mr. Emily. A state fire lookout ~~is~~ located on this peak. At 180° is Bosley Butte which also has a fire lookout. Between 180° and 310° you can see the Pacific Ocean on a clear day with Humbug Mountain at the 310° reading. At 220° is Pistol River and the prairies you see are the Miller and Gardner ranches. Between 230° and 280° is the aftermath of the Pistol Basin Burn. This was quite a serious fire several years ago. It was very difficult to fight because of poor accessibility. At 260° you'll see the brush field spraying using aerial chemicals to release the Douglas fir from under the ceanothus, coyote brush, tanoak and other less valuable species. At 320° is Snow Camp Meadow, the place we spent some time a short while earlier; at 330° is Fairview Mountain, the location of the Gold Beach Ski Club. Between 330° and 340° you can see the north side of the Rogue River with several of the large prairies that are excellent grazing and wildlife habitat. At 335° you might see the Lake O The Woods Lookout, a Forest Service manned lookout.

29.0 Once again we will stop here and walk about 400 yards to where we will find Brewer Spruce, dwarf salal, Sadlers oak, as we walk through peridotite and serpentinite rocks.

29.8 We're back once again at the junction of the Snow Camp-Game Lake road.

30.2-30.7 Here we have an unusual forest that was caused by a dramatic change in the soil type. We move from the Colebrook formation at 30.2 abruptly into the peridotite and serpentine soils. If you watch you'll see the direct change from Douglas fir to a dry type forest.

30.7 Here we can find Darlingtonia which is a flycatcher plant, Labrador tea, Brewer spruce, Sadlers oak and dwarf salal.

31.2 Huntley Springs. A favorite camping spot for local people. Here you will see pebble conglomerate on both sides of the road. This is an extension of the formation that runs on the Chetco connecting road just below Snow Camp lookout.

31.6 Junction of the road; take the lower road.

32.3 You'll be passing Collier Butte on your right and if you look in the distance you will see a prairie that is reminiscent of a map of the United States. Some of us call it U. S. prairie but the real name is Silver Prairie. It is located on Silver Peak, the site of an abandoned Forest Service lookout. Behind Collier Butte you'll see the Craggies once again.

32.9 Another road junction - take the upper road, the one that goes to the right.

34.4 Another junction - take the left road this time.

34.5 We'll stop here just a minute to look at some altered pillow lava in a quarry on the left of the road.

On the ridge northeast of Saddle Mountain, we're back in the lower plate Dothan formation sediments until we get back into the serpentinite and diorite near Game Lake.

38.9 Game Lake junction at Skinners Camp.

- 38.9 Game Lake. This is a glacial cirque. It was formed by a small alpine glacier on Game Lake Peak just south of us. To the north, down the slope you can find some glacial moraine. All of these rocks are again in the upper thrust plate overlying the Dothan formation. Game Lake Peak is largely a small intrusive body of quartz diorite. Some gneissic gabbro is also exposed closer to the lake and you will find serpentine, peridotite rocks on the northeast side of the lake. At Game Lake you'll find Jeffrey pine, Golden chinkapin, manzanita, Douglas fir, Grand fir, quartz diorite, gneissic gabbro, a quinine conk and many other specimens.
- 39.8 Back at Skinners Camp and we'll be back tracking back to the Wildhorse Rd.
- 40.3 If you look to the right you can see the Wildhorse Lookout. We'll be passing out of sight but just under this lookout on the way back down the Wildhorse road.
- 52.1 The Wildhorse road junction goes to our right here. It's a sharp right so be ready for it.
- 53.3 Another junction. Take the right fork. We'll be driving through Douglas fir pole stands underlain with rhododendron here. Watch for insulators along the road from the old telephone line to the Wildhorse Lookout. Going down the Wildhorse ridge we'll cross the Mountain Wells fault twice. It will be mostly in the Colebrook formation. The Mountain Wells fault is a contact marked by a very narrow zone of sheered serpentinite which is a nearly vertical north trending fault which has been traced for more than 30 miles in Curry County.
- 56.4 A cross road. Keep straight ahead.
- 57.0 We're now back into some better timber and you'll see some fresh logging along the road. On this whole trip you've passed through logging that has been done within the last fifteen years. Much of it is back into beautiful young Douglas fir stands.
- 58.0 Now you're entering the south end of Wildhorse Prairie. Wildhorse Prairie was supposedly named for some horses that got loose and were very difficult to catch again.
- 58.5 Junction with the Wildhorse Lookout road.
- 60.4 We'll stop here for a few moments at small quarry where we can find some interesting mineral and rock specimens including a quartzite (metachert) with bands of magnetite and manganese oxide. On the way back down this road we will cut into some serpentinite and early cretaceous marine sedimentary rocks back down toward Rogue River.
- 62.7 The Pine Grove Trail takes off from here. It's a beautiful hike from Agness up to this location and then down to Lawson Creek and up to Game Lake.

As you go along this road be sure to watch for hugags, splinter cats, squatalots, whirling wimpuses, bark snarks and other kinds of fearsome critters that are found in these woods. (Hugags cause leaning trees, splinter cats shatter trees into splinters, whirling wimpuses take the tops right out of trees and squatalots cause those deformed trees that have branches going all different directions, and bark snarks bite chunks of bark from trees.)

- 66.5 In the distance you can see Skookumhouse Prairie on the north side of Rogue River. Up river from that location is Potato Mountain - the old Adams ranch that is now Forest Service property. This was homesteaded by John Adams who just passed away a couple of years ago at the age of 95. Believe it or not, they used to grow potatoes on the top of this mountain. Now it's used for cattle grazing and timber growing and is excellent hunting.
- 68.7 You're back now on the Rogue River road. Have your ears popped yet?
- 71.5 Now we are going over Skookumhouse Canyon. Watch for the big spider net on the left of the road. That's the home of the Rogue River Rainforest spider.
- 72.3 Across the river you'll see a building and a little bit of farmland. This is the famous Lowery place that was a midway stop for the boat travelers between Agness and Gold Beach in the early days.
- 72.8 You're now passing the campground known as Hideaway that has recently been taken over by the Forest Service and will be called Quosatana Campground. A good spot to camp in the myrtle trees right along the edge of the Rogue River.
- 73.6 We're now crossing Quosatana Creek. Another beautiful camp spot is located upriver. You must walk or drive up the creek bed in the summer time to get to these camp locations.
- 73.9 Quosatana Creek road junction. This is where we left the Rogue River road on our way up the hill.
- 77.3 We're back at the north end of Lobster Creek bridge where this tour started. We hope you had a good time and we'll see you back at camp.

Mineral Resources of Curry and Southwestern Coos Counties
Prepared by L. Ramp, Dept. of Geology & Mineral Ind., Grants Pass
1/26/61, Revised 2/5/63, Revised 4/8/69.

Introduction: Mineral resources of the area are still relatively undeveloped. Some of the known mineral occurrences are shown on the accompanying map. Early gold production which came mainly from placers outranks other mineral production in the area.

Black Sand: The black sand deposits are believed to represent a potential source of gold and platinum as well as other minerals including chromite, zircon, garnet, ilmenite, magnetite, rutile, etc., in the area. Most of the black sand deposits are relatively thin and covered, but quite extensive laterally (see map). The work done by Allen B. Griggs (1945) is the most complete reference on these deposits. The black sands have been worked in several places mainly for gold and, in a few places in Coos County, for their chromite content. The black sands contain from 3 to about 20 percent chromite, up to 1.9 percent zircon, up to 7 percent ilmenite, and up to about 10 percent magnetite. Some work on the black sand deposits was done in the vicinity of Cut Creek north of Bandon where a complete processing plant was erected by the Mineral Sands Company in 1956. Also in 1955 and 56 chromiferous sands in the Government Stockpile near Coquille was re-processed producing a cleaner chromite concentrate and some by-product minerals. Hunt (1960) described the mineralogy and processing of these sands using magnetic and Carpo High-Tension separators. More recent work by the U. S. Geological Survey in cooperation with Oregon State University Oceanography Dept. is devoted to testing for gold in sediments on the continental shelf off southern Oregon. Clifton (1968) reports results of this prelim testing.

Iron: The occurrence of magnetite disseminated in pyroxenite near

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Tincup Peak is also of interest. Other bodies of similar ultramafic rocks in the area may contain similar and possibly higher grade occurrences. Further exploration for iron in this area is believed warranted.

Mount Emily: The Mount Emily area is of interest due to evidence of mineralization in syenite and the related intrusives. Zinc, molybdenum, cobalt, nickel, and gold have been reported to occur at Mount Emily. Perhaps the most interesting of these occurrences is the disseminated molybdenite reported by Butler and Mitchell (1916, p. 113).

Nickel: Considerable testing work has been done in the Red Flat area by the State of Oregon Department of Geology and Mineral Industries (Libbey, et al, 1947), the U. S. Bureau of Mines (Hundhausen, et. al, 1954); and more recently by the Hanna Mining Company. These residual surface deposits of low-grade nickel-bearing red soil represent a fairly large reserve for possible future mining.

Coal: The coal occurrences shown in Curry County are of low rank and fairly high ash content according to Diller (1903). He reports the most promising occurrence a few miles southwest of Eckley (map No. 67). More extensive deposits of fair quality coal occur in the Eden Ridge Coal Field (Map No. 65) where the Pacific Power and Light Company has recently completed an extensive exploratory program with plans to supply coal for a proposed steam electric generating plant.

Industrial Minerals: The field of industrial rocks and minerals is the most rapid growing of Oregon's Mineral industries. The demand for building stone, road aggregate, roofing granules, jetty rock, and sand and gravel for suitable concrete aggregate is constantly increasing. Rocks suitable for most if not all these uses are available in the area. Exposures

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of iron-stained rhyolite dikes along the Winchuck River road about 7 miles from U. S. 101 have been used in a few places for building stone. It appears to be attractive and suitable.

Some future use may be found for the extensive deposits of mica schist mapped by Diller (1903) as Colebrook schists and by Wells and Peck (1961) as Galice formation--gneiss and schists. Wright (1957, p. 359) reports of sericite schists mined in California that are similar by description to schists in Curry County.

Chrysotile asbestos is known to occur in minor amounts in Curry County, but to date none of commercial quantity is known. The possibility of finding a large deposit of this short-fiber asbestos in some of the numerous serpentine areas in Curry County has not been eliminated as yet.

Exploration: The Oregon Department of Geology and Mineral Industries has recently completed field and laboratory work on a regional geochemical sampling of stream sediments in southwestern Oregon. Tests have been made for copper, molybdenum, zinc, mercury, gold, nickel and a few other elements. The results of this work should be available in 1970 and should stimulate exploration by private companies and individuals.

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Many of the occurrences listed below and spotted on the map probably have very little commercial significance, however, they serve to designate mineralized areas where further exploration may be warranted. It should also be noted that not all of the known prospects or occurrences are listed.

Mineral occurrences Curry County and S.W. Coos County

Map No.	Mineral or Metal	Name	Location			Reference
			Sec.	T.S.	R.W.	
1	Chromite	Trails End	26	31	14	Dept. Bull. 52
2	"	White Rock	21	32	12	" " "
3	"	Independence	23	33	12	" " "
4	"	Rock Creek	33	33	12	" " "
5	"	Big Cat	9	34	12	" " "
6	"	Last Chance	24,25	33	12	" " "
7	"	Edna Fry & North Star	14	34	12	" " "
8	"	Foster Creek (Illahe)	12	34	12	" " "
9	"	Agness Group	?	35	12	" " "
10	"	Signal Buttes Area	29,30	36	13	" " "
			31,32			
11	"	No Name (float)	8	36	14	" " "
12	"	Black Rock #31	35	35	12	" " "
13	"	Black Rock #10	5	36	12	" " "
14	"	Collier Creek Craggs	8	37	12	" " "
15	" & copper	Collier Creek Copper	16	37	12	" " "
16	"	Lena Claim	29	37	12	" " "
17	"	Upper & Lower Pines Chromite	11	38	12	" " "
18	"	Gardner Chrome	10	39	11	" " "
19	Copper & Gold	Moss Rose (Axtel)	16	33	14	Dept. Mine Files*
20	" "	Copper King	33	33	12	" " "
21	" "	Pine Flat	26	35	12	" " "
22	" "	Kessler & Fry	22	36	12	" " "
23	" "	Magnabonus	29	32	12	" " "
24	" "	Collier Creek Copper Co.	30	36	11	" " "
25	Copper, Cobalt, Pyrite	Cobalt Group	28	36	11	" " "
26	Copper & Cobalt	Bonanza King	1	37	12	Butler & Mitchell (1916)
27	Copper	Bunker Hill	20	37	12	Dept. Mine Files
28	"	Star Group	31	36	13	" " "
29	"	Shasta Costa	4	35	11	" " "
30	"	No Name	12	31	15	Assay only (NG-341)
31	Copper & Gold	War Baby	23	32	13	Assay only (P-10106)
32	" "	No Name	36	35	14	Assay only (P-15629)
33	Gold & Chromite placer	Independence	19	33	11	Bull. 14-C, Vol. 1
34	Gold Placer	Madden	4	32	15	" " " "
35	Gold, Moly, Zinc, Syenite	Mt. Emily Group	7	40	12	Butler & Mitchell (1916)
36	Gold, Silver, Copper (placer & lode)	Wildcat Group	4	34	12	Dept. Mine Files
37	Gold lode	Bear Cat	22	32	13	" " "
38	Gold placer	Big Sunshine Placer	13	33	14	" " "
39	Gold lode	Butcher Hill	21	32	13	" " "
40	Gold - Beach placer	Cape Blanco Mine	1,12	32	16	" " "
41	Gold lode	Cliffslide lode	7,8	33	14	" " "
			17,18			
42	Gold lode	Combination	22,27	32	13	" " "
43	Beach sands placer	Crystal Creek	2	32	15	" " "
44	Gold placer	Elkhorn Group	23	33	14	" " "
45	Gold placer	Inman Mine	12	32	14	" " "
46	Gold-Silver lode	Jupiter Group	3,10	32	13	" " "
47	Iron--low-grade	Tincup Group	32	37	10	" " "
48	Gold placer	Blossom Bar	18	33	10	" " "

* Reference to most of the gold occurrences may also be found in Dept. Bulletin 61.

Mineral occurrences Curry County and S.W. Coos County

Map No.	Mineral or Metal	Name	Location			Reference
			Sec.	T.S.	R.W.	
49	Gold lode	Marigold (Tiny H)	33	32	10	Dept. Mine Files*
50	" "	Donoghue (Yellow Moon)	32	32	10	" " "
51	" "	Golden Cargo	31	32	10	" " "
52	" "	Golden Cabin	32	32	10	" " "
53	" "	Golden Economy	29	32	10	" " "
54	" "	Keystone	17	33	10	" " "
55	" "	Lucky Strike	31	32	10	" " "
56	" "	Mule Mountain	17	33	10	" " "
57	" "	Paradise	27	32	10	" " "
58	Gold placer	Paul Junior	9	33	10	" " "
59	" "	Red Dog	9,10	33	10	" " "
60	Gold lode	Mammoth	3,4	33	10	" " "
61	Manganese	Black Bear	13	41	11	U.S.B.M. R.I.-5369
62	"	Long Ridge	14	38	12	" " "
63	"	McAdams	20	30	14	" " "
64	Chromite	Sourdough	35,1	40,41	11	Dept. Bull. 52
65	"	Pearsoll Peak area	2,11	38	10	" " "
66	Gold placer	M & B	15,16	38	10	Dept. Mine Files
67	Gold lode	Peck Mine	23	38	10	" " "
68	Nickel	Red Flat Area	19,30	37	13	Mine Files & Ore-Bin, v.9,No.3; USBM RI-5072
69	Nickel	Red Earth Prospect	28,32,33	33	12	Personal communication,
70	Quicksilver	Harmony	35	32	13	Assay only
71	"	No Name	9(?)	38	13	Assay only
72	"	Red Flat	32	37	13	Mine Files & USBM R.I.507
73	"	No Name	9	35	14	Assay only
74	Coal	Eden Ridge Field	--	32	11	Dept. Mine Files
75	"	Agness	--	35	11	Diller (1903)
76	"	Upper Sixes	--	31,32	13	" "
77	Borax	Lone Ranch pricite	22	40	14	Butler & Mitchell (1916)
78	Iron-Vanadium	Horse Sign Butte	17	36	11	" " & Mine File
79	Jetty Rock	Chetco	24	40	13	Operated in 1968
80	Building Stone	Winchuck Rhyolite	8,9	41	12	None
81	Jetty Rock	Ryce Wilson	7?	32	14	Oral communication Walt Schroeder, 1969
82	Gold lodes	Frazier & Young Mines	24	38	10	Dept. Bull. 61
83	Gold placer	Little Chetco Placers	10,14	39	10	" " "

* Reference to most of the gold occurrences may also be found in Dept. Bulletin 61.

PROVISIONAL
OVERALL ECONOMIC DEVELOPMENT PLAN
FOR
CURRY COUNTY, OREGON

*Prepared By The
Curry County Rural Area Development Committee
May, 1963*

PROVISIONAL OVERALL ECONOMIC DEVELOPMENT PLAN

for

CURRY COUNTY , OREGON

I. DEVELOPMENT AREA ORGANIZATION

The Curry County Court appointed a Rural Area Development Committee to study the resources of Curry County and to make recommendations for the overall economic development of the county. Persons serving on this committee are as follows:

<u>Member</u>	<u>Community</u>	<u>Affiliation</u>
Cy Zeigler	Brookings	U.S.National Bank
Harry Hedderly	Gold Beach	Mining Interests
Robert M. Knox	Wedderburn	Farm Owner & Businessman
Ed Thornton	Brookings	Service Stn. Owner
Frank St. Clair	Port Orford	Wester States Ply.
Olympia Moody	Brookings	Traffic Office Mgr. Radio KURY
Herb Morrill	Sixes	Farm Owner
Jim Little	Gold Beach	Title & Trust Co.
Ed Seger	Gold Beach	County School Supt.

Ed Thornton, Brookings was elected chairman of the group, and Jim Little, Gold Beach was elected Vice-President. Louis M. Oester, Curry County Extension Agent, was appointed Secretary for the committee. Many other individuals and groups worked on various parts of the plan. The committee was appointed in May, 1962, but most of the meetings were held between January and May, 1963.

II. THE DEVELOPMENT AREA AND ITS ECONOMY

Topography and Location

Curry County is located in the extreme southwestern part of Oregon. It is bounded on the West by the Pacific Ocean, on the East by the Siskiyou Mountains and on the South by California. It is approximately 90 miles long and 30 to 40 miles wide, and contains 1,038,080 acres of land. Relatively flat areas are found as benches above the ocean and along rivers in the county. Rolling hills are found in the foothill area but the interior is mountainous with peaks up to 5,000 feet elevation. The Rogue River flows through the middle of the county and into the ocean at Gold Beach.

Most private land in the county is in the narrow strip along the ocean and along the shoestring valleys formed by the rivers. Most of the interior is in the Siskiyou National Forest.

Many rivers and small streams drain the area with the main ones being the Winchuck and Chetco Rivers in the South; Pistol River, Hunter's Creek, Rogue River, and Euchre Creek in the Central area; and Elk River, Sixes River, and Flora's Creek in the north. All head in the coastal mountains except the Rogue which rises at the foot of Crater Lake in the Cascade Mountains.

Flora's Lake and Garrison Lake in the northern part of the county are the only natural lakes. Both lakes are adjacent to the ocean with narrow beaches separating them from the ocean.

A flat bench about 20 miles long and up to 2 miles wide extends along the ocean from Port Orford to the north end of the county. A smaller bench comprising about 2,000 acres is found from Brookings south to the State line, and minor benches are found in other sections along the coast.

Climate

The climate of Curry County is greatly influenced by the prevailing westerly winds of the Pacific Ocean. Temperatures are moderate along the coast with slightly higher temperatures both winter and summer in the southern part of the county. Summer winds are usually from the northwest and winter winds from the southwest. East winds often bring mild sunny weather during the winter in the county.

The average summer temperature is 59 and the average winter temperature is 48. While coastal temperatures may be cool during the summer, a few miles up any coastal stream will find temperatures from 80 to 100 degrees during clear weather.

Rainfall varies from 60 to 80" per year on the coast to up to 120" in parts of the interior. The summers are relatively dry with often less than 1" of rainfall from June 1 to September 15th.

Curry County is strategically located to provide outdoor recreational facilities for a fast growing and over-populated California as well as a rapidly developing southern Oregon. It is in a direct line with the Winnemucca to the sea road being built from Winnemucca, Nevada to the Pacific Coast.

Population

The population in Curry County increased from 6,048 in 1950 to 13,393 in 1960, an increase of 131.2%, which was the greatest percentage increase for any county in Oregon. This was brought about by improved transportation, electricity, and an expanded market for lumber products of which Curry County had a relatively untapped supply. The average family income increased from \$2,692.00 to \$6,033.00 during this ten-year period. The 1960 population was listed by the Census Bureau as 18.9% urban and 81.1% rural.

Employment

The labor force in 1961 averaged 4,790 persons, and 380 or 7.9% were unemployed. For the first nine months in 1962 the labor force was down to 4,715 and average unemployment was 310 or 6.3% of the labor force.

The labor decline since 1960 is attributed to the fact that heavy construction workers usually leave an area during winter shut-down or when the job is finished. A decline in lumber workers is probably due to low lumber prices which have continued to depress the lumber industry. The lumber industry normally experiences a seasonal dip in employment during the winter months because the weather may prevent logging.

The Oregon State Board of Census indicates that 36% of the population is under 18 years of age and 9.5% is over 65. This leaves 54 1/2% of the population in the employable age from 18 to 64.

Employment in 1961 was as follows:

Self employed and domestics	660
Lumber and wood products	1840
Other manufacturing	40
Contract and construction	90
Transportation & utilities	90
Agricultural	370
Wholesale and retail trade	490
Finance, insurance and real estate	100
Service and miscellaneous	200
Government	520

Welfare cases in the county for November 1962 showed 189 cases, of which 69 received old age assistance and only two employable men were on the assistance program.

FINANCIAL CONDITION AND RESOURCES

Bank deposits in Curry County have made a steady increase over the last few years, according to records at the Oregon State Banking Department. They increased from \$9,069,000 in 1957 to \$11,633,000 in 1961.

Total payroll in Curry County covered by employment insurance, according to the Oregon State Department of Employment, was \$14,229,000 in 1960. In manufacturing alone, it totaled \$10,061,000. It is estimated that the total family income in the county is about \$23,000,000. The major portion of manufacturing done in Curry County involves lumber and wood products.

Log production in Curry County land has averaged about 450 million board feet over the last few years. About 25% of the annual log production has gone outside the county for manufacture into lumber and plywood. Another 20% of the logs have been made into veneer and shipped out of the county to be made into plywood.

The allowable cut on public land (Forest Service, B.L.M., Public Domain, and State) is about 125 million board feet of logs per year. The remainder comes from private land and assessment records indicate there is about 2.7 billion board feet of old growth private timber left in the county.

Present manufacturing of wood products in the county is about 184 million board feet of lumber and the equivalent of 455 million square feet of plywood (3/8 inch).

No paper mills or hardboard plants are located in the county. Sawdust and wood material not suitable for lumber and plywood is burned except for one small box plant using reject veneer and one sawmill trucking chips out of the county. A recent survey by the State Department of Planning and Development indicates about 525 units of chips per day would be available from county mills.

There is approximately 1.7 billion board feet of Tanoak in Oregon and practically all of it is in Curry County. Research conducted by the Forest Research Laboratory at Corvallis and trials conducted by timber companies indicates that Tanoak can be used for plywood, flooring, furniture, boat, lumber, pulpwood, and charcoal. Present use is on a trial basis and is very limited.

Commercial fishing is primarily for salmon and crabs and brings about \$1,000,000 per year into the county. Crab processing plants are located at Port Orford and Brookings.

With the completion of the new highway between Brookings and Gold Beach, tourist travel should show a tremendous increase. Approximately 700,000 cars passed through the county in 1962. Many tourists were on their way to the World's Fair in Seattle and didn't stay in the county. In 1961, 225,000 out of state cars passed through the county and based on the estimate that out of state tourists spend an average of one day in the county and spend an average of \$20.00 per day, the total income from this source is about \$5,500,000. It is estimated another \$2,000,000 comes from Oregon tourists.

The Rogue River, world famous salmon and steelhead fishing stream, is the outstanding tourist attraction with many families staying several weeks to fish.

Agricultural production consists of ranch operations with beef and sheep, dairy farms, and bulb raising. About 90% of the Easter lilies field grown to be forced for Easter are grown in Curry County and the adjacent area in Del Norte County, California. Agriculture accounted for an income of about \$2,500,000 to the county in 1962.

SUMMARY OF ACTION OF COMMITTEE

The economy of Curry County is almost entirely dependent upon the utilization of natural and renewable resources existing within the county. The jobs created in the process of utilizing these resources provide most of the money for the general economy of the area. Therefore, any study of the economy will be a study of these resources. Recommendations will be for better utilization and increased economic activity based on these resources.

The determinants of the economy are basically (1) wood products, (2) tourism, (3) agriculture, and (4) commercial fisheries. Mining could also be an important one for future development. The orderly development and utilization of these resources depends upon the human resources available, the transportation system, water, finance, and many other factors.

It is the purpose of the committee to focus attention on the orderly development of the resources of the county and to prevent waste, unnecessary depletion, and other circumstances that may be responsible for decreased economic activity.

It is the opinion of the committee that all of the recommendations made should have serious consideration over the next few years. However, if a system of priority is used, the committee considers the following should have highest priority:

1. Construction of a deep water harbor.
2. Utilization of waste wood products and tanoak.
3. Construction of a road from Agness to Selma.
4. Development of the ocean bottom fishery for recreation and commercial use.
5. More advertising of the county and what it has to offer.

The Curry County Area Development Committee recognized 9 areas of resource development where changes could be made that would strengthen the economic conditions in the county. These are as follows: Transportation; Tourist & Recreation; Health, Education & Welfare; Forest & Industry; Agriculture; Mining; Watersheds; Fisheries; and Business & Finance.

TRANSPORTATION

The transportation system in Curry County has always hindered its economic development and each major improvement made has substantially raised the economic level. It is one of the few counties in western Oregon that does not have a railroad. Since it does not have a deep harbor either, it has been limited to truck transportation which has a much higher freight rate. The highway system parallels the ocean on the coastal strip and there is no tie to the rest of southern Oregon on the east. Curry is the only coastal county in Oregon that does not have a highway to the east.

Barge harbors in recent years have given some relief but at the present time they are primarily suited for lumber shipments to California coastal ports.

Roads

State highway 101 runs north and south and full length of the county. The portion from Port Orford to Brookings has been straightened and made into a modern highway in the last 10 years. The balance of this highway is on relatively level ground and should be widened and straightened in the near future. A modern highway is also needed from Josephine county to the coast, to open up vast areas of recreational land, harvest untapped areas of timber, and provide a transportation system from the Interior to the coast for industry, agriculture, and recreation.

County roads branch off the state highway along each major stream in the county and in each agricultural or timber access area. Most county roads going east tie in with Forest Service access roads that reach farther back into the national forest..

County roads are important for timber harvest, recreational access and as agricultural market roads. Those used for timber harvest should be improved and surfaced so county mills can compete with mills in other counties that are building improved roads to reach Curry County timber. Only a competitive advantage will keep the timber from going to more wealthy counties.

Forest service access road construction should be expanded to provide access to all parts of the national forest where economic wealth lies. The roads should be maintained into recreational areas that will help provide an expansion of the tourist industry.

A road is being constructed up the south bank of the Rogue river to Agness. This road should be paved to provide better utilization of the recreational potential and to provide less costly transportation of logs. The continuation of this road to Selma is needed to provide a link with the interior.

The Sixes River road should also be improved to keep Curry County mills in a competitive position with mills in other areas. This area is

of primary importance because most of the private timber has been cut in the area and public timber bids will be more competitive.

Harbors

While there is a history of coastal water transportation serving the three sections of the county dating back to the early settlers, this method was discontinued until recent years when jetty harbors were constructed at the mouth of the Chetco River, Rogue River, and a breakwater built at Port Orford. These harbors now provide facilities for a fishing fleet and barge transportation, with small coastal ships also being able to load at Port Orford part of the year.

Brookings and Port Orford have natural conditions for deep water harbors if adequate breakwaters are constructed. While these sites have been investigated in the past, there are no definite plans for development at this time.

A deep water harbor is needed in Curry County to provide economical transportation to compete with other areas that have railroads. This facility is needed for development and utilization in the timber industry and to take advantage of the untapped mineral resources in the county. The primary problem in the economic development of the mineral industry and wood products utilization is competitive transportation.

Siltation is a problem in the Chetco and the Gold Beach harbors and annual dredging is necessary. This problem needs study to determine what steps are necessary to reduce this obstruction. A small boat basin is needed at Gold Beach for an expanded fishing fleet, and Dock space, fish processing facilities, and other improvements are needed to encourage further economic development.

Airports

It is a well established fact that good airports attract and hold industry. This may be an even more important factor in the future than it is now. Tourist travel by air is also becoming more important in the county. In case of certain emergencies, airplanes are an essential means of transportation for local people. No commercial airplanes use the facilities in the county at the present time.

The Curry County Airport is located near Sixes in the northern part of the county. It has a paved runway 5100 feet long and has lights and a beacon. Only four airplanes are based there now.

The airport at Gold Beach is 3200 feet and was recently paved. Lights were recently installed and plans are underway for installing a beacon. It is located adjacent to the beach and is only about 3 blocks from the business district of Gold Beach. Eight airplanes are based there. There is a need for six hangars at this site.

The State Line airport is located adjacent to the beach south of Brookings. It has a gravel runway 1800 feet long and 6 airplanes are now based at this site. A new airport is being constructed closer to Brookings and this project should be speeded up.

The Curry County Airport needs a new beacon and the runway lights need

repairing. The airport was built during World War II as an emergency landing field and is still maintained for this purpose. It has potential for the development of industry that needs a good landing field with low-value level land adjacent. A new state park is being developed between the airport and the ocean.

Promotional activities to encourage sportsmen to fly to the area are needed.

TOURIST & RECREATION

Tourism is considered the main area in the county where a vast expansion can be made that can materially improve the economy of the area. Its importance will be increased as time goes on and an orderly development of all resources contributing to it should be encouraged.

The demand for recreational facilities is expected to increase due to improved transportation, increased population, shorter working hours, and an increased interest in outdoor types of recreation. Curry County is in a strategic geographic location to offer recreational opportunities for the large population centers in California and to offer a "banana belt" climate to tourists from Oregon, Washington, and Canada. The development of roads to the East will bring additional tourists from Southern and Eastern Oregon and from the mountain states.

Scenic beauty and fishing have been the main attractions in the past. The use of these resources can be expanded by providing local advertising, maintaining adequate marking of attractions, roads, and trails, and by a concentrated effort to improve water facilities for fishing and other types of recreation. This would also encourage tourists to stay longer in the area.

It is recognized that extending the tourist season is important to maintain a labor force and to prevent slack economic periods. This has a distinct advantage on the Rogue River where spring salmon fishing starts in late March and extends through May when the regular tourist season starts. Developing improved steelhead fishing on adapted coastal streams for winter fishing would be another step toward extending the season. Developments for hunting upland game birds, ducks and geese would also extend the tourist season.

The development of bodies of water in the interior of the county for recreation would open up tremendous areas for development. Warmer temperatures a few miles from the ocean would broaden the scope of recreational possibilities.

Developments on private land are needed as well as on State Park and Forest Service land. Private landowners control access to some of the good areas for recreation.

Further studies are needed both of the needs of tourists and the development of the resources in the county to meet the needs.

HEALTH, EDUCATION & WELFARE

Human resource development is essential to the economic development of an area. People provide the creative ideas, management ability, and capable work force for an area. Good schools, health facilities, good water supplies, and facilities for pollution abatement are important for the orderly development of the economy.

Pollution Abatement

Without adequate sewage disposal, an area becomes blighted, and there is danger of disease and water pollution. Loan money is also restricted. Brookings and Gold Beach have municipal sewer systems. Brookings needs expansion in two areas, near Tanbark Road and in the cemetery district around 7th. St. Expansion is being made in Gold Beach that should be adequate. The Rogue Hills subdivision in Wedderburn also has a satisfactory sewage system.

The rest of the county is without a sewage system except for septic tanks, and in most areas these are unsatisfactory because of soil conditions and water supply. Critical areas are Harbor, Wedderburn, and Port Orford.

Gold Beach and Port Orford have adequate municipal water systems at the present time. Gold Beach has a satisfactory system to serve the fringe areas around the town if financing can be arranged by these districts.

The Brookings area is served by a private system and restrictions on use of water during the summer are necessary. The present system is apparently not adequate to serve areas adjacent to Brookings.

The rest of the county depends upon wells and springs for individual and sometimes cooperative water supplies. High yielding wells are not found except near streams and in sand dune areas. Water supplies are available in all areas of the county but the cost of development is a limiting factor.

Garbage disposal is another serious problem in areas outside of incorporated cities. Indiscriminate garbage dumping seems to be a growing difficulty which destroys natural beauty, as well as creating a health hazard.

Education

Vocational education is limited to the following general areas in the county: Port Orford offers vocational agriculture, commercial subjects (bookkeeping, shorthand, typing) and home economics. Gold Beach offers woodshop, commercial subjects and home economics. The Brookings-Harbor school system has classes in auto shop, woodshop, commercial subjects and home economics.

In terms of courses or subjects offered in other high schools, these in Curry County represent bare minimum courses. No post high school courses are offered and informal education is limited to the offerings of cooperative extension in the fields of agriculture, home economics, and 4-H club leader training.

There are no nursery-day-care centers and only non-public school kindergartens.

A post high school educational program is needed, especially in vocational education. Adult educational opportunities are also needed for job improvement, in cultural subjects, and the humanities and social sciences.

Health

There is a lack of medical services in Curry County and it is especially critical in the Brookings-Harbor area at the present time. Curry General Hospital at Gold Beach, a tax-supported hospital, has been in financial distress. One reason is that many people from the Brookings-Harbor area use hospital facilities in Crescent City and many people in the Port Orford area use hospital facilities at Bandon.

No veterinarian resides in Curry County so there is inadequate control of animal diseases that affect humans.

Approximately 30 Curry County residents must seek regular nursing home care elsewhere, since there is no facility of this type in the county. This condition should be studied and if feasible, a nursing home should be started. Retirement housing also should be encouraged if a nursing home and adequate medical services were available in the county.

Welfare

A great waste of human resources can be found in welfare cases. Welfare can also create a serious strain on the economy of any area. Programs and facilities for prevention and rehabilitation through education, mental health, and physical health should be provided.

FOREST AND INDUSTRY

Forest industries are the major source of economic activity in the county at the present time. Out of 1,030,000 acres of land in the county, about 900,000 acres is in forest land. There are three plywood mills, two veneer plants, ten sawmills, and one box factory in operation at the present time. One veneer plant closed recently and several small sawmills operate periodically. The forest industry employs about 2,000 persons, which is 43% of the labor force in the county.

Timber is being cut at a much faster rate than it is growing on private land in the county. Better utilization is needed to maintain or expand the labor force in the county.

Methods of transportation have greatly improved during the last 10 years but the absence of either a railroad or a deep water harbor for ships has limited the processing of wood products, except for lumber and plywood. A deep water harbor in the county would encourage industries for better utilization of wood products. Venture capital is also needed to encourage better utilization.

There are opportunities in the county for the establishment of small businesses that could either utilize waste material or carry out further processing and manufacture that would result in a higher value product. This would increase the number of jobs in the area.

Curry County has nearly 1.7 billion board feet of tanoak timber. Expanded research on the use and marketing of this species is needed. Since it is a heavy wood, it should be processed within the county to reduce hauling costs. It appears that a plant making tanoak paneling and other tanoak products would be profitable in the area. Waste material could be made into charcoal or sold to paper mills.

The vast acreage of timber land in the county supports a substantial amount of huckleberry, sword fern, salal, and Port Orford Cedar that is used for greenery. One plant handling this material is located at Port Orford. An expansion of this industry appears warranted.

AGRICULTURE

There are 273 farms in Curry County, according to the 1959 Agricultural Census. There was a decrease of 117 farms from the 1954 census. There are about 120,000 acres in farms and the average size is 433 acres. The average value of farms in the county is \$42,000 and the total value runs about \$11,500,000.

Only about 12,000 acres qualifies as crop land and the rest is pasture or range and woodland.

Gross income from agriculture is from \$2,500,000 to \$3,000,000 annually. The income is about equally distributed between crops and livestock.

Lack of economical transportation facilities and the distance to markets have been two of the primary problems in agricultural development. Cool growing conditions and a lack of definite seasons limits the growth on crops such as fruit trees, corn, tomatoes, etc. However, these conditions are ideal for the growing of crops such as bulbs, nursery stock, grass and cranberries. High value crops of low weight are best adapted because of the economic limitations in the county.

Easter lilies have been a successful high value crop in Curry County over the last 20 years. At the present time, a crash program on Easter lily disease research is needed. A continuation of research on the cultural practices, new varieties, and propagation of lilies is also needed. There is room for an expansion in the acreage of lilies (both Easter and garden varieties) nursery stock, cut flowers, cranberries, and small fruit. Expanded use of lime and fertilizer on these crops as well as pasture land is also needed.

Any expansion in the livestock industry must be preceded by improvements of pasture land. Most of the pasture land needs fertilization and the establishment of legumes for added carrying capacity. A pasture renovator and a fertilizer applicator available to farmers on a rental basis is badly needed.

Control of brush by burning or chemical sprays is needed on a considerable acreage of pasture land. Economical methods of controlling brush and establishing stands of high producing grasses and legumes on this type of land is needed and calls for further research. Control of brush on forest land is also needed by spraying with chemicals to establish seedlings and to release commercial forest tree species.

Many dogs run loose in the county, causing serious death losses in sheep and wildlife. Dog control laws are needed to control this waste in the economy.

A tax study on agricultural land, forest land, and other property in the county is needed to determine how seriously the tax condition is effecting the economy of the county. The development of irrigation, drainage, and streambank erosion projects on farm land is needed to maintain and increase the agricultural economy.

Markets for second growth timber, tanoak, and alder are urgently needed to utilize the full potential of farm woodlots.

Increased emphasis on improved breeding stock of beef cattle, sheep, and dairy cattle is also needed. Increased efficiency and labor saving methods are needed to keep farms competitive with other areas.

MINING

Mineral resources in the county are still relatively undeveloped. There has been considerable prospecting since the early settlement of the county but most mineral deposits have turned out to be low grade ores. The vast expanse of mountainous area has made investigations difficult.

Early mining enterprises were primarily gold placers and considerable gold was taken from the streams of the county as well as from the ocean beaches. The greatest activity at the present time is on the upper Chetco River where a gold placer mine is in operation.

The State Department of Geology and Mineral Industry reports there are extensive areas of black sand that contain gold and platinum as well as Chromite, zircon, garnet, ilmenite, and magnetite. There are other areas where magnetite is found and further explorations for iron are warranted.

There are other areas where zinc, molybdenum, cobalt, nickel, and other minerals have been found. One of the largest deposits of nickel is in the Red Flat area between Pistol River and the Rogue River. This area has been extensively investigated but drilling and other methods of exploration are needed to better determine the size of deposits.

There is considerable gravel in most Curry County streams. With improved ports and water transportation, it may be feasible to transport sand and gravel to distant markets. The Rogue River has the largest supply, and dredging is an annual problem. Jetty-type rock is also available and it may be possible to barge it to areas where it is needed.

Technical assistance is needed for a detailed study of the mineral resources of the county. This should include gravel and limestone deposits, and possibilities for development of all minerals should be explored.

Transportation is one of the important obstacles in the development of mineral resources. Besides improved roads, a deep water harbor is needed in the county for economical transportation.

WATER

Water resources in Curry County are important to the economic development of the area. Water is of major importance in recreational and industrial development. Since the county is in a high winter rainfall area, efforts should be made to reduce runoff in the winter and increase stream flow during the summer.

The proposed dams on the upper Rogue River will help stabilize this stream. Studies are needed on other streams in the county to determine the feasibility of headwater storage that will help stabilize the streams, prevent flooding, improve fish habitat, and provide areas for further recreational development.

During winter periods of high rainfall, the streams in the county are high and muddy. Better erosion control methods are needed to reduce soil erosion that depletes the topsoil and creates silting problems detrimental to fish life.

Vegetative plantings are needed on road cuts, waterways, and on logged-off land. Immediate reforestation is needed on logged-off land to protect the watershed as well as to help insure a future log supply for the area.

A survey of the Floras Lake area is needed to determine if underground water supplies are adequate for industrial development. Methods of securing adequate water for industrial development in other parts of the county are also needed.

Further studies on the proposed hydroelectric dam on the Illinois River are needed to determine the feasibility of this project in view of the future power needs of the region and the effect this facility would have on recreation and fisheries.

More detailed studies on Curry County streams are needed to establish seasonal flows, determine feasible storage facilities, and to put the water to the best use for the economic development of the county.

FISHERIES

Sport & Recreation

Fisheries contribute a tremendous amount to the recreation industry in the county. The spring salmon run on the Rogue River starts the tourist season about two months ahead of the normal coastal tourist season. Summer steelhead and summer salmon also bring many tourists to this famous stream. Fall salmon and winter steelhead in all streams in the county bring tourists late in the fall and during the winter. The fish resource is one of the main tourist attractions in the county and it holds people in the county a longer period of time.

The Rogue River is world-famous for its sport fishery of anadromous fish. Improving the runs of anadromous fish in all major streams in the county is important for the economic development of the area. Methods of improving fish habitat and protecting downstream migrant fish should be emphasized. Facilities for artificial propagation and growing of fish, such as hatcheries and rearing ponds, should be employed for anadromous fish whenever feasible. Possible sites for such facilities should be surveyed.

The proposed dams on the upper part of the Rogue River will increase the summer flow and lower the summer water temperature on the Rogue. These dams should be constructed as soon as possible to improve the habitat for anadromous fish in the river.

The prevention of pollution and siltation harmful to fish should be stressed so all people will realize the deleterious effect of these factors on fish life, and subsequently to the economy of the area. Educational programs to make the general public more conservation minded are needed.

Commercial

The ocean along the 90 mile coastline in Curry County offers a vast resource for an expanded fishing industry. This area is fished by a limited number of boats operating out of ports within the county. The present income from fisheries in Curry County averages about \$1,000,000. This could be increased to \$2,000,000 or \$3,000,000 by port improvements and the addition of facilities to process bottom fish and shrimp. At the present time the income from crab makes up from 50% to 75% of the total income, with the balance coming primarily from salmon.

Fisherman and biologists report an abundance of black cod, halibut, and other species of bottom fish off the coast. Drag boats from Brookings operate as far north as Cape Sebastian but the area from there to Cape Blanco is not fished except for salmon and crab. An abundance of shrimp also exist in this area.

Brookings and Port Orford have processing plants for crab and facilities for handling salmon. During peak periods some of the crab must be shipped out of the county to be processed. There is a limited local market for crab and salmon in Gold Beach but most of the catch must be shipped out of the county.

No facilities are available for processing bottom fish and only limited facilities for processing shrimp will be used this year. The bottom fish that come into Brookings are shipped out of the county for processing.

The proposed improvements at Brookings of lengthening the jetties and enlarging port facilities will greatly improve the situation there. Gold Beach has a silting problem and additional work is needed to improve the port. The proposed boat basin and dredging project will help remedy the problem.

The present port site at Port Orford has a great potential for a deeper harbor with protection from storms if an additional breakwater is adequately constructed. Fishing boats are now limited to 34 feet in length and must be lifted out of the water at night and during stormy weather. A properly constructed breakwater and dock would make this an all-season port that would have a tremendous potential for both fisheries and shipping. A all-weather port of refuge in that location would also be an important safety factor for shipping, fishing, and recreation.

When improvements in port and dock facilities are made, fish processing plants will be feasible. It takes considerable capital to build and operate plants that include cold storage, but these facilities would improve the year-around labor situation in the area and would enable operators to use fish by-products.

Truck transportation in the county is also a problem. Fish products must be hauled quickly to market and present arrangements are not always satisfactory. If the industry is enlarged, a better transportation system could be maintained.

At present, salmon accounts for nearly half the gross revenue from the commercial fishery. Improvements that will prevent stream pollution, improve fish habitat, and improve propagation of salmon will greatly aid this resource.

Further research on both crab and salmon is needed to strengthen the fishing resource.

BUSINESS AND FINANCE

Financing is a necessary resource in an area both to develop sound business ventures and to provide capital for local consumer needs.

Most industrial development (wood product) is financed through corporations and cooperatives. Smaller businesses are financed through banks, individuals and the Small Business Administration.

Three banks are located in the county and one credit union is in operation in the Brookings area. Other lending organizations such as the Small Business Administration, Farmers Home Administration, and the Federal Land Bank make loans in the county but their offices are located elsewhere. Insurance companies, and Building and Loan Associations do not have offices in the county.

While most types of loans are available in the county, it is usually more difficult to secure a loan in a rural area that does not have an economy as broad as in more metropolitan areas.

Business would benefit if more loan money was readily available and if more people made their purchases within the county. Businessmen have a responsibility to offer variety, quality, and service to encourage local buying.

Industrial development corporations are needed in the county to encourage sound business ventures that are needed to provide more jobs. Projects to utilize waste materials appear to be the most feasible at the present time.

Merchandise inventories gathered by the county assessor for Curry County is as follows for 1962:

Port Orford	\$181,720	84 businesses
Gold Beach	539,760	155 businesses
Brookings	1,416,480	173 businesses

SUMMARY OF PROPOSED ACTION PROGRAM
OUTLINED IN THE PROVISIONAL OVERALL
ECONOMIC DEVELOPMENT PROGRAM FOR
CURRY COUNTY, OREGON

TRANSPORTATION

A. Immediate Possibilities for Development

1. Straightening and improvement of highway 101 from Port Orford to Bandon and from Harbor to the state line.
2. Improved county roads for timber hauling. Sixes road in particular.
3. Continuation of access road building on Forest Service land for timber removal and recreation.
4. Paving of road to Agness and construction of a road to Selma.
5. Construction of a small boat basin and breakwater at Gold Beach by Army Engineers, also docks and facilities by the port district.
6. Construction of a deep-water harbor in the county.
7. Completion of airport at Brookings.
8. Construct a new beacon and repair runway lights at Sixes airport.
9. Expand local use of airports--Build 6 hangars at Gold Beach.

B. Knowledge and Technical Information Needed

1. Cost and feasibility study of constructing a road from Agness to Selma up the Illinois River.
2. Feasibility study of the effect of a deep water harbor on the economy of the county.
3. Mineralogical summary with economic study based on recent changes in transportation facilities.
4. Containerization for economy in transportation by truck, rail and boats.
5. Study by public utilities commissioner to increase service and lower freight rates in the county.

TOURIST AND RECREATION

A. Immediate Possibilities for Development

1. Improved swimming facilities in all areas of the county.
2. Construction of a golf course in the county.
3. Utilizing a map of Curry County as a place-mat in restaurants and as hand-out material at service stations and motels.
4. Conducting a school to keep persons meeting tourists informed on recreational facilities and attractions in the county.
5. Constructing and improving roads and trails to beaches and other scenic areas. These roads and trails should be well marked so tourists can find them.
6. Encourage tourist fishing for bottom fish, clamming, etc.
7. Construction of additional sport and recreational boat launching facilities on the Chetco River, Rogue River, and at Port Orford.
8. Development of tourist attractions to utilize agate beds, marine gardens, and scenic areas of the shoreline.
9. Construction of indoor recreational facilities.
10. Location and construction of trails and facilities for hiking, horse-back riding, and pack trips.
11. Conduct a campaign to encourage painting and keeping the area clean. Discourage indiscriminate garbage dumping.
12. Construction of recreational facilities on private land on the many streams and rivers in the county.
13. Development of Blacklock State Park in the north end of the county.
14. Development of the State Park in the sand dune area at Pistol River.
15. Keep Forest Service roads and trails marked and maintained for added tourist attractions.
16. Encourage winter conventions.
17. Advertise airport with air tours and encourage sportsmen to fly to the area.

B. Knowledge and Technical Information Needed

1. A study of the feasibility of water impoundments to provide recreational facilities on Floras Creek, Euchre Creek, Hunters Creek, Pistol River, and the Chetco River.
2. Study further potential park development opportunities by U. S. Forest Service and State Highway Commission.

3. Study of the area between Floras Lake and New Lake for recreational developments of fishing, boating, duck hunting, etc.
4. Study of upland areas for introduction and development of upland game birds.
5. Surveys to determine the potential needs and demands of tourists of the future.

HEALTH, EDUCATION & WELFARE

A. Immediate Possibilities for Development

1. Expansion of Brookings sewer system to area of Tanbark road and to the cemetery district around 7th street.
2. Development of sewage disposal systems at Harbor, Wedderburn, and Port Orford.
3. Improved water system in the Brookings-Harbor area.
4. Improved private water systems (springs, wells, etc.)
5. Improved garbage dumping facilities in the Langlois area.
6. Educational program to discourage indiscriminate garbage dumping.
7. Provide vocational training for youths and adults to qualify them for skilled and technical jobs--adjustment to automation.
8. Training of service workers for tourist season operations.
9. Additional doctors and health services.
10. Opening of an employment office in the county, even on a part-time basis. Continue youth employment center at Brookings.
11. Establishment of a veterinarian in the county.
12. Addition of nursing home to county hospital facilities.

B. Knowledge and Technical Information Needed

1. Cost studies of sewage disposal systems at Harbor, Wedderburn, and Port Orford.
2. Study of job opportunities for young people.
3. Survey and study to determine the need for additional doctors, rest homes, and retirement homes.

FOREST AND INDUSTRY

A. Immediate Possibilities for Development

1. Industries to use waste wood material from mills. Pulp, hardboard, etc.
2. Industries for manufacture of wood products such as boxes, arrow shafts, pallets, posts, poles, etc.
3. Plant for utilization of tanoak for paneling, boat lumber, and other recommended uses.
4. Charcoal manufacture from hardwoods.
5. Improved reforestation program to insure a supply of timber for the future economy of the area. Include spraying for release of desirable tree species.
6. Encourage thinning of immature timber stands instead of clear cutting such timber.
7. Expanded system of access roads on public forest land.
8. Expansion of the minor forest products industry.

B. Knowledge and Technical Assistance Needed

1. Market information on hardwoods, charcoal, and specialty wood products.
2. Information on use of tanoak for pulp.
3. Inventory of sites for industrial use.
4. Assistance in developing small industries using wood products.

AGRICULTURE

A. - Immediate Possibilities for Development

1. A crash program on lily disease research.
2. Continue research on cultural practices, new varieties, and propagation of lilies.
3. Expanded acreage of lilies, nursery crops, cut flowers, cranberries, and small fruits. Also blueberries.
4. Expanded use of lime and fertilizer on crops and pasture land.
5. Establish legumes on hill pastures with the use of pasture renovator.
6. Control brush by burning or chemical sprays on pasture land.
7. Establish dog control district for county.
8. Encourage use of improved animals for breeding stock.
9. Control brush on forest land by spraying with chemicals to release forest tree seedlings.
10. Develop marketing organization for Curry County products such as garden lily bulbs, driftwood, myrtlewood products, etc.

B. Knowledge and Technical Information Needed

1. Completion of soil survey for Curry County.
2. Survey to determine need for small watershed study on Floras Creek.
3. Tax study to determine the effect of taxation on land use and development.
4. Study of sheep diseases.
5. Study possibility of fertilizer application with aircraft on range land.
6. Market possibilities for small dimension logs from thinning operations.

MINING

A. Immediate Possibilities for Development

1. Develop a sand and gravel operation at Gold Beach to export these materials.
2. Develop mining operations in beach sands with proper equipment which is available.
3. Construct a deep water harbor in the county so ore can be transported economically.

B. Knowledge and Technical Information Needed

1. Reopening of nickel investigations in the county by the Bureau of Mines.
2. More extensive surveys of mineral deposits and feasibility studies on mining these deposits.
3. Survey of markets for gravel and jetty rock so these minerals can be utilized.
4. Investigation of limestone deposits to see if they are adequate for a cement manufacturing plant.

WATER AND WATERSHED

A. Immediate Possibilities for Development

1. Better erosion control methods on road construction and logged-off land.
2. Reforestation and the establishment of watershed vegetative cover to reduce rapid water runoff.
3. Construction of proposed dams on headwaters of Rogue.

B. Knowledge and Technical Assistance Needed

1. Investigation of underground water supplies for industrial use in the Flora's Lake area.
2. Survey of sites on Curry County streams for headwater storage.
3. Secure data on seasonal stream flow on all major streams in the county.
4. Feasibility study on a hydroelectric dam at Buzzards Roost on the Illinois River.

FISHERIES

A. Immediate Possibilities for Development

1. Construct hatcheries and rearing ponds on sites already surveyed and considered feasible for salmon and steelhead. Elk River in particular.
2. Construct proposed dams on upper area of Rogue River to increase summer flow and lower water temperatures.
3. Enlarge program for stream pollution abatement and stream habitat improvement.
4. Lengthen jettys and enlarge boat basin at Brookings.
5. Construct adequate breakwater and dock facilities at Port Orford for shipping, fishing, and as a port of refuge.
6. Correct silting problems and construct small boat basin at Gold Beach.
7. Develop processing facilities for shrimp and bottom fish as ports are improved.
8. Conduct educational program to encourage all people to protect the fishery and discourage illegal practices.
9. Improve lakes in the county for an expanded use as a fishery.
10. Correct ocean surges reaching into bay on Rogue and damaging sport fishing boats and resort property.
11. Clear log jam at mouth of Hubbards Creek near Port Orford.

B. Knowledge and Technical Information Needed

1. Survey all streams for feasible hatchery and rearing pond sites for anadromous fish.
2. Survey sites for lakes that could be developed for fishing.
3. Conduct study of present trucking facilities to see if they could be expanded to give better service to the commercial fishing industry.
4. Study of fish marketing and processing to find ways to improve and expand markets for bottom fish.
5. Conduct study of seasons and fishing pressure on crabs.
6. Increase research program on propagation of salmon and crabs.

BUSINESS AND FINANCE

A. Immediate Possibilities for Development

1. Encourage local buying to keep more money in the county.
2. Develop credit unions for more short term consumer credits.
3. Develop local industrial development corporations to start and encourage new industry.
4. Broaden base of economy so more venture capital may be available.
5. Initiate tax study to see what effect taxes have on local business.

B. Knowledge and Technical Assistance Needed'

1. A study on possibilities of developing the following small businesses:
 - a. Arrow shaft manufacturing from Port Orford Cedar
 - b. Charcoal plant to utilize hardwoods.
 - c. Pallet making business
 - d. Cement products manufacturing.
2. Inventory of sites for industrial use.
3. Study of industries not associated with wood products that would have advantages by locating in the county.

Ed H Divilbiss (P) Big Creek Placers mining claim.
Sec 8 T 32 S R 13 W Six Rivers

Mrs. Oleta A Walker
County Clerk. Curry County.
Gold Beach Oregon

Ed H. Divilbiss (P) Hudson Strike.
Souty Fork of Six Rivers Recorded Book 10 pg 398

A. L. La Chance (P) Red Gold Association
1, 2, 3, 4, 5, 6, 7, 8 + 9 Hunters Creek.

Frank Shurman, May Shurman, Wm H. E. Coffman
and Dona M. Coffman Shurman. (E) Loc. B 10 pg 520

Louis Schwartz (Loc) Dugan Placer mine. In bed
of Six Rivers west of Hudson placer claim. B 10 pg 598.

Clarence A. Henshaw. (E) Lina Placer claim. Little
Loc am B 10 pg 294. also joint owners with Fred Miller
Ben Roe & Rasmus Roe

Francis mining claim Vol 10 293

Francis No 2 381

Little Bay Chrome Bottle No 1 Vol 10 pg 400

" " " " No 2 " " " "

" " " " No 4 " " " 434

5 " " 434

H. S. Stutch (E) Ada Eldora mule creek 2/28/37

John J. Hoogstraal (E) Big Bay Group Diamond Creek 6/29/37

Clara Gage Landreth & Mrs. M. Stoll 3 1/2 doz
Six Rivers Sec 4 T 31 S R 15 W 6/30/37

Ira C. Miller Eng. Lillian G. Miller, Florence M. Barber
Iron Spinal filed 7/22/32 Iron Wood filed 7/22/32
Iron sides 7/22/32 Price Creek 7/22/32
Verdure 6/15/32 Florence Exp 6/15/32 (B)
Rhododendron 6/15/32 Jink Lodge 6/15/32
Evergreen Hollow 3/15/32 Mule Creek June 28

L. A. Damon. (E) Golden Dnd, Golden Dnd Exp
Golden Rattler, Golden Rattler Exp Golden Frachin
and Lancaster Mule Creek. 6/28/37

Arthur Damon. (E) Vol 10 Jan 30 1937
Oregon 520 Rambler 467 Old Camp 458
Tom Harland 520 Blue Buck 472 Gladys 463
Buckhorn 426 Berry 472 Blue Bird 462
Flicker 468 Lucky Strike 473 Allie 464
Prince Albert 471 Sports 474 Hillsie 478
Black Bird 466 Henry Holland 475 Snow Bird 470
Skinner 422 Collier 475 Blue Bird 477
Maryland 521 Hooper 470 Red Bird 472
Game Lake 521 Blue Rock 455 Wildcat 480
Twin Pines 479 Buckskin 456 Scoppin 480
Paul 469 White Pine 455 Brandy 427
Lone Tree 412 Forked Buckhorn 440
Hugo 413 Hawk 458.

Arthur Dorn @ chitco mining claim 10-463

Loeta M Jewell^{ac} (E) Pine Ridge, Pine Ridge No 2
& Lane Lue

Bald Eagle Mining Co of O'Brien E.M. Cook et al 7/28
Cleopatra mining Dis Proof of Labor on Bald
Eagle group no 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 & 15

C. E. Little, Walter Fry & Arthur Dorn. (P) 6/15/37
Prairie Queen 10-438 Grand Pap. 10-436
Blue mouse 10-441 Chickadee 10-437
Jackie 10-427 Wakeup Riley 10-425

N. E. Harju (E) Yankee Boy 1, 2 & 3 Yankee Girl
Mule Creek. Arvada Fork. 7/28

E. O. Emmel & S Amato Robert & No 10 & 11
Chitco. 6/28/37

A. L. Fry of Marial Co. (E) Acme, Oregon Boy, Green
Beauregard 1 & 2 Quartz lodes & The Rocky Bar
Placer & The Rocky Bar Quartz claim. Mule
Creek. June 29/1937

Fred Vail Agness Ore. (A) Indigo Gold Lode
The Gold Ridge Lode and The Silver Bell Lode.

C. M. Carr. & J. V. Harner (E)
Keystone Lode. 10-213 6/29/37

Gail & Huggins (E)
Laura & Lode. 10-276. 6/27/37

Chas. M. Tucker. (Loc) Mammoth no 1. Mule Creek
dist. 6/26/37

J. Dorman & Charles M. Tucker. Red Dog Placer (Loc)

Charles M. Tucker. (E) Mammoth mine, Hidden Treasure 6/29/37
Red Dog and Buckhorn mineral Claims. Mule C. Dis

Robert Owen. C. E. Little and Arthur Dorn. (P) 6/28/37
Browne. Long Prairie Black Bay Ajax
Whiskers Pacific Todd High Rock
Rough Trail. Blue Grouse Signal Greentree
Sweet Acorn Laurel. Farzan Ruth
Jo Jo. Lois Jordan Blue Monday
Mayfield McKinlay

Fred Mustholtz Gold Beach. June 7 1937

Robert H Smith. (Gold Beach) Ranger Ass'n no 2
8000 ft N 80° W of the Snow Camp L.O. T 375 R 14 W
Albert Winters, Robert H. Smith Jr., Madeline F Smith, Kathrine M
Smith, Elizabeth Jones, Arthur Walker, Morris Walker, Oetha Walker
R. H Smith atty & loc. June 28 1937 10-586

Robert H Smith. joins above claim North west cor section with
South west cor. Ranger Ass'n no 2 locator Albert Winters
Robert H Smith Jr. Madeline F Smith, Kathrine M Smith
Elizabeth Jones Arthur Walker, Morris Walker Oetha Walker
R H Smith att & Loc. June 7 1937 Club Bear No 1

Hancock Ass no 5. 660 ft S 50° E from Snow
Camp Ranger Station T 375 Same locator
as Club Bear no 1. loc

Red Rock Assn no 6 begins at S W cor of Hancock
same locators as Hancock. 6/8/37 loc

Sour Dough Assn no 8 same locators as Red
Rock. in Snow Camp mining Dis.

Ass Nickel no 3 & 4. Placers loc June 7 1937
Frank Colvin, Fred Lorber, Chas Morse, Chas Bailey,
Arthur Walker, R H Smith Jr. Madeline F Smith & Fred
Wustholz Loc & att in fact.

R. H. Smith (C) & Alf Bagnell
Chesterfield Quartz claim on Burns Creek Snow
Purcell Gold on Blossom Bar Creek ^{Camp}
also Snow Camp Quartz No 1 & 2 loc. ^{Robert Smith}
^{Bob Miller}
^{and Ingram}

M. M. McKenzie, C. W. Aptell, H. M. Aptell, & A. V. Dittler
The Moss Rose Group of Quartz claims, The Myrtle
mine Group Placer claims, Pelton Placer claim and
Surprise Placer claim all on middle Elk dist.
sec 16 T33S R14W.

M. L. Kuebner (C) Golden cloud. So Six Rivers.

Frank A. Dowty (C) D & S. Sec 22 T32S R10W
~~Williamette M. S.~~ Golden Copper Pot. Sec 31 T32S R10W

Horothy Owings Brubaker. C. Mule Creek Dist.
Sun Beam mining claim, Dropping Star &
Golden Crown Book 10 pgs 88-90

R. T. Mervay, John Woodworth Illake Mining Dist.
Last chance, Shrub Pine, Vol 9, pgs 92

G. A. Hyde & A. A. Linder Chitco Mts.
Blue Jay Quartz, Vol 10, 309 High Prairie
Chrome Mining claim Vol 10 309

just did the work.
John H Clarke (C) Prince Albert, French Gu.
and wedge claim. See 14 T 385 P 10W.
Work was done for and with consent of Edith Miller
of Medford owner.

R O Yunker (C) Collier Creek dist 386
S. A. Calif.

A. I. White (C) S. A. Calif Collier Creek Dist. 485

I F Peck (Jack Pot Gold Mining Co) (C)
Jack Pot Lode mining claims No 142

I F Peck (Delhi Gold Mining Co) (C)
Blue Jay Quartz Lode Mining claims Nos 1, 2, 344

Frank Cain - Bald Face Creek 1/2 Interest.
Black Beauty Vol 10 p 375 (C)

Frank Pallady & Mark C Wood. Mt. Emily.
Liberty, Rainbows End, Horse shoe, Cold Spring, Dead
Horse - mineral King - Blue Grouse, Blind Pig,
Yellow Jacket, Brown Bear, Cube & Gold Run

Emily Gold Lve. by W m F Hayden Vice Pres & Agent.
Mt. Emily. Fort Worth, Sunset, Trails end. Old Rough
Ocean View, Alaska, Klondyke, Liberty, Lone Star
Salt Lake, Detroit, King of the west

Pacific Mineral Inc. by Wm F. Hayden V.P. & agent
Shasta Coasta dist. (C)

Pacific National no 1, 2, 3, 4, 5-8, 9 & 10

following claims in Mt Emily dist

Black Rock, Jump off Joe, Rock Ridge,
Rock Bluff.

Arnold H. Gass by Wm F. Hayden Mt Emily (C)
Gold Bug, Lam Cat, Sun River, Big Bay, Golden
June & North Star

Mrs. Adda Newmann. @ Elk River dis.
Brown Martin claim. Placer.

J. R. Kyde & Al a Linder loc Dune mine 5/26/37
Cedar Creek dist

Jens C Johnson. @ Bed Rock Placer &
S Fork of Six Rivers. Fortuna no 1
Jack Pot, Lucky Stevens & Good Luck

Alice M. Gallaher. loc. Gallaher no 1 Agness dis.

C. E. Clark @ Damfino Quartz claim Sec 14 T 38 S
R 10 W.

John Wargo loc Evergreen Placer NW 1/4 Sec 16
T 38 S. R 10 W on Chetco River at Steep Creek. 5/17/37

Albert Crimmens, George Crimmens, Tom Buffum @
Ed Fischbocker, Bertha Crimmens, Nettie
Fischbocker. In Tillamook Maid Placer
Loc. Sec 4 T 34 S R 12 W. 130 acres.

V.E. Boyer & Maude Lynch @ Fall Creek Group
on Elk River.

Victor Wandell Powers Origan c/o H McFarland
@ no name of claims. on S Fork of Six Rivers

Victor Wandell for Edgar Cagho @ an (no name
claim S Fork of Six Rivers Vol 9 p 548

W.C. Lawrence loc. mountains Sec 10 T 39 N
R 14 W June 14 1937

Caroline Wallace @ white elephant Placer claims no
1, 2, 3 & 4 & on white elephant & Low Divide Quartz
claims Boulder Creek

T.M. Parker, D Rowland, C Smedberg, Louisa Parker
@ on Grizzly Bear, & Big & Groups sec 8-5,
49 T 34 S R 12 W. after mt.

W.R. Johnson @ on Elk Horn mining claims
1, 2 & 3 Elk River Dist

Paul Hamaker of Kerby @
Hill Top Quarry claim railroad waters of the north fork
of Carter Creek. Chitco Dist Vol 10 - 246

Maynard Wilson @ on Big Bay Group no 2
of 3507 46 N.E. Seattle Vol 9 p 197

John Hampshire @ on Chromite no 1, 2 & 3 Lode mining
Grants Pass. Bald Face Creek.

Ed. Divelbiss & John Becker Sipes River
Big Ben Quartz no 1 & 2 Book 9 - 33

Gilbert & Gable, leased to Oregon Eng Corp.
sub let to Siskiyou Gold Mining Co. Oregon
Elgin Consolidated on Sipes River Sec 10 & 11 - 32 -
99 acres. French Placer. Sipes River.
Sec 11 & 12 - 32 - 14 8 claims. also
Great Eastern claims, Pelican claims on Sipes
River. Sec 7 - 32 - 13 also Bullion claim
Pay Day & Pay Day Extension on Sipes R.
The Lewis and Clark claims 1 to 9 Inc, O K
and S R. claims. (Herbert & Dewart.)

S A, M J, Carmichael @ Mule Creek dis.
Saur Drough Mule Trail, Lucky Day, Golden
Laurel, Pocket sample lode, Good Luck Lode

C. M. Lewis. Marial Curry Co. ©. Fallen Star
mineral claims Mule Creek Dist

R. E. Paddock. Marial © Paradise Mine
Mule Creek.

O. H. Kagberg & H. W. Lippel Grants Pass (Hg)
The Big Bay Group Diamond Creek Dist.
on Calif line and part of them in Calif.

W. A. & M. A. Alexander © Mule Creek
Rainbow claim Sec 31-32-10
Golden Dream Sec 32-32-10
Golden Lamb secs 31, 32-32-10

Ben Wyant. © Alder Springs & Sugar Loaf
lode mining claims in Quasatana Dis.

J. R. Leavitt © Quick Silver King Sec
7-32-14

H. S. & Lora A. Beaulieu © Lumb Lora
mining claim (Josephine Co)?

R. C. Boone © Betty Glen Group
of Marial. Mule Creek Dist

8 claims 1600
T40 R 10 W Chopatna Dist

Will H & Kathryn H. Smith @ Lone Wolf no 1, 24.
mule creek dist.

J. P. Monroe @ Blue Jay no 1 & 2 mule creek
creek dist

E. W. Monroe @ Gold Dollar Mining claim mule creek

T. P. Shipman of South Slope @ on all placer
claim

C. A. Billings @ Black Bear & Raymond.
Mining Claims in Idaho M Dist Idaho

Bert West & C R Singleton @ Twin Falls
Quartz Claims mule creek dist.

C. F. Smith @ Monte Bell, Lobster Creek

Chas L Hupp @ Chetco Bar Mining Claims
Chetco Dist

F. H. McMullen, W. E. Bradley, R. H. Mast, W. W. Wilson
and F. L. Hazelwood (Coas Co.) @ Blue Jay 1 & 2

1937-38. Claude Ward & W H Corwin @ on
Paul Junction sec 9 T 33 S R 10 W

Sum

over

Planning for Tomorrow in



1969 LONG RANGE PLANNING CONFERENCE



Farm Organizations and Other Service Groups

Three subordinate granges and one Pomona grange are active in the county. The Farm Bureau has an active county-wide center.

Active chambers of commerce are located in Brookings-Harbor, Gold Beach-Wedderburn, and Port Orford.

Service clubs such as Rotary, Lions, Soroptimist, the Junior Chamber of Commerce (Jaycees), and others are keenly interested in the human and natural resources of the county and work for their development.

Curry County has 37 churches representing almost every denomination.

AGRICULTURAL AGENCIES

County Extension Service

The Cooperative Extension Service is an off-campus educational activity of Oregon State University. Its major objective is to help people understand and apply scientific developments in agriculture, home economics, and related sciences in order to enjoy a better life.

The education provided by the Extension Service is an informal and distinct type directed to helping people solve day-to-day problems. It is education for action and is directed toward helping individuals make sound decisions to:

- Earn more money and make the best use of available resources
- Improve living and home environment
- Develop a better community in which to live
- Develop increased ability and willingness by both adults and youth to assume the responsibilities of leadership and citizenship

The guiding principle of Extension then is "to help people help themselves".

Curry County's Extension Service staff consists of one home economics and youth agent and one agriculture, community development, and youth agent. Area agents in fisheries, cranberries, dairy and livestock assist with the county program. The Extension staff offers services and information from OSU Extension specialists, experiment stations, and resident instructors to the residents of the county. Offices are located in the Curry County Office Building, Gold Beach.

Agricultural Stabilization and Conservation Service

The Agricultural Stabilization and Conservation Service (ASCS) is administered in Curry County by a three-man county committee and three three-man community committees. County committees are elected annually from cooperators in each community, voting under uniform election procedures set up by Congress. The County Extension Agent is an ex-officio member of the committee.

The ASCS administers a variety of federal farm programs. In Curry County these involve cost-share payments to farmers for conservation practices and the wool-incentive program.

The ASCS program is directed towards reducing significantly the loss of agricultural soil, water, woodland, and wildlife resources and improving the prospect of their multipurpose use in the provision of an adequate supply of food, fiber, water, and wildlife for the future and for the general improvement of man's total environment.

County programs are developed from the state ASCS program and include practices most applicable to the county. The county program is developed by the County ASCS Committee, including

the county Extension agent, the local SCS technician, and a representative of the State Board of Forestry, in consultation with the Soil Conservation District supervisors. It takes into consideration recommendations of the supervisor of the Farmers Home Administration and the ASC community committeemen. The county ASCS office is located in the Curry County Office Building, Gold Beach.

Soil and Water Conservation District

Curry County has one soil and water conservation district. The office is located in the Bet-Gar Building, Gold Beach. The SWCD is governed by a seven-man board. The Soil Conservation Service has assigned one district conservationist to the office.

The SWCD is a legal subdivision of the state, established in accordance with the provisions of the SWCD law. The objectives of the district are to provide for conservation of soil and soil resources, for the control and prevention of soil erosion, for the prevention of damage from floodwater and sediment, and for the conservation, development, utilization, and disposal of water.

State Employment Service

The State of Oregon maintains an employment service in Coos Bay. This office acts as a clearinghouse for labor in the county, servicing the needs of agriculture, industry, and forestry. The Department of Employment assists in Curry County through part-time offices.

Farmers Home Administration

The Farmers Home Administration provides credit and financial and managerial assistance to farmers, rural families, and organizations. A representative of the FHA visits Curry County twice a month at the County Extension Office. Here eligible borrowers make application for assistance. FHA is an agency of the United States Department of Agriculture. Services include operating loans, farm ownership loans, water facility loans, emergency loans, and livestock loans.

NATURAL ECONOMIC RESOURCES

Agricultural Committee Report

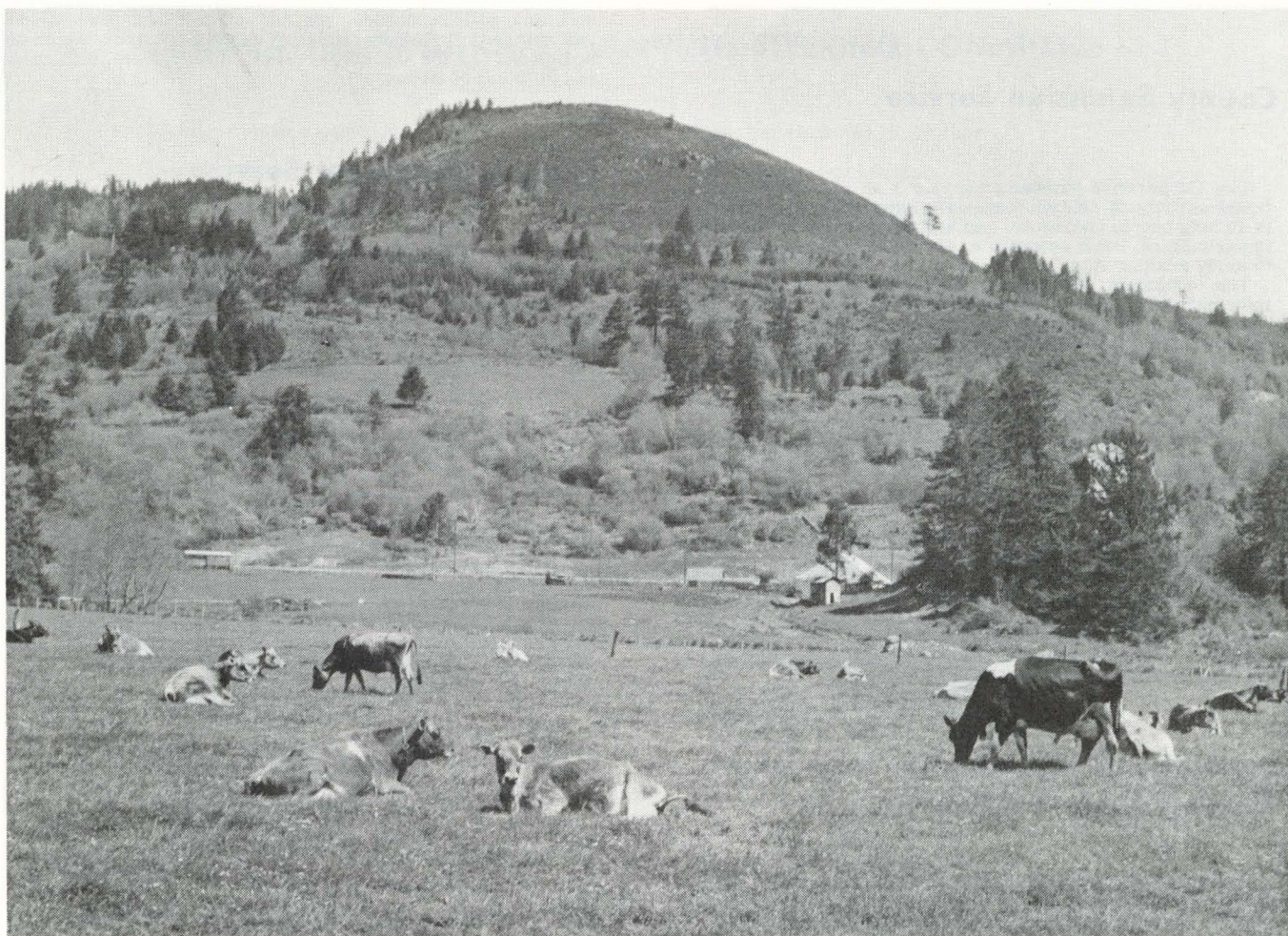
Agriculture in Curry County is devoted mainly to the production of livestock, livestock products, and Easter lily bulbs. The gross farm income for 1968 was estimated at close to \$2-1/2 million. Animal products accounted for about 60 percent of this total, with cash crops valued at 40 percent.

In 1964 there were approximately 263 farms in Curry County, covering about 110,000 acres. The average size

farm is 418 acres. Twelve hundred acres qualify as cropland, and the rest is pasture or range and woodland.

A year-round mild climate gives the area a natural advantage for forage-crop production in both the limited valley croplands and on the hill pastures and rangeland.

At the present time it takes approximately 1 to 3 acres to graze 1 ewe for a year.



Lush bottomland pastures supplement bench and hill ranges for dairy and beef cattle and sheep (Brookings-Harbor Pilot photo)

LIVESTOCK AND FORAGE

Animal products and forage crops account for over 60 percent of the agricultural income to Curry County.

Although the sheep population has remained fairly constant, beef has increased considerably over the past 10 years, while the number of dairy cattle has decreased. Most of the productive bottom land is producing good forage. The use of

improved varieties of grasses and legumes, proper establishment techniques, and follow-up fertilizer applications should greatly increase the carrying capacity of bench and hill land.

Many potentially productive areas have become overrun with brush, primarily Ceanothus, coyote brush, salmonberry, and other species. Burning permits are not always obtainable. Chemical control has been tried for the past several years in Curry County, but the results are not yet conclusive.

Much of this brush-covered land is productive and should be in either timber or in improved grazing land. This com-

mittee recognizes that pasture improvement is a major need in Curry County.

Many parcels of Curry County rangeland are now growing bentgrass of one variety or another. At one time this was a recommended forage, but now that better species have been found it is difficult to eliminate the "bent" growing on these ranges.

PREDATORS

Predation by coyotes and dogs is a very serious economic problem to the sheepmen in Curry County. Each year domestic and feral dogs destroy or maim many head of sheep, and often will run deer to exhaustion and death. The use of a coyote repellent has been used experimentally in Curry County for two years. Results to date show mixed results in the control of coyote and dog predation. The chemical is not registered for sale outside of the state in which it is manufactured.

Curry County has a coyote and bobcat bounty system and two very competent predatory control agents. The present indemnity for sheep killed by dogs is \$8 per head. At the present cost of replacement ewes, this figure is not adequate.

Other predators in the area include cougar, bear, bobcat, eagles and ravens.

PESTS

Insects, weeds, and diseases continue to be serious problems to the livestock producer.

Tansy-ragwort, poison hemlock, and gorse (Irish furze) are three of the more serious weeds. Tansy-ragwort is toxic to cattle and horses but does more damage by crowding out desirable plants on both hill and bottom land pastures. Seeds of the tansy-ragwort are lightweight and spread very rapidly by wind, water, and animals. These seeds quickly infest logged-over lands, and this provides a seed source to reinfest pastures. Sheep provide some degree of control on tansy-ragwort but do not eradicate this plant. As much of the seed source is on logged-over lands, it is not economically feasible to control the seed source by mechanical or chemical means.

A biological control for the tansy-ragwort plant was first introduced in Curry County in 1965 by the Extension Service in cooperation with the Entomology Research Division of the United States Department of Agriculture. This was the cinnabar moth, which was obtained from sites at Fort Bragg, California. In 1968 and 1969 one of the five release sites showed a considerable increase in the numbers of the cinnabar moth larvae. Survival at the other sites was minimal. Additional releases from the successful site were made to other areas of the county. At best, the control of tansy by the cinnabar moth will be a long, slow process.

Poison hemlock has become more serious in recent years, and each spring it is responsible for the death of several head of cattle.

Gorse has taken much of the rangeland in the north end of the county and is gaining a foothold in other sections of the county. The entire county is in a weed-control district, and a major effort is being made to prevent gorse from establishing new footholds. Efforts are also being made to control this weed in the more valuable lands in the north end of the county.

The face fly, a recent arrival in Oregon and in Curry County, is becoming a very grave problem to cattle and horses. To date, no adequate control has been developed for rangeland cattle. The use of back rubbers with a cidron-vapona solution has given limited control.

Internal parasites also cause considerable economic loss to sheep in Curry County.

LAND USE

Of considerable concern to many of the farmers and ranchers of Curry County is the encroachment of subdivisions and other residential property on agricultural lands. For

those who wish to remain in farming, this becomes a problem. The agricultural use assessment program has been applied for by over half of the Curry County farmers and ranchers and is providing some relief, but the steady encroachment and surrounding of agricultural lands promise to become more serious in the future.

MARKETING

Almost all of the marketing of livestock in Curry County is through country buyers. One auction yard is available in the Bandon area, and some ranchers buy and sell through this outlet.

The marketing of wool is limited to two or three buyers. At one time Curry County wool commanded a premium for papermakers' felt. At the present time the Lincoln-Cotswold-Romney coarser fleeces take a reduction in price because of synthetics now being used in the papermaking industry. In some instances, sheep producers in Curry County have been told that buyers do not want their wool because of the coarseness and poor quality. A definite program is needed to upgrade the quality of wool.

The Lincoln-Cotswold-Romney cross has been developed to survive under minimal care in the winter weather along the coast. The quality of the wool and the number and growth rate of the lambs, however, is somewhat less than desirable. Here again, work is needed to improve the lambing percentage and growth rate of lambs under Curry County range conditions. Present lambing percentages range from 60 to 80 percent.

Recommendations

The Livestock and Forage Committee considered the situation and the problems of the livestock industry and made the following recommendations designed to help solve these problems and to meet the educational and research needs of the industry:

- Pasture improvement is a major need. Efforts of the Extension Service and other agencies should be focused on promoting technology now available toward the development of improved pasture and rangeland. Ranchers should concentrate on improving their best lands first.

- Cost studies should be developed by Oregon State University to determine the economics of improving pasture and rangeland. These cost of production studies should be done under a variety of conditions in Curry County.

- Continued research on the fertilizer requirements of forage crops to be grown in the county should be carried out by the Extension Service and Oregon State University. Special emphasis should be placed on the needs for sulfur and minor element requirements.

- Cost studies on developing hill lands for forage and for timber production should be developed to help land owners determine the best use of land. Generally speaking, it is recommended that the north slopes be reserved for forestry.

- Further research should be conducted by Oregon State University to determine the most effective and economical methods of controlling bentgrass on pastures and ranges.

- Research should be continued into the control of brush on many of the Curry County rangelands. Ranchers should work very closely with the Coos Forest Protective Association on burning when feasible. Continued research should be done by Oregon State University on the control of brush by chemical means under Curry County conditions. Ranchers must follow up brush control by establishing improved forage crops in sprayed areas.

- Research should be continued by the Extension Service on the use of repellent sprays on sheep to prevent killing by coyotes and dogs.

- The Curry County Livestock Association and its predator control committee should work very closely with the dog control officer, the United States Fish and Wildlife Service predatory control agents, and the county sheriff's department in the control of dogs on sheep ranges. The Curry County

Board of Commissioners should consider increasing the dog kill indemnity payments to approach more realistically the cost of replacing sheep.

- Methods of controlling ravens are desperately needed in some areas. The United States Fish and Wildlife Service should conduct research to determine ways to protect newborn lambs from ravens.

- Accelerated research on face fly control should be done by Oregon State University.

- To aid in the control of noxious and other weeds, the Extension Service should develop an abbreviated weed-control recommendation list to be sent periodically to farmers, ranchers, and the feed stores in the county. This should be updated at least every two years.

- To aid in the control of tansy-ragwort, continued emphasis should be given by the Extension Service to obtain additional cinnabar moth larvae. A search for other means and other biological controls of this weed should be continued by Oregon State University and the USDA.

- Oregon State University should intensify efforts to find controls for foot rot in both sheep and cattle.

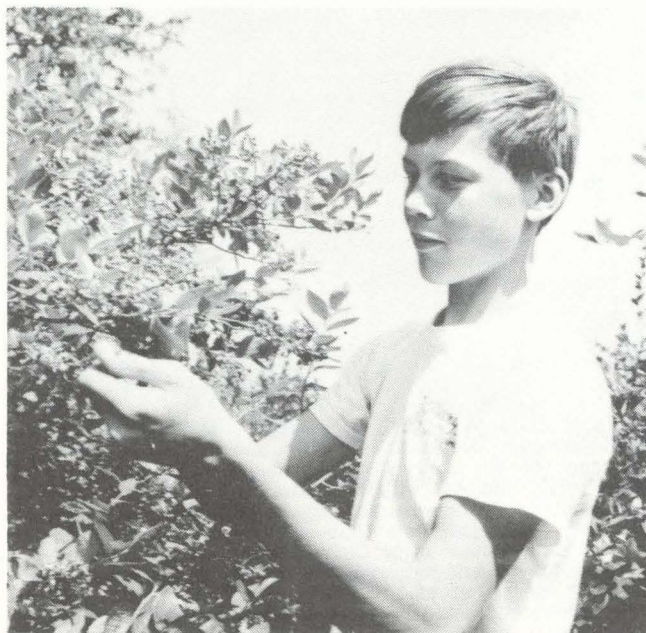
- Farmers and ranchers should work continually towards upgrading the quality of wool produced on Curry County ranches. Proper wool-handling methods and careful selection of replacement stock should give top consideration to the quality of wool as well as to the growth rate and lambing percentage. Continued research is needed in improving the quality of breeding stock.

SPECIALTY CROPS

Horticultural Crops

BLUEBERRIES

Blueberries are being grown at the present time in Curry County on between 8 and 10 acres each year. Much of the production is marketed locally on a "u-pick" basis or in neighboring communities. The quality of the berries is very good.



Blueberries are now grown in limited quantities in Curry County. A large amount of land in the Port Orford - Langlois area is suited for growing quality berries. The committee feels the future of blueberries is good in Northern Curry County.

(Extension Service photo)

Committee members estimate there are close to 2,000 acres available in the Brush Prairie area for the production of blueberries. Some of the problems that need to be solved before a successful blueberry planting is made are drainage, windbreaks, and deer control. Labor for pruning, mowing, and fertilizing might also be a problem. Northern Curry has at present adequate labor available.

The committee feels that the future of blueberries is good in northern Curry County. This is a good supplemental income program for retired people or for those who want part-time work.

RECOMMENDATIONS

- To develop adequate markets, more people need to be interested in raising blueberries. The Extension Service should organize a tour of the blueberry fields in early August to encourage interest in raising this crop.

- The marketing potential in the San Francisco and Los Angeles markets should be closely investigated as well as canning and freezing possibilities. It is estimated that a small canning or freezing operation could be developed locally at a very low cost.

CRANBERRIES

Cranberries are becoming an increasingly important crop in Curry County. Approximately 50 acres of cranberries are now in production in this county.

Most of the Curry County cranberry growers belong to the Southwest Oregon Cranberry Club, which is serviced by Coos County Extension agents. This group thoroughly discusses the cranberry industry, and a complete report will be found in the Coos County Long Range Planning Conference report entitled "Coos County Looks to the Future" (1968).

ARTICHOKES

It has been found that artichokes can be grown successfully in Curry County. At the present time two experimental plantings have been developed in the Harbor area. Cultural practices are needed to insure a crop of artichokes at the time the California supply is not available to the market.

DAFFODILS

In southern Curry County the production of daffodils for cut flowers and bulbs was a more important industry in the past than it is at present. The general consensus of the committee, however, is that this flower does come on earlier and provides better flowers in the Harbor area than in any other part of the state or the neighboring areas in California. There is, however, considerable competition from other areas and from larger growers. Insect problems and nematodes are a serious problem in the Harbor area.

LILIES

Easter lilies have been an important crop in Curry County and neighboring Del Norte in California since the 1930's. The Croft lily, first grown by Sidney Croft in 1928 at Bandon, was the cornerstone in the Easter lily industry in the Pacific Northwest. Shortly after World War II, a boom in the lily industry saw bulbs selling as high as a dollar each, with about a hundred people growing small plots to cash in on this popular crop. In recent years the industry has stabilized itself with about 25 growers and somewhat over 300 acres in the two counties. Scattered plantings are located elsewhere in Curry County, and a few are located in the Willamette Valley.

Major varieties now are the Ace and the Nellie White. Work at the Pacific Bulb Growers Association's Research



The Harbor bench is especially well suited for growing high quality bulbs. Easter lilies (*Lilium longiflorum* Thunb.) are an important crop in Curry County.

(Oregon State Highway Dept. photo)

and Development Station has been directed toward insect and disease control, cultural practices, and the development of new varieties. A 1963 selection, known as 63-1, shows a great deal of promise, having scored consistently high in pot evaluation.

A critical factor in lily production in the Harbor area is the availability of land. The new Harbor Water District has spurred a rash of housing subdivisions on land that is exceptionally well suited for growing lilies. The committee notes that the soil in the Harbor area is superior to that of other areas for growing the Easter lily, *Lilium longiflorum*.

In the earlier years the Easter lily situation in Curry County looked rather bleak, with diseases and insects making major inroads on productivity. Work at the research station, the development of nematicides, and other insect and disease controls have made it possible for Curry County to continue producing top quality lily bulbs. At the present time over 90 percent of the lilies that are forced for Easter in the United States are grown in the Curry and Del Norte area.

Botrytis, also known as fire blight, and different types of twist are now causing considerable concern among the growers. The present program for botrytis control is weekly applications of Bordeaux spray. Some promising new chemicals are being tested for botrytis control.

The effects of the use of thimet over the past years are felt by some growers to be causing problems in the greenhouse performance of lily bulbs.

The costs of production of lilies is spiraling upward rapidly. New minimum wage laws and the lack of adequate labor are making it increasingly difficult for the growers. Committees of the Pacific Bulb Growers Association have embarked on a study of additional mechanization to fill in the labor gap. Another labor problem is in weed control, where it is difficult to find people willing to do hand weeding. Some work on chemical control is now being explored by Oregon State University.

Most lily growers feel that the present grading system has outlived its usefulness and a new system is in order. Some market testing has been done by several of the growers

with the new three-grade system.

The potential for garden lilies looks very good in this area. Several growers are producing the different varieties of colored lilies for cut flowers and bulbs. If land remains available, this could be an important part of the lily industry.

Nursery Crops

The market for nursery stock is developing very rapidly. Many varieties of nursery stock can be very well grown in Curry County. In recent years the production of nursery crops has developed rapidly in this area, primarily in the Harbor area.

Some of these crops include geraniums, rhododendrons, azaleas, and hydrangeas, though evergreen ornamentals are also a possible nursery crop for the area.

A major problem in the hydrangea industry is the need for mechanical equipment to take the place of unavailable or high-priced labor.

Other crops

Other crops such as cauliflower, broccoli, cabbage, and other members of the cole family, as well as lettuce, have definite possibilities in Curry County. The maritime climate is ideal for some of these crops. Several ranchers are now producing quality shore pine Christmas trees. Many others are interested in this type of crop.

Recommendations

- Equipment research should be carried out by Oregon State University, the Pacific Bulb Growers Association, and the Extension Service to develop labor-saving machinery for the lily and other horticultural industries.

- Oregon State University should continue research on weed control in horticultural crops with specific reference to lilies and hydragneas.

- The Extension Service should establish additional trials of artichokes in other areas of Curry County. More work is also needed on cultural practices to provide artichokes for the market when the California crop is not available.

- Research needs to be done to maintain the daffodil industry in Curry County. Special emphasis should be placed on the control of nematodes.

- Further exploration of the three-grade system should be made by growers. If the grading system is accepted on a pilot basis, the Pacific Bulb Growers Association should push for adoption of a three-grade system.

- Further experimentation with the use of Benlate and Thibendazole should be carried out for botrytis control on lilies. Research also needs to be done by the Extension Service, Oregon State University, and the University of California on Benlate and Thibendazole dips for lilies.

- The Congress of the United States, at the earliest possible date, should appropriate funds for the horticultural research facilities at Oregon State University and at Puyallup, Washington. With the increasing importance of the horticultural industry in Oregon, this is a definite need.

- The potential for the nursery industry has not been approached in Curry County. Further investigation of this potential should be carried out.

- The market for cole crops should be closely followed so that whenever it becomes feasible Curry County will be in a position to produce for this market.

- The zoning of the entire state will be mandatory by December 1971. The committee feels that zoning will become necessary to retain a sound agricultural base and to retard encroachment on agricultural land. This protection can be realized by a relatively simple type of zoning ordinance.

that will hold controversial points to a minimum and allow such a regulation to be fully understood by the people and accepted by a majority of the people. An extensive educational program is needed to acquaint citizens of the county with zoning regulations being proposed.

— An expansion of the production of quality Christmas trees is needed in Curry County. The area between Port Orford and Bandon has the potential of producing some of the finest quality shore pine trees of anywhere in the state. The Farm Forester, the Soil Conservation Service, and the Extension Service should continue efforts to expand this industry.

COMMITTEE ON AGRICULTURE

Livestock and Forage

Dave Barklow, Langlois	Fred Blunt, Brookings
Everett Isenhardt, Langlois	Lowell Kreutzer, Sixes
Lloyd Kreutzer, Langlois	Harold Knapp, Port Orford
Glen Wagner, Port Orford	Richard Hildebrand, Langlois
Georgina Wahl, Langlois	Fritz Sigel, Port Orford
	Charles Jensen, Denmark
Rex Warren, Oregon State University crops specialist	
Wayne Mosher, Douglas County Extension agent	
Don and Margaret Linklater, New Zealand	
Walt Schroeder, Curry County Extension agent, secretary	

Horticultural Crops

Robert Hastings, Harbor
Walt Bomhoff, Harbor

Joe Zumpfe, Harbor
Henry Itzen, Harbor

Blueberries

Mrs. Charles Ells, Port Orford Charles Jensen, Denmark
Jim Wilson, Port Orford



Forestry Committee Report

This report deals mostly with the continuing production of the raw materials for Curry County's most important industry. The manufacture of lumber, plywood, and other wood products exceeds all other activities in economic worth. The number of people thus employed and the value of the end product are high because the county is largely forested. Not more than 4 percent of the area is cultivated or used intensively by man. In fact, some 67 percent of the land is in public ownership. The Siskiyou National Forest takes up nearly 62 percent of the total.

Not all of the national forest is suited to the production of commercial trees, nor are all of the lands so designated adequately stocked with trees. This is also true of private ownership. An active program is urgently needed to bring all of our commercial forest lands into full production. Few will doubt the need for a greater supply of trees to keep pace with our expanding population. Wood is still our cheapest source of building materials. The paper industry alone, if deprived of imports, could nearly use up the annual growth of our forests. Housing in this country is in very short supply. Wood substitutes can help but are likely to increase costs.

THE LOCAL FOREST INDUSTRY

This region was one of the last in Oregon to make use of its virgin timber stands. All early attempts to produce lumber on a large scale were short-lived. From 1925 to about 1946 timber harvest was on a very minor scale. Most of the cutting was to feed small portable mills, and all of the logging prior to 1951 did not keep up with the rate of timber growth. On the national forest, cutting did not reach the volume of annual growth until the late 1950's. It has been held at that figure ever since as a matter of policy. The holdings of the United States Bureau of Land Management operate under a similar policy. The committee knows of no private ownership that comes under sustained-yield management; that is to say, where growth and cutting are in perpetual balance.

Since 1956 the mill capacity in or near Curry County has far exceeded the capacity of the timber lands to produce new wood. There is now sufficient mill capacity to use up all of the privately owned timber in as little as four years. More and more companies are becoming dependent upon the government agencies for their raw materials. The time for intensive forestry is at hand. The virgin timber stands are nearly gone, and we must increase our efforts toward producing the next crop. Wood is a renewable natural resource, but we cannot sit back and wait for a crop of trees. Forestry is quite properly a branch of agriculture.

FOREST MANAGEMENT

To grow a crop of trees one must have land, soil, water, seeds, capital, and a knowledge of forestry. There are many things during the life of a tree that tend to stunt or destroy it. They are, in brief, as follows:

1. Unfavorable weather and climatic conditions such as drought, floods, high winds, wet snow, high temperatures, and the like.

2. Deficiencies in the growing site. These can be unstable ground, too steep a slope, poor soil, poor drainage, and even facing in the wrong direction.

3. Insects that live on or in the tree. There are far too many kinds to name here.

4. Tree diseases that are classed as blight, molds, rusts, fungi, nematodes, etc. Like the insects, they are numerous.

5. Animals that are injurious to trees. These are both wild and domestic. Mice and rabbits probably head the list.

6. Other plants or trees that compete for the same living space. Grass, brush, vines, and often too many trees illustrate the problem.

7. Fire, which is often the number-one enemy of the forest.

8. Taxes and other carrying charges. These are an indirect threat. Trees may not reach maturity before they must be cut.

9. The timber-growing area may be pre-empted by some so-called higher use, such as roads, parks, or building sites.

Curry County Forest Management

Climate and weather. The 75 inches or more of precipitation is quite favorable for tree growth. We will not soon forget the great blowdown of 1962, the floods of 1964, or the breakage from snow during the past winter. In spite of these recent happenings, the chances of a tree reaching maturity are quite good.

The growing site. The presence of Douglas-fir trees in the county that are 10 feet through and more than 200 feet tall shows that some areas, at least, have good potential. The foresters classify most of the commercial timber lands as "Site Class III (3)"; in other words, average for the species. Most of the county is best suited for timber production, not annual crops.

Insect pests. No important outbreaks of forest insects in this area have come to the attention of the committee in recent years. There is, of course, a steady attrition, especially from bark beetles.

Tree diseases. Approximately one third of the wood from old-growth stands in Curry County is unsound due to different kinds of fungi. A tree's ability to resist decay is related to its age and vigor. A very large portion of the merchantable trees have passed their prime, and an early harvest is essential to prevent further loss.

In the northern half of the county a root disease of Port Orford cedar has been taking a heavy toll. This is giving foresters considerable concern, because this cedar brings the highest prices on the current log market, often exceeding \$500 per thousand board feet.

Conflict with animals. The main source of trouble with animals is in the establishment of new trees. Mice and squirrels and birds are seed eaters and greatly lessen the chances for seedlings to become established. Poorly stocked tree stands are everywhere evident in the county. This may or may not be due to animals and birds, but it stands to reason that they are an important part of the overall problem.

Grazing and the growing of trees are incompatible uses for the same acreage. This problem exists whether the grazing animals are wild or domestic.

Conflict with other plants. In this area the main concern is brush fields and understocked stands of Douglas-fir. There are, however, thousands of acres that have reached the small pole size and are ready for the first thinning. The Forest Service has been spraying the brush fields and letting thinning contracts, but the program to date falls far short of such needs.

Fire -- enemy or tool. In the past, wildfire has destroyed millions of trees in this county. However, no large fires have occurred since the late 1930's. The big columns of smoke seen in the area during spring and fall are from slash burning or cutover areas in preparation for tree planting.

Taxes and other costs chargeable to the next crop of timber. All but 1,200 acres of the 287,000 acres of private timberlands come under the ad valorem tax laws. Timberland owners are reluctant to utilize any of the alternate laws designed to defer taxes until harvest time.

Oregon timber owners are not assessed on trees that are 11 inches in diameter or under, and only for 30 percent of the market value for the larger trees. This may sound like a very lenient system, but when added to other costs required to produce commercial trees the expected profits disappear. Taxes on standing timber tend to hasten cutting and result in an ever-shrinking tax base. Only a small percentage of the



Forest products provide the largest source of income to the county. More intensive forest practices and utilization are necessary if Curry County is to continue to maintain forestry payrolls. (Brookings-Harbor Pilot photo)

287,000 acres of privately owned timberland now supports old-growth timber. It will all but disappear in the next five years at present cutting rates.

One of the financial drawbacks to growing trees is the unavailability of insurance. It is a high-risk business, for there are several things that can wipe out a lifetime of effort and expense.

Other uses for timberlands. When land that is classed as "Site Index" Four or Five is dedicated to other uses, there is very little conflict with forest management. Much of the 80,000-acre Kalmiopsis Wild Area is poor timber-growing land. Roads and stream-protection strips have removed thousands of acres from timber production, and more area will be needed. More intensive forestry on the remaining acreage can more than make up the difference if the need for funds is met.

There is a trend in public thinking which emphasizes special or single land uses over the principle of multiple use. In general, good forest management is not incompatible with other uses for the land.

Recommendations

— There are several long-range forestry programs already underway, and the committee urges that their scope and intensity be increased. One of the most important of these is the plan to seek out the dead and down trees and remove them at the earliest possible date. To these should be added

the trees that show evidence of major rot or defect. Selective cutting, as such, may not be possible in the Douglas-fir region, but there is plenty of room to step up salvage operations.

— Another program already underway is the release of small Douglas-fir trees from competition with other plants by use of herbicidal sprays that are selective as to species. This program seems to be very effective on the national forest to date. An analysis of results and costs is needed so that the forest industry and other landowners may determine the extent that they wish to participate. The Industrial Forestry Association would be the logical agency to look into the possibilities of this program.

— An adequate portion of the income from federal forest lands should be committed to funding the actual needs of the forest for proper management practices specific to each area.

— The key to maintaining the payrolls dependent upon the harvest and growing of trees is more intensive forestry. Since the federal government is the largest landowner in the county, it should lead the way; indeed, it already is doing so in several respects. We believe that the funds appropriated for forest management should be greatly increased in this area.

— Several governmental agencies are now carrying on very essential programs designed to promote forestry. The Forest Fire Protective Associations under the state forester's direction has had singular success. The nation wide Farm Forester program, where technical aid is made available to the small landowner, is now active within the county. The Soil Conservation District includes forest management in its program. The county Extension agent sees to it that questions about forestry reach the right agency. His office distributes much literature on the subject.

— What the forest landowner needs to know most, is how

to make tree growing a profitable venture. The risks named earlier in this report indicate that there are no simple answers. Perhaps a demonstration forest, with cost studies set up by Oregon State University, could furnish the proof needed to lead the way. A great many acres of the national forest already present a demonstration, but without the tax load and other charges that are so vital to the production of a long-term crop.

Landowners are much disturbed over taxes, and this problem must be better resolved, if we are to look to them for an increase in wood production. It is believed that the State Legislature should renew its efforts to devise a timber tax law that will encourage, not discourage, tree growing. The committee discussed, but did not approve, tax incentives as a means of getting idle lands back into timber production. In view of the millions handed out to the oil industry, this idea cannot be ruled out altogether.

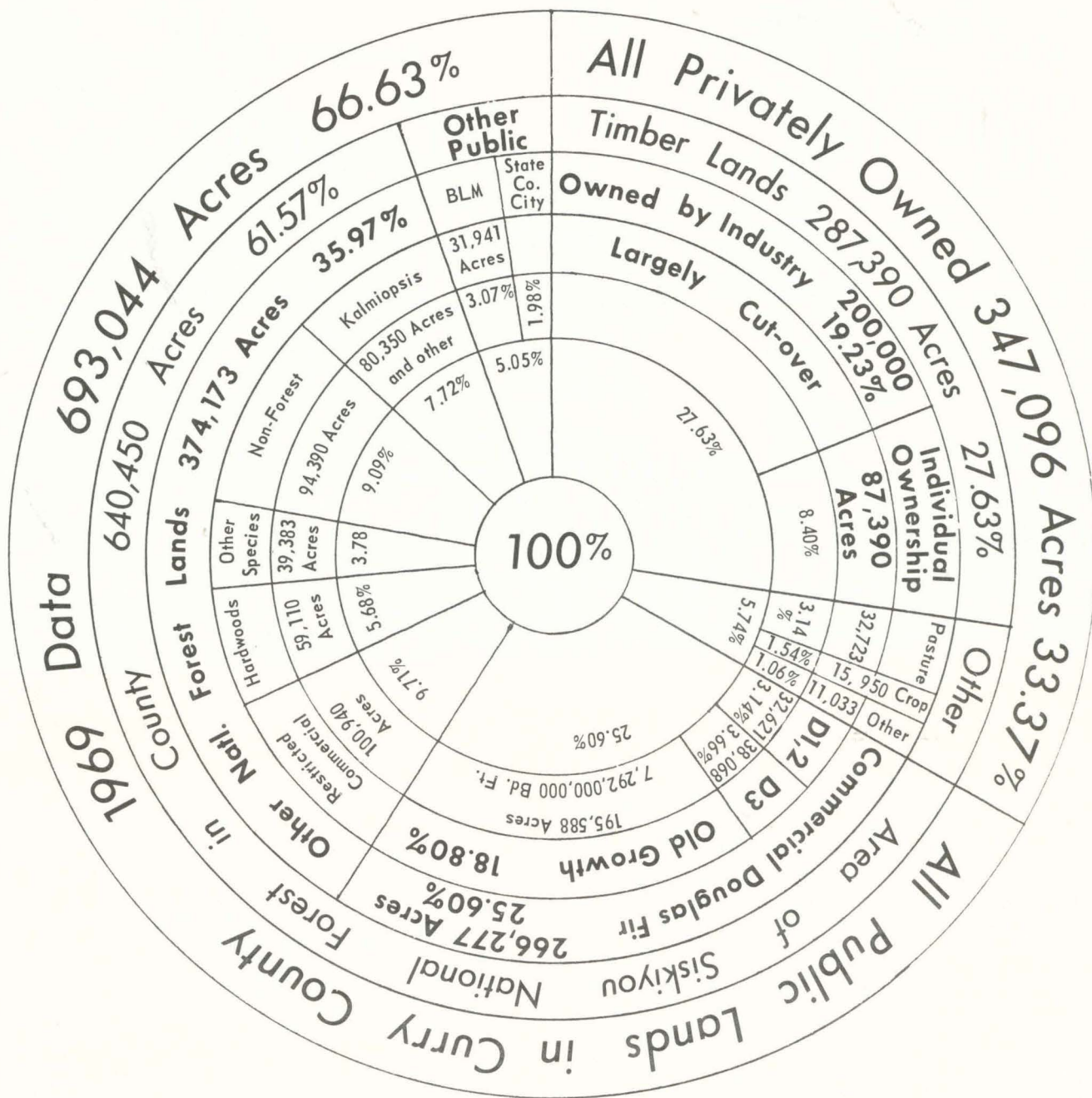
Oregon, as well as neighboring states, has set up minimum standards of good forest land management. In California the Forest Practice Act includes stiff fines for non-compliance. The committee agrees that there is a need for certain basic rules under which all landowners must operate, but rejects the idea that the future timber crop can be legislated into being. The raw materials of the wood-using industry are an economic asset subject to the law of supply and demand. If the political climate is as favorable to tree growth as is the

natural climate, the necessary steps will probably be taken to insure a steady flow of wood products. A more intensive forestry is the only means of perpetuating the industry near its present level. This must also be coupled with a more intensive program of utilization. All of the tree must be used, including the bark.

COMMITTEE ON FORESTRY

Randal McCain, Harbor, chairman
Sidney Bales, Gold Beach, secretary
Leroy Lambert, Port Orford
Cecil Rodgers, Brookings
George Morey, Gold Beach
Lester Hill, Brookings
Vance Noble, Port Orford
Jerry Proutt, Gold Beach
Robert Rogers, Gold Beach
J.F. "Slim" Miller, farm forester





Curry County Ownership Data

Industry Committee Report

With approximately 70 percent of the county in commercial forest land, it has been only natural that forest-based industry should have predominated in Curry County. This is still the situation today, although there is evidence that some revision in relative standings of the various industries may be in the offing. Indeed, in the "Smaller Communities Program Report," published by the State of Oregon Department of Labor, September 1967, it is stated that Curry County may someday be without a lumber-producing mill in spite of the fact that it has more standing timber per capita than any area of like size in the world.

This committee, while admitting that the county may be at some sort of crossroads, refuses to believe that wood products will not continue to play an active part in the industrial future of the county. This crossroads is one in which we see a virtual end of privately owned old-growth timber and a consequent dependence on federal timber for the plants which may remain. This situation by itself will likely mean the death of one or more existing log-using facilities or perhaps a lessening in log usage by all or some plants in order to permit the survival of all or some. Either way, it spells a decrease in the number of payroll dollars; when this occurs, imaginative and energetic action will be needed in order to maintain a healthy economic condition in the county. It is felt, however, that public-spirited, interested people have already foreseen these possibilities and are already taking steps to utilize other resources in such a way as to lessen the impact of a gradually shrinking timber industry.

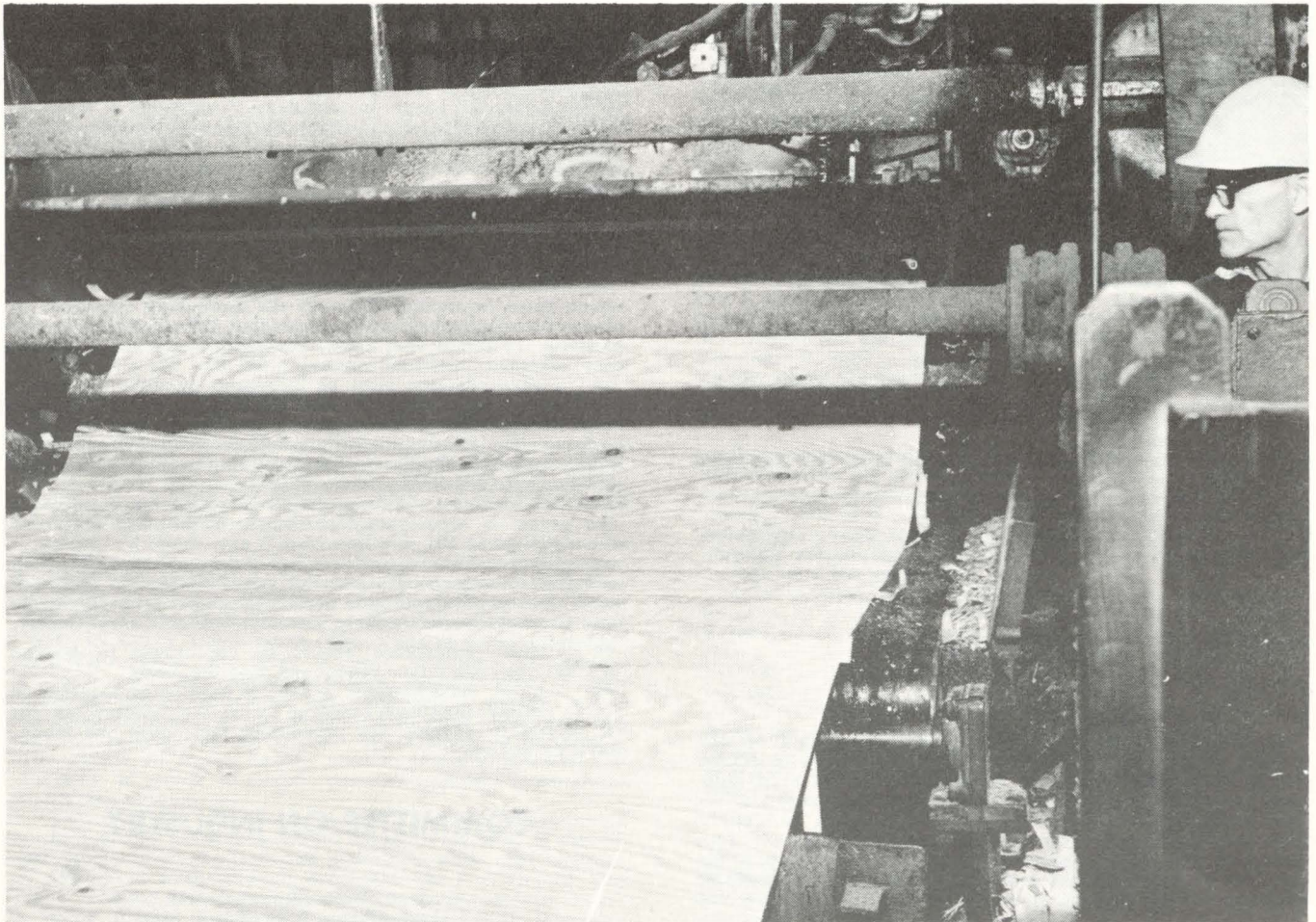
THE TIMBER INDUSTRY

No doubt there has been some sort of wood-converting operation in Curry County since the sawmill of Neefus and Tichenor in Port Orford in 1854. During the 1940's and 1950's, nearly every canyon had a mill in it; it is estimated there were 32 active sawmills in the county in 1956. Today there are 11.

Regardless of how it occurs, there will be fewer people employed in the manufacture of lumber and plywood in Curry County some few years hence. With the disappearance of privately owned timber in the county, remaining mills must compete for the approximately 100 million board feet of federal timber now available annually under existing management plans and tributary to existing Curry County conversion facilities.

Hearings conducted by the Small Business Committee of the United States Senate in 1968 give ample evidence that more, not less, timber will be needed in the future, merely to satisfy domestic demands. It is reasonable to assume that Curry County plants will continue to harvest and manufacture all the timber which can be obtained.

While the number of those employed by the primary log-converting plants will decrease, it is possible that net jobs may stay at approximately the present level because of an anticipated expansion in the processing of native hardwood logs and in the production of specialty wood products from



Lumber and plywood manufacturing have been the primary industry of Curry County. Future industry will continue to be based on forest products and commercial fishing, tourism and agriculture. Industry potentials in forest products will be in the fields of specialty wood products from both hardwoods and softwoods. (Dan's Photography, Brookings)

both hardwoods and softwoods. Until the present time, hardwoods have found uses largely as a source of chips for pulp and as a raw material for novelty products. Increased interest in the properties of tanoak will no doubt some day lead to research which will produce satisfactory methods of manufacturing and drying this species. More refined uses for softwoods will soon be forthcoming, and cut-up plants will be established to extract high-grade, short cuttings from otherwise low-grade lumber and logs.

TOURISM

Tourism, Oregon's third and Curry County's second industry, can only increase as a source of employment and of revenue for the county. With 90 miles of unspoiled and spectacular ocean frontage and with a year-round mild climate, this corner of Oregon is on the threshold of being "discovered" by both tourists and retirees. Part of the appeal of the area is due to the lack of congestion and the "take-it-easy" attitude that prevails, particularly in contrast with areas to the south. Like it or not, people will come and they will stay and the pace will quicken. Just how fast this will happen is difficult to predict, but it will be in direct proportion to the creation of such things as:

-----Fish production. With particular reference to sports fishery, Curry County is living on its past glories and must get involved in re-stocking programs if it is to maintain its reputation as a fish producer.

-----Better transportation systems.

Rail. Because of the difficult and unstable terrain and because of a lack of freight potential, it is doubtful whether the county will see a railroad at any time in the future.

Air. Although weather conditions hamper flight at certain times of the year, there is no reason to believe that air service will not be expanded as need increases.

Water. Both pleasure and commercial traffic via the ocean can and will develop as it is needed.

Highway. Highway 101 through Curry County is a definite asset to the county as a whole because it makes the ocean accessible and shows its beauty to maximum advantage. There is, however, a growing feeling that an east-west highway to the Josephine County area, linking Highway 101 with Interstate 5, would add much to the economy of the county.

-----Recreational facilities. More people with more money and more time will seek, almost demand, a golf course if they are going to stay in a particular area. Provision of at least one public golf course in the county is pending. Also, a covered, year-round swimming pool would be a boon to the area.

-----Medical services. As the retiree population increases, the county will need more specialized medical services. The county is rarely oversupplied with routine medical and dental attention.

-----Sewer and water facilities. In some areas these facilities need to be improved.

-----County-wide zoning. To protect property values, zoning should be established.

-----Sales and service. The establishment of a luxury-type facility would not be entirely out of the question at this time.

AGRICULTURE

Agriculture, in the sense most commonly thought of--the raising or growing of food for human consumption--is limited within the county because of the small number of acres suitable for tilling. Likewise, climatic conditions severely affect the possibilities; because the climate is mild, it does not have the heat necessary to ripen row crops or fruit. Too, much of the most desirable farmland has been used for housing or has reverted to brush; either way, it has priced itself out of the market. However, to say or even imply that farming has no place in Curry County is far from the truth. Indeed, continued attention should be given to expanding agricultural income and to prevent further loss of tillable ground to the spread of civilization.

As for the future of agriculture, no drastic changes are

seen; livestock production will probably continue at the same general level; bulb production likewise will be limited in its growth by the lack of suitable acreage; fruit and row-crop plantings will only be grown to fill local market needs. Only in the fields of shore pine Christmas tree production and cranberry and blueberry growing is there seen much change for the better.

OTHER INDUSTRY

Commercial fishing and seafood processing. The last few years have seen a quickening interest in the producing and processing of seafood. Continued research in this field is anticipated. With new methods of processing and with innovations in freezing and canning techniques, it is likely that in the next few years additional seafood processing expenditures will occur.

Government. In keeping with the national trend, it is likely that the total number of employees of some level of government will increase in the next few years. Specialization, programs for the disadvantaged, more and better highways, schools and parks, more demand for more services--all will add to the number of people on governmental payrolls.

All other industry. Insofar as the construction, transportation, retail trade, banking, utilities, communications, real estate, and other businesses are concerned, there is no reason to expect phenomenal growth in any, nor is there reason to expect more than the usual seasonal slumps. The general trend will be upward, however; as the general economic health of the county improves, so will the general health of each part of it.

Recommendations

----- To further develop complete utilization of forest products, OSU and private mills are encouraged to accelerate research on economical uses for all parts of the tree.

----- Private industry must expand beyond primary manufacturing of wood products to maintain a stable economic base for the county. This expansion could take the form of remanufacturing of blanks, flooring, moulding, framing, and other products of higher value than green lumber.

----- The committee recognizes that any industrial development must be compatible with the increasing emphasis on tourism, recreation, and commercial fishing. Pollution can destroy, or at the very least, seriously hamper the further development of these industries.

----- Fish production must be increased in order for Curry County to maintain its position as a sportsman's paradise. Improved hatchery techniques must be further developed and put into production through efforts of the Oregon State Fish Commission, the Oregon State Game Commission, and Oregon State University.

----- All agencies of government concerned with public roads are urged to accelerate development of the east-west road linking Highway 101 with Interstate 5.

----- Sewer and water facilities must be developed by local cities and districts in cooperation with state and federal agencies.

----- County-wide zoning is needed to protect property values and to provide for orderly development of Curry County.

----- Private enterprise should be encouraged to develop at least one luxury-type resort and possibly more.

----- Seafood processing is a rapidly developing industry in Curry County. Continued research by private industry and OSU is needed to develop new processing techniques and labor-saving machinery.

COMMITTEE ON INDUSTRY

Jim Izett, Brookings, chairman
George Hahn, Port Orford
Archie Aldropp, Langlois
Karl Ostenberg, Brookings
Robert Drager,

Oregon State Department of Economic Development

Marine Science Committee Report

Marine industries make a major contribution to the economy of Curry County, and have been doing so for many years. Marine industries include commercial fishing, fish processing, marketing, sport fishing, sport shellfishing, scuba diving, and associated support industries.

The future of marine industries, especially commercial fisheries, is clouded by many problems, some on a regional or national scale and some on a purely local scale.

The following discussion provides some insight into the problems and needs of Curry County's marine industries and mentions problems and needs that face the industry in general. Not all the problems outlined are from the marine resources committee; other members of local communities, professional fisheries people, and people associated with marine industries in other parts of the Northwest have identified problems. Since Pacific Northwest marine industries are similar, they will fit well with the specific needs of Curry County.

COMMERCIAL FISHERIES

Fish harvesting and processing methods have not changed much from those used 10 or even 20 years ago. Modern technology has transformed other resource-based industries, such as agriculture, into valuable and viable segments of our economy but fishery has hardly been touched.

This problem and many others are not unique to Curry County, but Curry County lags further than most areas in adopting new methods and technology in fishing, processing, and marketing. Curry County, the state of Oregon, and the nation need to make a thorough re-evaluation of marine industries, locate factors impeding progress, define goals, and then proceed to solve the problems.

As mentioned before, the problems are regional and national, but the beginning must be made on a local scale. Curry County could be a leader in this field, but it is going to take leadership, imagination, work, and investment to utilize the full potential of the Pacific Ocean.

This country's fish and shellfish landings have stagnated in the past 30 years. We have dropped from second place in 1954 to sixth in 1968. Many factors have contributed to the drop, ranging from expanding imports cutting into domestic markets to over-utilization of some stocks and lack of technical development and assistance. Curry County faces these problems and others that are purely local.

The primary species utilized in the county are chinook and coho salmon, shrimp, crab, ground fish, and some albacore tuna. Salmon and crab make up the major dollar value of the catch. Of the three Curry County ports, Brookings leads the way with 3,206,011 pounds of all species landed in 1967; Port Orford landings were 2,255,060 pounds in 1967; and Gold Beach had 31,234 pounds in 1967, mostly salmon.

Salmon landings are almost entirely from the high seas troll fishery; thus some landings are from transit fishermen based at other ports in the Northwest. If the salmon are feeding off southern Oregon, fishermen stay in the area and fish; if they receive the needed services, they will stay and sell their catch in Curry County ports. The needs of transient fishermen also reflect the needs of local fishermen. Safe harbor entrance, efficient unloading facilities, moorage space, proper icing facilities, convenient gear and supply outlets, and a welcome treatment by the people performing these services are all needed and appreciated by commercial fishermen. The people of Curry County need to improve facilities and services in order to attract new and transient commercial fishermen to the area.

Crab, shrimp, and ground fish make major contributions to the economy of the area. In 1967 the large majority of shrimp and ground fish were landed at Brookings, while crab landings in 1967 were split between Brookings and Port Orford. The higher shrimp and ground fish landings at Brookings reflect a better market and facilities available, but still improvements are needed in transportation, marketing, unloading facilities, and increased moorage spaces to further utilize these species, especially ground fish.

Research with crab, shrimp, and ground fish is needed to



Crab, shrimp and ground fish are major contributions in the economy of the county. Additional research is needed to evaluate the size of the stocks and the amount of pressure they can withstand for optimum sustained yield.

(Dan's Photography, Brookings)

evaluate size of the stocks and the amount of pressure they can withstand for optimum sustained yield. Also, further research is needed to improve boat and gear efficiency and processing efficiency and to improve and develop new marketing techniques. This last is definitely needed because lack of markets and foreign imports are the major limiting factors in expanding the ground-fish fishery.

At the present time there are unexploited and underexploited species of fish and shellfish present in southern Oregon waters, including, among others, hake, saury, anchovy, blackcod, tanner crabs, offshore clams, and possibly scallops. Future harvesting and processing of these species would diversify the industry and provide more jobs throughout the year. But first, efficient methods of harvesting and processing must be developed and markets for the new products be established. Thus, with further research and development these species represent future growth for Curry County's commercial fisheries.

Recommendations

Local fishermen feel that offshore stocks of fish and shellfish are being overexploited by foreign fishing fleets. It is recommended that the federal government enact legisla-

tion to further protect these important stocks from foreign encroachment.

- The Oregon Fish Commission and the Bureau of Commercial Fisheries should conduct a comprehensive survey of coastal commercial fishery resources with emphasis on the effect of foreign fisheries on the stocks.

- Local people feel that more hatcheries would increase runs of salmon and steelhead to Curry County streams and also increase the offshore catch of salmon. It is recommended that the Oregon Fish Commission and the Oregon Game Commission research and survey possible hatchery sites in Curry County streams.

- Because of the need to diversify into new fisheries, it is recommended that research agencies such as the Oregon Fish Commission, the Bureau of Commercial Fisheries, and Oregon State University intensify research into harvesting, processing, and marketing these previously mentioned species and that the information be made available to the marine industry.

- It is also recommended that these research agencies investigate new methods of harvesting, processing, and marketing presently utilized species and make this information available to the marine industries through Oregon State University Extension Service.

- Because improved port facilities are needed to attract commercial fishermen it was recommended that the Port of Brookings increase moorage space, encourage cold storage development as a community project, and investigate the possibilities of adding dryland storage areas for commercial boats; that the Port of Gold Beach construct a heavy duty basin, a north jetty extension, and investigate the possibilities of a constant dredge to maintain the port; and that the Port of Port Orford urge the development of adequate cold storage facilities and jetty extension.

- In conjunction with the above port developments, it is recommended that studies be made on improving transportation either through airport or highway development, from the three port areas.

- Finally, it is recommended that the U.S. Weather Bureau in cooperation with the OSU Marine Meteorology Station at the Marine Science Center in Newport, provide more accurate up-to-date weather information to the fishing industry--specifically, more accurate correlation of warning flags with actual weather conditions and accurate information on offshore weather conditions.

RECREATIONAL MARINE FISHERIES

Recreational fishery is one of the fastest growing industries in Oregon. According to the Oregon Game Commission, the number of salmon-steelhead punch cards sold is increasing every year. Untold numbers of fishermen fish the coastal areas without the need of a license for bottom species. Many people also use the coastal beaches to dig clams and harvest other shellfish. Scuba diving is a fast-growing sport in coastal areas.

Curry County boasts all these fisheries: offshore salmon, coastal fishing for bottom fish, shellfish, and scuba diving, but has failed to use the potential.

The county has three possible ports for offshore salmon fishing, but with the exception of Brookings, has limited or nonexistent facilities. In all three areas there are few of the large multipassenger charter boats commonly found in other coastal areas of Oregon and Washington. All three port areas need further improvement in order to attract the charter boat business. Not only charter boat operators, but people with private boats seeking a port to base their sport fishing operations for the summer would be attracted. These people would bring money into the area and support industries such as motels, restaurants, and fuel outlets.

The coastal rocks, jetties, and offshore areas of Curry County support populations of rockfish, lingcod, flounder, greenling, perch, and other bottom species which are easy to catch and furnish excellent eating. Even though more people are utilizing these species, guide services and information are definitely needed to encourage the growth of this fishery.

Scuba diving for fish is a fast-growing sport in the Northwest, and Curry County has some outstanding diving areas. Again, as with the other recreational fisheries, lack of information and facilities are the limiting factors. Scuba divers need

information on when and where to go; they also need facilities for air and equipment. Curry County has none of these facilities.

One underlying problem with all marine recreational areas in the county is lack of information. There is a definite need for an information network, to handle promotion, guide services, and advice on specific recreational opportunities. Without this information available to the public, marine recreation stagnates.

Recommendations

The committee recommends that:

- The ports of Brookings, Gold Beach, and Port Orford install adequate moorage and services to handle sports fishing boats and install tourist facilities such as rest rooms and trailer parks.

- Additional launching facilities for private boats be built in all river systems.

- Because of the use of salmon by sports fishermen as well as commercial, the Oregon Fish Commission and the Oregon Game Commission research and survey possible sites for hatcheries in Curry County streams.

- Because of lack of information on recreational fisheries in the area, either local chambers of commerce or a county-wide organization establish an information network, concerned with promotion, listing of services, and distribution of current information on fishing, clam digging, scuba diving, and other marine recreation available to the public.

- Because of the lack of guides in the area, OSU's Extension Service, in cooperation with local guides, give a workshop to train people as possible guides.

- Because the nearest facility for scuba divers is in Coos Bay, an effort be made by the local communities to help someone establish scuba facilities.

- The communities in the area establish an overall county planning committee for orderly development of marine recreation.

COMMITTEE ON MARINE SCIENCE

E.G. Samuel, Brookings, chairman

Robert C. Courtright, head, OSU Marine Science Laboratory,

Port Orford, secretary

Ron Crook, Pistol River

Orris Smith, Port Orford

Dick Goergen, Port Orford

Archie McVay, Harbor

Alden Boice, Gold Beach

Don Wisely, Gold Beach

Jack Neilson, Oregon Fish Commission, Newport

Bob Jacobsen, Marine Extension Agent, Newport

Paul Heikkila, Marine Extension Agent, Coos and Curry counties

Mining Committee Report

Gold mining was originally the mainstay of the economy of Curry County. As placer mining decreased, the reliance upon timber increased. With eventual depletion of timber resources, we may come full circle, back to mining as a major income to the local economy.

The areas of undeveloped mineral wealth include low-grade gold ores, as well as ores of nickel, copper, iron, platinum, and chromite. The market for aggregates and for building stone will expand as population increases.

Absence in Curry County of a harbor for deep-draft vessels, and lack of a railroad, would encourage local processing of ores, which could bring more benefit to the county through larger local payrolls. It is understood that electric power from Bonneville Power Administration could be made available for industrial use at economical rates.

With power, water, and labor available to process local ores, a potential wealth exists that possibly equals that of the best years of the lumber industry.

BLACK SAND

The black sand deposits are believed to represent a potential source of gold and platinum as well as other minerals, including chromite, zircon, garnet, ilmenite, magnetite, rutile, and other rare metals. Most of the black sand deposits are relatively thin and covered, but quite extensive laterally (see map.) The black sands have been worked in several places, mainly for gold. These sands contain from 3 percent to 20 percent chromite, up to 1.9 percent zircon, up to 7 percent ilmenite, and up to 10 percent magnetite. Hunt (1960) described the mineralogy and processing of these sands, using magnetic and Carpo High-Tension separators. More recent work, by the United States Geological Survey in cooperation with the Oregon State University Oceanography Department, is devoted to testing for gold in sediments on the continental shelf off southern Oregon. Platinum-group metals are known to occur with placer gold because of the high specific gravity of these elements.

OFFSHORE DEPOSITS

Concentrations of gold (and therefore of platinum-group metals) occur in the surface sediments of the continental shelf off Curry County. The areas of concentration tend to be elongated and parallel to the present shoreline and are nearly parallel to depth contours. These concentrations of the heavy minerals probably originated as relict beach placers. The gold deposits appear to be smaller and more linear than their associated heavy mineral anomalies, probably because gold migrates from the original deposit less readily than the associated heavy minerals. Only by drilling can the economic significance of any beach placers underlying the surficial concentrations of gold be evaluated. (From: "Gold Distribution in Surface Sediments on the Continental Shelf off Southern Oregon," Geological Survey Circular 587.)

The largest concentrations off Curry County occur off Cape Blanco, apparently fed by the Sixes and Elk rivers. Other concentrations occur off Port Orford, a few miles south of Humbug Mountain, and off the mouth of the Rogue River.

IRON AND NICKEL

Magnetite occurs disseminated in pyroxenite near Tincup Peak and in the upper Pistol River area. Other bodies of similar ultramafic rocks contain similar and possibly higher

grade occurrences. Further exploration for iron in these areas is warranted.

Considerable testing work has been done in the Red Flat area by the State of Oregon Department of Geology and Mineral Industries, the United States Bureau of Mines, the University of Wisconsin, and by the Hanna Mining Company. These residual surface deposits of low-grade nickel-bearing soil represent a fairly large reserve for possible future mining. Hanna Mining Company has an option upon a major portion of the nickel area.

COAL

The coal occurrences in Curry County are of low rank and fairly high ash content. The most promising deposits are a few miles southwest of Eckley (map No. 76). More extensive deposits of fair-quality coal occur in the Eden Ridge coal field (map No. 74), where the Pacific Power and Light Company has recently completed an extensive exploratory program with plans to supply coal for a proposed steam electric generating plant.

OTHER METALS

The Mt. Emily area is of interest because of evidence of mineralization in syenite and the related intrusives. Zinc, molybdenum, cobalt, nickel, and gold have been reported to occur at Mt. Emily. In addition to this one area, sediment sampling on more than 3,000 streams in southwest Oregon will be released by the Oregon Department of Geology and Mineral Industries. Semiquantitative chemical analyses were made for copper, zinc, molybdenum, and mercury. Also, spectographic analyses for 30 elements has been made by the United States Geological Survey. Release of this material can be expected to result in a considerable expansion of exploration in Curry County by major mining companies as well as by individual prospectors.

INDUSTRIAL MINERALS

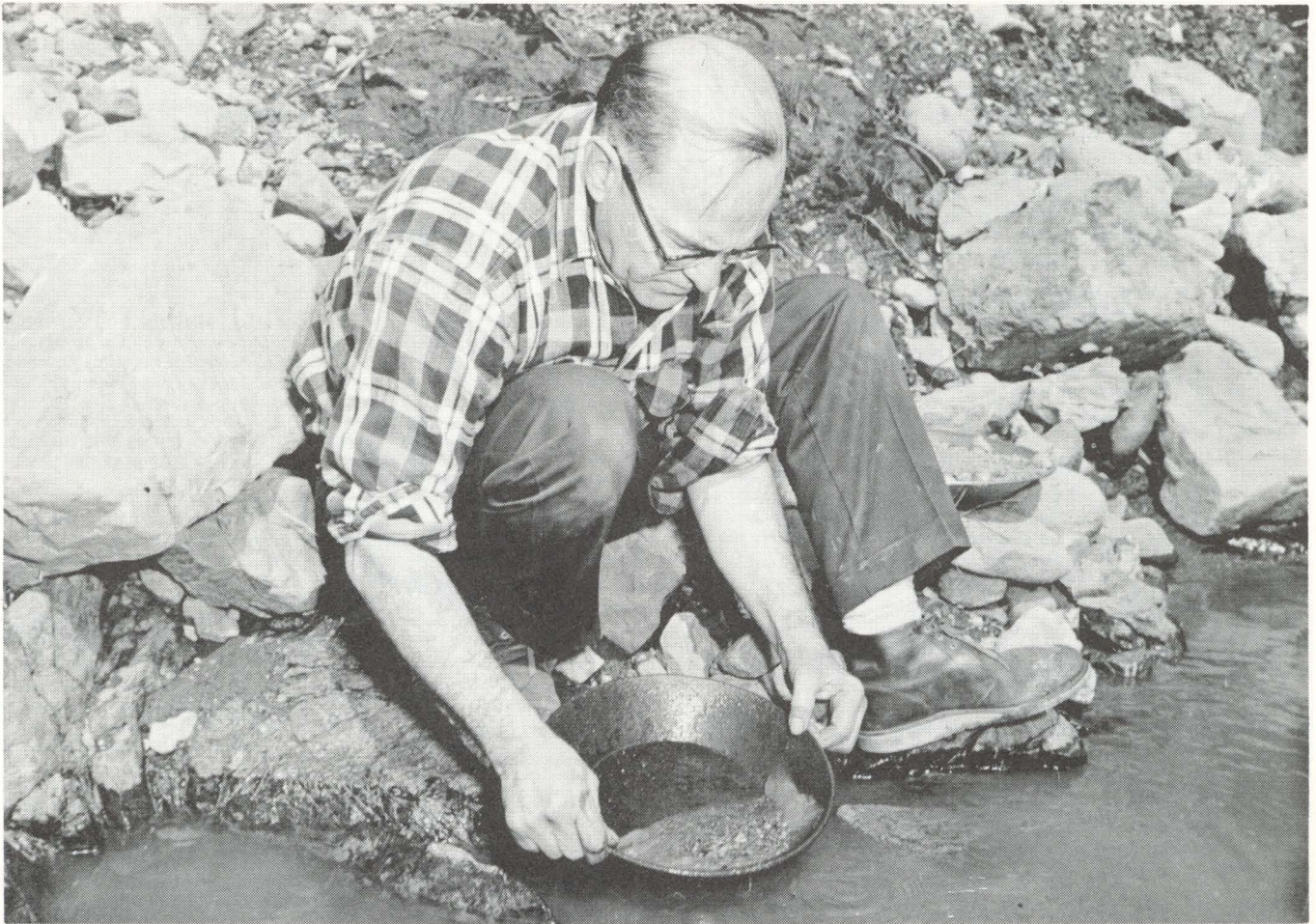
The field of industrial rocks and minerals is the most rapid growing of Oregon's mineral industries. The demand for building stone, road aggregate, roofing granules, jetty rock, and sand and gravel for suitable concrete aggregate is constantly increasing. Rock suitable for most, if not all these uses, is available in Curry County. Exposures of iron-stained rhyolite dikes along the Winchuck River road about 7 miles from U.S. 101 are being used for building stone in walls and fireplaces.

Some future use may be found for the extensive deposits of mica schist. Reports of sericite schists mined in California are similar by description to schists in Curry County.

Chrysotile asbestos is known to occur in minor amounts in Curry County, but to date none of commercial quantity is known. The possibility of finding a large deposit of this short-fiber asbestos in some of the numerous serpentine areas in Curry County has not been ruled out.

EXPLORATION

Many of the occurrences listed on the map probably have very little commercial significance. However, they serve to designate mineralized areas where further exploration may be warranted. Only during the last decade have maps been



Gold mining, first with pan, then with sluice box and finally with more sophisticated equipment, was a major contribution in the development of Curry County. (Brookings-Harbor Pilot photo)

available of the interior regions of Curry County. Recent interest by governmental agencies can be expected to result in an increase in mining activity in the county and in the off-shore areas.

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- "Gold and Silver in Oregon," Bulletin 61, Len Ramp, and Howard C. Brook. State Department of Geology and Mineral Industries. 1968.
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- "Geology Provides Preparation for Planning, Pleasure, Profit." Sixteenth biennial report of the State Geologist. Bulletin 63. 1966-68.
- "Mineral Resources of Curry and Southwestern Coos Counties," prepared by Len Ramp, Department of Geology and Mineral Industries.
- The Ore-Bin, Monthly periodical of the Department of Geology and Mineral Industries.

Recommendations

- The attention of pulp mill engineering staffs should be drawn to the presence of sulfide ore in Curry County as a possible source of sulphuric acid for use in pulp manufacturing.

- Building contractors should be made aware of the presence of building stone in Curry County by means of samples of available materials placed on public display.
- The County Planning Commission should be advised that all mining operators in the county ought to restore land they use, as far as reasonably possible, to its original state in order to protect surface appearance and surface use after mining has ceased.
- More use of available supplies of aggregate should be encouraged for building material and to help deepen harbors by the removal of sand and gravel.
- The Oregon Department of Geology and Mineral Industries could provide a valuable service by publishing a study of the geology of Curry County for use as a guide by recreationists as well as geologists, prospectors, and others.

COMMITTEE ON MINING

That's him

Charles Hoffman, Brookings, chairman
 Ted McKenzie, Port Orford
 Art Fisk, Gold Beach
 Toby Wallace, Gold Beach
 Dick Guthrie, Gold Beach
 Brownie Coldiron, Gold Beach
 William Toner, Harbor
 Len Ramp, resident geologist, Department of Geology and Mineral Industries

Tourism and Recreation Committee Report

Curry County's unusual geographic and geological features make it unique among all Oregon counties. Ninety miles of spectacular headlands interspersed with sandy, gravelly, or rocky beaches are the predominant features of the Curry County coast. The spectacular scenery which can be seen by the tourist as he drives from Port Orford to the California state line has more ocean view along Highway 101 than any other county along the coast. Beach access is readily available.

But the individuality of Curry County also stems from the fact that the Klamath Mountains find their western terminus here in the beautiful waters of the Pacific in Curry County. Beaches and the sweep of rocky cliffs that rise boldly from the sea are a prime attraction for the tourist. Sea stacks of ancient lava intrusions add much to the picturesque views. The county also has sections of the Oregon Coast Range in the area north from Port Orford.

In early geological times, only the Klamath Mountains (also called the Siskiyou) of southwestern Oregon and the Blue Mountains of northwestern Oregon showed as land above the shallow Pacific sea. Uplift of land, vulcanism, and glaciation made the area unparalleled in that prehistoric plants of over 75 million years ago are still found in those high portions of the Klamath Mountains that were not covered by ocean or by glaciers.

The uniqueness of the county is further illustrated by the wide variety of climatic plant community zones. In a short distance of 25 miles a visitor can enjoy coastal rain forests and the dry eastern Oregon type ponderosa and sugar pine forests.

The abundance of beautiful fresh-water streams and the fighting quality of salmon and steelhead are world famous. Rogue River summer steelhead attract thousands of visitors each year. The Rogue and Columbia systems are the only two spring chinook systems in the state. Other rivers with their own claim to fame include the rivers with the interesting names of Chetco, Sixes, Elk, Winchuck, and Pistol. Hunter Creek, Euchre Creek, and Floras Creek are also fine fishing streams.

THE TOURIST INDUSTRY

Tourism and recreation are at the present time Curry County's second largest source of income, bringing about \$18 million annually into the economy. The multiplier effect of each tourist dollar ranges from 2-1/2 to 7 times, thereby promoting additional jobs and wealth. Tourism, as it is now developing, will soon be Curry's largest industry. It can be even larger with planned and coordinated efforts. The purpose of this committee is to promote, encourage, and foster quality recreation and tourist facilities so that this area will maintain its livability for the residents as well as being a tourist paradise for those seeking relaxation and recreation.

America is fast becoming a nation of tourists. An affluent society with better pay, more leisure time, and a desire to see and do things is booming the tourist industry beyond all expectations. Most travelers demand and are willing to pay for quality recreation. In 1967 over 45 percent of the visitors to Oregon came from the neighboring state of California. Curry County, as a scenic gateway to southern Oregon, can capitalize on this desire of our neighbors to the south to find clean air and water and unspoiled and uncrowded beaches.

Tourism is a clean industry and brings wealth into the economy without the necessary expenditures for schools and other public services.

A total of 7,229 acres of Curry County land were classified as developed recreational areas by public agencies in 1964. These include:

Property Ownership:	City	County	State	U.S. Forest Service	BLM	Total
Number of Acres:	12	74	6,912	31	200	7,229

The Oregon State Highway Department has an additional

150 acres programmed for development by 1975.

Curry County is the only county west of the Cascades that does not have a golf course.

Recommendations

Items for immediate consideration include the following:

- A county-wide brochure should be one of the top priorities for development. This brochure should be quick to read, attractive, and should stress the uncrowded beaches, the superb driftwood collecting, primitive areas, quiet relaxation as well as exciting activities, and the clean water and fresh air that can be found in Curry County. It was felt that this brochure would have wide appeal to tourists planning vacations to Oregon.

- The present county advertising budget (\$10,000 in 1969-70) should be used to publish this brochure and thus promote the entire county. Representatives of the tourist and recreation industry in each area of the county should be selected to develop the brochure.

- Although Curry County is extremely wealthy as far as natural beauty and resources are concerned, many visitors would stay longer in Curry County if a golf course were available.

- An association of trailer park and camp facility owners and operators should be organized to promote this industry. This group could also serve as a clearing house for trailer and camping sites during the tourist season.

- A clearing house for motels should also be established through the various chamber information offices.

- A county-wide action group to promote tourism is a definite need. It is felt that funds from both private and public sources could be coordinated to promote the entire county. This should be an action committee or a booster committee.

- Extension of the tourist season is definitely needed. Retired families or those in which the children have graduated from school should be encouraged to come during the off-season. More of these people are coming to the area, but this trend definitely needs to be expanded. Brochures to areas in Canada and to retirement cities might help. Another attraction would be the improvement of fall, winter, and spring fishing in the rivers and streams of Curry County through improved hatchery technology.

- Tourist facilities should be developed as necessary to accommodate the increasing number of visitors coming to Curry County. It is necessary that a balance be maintained between private and public facilities so that free enterprise has a chance to operate.

Less urgent but important recommendations include the following:

- Historical, scenic, and natural sites should be promoted and marked as tourist attractions in Curry County.

- Packaged tours for special-interest groups should be developed by local organizations or chambers of commerce. Some examples would be fly-in breakfasts, tours conducted for the Portland Rhododendron Society, and excursions for rock hunters.

- Further improvement of the East-West Highway would have a great impact on the tourist income to Curry County. At the present time the nearest east-west highways are those that enter to the south at Crescent City and to the north at Coquille and Bandon. The east-west highway is now being used, and improvement would greatly enhance the position of Curry County to attract visitors from the Grants Pass-Medford area.

- Small boat basins have been shown to increase greatly the tourist interest in an area. Small boat basins are needed at Port Orford and Gold Beach, and expansion of the Brookings small boat basin is definitely warranted.

- Directional signs pointing out various tourist attractions, the location of churches, and road and trail directions should be improved.

- Further improvement on Highway 101, the main north-south artery and at the present time the only access to Curry County, needs considerable improvement. Items specifically pointed out for improvement include the Chetco bridge, the Sixes River bridge, and the area from Port Orford to Bandon.



Tourism is Curry County's fastest growing industry. The development of better highways, a golf course, fishing accesses and more fish will help to accelerate this important industry. (Brookings-Harbor Pilot photo)

We commend the Oregon Highway Department for the work that it is doing at the present time and urge continued attention to this important job.

— Curry County lacks luxury resorts. The establishment or development of a luxury resort would be a great asset to the county. Efforts should be expended to encourage this type of facility.

— The orderly and planned development of Curry County is essential to maintain its livability. This committee recommends that land-use planning be developed as rapidly as possible and that zoning be used to implement these plans for orderly development. The plan should provide a blueprint for future development for the entire county and should include recreational as well as industrial, agricultural, and residential uses. Every effort should be expended to control pollution, which might hinder the growth and development of the tourist industry.

— Tourist hospitality clinics now being conducted in the three areas of the county should be continued in order to assist the local people to be even more friendly and hospitable to tourists. It is important that local citizens know the things that a tourist might do in the county. Such perception can help to keep the tourists happy and keep them here a little longer. In this same vein, it is necessary to continue to impress the local people of the importance of tourism to the economy of Curry County.

— The committee recommends that because of the importance of tourism on a state-wide basis and the projection that tourism will become our primary industry in time, a full-time state tourist agency be organized to promote this industry. We are cognizant of the excellent work being done by the Travel Information Division of the State Highway Department but feel that the importance of this industry warrants a separate department.

— A visitors' center should be developed at the Oregon State University Marine Science Laboratory at Port Orford. This marine science visitors' center would be an important attraction to tourists.

— The bottom or ground fishing off the Curry County coast is outstanding; yet very few people are aware of this valuable sport fishery. Each port in the county should promote the bottom-fishing industry. Many people are more interested in the act of fishing than in the type of fish that they catch. This industry could keep people here longer and thereby favorably affect the economy.

— The committee recommends that public access be made available to the streams in Curry County. These accesses would be primarily in the launching and taking-out sites for boat use on those streams which can be drifted.

— A visitor's first impression of a community often determines whether he will stay or go to the next town. Every effort should be made to clean up the communities in Curry County and paint unsightly structures, to give this good first impression to tourists. Abandoned cars not serving a useful purpose along county roads, streams, and other areas are a detriment to the area. Service organizations or the County Road Department should remove these eyesores to restore some measure of beauty to the landscape.

— Many local people have a great talent for arts and handicrafts. Visitors are interested in purchasing souvenirs that

are representative of the area they are visiting. The committee endorses the action being taken by the Central Curry Tourist Hospitality Committee in taking the lead in developing a "home arts" outlet for locally produced or developed articles.

— An understanding by residents of the natural resources of Curry County is important in helping them to become more aware of natural scenic and historical areas. Such an awareness should develop more local pride and establish a group who can convey information to tourists.

— We recommend the continuation of shortcourses in natural and historical resources and propose that the Extension Service take the leadership in organizing a committee to develop courses of interest to local citizens.

— As the tourist industry develops, the number of qualified guides will need to be increased. The Extension Service, in cooperation with the Oregon Guides and Packers Association, should sponsor guide schools to develop well-informed and qualified guides for Curry County.

— Additional trails would help to make Curry County scenic areas more accessible to tourists and local residents. The committee recommends that the Forest Service and other agencies owning land accelerate development of new trails and increased maintenance of existing trails.

— Legislation now pending in the state legislature is hampering the development of beach lands along the Curry County coast. While acknowledging the rights of the public to traditional beach lands, the pending legislation is of considerable concern to those interested in the orderly development of their property along the ocean.

— The committee recommends that Oregon laws pertaining to Oregon beaches and estuaries be clarified and defined and that specific boundaries be established as rapidly as possible. Oregon laws pertaining to beaches, estuaries, lake shores, and river banks must recognize the rights of private property owners.

— The geology of Curry County is one of its unique resources. Many tourists would be interested in descriptive literature which could serve as a tourist guide to geological features on a mile-by-mile basis. We recommend that the Department of Geology and Mineral Industries or the Geology Department of Oregon State University or University of Oregon prepare a field trip guidebook or road log of Curry County geology.

COMMITTEE ON TOURISM AND RECREATION

Walt Thompson, Harbor
Anona Robinson, Port Orford
Chester Brown, Port Orford
Charles Knox, Wedderburn
Dave Freeman, Brookings
Robert White, Gold Beach

Len Beck, Sr., Port Orford
E.A. Nelson, Port Orford
Don Buffington, Gold Beach
Mary Woodruff, Port Orford
Ruth Bradway, Port Orford
Jerry White, Gold Beach

Walt Schroeder, county Extension agent, secretary



HUMAN RESOURCES

Family Health Committee Report

For rural areas, such as Curry County is considered, a hospital with a minimum of 25 beds with plans for expansion to 50 is considered adequate. Under normal conditions it is believed that any rural area should have a hospital within one hour's travel time.

Curry County has one general hospital in Gold Beach with 25 beds. The hospital has a diagnostic or treatment center which includes general care, x-ray facilities, and a clinical laboratory. In 1964 occupancy was 39 percent.

Since Gold Beach is located in the central area of the county, travel time from the Port Orford or Brookings area to the general hospital is about one-half hour. Langlois travel time to Gold Beach is 45 minutes but about 15 minutes to the Bandon medical facilities in Coos County. Construction of the Good Samaritan Nursing Home in Brookings was completed in July 1969. It has a 68-bed facility.

The Gold Beach area has 1 medical doctor, 1 MD working half time, 1 osteopath, 2 chiropractors, 1/5 optometrist, and 2 dentists. The Brookings-Harbor area has 2 MDs, 1 osteopath, 1 optometrist, 1 chiropractor, and 4 full-time dentists. Port Orford has 1 part-time osteopath. Altogether, Curry County has 5-1/2 doctors serving 13,450 people, or about 1 physician for every 2,445.5 persons.

There is a volunteer ambulance service in each of the three major areas of the county. The cost for this service is \$1 per person up to a maximum of \$5 a family within a 25-mile radius or \$1 a mile with a minimum of 15 miles.

A Mercy Flight operates out of Medford, with annual family dues of \$8 or a regular cost on a mileage basis. This flight uses the Gold Beach, Brookings, and Port Orford air strips. There is also a small air strip in Agness for emergency purposes.

Located in Gold Beach is the County Public Health Department. Immunization clinics are held in the schools and also once a month at the department, administering smallpox, diphtheria, pertussis, tetanus, polio, and measles vaccination. Tuberculosis skin tests are also given. In October 1967-68 a total of 4,632 persons visited the mobile x-ray unit. Three new cases of tuberculosis were found.

Under the supervision of a public health nurse and a staff of 2 public health nurses, 2 and sometimes 3 licensed practical nurses go into homes requiring special at-home medical care (like medicare patients and anyone needing home nursing care.) The cost is \$12 a visit or, as in the case of low-income people, the cost is figured on a graduated pay scale.

One diagnostic clinic for crippled children and one ology clinic (for hearing problems) are held once a year. Pre-school vision and hearing clinics for children from 3 to 6 years are held in the spring.

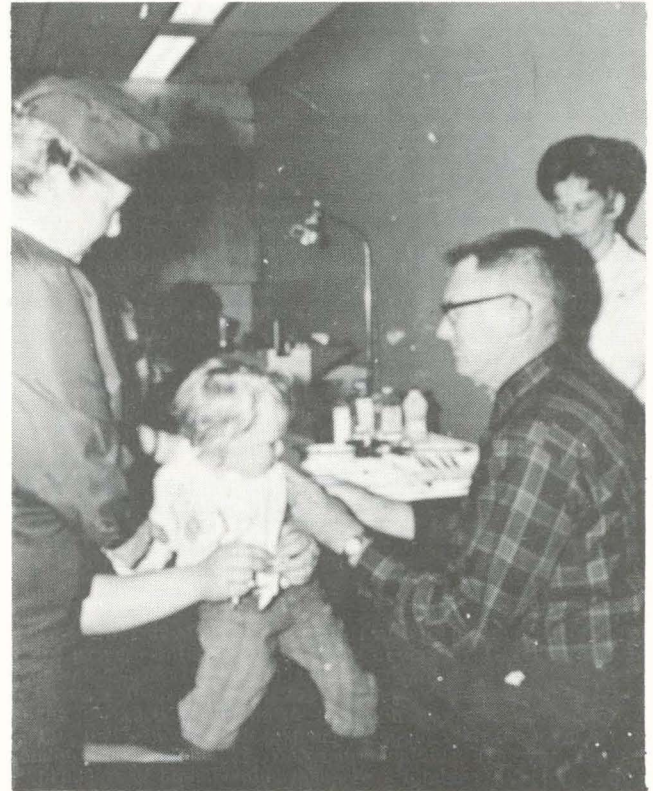
MENTAL HEALTH

The following chart gives the monthly rate it takes to care for one patient in the listed institutions according to the Oregon State Board of Control, April 1, 1969:

Hospitals for the mentally deficient.....	\$ 297
Hospitals for the mentally ill.....	437
Juvenile training schools.....	588
Juvenile foster home care.....	199
Tuberculosis hospital.....	1,052

These rates do not include the costs necessary for the operation of the educational and outpatient programs, nor do they include any other costs not directly related to the patient's actual care and treatment.

From July 1, 1966, to June 30, 1968, 44 people from Curry County were admitted to the Oregon State Hospital.



Immunization clinics are part of the program offered by the Public Health Department. Mrs. Dorothea Miller, R. N., PHN, is shown helping Dr. J. Robert Schmidt. (Extension Service photo)

Curry County operates a Family Service Clinic located in Gold Beach. The clinic provides four basic services:

- Child guidance and counseling
- Family and marriage counseling
- Out-patient psychiatric treatment
- Mental hospital patient follow-up services

Services are also offered to the mentally retarded and their families in the areas of:

- Psychological testing and diagnostic services
- Psychiatric evaluation, medication management, and referral services
- Family and individual counseling
- Psychotherapy for the child and/or parents where indicated
- Consultation to Intermediate Education District officials and special education class teachers

In-patient psychiatric services or facilities are not available in Curry County for either acute or chronic patients. Curry General Hospital does provide bed space temporarily for patients the court has committed while they are awaiting transfer to the State Hospital in Salem.

In 1964, 533 alcoholics were reported in the county. Alcoholic rehabilitation as a specific service is not offered by the Family Service Clinic. However, to the alcoholic and his family are offered:

- Psychological testing and diagnostic services
- Psychiatric evaluation, medication management, and referral services
- Family and individual counseling

--Individual psychotherapy for the alcoholic, his spouse, and family where indicated

Local physicians do hospitalize patients in the local hospital for withdrawal from excessive use of alcohol.

At the present the Family Service Clinic houses 1-1/2 psychiatric social workers and 1 psychologist; and there is 1 psychiatrist 26 days a year. The average case load is 85 persons, with no waiting list. Weekly contact is also made with the Brookings, Port Orford, and Gold Beach schools.

Within the elementary and high-school districts throughout the county are found special classes for the educable mentally retarded. There are at present 30 EMR children in the elementary grades and 33 in the secondary. Each class in the elementary grades is limited to 15 pupils per class, with a limit of 18 on the secondary levels. At present (1969) there is a waiting list of 11 in Brookings in the elementary age group because of lack of school facilities available for classes.

In order to improve and coordinate communication between agencies, meetings are held weekly by the Family Service Clinic staff with the staff from the Public Health Department and the Welfare Department. On a monthly basis an interagency meeting is held also with the Juvenile Office, Vocational Rehabilitation Department, Intermediate Education District, Community Action Program, and others.

NUTRITION

Evidence from studies made in the western United States revealed that 6 out of 10 girls and 4 out of 10 boys had poor diets. Surveys of teen-agers' diets show they are less adequate than those of any other age group. Nationally, the diets of teen-age girls are found to be nutritionally low in vitamins A, C, thiamine, and riboflavin as well as protein, calcium, and iron. Boys' diets are low in the same nutrients with the exception of protein. Inadequate nutrition hampers growth and learning, makes the body more susceptible to illness and disease, causes early senility, and slows the healing process.

At least 1.3 of all first-born children today are being born of teen-age mothers. The American Medical Association says that at any give time, 20 percent of the babies in America are anemic. It is known that malnutrition of the infant causes permanent damage to the brain and nervous system.

On a national scale, also, only half of the young men were accepted for military service in 1962. Results of preinduction examinations show 25 percent were medically disqualified and nearly 25 percent failed the mental tests. In 1965 Curry County ranked first in the State of Oregon in the number of draft rejections. Out of 1,698 who registered, 253 were rejected.

In Curry County a questionnaire provided by the Oregon Dairy Council to survey the eating habits of teen-agers was passed out to 138 boys and girls in the high school American Problems classes and to 54 adults throughout the county. Following are the results of this survey:

Milk and Milk Products (calcium, protein)

Teen-agers

Only 54% of the 138 teen-agers reported consuming the recommended daily allowance. Fifty-five reported drinking 4 or more cups of milk a day. Forty reported drinking 3 or more cups daily. Twenty-one reported drinking 2 cups and 15 reported drinking 1 cup.

Adults

Only 46% of the adults consumed the recommended daily allowance.

Meat and Meat Substitutes

Teen-agers

93% consumed 3 oz. of meat or more daily but only 67% consumed the recommended daily allowance.

Adults

About 70% reported eating the amount of protein to meet the recommended allowance.

Vegetables and Fruits

Teen-agers

Only 31% consumed the daily allowance of citrus fruit, green and yellow vegetables, and potatoes.

Adults

50% of the adults consumed the daily recommended allowance.

Bread and Cereal

Teen-agers

30% reported adequate daily consumption. 44% reported consuming 1/2 or over.

Adults

44% of the adults ate the recommended allowance. 43% ate at least 1/2.

Diet Rating

Teen-agers

21 rated excellent -- 15%	22 rated very good -- 16%
24 rated good -- 17%	25 rated fair -- 18%
46 rated poor -- 34%	

Adults

12 rated excellent -- 22%	12 rated good -- 22%
11 rated fair -- 20%	19 rated poor -- 36%

The nutrition problem in America does not seem to stem from lack of food because nearly half of all adults are overweight. To prevent a life-long chain of poor eating habits, it is important that young children develop good habits from their parents.

"From this, we must conclude that many Americans are making a poor choice -- nutritionally -- of our food abundance, and that to a large extent income does not determine good nutrition. There are many influences and much competition for the food dollar, and the dollars spent may not relate to good nutritional value."*

*U.S. Department of Agriculture

Recommendations

- A regional medical center and comprehensive health and nutrition program should be established within the Southwestern Oregon District (Coos and Curry counties).
- Doctors would be welcome to set up their practices in Curry County.
- A laboratory including x-ray facilities and a laboratory technician should be eventually added to the nursing home at Brookings.
- Red Cross certificate holders and practical and retired nurses should have names and phone numbers listed for easy reference in case of emergency.
- Special effort should be made by the different health agencies to let the public know what health facilities are available to them.
- For newcomers and tourists in the county, a public notice should be run periodically in the three newspapers telling where the public garbage dumps are and whom to contact for garbage pickup.
- Organizations should make an effort to incorporate a nutrition program into their schedule.
- Human-relations seminars on current problems like drugs, drinking, smoking, health, etc., should be started at least in the fifth grade before the children have developed set ideas. These could be conducted by members of social agencies like the Family Service Clinic, Extension Service, and Welfare.
- A survey should be made in the elementary schools to see if enough children are getting nutritional breakfasts. If a high percentage come to school without breakfast, the IED should look into special programs provided under the Child Nutrition Act of 1966 to provide breakfast for the underprivileged.
- The Extension Service, through cooperation with the public schools, should set up a program in the elementary and high schools to teach the importance of adequate nutrition and balanced meals.

Family Housing Committee Report

Home ownership is the traditional goal of the American family. On the average, approximately one-fourth to one-third of a family's income is spent on renting or owning a house or an apartment, which includes furnishings, equipment, and household operation.

In the past two years, the size of Curry County has grown from 12,500 people to 13,450. Enrollment projections for the schools, age 4 through grade 12, drop steadily up to the year 1977. It might be assumed, therefore, that many of the people moving into the county are in their later years and either close to retirement or retired. Senior citizens face adjustments to limited incomes, changing physical conditions, reduced personal contacts, and new living patterns which affect the type of housing they choose.

In turn, a family is affected by the kind of house in which they live. Ideally, a house is a place where family members go for rest, nourishment, and security. The 1960 U.S. Census revealed that nationally more than 9 million families were living in substandard housing units, 5 million in deteriorating housing, and another 6 million in overcrowded quarters. In 1960, 26.1 percent, or a little over one-fourth of the housing in Curry County was considered unsound. Many of the houses were built between 1950 and 1960, when the county experienced a 131.2 percent increase in population. Of the 4,675 housing units reported, 1,377 did not have a water supply piped inside, and 1,500 lacked proper toilet facilities.

Families moving into Curry County find that it is a tedious task to find a place to buy or rent. The availability of rental homes is not really known, and the newspapers are often the only source of information for people not acquainted with the county.

A brief survey of the Brookings area found 10 apartments available for \$100-\$125 a month, 6 partly furnished apartments for \$85, and 12 unfurnished for \$75. Several of these spaces were in very poor condition.



Many homemakers get valuable homemaking tips through informal study groups sponsored by the Cooperative Extension Service. (Extension Service photo)

In a consumer survey involving 90 families throughout the county, the following figures pertaining to housing were obtained:

*Planning to purchase in next two years		INCOME			AGE	
		\$0-7,999	\$8,000-9,999	\$10,000 plus	20-50	50 plus
Rugs or carpeting	35%	35%	46%	19%	61%	39%
Draperies	23%	29%	38%	33%	38%	62%
Range or refrigerator	30%	15%	52%	33%	70%	30%
New or used car	33%	57%	20%	23%	53%	47%
Furniture	21%	47%	16%	37%	68%	32%
Color TV	17%	60%	27%	13%	40%	60%

*Planning major expendi- tures in next two years		INCOME			AGE	
		\$0-7,999	\$8,000-9,999	\$10,000 plus	20-50	50 plus
Adding or remodeling room	28%	36%	40%	24%	72%	28%
Painting inside of house	46%	46%	37%	17%	59%	41%
Painting outside of house	38%	47%	32%	21%	40%	60%
New roof	14%	46%	23%	31%	38%	62%
Landscaping	23%	38%	38%	24%	52%	48%

*Approximate percentages

According to the U.S. Census of Population, the average income of all families in Curry County in 1960 was \$6,032. If one-fourth of this had been spent on housing, this would have given the average family \$125 a month to spend on housing, furnishings, and home maintenance. However, the 1967 Sales Management report states that approximately 18.1 percent or 724 of the households in Curry County had an income of less than \$3,000.

The more than 150 families on welfare have to take what housing is available to them in the price range of their monthly allotments. At present, \$74 is the allowance for a family of five or more for rent and utilities; one person living alone is allowed \$54. Adequate rentals in this county for this amount of money are not readily available. Professional, newly married, single, or retired people also have a difficult time finding adequate living conditions.

Before 1960, when many of the homes in the county were built, electrical wiring was adequate for the use at that time. The past 10-15 years has seen a tremendous increase in the number of electrical appliances available and used. Electric griddles and power tools use a much greater load of electricity than the larger washing machines and refrigerators.

Overloaded electrical wiring often causes serious fires. To save cost, the inexperienced homeowner does his own repairs and building, which demand the skill of an electrician or plumber.

Because of the damp coastal climate, many homeowners have trouble with mildew, moss, dry rot, moisture condensation, and termites. As their families grow, they build on to their own homes and often find their dwellings assessed according to professional carpenter wages. They need to take pride in the appearance of their homes, but find that home improvements increase property taxes. Many senior citizens are unaware that they can apply for tax relief on property.

Nationally, one out of four people in the United States buy mobile homes. Families who have less than \$15,000 to spend on a house usually choose a mobile home. Curry County has approximately 22 private mobile trailer courts with an average of 27 accommodations each that provide water, sewer, and electricity. Twenty-one provide laundry facilities.

The Federal Housing Authority has a program for purchase and rehabilitation of housing for resale to low-income purchasers at 3 percent interest rate. A sponsoring nonprofit agency must start the action. Five substandard houses are found, bought, and brought up to FHA standards with money borrowed from a finance agency and then sold to a qualified low-income family. The monthly payments generally run

about \$70 a month.

Farmers Home Administration loans are available for families in rural areas and communities up to 5,500 population. These loans are available for families of low and moderate income levels and senior citizens unable to obtain conventional loans. Several of their programs include rural housing loans at 5 percent to 6-1/2 percent; rental and co-op housing in rural areas; and self-help housing loans at 4 percent interest.

Concerns

The proportion of income that low-income residents can spend for housing can provide only inadequate housing to meet minimum family needs. These families usually live in neighborhoods where safety and sanitation are inadequate.

Homes adequate to meet the needs of large families are not generally available in the county.

Need for low-cost, attractive, adequate housing for single adults and older citizens is evident.

Recommendations

— The Extension Service, in cooperation with the building industry, should provide a self-help housing program for those who would benefit and are interested. This program should include house planning, remodeling, financing, landscaping, and furnishing. Special emphasis should be placed on storage, moisture problems, and wiring.

— The public should be made aware of educational information on housing, furnishings, and landscaping accumulated by the Extension Service and other public and private agencies.

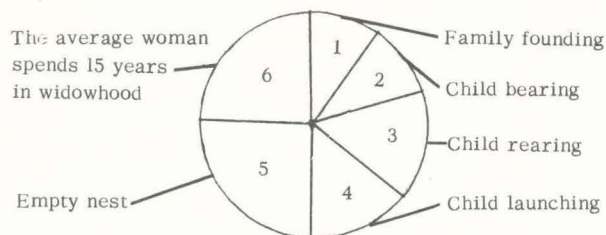
— There is a definite need for clean, pleasant rental apartments under \$100 a month and well-built housing for sale under \$15,000.

— A nonprofit agency should look into the FHA program of purchasing and rehabilitating housing for low-income purchasers.



Family Stability Committee Report

The life of every person in Curry County is influenced by his home and his environment. It has been found that the life of most individuals takes on a specific pattern:



Twenty-five percent of married women are widows at age 55-64. Nationally, 10 percent of the homes have women as head of the family. The average 15-year-old girl of today will spend 25 years of her life working outside of the home. Forty percent of all married women in the United States with school-age children work outside the home. In the small area of Port Orford, it was estimated that approximately 190 women are salary employed.

In 1962-63 Curry County had six boys admitted to a boys' juvenile training school. In 1965 there were eight illegitimate births recorded. In 1966 there were 52 drop-outs from the high school enrollees of 1,237. Last year there were 10 marriages within the county's high schools. In 1966 the county recorded 100 marriages and 49 divorces; in 1967, 77 marriages and 41 divorces; in 1968, 85 marriages and 35 divorces.

In 1962-63 a total of 2,012 out of 12,997 people in this county were listed in a church membership.

1960 COMPOSITION OF POPULATION BY AGE

18 & under.	38.7%
18-64	55.2%
65 plus	6.1%

Median Age	28.2
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1966 POPULATION AREAS

Brookings-Harbor.	5,350
Gold Beach	4,250
Port Orford-Langlois	3,250
Agness	150

1966 CITY POPULATION

Brookings.	2,677
Gold Beach.	1,759
Port Orford	1,145

CURRY COUNTY POPULATION GROWTH

1940	1950	1960	1965	1967	1968
4,031	6,048	13,983	13,000	12,500	13,450

MAJOR ADULT ORGANIZATIONS

American Legion
American Red Cross
Art Association
Beta Sigma Phi
Bowling Leagues
BPW
Chamber of Commerce
Chess Club
Christian Women's Club
Daughters of the Nile
Duplicate Bridge
Eagles Lodge
Eastern Star
Elks

Emblem Club
Flying Club
Garden Club
Gem & Mineral Society
Golf Association
Grange
Historical Society
Home Extension
IOOF
Jaycees
Jaycee Ettes
Lady Lions
Lions Club
Masonic Lodge

Moose Lodge
PTA
Rebekah Lodge
Rod & Gun Club
Rotary Club
Salvation Army
Senior Citizens
Soroptimist
Square Dance Club
TOPS
VFW
Volunteer Fire Dept.
Women of the Moose
WWI Veterans & Aux.

WELFARE

Approximately 150 families are on the welfare roles for Curry County, with 50-70 of these on Aid to Dependent Families with Children. There are 26 foster homes, which are filled most of the time with long-term-care children.

According to the report of the State Public Welfare Com-

mission for February 1966, \$10,660 was paid out in direct assistance payments, and \$2,485 was paid out in medical care payments. These both included old-age assistance, aid to the blind, aid to the disabled, aid to dependent children, general assistance, and foster care.

Abundant food is delivered to three areas of the county, which served approximately 900 people during the winter months.

Community Action Service Centers are found in Gold Beach and Port Orford with the program of helping the poor to help themselves.

LIBRARIES

The Curry Public Library in Gold Beach houses approximately 11,904 volumes and had a circulation of 2,780 during the month of April 1969.

The Chetco Community Public Library in Brookings has approximately 15,000 volumes and about 1,300 volumes are added each year. It has a circulation of about 3,700 a month and services many people from Smith River, California. Plans are now underway to add a children's wing to the main library.

The Port Orford City Library has approximately 10,000 volumes and a circulation of about 2,000 a month.

Concerns

There is a need to get more family life education for parents and youth in the following areas: understanding behavior; child guidance techniques; developing responsibility; family

communication; understanding ourselves and others; alcohol and drugs; illegitimacy; and the effects of divorce and separation.

Recommendations

— A broad program in human relations and family life should be a part of the curriculum in the elementary and high school programs. The curriculum should focus upon the needs of the various age levels to help students understand their physical, mental, and social development.

— Adult educational programs should be provided through the cooperation of the Family Service Clinic, the Cooperative Extension Service, and the Community Action Program on family stability, child care, and premarital and marriage classes. Separate emphasis should be developed for the special groups of low-income families -- ADC mothers, young families, senior citizens, and established families.





Knowledge doubles every 7 years. Through education our youth learn how to be effective leaders of tomorrow (Brookings-Harbor Pilot photo)

Youth Committee Report

In 1969, 40.7 percent of the county's population was listed as under the age of 20. Existing recreational facilities for youth are 3 show houses, 1 drive-in movie, 2 skating rinks, 2 bowling alleys, 1 miniature golf course, 2 tennis courts in Gold Beach, 90 miles of ocean-front beach, state parks, and 2 rifle ranges. Organized youth groups outside of school

consist of:
Jobs Daughters
Rainbow Girls
De Molay
Camp Fire Girls
Girl Scouts

Boy Scouts
4-H Clubs
Church youth groups
Cub Scouts
Ski Club

YOUTH EDUCATION

1966 SCHOOL ENROLLMENT

<u>School District</u>	<u>Enrollment</u>	<u>Curriculum</u>	<u>Location</u>
Upper Chetco, #23	47	1-8	North Bank Chetco River
Brookings-Harbor, #17C.....	1,479	1-12	Brookings
Pistol River, #16	24	1-8	Pistol River
Gold Beach, Elementary, #3C	550	1-8	Gold Beach
Gold Beach Union High, #1.....	319	9-12	Gold Beach
Agness, #4.....	7	1-8	Agness
Ophir, #12.....	172	1-8	Ophir
Port Orford-Langlois, #2CJ.....	792	1-12	Port Orford-Langlois
.....			
Seventh Day Adventist	21	1-8	Brookings

Upper Chetco students are tuitioned to Brookings-Harbor High School. Pistol River, Gold Beach, Ophir, and Agness are all part of Gold Beach Union High School. Port Orford-Langlois form a consolidated district, with the high school, Pacific, located midway between the two towns.

Brookings-Harbor has 2 full-time counselors, Gold Beach has 2 half-time counselors, and Pacific has one 1/2 time

counselor.

By June 1966 the year's school dropout number had grown to 52, or 5 percent of the total enrollment. Various reasons were given for this dropout problem: marriages, armed services, jobs, pregnancies, poor school attitudes, grades, and disciplinary actions. This last year, 1968-69, has witnessed 10 marriages within the county's high schools.

ENROLLMENT PROJECTION RATE FOR BROOKINGS-HARBOR SCHOOLS

	1970	1971	1972	1973	1974	1975	1976
Elementary	1,056	1,022	997	1,002	1,002	1,002	1,002
High school	464	479	539	531	531	498	470
Totals	1,520	1,501	1,536	1,533	1,533	1,500	1,472

None of the elementary school districts or elementary schools provide vocational-technical training. There is no vocational counseling at the junior high level to speak of, and vocational information is usually only conversational. Some vocational guidance is offered at all three high schools, and each school provides its own interest, aptitude, and vocational preference tests.

Vocational courses offered in the 1966 regular school program were Typing, I, II; Office Practice; Shorthand I, II; Bookkeeping I; General Business; Business Law; Wood Shop I, II; Metal Shop; Auto Shop; Mechanical Drawing; Homemaking; and Vocational Agriculture.

There were, in 1966, nine young men involved in apprenticeship programs in Curry County. Applications for apprenticeship positions far exceeded the number of openings. The limited number and the small size of appropriate businesses limit the number of apprentice programs that can be offered.

The Curry County Intermediate Education District provides services of remedial reading, speech therapy, classes for the educable mentally retarded, group and individual testing, gifted and able programs, data processing, pool purchasing, attendance officer, in-service workshops, and audio-visual aids.

YOUTH COUNCIL

Teen-agers want to grow up to be treated in a mature fashion and to be heard on matters that concern them. One of the best ways to obtain youth-adult understanding and cooperation is through a youth council to which clubs and schools send representatives.

The Curry County Youth Council was initiated in 1965. During the 1966-67 school year, the Gold Beach group raised over \$400, which was earmarked to provide a meeting place for the Gold Beach youth after school and on weekends. After experiencing difficulties in finding a building to rent, the group banked the money.

The Youth Council also felt that a way was needed to get in contact with the youth directly to see how they felt about certain ideas, issues, and problems. The result of this motivation was a survey administered to all high school students in Curry County. Some of the results of the survey were:

QUESTION	YES	NO
1. Does your community need a swimming pool?	84%	16%
2. Does your community need outdoor sports facilities?	71%	29%
3. Would you attend and use the facilities of a teen center?	90%	10%
4. Are stimulating informal education opportunities available to young people in addition to school programs?	37%	63%

5. Would sex education courses be a welcome addition to your school's curriculum?	71%	29%
6. Is drinking a major problem among teen-agers?	68%	32%
7. Are there too many restrictions on the activities of teen-agers?	36%	64%
8. Do you think the idea of juvenile juries would work here?	63%	37%
9. Are teen-agers adequately represented in adult serving organizations in your community?	33%	67%
10. Do you have a feeling of belonging and pride in your community?	52%	48%

The Youth Council experienced a decline in the summer of 1967, and the youth in Gold Beach are trying to get it started again. One of their main concerns is to provide a place with a healthy atmosphere for youth to meet after school and on weekends.

A youth group is active in Brookings, with approximately 90 members. It is sponsored by the Presbyterian, Catholic, and Episcopal churches. This group meets once a week, and activities include recreation, speakers, films, and discussions of current problems.

SUMMER EMPLOYMENT

In 1966 the Curry County Court met with the budget committee and agreed to finance the County Youth Employment Project from county funds.

In 1967, 27 students in Brookings and 87 students in Gold Beach and Port Orford (64 part-time, 23 full-time) were employed through the Youth Employment Service, which was a part of this youth employment project. For the summer of 1969, the county summer work program was cut to employ only 7 girls (4 hospitality hostesses and 3 Youth Employment Service secretaries).

Recommendations

- Encourage business organizations to employ interested youth in apprenticeship programs.
- Encourage county officials, local citizens, and parents to support youth councils and youth organizations.
- Urge a more cooperative effort from the school districts to provide youth access to outdoor school recreational facilities during the summer months.
- Create a position for a county recreation leader to establish and coordinate recreational programs in all communities in Curry County.
- Reinstate summer Youth Employment Program within the county budget.

Money Management Committee Report

(Current prices are expressed as a percentage of average prices during the 1967-69 period. For example, the February 1969 index average of all items of 24.6 indicates that prices in that month were 24.6 percent higher than in 1957-59).

	1968 Average	1969 February
Food.....	19.3	21.9
Meats, poultry, and fish.....	13.7	16.2
Dairy products.....	20.6	22.8
Fruits and vegetables.....	26.8	24.7
Housing.....	19.1	23.3
Shelter.....	23.6	28.9
Rent.....	15.1	17.2
Home ownership.....	27.0	33.6
Fuel and utilities.....	10.4	11.8
Fuel oil and coal.....	15.1	16.9
Gas and electricity.....	9.5	10.2
Household furnishings and operation	13.0	15.8
Apparel and upkeep.....	20.1	23.9
Transportation.....	19.6	22.0
Private	17.3	19.3
Public.....	38.2	45.5
Health and recreation.....	30.0	33.7
Medical care.....	45.0	51.3
Personal care.....	20.3	24.1
Reading and recreation.....	25.7	28.4
Total average all items.....	21.2	24.6



Consumers in the United States spend over \$1 billion a day. Our youth need to be aware of how to plan a purchase, and how to select the goods and services that will best meet their needs.
(Gold Beach Union High School photo)

The Consumer Price Index is a monthly measure, compiled by the United States Bureau of Labor Statistics, of changes in the prices of some 300 goods and services consumed by urban families and individuals. It does not include items bought primarily by suburban and rural families or by lower and upper income families.

Today's market place is primarily geared to the young adult and teen-ager. Nationally, there are 23 million young adults between the ages of 18 to 23, and it is predicted that by 1975 half of the United States population will be under 25. Sixty percent of the brides in 1966 were teenagers.

Consumers spend over \$1 billion a day. Installment loans in 1965 amounted to \$66 billion and are increasing rapidly. Credit is used by many merchants as a technique to promote sales, and 80 percent of the nation's families use consumer credit to buy household appliances, furnishings, cars, and clothing. The states on the west coast account for about one-third of all credit granted through bank credit cards.

In Curry County a consumer survey was made of 90 residents about their buying habits. The results were as follows:

*Purchasing clothing		Age		Income		
		20-50	50 plus	\$0-7,999	\$8,000-9,999	\$10,000 plus
Locally	17%	53%	47%	40%	40%	20%
Mail order	31%	83%	18%	57%	18%	25%
Outside local areas	52%	47%	53%	44%	35%	21%
*Shopping for clothing During sales		Age		Income		
		20-50	50 plus	\$0-7,999	\$8,000-9,999	\$10,000 plus
Almost always	24%	71%	29%	38%	33%	29%
Occasionally	61%	55%	45%	49%	28%	23%
Almost never or never	15%	38%	63%	54%	31%	15%

*Approximate percentages

*Reasons for dissatisfaction	
Clothing purchases	
Construction faulty	44%
Fabric quality	53%
Size	26%

*Influences on buying decisions	Very important or important	Unimportant
Newspaper advertising	57%	43%
Television	26%	74%
Radio	17%	83%
Friends or relatives	87%	13%
Information rating (Consumer reports)	84%	16%
Sales person	67%	33%

	AGE		INCOME		
*Kinds of credit used	20-50	50 plus	\$0-7,999	\$8,000-9,999	\$10,000 plus
Charge account, 30 to 90 days	51%	49%	47%	29%	24%
Revolving charge accounts	74%	26%	48%	36%	16%
Bank loans and credit	58%	42%	42%	17%	41%
Gasoline credit	56%	44%	38%	34%	28%
Finance company	77%	23%	45%	27%	28%
Home mortgages	60%	30%	37%	37%	26%

*Approximate percentages

There is a growing trend for people to secure desired goods and services when they want them rather than to wait until they have saved the money to purchase them. There is a tendency, too, for consumers to spend freely on large purchases with little interest in seeking kinds of information which would help them make the most intelligent decisions.

Rapid technological advances in the textile industry are producing fabrics of numerous blends and finishes which, when consumers do not keep abreast of the new knowledge, pose problems in the selection, care, and handling of these fabrics. When asked what they do when they are dissatisfied with a clothing purchase, the 90 Curry residents indicated that: 11 ignore it; 13 ignore it but buy nothing else from the store; and 24 tell their friends about their experiences. These attitudes worry many merchants because their businesses depend upon satisfied customers. Many merchants prefer that consumers complain directly to them.

The food market itself is also confusing, since there are nearly 8,000 items from which to choose. On the average, nearly a fifth of the family income is spent for food. Since the homemaker is the chief food buyer, she has the responsibility for selecting and purchasing food that will please the family and meet their nutritional needs at a cost the family can afford.

When asked if they plan their meals before going grocery shopping, 41 of the 84 Curry residents who answered this question said occasionally or never. When asked if they

plan their meals while shopping, 66 of these residents said occasionally or never.

Since there is more buying to be done, and more specialized and depersonalized markets are developing, educating the consumer becomes increasingly important.

Concerns

People lack knowledge about credit: its use, cost, and the credit responsibility of both buyer and seller. The seller frequently grants credit without checking the ability of the buyer to repay.

Unbiased information about products and services that will help families in making decisions about purchases must be provided.

Financial counseling for families experiencing financial stress should be available and publicized.

Emphasis on money management in schools, particularly for boys, to establish a better understanding of buying decisions, credit, and credit costs is urgently needed.

It is too easy to proclaim bankruptcy and be absolved of debts.

Recommendations

The committee recommends that:

- Bankruptcy laws be tightened and suggests that present laws be changed to permit publishing the names of people who go through bankruptcy, with the hope that this will have some hindering effect on those who are preparing to file.
- The Division of Continuing Education set up a graded money management course to be enforced at the court's discretion for anyone who experiences bankruptcy or is brought into small claims court.
- More emphasis be placed on the wage-earner program in bankruptcy cases. This allows for paying creditors over a period of time.
- Educational programs on the intelligent purchase of goods, money management, and consumer credit be taught to all students in our high schools.
- Merchants be encouraged to require minimum down payments and use the lay-away plan for their customers.
- The Extension Service conduct programs for families to enable them to become informed shoppers with good standards for judging quality and evaluating their buying

habits. They should also become aware of various sources of assistance available to them on consumer problems.

- That a workshop be set up especially geared to senior citizens, explaining their revised tax obligations.

COMMITTEE ON HUMAN RESOURCES

Cy Zeigler, Brookings	Miriam Christensen, Brookings
Rev. J.D. Gordon, Brookings	Theresa Badger, Brookings
Margaret Breuer, Brookings	Berneice Hewitt, Harbor
Millie Arzner, Harbor	Marian Rodgers, Brookings
Gladys Mann, Brookings	Ethel Bonotto, Gold Beach
Larry Hess, Gold Beach	Ed Christie, Gold Beach
Miriam Hansen, Gold Beach	Ted Miller, Gold Beach
Etta Goudy, Wedderburn	Arlena Hall, Gold Beach
Connie Neugart, Gold Beach	Don Tate, Langlois
Gilbert Rush, Port Orford	Bertha Bergstrom, Port Orford
Billie Smith, Langlois	Rev. Donald Parsons, Port Orford
Gold Beach High School Human Relations Class	



PUBLIC AFFAIRS

Land Use Committee Report

Curry County, known as "The Last Frontier" in the late 1920's and early 30's when it was first opened to traffic by the construction of Roosevelt Highway (101) also became Oregon's "experiment station" for land-use planning. By House Joint Resolution #3 of the Thirty-Eighth Legislative assembly, the State Planning Board was directed to make a land-use study in Curry County. Nearly 100 pages of Curry County land-use history, problems, and statistics were submitted by the board to the Thirty-Ninth Legislative assembly. As a result of this report, Oregon's first Land Use Law was enacted as Chapter 381, Oregon Laws 1937.

Under this law only three classes were recognized:

- Class I -- Timber lands
- Class II -- Interim grazing during reforestation
- Class III -- Agricultural and grazing lands

Under this law landowners, after group study and mutual agreement, effectively zoned most of the land outside of the National Forest boundary.

In Class III areas resident owners formed five control districts and successfully reduced the incidence of incendiary fires to almost nothing. This saved millions of dollars worth of valuable timber, and at the same time the sheep population was doubled. Perhaps land-use planning can accomplish as much during the next 30 years.

According to the 1960 census, Curry County led the state for percentage in increase in population. Following a drop from 1960 to 1967, the population trend is again upward. The committee believes that this trend will continue, particularly in retirement and recreational categories. The virgin timber harvest has already passed its peak, and the timber tax base will soon be greatly reduced under our present reforestation tax laws. With increasing demands for tax-supporting services, we must find other sources of revenue if individual ownership of real property as an American institution is to survive.

"Water, water everywhere and not a drop to drink." How dramatically this has been proven to be true in some of our uncontrolled subdivisions. During dry seasons many wells have gone dry unless they could be refurnished from the neighbors' drainfield. Adequate and safe water for domestic use can become a serious problem if steps are not taken soon to develop further municipal and rural water sources. Sewage disposal is also developing into a problem in many areas of the county.

Recommendations

The Land-Use Committee, after considering problems mentioned, makes the following recommendations:

— We respectfully request the Curry County Board of Commissioners, after intensive study and public hearings, to zone Curry County so that the community environment can be developed in an orderly manner for its best use and highest standard.

— In order to proceed in an orderly fashion, the County Board of Commissioners and the County Planning Commission are urged to establish lay advisory committees in each district to represent all socio-economic and geographic communities of the county. The purpose of the advisory committees would be to serve as a liaison with each community and to advise the Planning Commission and county commissioners about planning and zoning in their respective areas. The advisory committees would serve as a vital two-way educational and public relations instrument.

— Recognizing that an educational program must accompany any efforts in the area of land-use planning, the committee recommends that the Cooperative Extension Service join the Curry County Planning Commission in sponsoring public forums and other educational programs to point out the importance of land-use planning.

— Because the tax structure often determines land use, the committee recommends to the state legislature that other sources of revenue be found to serve as a property tax offset. If the voting public is completely informed on all of the tax problems, they may well support this tax revision with their votes.

— The Planning Commission should not approve a subdivision unless an adequate State Board of Health approved water supply and centralized sewage disposal system is included as part of the development. Public development should be subject to the same standards as private development.

— Water impoundments should be developed in suitable canyons for multiple-use purposes, such as domestic water supply, recreation, fish conservation, flood control, and power.

— The multipurpose use of land, both privately and publicly owned, to provide maximum values to the greatest number of people and to the total economy of the county, must be given major consideration if zoning is to be successfully carried out. Since the county is 66% publicly owned (see statistical appendix), responsible governmental agencies should participate, giving advice and assistance to the County Planning Commission in the development of an overall improvement program. Guidelines for this development should include the following suggestions:

--Public ownership should not be further expanded until areas presently owned have been developed for their best use. Public developments should be subject to the same standards as private developments.

--Special interest groups should be curbed in their enthusiasm for single-use restrictions such as "primitive areas" of wilderness areas without study and hearings in the communities affected.

--Limited highway access laws and regulations should not be used beyond traffic safety standards to control land use, except in conformity with Planning Commission approval.

--Logging and mining operations should leave their operational areas in as good or better condition for future uses than the condition existing before logging or mining in order to prevent stream pollution, erosion, and waste.

--In scenic areas, underground utility services should be used.

--Air and water pollution, garbage disposal, and litter control should be rigorously enforced by the State Sanitary Authority and county officials.

--The committee urges the state legislature to pursue the idea of a tax or deposit on beverage containers as an aid to cleaning up the eyesores caused by indiscriminate disposal.

--Recreational complex development, including hunting, fishing, golf courses, swimming, trail rides, boating, skiing, and others should be encouraged.

--To control fires, safe campfire areas and safeguards should be provided and fire hazards cleaned up.

--Schools should conduct educational programs to develop interest and pride in community appearance and high standards.

--Adult organizations, service clubs, farm organizations, etc., should study and sponsor development and improvement projects and make their recommendations for zoning to the planning commission.

--Minimum property standards (MPS) for low-cost housing, established by the Federal Housing Administration (FHA), the Veterans Administration, and the state building code should be required in all residential areas.

--Areas established for mobile homes and trailers should provide adequate water and sanitary facilities and maintain a good general appearance.

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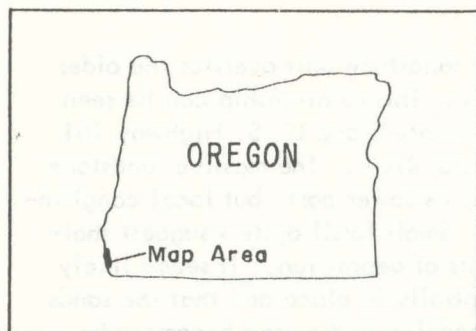
GEOLOGY OF CAPE SEBASTIAN STATE PARK AND ITS REGIONAL RELATIONSHIPS*

By

J. K. Howard and R. H. Dott, Jr.**

INTRODUCTION

The Cape Sebastian-Crook Point area of the southwest Oregon coast is unique in being one of the few areas in the Klamath-Siskiyou geologic province with preserved Late Cretaceous deposits. Because rocks of this age are only mildly deformed, they provide an important means for bracketing the age of the very severe deformation suffered by all older rocks of this region. At least two major late Mesozoic orogenic pulses can be recognized, the most severe of which affected pre-Lower Cretaceous rocks as demonstrated clearly in the Humbug Mountain area, 30 miles to the north and reported on in the March, 1961, *Ore.-Bin* (Koch and others, 1961). A subsequent disturbance deformed the Lower Cretaceous strata as well throughout the northern

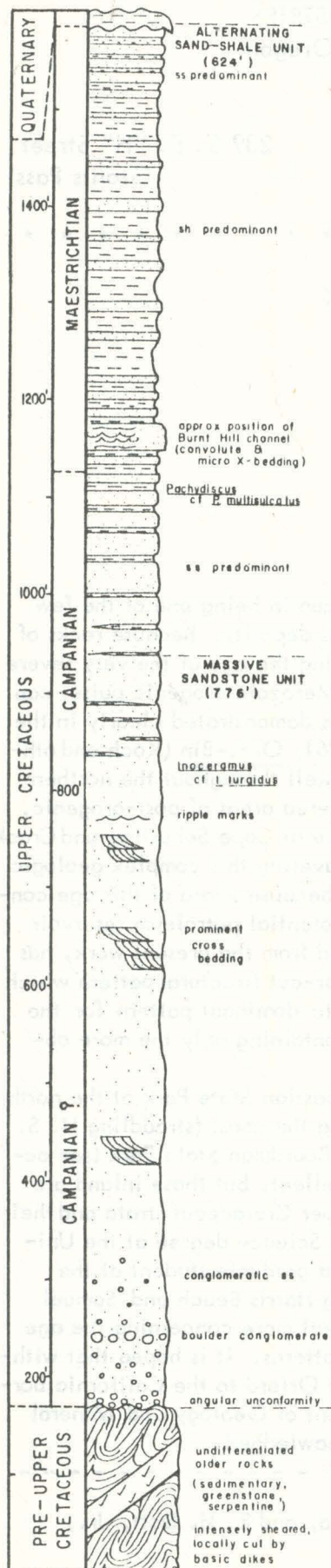


Siskiyou region. Study of the few scattered areas of post-orogenic, Upper Cretaceous deposits, such as those at Cape Sebastian and Crook Point, is not only of importance in unraveling this complex geologic history in detail, but is also important because strata of this age contain some of Oregon's most promising potential petroleum reservoir sandstones. A third, unexpected reward from the present work, has been the delineation of a relatively clear-cut structural pattern which provides a valuable clue to the probable dominant pattern for the whole coastal region, even for areas containing only the more obscure older rocks.

The area comprises all of Cape Sebastian State Park at the north and extends in a narrow belt south along the coast (straddling U. S. Highway 101) to the northernmost part of the presently undeveloped Samuel H. Boardman State Park (see accompanying geologic map). Private land intervenes. Coastal outcrops are excellent, but those inland are very sparse and generally deeply weathered. Results of investigation of the Upper Cretaceous strata and their structure have been used by Howard (1961) for a thesis subject for the Master of Science degree at the University of Wisconsin. Continuing doctoral research studies by J. M. Widmier, a graduate student at the University of Wisconsin, in the adjacent Brookings region to the south (including Harris Beach and Samuel Boardman Parks), and by Dott in the upper Pistol River area, hopefully will reveal more concerning the age and structure of the older rocks as well as extrapolation of regional structural patterns. It is hoped that within a year preliminary geologic mapping of the coast will be completed from Port Orford to the California border. Partial financial aid for the present study from the Oregon State Department of Geology and Mineral Industries and from the Wisconsin Alumni Research Foundation is gratefully acknowledged.

*A progress report of continuing field work in the area.

** J. K. Howard, geologist, The California Company, New Orleans, Louisiana, and R. H. Dott, Jr., Associate Professor, University of Wisconsin, Madison, Wisconsin.

COMPOSITE COLUMNAR SECTION
CAPE SEBASTIAN AREA, OREGON

PREVIOUS WORK

The area was originally mapped superficially by Butler and Mitchell in 1916 during a preliminary survey of the resources of Curry County, later by Treasher (1943), and finally by Wells (1955). None of these determined the structural relationships nor did they recognize the strata as being Upper Cretaceous. Instead, they classified them either as the Myrtle formation (Jurassic-Cretaceous) or as the Eocene Arago formation. The bulk of the Arago is now included in the Coaledo formation of the Coos Bay district, 60 miles north. Upper Cretaceous fossils were found at three localities near Cape Sebastian (see accompanying geologic map) by Howard during the summer of 1960. Soon thereafter Popenoe and others (1960) re-classified these rocks as Upper Cretaceous on the basis of fossils collected by J. S. Diller about 1900 while mapping the Port Orford quadrangle. Diller's fossils, although in the U. S. Geological Survey collections, were unknown to any workers during the intervening years.

STRATIGRAPHY

Pre-Upper Cretaceous

The oldest rocks recognized in the Cape Sebastian-Crook Point area are intensely sheared and folded sandstone and mudstones mixed with greenstone and serpentine. A pillow lava occurs within these strata in NW $\frac{1}{4}$ sec. 22, T. 38 S., R. 14 W. Their age is probably Late Jurassic or Early Cretaceous, but no fossils were found to substantiate this inference. Correlation is based solely upon similarity to sedimentary rocks of this age in the Humbug Mountain-Port Orford area 30 miles to the north (Koch and others, 1961).

Upper Cretaceous

Massive sandstone unit: A massive sandstone unit overlies the older rocks with marked angular unconformity. This relationship can be seen in lower Myers Creek and with less certainty along U. S. Highway 101 near Wildwood Inn and just north of Pistol River. The massive sandstone unit is typically quite conglomeratic in its lower part, but local conglomerate lenses may occur higher as well. Small fossil oysters suggest shallow, near-shore and beach environments of deposition. It seems likely that the conglomerate was formed essentially in place and that the sands infiltrated around beach pebbles and cobbles as the area became submerged. This unit grades upward from the conglomeratic base into a well-sorted, fine-grained sandstone 150 feet above the lower contact (see accompanying columnar section). Thin section studies of this rock indicate that it is a feldspathic wacke (Williams and others, 1954). The massive sandstone forms all of Cape Sebastian proper and crops out extensively along U. S. Highway 101, but particularly in the vicinity of Myers Creek bridge. Cross stratification, ripple marks and sole marks are numerous throughout the upper part of this unit, indicating that it was deposited in a current-agitated environment. The cross stratification is best seen on the sea cliffs on the northwest side of Hunters Cove. The fossil clams *Inoceramus turgidus*? and *Cucullaea*? were found within this unit on the south side of Cape Sebastian and on U. S. Highway 101, about 100 feet west of Myers Creek bridge.

Alternating sand-shale unit: The massive sandstone unit grades upward into an alternating, olive to gray, sand-shale unit which can easily be seen on the sea cliffs around Hunters Cove on the southeast side of



Looking northwest toward Cape Sebastian State Park from a point just south of the mouth of Myers Creek on U.S. 101. Stacks in foreground are pre-Upper Cretaceous sediments and greenstone; Cape Sebastian in background is Upper Cretaceous massive sandstone. Head of cove to right is Upper Cretaceous shale.

(Photo by Dott)

Cape Sebastian. It is also well exposed in a U. S. Highway 101 roadcut at the south end of the Pistol River bridge (sec. 19, T. 38 S., R. 14 W.). The contact between the two units was chosen at the first well-developed shale stratum, though shale lenses occur some distance below the contact. A true alternating sequence is developed within the first 100 feet of the second unit, and is characterized by sandstones averaging 3 inches in thickness, each separated by one foot of shale. Locally, however, the shales and sandstones range up to 10 feet in thickness. The sandstones contain fine cross-stratification throughout. Animal burrows and current sole markings occur on many stratification surfaces. A large, well preserved ammonoid, *Pachydiscus multisulcatus*? was found within this unit on the north side of Cape Sebastian (sec. 36, T. 37 S., R. 15 W.). It, together with *Inoceramus turgidus*? below, indicates a Late Cretaceous age. Additional fossils are also reported by Popenoe and others (1960), but most of the listed localities do not agree with the present land survey network so cannot be rechecked.

Of special note within the alternating sand-shale unit are channel-like sandstone bodies of fluvial or shallow marine origin. They are best exposed on the headlands north and south of Burnt Hill Creek (NW $\frac{1}{4}$ sec. 5, T. 39 S., R. 14 W.). This channel is composed of light tan, well-sorted, fine-grained sandstone quite similar to that of the underlying massive sandstone unit, but is characterized by prominent current features such as fine cross-stratification, sole markings, convolute laminations, and rolled-up sandstone balls. Convolute laminae have been recorded elsewhere only in the finer grain sizes and, where associated with cross lamination, have been attributed to intense hydraulic deformation, in particular to turbidity current action (Ten Haaf, 1956). This latter assumption is apparently unjustified, for no graded bedding or other evidence of turbidity current deposition was found in any of the local deposits. In fact the environment and mechanism envisioned for deposition of the sequence is hardly favorable for any significant turbidity current activity in spite of superficial similarities to known "turbidites". (See Dott and Howard, 1961). At least one channel-like body in the alternating sand-shale unit on the east side of Hunters Cove contains a thin zone of coarse conglomerate.

STRUCTURE

The fault system of this area is composed of two nearly perpendicular sets, the dominant one trending northwest, the other northeast. (See accompanying structure map.) Three major northwest-trending faults are herein named the East Boundary, Pistol River, and Crook Point faults. Movement along them is speculative, but on the Pistol River fault zone, which is half a mile wide, there is evidence of right lateral, strike slip movement. A fold axis truncated by this fault constitutes a piercing point (or displacement reference point) as defined by Crowell (1959). Offset of this fold axis suggests right lateral movement on this fault (that is, the northeast side apparently moved to the right or southeast). Offset on the northeast-trending set is more

clearly defined. In the vicinity of Myers Creek, a synclinal fold axis is truncated by the fault paralleling Myers Creek (sec. 8, T. 38 S., R. 14 W.). The continuation of this axis on the north side of the fault is located west of U. S. Highway 101, indicating left lateral displacement of about one-half mile. Employing the strain ellipsoid concept, left lateral displacement on the northeast-trending set should produce right lateral movement on the northwest-trending set and vice versa. (See stress diagram on structure map). Such seems to be the case.

At the south end of the area two small thrust faults have been recognized and named the Burnt Hill and Hostenaden thrusts. Together with several small folds, they indicate northward compression in that area, and as they lie on the west side of the Pistol River fault zone, this evidence tends to substantiate right lateral movement on that fault.

The lineation of stacks offshore from major shear zones is an interesting feature of this area. This is most noticeable south of Crook Point where large stacks are parallel and adjacent to the submerged portion of the Crook Point fault. Though less obvious, stacks of the older rocks are also present offshore to the northwest of the East Boundary and Pistol River faults. The relationship between the faults and aligned stacks is not entirely clear, but their association has proven valuable in locating offshore extensions of faults in the mapping of other coastal areas both to the north (see Koch and others, 1961) and to the south where J. M. Widmier is working.

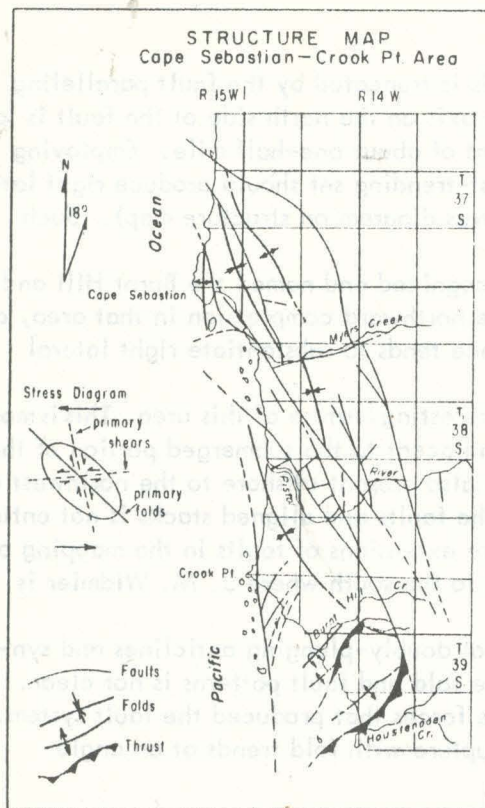
The Upper Cretaceous strata of this area are folded into a series of doubly-plunging anticlines and synclines with a general trend of N.30°W. The relationship between the fold and fault patterns is not clear. The folds may be primary structures formed simultaneously by the same forces that produced the fault system. This pattern also could be produced by secondary forces set up by a rupture with fold trends at an angle between 5° and 30° to a major fault (Moody and Hill, 1956).

REGIONAL HISTORICAL AND STRUCTURAL SYNTHESIS

Scattered Late Cretaceous deposits of the whole Klamath-Siskiyou province represent eroded remnants of a once far more extensive overlapping sequence which apparently blanketed much of the region after the last strong mid-Cretaceous orogenic pulse. The writers envision a rise in relative sea level in the Cape Sebastian area in Late Cretaceous (Campanian?) time resulting in a series of embayments into which rivers debouched sands and mud that accumulated on deltas and shallow shelves. As the sea level rose further, the energy level of the depositional environments decreased, and near the close of the Campanian epoch periodic influxes of mud produced the rhythmic alterations of sand and shale. The cyclic deposition presumably continued into the Maestrichtian epoch.

Because the topography was moderately irregular, and because marine transgression spanned practically all of Late Cretaceous time, the exact age of the basal "post-orogenic" deposits varies considerably from place to place. Judging from rather incomplete fossil evidence, transgression apparently began in "middle" Cretaceous time (Albian to Cenomanian) in the eastern Siskiyou region from Roseburg southeast through upper Grave Creek, Medford, and Ashland to Hornbrook, California, and south to Redding as it did in central Oregon (Popenoe and others, 1960). On the west, however, transgression did not commence until later Cretaceous time (probably Campanian) as evidenced around Cape Sebastian (this paper), just north of Port Orford (Koch and others, 1961), and at Dement Creek about 25 miles northeast of Port Orford (Popenoe and others, 1960).

The Cretaceous near Takilma and Waldo, Josephine County (near Oregon Caves), remains an enigma. Meager fossil evidence suggests an Early Cretaceous age (Hauterivian to Barremian) which would compare most closely with the Myrtle group of the Roseburg region (Popenoe and others, 1960). These strata have been examined by Dott, and their practically undeformed character as well as their lithology suggests that they are in fact "post-orogenic" and more akin to the later Cretaceous overlapping sequence. All known Myrtle strata were severely deformed during the mid-Cretaceous, but it is of course possible that this area, deep in the interior of the Siskiyou province, escaped effects of the last orogeny. This is unlikely, however, for the nearby Ashland batholith was apparently formed simultaneously or slightly after Myrtle deposition (102 million years ago according to Jaffe and others, 1959). Like practically all of the younger localities, this area contains a coarse basal conglomerate grading up through a thick massive sandstone unit to an upper rhythmically-alternating sandstone-shale unit. The similarity of all these sequences is indeed striking. Dott



feels that all physical stratigraphic evidence favors a later Cretaceous age in spite of biostratigraphic evidence. He suggests that those deposits should be compared to the Albian-Cenomanian ones of the Grave Creek and Medford areas.

Apparently most of Oregon was affected by the "middle" Cretaceous orogeny, and soon thereafter was invaded widely by the transgression of the sea eastward to the Mitchell-Blue Mountains region (Popenoe and others, 1960) and into half or more of the Klamath-Siskiyou region. "Middle" Cretaceous transgression is evidenced on all continents and is thought to represent a world-wide rise in sea level. The sea apparently covered the western two-thirds of Oregon and Washington. Therefore, Upper Cretaceous marine strata probably underlie practically all of that region. General regression of the sea occurred during the early Cenozoic as evidenced by complete absence of known Paleocene deposits and unconformable overlap of basal Eocene strata in the northern Siskiyou region.

Severe faulting occurred on the coast prior to deposition of Upper Cretaceous strata, but the faults discussed above have also been active during the Cenozoic. At Crook Point and north of Port Orford, Upper Cretaceous strata are in clear fault contact with older rocks. Scattered dikes and sills of rhyolitic and basaltic composition between Crook Point and Brookings are unaltered and appear to be relatively young; they are assumed to be related to the regional fault system.

Great shear zones along the coast are in marked contrast with the typical northeast-trending structural and metamorphic pattern of the interior Siskiyou province as indicated by Koch and others (1961). The present coastal structure, which is nowhere so clear as in the Cape Sebastian-Crook Point area, is regarded as a profound pattern superimposed upon the older structure along the western fringe of the province. Similarity of trends, similar apparent movement, and prevalence of large-scale shearing suggests a genetic relation with the San Andreas-Mendocino fault system and an extension of California "coast range structure" north well into Oregon. Dott believes that this structural pattern persists as far north as Bandon, 50 miles north of Cape Sebastian. It has been suggested that these great fault systems have resulted from counter-clockwise rotation of the Pacific Ocean basin relative to the continent (St. Amant, 1957); to gigantic twisting and shearing of blocks of the crust within the whole of western North America, and the great arcuate bend of Pacific Coast fold trends in the Klamath region (Carey, 1958); and to differential movement and tension within large "oceanic blocks" on the flanks of the recently-discovered East Pacific Rise. The Rise presumably passes from the equatorial Pacific beneath western California and out to sea again off southwestern Oregon (Menard, 1960). The present study clarifies the extent, pattern, probable types of movement and partial age of the great California fault systems in Oregon, but can not shed light upon their ultimate cause.

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* * * * *

GEOPHYSICAL EXPLORATION AUTHORIZED ON CONTINENTAL SHELF

The Department of the Interior announced on August 3 approval for permitting geophysical exploration by oil companies on the outer continental shelf of the Pacific Ocean off the Oregon and Washington coasts. Oil companies interested in doing exploratory work in federal offshore waters of these states must comply with the following conditions:

1. To obtain a permit from the regional oil and gas supervisor of the U.S. Geological Survey, Los Angeles, California.
2. To confine operations to such areas as are designated in the permit.
3. To file a stipulation with the regional supervisor to comply with requirements protecting and conserving the aquatic life in the designated area.

Companies authorized to conduct geological and geophysical explorations are not empowered to drill exploratory wells under a federal exploration permit, nor does the permit confer preference in obtaining oil and gas leases.

The announcement by the Department of the Interior will allow companies operating off the Oregon and Washington coasts to extend their geophysical surveys beyond the 3-mile limit. Shell Oil Company, Gulf Oil Corporation of California, and Union Oil Company of California have obtained exploration permits to explore in Oregon waters. State permits differ from federal in allowing core-hole drilling to a depth of 500 feet; no drilling can be done under the federal permit.

* * * * *

RECENT DEVELOPMENT WORK AT THE BUFFALO MINE

Recent development work at the Buffalo mine, long-time Grant County gold producer, has exposed the Constitution vein on the 600 level, 253 feet below the south end of the last known drift on the 400 level. The discovery followed two years of tunneling from a new hillside portal, in part following an old adit driven years ago. As shown on the accompanying map, about 1500 feet of tunnel have been driven on the new low level.

The Constitution vein was reached on the 600 level in early July, 1961, and by August 1 some 265 feet of drift had been driven on the vein, which is two to three feet wide and of generally good grade, carrying both gold and silver. The vein is similar in appearance to that stoped on the two levels above and contains, besides the gold and silver, pyrite, pyrrhotite, sphalerite, chalcopyrite, and galena in a gangue of quartz and calcite.

Prior to encountering the Constitution vein, the tunneling exposed several stringers and a narrow but well-defined vein in the drift marked "No. 3 vein" on map. These stringers and the vein improve markedly to the north and probably correspond to the No. 3 vein on the 400 level. Mr. James P. Jackson, Jr., mine owner and manager, plans to drift northward on the Constitution vein before starting stoping.

Of particular significance in the discovery is the demonstration that these veins, and presumably some of the other gold veins of northeastern Oregon, persist at depth and can be located and mined profitably.

Earlier work at the Buffalo and nearby mines was described in Department Bulletin 49, Lode mines of the central part of the Granite mining district, Grant County, Oregon, published in 1959.

* * * * *

EDEN RIDGE COAL EXPLORATION SLATED

A coal exploration crew has been assigned by Pacific Power & Light Company to conduct core drilling this summer in the Squaw Basin area near Eden Ridge in southeastern Coos County. Geological explorations by the company on Eden Ridge in 1956 and 1957 mapped two veins of sub-bituminous coal. Mining rights were subsequently obtained on 5,000 acres in connection with plans for a future steam-electric power plant to serve southwest Oregon. (Ore.-Bin, August, 1956.)

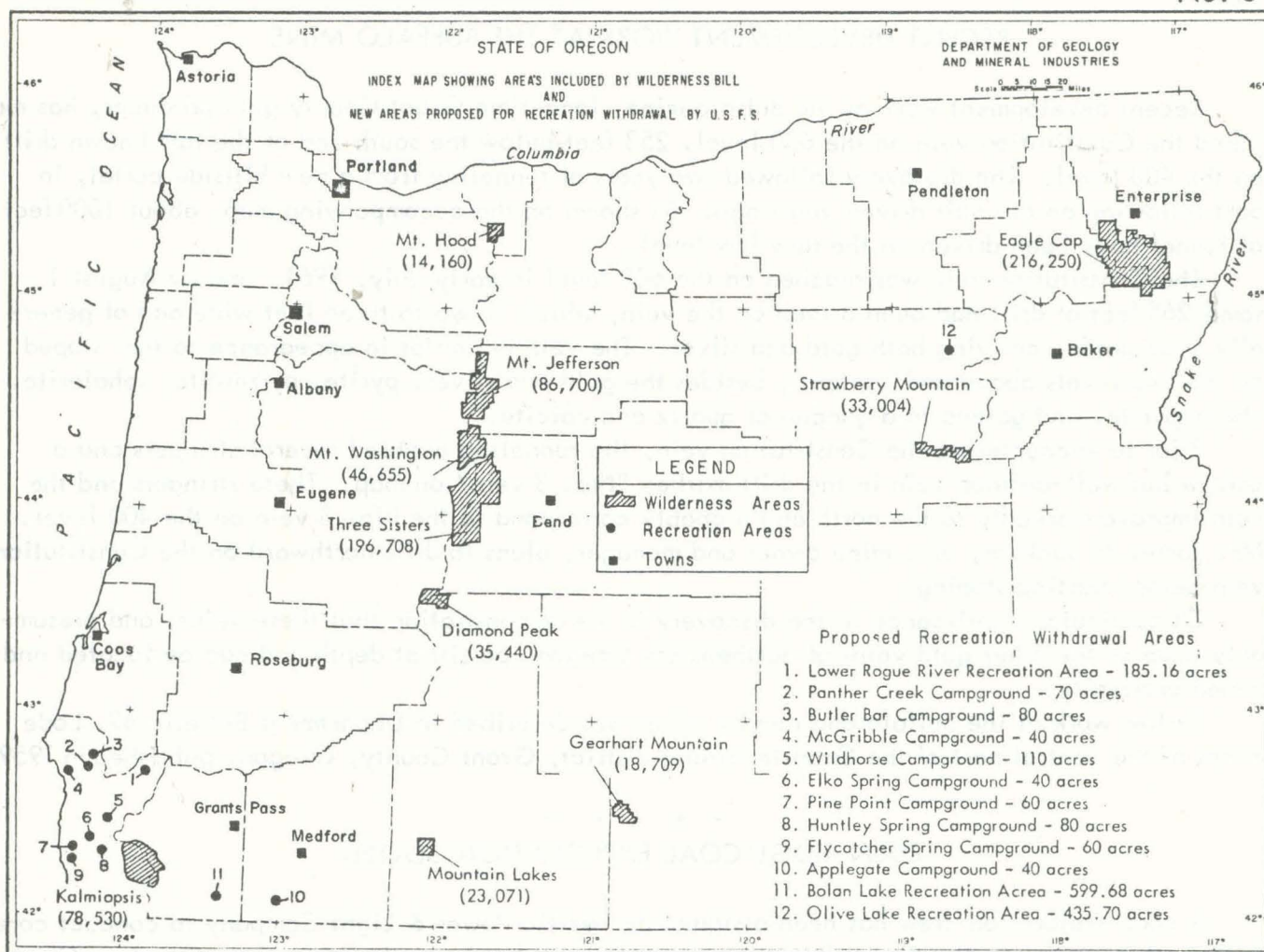
The Eden Ridge coal field is adjacent to the site of a proposed hydroelectric development on the South Fork Coquille River. The power company has a license application pending before the Federal Power Commission for the two-dam \$23,000,000 project. A 77,000 kilowatt powerhouse would be located at the north side of a 12-mile long bend in the river. It would be at the foot of a penstock which would drop the water 1600 feet down the side of Eden Ridge to drive the turbines and generators.

* * * * *

HANDBOOK ON TERTIARY STRATIGRAPHY AVAILABLE

A very useful addition to the literature has just been published in the form of a handbook of western Oregon and Washington stratigraphic units, consisting of 92 pages and 2 correlation charts. Original descriptions, supplements, and revisions heretofore widely scattered are brought together in a concise form in this handy reference booklet. Author and publisher is Walter Youngquist, Professor of Geology, University of Oregon, Eugene. The booklet, entitled "Annotated Lexicon of Names Applied to Tertiary Stratigraphic Units in Oregon and Washington West of the Cascade Mountains, with Bibliography", may be obtained for \$3.00 (postpaid) from the author, Box 5201 University Station, Eugene, Oregon.

* * * * *



WILDERNESS BILL NEARS SENATE ACTION

The highly controversial national wilderness bill, S 174, has been approved by the Senate Interior Committee and is nearing Senate action. As noted in the February, 1961, *Ore.-Bin*, this bill would exclude from mineral exploration millions of acres of national forest and public domain lands formerly subject to the general mining laws. The American Mining Congress points out that although an amendment to the bill empowers the President to authorize mining in an area if it be of greater public good than preservation of the wilderness, the bill would still prevent modern scientific prospecting, which is the first step in locating hidden mineral deposits, and would thus preclude the discovery of important mineral deposits in extensive unexplored areas holding great geologic promise.

Passage of the bill would affect 10 areas in Oregon totalling 749,227 acres (see wilderness-type areas on map above), and would make certain other areas subject to consideration for future inclusion in the wilderness system.

* * * * *

U. S. FOREST SERVICE ADDS TO RECREATION WITHDRAWALS

The U.S. Forest Service, through the Bureau of Land Management, has filed two applications for withdrawal of 12 parcels of land totalling 1,800 acres exclusively for recreation use. These lands are mainly in Curry, Jackson, and Josephine Counties and are noted on the above map. The withdrawal application states that the land is withdrawn "from all forms of appropriation under the public land laws including the general mining laws but excepting the mineral leasing laws". Those wishing to file objections on the withdrawals have 30 days from July 26 to file their statements with the Bureau of Land Management, 710 N. E. Holladay Street, Portland 12, Oregon. If circumstances warrant it, a public hearing will be held.

* * * * *

BENEFICIATION OF
SOUTHWEST OREGON BEACH SANDS
BY HIGH TENSION
AND MAGNETIC DRY PROCESSING

BY

J. F. HUNT

STATE DEPT. OF GEOLOGY & MINERAL INDUSTRIES
FIELD OFFICE
521 N.E. "E" Street P. O. Box 417
Grants Pass, Oregon 97526

PRESENTED AT THE
1960 PACIFIC NORTHWEST
METALS AND MINERALS CONFERENCE
APRIL 29, 1960
PORTLAND, OREGON

ABSTRACT

THE AUTHOR DESCRIBES THE ACTUAL PROCESSING OF THE GOVERNMENT STOCK-PILE OF CHROMIFEROUS SANDS, LOCATED AT COQUILLE, OREGON, DURING 1955 AND 1956. A GENERAL HISTORY OF THE STOCKPILE IS GIVEN, ALONG WITH A BACKGROUND OF THE GEOLOGY AND ORIGIN OF THESE SANDS. THE FLOW SHEET USED IN THIS OPERATION IS OUTLINED IN DETAIL, AND THE MINERALS WON FROM THE STOCKPILE BY HIGH TENSION AND MAGNETIC PROCESSING ARE DISCUSSED AS TO THEIR PURITY AND SALEABILITY. AMONG THESE MINERALS ARE CHROMITE, ILMENITE, MAGNETITE, ZIRCON, GARNET, RUTILE, MONAZITE, GOLD, AND PLATINUM. PLANNED POST-STOCKPILE OPERATIONS ON THE PRESENT BEACH DEPOSITS ARE DISCUSSED. THESE OPERATIONS WOULD HAVE BEEN CARRIED OUT TO SET UP A CONTINUOUS INTEGRATED MINING AND BENEFICIATION PROJECT, EXCEPT FOR UNFORESEEN CIRCUMSTANCES WHICH DICTATED THE CLOSING OF THE OPERATIONS AT THE EXHAUSTION OF THE GOVERNMENT STOCKPILE. THE PAPER IS ILLUSTRATED WITH MAPS, FLOW SHEETS, CHARTS, AND PHOTOGRAPHS OF STOCKPILE, PLANT, AND EQUIPMENT.

HISTORY AND BACKGROUND

CHROMIFEROUS SANDS, COMMONLY KNOWN AS "BLACK SANDS" BECAUSE OF THEIR COLOR, ARE FOUND BOTH IN THE PRESENT BEACHES AND ON RAISED MARINE TERRACES ALONG THE SOUTHERN OREGON COAST IN COOS AND CURRY COUNTIES. THESE DEPOSITS SEEM TO BE CONCENTRATED ON THE LOWER TERRACES BETWEEN CAPE ARAGO AND THE TOWN OF PORT ORFORD, AND IN THE SOUTH SLOUGH REGION (SEE USGS MAP, FIG. NO. 1). THIS BLACK SAND OCCURS IN LAYERS AND LENSES THAT RANGE IN THICKNESS FROM A FEW INCHES UP TO 42 FEET; IN WIDTH, FROM A FEW TONS OF FEET TO MORE THAN 1,000 FEET AND, IN LENGTH, FROM A FEW HUNDRED FEET TO A MILE OR MORE. THE TERRACED DEPOSITS ARE COVERED WITH 1 TO 75 FEET OF SAND, CLAY, AND GRAVEL. BESIDES CHROMITE, OTHER VALUE MINERALS COMMON IN THESE BLACK SANDS INCLUDE ILMENITE, MAGNETITE, ZIRCON, GARNET, RUTILE, MONAZITE, GOLD, AND PLATINUM. OTHER RELATIVELY LESS VALUABLE MINERALS, OR THOSE FOR WHICH NO LARGE USE HAS BEEN FOUND, CONSIST OF QUARTZ, OLIVINE, PYROXENE, AND EPIDOTE, WHICH ARE CONSIDERED THE GANGUE MINERALS IN THESE DEPOSITS.

ALTHOUGH THE ULTIMATE SOURCE OF THE CHROMITE IN THESE BLACK SANDS IS THE MORE OR LESS SERPENTINIZED ULTRAMAFIC ROCK IN THE NEARBY COAST RANGE AND KLAMATH MOUNTAINS, MUCH OF THE CHROMITE PROBABLY HAS BEEN REWORKED FROM THE TERTIARY SEDIMENTARY ROCKS. TERTIARY SEDIMENTS AT THE NORTHERN END OF THE AREA ARE KNOWN TO CONTAIN CHROMITE, WHICH MUST HAVE BEEN ERODED OUT OF THE PERIDOTITES AND SERPENTINES. AFTER BEING RELEASED FROM THE ORIGINAL SOURCE, SOME OF THE CHROMITE WAS DEPOSITED IN THE TERTIARY SEDIMENTS, AND THEN RELEASED AGAIN, AND CONCENTRATED IN THE PRESENT TERRACES.

MODERN BENEFICIATION METHODS. THIS CHROMITE WOULD THEN BE SHIPPED TO THEIR SPOKANE SMELTER FOR CONVERSION INTO FERROCHROMIUM ALLOY. ANY OTHER MINERALS REMOVED ALONG WITH THE CHROMITE WERE THE PROPERTY OF PNA, TO BE UPGRADED, PURIFIED, AND SOLD ON THE OPEN MARKET. I ACCEPTED A POSITION AT THIS TIME WITH PACIFIC NORTHWEST ALLOYS AS WORKS MANAGER OF THIS PROJECT. WE BELIEVE WE WERE THE FIRST FERROALLOY PRODUCER IN THE U. S. TO UPGRADE SUCH LOW GRADE DOMESTIC ORES AND PROCESS THEM INTO HIGHLY USABLE AND COMMERCIALY ACCEPTABLE VACUUM PRODUCED FERROCHROMIUM.

GROUND CLEARING AND LEVELING TO PUT UP THIS MINERAL BENEFICIATION PLANT ADJACENT TO THE STOCKPILE WAS STARTED IN OCTOBER, 1954. MINERAL PROCESSING STARTED SIX MONTHS LATER, IN APRIL, 1955. COMPLETION OF THE STOCKPILE WAS ACCOMPLISHED IN AUGUST, 1956 (SEE FIGS. NO. 2 AND NO. 3).

AS THE STOCKPILE WAS BUILT UP, THE HUMPHREYS GOLD CORPORATION FED IT WITH A HEAVY MINERAL CONCENTRATE PRODUCED BY SPIRALS FROM THE LAGOONS OPERATION; AND THE KROME CORPORATION WITH A CONCENTRATE PRODUCED BY WET TABLING FROM THE 7 DEVILS MINE. THE TOTAL STOCKPILE VARIED CONSIDERABLY, IN COMPOSITION, FROM TONNAGE TO TONNAGE, BUT RAN FROM 54% TO 58% CHROMITE, 12% TO 20% ILMENITE, 3% TO 4% MAGNETITE, 12% TO 17% GARNET, 3% TO 5% ZIRCON, AND UP TO 11% SCRAP OR GANGUE MINERALS.

FLOW SHEET

TO RECOVER THESE MINERALS AND UPGRADE THEM TO SALEABLE PRODUCTS, THE FOLLOWING FLOW SHEET WAS USED (SEE ACCOMPANYING FLOW SHEET, FIG. NO. 4).

THE STOCKPILE ORE IS BROUGHT INTO THE SCREENING AND WASHING PLANT BY MEANS OF A MUCKER DRAGLINE, USING A $3/4$ YARD CRESCENT BUCKET WHICH DUMPS

THE ORE THROUGH A GRIZZLEY INTO A HOPPER. BY MEANS OF A SCREW IN THE BOTTOM OF THE HOPPER, THE ORE IS CONVEYED TO A Poidometer AUTOMATIC WEIGHING MACHINE FOR ORE TONNAGE RECORDS. AT THIS SAME POINT, THE ORE IS AUTOMATICALLY SAMPLED FOR ANALYSES AND MOISTURE DETERMINATIONS. AFTER WEIGHING, THE Poidometer DELIVERS THE ORE TO A BUCKET ELEVATOR FEEDING A WET VIBRATING 20 MESH SCREEN WHICH BREAKS UP ORE CONGLOMERATES AND REMOVES FOREIGN WASTE MATERIAL. THE SCREEN UNDERAGE FLOWS INTO THE SUMP OF A WILFLEY SAND PUMP WHICH PUMPS THE SLURRY TO A DEWATERING CONE, THE UNDERAGE FROM WHICH DROPS INTO A DEWATERING SCREW (THE CONE IS NOT SHOWN IN THE FLOW SHEET). THE DEWATERED PULP, CONTAINING ABOUT 15% MOISTURE, IS ELEVATED BY MEANS OF A CHEVRON STACKER BELT AND IS DROPPED INTO PILES ON A CONCRETE DRAIN SLAB. THESE PILES OF SAND WILL DRAIN TO ABOUT 9% MOISTURE AND ARE THEN CHARGED INTO AN OIL FIRED ROTARY DRYER BY MEANS OF A FRONT END LOADER FEEDING A CONTINUOUS BUCKET ELEVATOR.

THE SAND EMERGES FROM THE DRYER AT AROUND 300° F., DROPPING INTO THE BOOT OF A CHAIN ELEVATOR WHICH DELIVERS IT TO A 100 TON DRY, HEAVY SAND, STORAGE TANK. FLOWING FROM THE BOTTOM OF THIS TANK, THE HOT SAND IS FED BY MEANS OF AN ELEVATOR THROUGH A DISTRIBUTOR BOX TO A CARPCO HIGH TENSION SEPARATOR SYSTEM, CONSISTING OF EIGHT ROTORS. THIS MACHINE SEPARATES THE CONDUCTOR MINERALS, CONSISTING OF CHROMITE, MAGNETITE, ILMENITE, RUTILE, GOLD, AND PLATINUM, FROM THE NONCONDUCTOR MINERALS, CONSISTING OF ZIRCON, GARNET, AND QUARTZ, BY A HIGH VOLTAGE DISCHARGE. THE CONDUCTOR MINERALS ARE THROWN FROM THE SPINNING ROTORS, AND ARE CALLED THE "THROWN FRACTION." THE NONCONDUCTOR MINERALS ARE PINNED TO THE SPINNING ROTORS AND HAVE TO BE BRUSHED OFF. THESE NONCONDUCTORS ARE CALLED THE "PINNED FRACTION."

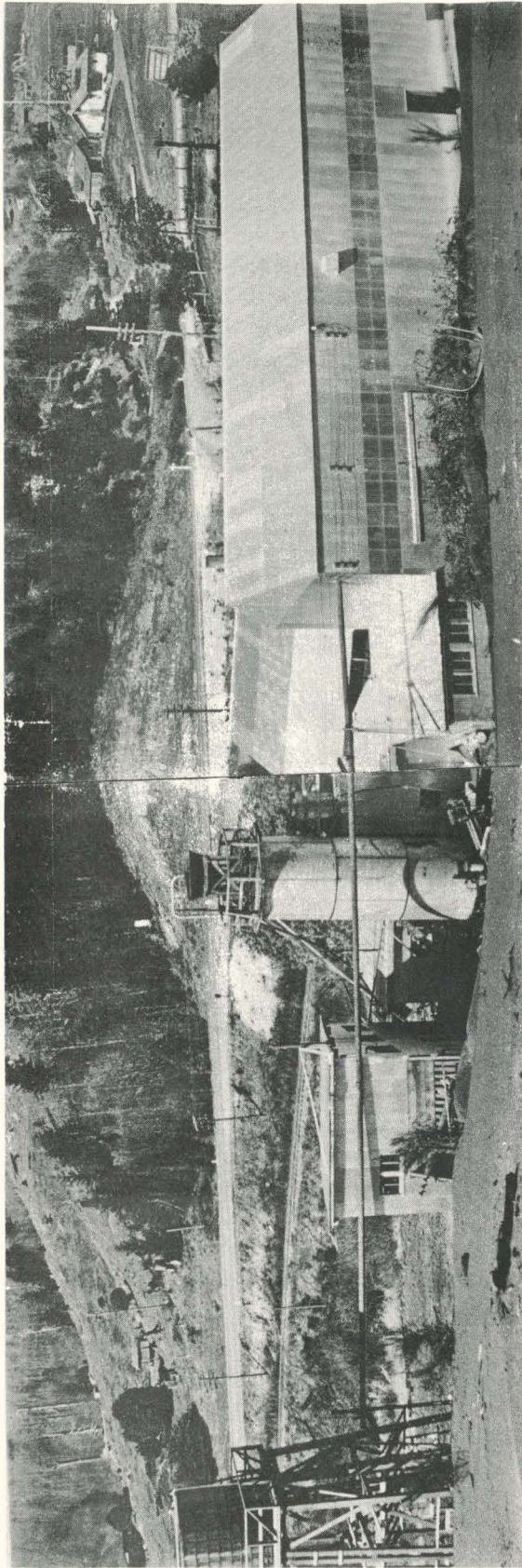


FIGURE 3

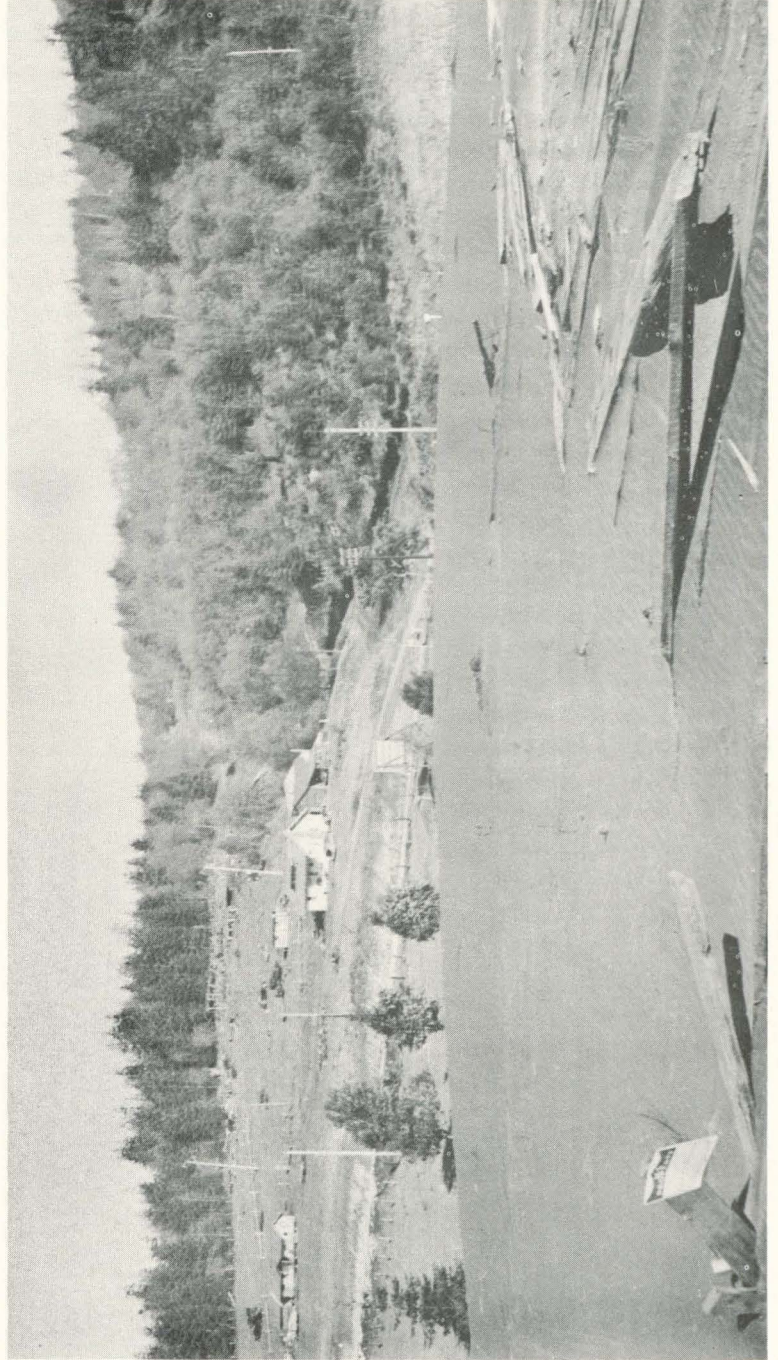
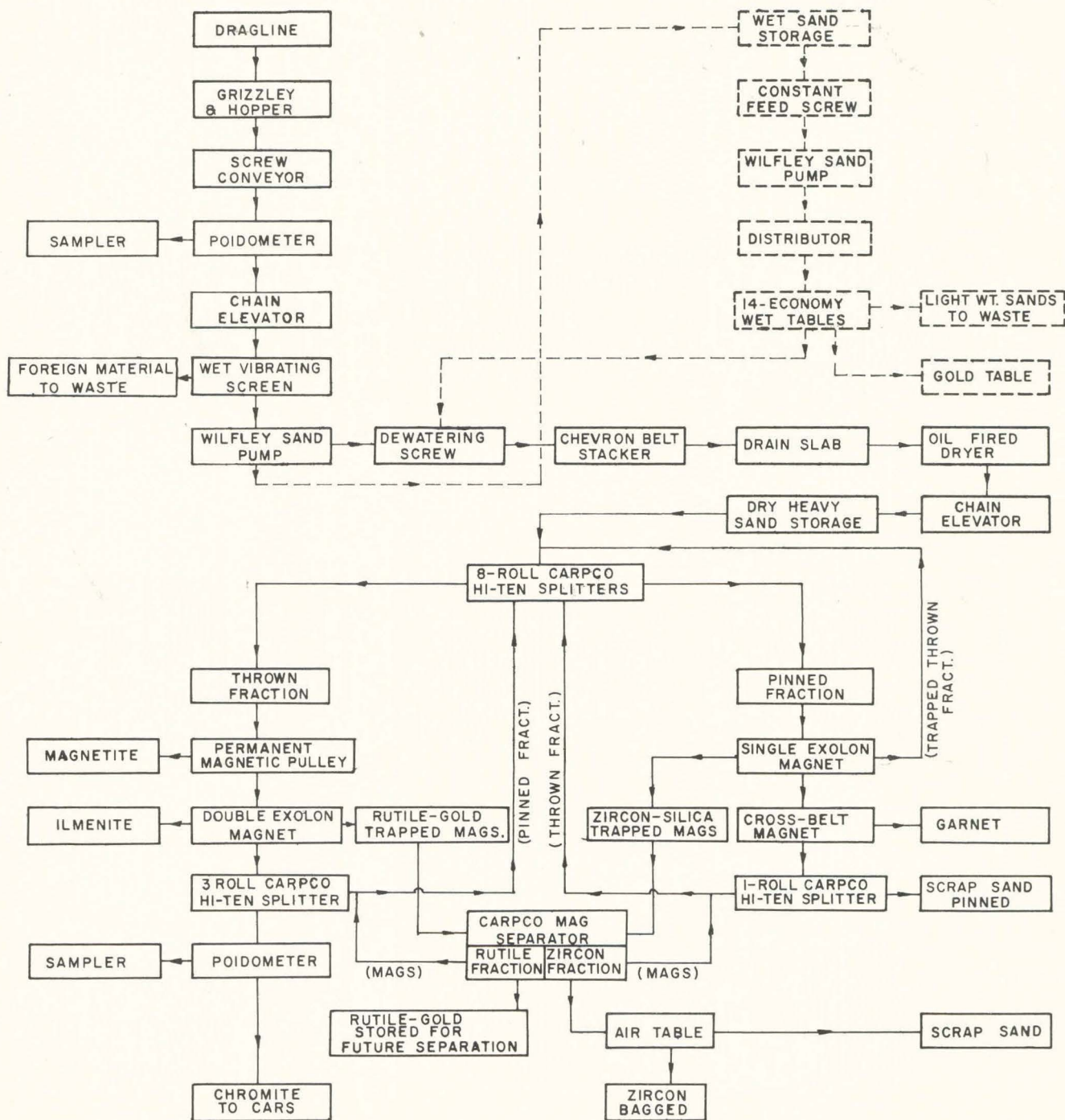


FIGURE 2

FLWSHEET COQUILLE DIV. PLANT-PACIFIC NORTHWEST ALLOYS, INC.



NOTE:

BROKEN LINES INDICATE INSTALLED
EQUIPMENT NOT IN USE AT PRESENT

COQUILLE, OREGON
AUGUST 25, 1955
- J. F. HUNT

THE MINERALS IN THE THROWN FRACTION ARE THEN COLLECTED BY A SYSTEM OF CONVEYORS AND ELEVATORS AND PASSED OVER A PERMANENT MAGNETIC PULLEY, WHICH PULLS OUT SALEABLE MAGNETITE. THE REMAINDER OF THIS FRACTION THEN PASSES THROUGH AN INDUCED ROLL EXOLON MAGNETIC SEPARATOR WHICH PULLS OUT THE ILMENITE AS A SALEABLE PRODUCT, PULLS OUT THE SEMICONCENTRATED CHROMITE AND PASSES THROUGH THE NONMAGNETIC RUTILE AND GOLD FRACTION. THE SEMICONCENTRATED CHROMITE IS THEN FED TO THREE ROTORS OF ANOTHER CARPCO HIGH TENSION SEPARATOR, WHICH CLEANS IT UP TO A 42% MINIMUM Cr_2O_3 CHROMITE WHICH IS THEN READY FOR SHIPMENT TO THE ALLOY SMELTER. THIS FINISHED CHROMITE IS WEIGHED ON A POIDOMETER AND SAMPLED BEFORE SHIPMENT. THE RUTILE-GOLD FRACTION THAT PASSES THROUGH THE EXOLON MAGNET, ALONG WITH TRAPPED MAGNETICS, IS SENT TO A CARPCO INDUCED ROLL MAGNETIC SEPARATOR, WHICH REMOVES THE REMAINING MAGNETICS WHICH, IN TURN, ARE CONVEYED BACK TO THE HEAD FEED OF THE 8 ROTOR CARPCO HIGH TENSION SEPARATOR, AND PASSES THE RUTILE-GOLD FOR STORAGE AND FUTURE SEPARATION.

LIKewise, THE MINERALS IN THE PINNED FRACTION ARE COLLECTED AND PASSED DIRECTLY THROUGH ANOTHER INDUCED ROLL EXOLON MAGNETIC SEPARATOR, WHICH PULLS OUT THE TRAPPED CONDUCTORS WHICH, IN TURN, ARE CONVEYED BACK TO THE HEAD FEED OF THE 8 ROTOR CARPCO MACHINE. THIS EXOLON ALSO PULLS OUT A SEMICONCENTRATED GARNET, WHICH IS PASSED TO A CROSS-BELT MAGNET FOR PULLING OUT AND PRODUCING A SALEABLE GARNET. THE NONMAGNETIC ZIRCON AND SILICA FRACTION PASS THROUGH THE EXOLON. THIS LATTER FRACTION, ALONG WITH TRAPPED MAGNETICS, IS SENT TO THE CARPCO INDUCED ROLL MAGNETIC SEPARATOR WHICH REMOVES THE MAGNETICS WHICH, IN TURN, ARE CONVEYED BACK TO THE HEAD FEED OF THE CARPCO 8 ROTOR

MACHINE AND PASSES THE ZIRCON-SILICA TO A GRAVITY AIR TABLE FOR REMOVAL OF THE SILICA AND PRODUCTION OF SALEABLE ZIRCON. THE NONMAGNETICS COMING FROM THE CROSS-BELT MAGNET ARE THEN FED TO THE FOURTH ROTOR OF THE OTHER CARPCO HIGH TENSION SEPARATOR, WHICH PRODUCES A THROWN FRACTION TO BE RETURNED TO THE HEAD FEED OF THE 8 ROTOR CARPCO AND PINS OUT A SCRAP THROW AWAY SAND.

THE BROKEN LINES IN THE FLOW SHEET INDICATE PROCESSING AND EQUIPMENT THAT WAS INSTALLED BUT NOT USED AFTER A FEW WEEKS' RUN. THIS EQUIPMENT OCCURS IN THE FLOW SHEET BETWEEN THE WILFLEY SAND PUMP FOLLOWING THE WET VIBRATING SCREEN AND THE DEWATERING SCREW AND CONSISTED OF A WET SAND STORAGE TANK DELIVERING ITS CHARGE TO A CONSTANT FEED SCREW, THENCE TO A SAND PUMP, PUMPING THE SLURRY TO A DISTRIBUTOR FEEDING 14 ECONOMY WET TABLES. THESE TABLES EXTRACTED THE LIGHT WEIGHT SANDS (PRIMARILY SILICA), WHICH WERE SLUICED TO WASTE, TOOK OFF A TOP, EXTRA HEAVY MINERAL CONCENTRATE (PRIMARILY MAGNETITE AND GOLD AND PLATINOIDS) WHICH WAS LAUNDERED TO ANOTHER SMALLER WET TABLE FOR REMOVAL OF GOLD AND PLATINOIDS, AND DELIVERED THE REGULAR HEAVY MINERAL CONCENTRATE, BY LAUNDERS, TO THE DEWATERING SCREW.

BUT, DUE TO THE RELATIVELY LOW PERCENTAGE OF LIGHT WEIGHT SCRAP MINERALS (AROUND 10%) IN THE STOCKPILE, IT WAS FOUND UNNECESSARY TO REMOVE THIS FRACTION BY THE TABLES, SINCE THE CARPCO SEPARATORS COULD HANDLE AND DISPOSE OF IT QUITE EASILY. AS FOR THE GOLD CIRCUIT, IT WAS FOUND OUT THE CONCENTRATES IN THIS STOCKPILE HAD BEEN PREVIOUSLY HIGH-GRADED FOR GOLD DURING THE PRIMARY GRAVITY SEPARATION, THEREFORE, THERE WAS NOT ENOUGH GOLD LEFT IN THE STOCK-PILE TO ALLOW AN ECONOMICAL OPERATION OF THIS CIRCUIT.

PRINCIPLE OF OPERATION OF THE CARPCO HIGH TENSION SEPARATOR

THE HIGH TENSION (OR ELECTRODYNAMIC) SEPARATOR SEPARATES ONE MINERAL FROM ANOTHER BY THE DIFFERENCE IN ELECTRICAL CONDUCTIVITY OF THE MINERALS; WHEREAS A MAGNETIC SEPARATOR SEPARATES MINERALS BECAUSE OF THEIR DIFFERENCES IN MAGNETIC SUSCEPTIBILITY (SEE FIGS. NO. 5, 6, 7, 8, 9, AND 10).

BY A COMBINATION OF THESE TWO TYPE MACHINES, ALONG WITH USING THE ADVANTAGE OF DIFFERENCES IN SPECIFIC GRAVITY, WHERE NECESSARY, MANY SUITES OF MINERALS CAN BE SEPARATED (SEE SEPARATION CHARACTERISTICS OF MINERALS CHART, FIG. NO. 11).

HIGH TENSION SEPARATION SHOULD NOT BE CONFUSED WITH ELECTROSTATIC SEPARATION. AN ACTUAL ELECTRICAL CURRENT FLOW TAKES PLACE IN A HIGH TENSION SEPARATOR IN THE FORM OF A CORONA DISCHARGE WHICH PLACES AN ELECTRICAL CHARGE ON THE MINERAL PARTICLES BEING PROCESSED. IN AN ELECTROSTATIC SEPARATOR, THE MINERALS MUST BE ELECTRICALLY CHARGED IN SOME MANNER OR OTHER BEFORE ENTERING THE SEPARATION SYSTEM. HAVING BEEN CHARGED, THE MASS OF MINERALS ARE THEN PASSED BETWEEN POSITIVE AND NEGATIVE ELECTRODES, THE POSITIVELY CHARGED PARTICLES BEING DEFLECTED TOWARD THE NEGATIVE ELECTRODE AND THE NEGATIVELY CHARGED PARTICLES BEING DEFLECTED OR ATTRACTED TOWARD THE POSITIVE ELECTRODE.

IN THE CARPCO HIGH TENSION SEPARATOR, THE MIXTURE OF MINERALS IS FED THROUGH A DISTRIBUTION HOPPER ONTO A HORIZONTAL ELECTRICALLY GROUNDED SPINNING ROTOR (SEE FIG. NO. 12). THIS ROTOR CARRIES THE MINERAL PARTICLES THROUGH A SPRAY OF ELECTRONS OR CORONA DISCHARGE CREATED BY A HIGH VOLTAGE CHARGED WIRE

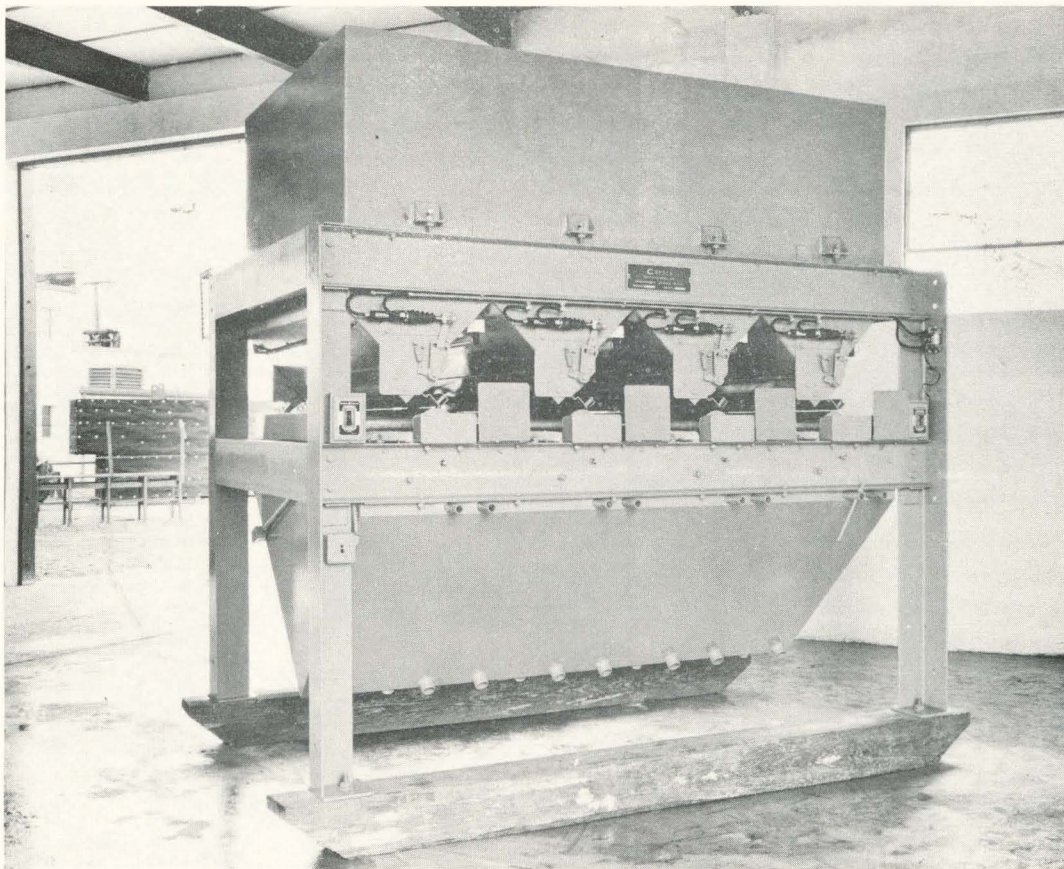
ELECTRODE WHICH IS BEAMED OR POINTED AT THE SPINNING, GROUNDED ROTOR. EVERY MINERAL PARTICLE ACCEPTS THE CHARGE THROWN OFF BY THE WIRE ELECTRODE. THE CONDUCTIVE PARTICLES IMMEDIATELY DISSIPATE THIS CHARGE AND, DUE TO THE TANGENTIAL FORCES OF THE SPINNING ROTOR, ARE THROWN FORWARD INTO A THROWN OR CONDUCTOR MINERAL HOPPER. THE NONCONDUCTIVE PARTICLES ACCEPT AND HOLD ONTO THIS CHARGE, WHICH IS OPPOSITE TO THE CHARGE OF THE ROTOR, AND CONSEQUENTLY ARE PINNED TO, OR STICK TO THE SPINNING ROTOR. THESE PARTICLES ARE CARRIED TO THE BACK OF THE ROTOR AND BRUSHED OFF INTO A PINNED OR NONCONDUCTOR MINERAL HOPPER. AS IN MOST TYPES OF MINERAL SEPARATORS, THERE IS A MIDDLEINGS HOPPER, IF REQUIRED, TO CATCH AGGLOMERATED CONDUCTOR AND NONCONDUCTOR PARTICLES, AND TO ALLOW THE SYSTEM TO PRODUCE HIGHER PURITY CONCENTRATES. THESE MIDDLEINGS ARE USUALLY CIRCULATED TO HEAD FEED.

THE HIGH VOLTAGE WHICH PRODUCES THE CORONA DISCHARGE IN THE CARPCO SEPARATOR IS PRODUCED BY A SPECIALLY DESIGNED DC RECTIFIER SYSTEM. VOLTAGES USED VARY FROM 25,000 TO 40,000.

DISCUSSION OF MINERAL VALUES AND SALEABILITY

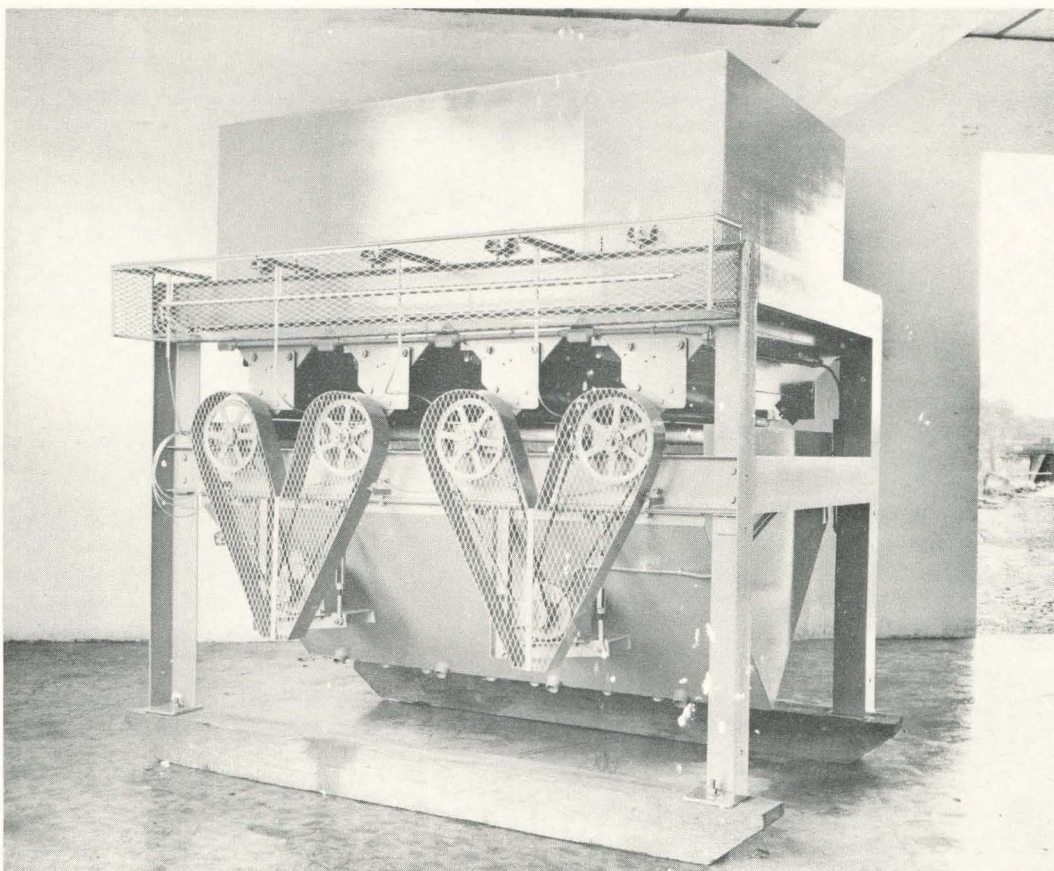
THE COQUILLE PLANT, WHICH COST IN THE NEIGHBORHOOD OF \$300,000, INCLUDING CLEARING OF THE PLANT SITE, BUILDINGS, EQUIPMENT AND ALL, AVERAGED AROUND 175 TONS PER DAY OF STOCKPILE FEED, AFTER BREAKING IN.

FROM THIS FEED WERE PRODUCED 80 TO 90 TONS OF CHROMITE PER DAY, ASSAYING 42% TO 43% Cr_2O_3 , WITH A CR-Fe RATIO OF AROUND 1.5:1.0. ALL THIS BENEFICIATED CHROMITE WAS SHIPPED IN BULK RAILROAD CARS (EITHER HOPPERS OR GONDOLAS) TO THE SPOKANE PLANT OF PACIFIC NORTHWEST ALLOYS, WHERE IT WAS PROCESSED



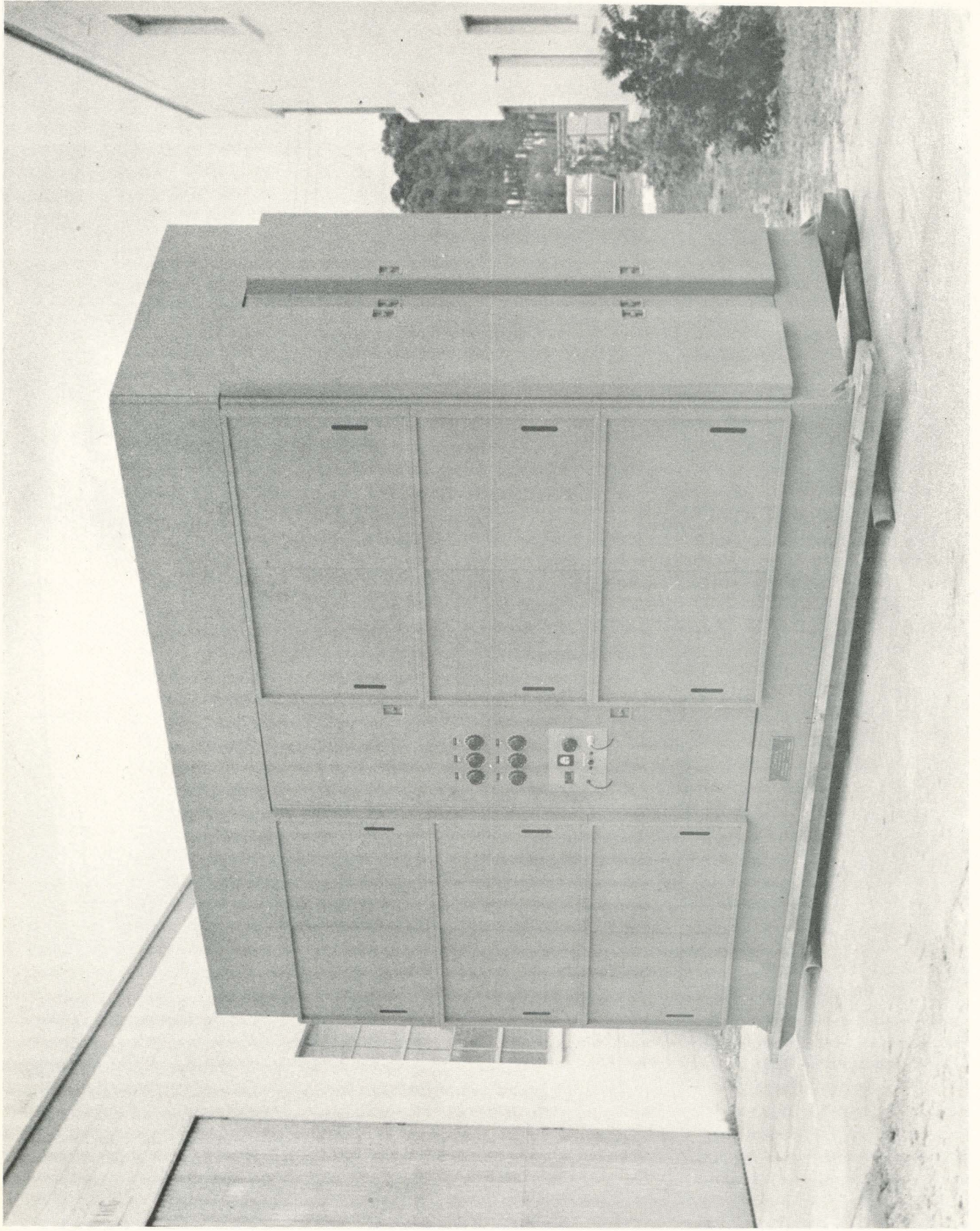
OPERATING SIDE CARPCO HT-460 HIGH TENSION SEPARATOR
TYPE USED AT COQUILLE PLANT

FIGURE 5



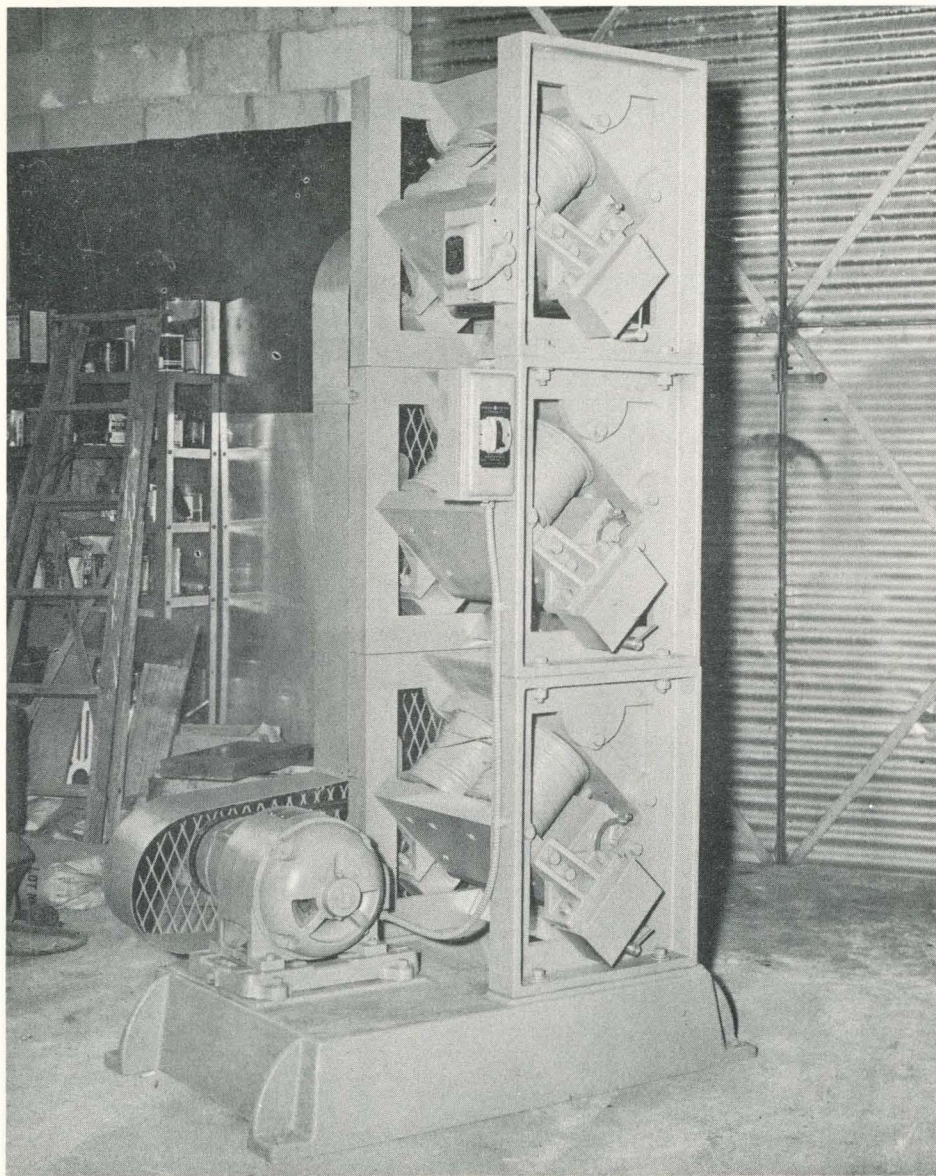
REAR VIEW CARPCO HT-460 HIGH TENSION SEPARATOR
TYPE USED AT COQUILLE PLANT

FIGURE 6



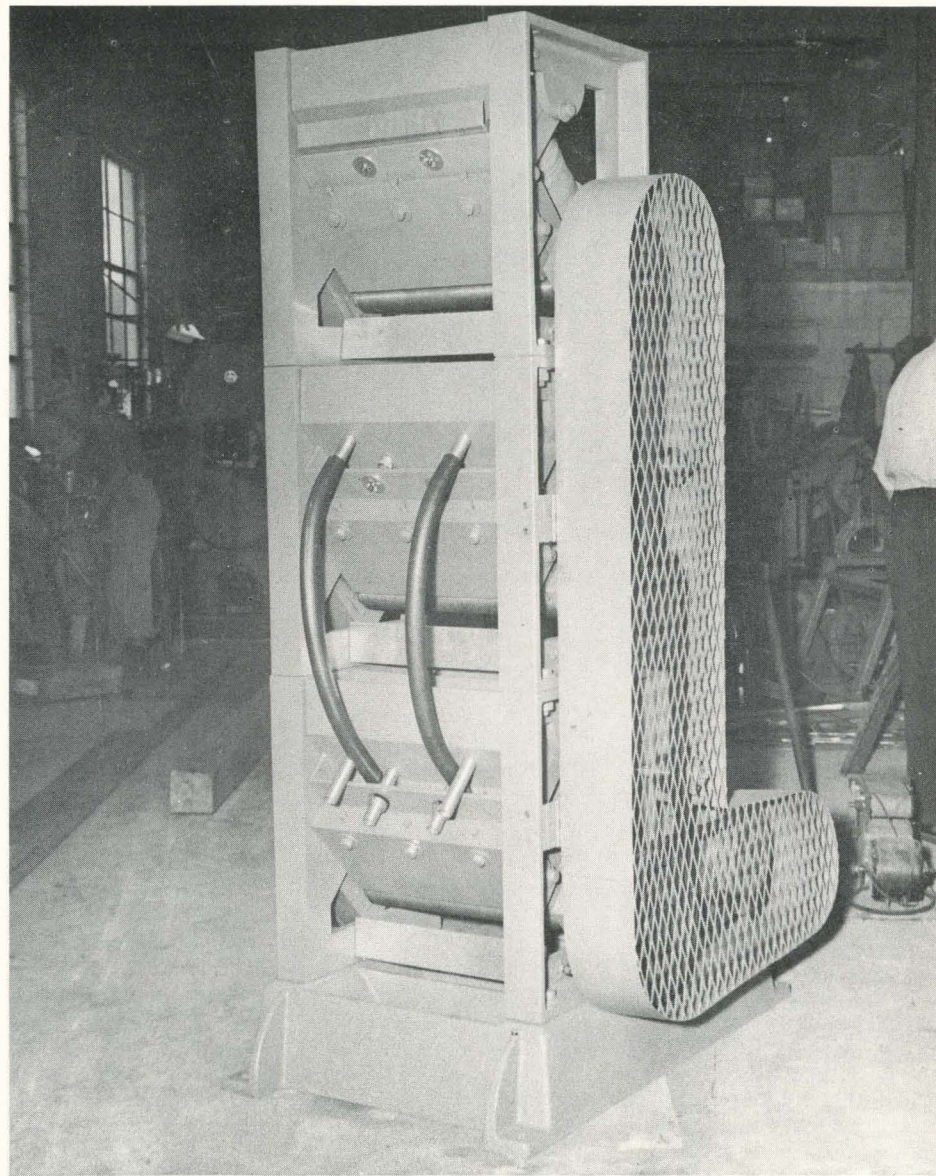
LATEST MODEL CARPCO HTV-23120 HIGH TENSION TOTALLY ENCLOSED VERTICAL BANK SEPARATOR

FIGURE 7



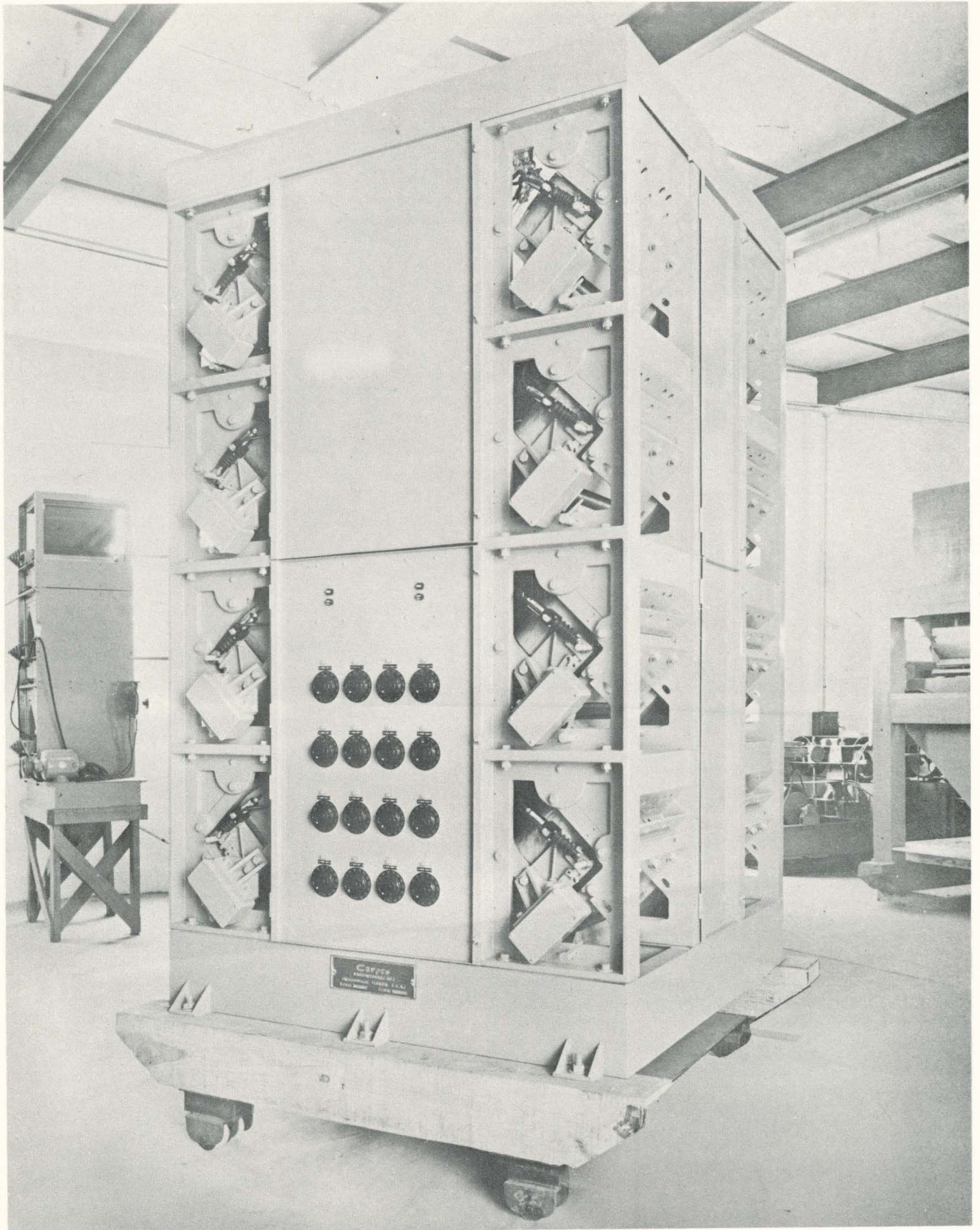
OPERATING SIDE CARPCO MI-318 INDUCED ROLL MAGNETIC SEPARATOR
TYPE USED AT COQUILLE PLANT

FIGURE 8



REAR VIEW CARPCO MI-318 INDUCED ROLL MAGNETIC SEPARATOR
TYPE USED AT COQUILLE PLANT

FIGURE 9



LATEST MODEL CARPCO MI-2436 INDUCED ROLL MAGNETIC SEPARATOR

FIGURE 10

CARPCO RESEARCH AND ENGINEERING
JACKSONVILLE, FLORIDA, U.S.A.
SEPARATION CHARACTERISTICS OF MINERALS

NON-CONDUCTORS (HIGH TENSION PINNED)				CONDUCTORS (HIGH TENSION THROWN)				
SP. G.	MAGNETIC	WEAKLY MAGNETIC	NON MAGNETIC	HIGHLY MAGNETIC	MAGNETIC	WEAKLY MAGNETIC	NON MAGNETIC	SPECIFIC GRAVITY
Over 8.0							Gold Copper	Over 8.0
8.0						Tantalite		8.0
7.5					Ferberite	Wolframite	Galena	7.5
7.0							Cassiterite Wulfenite	7.0
6.5								6.5
6.0			Scheelite					6.0
5.5						Samarskite		5.5
5.0	Monazite	Bastnasite		Magnetite		Columbite Hematite Franklinite	Pyrite	5.0
4.5	Xenotime		Zircon Barite	Ilmenite— (High Iron)	Ilmenite Davidite	Euxenite Chromite	Molybdenite Koppite	4.5
4.0	Garnet Siderite Staurolite		Perovskite Corundum Celestite			Ilvaite Marmatite	Rutile Chalcopyrite Brookite Sphalerite	4.0
3.5		Epidote Olivine Hornblende Apatite Tourmaline	Kyanite Diamond Topaz Sphene Sillimanite Fluorite				Acmite Augite	3.5
3.0		Mica (Biotite)	Anhydrite Mica (Muscovite) Beryl Feldspars Calcite Quartz					3.0
2.5			Gypsum Chrysotile Sulphur				Graphite	2.5
2.0								2.0
Under 2.0								Under 2.0

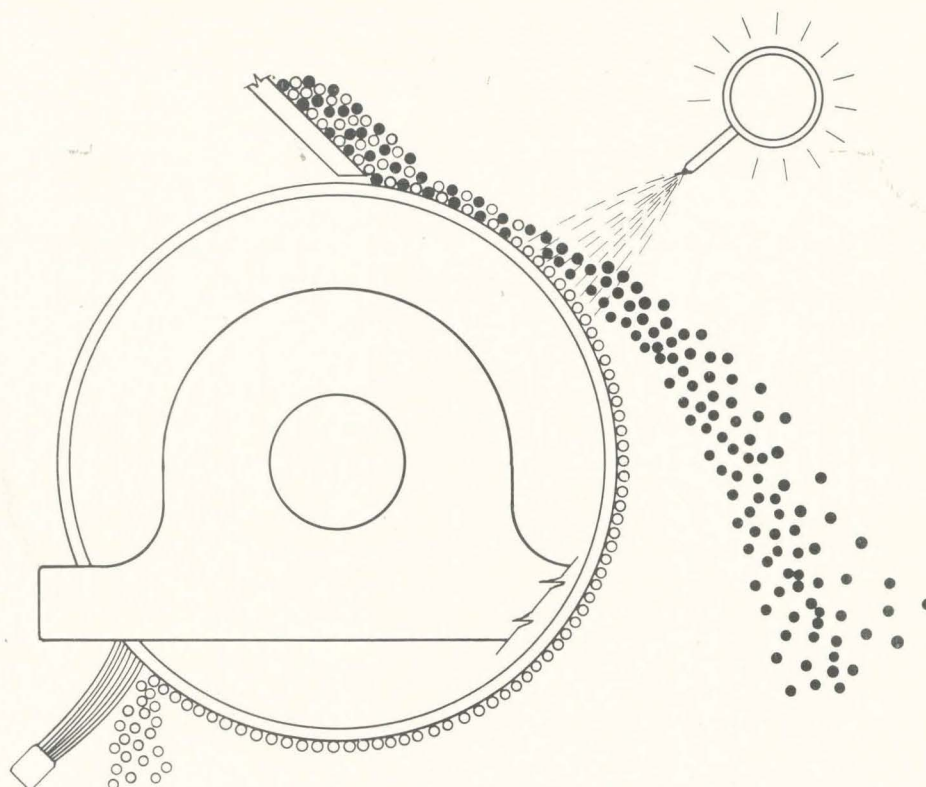
EXPLANATION OF TABLE:

Starting with a mixture of any of the above minerals it may be determined whether or not they can be separated by high tension, magnetic, or gravity methods and whether any one, or a combination of methods is required. If the minerals appear in different columns they may be separated by high tension and/or magnetic methods alone. Two or more minerals appearing in the same column can be separated by gravity concentration if they have sufficient difference in gravity (usually a difference of approximately 1.0).

It should be noted that grain shape and/or size may alter separation characteristics. This is sometimes a detriment and other times useful. As an example, mica and quartz may in many cases be separated by high tension, due to their grain shape.

Minerals behavior characteristics shown are from tests made in our laboratories rather than theoretical. Mineral characteristics and behaviors sometimes vary from different deposits. The behavior of minerals not shown can usually be predicted by the behavior of similar minerals in the above table.

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CORONA DISCHARGE (SOURCE OF IONS)

FIGURE 12

INTO VACUUM PRODUCED FERROCHROMIUM ALLOY.

METALLURGICAL SPECIFICATIONS FOR CHROMITE IN THE PAST HAVE CALLED FOR ORES HIGH IN Cr_2O_3 AND A CR-Fe RATIO OF 2:1 OR BETTER. THIS OREGON CHROMITE IS CONSIDERED LOW GRADE METALLURGICALLY; HOWEVER, THE PNA PROCESS MADE USE OF IT QUITE SATISFACTORILY.

CHEMICAL SPECIFICATIONS FOR CHROMITE CALL FOR ORES THAT ARE EASILY DECOMPOSED, THAT IS, HIGH IN IRON. I FEEL THIS OREGON CHROMITE, DUE TO ITS SMALL PARTICLE SIZE AND HIGH IRON CONTENT, UP AROUND 20% TO 21% Fe, WOULD FIND GOOD USAGE AS A RAW MATERIAL IN THE CHEMICAL INDUSTRY.

REFRACTORY GRADE CHROMITE SPECIFICATIONS SET A RELATIVELY HIGH PERCENTAGE OF Al_2O_3 AS IMPORTANT. OREGON CHROMITE RUNS AROUND 15% Al_2O_3 WITH AN MgO CONTENT OF AROUND 9% . THESE REFRACTORY OXIDE VALUES WARRANT SERIOUS CONSIDERATION BY THE CHROME REFRACTORY INDUSTRY.

IT IS INTERESTING TO NOTE THAT AROUND 2-1/2 MILLION TONS OF CHROMITE OF ALL GRADES, PER YEAR, ARE USED IN THE UNITED STATES, AND AROUND 95% OF THIS TONNAGE IS IMPORTED FROM TURKEY, RHODESIA, PHILIPPINES AND OTHER FOREIGN COUNTRIES.

THE ZIRCON WE PRODUCED FROM THE STOCKPILE ASSAYED AROUND 66% ZrO_2 AND 33.7% SiO_2 WITH LOW FRACTIONAL PERCENTAGES OF Ti, Fe, AND Cr. THIS WAS CONSIDERED A CERAMIC GRADE ZIRCON AND WAS BAGGED IN 100 POUND, 5-PLY PAPER BAGS AND, AS I RECALL, THE GREATER PORTION WAS SOLD TO THE FOUNDRY INDUSTRY HERE IN PORTLAND WHERE IT WAS USED AS A SUPER REFRACTORY MOLD AND CORE FACING. OTHER FOUNDRY USES OF ZIRCON ARE AS A MOLD WASH AND IN THE MAKE UP OF CHILLS. THIS GRADE ZIRCON WOULD FIND WIDE USE IN THE CERAMIC INDUSTRY AS A RAW MATERIAL IN

THE MAKE UP OF BODIES, GLAZES, VITREOUS ENAMELS, REFRACTORIES, ELECTRICAL CEMENTS, SAGGER WASHES, GLASSES, ETC.; IN THE CHEMICAL INDUSTRY AS THE BASIS FOR THE MANUFACTURE OF THE MANY ZIRCONIUM COMPOUNDS; IN THE METALLURGICAL INDUSTRY FOR THE PRODUCTION OF ZIRCONIUM METAL AND ITS ALLOYS.

THE GARNET PRODUCED WAS BAGGED AND SHIPPED TO PORTLAND AND SAN FRANCISCO FOR GENERAL SAND BLASTING AND ABRASIVE USE. IT IS A BRICK-RED CRYSTAL, ROUNDED, NOT SHARP, AND VERY TOUGH. IT IS AN EXCELLENT BLASTING SAND FOR SOFT METALS AND WOODS. IT TENDS TO PRODUCE A PEENING RATHER THAN A CUTTING ACTION. THIS GARNET WAS USED MOSTLY IN FOUNDRIES AND SHIPBUILDING YARDS.

THE MAGNETITE AND ILMENITE FRACTIONS PRODUCED IN THIS FLOW SHEET, DUE TO THE RELATIVELY HIGH PERCENTAGES OF CR AND TI IN THE MAGNETITE AND CR IN THE ILMENITE, WERE NOT SALEABLE FOR THEIR GENERAL USAGES SUCH AS IRON ORE AND PIGMENT MANUFACTURE RESPECTIVELY. FURTHER BENEFICIATION OR PROCESSING WOULD UNDOUBTEDLY HAVE PRODUCED THESE MINERALS IN A PURER FORM FOR THEIR GENERAL USAGES. WE MIXED THESE TWO FRACTIONS TOGETHER, BAGGED THEM, AND HAD A + 140 MESH, HEAVY BLACK SAND, ROUNDED GRAINS, SPECIFIC GRAVITY OF APPROXIMATELY 5.0, WHICH WE SOLD TO THE ROOFING PAPER MANUFACTURERS IN PORTLAND AND SAN FRANCISCO. THEY USED IT PRIMARILY AS AN OPAQUE MEDIUM FOR PROTECTING THE BITUMEN IN ROOFING PAPER FROM THE ROTTING ACTION OF THE SUN'S RAYS. THIS BLACK SAND MIXTURE COULD ALSO BE USED AS A WEIGHTING SAND AND IN HEAVY MEDIA SEPARATIONS.

AS PREVIOUSLY NOTED, THE PERCENTAGES OF RUTILE, MONAZITE, GOLD AND PLATINUM IN THIS STOCKPILE WERE TOO LOW TO ECONOMICALLY RECOVER IN OUR OPERATION. HOWEVER, IN OUR LABORATORY, WE CONCENTRATED BATCHES FROM TIME TO TIME FROM AN ACADEMIC INTEREST ONLY. THE RUTILE CONCENTRATED OUT AT BETWEEN 95% AND

96% TiO_2 WITH ONLY FRACTION AND TRACE PERCENTAGES OF SUCH CONTAMINANTS AS CR, FE, VA, ZR AND P. HAD THERE BEEN SUFFICIENT TONNAGE OF THIS RUTILE, IT WOULD HAVE BEEN HIGHLY SALEABLE TO THE WELDING ROD, Ti -METAL AND Ti -COMPOUND INDUSTRIES. ALTHOUGH WE MADE NO ANALYSES ON THE MONAZITE SEPARATIONS, PHYSICAL EXAMINATIONS INDICATED THEY WERE HIGH GRADE CONCENTRATES. THE GOLD CONCENTRATED OUT WAS IN THE FORM OF SMALL FLAT FLAKES AND THE PLATINUM IN THE FORM OF SMALL PLATINOID PARTICLES. I HAVE SAMPLES OF ALL THESE CONCENTRATES WITH ME FOR THOSE OF YOU WHO ARE INTERESTED IN EXAMINING THEM.

PLANNED POST-STOCKPILE OPERATIONS

WITH PLANS OF CONTINUING THE OPERATION AFTER EXHAUSTION OF THE STOCKPILE, WE ACQUIRED A SUBSTANTIAL ACREAGE OF LAND BEARING KNOWN CHROMITE DEPOSITS IN THE 7 DEVILS AREA ABOUT TEN MILES WEST OF THE COQUILLE OPERATION. EXTENSIVE DRILLING AND LABORATORY WORK WAS EXPENDED ON THESE HOLDINGS AND SUBSTANTIAL ORE RESERVES WERE ESTABLISHED AND ADDITIONAL PROBABLE SOURCES DEVELOPED. IN A FEW MONTHS OF THIS DRILLING PROGRAM, WE PROVED UP ABOUT 150,000 TONS OF 40% EQUIVALENT Cr_2O_3 ORE WITH PROBABLE ORE INDICATED BY DRILLING OF A FURTHER 100,000 TONS. MUCH OF THE AREA HAS NOT BEEN FULLY EXPLORED. THIS 150,000 TON FIGURE WOULD CONSTITUTE A 5 YEAR SUPPLY OF ORE FOR THE COQUILLE OPERATION.

THE PROPOSED PRIMARY OR MINING PLANT HAD BEEN RATHER COMPLETELY ENGINEERED AND GROUND LAYOUT SURVEYED. THIS PLANT WOULD MINE THE DEPOSITS AND PREPARE THE HEAVY MINERAL CONCENTRATE FOR DELIVERY TO THE BENEFICIATION PLANT AT COQUILLE. MY GOOD FRIEND, DEAN GEORGE W. GLEESON, OF OREGON STATE COLLEGE, WORKED WITH US ON THIS MINING PLANT PROJECT AND WAS LARGELY RESPONSIBLE FOR

THE FLOW SHEET, PRODUCTION SCHEDULE AND PLANT LAYOUT. A COMPLETE REPORT ON THE PROJECT WAS COMPILED AND EQUIPMENT SELECTION WAS PRETTY WELL DEFINITELY FIXED. THIS PRIMARY OR MINING PLANT WAS ENGINEERED TO MINE 750 TONS OF ORE HEAD FEED PER 16 HOUR DAY. AT A 4 TO 1 CONCENTRATION RATIO, AND FIGURING 80% RECOVERY IN THE PRIMARY PLANT, THIS WOULD GIVE 150 TONS PER DAY OF A 20% Cr_2O_3 HEAVY MINERAL CONCENTRATE FOR DELIVERY TO THE BENEFICIATION PLANT.

EXCEPT FOR THE UNEXPECTED UPSET IN PLANS, CONSTRUCTION WORK WOULD HAVE BEEN STARTED ON THIS MINING PLANT IN MARCH, 1956, TO HAVE HEAVY MINERAL CONCENTRATES AVAILABLE FOR CONTINUOUS OPERATION OF THE COQUILLE BENEFICIATION PLANT WHEN THE GOVERNMENT STOCKPILE WAS DISSIPATED IN AUGUST, 1956.

UNFORESEEN CIRCUMSTANCES FORCED THE CHROMIUM MINING AND SMELTING CORPORATION TO ABANDON THESE FUTURE DEVELOPMENT PLANS AND TO TERMINATE THEIR WORK ON COMPLETION OF PROCESSING THE GOVERNMENT STOCKPILE. ACCORDINGLY, AT THE COMPLETION, ALL OPERATIONS WERE SHUT DOWN AND THE PLANT DISMANTLED.

FROM THE EXPERIENCE GAINED IN THE BENEFICIATION OF OREGON BEACH SANDS AND WITH THE MODERN SEPARATION EQUIPMENT AND PROCESSES, WHICH HAVE BEEN PROVEN OUT, ALONG WITH INDUSTRY'S INCREASING DEMAND FOR MINERALS SUCH AS ARE FOUND IN THESE OREGON BEACH SANDS, THE FUTURE CERTAINLY IS VERY BRIGHT FOR THE REVIVING AND CONTINUATION OF THIS MINING AND BENEFICIATION INDUSTRY. OF GREAT HELP TO SUCH A PROJECT ARE THE FACTS THAT THE MINING PRACTICE FLOW SHEET HAS BEEN FAIRLY COMPLETELY ENGINEERED, THE ACTUAL MARKETING OF THE VALUE MINERALS IN THESE SANDS HAS BEEN ACCOMPLISHED, SUBSTANTIAL ORE RESERVES HAVE BEEN PROVEN AND THERE ARE UNLIMITED AREAS OF PROBABLE ORE THAT HAVE NOT YET BEEN DRILLED.

Minutes
Mining Committee
Long Range Program Planning
April 2, 1969

Present were: Chuck Hoffman, Bill Toner, Dick Guthrie, Walt Schroeder, and Len Ramp, Resident Geologist, Department of Geology and Mineral Industries. The minutes of the previous meeting were read and approved.

Mr. Ramp explained the regulations on building stone claims. He indicated that some deposits may be locatable and some must be leased. The deciding factors are based upon whether the stone can be interpreted as a common variety or a special variety. Claims may not be located on rock deposits that are considered common varieties but if one can show that the deposit contains stone that has some special desirable properties that distinguish it from other rocks in the area it can then be located under the mining law. For example, stone which is naturally cleavable into blocks or impervious to water and has a distinguishing desirable color would not be considered common variety and would therefore be locatable.

Mr. Ramp was asked about the regulations for using beach sand as placers. He noted that at the present time leases would need to be negotiated with the Division of State Land. According to members of the committee, legislation is now pending to change this to the State Highway Department.

The Red Flats area was discussed briefly. It was noted that Hanna Mining Co. is the only nickel mine in the United States. The Riddle area still has fringe ore bodies of the lower grade material averaging about 1.4%. Exploratory work is still being carried on in the Red Flats area and reports are that this ore should be easier to work than some of the material still in the Riddle area.

Mr. Ramp indicated that one thing that would certainly help mining in this area would be to encourage further prospecting and to gather and dispense information on the materials available.

The committee asked if assay blanks could be made available locally. Mr. Ramp agree to send a supply of the SIR blanks to the Extension Office for distribution. The distribution will probably be made to Chuck Hoffman's shop in Brookings, Dick Guthrie's in Gold Beach and the Tourist Information Office in Port Orford.

Mr. Ramp urged the committee to investigate thoroughly the effects of off-shore sampling and its effect on mining in the area. He will send information on off-shore mining to the committee for inclusion in the report.

The clay deposit at Port Orford was discussed briefly and the secretary was instructed to contact Ted McKenzie to get more information on this.

As soon as we get the information from Mr. Pamp, Chuck Hoffman will write up a rough draft prior to the next meeting.

Respectfully submitted,

Walt Schroeder

Report of reconnaissance made by F. W. Libbey and H. M. Dole April 14, 15, and 16 in the coastal area of southern Coos County and Curry County.

April 14 a reported manganese occurrence was investigated east of Myrtle Point approximately $2\frac{1}{2}$ miles and just south of Sugar Loaf Mountain. This occurrence was called to our attention by Mr. Sibert of Myrtle Point. Mr. Sibert had assay blanks showing results of 45 percent manganese. The specific location from which the manganese was obtained for these assay results was never found. The area investigated is one of Dothan(?) sandstones and shales with chert and basaltic intrusives. It is quite possible that manganese does occur in the locality but none was located. The area is about a mile to a mile and a half north of the Guerin manganese deposit.

The afternoon of April 14 the terrace east of the Bandon golf course was investigated at the request of the owner of the property. It was reported that a man was periodically taking these sands and selling them when he "needed spending money". The owner was curious as to the values. The terrace is at approximately 50 feet and nothing unusual was noted about it. A screen was found but no pits (which had been reported) were seen. Mr. Libbey took two samples (P-11035, P-11036) from the terrace bank where there was some limonite staining. These samples are to be panned by Mr. Libbey.

April 15 automobile traverses were made up Fourmile Creek, along the ridge east of Langlois and up Floras Creek. Approximately 3 miles up Fourmile Creek, south of the road and across the creek is a landslide area that shows considerable chert, some of which is manganese stained. The area is terribly torn by landslides. No manganese was seen in place. It is doubtful that this location is worthy of further prospecting. Country rock is mainly sandstone and shale of the Dothan(?) formation. Regional trend could not be determined. A traverse was made on the road which goes east out of Langlois and up toward Round Top Mountain. Approximately $5\frac{1}{2}$ miles east of Langlois and along the ridge top is an outcrop of calcareous silicified shale. This is just south and slightly east of the McAdams manganese occurrence on Bethel Creek. A sample (P-11056) was taken of this outcrop and a spec is to be run on it. Here, too, the rock apparently is Dothan formation. The traverse was continued for approximately another 5 to $5\frac{1}{2}$ miles to the Hilderbrand manganese occurrence. Most of the way the sediments were typical of the Dothan formation; however, there were several outcrops in the vicinity of Bennett Butte that could be of Cretaceous rocks. The Hilderbrand manganese occurrence was sampled (P-11037). The report by Brown to be found in the Curry County binder was confirmed. Another traverse on the road just south of this one and going up the north side of Floras Creek was made in the afternoon. A chert and serpentine

occurrence was investigated approximately 3 miles east of Highway 101 up Floras Creek. Here again there was some manganese staining but certainly nothing of economic interest was noted. This occurrence reminded me of the Colegrove manganese deposit in that schist, apparently formed from the metamorphism of sandstone, was found adjacent to chert. Evidently the chert zone was one of weakness and allowed intrusion of serpentine which altered the sandstone. Similarity between the rocks seen on this traverse and rocks of the Dothan formation is striking.

April 16 the reported limestone occurrence on Bear Trap Creek (south of Port Orford and just behind Humbug Mountain) was investigated. The limestone is on the property of Ray Fromm, Port Orford. Mr. Fromm reports analyses of "almost 100 percent". The limestone lens was not found; however a dioritic intrusive, probably a dike, was found and considerable contact metamorphic rocks were noted in the area. Three samples were taken (P-11057, P-11058, P-11059) and specs are to be run on them. Mr. Fromm is to be contacted by letter requesting a sample of the limestone. The age of these rocks is in question.

WJ

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* * * * *

GEOLOGY OF THE HUMBUG MOUNTAIN STATE PARK AREA

By

J. G. Koch, W. R. Kaiser, and R. H. Dott, Jr.*

INTRODUCTION

The Humbug Mountain area was visited in 1955 by Dott while in the employ of Humble Oil & Refining Company. The presence of a diorite pluton and unmetamorphosed strata containing diorite and phyllite pebbles together with moderate numbers of Cretaceous fossils offered great promise for accurate geologic dating of mountain building, intrusion of diorite, and regional metamorphism in southwestern Oregon. The geology also seemed to provide an opportunity for establishing detailed coastal Cretaceous stratigraphy. Work renewed in 1959 has verified these beliefs, although structural complications are far greater than anticipated. These investigations, the first since J.S. Diller's (1903) description and mapping of the Port Orford quadrangle, are part of a long-range study of the sedimentation in and stratigraphic history of the Klamath mobile belt during its most active periods of post-Paleozoic deformation.

This preliminary summary of the geology of the Humbug Mountain State Park area is based upon investigations made during two field seasons by Koch, one by Kaiser, and parts of three seasons by Dott. Koch has completed a Master's dissertation on the immediate park area (Koch, 1960) and now is extending his studies of late Mesozoic strata southward and eastward. Kaiser currently is investigating in detail the metamorphic and igneous rocks east of the park. Their work, as well as that of other University of Wisconsin students farther south along the coast, is under the general direction of Dott. He also has investigated areas northward as far as Coos Bay. Financial support from the Wisconsin Alumni Research Foundation and the Oregon Department of Geology and Mineral Resources is gratefully acknowledged.

PREVIOUS WORK

Diller (1903) was the first geologist to describe the area in detail. His application of the name Myrtle formation (Diller, 1898, p. 1) to most of the sedimentary rocks was unfortunate in that these are of mixed ages and lithologies. Imlay, et al. (1959), recently recognized the Myrtle as a group in the Roseburg region (80 miles northeast of Port Orford), the type Myrtle area. Two new formations of latest Jurassic and earliest Cretaceous age, respectively, have been designated there. Because of the distance from that area and rather different lithologic characteristics, no formal stratigraphic terminology is being endorsed herein for coastal sequences of similar age. Ages suggested by previous workers for metamorphic and igneous rocks in the Humbug Mountain area are regarded with reservations.

*J. G. Koch and W. R. Kaiser, graduate students, and R. H. Dott, Jr., Assistant Professor, Department of Geology, University of Wisconsin, Madison, Wisconsin.

STRATIGRAPHY

Metamorphic and Igneous Rocks

Characteristics

Rocks assigned to the pre-Cretaceous include metasediments, phyllites, greenstones, and basic to intermediate igneous varieties, chiefly diorite. Their general distribution appears on the accompanying map.

Metasedimentary rocks: The metasediments contain 85 to 90 percent quartz and are characteristically banded. Bands range from 1/4 to one inch in thickness, and they show fine-scale ripple bedding and graded bedding. In thin section one sees incipient growth of mica, a few quartz grains with sutured boundaries, and poorly preserved foraminifera. Among all the sedimentary rocks in the area, these banded metasediments are the most distinctive. They are similar in practically all respects with sediments of the Galice formation observed by the writers along Grave Creek in the Galice quadrangle, 50 miles east of Port Orford (see Wells and Walker, 1953).

Colebrooke schist: Low-grade metamorphic rocks referred to the pre-Cretaceous Colebrooke schist by Diller (1903) are chiefly quartz-mica phyllite. A significant amount of carbonaceous material is also present. The phyllite locally has chevron folds on both a megascopic and microscopic scale.

Greenstones: The most complex group of rocks are those described under the general heading of greenstones. These are greenish, altered basic igneous rocks. The color is principally due to three minerals - chlorite, epidote, and hornblende. Because of the high degree of alteration, it can not be said with certainty whether these are altered intrusive or extrusive rocks. No definite amygdaloidal, pillow, or other volcanic structures were observed except in one example associated with Upper Jurassic strata along the Rogue River, south of the present map area. Basic igneous rocks, other than greenstone, are diabasic in texture and of gabbroic composition. These are found in scattered localities along the Elk River and elsewhere.

Diorite and metasedimentary rocks: The most common igneous rock is diorite that shows local variations toward a more basic composition. It occurs in a small intrusive pluton, here designated the Pearse Peak diorite. The best exposures are along the Elk River, just north of Pearse Peak. The diorite contains andesine with well-developed zoning, hornblende, quartz (5 to 10 per cent), and biotite, with alkali feldspar, sphene, and magnetite as accessories. It has a granitic texture. The presence of sphene, euhedral mineral grains, and well-developed zoning of the plagioclase all point to a magmatic origin.

Age and Sedimentary Relationships

The stratigraphic position of the Pearse Peak diorite is considered as Upper Jurassic. Dikes and sills of the diorite intrude banded metasediments on the east and west sides of the pluton, for example, at Purple Mountain Creek (NE $\frac{1}{4}$ sec. 23, T. 33 S., R. 14 W., near its junction with the Elk River) and on Beartrap Creek (SW $\frac{1}{4}$ sec. 32, T. 33 S., R. 14 W.). At both localities foraminiferal-bearing banded metasedimentary rocks were collected near the contacts. The foraminifera have been identified by Professor R. L. Batten of the University of Wisconsin (personal communication) as belonging to the families Buliminidae, Heterohelicidae, Lagenidae, Polymorphinidae, and Rotaliidea, and they are of probable Late Jurassic or Cretaceous age. A Late Jurassic age seems more likely because the metamorphic-igneous complex is unconformably overlain by Early Cretaceous (Valanginian) conglomerate containing diorite and metasedimentary pebbles. Furthermore, there is the striking similarity of the banded metasediments to the early Late Jurassic (Oxfordian-Kimmeridgian) Galice formation (Wells and Walker, 1953). It is also unlikely that the foraminifera could be older than Late Jurassic (personal communication, R. L. Batten). The Pearse Peak diorite, therefore, is regarded as post-early Late Jurassic and pre-Early Cretaceous (Valanginian). (It is hoped that a radio-active date by the potassium-argon method can be

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established, but no biotite that has escaped chloritization has been found.

The history of the phyllite is poorly documented. The presence of phyllite fragments in Lower Cretaceous conglomerate near the head of Brush Creek (sec. 4, T. 34 S., R. 14 W.) and at the mouth of Mussel Creek (sec. 19, T. 34 S., R. 14 W., just south of the map area) indicates a pre-Early Cretaceous (Valanginian) age. Wells (1955) mapped the Colebrooke schist as a metamorphosed phase of the Late Jurassic (Oxfordian-Kimmeridgian?) Rogue formation. The typical Rogue (Wells and Walker, 1953), where seen by the writers inland on the Rogue River below Grave Creek bridge, consists of fine- to coarse-grained sediments rich in volcanic detritus, tuffs, agglomerates, flow breccias, flows, and their metamorphic equivalents. The mineralogy of the Colebrooke does not suggest a close similarity. Extremely high quartz content plus carbonaceous material suggest a more normal sedimentary rock as the parent, for example, the Galice formation. Foliation transecting relict bedding also was found in the phyllite; however, in most cases the bedding has been destroyed. Perhaps the banded metasedimentary rocks are the parent, for the mineralogy and scale of compositional layering or banding are compatible with that of the phyllite. Chemical analyses of both lithologies should aid in identifying the parent of the phyllite.

A pre-Cretaceous age for most, if not all, of the greenstone is suggested by abundant fragments of this lithology in the Lower Cretaceous conglomerate. Study of inclusions found in the diorite to ascertain whether they are basic rock may be helpful in further restricting the age of the greenstones and other basic rocks exposed near the Elk River. But greenstone masses along the coast in areas of Cretaceous outcrops cannot be dated adequately. Diller (1903) believed that these (e.g., Silver Butte, just north of Port Orford) were Cretaceous? volcanic necks. This area lies in what now is regarded as the Port Orford shear zone (fig. 1), and it is entirely possible that these masses are in-faulted pre-Cretaceous bodies. Intensely sheared greenstones as well as serpentinites are present due west, but not east, of the diorite pluton. A possible explanation of this relationship, in view of the general northeast strike and southeast dip of the banded metasediments, is that faulting on the west has brought up basic rocks, now greenstones, that were stratigraphically below or low within this sequence. Because of the easterly dip, the greenstones would be buried more deeply on the east, thus explaining why they are not exposed east of the pluton (figs. 1 and 2). Faulting may also explain the greenstones scattered locally within the phyllite. If basic igneous rocks were interbedded in the phyllite, they probably were better able to withstand dynamic metamorphism because of their relatively greater competence. The fact that many of the greenstones also are associated intimately with banded metasediments makes it important to determine if they are extrusive or intrusive. At present the writers have insufficient petrographic data to give a definite answer. If they are extrusive, we would consider them as interbedded within the banded metasediment sequence and its possible phyllitic phase.

The serpentinites present yet another problem of stratigraphic relationships. Faulting, undoubtedly a significant factor in regard to their present positions, greatly hinders any age assignment for these rocks. Furthermore, serpentinite fragments are apparently absent from the Lower Cretaceous conglomerates.

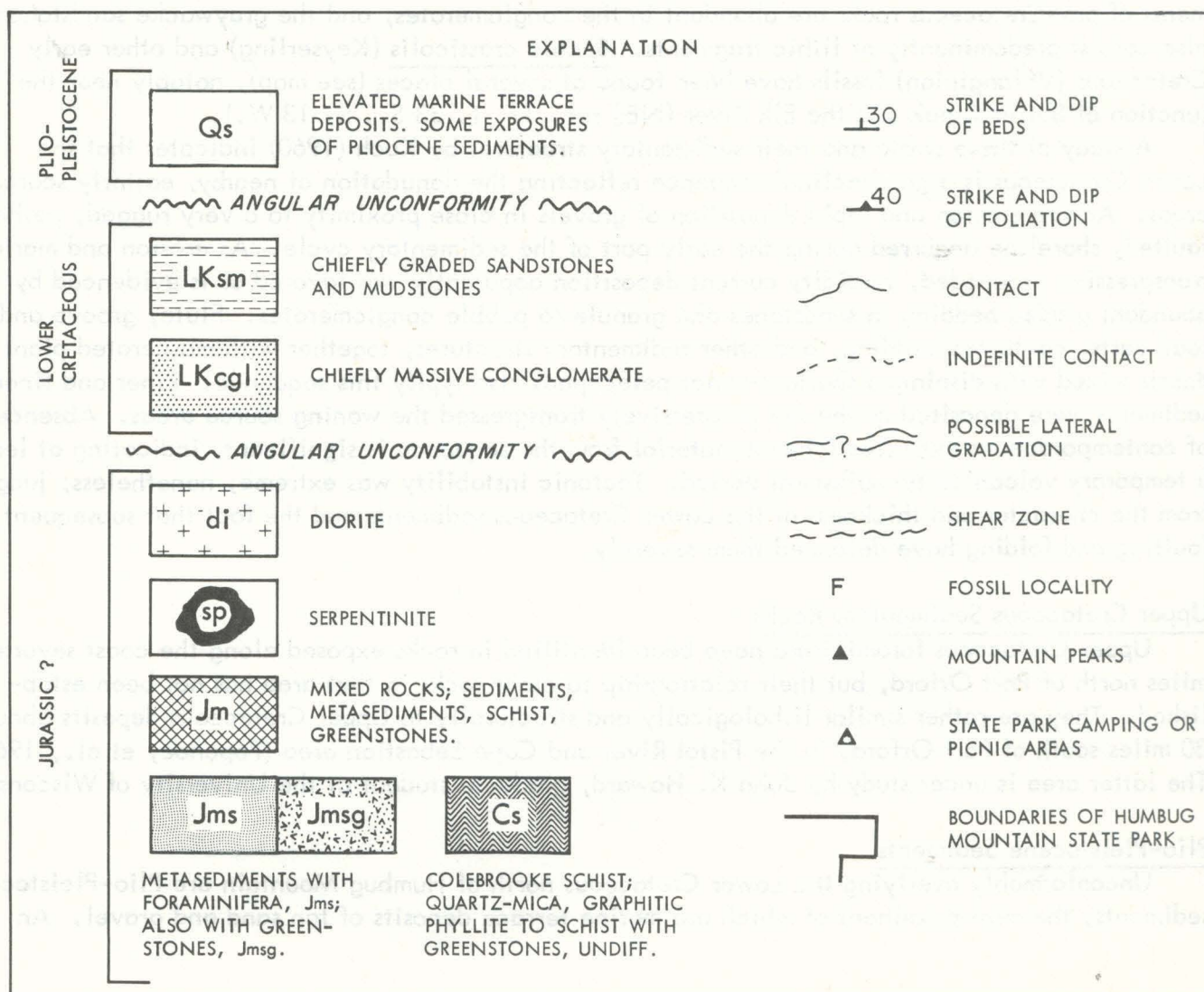
Sedimentary Rocks

Upper Jurassic (Portlandian) Sedimentary Rocks

An unmetamorphosed sequence of sediments containing the late Jurassic (Portlandian) pelecypod *Buchia piochii* (Gabb) was found north of Gold Beach during 1960 (south of the map area of the present report). These are somewhat similar lithologically to the Early Cretaceous sediments. Pillow basalts exposed along the Rogue River about five miles above its mouth may be interbedded with Upper Jurassic strata, but no other known volcanics have been seen associated with them. Detailed petrologic distinctions between the Upper Jurassic and Lower Cretaceous sediments have not been established, but obvious differences exist between conglomerates in the two sequences.



HUMBOG MOUNTAIN, in the background, is composed of Lower Cretaceous conglomerate. The foreground is of the same material. The light-colored area between is a down-faulted block of younger Cretaceous sandstone and mudstone.



Upper Jurassic conglomerates are dominantly of argillite, quartz, and chert fragments that are all less than four inches in average diameter. In contrast, Lower Cretaceous conglomerates contain numerous phyllite, metasediment, greenstone, diorite and other igneous rock clasts, and are generally coarser, having individual fragments to one foot or more in diameter, and more poorly sorted.

Where one sequence is exposed the other is absent. Thus their inter-relationship remains unknown, neither supporting nor denying the possible presence in this area of an unconformity between the Upper Jurassic and Lower Cretaceous strata such as that suggested in the Roseburg area by Imlay, et al. (1959). Although the sequence appears to be equivalent at least in part to the Riddle formation of Imlay, et al. (1959), it is deemed presently inadvisable to apply that term in this area.

Lower Cretaceous (Valanginian) Sedimentary Rocks

A dominantly coarse-grained clastic Lower Cretaceous sequence rests with marked unconformity on pre-Cretaceous rocks exposed along the Elk River (SW $\frac{1}{4}$ sec. 8, T. 33 S., R. 14 W.). This sequence, temporally equivalent to part of the Days Creek formation (Imlay, et al., 1959), has been subdivided into two mappable units by Koch (1960), a lower massive conglomerate unit overlain gradationally by a dark-gray sandstone-mudstone unit. Humbug Mountain consists of southwest-dipping massive conglomerate, whereas north of it the sandstone-mudstone unit is exposed and dips westward. Their relative stratigraphic positions are revealed north of the Humbug Mountain camp ground where the coarse unit appears to dip west beneath the other in an unfaulted relationship. The Lower Cretaceous sequence is believed to be at least 9,000 feet thick. Fragments of pre-Cretaceous rocks are abundant in the conglomerates, and the graywacke sandstones also consist predominantly of lithic fragments. *Buchia crassicolis* (Keyserling) and other early Cretaceous (Valanginian) fossils have been found at several places (see map), notably near the junction of Butler Creek and the Elk River (NE $\frac{1}{4}$ sec. 17, T. 33 S., R. 13 W.).

A study of these strata and their sedimentary structures by Koch (1960) indicates that the Lower Cretaceous is a geosynclinal sequence reflecting the denudation of nearby, easterly source areas. Active erosion and rapid deposition of gravels in close proximity to a very rugged, perhaps faulted, shoreline occurred during the early part of the sedimentary cycle. As erosion and marine transgression proceeded, turbidity current deposition apparently was favored as is evidenced by abundant graded bedding in sandstones and granule to pebble conglomerates. Flute, groove and load casts, contorted bedding, and other sedimentary structures, together with mascerated plant debris mixed with displaced shallow-water pelecypods also typify this sequence. Finer and finer sediments were deposited as the sea progressively transgressed the waning source areas. Absence of contemporaneous extrusive igneous material from the sequence is significant, indicating at least a temporary volcanically-quiet period. Tectonic instability was extreme, nonetheless, judging from the character and thickness of the Lower Cretaceous sediments and the fact that subsequent faulting and folding have deformed them severely.

Upper Cretaceous Sedimentary Rocks

Upper Cretaceous foraminifera have been identified in rocks exposed along the coast several miles north of Port Orford, but their relationship to older rocks in that area has not been established. They are rather similar lithologically and structurally to Upper Cretaceous deposits about 30 miles south of Port Orford, in the Pistol River and Cape Sebastian area (Popenoe, et al., 1960). The latter area is under study by John K. Howard, graduate student at the University of Wisconsin.

Plio-Pleistocene Sediments

Unconformably overlying the Lower Cretaceous north of Humbug Mountain are Plio-Pleistocene sediments, the most prominent of which are marine terrace deposits of tan sand and gravel. An

exposure of fossiliferous sediments, tentatively regarded as the Pliocene Empire formation, was found at the mouth of Hubbard Creek, about one mile southeast of Port Orford. Fossils there include large, coarse-ribbed *Pecten* and other molluscs, as well as coaly material. A thin terrace veneer of Plio-Pleistocene sediments is also visible approximately 300 feet up on the west or seaward face of Humbug Mountain, just above the sea cliffs.

GEOLOGIC STRUCTURE

Faults of various trends, including almost due north and due east shear zones, have sliced the area into a number of discrete blocks (figs. 1 and 2). The dominant trend, and also the one that has apparently the most intensive deformation, is northerly. Some of the shear zones are at least half a mile wide. Such zones are characterized by intensely sheared rocks, calcite and quartz veining, and commonly by greenstones and ultramafic rocks of indefinite affinities. Also typical of the shear zones are landslides and valleys, for example, the Brush Creek valley at the Humbug Mountain camp ground. Due south of Port Orford, serpentinite masses of indefinite age and origin are present within the Port Orford shear zone. This zone is believed to be coincident offshore with the greenstone islands and to pass west of Humbug Mountain. It apparently re-enters the coast south of the map area. Movement along this and the other shear zones is unclear and requires further study. Their pattern and magnitude of deformation are quite similar to the fault systems of northern California. Distinct contrasts are the more regular northeast-trending structural pattern in the interior Klamath-Siskiyou province farther east (Wells, 1955) and the less intense deformation of Tertiary rocks in the Coast Range farther north.

In general, poor exposures and widespread shearing mask that area's fold patterns. Small folds present in beach exposures north of Humbug Mountain trend northeast, but these may be only the result of movement along the Port Orford shear zone. Mapping, however, does indicate a north to northeast trend in the inland portions of the Lower Cretaceous, a trend somewhat similar to the general northeast structural pattern of most of southwest Oregon. Structures within the pre-Lower Cretaceous, besides those due to shearing, are but imperfectly recognized, as are possible northeast trends in the metasediments.

HISTORICAL SUMMARY

The Humbug Mountain area was subjected to the same severe mountain-building forces that pervaded the whole Klamath region during late Mesozoic time, and presumably earlier as well. The Pearse Peak diorite, a product of this activity, is the most westerly body of like composition in the whole Klamath province. It is notable in that its age can be fixed rather precisely as intra-Late Jurassic or classic Nevadan. Dioritic plutons of this age have proved to be rare indeed, and, in general, these are confined to the westerly side of the Pacific Coast batholithic belt. By far the bulk of the batholiths are of Cretaceous age. Very soon after the diorite was intruded and the most intense deformation had ceased, at least by Early Cretaceous time, the Pearse Peak diorite and surrounding metamorphic and igneous rocks were being eroded in a very rugged terrain, providing abundant coarse gravels to the sea. Topographic conditions then changed, however, and deposition gave way to sandstones and mudstones apparently deposited considerably by turbidity currents.

After Early Cretaceous and until relatively recent time, there was renewed mountain building characterized chiefly by long-continued intense shearing along great fault zones. Broad vertical warping that has taken place still more recently is evidenced by elevated flat-topped and wave-notched sea stacks and by marine terraces veneered with conspicuous tan sands and gravels exposed along Highway 101 between Humbug Mountain and Port Orford.

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UNDERWATER WELL COMPLETION

The petroleum industry's first underwater well completion was announced early in November by Peruvian Pacific Petroleum Company. The wellhead of the pioneer project is located under 130 feet of water on the ocean floor about a mile off the coast of northern Peru. Oil now is flowing from the well to a tank farm ashore through a string of 3-inch-diameter aluminum pipes anchored to the ocean bottom. Success of the technique used could eliminate the need for costly platforms in offshore oilfield development. The unique ocean-floor well utilized a Peruvian Pacific-Richfield Oil Corporation "Christmas tree" made of aluminum piping that is expected to minimize operating and maintenance difficulties at the 130-foot depth of the wellhead. The flow line from well to shore is actually a bundle of aluminum pipes made up of 50-foot lengths welded on shore into two continuous 3250-foot segments. These were then plugged and the lines launched parallel to the shoreline and (pulled through 90 degrees of arc without the use of a pipe-laying barge) floated into position. (From Compressed Air Magazine, January, 1961)

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MINERALOGIST MAGAZINE UNDER NEW OWNERSHIP

The Mineralogist Magazine, which for over 30 years was owned and managed by the Dake family of Portland, with Dr. H. C. Dake as editor, transferred ownership in September, 1960.

New owner and publisher is Don MacLachlan of Mentone, California, editor of the magazine Gems and Minerals. Mr. MacLachlan states that the editorial policy of The Mineralogist has been altered to make it primarily a magazine for mineral collectors and that very little gem or gem-cutting material will be included, because this type of information is now covered adequately by other periodicals.

The Dakes will continue to handle the publication and distribution of their many popular and helpful booklets on prospecting and gem cutting from their home in Portland.

* * * * *

STATE LEGISLATIVE NEWS

The following bills of direct interest to the mining industry have been introduced since the report made in the February Ore.-Bin:

House Bill 1668: Introduced by Representatives Haight, Eymann, Kelsay, and Leiken: establishes regulations for perfection of placer mining claims upon the public domain of the United States. Sec. 1 defines "legal subdivision" as a subdivision of a state survey or of a United States survey which has been extended over the geographic area to be described. Sec. 2 requires that location notice shall contain the name of the claim, name of the individuals locating claim, date of location, and description of area to be located. Sec. 3 requires that boundaries of claim be marked within 30 days after posting of location notice. Sec. 4 requires that within 60 days after posting of location notice an open cut be made of not less than five cubic yards in volume and exposing the placer deposit. Sec. 5 requires that within 60 days from posting of location notice the claim shall be filed for record with the County Recorder of Conveyances. Sec. 6 states that all locations or attempted locations of placer mining claims made after the effective date of the act that do not comply with the provisions of secs. 1-5 are void.

House Joint Memorial 11 - Introduced by Representatives Haight, Eymann, Kelsay, Leiken, and Senator Flegel: states the importance of Oregon's mineral resources to the state and nation and the need for maintaining a healthy mineral industry and calls upon the federal government to foster and encourage the development of an economically sound and stable domestic mining and mineral industry, the orderly development of domestic mineral resources and reserves necessary to assure satisfaction of industrial security needs, and research to promote the wise and efficient use of our mineral resources. Recommends that this policy be implemented by more effective enforcement of anti-dumping laws and the imposition of adequate duties on metals and mineral imports.

House Joint Memorial 12 - Introduced by Representative Cannon: urges Congress to decline passage of Senate Bill 174 (the National Wilderness Bill), decline passage of any legislation which would encourage extension of or increase the rigidity of regulation of existing wilderness, wild, or primitive areas, and decline passage of any legislation which would set aside any area of federally owned land for limited and restricted use.

* * * * *

UNDERSECRETARY FOR MINERALS APPOINTED

On February 14, President Kennedy announced the appointment of John M. Kelly of Roswell, New Mexico, as Assistant Secretary of the Interior for Mineral Resources.

Kelly, a native of Chelsea, Mass., is a mining and petroleum engineer. As assistant secretary, he will discharge the duties of Secretary Udall in the field of natural resource development. He will also be responsible for the activities of the Bureau of Mines, the Geological Survey, the Oil Import Administration, the Office of Mineral Exploration, the Office of Minerals Mobilization, the Office of Coal Research, the Office of Oil and Gas, and the Office of Geography.

For the past 25 years Kelly has been active in the field of petroleum conservation, and at the time of his appointment, was the president of his own oil-producing firm in New Mexico. He is a graduate of the New Mexico School of Mines with bachelor of science degrees in mining engineering and petroleum engineering. (American Mining Congress Bulletin Service, Feb. 18, 1961).

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MINERALS CONFERENCE TO BE HELD AT SPOKANE

The Pacific Northwest Metals and Minerals Conference for 1961 will be held at the Davenport Hotel in Spokane on April 13, 14, and 15. W. D. Nesbeitt, Spokane, is chairman of the conference.

The meeting will be sponsored jointly by the Columbia Section of AIME and the Spokane Section of the American Society for Metals. Scheduled for April 13 and 14 are 11 technical sessions on mining, geology, industrial minerals, minerals beneficiation, geophysics, and primary and secondary metal working. A panel discussion "Gold and the Monetary System" will be held Thursday evening, April 13. The program will include two luncheons with speakers and a buffet dinner. Field trips will be made on Saturday, April 15.

Some of the papers to be presented at the two-day sessions are as follows:

"Cement Operation in the Pacific Northwest" by Lawrence C. Miller, Portland Cement Association, Spokane, Washington.

"Precast and Prestressed Concrete" by J. Gordon Fenton, Central Pre-Mix Concrete Company, Spokane, Washington.

"An Airborne Magnetometer and Scintillometer Survey in Ferry and Okanogan Counties, Washington" by Marshall T. Huntting, Washington State, Division of Mines and Geology, Olympia, Washington.

"Iron Ore Occurrences in Idaho" by David W. Young, Idaho Bureau of Mines and Geology, Moscow, Idaho.

"Engineering Geologic Studies as an Aid in Urban Development" by Herbert G. Schlicker, State of Oregon Department of Geology and Mineral Industries, Portland, Oregon.

"Sawtooth Mountains Aquamarine and Other Beryllium Deposits in Idaho" by Eldon C. Pattee, U. S. Bureau of Mines, Spokane, Washington.

"Stratigraphy of the Belt Series, Northwest Montana" by Willis M. Johns, Montana Bureau of Mines and Geology, Butte, Montana.

"Electron Beam Zone Refining of Tungsten" by Lloyd Bazant, U. S. Bureau of Mines, Albany, Oregon.

"Geology of the Hunters Quadrangle and Vicinity, Washington" by Arthur B. Campbell, U. S. Geological Survey, Denver, Colorado.

"Geochemical Studies in Pend Oreille County, Washington" by James W. Crosby III and Richard E. Cavin, Division of Industrial Research, Washington State University, Pullman.

"Permian Limestones in Northeastern Washington" by Joseph W. Mills, Department of Geology, Washington State University, Pullman, Washington.

"Progress Report on the Washington State Geologic Map" by Wayne Moon, Washington State Division of Mines and Geology.

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QUICKSILVER INSTITUTE ELECTS OFFICERS

At the annual meeting of the American Quicksilver Institute, S. H. Williston was elected president, C. Hyde Lewis, vice-president, and S. R. Smith, James Bradley, and C. O. Reed, directors.

Within the past year the number of active quicksilver mines in the United States has dropped by 30 percent because of the lowest price in ten years. As a result, exploration and development for new mines has slowed considerably and current operating mines have had to increase their cut-off grade of ore to remain in operation. This has reduced materially the proven reserves of the industry.

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nearly 1 ppm (\$0.05 per ton) of silver. Further extensive sampling was done during the summer of 1967.

California

Sediment sampling of streams, southern California.—Sediments at the mouths of streams at 57 localities in southern California between Point Concepcion, west of Santa Barbara, and the Mexican border have been sampled. Although the heavy metal content appears to be very small, the identification of tracer minerals or mineral suites may aid in locating offshore concentrations. Sampling continues along the coast from Point Concepcion north to the Santa Ynez River and also on Santa Catalina, Santa Rosa, and Santa Cruz Islands. This work is being done under a research contract with the University of Southern California.

Acoustic seismic profiling, San Francisco Bay.—Stratigraphic control of bottom sediments in deeper water parts of San Francisco and San Pablo Bays has been obtained by running about 400 miles of continuous acoustic sampling profiles. This reconnaissance survey will indicate areas requiring more detailed coverage and will aid in selection of sample sites.

Northern California continental shelf.—During a 40-day cruise of the R/V "Oconostota" under a research contract with Scripps Institution of Oceanography, 3,700 kilometers (2,300 miles) of intersecting acoustic reflection profiles was run across the continental shelf between the coast of northern California and the Mendocino fracture zone. In addition, 125 bottom samples were collected.

California and Oregon

Offshore studies.—R/V "Polaris" made a 38-day cruise along the coast of southwestern Oregon. This vessel, formerly operated under charter from the University of California, was acquired by the Geological Survey in May 1967. Subbottom acoustical profiles were obtained across potential heavy metals-bearing sands between Coos Bay and the Rogue River and samples were collected in the same area.

Acoustic profiling along 170 miles of lines between Crescent City, Calif., and the delta of the Klamath River showed that Recent sediment in the area is 0-200 feet thick. Filled Pleistocene river channels, the modern delta of the Klamath River, and Pleistocene faults account for the range in thickness. Samples of Recent sediment were collected for heavy metals analysis.

Gold contents significantly higher than background were detected in black sands off the coast of Oregon and in sediments off California that may be on Mesozoic basement or that may have been reworked from outcrops of a folded Pliocene unconformity during lower stands of sea level. The Oregon black sands were located by acoustical profiling and reconnaissance sampling and are offshore from beach sands containing significant amounts of gold.

Gold in beach sands.—More than 1,000 samples of terrace, beach, and nearshore sands from southern Oregon and northern California have been analyzed for gold. Reproducible results can be obtained by analyzing the fraction finer than 100 mesh and having a specific gravity greater than 3.2; analyses of splits of raw samples were not reproducible.

A mobile sedimentology laboratory, supported by a mobile analytical laboratory, was used in the field at Bandon, Oreg., to concentrate heavy minerals in sediment samples prior to chemical analysis. The sensitivity of these analyses thus was greatly increased. A marine heavy metals sedimentology laboratory recently established at Menlo Park, Calif., is being utilized in preparing additional samples from these areas.

Oregon

Gold on continental shelf, southern Oregon.—Anomalous high concentrations of fine gold were found in surface sediments on the continental shelf off southern Oregon by the Department of Oceanography of Oregon State University operating under a research contract with the Geological Survey. The gold is associated with heavy minerals tentatively believed to be on submerged beaches of late Pleistocene age. Promising areas were resampled using box and piston corers. About 235 samples were collected by the research vessels "Cripple Creek" and "Yaquina". In addition, about 565 nautical miles of acoustical subbottom profiling and 145 miles of magnetometer traverse was run. Sea-bottom photographs were taken at 22 localities.

Each area of relatively high gold content is associated with a concentration of heavy minerals and marked by a positive magnetic anomaly that suggests a considerable concentration of magnetic black sands beneath the surface sediments. The gold content is low, generally <0.03 ppm, but may reflect a larger concentration at depth; this possibility can be tested only by drilling.

Oregon and Washington

Heavy metals studies along coast.—Terrace and beach sands, Tertiary sediments, and a granodiorite intrusion on the coast of northwest Washington were sampled, and coastal terrace and beach deposits near Newport, west-central Oregon, previously shown to contain anomalous amounts of gold, were resampled.

Washington

Studies on continental shelf.—Reconnaissance acoustical subbottom profiling and sampling in near-shore areas of the continental shelf off the coast of Washington were done during an 8-day cruise by R/V "Oceaneer" of the University of Washington under a research contract. Local thick deposits of Recent sediments that may be sources of heavy metals were recognized. Systematic sampling will be done after interpretation of records has been completed.

Progress Report U S G S. Heavy Metals Program
Circular 560 1968

RECORD IDENTIFICATION

RECORD NO..... MO61724
RECORD TYPE..... XIM
COUNTRY/ORGANIZATION. USGS

NAME AND LOCATION

DEPOSIT NAME..... NAME UNKNOWN

COUNTRY CODE..... US

COUNTRY NAME: UNITED STATES

STATE CODE..... OR

STATE NAME: OREGON

COUNTY..... CURRY

COMMODITY INFORMATION

COMMODITIES PRESENT..... CR

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 8

PRESENT/LAST OPERATOR.... RONALD TYCER

PRODUCTION

YES

SMALL PRODUCTION

ANNUAL PRODUCTION (ORE, COMMOD., CONC., OVERBURD.)

ITEM	ACC	AMOUNT	THOUS. UNITS	YEAR	GRADE, REMARKS
1 ORE ACC		.008	TONS	1952	45% CR203
21 TOTAL		.008	TONS	45.00 %	CR203 (WEIGHTED AVERAGE GRADE)

GENERAL REFERENCES

1) THAYER, T. P., 1974, UNPUBL. DATA

RECORD 00988

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION

RECORD NO..... N061721
RECORD TYPE..... X1M
COUNTRY/ORGANIZATION. USGS

NAME AND LOCATION

DEPOSIT NAME..... NAME UNKNOWN

COUNTRY CODE..... US

COUNTRY NAME: UNITED STATES

STATE CODE..... OR

STATE NAME: OREGON

COUNTY..... CURRY

COMMODITY INFORMATION

COMMODITIES PRESENT..... CR

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 8

PRESENT/LAST OPERATOR.... GUS KELLY

PRODUCTION

YES

SMALL PRODUCTION

ANNUAL PRODUCTION (ORE, COMMOD., CONC., OVERBURD.)

ITEM	ACC	AMOUNT	THOUS. UNITS	YEAR	GRADE, REMARKS
1 ORE ACC		.007 TONS		1956	47% CR203
21 TOTAL		.007 TONS		47.00 %	CR203 (WEIGHTED AVERAGE GRADE)

GENERAL REFERENCES

1) THAYER, T. P., 1974, UNPUBL. DATA

MINERAL FUELS

Coal

General

Minor amounts of coal are found in a number of areas in Curry County in the Otter Point, Myrtle Group, and Tertiary sediments. Thin seams of coal are also exposed locally in nearshore facies of the Lower Cretaceous sedimentary rocks. Thicknesses average about 1 ft in parts of the Rocky Point Formation at Coal Point a few miles south of Port Orford, but these deposits have no commercial significance.

Two areas, the deposits of the Eckley (Upper Sixes) and Shasta Costa Creek areas, are reported by Diller (1903) to be of somewhat more promising dimensions. The coal prospects described and mapped by Diller in the Upper Sixes area include the localities marked 107 and 108 on the Mineral and Rock-Materials Localities Map (in pocket). These include two coal-prospect openings near Dement Ranch; one on the west bank of the Sixes River about 1/4 mile downstream from the North Fork in the SW $\frac{1}{4}$ sec. 36 and the other at about 820 ft elevation on the south side of an unnamed tributary to the Sixes River about the NE corner of SW $\frac{1}{4}$ sec. 35, T. 31, R. 13 W. Two others, mapped by Diller, near the south edge of a body of Tertiary sediments. One prospect is located a short distance west of the Middle Fork at about 600 ft elevation in the E $\frac{1}{2}$ of the SW $\frac{1}{4}$ sec. 13, T. 32 S., R. 13 W. The other lies about 1 mi to the west on the east side of Cold Creek at about 700 ft elevation in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 32 S., R. 13 W. The known coal occurrences are summarized below.

Description of deposits

Agness (Shasta Costa) prospects (170): On Shasta Costa Creek about 0.25 mi up from Rogue River near the east edge of the SW $\frac{1}{4}$ sec. 5, T. 35 S., R. 11 W. (may be obscured by bridge) and a second prospect on the south side of Snout Creek about 0.50 mi from the Rogue in SW $\frac{1}{4}$ sec. 8, T. 33 S., R. 11 W., at about 400 feet elevation. Shallow workings all caved.

A 10-ft, shale is exposed near the bridge on Shasta Costa Creek and on the south side of Snout Creek about 0.5 mi from the Rogue River, and contains 4- to 6-ft of poor-quality coal. The coal is underlain by 300 ft of conglomerate and about 100 ft of sandstone and shale. These Tertiary sedimentary rocks are in fault contact with rocks of the Lower Cretaceous Myrtle Group. The sediments dip gently eastward near the bridge across Shasta Costa. A sample reported by Diller (1903, p. 5) contained 0.79 percent moisture, 48.90 percent combustible volatile, 36.58 fixed carbon (less ash), 13.73 percent ash and 6.25 percent sulfur. There has been no known recent exploration. Diller reported that other localities were found near the Rogue River above Big Bend but that none are of importance.

Eckley Coal prospects (107): Located on the west side of Sixes River about 1/4 mile downstream from North Fork in SW $\frac{1}{4}$ sec. 36, T. 31 S., R. 13 W., at about 400 ft elevation, and on the south side of an unnamed tributary in the S $\frac{1}{2}$ sec. 35 at about 800 ft elevation, 1 $\frac{1}{4}$ mi east of Sugarloaf Mountain. Short adits and prospect cuts are probably all caved and overgrown. The coal-bearing beds (Ts - Lookingglass Formation) include a series of shales and soft sandstones containing two beds of coal; a sheared dirty layer about 20 ft thick and a 5-ft bed of the "best looking coal seen in the region." The coal beds are reported to pinch abruptly and are apparently not of great extent. The coal lies near the base of the formation and the coal beds are offset by high-angle faulting. A sample of the best coal from this locality (a 5-ft bed in sec. 35) contained 6.78 percent moisture, 43.51 percent volatile combustible, 47.27 percent fixed combustible, 2.44 percent light-reddish ash and 3.87 percent sulfur (analysed in 1901 by W. F. Hillebrand) (Diller, 1903, p. 4-5).

Iron Mountain (Carol Ann) coal occurrence:(141): Located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 34 S., R. 12 W., at about 3,500 ft elevation at the road junction on the southeast side of Iron Mountain. One 25-ft adit (caved), one 75-ft adit (caved) and shallow cuts. Shallow workings are both northeast and south of the road junction. A thin seam of dirty coal occurs in a narrow down-faulted segment of Tertiary sandstone in contact with serpentinite and the Galice Formation. The strike appears to be about east, and the dip is nearly vertical. The seam of coal is less than 4 ft thick, limited in extent, and poor in quality. Exposures are in the saddle on the southeast side of Iron Mountain at the road junction about 3,500 ft elevation (Oregon Department of Geology and Mineral Industries unpublished file report, 1941).

Middle Fork Sixes coal prospect (108): Located on the east side of Cold Creek (S $\frac{1}{2}$ sec. 14), at about 800 ft elevation and the S $\frac{1}{2}$ sec. 13 on the west side of Middle Fork Sixes at about 600 ft elevation; T. 32 S., R. 13 W., on the north flanks of Rusty Butte. A number of tunnels and open cuts; probably all caved and overgrown. The coal-bearing horizon, which contains some carbonaceous (coal-bearing) shale, (50-ft thick) is underlain by a thin bed of shale, nearly 100 ft of gray sandstone, and some conglomerate lying unconformably on older sedimentary and igneous rocks. The beds strike about east and dip 55° north. A sample analysed in 1901 contained 4.72 percent moisture, 41.40 percent combustible volatiles, 34.91 percent fixed combustible, 18.97 percent white ash and 5.78 percent sulfur. There has apparently been no further exploration for coal in this area since Diller's work (Diller, 1903, p. 4).

Oil and Gas Possibilities

The formation of recoverable oil or gas in nature requires (1) the accumulation of carbonaceous material in fine-grained source beds; (2) the presence of coarser-grained, porous, reservoir rock through which oil and gas can migrate; and (3) a structural or stratigraphic trap to confine the migrating oil or gas in the reservoir rock. Many of the most productive oil fields of the world are associated with basins having a history of rapid deposition and subsidence. The weight of the sediments accumulating in the center of the basin in the geologic past reduced porosity and squeezed the oil into the reservoir rock, where it was trapped by surrounding structures.

The pre-Cretaceous rocks of the study area are in general not suitable in terms of oil exploration for several reasons including (1) metamorphism after deposition; (2) inappropriate environments of deposition; (3) impermeability; and (4) thrusting, shearing, and other types of deformation that have broken the rock into small fragments. Instead the most likely areas to prospect for oil and gas are in the younger marine sedimentary rocks of Cretaceous and Tertiary age. Offshore areas of Tertiary sediments, northeast of Agness, the Upper Cretaceous sedimentary rocks around Cape Sebastian, the mouth of Pistol River, and Crook Point may be considered more favorable. The geologic history of the Tertiary rocks on the continental shelf differs from that of the older rocks on the mainland. Recently the shelf has been systematically investigated by oil companies, the U.S. Geological Survey, and the Department of Oceanography at Oregon State University. Research has included geophysical investigations and sediment sampling. McKay (1969) has tentatively correlated offshore bedrock units, defined by their seismic properties, to bedrock units exposed onshore in the Cape Blanco-Coos Bay area.

A large, linear offshore basin between Bandon and Cape Blanco is filled with a thick deposit of Miocene and Pliocene sediments and may have potential for oil and gas production. The offshore late Tertiary is generally thicker and more extensive than the onshore section, a characteristic which contributes to the attractiveness of the shelf in terms of oil potential. A 6,146-ft test, drilled about 10 mi off the coast northwest of Bandon (Coos County) in 1967 bottomed in the Tyee Formation and reportedly encountered non-commercial amounts of gas in a 60-ft sandstone layer (at 5,400 ft) (Newton and Mason, 1973, in Baldwin and others, 1973, p. 71). The large offshore area along the Curry County coast is essentially unexplored and may eventually attract companies in search of oil and gas. There has been no drilling for oil in Curry County at the date of this writing. The discovery of commercial quantities of oil, either on, or offshore, would have a major economic effect on Curry County. Employment would rise and an offshore discovery would require huge amounts of capital for offshore platforms, pipelines, and auxiliary supply facilities. The short-term economic effect of an oil discovery would be felt immediately, but the more important long-term effect would be the broadening of the County's economic base.

NAME-
PRIMARY NAME- 22RED FLAT PLACERS

REFERENCE NUMBER- 4101500094

1
1 NAME- CURRY CO RD DEPT #7 REFERENCE NUMBER- 4101500207
STATE- OREGON COUNTY- CURRY ELEVATION- 00080
LATITUDE- 42 01 55 N PRECISION- 1000 METERS
LONGITUDE- 124 10 01 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 041 S RANGE- 012 W
DESCRIPTION SECTION- 06 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
STATUS- PRODUCER OPERATION TYPE- SURFACE
MAP NAME- MT.EMILY,OREG. TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 1CURRY CO RD DEPT #7
COMMODITIES- SAND & GRAVEL
OR MF

2
2 NAME- PORT OF BROOKINGS REFERENCE NUMBER- 4101500227
STATE- OREGON COUNTY- CURRY ELEVATION- 00025
LATITUDE- 42 03 23 N PRECISION- 500 METERS
LONGITUDE- 124 15 47 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 041 S RANGE- 013 W
DESCRIPTION SECTION- 05 SE1/4 NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- PRIVATE
STATUS- PRODUCER OPERATION TYPE- SURFACE
MAP NAME- CAPE FERRELO,OREG TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 2PORT OF BROOKINGS
COMMODITIES- SAND & GRAVEL
OR MF
ALSO IN SECS 6, 7, 8

3
3 NAME- CURRY CO RD DEPT #4 REFERENCE NUMBER- 4101500204
STATE- OREGON COUNTY- CURRY ELEVATION- 00095
LATITUDE- 42 04 01 N PRECISION- 1000 METERS
LONGITUDE- 124 13 51 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
DESCRIPTION SECTION- 34 S 1/2 NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
STATUS- PRODUCER OPERATION TYPE- SURFACE
MAP NAME- MT.EMILY,OREG. TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 3CURRY CO RD DEPT #4
COMMODITIES- SAND & GRAVEL
OR MF

4

4 NAME- CURRY CO ROAD DEPT 1 REFERENCE NUMBER- 4101500200
 STATE- OREGON COUNTY- CURRY ELEVATION- 00080
 LATITUDE- 42 04 22 N PRECISION- 500 METERS
 LONGITUDE- 124 12 44 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 35 NW1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- MT.EMILY,OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 4CURRY CO ROAD DEPT 1
 COMMODITIES- SAND & GRAVEL
 OR MF

5

4 NAME- RUSH, RODNEY K. REFERENCE NUMBER- 4101500229
 STATE- OREGON COUNTY- CURRY ELEVATION- 00035
 LATITUDE- 42 03 57 N PRECISION- 500 METERS
 LONGITUDE- 124 13 25 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 34 SE1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- MT.EMILY,OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 4RUSH, RODNEY K.
 COMMODITIES- SAND & GRAVEL

6

5 NAME- ELMER BANKUS REFERENCE NUMBER- 4101500197
 STATE- OREGON COUNTY- CURRY ELEVATION- 00080
 LATITUDE- 42 04 17 N PRECISION- 1000 METERS
 LONGITUDE- 124 14 59 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 33 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- MT.EMILY-CAPE FER TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 5ELMER BANKUS
 COMMODITIES- SAND & GRAVEL
 OR MF

7

5 NAME- MCKENZIE, THOMAS M REFERENCE NUMBER- 4101500218
 STATE- OREGON COUNTY- CURRY ELEVATION- 00060
 LATITUDE- 42 04 15 N PRECISION- 1000 METERS
 LONGITUDE- 124 15 02 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 33 CENTR NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- UNDETERMINED
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- CAPE FERRELO TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 5MCKENZIE, THOMAS M
 COMMODITIES- SAND & GRAVEL
 OR MF

8

5 NAME- PACIFIC ROCK AND PACIFIC CO. REFERENCE NUMBER- 4101500227
 STATE- OREGON COUNTY- CURRY ELEVATION- 00060
 LATITUDE- 42 04 11 N PRECISION- 1000 METERS
 LONGITUDE- 124 15 18 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 33 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- UNDETERMINED
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- CAPE FERRELO TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 5PACIFIC ROCK AND PACIFIC CO.
 COMMODITIES- SAND & GRAVEL
 OR MF
 2 MI NE OF BROOKINGS

9

6 NAME- FERRY CREEK ROCK CO REFERENCE NUMBER- 4101500214
 STATE- OREGON COUNTY- CURRY ELEVATION- 00360
 LATITUDE- 42 04 25 N PRECISION- 1000 METERS
 LONGITUDE- 124 16 14 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
 DESCRIPTION SECTION- 32 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- UNDETERMINED
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- CAPE FERRELO, OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 6FERRY CREEK ROCK CO
 COMMODITIES- SAND & GRAVEL
 OR MF

10

7 NAME- ELMER BANKUS ROCK QUARRY REFERENCE NUMBER- 4101500196
STATE- OREGON COUNTY- CURRY ELEVATION- 00160
LATITUDE- 42 06 09 N PRECISION- 500 METERS
LONGITUDE- 124 11 46 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 013 W
DESCRIPTION SECTION- 24 NW1/4 NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- PRIVATE
STATUS- UNDETERMINED OPERATION TYPE- SURFACE
MAP NAME- MT.EMILY,OREG. TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 7ELMER BANKUS ROCK QUARRY
OTHER NAMES- SOUTH COAST LUMBER CO
COMMODITIES- SAND & GRAVEL
OR MF
8 MI NE OF BROOKINGS

11

8 NAME- FLORENCE PROSPECT REFERENCE NUMBER- 4101500076
STATE- OREGON COUNTY- CURRY ELEVATION- 02800
LATITUDE- 42 06 17 N PRECISION- 1000 METERS
LONGITUDE- 124 09 01 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 012 W
DESCRIPTION SECTION- 08 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- MOUNT EMILY TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 8FLORENCE PROSPECT
COMMODITIES- ZINC GOLD

12

8 NAME- LUCKY WARREN PROSPECT REFERENCE NUMBER- 4101500087
STATE- OREGON COUNTY- CURRY ELEVATION- 01600
LATITUDE- 42 05 43 N PRECISION- 10000 METERS
LONGITUDE- 124 09 20 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 012 W
DESCRIPTION SECTION- 08 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- MOUNT EMILY TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 8LUCKY WARREN PROSPECT
COMMODITIES- GOLD

13

8 NAME- WINCHUCK PIT REFERENCE NUMBER- 4101500230
 STATE- OREGON COUNTY- CURRY ELEVATION- 01200
 LATITUDE- 42 06 55 N PRECISION- 1000 METERS
 LONGITUDE- 124 08 34 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 041 S RANGE- 012 W
 DESCRIPTION SECTION- 05 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- MT.EMILY,OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 8WINCHUCK PIT
 OTHER NAMES- SIMONSON LUMBER COMPANY
 COMMODITIES- SAND & GRAVEL
 OR MF

14

✓ 9 NAME- COLFGROVE PROSPECT REFERENCE NUMBER- 4101500077
 STATE- OREGON COUNTY- CURRY ELEVATION- 00350
 LATITUDE- 42 08 50 N PRECISION- 1000 METERS
 LONGITUDE- 124 20 07 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 040 S RANGE- 014 W
 DESCRIPTION SECTION- 02 N 1/2 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- CAPE FERRELO OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 9COLFGROVE PROSPECT
 COMMODITIES- MANGANESE

15

✓ 10 NAME- LONG RIDGE PROSPECT REFERENCE NUMBER- 4101500078
 STATE- OREGON COUNTY- CURRY ELEVATION- 01300
 LATITUDE- 42 15 32 N PRECISION- 1000 METERS
 LONGITUDE- 124 05 15 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 012 W
 DESCRIPTION SECTION- 14 S 1/2 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- PAST PRODUCER OPERATION TYPE- PROSPECT
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 10LONG RIDGE PROSPECT
 COMMODITIES- MANGANESE

16

11 NAME- CURRY CO RD DEPT #5 REFERENCE NUMBER- 4101500205
 STATE- OREGON COUNTY- CURRY ELEVATION- 00080
 LATITUDE- 42 16 19 N PRECISION- 1000 METERS
 LONGITUDE- 124 24 05 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 014 W
 DESCRIPTION SECTION- 19 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 11CURRY CO RD DEPT #5
 COMMODITIES- SAND & GRAVEL
 OR MF

17

11 NAME- OREGON STATE HWY DIV 25 REFERENCE NUMBER- 410150022?
 STATE- OREGON COUNTY- CURRY ELEVATION- 00025
 LATITUDE- 42 16 33 N PRECISION- 500 METERS
 LONGITUDE- 124 23 30 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 014 W
 DESCRIPTION SECTION- 20 NW1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- STATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 11OREGON STATE HWY DIV 25
 COMMODITIES- SAND & GRAVEL
 OR MF
 ALSO IN SEC 21

18

12 NAME- CROCKETT REFERENCE NUMBER- 4101500201
 STATE- OREGON COUNTY- CURRY ELEVATION- 00090
 LATITUDE- 42 16 35 N PRECISION- 500 METERS
 LONGITUDE- 124 21 07 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 014 W
 DESCRIPTION SECTION- 21 NW1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- CAPE FERRELO, OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 12CROCKETT
 OTHER NAMES- CURRY CO RD DEPT 8
 COMMODITIES- SAND & GRAVEL
 OR MF

19

✓ 13 NAME- LOWER PINES OCCURRENCE REFERENCE NUMBER- 4101500051
STATE- OREGON COUNTY- CURRY ELEVATION- 01050
LATITUDE- 42 16 37 N PRECISION- 100 METERS
LONGITUDE- 124 05 11 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 012 W
DESCRIPTION SECTION- 11 NW1/4 SE1/4 NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 13LOWER PINES OCCURRENCE
OTHER NAMES- PINES CHROMITE CHETCO
COMMODITIES- CHROMIUM

20

✓ 13 NAME- UPPER PINES CLAIM REFERENCE NUMBER- 4101500052
STATE- OREGON COUNTY- CURRY ELEVATION- 01500
LATITUDE- 42 16 52 N PRECISION- 100 METERS
LONGITUDE- 124 05 30 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 038 S RANGE- 012 W
DESCRIPTION SECTION- 11 NW1/4 NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 13UPPER PINES CLAIM
OTHER NAMES- PINES CHROMITE CHETCO
COMMODITIES- CHROMIUM

21

✓ 14 NAME- NO NAME REFERENCE NUMBER- 4101500046
STATE- OREGON COUNTY- CURRY ELEVATION- 02700
LATITUDE- 42 18 09 N PRECISION- 1000 METERS
LONGITUDE- 124 07 17 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 537 S RANGE- 012 W
DESCRIPTION SECTION- 34 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 14NO NAME
COMMODITIES- CHROMIUM

22

✓ 15 NAME- SNOW CAMP NO 1 REFERENCE NUMBER- 4101500045
 STATE- OREGON COUNTY- CURRY ELEVATION- 03200
 LATITUDE- 42 19 19 N PRECISION- 1000 METERS
 LONGITUDE- 124 07 28 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 537 S RANGE- 012 W
 DESCRIPTION SECTION- 28 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 15SNOW CAMP NO 1
 OTHER NAMES- WINDY VALLEY GROUP
 COMMODITIES- CHROMIUM

23

✓ 16 NAME- NUG CLAIM AND BOOMER CLAIM REFERENCE NUMBER- 4101500044
 STATE- OREGON COUNTY- CURRY ELEVATION- 03100
 LATITUDE- 42 19 09 N PRECISION- 1000 METERS
 LONGITUDE- 124 08 40 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 537 S RANGE- 012 W
 DESCRIPTION SECTION- 29 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 16NUG CLAIM AND BOOMER CLAIM
 COMMODITIES- CHROMIUM

24

✓ 16 NAME- PHYLLIS CLAIM REFERENCE NUMBER- 4101500043
 STATE- OREGON COUNTY- CURRY ELEVATION- 03400
 LATITUDE- 42 19 49 N PRECISION- 1000 METERS
 LONGITUDE- 124 09 16 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
 DESCRIPTION SECTION- 32 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 16PHYLLIS CLAIM
 OTHER NAMES- WINDY VALLEY GROUP
 COMMODITIES- CHROMIUM

25

✓ 17 NAME- PISTOL RIVER MERCURY PROSPECT REFERENCE NUMBER- 4101500057
STATE- OREGON COUNTY- CURRY ELEVATION- 01760
LATITUDE- 42 20 20 N PRECISION- 1000 METERS
LONGITUDE- 124 16 15 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 013 W
DESCRIPTION SECTION- 29 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 17PISTOL RIVER MERCURY PROSPECT
OTHER NAMES- RED FLAT PLACERS AREA
COMMODITIES- MERCURY

26

✓ 18 NAME- GOLD BASIN PLACERS REFERENCE NUMBER- 4101500082
STATE- OREGON COUNTY- CURRY ELEVATION- 03100
LATITUDE- 42 20 52 N PRECISION- 1000 METERS
LONGITUDE- 124 02 12 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 011 W
DESCRIPTION SECTION- 30 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- EXPLORED PROSPECT OPERATION TYPE- WELL
MAP NAME- COLLIER BUTTE ORE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 18GOLD BASIN PLACERS
COMMODITIES- GOLD

27

✓ 19 NAME- B AND K NO 1 REFERENCE NUMBER- 4101500041
STATE- OREGON COUNTY- CURRY ELEVATION- 03300
LATITUDE- 42 21 08 N PRECISION- 1000 METERS
LONGITUDE- 124 09 05 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 20 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 19B AND K NO 1
COMMODITIES- CHROMIUM

28

✓ 19 NAME- BUNKER HILL GROUP REFERENCE NUMBER- 4101500064
STATE- OREGON COUNTY- CURRY ELEVATION- 02960
LATITUDE- 42 21 56 N PRECISION- 1000 METERS
LONGITUDE- 124 08 51 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 20 NONE NONE NONE
RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 19BUNKER HILL GROUP
COMMODITIES- COPPER COBALT

29

✓ 19 NAME- LENA CLAIM REFERENCE NUMBER- 4101500042
STATE- OREGON COUNTY- CURRY ELEVATION- 04000
LATITUDE- 42 20 49 N PRECISION- 1000 METERS
LONGITUDE- 124 09 30 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 29 NONE NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 19LENA CLAIM
OTHER NAMES- WINDY VALLEY GROUP
COMMODITIES- CHROMIUM

30

✓ 19 NAME- PASTORELLI REFERENCE NUMBER- 4101500159
STATE- OREGON COUNTY- CURRY ELEVATION- 04220
LATITUDE- 42 20 42 N PRECISION- 1000 METERS
LONGITUDE- 124 09 50 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 30 E 1/2 E 1/2 NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 19PASTORELLI
COMMODITIES- NICKEL

31
 20 NAME- SNOW CAMP MEADOW REFERENCE NUMBER- 4101500156
 STATE- OREGON COUNTY- CURRY ELEVATION- 03500
 LATITUDE- 42 21 14 N PRECISION- 1000 METERS
 LONGITUDE- 124 10 15 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
 DESCRIPTION SECTION- 19 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 20SNOW CAMP MEADOW
 COMMODITIES- NICKEL

32
 21 NAME- PORT OF GOLD BEACH#1 REFERENCE NUMBER- 4101500193
 STATE- OREGON COUNTY- CURRY ELEVATION- 00160
 LATITUDE- 42 21 20 N PRECISION- 500 METERS
 LONGITUDE- 124 20 30 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 014 W
 DESCRIPTION SECTION- 22 SE1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 21PORT OF GOLD BEACH#1
 COMMODITIES- SAND & GRAVEL
 OR MF
 6 MI SE OF GOLD BEACH

33
 22 NAME- RED FLAT PLACERS REFERENCE NUMBER- 4101500094
 STATE- OREGON COUNTY- CURRY ELEVATION- 02500
 LATITUDE- 42 21 20 N PRECISION- 10000 METERS
 LONGITUDE- 124 17 56 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 013 W
 DESCRIPTION SECTION- 19 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 22RED FLAT PLACERS
 COMMODITIES- GOLD SILVER PLATINUM
 NICKEL CHROMIUM MERCURY

- 34
 22 NAME- RED FLATS REFERENCE NUMBER- 4101500161
 STATE- OREGON COUNTY- CURRY ELEVATION- 02350
 LATITUDE- 42 21 40 N PRECISION- 1000 METERS
 LONGITUDE- 124 17 14 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 013 W
 DESCRIPTION SECTION- 19 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 22RED FLATS
 OTHER NAMES- NORTH RED FLATS
 COMMODITIES- NICKEL
- 35
 23 NAME- NO NAME REFERENCE NUMBER- 4101500042
 STATE- OREGON COUNTY- CURRY ELEVATION- 03200
 LATITUDE- 42 22 14 N PRECISION- 500 METERS
 LONGITUDE- 124 07 41 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
 DESCRIPTION SECTION- 16 SE1/4 NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 23NO NAME
 COMMODITIES- CHROMIUM
- 36
 24 NAME- CURRY CO RD DEPT #11 REFERENCE NUMBER- 4101500212
 STATE- OREGON COUNTY- CURRY ELEVATION- 00100
 LATITUDE- 42 22 23 N PRECISION- 1000 METERS
 LONGITUDE- 124 24 20 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 014 W
 DESCRIPTION SECTION- 18 CENTR NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- COUNTY
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 24CURRY CO RD DEPT #11
 COMMODITIES- SAND & GRAVEL
 OREGON MICROFILM

37

25 NAME- COLLIER CREEK CRAGS REFERENCE NUMBER- 4101500038
 STATE- OREGON COUNTY- CURRY ELEVATION- 02700
 LATITUDE- 42 23 24 N PRECISION- 1000 METERS
 LONGITUDE- 124 09 26 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
 DESCRIPTION SECTION- 08 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 25COLLIER CREEK CRAGS
 COMMODITIES- CHROMIUM

38

26 NAME- OREGON STATE HWY DIV 23 REFERENCE NUMBER- 4101500223
 STATE- OREGON COUNTY- CURRY ELEVATION- 00030
 LATITUDE- 42 23 17 N PRECISION- 500 METERS
 LONGITUDE- 124 24 45 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 014 W
 DESCRIPTION SECTION- 07 W 1/2 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- STATE
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 26OREGON STATE HWY DIV 23
 COMMODITIES- SAND & GRAVEL
 OR MF

39

26 NAME- SMEDBERG BEACH PLACERS REFERENCE NUMBER- 4101500095
 STATE- OREGON COUNTY- CURRY ELEVATION- 00030
 LATITUDE- 42 23 47 N PRECISION- 1000 METERS
 LONGITUDE- 124 25 22 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 015 W
 DESCRIPTION SECTION- 01 NONE NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- PAST PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 26SMEDBERG BEACH PLACERS
 OTHER NAMES- ROCK CLAIM IDAHO
 COMMODITIES- GOLD

40

✓ 27 NAME- COLLIER CREEK COPPER NO 13 REFERENCE NUMBER- 4101500039
STATE- OREGON COUNTY- CURRY ELEVATION- 01750
LATITUDE- 42 23 20 N PRECISION- 1000 METERS
LONGITUDE- 124 04 29 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 12 NONE NONE NONE
RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 27COLLIER CREEK COPPER NO 13
OTHER NAMES- LEWIS
COMMODITIES- CHROMIUM

41

✓ 27 NAME- COPPER CITY CLAIMS REFERENCE NUMBER- 4101500063
STATE- OREGON COUNTY- CURRY ELEVATION- 01400
LATITUDE- 42 23 54 N PRECISION- 1000 METERS
LONGITUDE- 124 03 38 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 012 W
DESCRIPTION SECTION- 01 NONE NONE NONE
RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE- MINERAL LOCATION
MAP NAME- COLLIER BUTTE ORE TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 21.003
PRIMARY NAME- 27COPPER CITY CLAIMS
OTHER NAMES- COPPER CITY CLAIMS BRINER AND MYERS
COMMODITIES- UNDETERMINED

42

✓ 28 NAME- SMITH PROSPECT REFERENCE NUMBER- 4101500079
STATE- OREGON COUNTY- CURRY ELEVATION- 01050
LATITUDE- 42 24 19 N PRECISION- 500 METERS
LONGITUDE- 124 23 22 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 037 S RANGE- 014 W
DESCRIPTION SECTION- 05 N 1/2 NONE NONE
RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 28SMITH PROSPECT
COMMODITIES- MANGANESE

43

29 NAME- UPPER QUOSATANA PIT REFERENCE NUMBER- 4101500220
 STATE- OREGON COUNTY- CURRY ELEVATION- 02500
 LATITUDE- 42 24 41 N PRECISION- 500 METERS
 LONGITUDE- 124 14 53 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 013 W
 DESCRIPTION SECTION- 33 SE1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- COLLIER BUTTE,ORG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 29UPPER QUOSATANA PIT
 OTHER NAMES- OCEAN TERMINALS CO
 COMMODITIES- SAND & GRAVEL
 OR MF

44

30 NAME- COLLIER CREEK REFERENCE NUMBER- 4101500174
 STATE- OREGON COUNTY- CURRY ELEVATION- 00400
 LATITUDE- 42 24 46 N PRECISION- 10000 METERS
 LONGITUDE- 124 00 51 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 012 W
 DESCRIPTION SECTION- 32 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 30COLLIER CREEK
 COMMODITIES- NICKEL

45

31 NAME- PORT OF GOLD BEACH #2 REFERENCE NUMBER- 4101500228
 STATE- OREGON COUNTY- CURRY ELEVATION- 00020
 LATITUDE- 42 25 09 N PRECISION- 500 METERS
 LONGITUDE- 124 25 08 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 015 W
 DESCRIPTION SECTION- 36 NE1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- PRIVATE
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH,OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 31PORT OF GOLD BEACH #2
 COMMODITIES- SAND & GRAVEL
 OR MF

46

32 NAME- SIGNAL BUTTES AREA REFERENCE NUMBER- 4101500053
 STATE- OREGON COUNTY- CURRY ELEVATION- 02650
 LATITUDE- 42 25 29 N PRECISION- 100 METERS
 LONGITUDE- 124 18 00 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 36 NE1/4 NE1/4 NE1/4
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 32SIGNAL BUTTES AREA
 COMMODITIES- CHROMIUM

47

32 NAME- STARR GROUP REFERENCE NUMBER- 4101500096
 STATE- OREGON COUNTY- CURRY ELEVATION- 03300
 LATITUDE- 42 24 56 N PRECISION- 1000 METERS
 LONGITUDE- 124 17 27 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 013 W
 DESCRIPTION SECTION- 31 SW1/4 NONE NONE
 RIVER BASIN- 73V CHETCO RIVER 7322 DOMAIN- NATIONAL FOREST
 STATUS- DEVELOPED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- GOLD BEACH OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 32STARR GROUP
 COMMODITIES- COPPER GOLD SILVER
 IRON

48

33 NAME- BERRY PROSPECT REFERENCE NUMBER- 4101500062
 STATE- OREGON COUNTY- CURRY ELEVATION- 02600
 LATITUDE- 42 25 27 N PRECISION- 10000 METERS
 LONGITUDE- 124 02 20 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 011 W
 DESCRIPTION SECTION- 31 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- COLLIER BUTTE ORE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 33BERRY PROSPECT
 COMMODITIES- IRON

49

33 NAME- COLLIER CREEK COPPER CO REFERENCE NUMBER- 4101500065
 STATE- OREGON COUNTY- CURRY ELEVATION- 03000
 LATITUDE- 42 25 58 N PRECISION- 1000 METERS
 LONGITUDE- 124 02 54 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 011 W
 DESCRIPTION SECTION- 30 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- DEVELOPED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- COLLIER BUTTE ORE. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 33COLLIER CREEK COPPER CO
 COMMODITIES- COPPER GOLD SILVER

50

34 NAME- ARNTZENS REFERENCE NUMBER- 4101500194
 STATE- OREGON COUNTY- CURRY ELEVATION- 00030
 LATITUDE- 42 25 59 N PRECISION- 1000 METERS
 LONGITUDE- 124 24 19 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 30 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 34ARNTZENS
 COMMODITIES- SAND & GRAVEL
 OR MF
 NEAR GOLD BEACH

51

34 NAME- CARPENTER, CHANCEY REFERENCE NUMBER- 4101500198
 STATE- OREGON COUNTY- CURRY ELEVATION- 00030
 LATITUDE- 42 25 58 N PRECISION- 1000 METERS
 LONGITUDE- 124 24 18 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 30 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 34CARPENTER, CHANCEY
 COMMODITIES- SAND & GRAVEL
 OR MF

52

34 NAME- PORT OF GOLD BEACH #3 REFERENCE NUMBER- 4101500236
 STATE- OREGON COUNTY- CURRY ELEVATION- 00080
 LATITUDE- 42 25 51 N PRECISION- 500 METERS
 LONGITUDE- 124 25 09 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 25 SE1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 34PORT OF GOLD BEACH #3
 COMMODITIES- SAND & GRAVEL
 OR MF

53

35 NAME- PACIFIC ROCK AND PAVING CO. REFERENCE NUMBER- 4101500225
 STATE- OREGON COUNTY- CURRY ELEVATION- 00080
 LATITUDE- 42 26 48 N PRECISION- 1000 METERS
 LONGITUDE- 124 22 03 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 E
 DESCRIPTION SECTION- 21 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- UNDETERMINED
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 35PACIFIC ROCK AND PAVING CO.
 COMMODITIES- SAND & GRAVEL
 OR MF
 4 MI NE OF GOLD BEACH

54

36 NAME- KESSLERS AND FRYS PROPERTY REFERENCE NUMBER- 4101500067
 STATE- OREGON COUNTY- CURRY ELEVATION- 02800
 LATITUDE- 42 26 53 N PRECISION- 1000 METERS
 LONGITUDE- 124 06 33 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 012 W
 DESCRIPTION SECTION- 22 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- DEVELOPED PROSPECT OPERATION TYPE- UNDERGROUND
 MAP NAME- COLLIER BUTTE ORE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 36KESSLERS AND FRYS PROPERTY
 COMMODITIES- COPPER

55

37 NAME- HORSE SIGN BUTTE REFERENCE NUMBER- 4101500167
 STATE- OREGON COUNTY- CURRY ELEVATION- 02800
 LATITUDE- 42 27 34 N PRECISION- 100 METERS
 LONGITUDE- 124 01 38 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 011 W
 DESCRIPTION SECTION- 17 SW1/4 NW1/4 NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- SURFACE
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 37HORSE SIGN BUTTE
 COMMODITIES- IRON

56

38 NAME- CURRY CO RD DEPT #12 REFERENCE NUMBER- 4101500208
 STATE- OREGON COUNTY- CURRY ELEVATION- 00015
 LATITUDE- 42 27 42 N PRECISION- 1000 METERS
 LONGITUDE- 124 22 05 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 E
 DESCRIPTION SECTION- 16 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- COUNTY
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 38CURRY CO RD DEPT #12
 COMMODITIES- SAND & GRAVEL
 OR MF

57

38 NAME- US PLYWOOD REFERENCE NUMBER- 4101500219
 STATE- OREGON COUNTY- CURRY ELEVATION- 00050
 LATITUDE- 42 27 40 N PRECISION- 1000 METERS
 LONGITUDE- 124 22 01 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 16 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLDBEACH TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 38US PLYWOOD
 OTHER NAMES- CHAMP. INT. CORP
 COMMODITIES- SAND & GRAVEL
 OR MF
 ALSO IN SEC 29

58

✓ 39 NAME- FLOAT CHROMITE REFERENCE NUMBER- 4101500054
 STATE- OREGON COUNTY- CURRY ELEVATION- 00560
 LATITUDE- 42 28 05 N PRECISION- 1000 METERS
 LONGITUDE- 124 23 18 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 08 SE1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- GOLD BEACH TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 39FLOAT CHROMITE
 COMMODITIES- CHROMIUM

59

40 NAME- CURRY CO RD DEPT #6 REFERENCE NUMBER- 4101500206
 STATE- OREGON COUNTY- CURRY ELEVATION- 00560
 LATITUDE- 42 28 25 N PRECISION- 1000 METERS
 LONGITUDE- 124 18 31 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 12 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- COUNTY
 STATUS- PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 40CURRY CO RD DEPT #6
 COMMODITIES- SAND & GRAVEL
 OR MF

60

41 NAME- AGNESS RD REFERENCE NUMBER- 4101500216
 STATE- OREGON COUNTY- CURRY ELEVATION- 00040
 LATITUDE- 42 28 32 N PRECISION- 500 METERS
 LONGITUDE- 124 19 55 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 014 W
 DESCRIPTION SECTION- 11 NW1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 41AGNESS RD
 OTHER NAMES- FOREST SERVICE
 COMMODITIES- SAND & GRAVEL
 OR MF
 ALSO IN SEC 1

61

✓ 42 NAME- COLLINS MINE REFERENCE NUMBER- 4101500093
 STATE- OREGON COUNTY- CURRY ELEVATION- 00100
 LATITUDE- 42 29 26 N PRECISION- 100 METERS
 LONGITUDE- 124 24 56 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 015 W
 DESCRIPTION SECTION- 01 NE1/4 SE1/4 NONE
 RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- NATIONAL FOREST
 STATUS- PAST PRODUCER OPERATION TYPE- SURFACE
 MAP NAME- GOLD BEACH OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 42COLLINS MINE
 COMMODITIES- GOLD PLATINUM

62

✓ 43 NAME- IRON HILL GROUP REFERENCE NUMBER- 4101500066
 STATE- OREGON COUNTY- CURRY ELEVATION- 01850
 LATITUDE- 42 30 11 N PRECISION- 10000 METERS
 LONGITUDE- 124 09 18 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 012 W
 DESCRIPTION SECTION- 32 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 43IRON HILL GROUP
 COMMODITIES- IRON MANGANESE

63

✓ 44 NAME- INDIGO CREEK AREA REFERENCE NUMBER- 4101500032
 STATE- OREGON COUNTY- CURRY ELEVATION- 01600
 LATITUDE- 42 29 52 N PRECISION- 1000 METERS
 LONGITUDE- 124 01 09 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 036 S RANGE- 011 W
 DESCRIPTION SECTION- 05 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- COLLIER BUTTE TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 44INDIGO CREEK AREA
 COMMODITIES- CHROMIUM

64

44 NAME- NIGHT HAWK PROSPECT REFERENCE NUMBER- 4101500070
 STATE- OREGON COUNTY- CURRY ELEVATION- 01750
 LATITUDE- 42 30 40 N PRECISION- 1000 METERS
 LONGITUDE- 124 00 53 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 011 W
 DESCRIPTION SECTION- 33 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 44NIGHT HAWK PROSPECT
 COMMODITIES- GOLD

65

45 NAME- BLACK ROCK NO 31 REFERENCE NUMBER- 4101500047
 STATE- OREGON COUNTY- CURRY ELEVATION- 02550
 LATITUDE- 42 30 37 N PRECISION- 500 METERS
 LONGITUDE- 124 06 10 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 012 W
 DESCRIPTION SECTION- 35 NW1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 45BLACK ROCK NO 31
 COMMODITIES- CHROMIUM

66

45 NAME- ILLANE GROUP *H agness gp?* REFERENCE NUMBER- 4101500034
 STATE- OREGON COUNTY- CURRY ELEVATION- 02600
 LATITUDE- 42 31 14 N PRECISION- 1000 METERS
 LONGITUDE- 124 06 15 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 012 W
 DESCRIPTION SECTION- 26 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 45ILLANE GROUP
 COMMODITIES- CHROMIUM *H*

34

67

45 NAME- PINE FLAT MINE REFERENCE NUMBER- 4101500071
 STATE- OREGON COUNTY- CURRY ELEVATION- 02700
 LATITUDE- 42 31 18 N PRECISION- 1000 METERS
 LONGITUDE- 124 05 47 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 012 W
 DESCRIPTION SECTION- 26 N 1/2 NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 45PINE FLAT MINE
 COMMODITIES- COPPER GOLD SILVER

68

46 NAME- STEPHENS AND STEAR PROPERTY REFERENCE NUMBER- 4101500072
 STATE- OREGON COUNTY- CURRY ELEVATION- 01260
 LATITUDE- 42 31 09 N PRECISION- 10000 METERS
 LONGITUDE- 124 00 57 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 011 W
 DESCRIPTION SECTION- 28 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
 STATUS- PAST PRODUCER OPERATION TYPE- UNDERGROUND
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 46STEPHENS AND STEAR PROPERTY
 COMMODITIES- GOLD

69

47 NAME- AGNESS GROUP REFERENCE NUMBER- 4101500033
 STATE- OREGON COUNTY- CURRY ELEVATION- 01200
 LATITUDE- 42 31 10 N PRECISION- 10000 METERS
 LONGITUDE- 124 03 37 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 011 W
 DESCRIPTION SECTION- 30 NONE NONE NONE
 RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- UNDETERMINED
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 47AGNESS GROUP
 COMMODITIES- CHROMIUM

70

48 NAME- MANGANESE PROSPECT REFERENCE NUMBER- 4101500069
 STATE- OREGON COUNTY- CURRY ELEVATION- 00400
 LATITUDE- 42 33 36 N PRECISION- 1000 METERS
 LONGITUDE- 124 06 12 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 012 W
 DESCRIPTION SECTION- 11 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 48MANGANESE PROSPECT
 OTHER NAMES- COPPER CANYON
 COMMODITIES- MANGANESE

71

49 NAME- FLOYD D. SMITH REFERENCE NUMBER- 410150023
 STATE- OREGON COUNTY- CURRY ELEVATION- 00025
 LATITUDE- 42 33 37 N PRECISION- 1000 METERS
 LONGITUDE- 124 23 02 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 014 W
 DESCRIPTION SECTION- 08 NONE NONE NONE
 RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- PRIVATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- PORT ORFORD, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 49FLOYD D. SMITH
 COMMODITIES- SAND & GRAVEL
 OR MF

72

49 NAME- PARKER ELECTROMAGNETIC MACHINE REFERENCE NUMBER- 4101500101
 STATE- OREGON COUNTY- CURRY ELEVATION- 00020
 LATITUDE- 42 33 45 N PRECISION- 500 METERS
 LONGITUDE- 124 23 08 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 014 W
 DESCRIPTION SECTION- 08 W 1/2 NONE NONE
 RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- PORT ORFORD OREG TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 49PARKER ELECTROMAGNETIC MACHINE
 COMMODITIES- CHROMIUM

73

50 NAME- CLARNO PROSPECT REFERENCE NUMBER- 4101500060
STATE- OREGON COUNTY- CURRY ELEVATION- 00160
LATITUDE- 42 33 44 N PRECISION- 1000 METERS
LONGITUDE- 124 21 41 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 014 W
DESCRIPTION SECTION- 09 NONE NONE NONE
RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- PORT ORFORD OREG TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 50CLARNO PROSPECT
COMMODITIES- MERCURY GOLD

74

51 NAME- RED CUB COPPER PROSPECT REFERENCE NUMBER- 4101500158
STATE- OREGON COUNTY- CURRY ELEVATION- 01200
LATITUDE- 42 34 16 N PRECISION- 500 METERS
LONGITUDE- 124 00 47 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 011 W
DESCRIPTION SECTION- 04 SE1/4 NONE NONE
RIVER BASIN- 73T ILLINOIS RIVER 7320 DOMAIN- NATIONAL FOREST
STATUS- EXPLORED PROSPECT OPERATION TYPE- UNDERGROUND
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 51RED CUB COPPER PROSPECT
COMMODITIES- COPPER

75

52 NAME- HILL, RUSSELL F REFERENCE NUMBER- 4101500217
STATE- OREGON COUNTY- CURRY ELEVATION- 00160
LATITUDE- 42 34 18 N PRECISION- 500 METERS
LONGITUDE- 124 03 09 W REFERENCE POINT- APPROXIMATED LOCATION
PUBLIC LAND SURVEY TOWNSHIP- 035 S RANGE- 011 W
DESCRIPTION SECTION- 06 SE1/4 NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE- SURFACE
MAP NAME- AGNESS, OREG. TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 52HILL, RUSSELL F
COMMODITIES- SAND & GRAVEL
OR MF
RI MI 25, 2 MI UPSTREAM FROM AGNESS

79

✓ 56 NAME- KALAMAZOO OCEAN BEACH MINE REFERENCE NUMBER- 4101500100
STATE- OREGON COUNTY- CURRY ELEVATION- 00100
LATITUDE- 42 37 04 N PRECISION- 100 METERS
LONGITUDE- 124 23 37 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 014 W
DESCRIPTION SECTION- 20 W 1/2 NONE NONE
RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- NATIONAL FOREST
STATUS- PAST PRODUCER OPERATION TYPE- SURFACE
MAP NAME- PORT ORFORD OREG TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 56KALAMAZOO OCEAN BEACH MINE
COMMODITIES- GOLD

80

✓ 57 NAME- GOLD BAR MINE REFERENCE NUMBER- 4101500068
STATE- OREGON COUNTY- CURRY ELEVATION- 00380
LATITUDE- 42 37 16 N PRECISION- 10000 METERS
LONGITUDE- 124 03 50 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 011 W
DESCRIPTION SECTION- 19 NONE NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- PAST PRODUCER OPERATION TYPE- SURFACE
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 57GOLD BAR MINE
COMMODITIES- GOLD PLATINUM

81

✓ 58 NAME- EDNA FRY CHROME REFERENCE NUMBER- 4101500036
STATE- OREGON COUNTY- CURRY ELEVATION- 02400
LATITUDE- 42 37 57 N PRECISION- 1000 METERS
LONGITUDE- 124 05 43 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 14 NONE NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 58EDNA FRY CHROME
COMMODITIES- CHROMIUM

82

58 NAME- NORTH STAR CHROME REFERENCE NUMBER- 4101500037
 STATE- OREGON COUNTY- CURRY ELEVATION- 01850
 LATITUDE- 42 38 09 N PRECISION- 1000 METERS
 LONGITUDE- 124 05 08 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
 DESCRIPTION SECTION- 13 NONE NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 58NORTH STAR CHROME
 COMMODITIES- CHROMIUM

83

59 NAME- OREGON STATE HWY. DIV. #2 REFERENCE NUMBER- 4101500224
 STATE- OREGON COUNTY- CURRY ELEVATION- 00350
 LATITUDE- 42 38 17 N PRECISION- 500 METERS
 LONGITUDE- 124 24 01 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 014 W
 DESCRIPTION SECTION- 18 NE1/4 N 1/2 N 1/2
 RIVER BASIN- 73Q SIXES RIVER 7317 DOMAIN- STATE
 STATUS- UNDETERMINED OPERATION TYPE- SURFACE
 MAP NAME- PORT ORFORD, OREG. TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 59OREGON STATE HWY. DIV. #2
 COMMODITIES- SAND & GRAVEL
 OREGON MICROFILM
 10 MI S OF PORT ORFORD

84

60 NAME- FOSTER CREEK CLAIM REFERENCE NUMBER- 4101500035
 STATE- OREGON COUNTY- CURRY ELEVATION- 00880
 LATITUDE- 42 39 13 N PRECISION- 500 METERS
 LONGITUDE- 124 05 07 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
 DESCRIPTION SECTION- 12 NW1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- UNDETERMINED OPERATION TYPE-
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 60FOSTER CREEK CLAIM
 COMMODITIES- CHROMIUM

85

61 NAME- BONANZA BASIN PLACER REFERENCE NUMBER- 4101500097
STATE- OREGON COUNTY- CURRY ELEVATION- 02350
LATITUDE- 42 39 16 N PRECISION- 100 METERS
LONGITUDE- 124 09 48 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 08 NW1/4 NW1/4 NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- AGNESS OREG TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 61BONANZA BASIN PLACER
COMMODITIES- GOLD

86

62 NAME- GALENA KING REFERENCE NUMBER- 4101500171
STATE- OREGON COUNTY- CURRY ELEVATION- 01100
LATITUDE- 42 39 19 N PRECISION- 1000 METERS
LONGITUDE- 124 03 36 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 011 W
DESCRIPTION SECTION- 06 NONE NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE-
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 62GALENA KING
COMMODITIES- TUNGSTEN

87

63 NAME- BIG CAT CLAIM REFERENCE NUMBER- 4101500055
STATE- OREGON COUNTY- CURRY ELEVATION- 03600
LATITUDE- 42 39 13 N PRECISION- 500 METERS
LONGITUDE- 124 08 22 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 09 NW1/4 NE1/4 NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- UNDETERMINED OPERATION TYPE-
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 63BIG CAT CLAIM
COMMODITIES- CHROMIUM

88

63 NAME- BONANZA PLACER MINE REFERENCE NUMBER- 4101500098
STATE- OREGON COUNTY- CURRY ELEVATION- 03100
LATITUDE- 42 39 33 N PRECISION- 100 METERS
LONGITUDE- 124 08 57 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 05 SE1/4 NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- EXPLORED PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- AGNESS OREG TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 63BONANZA PLACER MINE
OTHER NAMES- CURRY MINE
COMMODITIES- GOLD

89

63 NAME- LAWRENCE BRADY PROSPECT REFERENCE NUMBER- 4101500175
STATE- OREGON COUNTY- CURRY ELEVATION- 03200
LATITUDE- 42 39 07 N PRECISION- 1000 METERS
LONGITUDE- 124 08 28 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 09 NONE NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 63LAWRENCE BRADY PROSPECT
COMMODITIES- CHROMIUM

90

63 NAME- PARKER PLACER MINE REFERENCE NUMBER- 4101500102
STATE- OREGON COUNTY- CURRY ELEVATION- 03200
LATITUDE- 42 39 46 N PRECISION- 10000 METERS
LONGITUDE- 124 08 45 W REFERENCE POINT- CENTER OF ORE BODY
PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
DESCRIPTION SECTION- 04 NONE NONE NONE
RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
STATUS- PAST PRODUCER OPERATION TYPE- SURFACE
MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
PRIMARY NAME- 63PARKER PLACER MINE
COMMODITIES- GOLD

91

64 NAME- MISS DOLLY NO 1 REFERENCE NUMBER- 4101500162
 STATE- OREGON COUNTY- CURRY ELEVATION- 03500
 LATITUDE- 42 40 02 N PRECISION- 500 METERS
 LONGITUDE- 124 09 02 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 034 S RANGE- 012 W
 DESCRIPTION SECTION- 05 NE1/4 NONE NONE
 RIVER BASIN- 73U ROQUE RIVER(LOWER) 7321 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 64MISS DOLLY NO 1
 COMMODITIES- COPPER

92

65 NAME- ANACONDA CLAIM REFERENCE NUMBER- 4101100165
 STATE- OREGON COUNTY- COOS ELEVATION- 03120
 LATITUDE- 42 40 45 N PRECISION- 1000 METERS
 LONGITUDE- 124 07 59 W REFERENCE POINT- CENTER OF ORE BODY
 PUBLIC LAND SURVEY TOWNSHIP- 033 S RANGE- 012 W
 DESCRIPTION SECTION- 33 E 1/2 NONE NONE
 RIVER BASIN- 73P COQUILLE RIVER 7316 DOMAIN- NATIONAL FOREST
 STATUS- RAW PROSPECT OPERATION TYPE- PROSPECT
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 65ANACONDA CLAIM
 COMMODITIES- COPPER

93

65 NAME- COPPER KING CLAIMS REFERENCE NUMBER- 4101100038
 STATE- OREGON COUNTY- COOS ELEVATION- 02900
 LATITUDE- 42 40 38 N PRECISION- 1000 METERS
 LONGITUDE- 124 08 08 W REFERENCE POINT- APPROXIMATED LOCATION
 PUBLIC LAND SURVEY TOWNSHIP- 033 S RANGE- 012 W
 DESCRIPTION SECTION- 33 NONE NONE NONE
 RIVER BASIN- 73P COQUILLE RIVER 7316 DOMAIN- NATIONAL FOREST
 STATUS- EXPLORED PROSPECT OPERATION TYPE- SURFACE
 MAP NAME- AGNESS TYPE- 15 MIN USGS TOPO
 1:250,000 MAP NAME- COOS BAY 161 WFOC PROPERTY FILE- 00.000
 PRIMARY NAME- 65COPPER KING CLAIMS
 COMMODITIES- COPPER GOLD SILVER