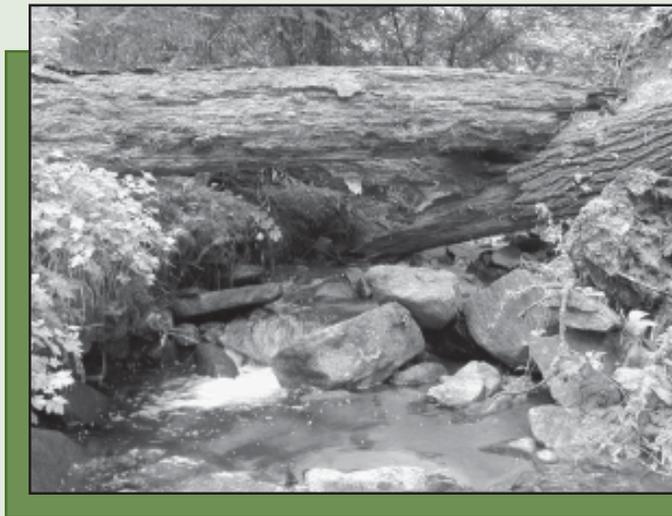




Are private forest landowners and operators doing their part to protect water quality in Oregon?



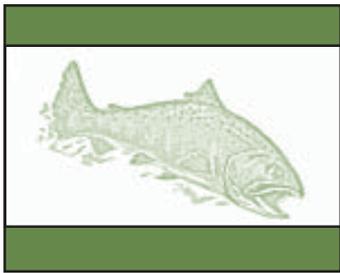
Inside these pages, we highlight a comprehensive compliance monitoring study conducted by the Oregon Department of Forestry and funded by the Oregon Department of Environmental Quality. The study provides a snapshot (circa 1998) of how well forest landowners and operators are implementing BMPs to maintain water quality. The results indicate that while landowners and operators achieve high rates of compliance (rates exceeding 96%) when implementing BMPs, improvement is needed in identifying small non-fish bearing streams, small wetlands, seeps and streams when planning and conducting forest operations so that appropriate protection requirements are applied.

We feature this study again today because Oregonians' concerns about water quality and resource protection on forestlands remain unabated. How often these studies need to be completed to provide assurances that BMPs are being implemented correctly is a question that is still being asked. As a means to address this question, we also feature an interview with the Oregon Department of Environmental Quality regarding the importance of continued monitoring of forestlands with respect to water quality and riparian function. Suggestions are presented to help guide future direction, and collaboration is pronounced as key to developing a common understanding of forest management practices and their relationship in helping to protect aquatic life and water quality.

See inside for more...

INSIDE

- "Enlightening Dialogue" with Koto Kishida, Oregon Department of Environmental Quality
- Monitoring Manager's Corner
- Recommended reading about Best Management Practices and water quality



fp monitor

is a newsletter published by the Oregon Department of Forestry.

Its purpose is to provide scientific information about Oregon's forest practices monitoring projects.

Project findings, summaries and recommendations, as well as other related information from the scientific community, is shared to help the public and policymakers determine the effectiveness of Oregon's forest practice rules and to help set monitoring priorities for future study.

**Oregon Department of Forestry
Private & Community Forests Program
2600 State Street
Salem, Oregon 97310
(503) 945-7200**

Arlene M. Whalen,
Editor/Design & Layout
awhalen@odf.state.or.us



Manager's Corner

Welcome to the third edition of the Forest Practices Monitor. This publication was initiated in 2002 to provide information about findings from the department's forest practices monitoring studies.

This edition features the department's monitoring study on how well forest landowners and operators are complying with best management practices (BMPs) for water quality. Field data was collected in 1999 and 2000, and the final technical report was completed in 2002. The results have been presented to the Oregon Board of Forestry and shared with other agencies, landowner associations and interested organizations and parties. The study provides a snapshot of compliance for the period the data was collected. Besides informing the Board that overall compliance rates are high, the study results have also proved useful in prioritizing how ODF field foresters should use their time in working with landowners and operators to achieve higher BMP compliance. It is my hope that highlighting the study and its findings will spur dialog about the importance of continuing this type of work, as well as stimulate feedback about how such studies can be improved.

Our goal is to publish the *Forest Practices Monitor* more frequently and timely. Upcoming topics include the department's 2004 commissioned study evaluating the resource site protection rules for the bald eagle, as well as highlights and emerging findings from our current work: 1) long-term stream temperature monitoring (patterns and trends) in selected basins throughout Oregon; 2) riparian function and stream temperature effectiveness monitoring of riparian management areas on small to medium fish bearing streams in the coast range; and 3) compliance monitoring and characterization of wildlife leave trees and down wood in clear-cut harvest units in the coast range. So, stay tuned. We will try to broadcast our signal more frequently.

For access to the full BMP technical report on the web: www.odf.state.or.us. Click on Private Forests- Research and Monitoring- Research and Technical Reports- BMP Compliance Monitoring- Final BMP CMP. An Executive Summary is available at the same location. Please address any comments or questions to me at jcathcart@odf.state.or.us or by phone at (503) 945-7493.



Jim Cathcart, Acting Forest Health and Monitoring Manager



Kyle Abraham, Monitoring Specialist, Returns to the ODF Monitoring Staff

B.S. in Fisheries Science (Oregon State University, 1997)

Kyle began his career with ODF in 1998 performing fish presence/absence surveys, and then worked three years as a seasonal employee in the Forest Practices Monitoring Program. He spent two years as a forest practices/stewardship forester in the North Cascade District before returning to the Forest Practices Monitoring Program.

COMPLIANCE WITH BEST MANAGEMENT PRACTICES FOR WATER QUALITY PROTECTION ON OREGON'S PRIVATE FORESTLANDS

Forest Practices Monitor Vol. 3, No. 1 - 2005

Contributors: Jim Cathcart, Acting Forest Health and Monitoring Manager; Kyle Abraham, Monitoring Specialist; and Jeremiah Tenneson, Policy Analyst

SUMMARY —

Oregon was one of the first states in the nation to adopt a comprehensive set of laws regulating timber harvesting practices, while providing sound resource protection for soil, air, water and fish and wildlife habitat. Provisions of Oregon's Forest Practice Act also serve as Best Management Practices (BMPs) for reducing non-point sources of pollution from forest operations. The Oregon Department of Forestry conducted a field evaluation of over 13,000 applications of BMPs on 189 forest operations to determine compliance rates and to identify the potential for and actual impacts to water quality and riparian function and habitat. The study addressed monitoring questions relating to overall compliance rates with BMPs, statistical representation, areas of highest and lowest compliance, and resource impacts of non-compliance.

On the 189 forest operations surveyed, a total of 13,506 applications of BMPs were evaluated for an average of 71 practices per operation. Landowners and operators are achieving high rates of compliance when implementing BMPs, though the record is not perfect. The results of the study are statistically representative of the true compliance rate for forest operations conducted in 1998. Proper understanding, interpretation, and compliance with BMPs improve the more they are conducted. Landowners often exceed the vegetation retention requirements of BMPs for Riparian Management Areas (RMAs). Of the 13,506 applications of BMPs evaluated for compliance, 170 (1.25%) were noncompliance practices that resulted in resource damage. Not identifying small non-fish bearing streams, small wetlands, seeps and springs when planning and conducting forest operations resulted in the lack of protection of these features, especially from the treatment and handling of timber harvest slash material. Future monitoring, education and training is needed to evaluate and reduce incidences of noncompliance, especially for those areas of noncompliance that result in the potential for or actual occurrence of damage to water and riparian resources.

BACKGROUND

Oregon was one of the first states in the nation to adopt a comprehensive set of laws regulating timber harvesting practices while providing sound resource protection for soil, air, water and fish and wildlife habitat. In 1971, the Oregon State Legislature passed the nation's first comprehensive set of forest protection laws with passage of the Oregon Forest Practices Act. While the resource protection standards found within the Act and its implementing administrative rules¹ have undergone significant changes since its initial passage 30 years ago, the overall purpose of the act remains the same:

“... to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species ...consistent with sound management of soil, air, water, fish and wildlife resources” (Oregon Revised Statute (ORS) 527.630(1)).

Under the Act, the Oregon Board of Forestry has exclusive authority over forest practice regulation on private, state and county forestlands (ORS 527.610 to 527.770, 527.990(1) and 527.992).

In 1972, amendments to the Federal Water Pollution Control Act set up what is commonly referred to as the federal Clean Water Act. Unlike other federal environmental laws, implementation authority for the Clean Water Act is delegated to states. For Oregon, this authority resides with the Oregon Environmental Quality Commission (ORS 468B.035(1)). *(con't. page 2)*

¹ The Oregon Forest Practices Act is made up of Oregon Revised Statutes (ORS) 527.610 through ORS 527.992 and Oregon Administrative Rules (OAR) Division 600 through OAR Division 665 and related agency technical notes and guidance.

(Background, con't.)

In 1991, the Oregon State Legislature defined the respective jurisdictions of the Board of Forestry and the Environmental Quality Commission with respect to water quality protection.

“The Board [of Forestry] shall establish best management practices and other rules applying forest practices as necessary to ensure that, to the maximum extent practicable, nonpoint source discharges of pollutants resulting from forest operations on forestlands do not impair the achievement and maintenance of water quality standards established by the Environmental Quality Commission for the waters of the state (ORS 527.765).”

Provisions of Oregon’s Forest Practice Act also serve as Best Management Practices (BMPs) for reducing non-point sources of pollution from forest operations.

The importance of the 1991 legislation to forest landowners and operators is that forest operations conducted in compliance with the water protection rules in the Forest Practices Act (Oregon Administrative Rules Divisions 630 through 660) cannot be considered in violation of any water quality standards for non-point sources of pollution¹ adopted by the state pursuant to requirements of the federal Clean Water Act. This provision is subject to the periodic review and revision of the Forest Practices Act water protection rules based on monitoring and new scientific information. In effect, the Forest Practices Act water protection rules serve as the state’s BMP program for forestlands – where BMPs are defined under the Clean Water Act as those practices that are practical and effective at reducing non-point source pollution. The 1991 legislation also requires the Board of Forestry to periodically assess the implementation of forestland BMPs in maintaining Oregon’s water quality.

MONITORING STUDY

The Oregon Department of Forestry conducted a field evaluation of over 13,000 applications of BMPs on 189 forest operations to determine compliance rates and to identify the potential for and actual impacts to water quality and riparian function and habitat. Between 1999 and 2000, the Oregon Department of Forestry’s forest practices monitoring section completed a BMP compliance monitoring project (Robben and Dent 2002) based on a pilot monitoring project conducted in 1998 (Dent and Robben 1999). The study objectives were to:

- Determine, through statistically valid sampling, the level of operator and landowner compliance with forest practices designed to protect water quality (i.e., BMPs).
- Identify opportunities to improve program administration, operator education, and technology transfer or rule clarity.

The study addressed monitoring questions relating to overall compliance rates with BMPs, statistical representation, areas of highest and lowest compliance, and resource impacts of non-compliance. Specifically:

1. What is the compliance rate with Forest Practice Act requirements for riparian protection, road construction and maintenance, harvesting standards and high-risk sites for landslides²?
2. How statistically representative are the compliance rates, and how do they compare to compliance rates reported from inspections by forest practices foresters?
3. Are there particular requirements that consistently have a higher or lower level of compliance? For those with lower rates of compliance, are there educational and training opportunities regarding those rules?
4. For non-compliant outcomes, to what extent are quality and function of riparian areas, stream channels and/or fish habitat compromised?

The study focused on the water protection standards adopted by administrative rule in 1994. These rules and associated administrative requirements were adopted to meet the 1991 State Legislature’s direction to review

(con’t page 3)

¹ Examples of non-point source water pollutants that can arise from forest operations are temperature increases, sediment delivery and increased turbidity.

² During the period of the study, the only applicable rules for high-risk sites pertained to written plan requirements and are covered in the administrative rule compliance results. A complete assessment of storm impacts and forest practice rule requirements can be found in Oregon Department of Forestry 1999. Compliance with Oregon’s fish passage and peak flow requirements for stream crossings was addressed in a separate study (Paul et al., 2002). See also Oregon Forest Practices Monitor, Volume 2, No. 1 – 2004.

(Monitoring study, con't.)

and revise the stream classification and water protection standards of the Forest Practices Act to resolve water quality protection issues identified at that time. Study sites were selected randomly from a database of planned forest operations¹ that met the following criteria:

1) were planned operations in 1998 and 2) associated with any stream or wetland. The sample was stratified by Oregon Department of Forestry administrative unit and then further stratified so there was a greater chance of selecting forest operations that were associated with fish bearing streams. The sample was also constructed with a goal of 70% of the selected sites being industrial, 20% non-industrial private, and 10% state or local government ownership, using forest operation size (e.g., acres) to determine the proportions.

Based on the sample, compliance data was collected in the field on 189 forest operations around the state (Table 1, page 5). The typical operation consisted of a timber harvest unit and all associated activity, such as road construction and maintenance necessary to conduct the timber harvest. Some sites selected in the original sample were not evaluated because they were not associated with a stream or wetland, were never actually conducted, or access could not be obtained. As a result, the final ownership class distribution was 77% industrial, 15% non-industrial and 8% state or local government.

It was not expected that every rule would be applicable to every site, or that a rule would only be checked once per site (e.g. some sites would have multiple applications of the same rule). Each occurrence of a forest practice where a rule applied was evaluated for compliance. A forest practice was determined to be exceeding requirements, meeting requirements or not in compliance. If the practice was not in compliance, then the type of noncompliance was identified. There were three types of noncompliance: administrative, resource concern and resource impact. Administrative noncompliance occurred when the practice used on the ground did not match what the operator or landowner submitted in a written plan.

The resources of concern in identifying the potential or occurrence of resource impacts resulting from noncompliance were riparian vegetation, riparian function and water quality. A forest practice determined in noncompliance either resulted in a resource concern (no damage done to the resource,

but because that practice was out of compliance, that particular resource was at a greater risk of impact) or resource impact (water and riparian impacts occurred where a water body was degraded in some way, whether by sediment, vegetation removal or other water quality reducing factors). If a resource was impacted by sediment, the level of impact was determined. There were four levels of impact: incidental, moderate, significant, and great.

RESULTS

Of the 189 forest operations surveyed, a total of 13,506 applications of BMPs were evaluated for an average of 71 practices per operation. At forest operation level, the overall rate of compliance with the number of different BMPs and the repeated application of BMPs on the same operation ranged from 79% to 100% compliance and averaged 96.1%. The compliance rate for all 13,506 rule applications surveyed was 96.3%. Of the 502 rule applications surveyed in noncompliance, 185 (1.4%) were with administrative rules only, 147 (1.1%) were potential resource issues, and 170 (1.2%) had an impact to riparian or channel resources. Table 2 (page 5) shows the compliance rates for the ten rule divisions and the administrative rules (applicable to all divisions) evaluated in the study. Compliance rates exceeded 96% for 6 of the 10 rule divisions evaluated. The lowest compliance rates were for the protection of wetland resources, both significant wetlands (88% compliance) and other wetlands (69% compliance). Compliance with applicable administrative rules was 83%. Table 3 (page 6) details the results of the study for rules relating to timber harvesting and slash disposal, chemical application and petroleum use, road construction and maintenance and riparian vegetation retention.

Although the compliance rate for all 13,506 rule applications surveyed was 96.3%, the lowest compliance rates were for the protection of wetlands.

Twenty-four percent of the operations surveyed had a perfect record of compliance. Thirty-six percent of the operations had at least one practice in noncompliance,

(con't. page 4)

¹ The Oregon Department of Forestry's Forest Activities Computerized Tracking System (FACTS) database. This is a database of planned operations based on landowner or operator notifications pursuant to Oregon Forest Practices Act requirements in OAR 629-605-0150.

(results, con't.)

but with only the potential of a resource impact. The remaining 40% of the operations had at least one noncompliant practice, which resulted in an impact to riparian and channel conditions.

FINDINGS

Monitoring Question #1 – Compliance Rates

Landowners and operators are achieving high rates of compliance when implementing BMPs, though the record is not perfect. The study results show that it is common to find a compliance issue with at least one application of a BMP associated with a timber harvest unit or other forest operation, as only 24 percent of the forest operations surveyed had 100 percent compliance with all applicable BMPs. However, compliance rates must take into account the numerous applications of the BMPs when conducting the operation. The monitoring study found that, on average, each operation applied 71 separate or repeated BMPs with the rate of compliance averaging 96%. When viewed in the aggregate of all 13,506 applications of the BMPs, the rate of compliance was 96.3%. Still, four of ten operations (40%) had at least one issue of noncompliance, which resulted in an impact to riparian and channel conditions. These results indicate that while the overall rates of compliance are high, there is still opportunity for improvement because the desired goal is to reduce the frequency of operations with resource impact concerns.

Monitoring Question #2 – Statistical Representation

The results of the study are statistically representative of the true compliance rate for forest operations conducted in 1998. Based on the sample size of 189 surveyed operations out of a population of 4,075 operations, the probability of observing the results of this study, assuming the true rate of operational level compliance is 96 percent (i.e., operations were in compliance with 96% of the BMPs applied to the operation), was 0.972. In other words, there is only a 0.028 probability (or 2.8% chance) the results of this study were an anomaly from a sample coming from a population where the true rate of operational compliance is something different than 96 percent.

The study results compare favorably with rates of compliance calculated based on reporting of non-compliance issues and citations in the Forest Activity

Computerized Tracking System and civil penalty data bases, respectively. Between 1995 and 2001, the rate of reported compliance for forest operations ranged from 96 to 98 percent, compared to the 96% compliance rate estimated in this study.

Monitoring Question #3 – Areas of Highest and Lowest Compliance

Proper understanding, interpretation, and compliance with BMPs improve the more they are conducted. Those practices more frequently encountered in the study had the highest rates of compliance. Rules with one to ten total applications (37 rules) had an average rule compliance of 72%, while rules with 11 to 100 total applications (49 rules) had an average rule compliance of 94%. Rules with more than 100 total applications (43 rules) had an average rule compliance of 96%. This shows that the more familiar operators are with a rule, the more likely they are to be in compliance with that rule.

Almost all the BMPs areas can be considered as areas in high compliance, with four of the ten rule divisions with over 98% compliance (two of them at 100% compliance) (Table 3). With regards to specific rules, Table 4 (page 7) lists the top ten BMPs with the highest rates of compliance. The study also identified ten specific BMPs as having the lowest areas of compliance – rules that had compliance rates less than 96% and five or more occurrences of noncompliance. These are listed in Table 5 (page 8).

Landowners often exceed the vegetation retention requirements of BMPs for Riparian Management Areas (RMAs). Frequently, forest landowners within each ownership class chose not to harvest any timber from within riparian management areas (RMAs), even though the riparian management BMPs allow for some timber harvest within the outer portions of RMAs beyond 20 feet from the stream bank (51%, 45% and 61% of the forest landowners within the industrial, non-industrial and other ownership classes, respectively). Similarly, 38% of the RMAs that had no timber harvest activity also had RMA buffer widths that exceeded the BMP required widths, even accounting for those instances within the RMA where some timber harvest occurred, approximately two-thirds of the 62 RMAs surveyed in the study retained conifer trees in excess of the required retention called for by the BMP – on average, double the required retention. Discussions with landowners revealed that requirements were exceeded because they desired to provide additional stream protection and retain required wildlife leave trees within the RMA.

TABLE 1

Selected forest operations for field evaluation of Best Management Practices compliance

OR Dept. Forestry District	Total Visited	Landowner Class			Stream Type	
		Industrial	Non-industrial	State or Local Gov't.	Type F	No Type F
Astoria	10	7	1	2	3	7
Tillamook	9	7	0	2	5	4
Forest Grove	28	22	4	2	15	13
West Oregon	24	19	4	1	10	14
Clackamas-Marion	16	8	6	2	10	6
Linn	9	8	1	0	4	5
Eastern Lane	14	14	0	0	11	3
Western Lane	10	8	1	1	7	3
Douglas	9	7	2	0	5	4
Northeast Oregon	9	6	3	0	4	5
Coos Bay	19	14	4	1	12	7
Southwest Oregon	11	8	0	3	7	4
Klamath-Lake	14	11	3	0	10	4
Central Oregon	7	6	0	1	2	5
TOTAL	189	145	29	15	105	84

Type F - Fish bearing stream

No Type F - Domestic use or non-fish bearing stream

TABLE 2

Rates of compliance with Best Management Practice divisions

Oregon Administrative Rule Division	Section Description	Compliance Rate
629-610	Reforestation timing (within RMA) ⁽¹⁾	100.0
629-615	Treatment of slash	98.2
629-620 ⁽²⁾	Chemicals & petroleum products	94.3
629-625	Road construction & maintenance	97.6
629-630	Harvesting	98.1
629-640	Vegetation retention along streams	96.4
629-645	Protection measures for significant wetlands	88.1
629-655	Protection measures for other wetlands	69.8
629-650	Protection measures for lakes	N/A
629-660	Operations near waters of the state	100.0
-----	Administrative requirements	83.0

(1) RMA - Riparian management area

(2) Includes Oregon Administrative Rule 630-400 (3)

“Future monitoring, education and training is needed to evaluate and reduce incidences of noncompliance.”

TABLE 3

Detailed compliance rates for specific rule categories in the Oregon Forest Practices Act

Forest Practices Rule Division	Best Management Practice	#Rule Applications	Percent Compliant	Nc: Pot. Impact	NC: Impact
HARVESTING & SLASH DISPOSAL RULES					
OAR 629-615	Slash disposal rules	1157	98.2	13	8
OAR 629-630	General yarding practices	407	99.5	0	2
OAR 629-615	Felling & harvesting rules	722	92.0	18	40
OAR 629-630	Cable yarding near waters of the state (WOS) rules	1157	98.2	13	8
OAR 629-630	Use of ground equipment near WOS rules	624	99.2	2	3
OAR 629-630	Harvesting waste rules	567	96.5	8	12
OAR 629-630	Landing rules	3472	99.8	8	0
OAR 629-630	Skid trail rules	636	96.4	6	17
Sub-Total - Harvesting & slash disposal rules		7961	98.3	55	83
CHEMICAL APPLICATION & PETROLEUM RELATED RULES					
OAR 629-620 OAR 629-630	Petroleum-related rules	567	93.3	38	0
OAR 629-620	Chemical application rules	129	98.4	0	2
Sub-Total - Chemical application & petroleum-related rules		696	94.2	38	2
ROAD CONSTRUCTION & MAINTENANCE RULES					
OAR 629-625	Road location rules	240	100.0	0	0
OAR 629-625	Road prism design rules	320	99.4	1	1
OAR 629-625	Stream crossing design rules	204	94.1	0	12
OAR 629-625	Road drainage design rules	993	97.3	16	11
OAR 629-625	Road drainage maintenance rules	369	96.7	2	10
OAR 629-625	Road waste & stabilization rules	258	97.3	3	4
OAR 629-625	Vacated road rules	26	96.2	1	0
OAR 629-625	Rock pit rules	85	100.0	0	0
OAR 629-630	Temporary crossing rules	152	90.8	3	11
Subtotal - Road construction & maintenance rules		2647	97.2	26	49
RIPARIAN VEGETATION RULES - FISH BEARING STREAMS					
OAR 629-640	Live tree & down wood retention rules	714	97.0	0	21
OAR 629-640	Hardwood conversion rules	36	77.8	6	2
Subtotal - Riparian vegetation retention rules - fish		750	96.1	6	23
RIPARIAN VEGETATION RETENTION RULES - DOMESTIC WATER & NON-FISH STREAMS					
OAR 629-640	Retention rules - domestic water	18	100.0	0	0
OAR 629-640	Vegetation retention rules - small non-fish bearing	65	98.5	0	1
Subtotal - Riparian vegetation retention - domestic & non-fish		83	98.8	0	1
TOTAL		12,137	97.7	125	158

OAR - Oregon Administrative Rules

(1) NC: Potential impact - noncompliance, potential resource impact (number of occurrences)

(2) NC: Impact - noncompliance, actual resource impact (number of occurrences)

“While the overall rates of compliance are high, there is still opportunity for improvement if the goal is to reduce the frequency of operations with resource impact concerns.”

Monitoring Question #4 – Resource Impacts of Noncompliance

Of the 13,506 applications of BMPs evaluated for compliance, 170 (1.25%) were noncompliance practices that resulted in resource damage. The most frequent category of resource damage was observed sediment delivery to streams and other water bodies (76 occurrences of non-compliance), though 84% of these occurrences involved less than ten cubic yards (e.g., a dump truck load) of material. Most of these occurrences resulted from noncompliance with road construction and maintenance practices, the removal of fill material associated with temporary stream crossings, as well as noncompliance with timber harvest practices. Two occurrences involved the substantial delivery of sediment in excess of a 100 cubic yards of material — poor applications of BMPs for the yarding (i.e., removal) of timber on steep slopes and within a wetland. The next most frequent observation of resource damage was high levels of slash accumulations below a high water line resulting from noncompliance with BMPs for the felling and harvesting of timber and associated treatment of slash material (53 occurrences). Damage or removal of riparian vegetation in noncompliance with BMPs was the third most frequent resource damage category (30 occurrences), followed by physical alterations to the bed or banks of streams without sediment delivery (11 occurrences).

Not identifying small non-fish bearing streams, small wetlands, seeps and springs when planning and conducting forest operations resulted in the lack of protection of these features – especially from the treatment and handling of timber harvest slash material. The piling of slash is prohibited in these areas, and accumulations of slash need to be below quantities that threaten water quality or increase the potential for mass debris torrents. Small non-fish bearing streams, small wetlands, seeps and springs are difficult to locate in the dry, summer months. Training needs to be provided to landowners, operators and foresters to identify these areas using indicator plant species, soil characteristics and physical evidence of small channels and wetlands during dry periods. Findings from the monitoring study led to increasing education and awareness to limit disturbance and slash accumulation in small, non-fish bearing streams (Oregon Department of Forestry 2002).

RECOMMENDATIONS

Future monitoring, education and training is needed to evaluate and reduce incidences of noncompliance – especially for those areas of noncompliance that result in the potential for or actual occurrence of damage to water damage to water and riparian resources. Supplemental compliance monitoring is needed for those

(con't page 8)

TABLE 4

Table 4: Best management practices with the highest rates of compliance.

Rule Number	Best management practice description	Percent compliance	Number of rule applications evaluated
OAR 629-610-040	Reforestation timing within riparian management areas	100%	36
OAR 629-625-200	New road location	100%	240
OAR 629-625-500	Rock pits	100%	85
OAR 629-630-200	Landings	99.8%	3,472
OAR 629-630-700	Cable yarding near waters of the state	99.7%	376
OAR 629-630-100	General yarding practices	99.5%	407
OAR 629-625-310	New road prism design	99.4%	320
OAR 629-640-200	Vegetation retention for non-fish bearing and domestic water use streams	98.8%	83
OAR 629-620-400	Chemical applications	98.4%	129

OAR - Oregon Administrative Rules

TABLE 5

Table 5: Best management practices with the lowest rates of compliance

Rule Number	Best management practice description	Percent compliance	Number of rule applications evaluated
OAR 629-630-800 (4)(e)	Fill removal of temporary crossings	47.8%	23
OAR 629-655-000 (2)(a) & (3)	Protection of other wetlands	69.8%	96
Administrative	Written plan requirements	77.1%	593
OAR 629-625-330 (1) OAR 629-625-600 (2)	Road surface drainage	81.8%	171
OAR 629-630-400 (3)	Removal of petroleum-related waste	82.0%	189
OAR 629-630-600 (2)	Felling of conifers into small non-fish streams	83.1%	189
OAR 629-625-320 (1)(b)(C)	Stream crossing fill stability	84.3%	51
OAR 629-615-200 (4)	Mechanical slash piling near waters of the state	89.6%	77
Administrative	Prior approval requirements	90.4%	492
OAR 629-630-800 (8) & (9)	Skid trails near waters of the state	92.0%	106

OAR - Oregon Administrative Rules

(recommendations, con't.)

BMPs with both potential and actual resource protection concerns, as there were relatively small numbers of applications evaluated in this study. Examples include future monitoring of BMPs that protect significant wetlands, high risk sites for landslides, as well as those practices guiding the conversion of hardwood riparian vegetation to conifer species.

Effectiveness monitoring is needed for the application of BMPs for roads and timber harvesting activity in preventing the delivery of sediment to streams. Education and training are necessary to raise awareness and understanding in low compliance areas – especially where there is the potential for, or actual occurrence of damaging impacts to water quality, riparian function and habitat.

Literature Cited

- Dent, Liz and Josh Robben. 1999. Oregon Department of Forestry Forest Practices Compliance Monitoring Project: 1998 Pilot Study Results. Salem, Oregon: Oregon Department of Forestry. 97 p.
- Oregon Department of Forestry. 1999. Storm impacts and landslides of 1996. ODF Technical Report 4. Salem, Oregon: Oregon Department of Forestry. 145 p.
- Oregon Department of Forestry. 2002. Small type “N” streams. Limiting disturbance and slash accumulation. Forest Practices Notes. October 2002. Number 11. Salem, Oregon: Oregon Department of Forestry, Forest Practices Program. 8 p.
- Paul, Jim, Liz Dent and Marganne Allen. 2002. Oregon Department of Forestry: Compliance with fish passage and peak flow requirements at stream crossings. Final study results. Technical Report 14. Salem, Oregon: Oregon Department of Forestry. 31 p. (plus Appendices A-D).
- Robben, Joshua and Liz Dent. 2002. Oregon Department of Forestry Best Management Practices Compliance Monitoring Project: Final Report. Technical Report 15. Salem, Oregon: Oregon Department of Forestry Forest Practices Monitoring Program. 68 p.

Recommended Reading

- Hairston-Strang, Anne B. and Paul W. Adams. 1997. Oregon’s streamside rules. Achieving public goals on private land. *Journal of Forestry* Volume 95. Number 7.
- Logan, Robert. 2002. Oregon’s Forest Protection Laws. An Illustrated Manual. Portland, Oregon: Oregon Forest Resources Institute. 160 p.
- Whitlock, Ian and Larry Knudsen. 2004. Regulation of water quality and forest practices. Salem, Oregon: Oregon Department of Justice. 8 p.
- Adams, Jas. Jeffrey. 2005. Legal relationship between ORS 527.765 and ORS 527.714 in deciding whether to adopt BMPs under the Oregon Forest Practices Act. Salem, Oregon: Oregon Department of Justice Memorandum, August 23rd. 26 p.

For copies of the above, contact Jim Cathcart at:
jcathcart@odf.state.or.us, (503) 945-7493

Enlightening Dialogues...



**Koto
Kishida**



**Department of
Environmental
Quality (DEQ)**

**Koto is a Nonpoint Source Specialist with
DEQ's Water Quality Division Program
Policy and Project Assistance Section**

In what ways does DEQ interact with ODF's monitoring staff?

“DEQ and its governing body, the Environmental Quality Commission (Commission), have a very special relationship with ODF and its governing body, the Board of Forestry (Board). The state legislature has given the Commission primary responsibility for complying with the mandates of the federal Clean Water Act (CWA) and has given the Board exclusive responsibility for regulating forest practices. However, there is a regulatory overlap because forest operations can affect whether a water body meets water quality standards. The legislature has dealt with this issue by exempting forest practices from certain aspects of the Commission's jurisdiction, providing the Board with limited water quality regulatory authority and providing each body with a process to request that the other consider its concerns. Anticipating that the agencies may disagree on the appropriate level of regulation, the state legislature has provided a process and incentives for the agencies to work together toward resolution.”

“Because of this special relationship, DEQ and ODF have worked closely together, especially since the late 1980s. In addition to having our relationship codified in Oregon state statutes, Forest Practice Act administrative rules and water quality standards reference each other and our agencies have a memorandum of agreement to lay out a process to ensure that implementation of the Oregon Forest Practices Act (OFPA) meets water quality standards.”

How does DEQ support ODF's monitoring efforts?

“DEQ relies on best available science to guide our effort to develop effective public policy. To meet the needs of forest landowners, as well as protect beneficial uses, DEQ has a history of supporting monitoring on forest lands and cooperative assessment. For example, DEQ has provided a grant for ODF to conduct studies on shade conditions over

forested streams in the Blue Mountain and Coast Range geographies of Oregon, (ODF Technical Report #13), as well as evaluate the effectiveness of forest road best management practices (BMPs) to minimize stream sediment impacts (ODF Technical Report #8 - both technical reports can be found on the ODF website.)

“In addition, a joint review was conducted by DEQ and ODF staff under a 1998 Memorandum of Agreement. The October, 2002 Sufficiency Analysis: A Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality identified a series of recommendations to improve the effectiveness of the OFPA in achieving and maintaining water quality standards on state and private forest lands in Oregon.”

What complex issues pronounce the importance of continued cooperation between DEQ and ODF?

“There appears to be opportunities to use data to bridge different approaches to protect beneficial uses. Since I have been in the nonpoint source program, I have attended several Rip-stream Riparian Function and Stream Temperature Steering Committee meetings to study OFPA impact on riparian function, as well as assist in the current water protection rulemaking process. More recently, I have been in many discussions within DEQ and also with ODF policy staff in an effort to understand the forestry community's concern that, from their perspective, total maximum daily loads (TMDLs) do not adequately capture water quality conditions and address issues relative to forest lands. (A TMDL is a calculated pollutant amount that a waterbody can receive and still meet Oregon Water Quality standards). DEQ and ODF were encouraged by our Commission and the Board last October during a joint meeting to come to a common understanding of water quality issues in small non-fish bearing streams.”

“In general, TMDL modeling focuses on larger streams where fish use is more common. Modeling the first and second order streams have not been done for TMDL development because of its technical difficulty and significant workload. Because of that gap in analysis, supplemental monitoring or analysis to determine appropriate protection, which may involve measurement other than effective shade, is essential to address forestry community concerns. This information is also essential to being able to understand the relationship between forest practices and TMDL strategies and to ensure attainment of TMDL Load Allocation (TMDL LA) and water quality standards in those streams. In addition, a better understanding of the influence of forest management at a landscape level on water quality and use protection would help improve our TMDL process. From DEQ's perspective, collaboration between DEQ and ODF monitoring staff is the key to developing information needed to resolve issues associated with non-fish bearing stream protection, and
(con't on page 12)

demonstrating how Forest Practices Act BMPs can meet Water Quality Standards and TMDL load allocations.”

“ODF and DEQ’s collaborative monitoring efforts also are important to effectively respond to upcoming issues. For example, excess fine sedimentation is recognized as a leading cause of water quality impairment in surface waters in the United States, and sedimentation as a parameter is being identified as an issue for both DEQ and ODF. As a result, there are currently several sediment TMDLs being developed by DEQ. As DEQ moves forward in developing strategies to address sedimentation, there will be many opportunities for ODF to participate and help identify how to respond to sedimentation concerns.”

How do you feel ODF’s monitoring efforts could be improved?

“ODF’s monitoring program provides a comprehensive list of monitoring projects and well thought out priorities. Since the Oregon Forest Practices Act is the main mechanism to ensure

water quality standards are attained and TMDL load allocations are met on non-federal forest lands, compliance monitoring of the OFPA is an essential aspect of the ODF monitoring program. There is always a desire for more data to help guide policy issues. From DEQ’s perspective, we would like to see a more common and cooperative approach to establishing study goals and design.”

“I have had the opportunity to directly talk with many foresters and forest landowners who have helped me understand the forestry community’s perspective regarding TMDLs. That understanding has helped me identify where we have disagreements, and how they may be resolved by developing a common understanding of the available science. Because of that experience, I encourage the ODF monitoring staff to work closely with DEQ staff. DEQ’s efforts at developing TMDLs can be improved by incorporating the knowledge and experience provided by ODF. ODF staff, on the other hand, may gain a better understanding of DEQ programs and water quality concerns through cooperative efforts to get the data needed to assess forest management on aquatic life and water quality.”

Do You Have An Enlightening Dialogue?

Peer reviews and feedback from major stakeholders help ensure that ODF’s monitoring work is scientifically credible.

We want to hear YOUR comments, concerns and questions.

Contact: Jim Cathcart, ODF Acting Forest Health & Monitoring Manager
jcathcart@odf.state.or.us, (503) 945-7493

**Oregon Department of Forestry
Private & Community Forests Program
2600 State Street
Salem, OR 97310**

