APPENDIX B

Past Studies by Species and Affected Land Type

Table B1
Past Studies by Species and Affected Land Type

	Noxious Weed Names						
	A. Rangeland Infestation						
	(2)	(3)	(5) Knapweeds				(7)
Study ID	Yellow Starthistle (Centaurea solstitialis)	Distaff Thistle (Carthamus lanatus)	Diffuse (Centaurea diffusa)	Spotted (Centaurea maculosa)	Russian (Centaurea repens)	Squarrose (Centaurea virgata)	Leafy Spurge (Euphorbia esula)
10-11							
10-17							X
10-19	X	X	X	X	X	X	X
10-20	X		X	X	X	X	
10-21	X						
10-24	X						
10-25	X	X	X	X	X	X	X
10-26	X	X	X	X	X	X	X
10-27	X	X	X	X	X	X	X
10-28		X					
10-29	X	X	X	X	X	X	X
10-30	X	X	X	X	X	X	X
10-31		X					
10-32			X	X	X	X	
10-33			X	X	X	X	
10-34			X	X	X	X	
10-35			X	X	X	X	
10-36							
10-37							
10-38							
10-40							X
10-41							X
10-42							
10-44							
10-46							
10-47							
10-48							
10-49							
10-50							
10-51							
10-60	X	X	X	X	X	X	X
10-61							
10-62							
10-64			X	X	X	X	
10-65							
10-66							X
10-67							X
10-68							X
10-69							X
10-70							X
10-71							X
10-72							
10-73							
10-74							
10-75							
10-76							
10-77							
10-78							
10-79							
10-81							
10-82							
10-90							
10-91							
OSU (10-1)	X	X	X	X	X	X	X

Table B1 (continued)

	Noxious Weed Names						
	A. Rangeland Infestation					B. Rangeland and Farmland	
	(11) Scotch Thistle	(12) Mediterranean Sage	(13) Purple Starthistle	(14) Hawkweeds		(1)	(8)
Study ID	(Onopordum acamthium)	(Salvia aethiopis)	(Centaurea calcitrapa)	Orange (Hieracium aurantiacum)	Yellow (Hieracium floribundum)	Tansy Ragwort (Senecio jacobaea)	Rush Skeletonweed (Chondrilla juncea)
10-11							
10-17							
10-19	X	X	X	X	X	X	X
10-20			X				
10-21							
10-24							
10-25	X	X	X	X	X	X	X
10-26	X	X	X	X	X	X	X
10-27	X	X	X	X	X	X	X
10-28			X				
10-29	X	X	X	X	X	X	
10-30	X	X	X	X	X	X	X
10-31							
10-32							
10-33							
10-34							
10-35							
10-36	X						
10-37							
10-38		X					
10-40							
10-41							
10-42				X	X	X	
10-44							X
10-46							
10-47							
10-48							
10-49							
10-50							
10-51							
10-60	X	X	X	X	X	X	X
10-61						X	
10-62			X				
10-64							
10-65							
10-66							
10-67							
10-68							
10-69							
10-70							
10-71							
10-72				X	X		
10-73							X
10-74							X
10-75							
10-76							
10-77							
10-78							
10-79							
10-81							
10-82							
10-90							
10-91							
OSU (10-1)	X	X	X	X	X	X	X

Table B1 (continued)

	Noxious Weed Names					
	C. Forestland		D. Wetlands			
	(4)	(6)	(9)	(10)	(15)	(16)
Study ID	Scotch Broom (Cytisus scoparius)	Gorse (Ulex europaeus)	Purple Loosestrife (Lythrum salicaria)	White Top and Perennial Pepperweed (Carderia draba and Lepidium latifolium)	Spartina (Spartina patens)	Brazilian Elodea (Egeria densa)
10-11		X				
10-17						
10-19	X		X	X	X	X
10-20				X		
10-21						
10-24				X		
10-25	X	X	X	X	X	X
10-26	X	X	X	X	X	X
10-27	X	X	X	X	X	X
10-28						
10-29						
10-30	X	X	X	X	X	X
10-31						
10-32						
10-33						
10-34						
10-35						
10-36						
10-37				X		
10-38						
10-40						
10-41						
10-42						
10-44						
10-46	X	X				
10-47					X	
10-48					X	
10-49					X	
10-50			X		X	X
10-51						X
10-60	X	X	X	X	X	X
10-61						
10-62						
10-64						
10-65				X		
10-66						
10-67						
10-68						
10-69						
10-70						
10-71						
10-72						
10-73						
10-74						
10-75	X	X				
10-76	X					
10-77	X					
10-78		X				
10-79		X				
10-81					X	
10-82					X	
10-90			X			X
10-91						X
OSU (10-1)	X	X	X	X	X	X

Table B.2
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APPENDIX C

Economic Evaluation Models

Definitions

- Sales = Total Output Affected.
- Personal Income = Personal Income (direct, indirect, and induced) Affected.
- Jobs = Estimated full time equivalent jobs, at $25,000 per year, affected.
- Economic Value = Total loss to society by affected lands. This may be value of goods produced for the market or for non-traded goods.

Table C.1
Economic Evaluation Models

Species: 1 - Tansy Ragwort
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Cattle			Agricultural Production: Ag			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone					100%																
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient				0.54																	
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs						87,888															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient										0.66											
% of Ag. Production (Income)											100%										
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres																	16%				
Est. at Net Acres per AUM																					
AUMs															87,888						
Est. Wildlife Affected Acres																	26,080				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	3,260,000	163,000	$4,233,618	$2,286,154	$4,233,618	$2,332,548	$1,259,435	$878,880	$592,833	$391,270	$391,270				$378,797	$250,006	$322,870	$7,537,796	$4,186,865	167	$5,826,638
B: POTENTIAL SPREADING																					
Potential Spreading Factor																		2.4	2.4	2.4	2.4
Total Estimated Potential Impact	--	391,200																$18,090,710	$10,048,475	402	$13,983,932

Notes: 1. Cattle losses - sales : Source document is 10-25. 2% of 1999 Western Cow Herd Production plus Horses.
2. Economic impact - Sales: Potential to spread in Eastern Oregon. Cow herd is 2.4 times of W. Oregon herd.
Source: Study.

Table C.2
Economic Evaluation Models

Species: 2 - Yellow Starthistle
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone					100%																
Sales per Gross Acre			$0.13																		
Range Cattle OR I/O Coefficient				0.54																	
2. Agriculture Production																					
Est. at % of Net of Affected Acres						100%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						7.30															
AUMs						129,735															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															7.30						
AUMs															129,735						
Est. Wildlife Affected Acres																	151,531				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	1,873,407	947,068	$243,543	$131,513	$243,543	$3,443,176	$1,859,107	$1,297,353							$559,159	$369,045	$1,875,952	$4,245,878	$2,359,666	94	$3,416,849
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Cattle Losses - Sales: Estimated at 10% Tansy Ragwart Losses or $0.13 per gross acre
2. Cattle Losses - Personal Income: Rangeland cattle Oregon I/O coefficient 0.54
Source: Study.

Table C.3
Economic Evaluation Models

Species: 3 - Distaff Thistle
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Sales per AUM																					
Grazing Fee per AUM																					
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	2,174	10																N/A	N/A	N/A	N/A
B: POTENTIAL SPREADING																					
Potential Spreading Factor																		1.8	1.8	1.8	1.8
Total Estimated Potential Impact	--	2,500,000																$7,642,581	$4,247,398	170	$6,150,328

Notes: 1. Cattle Losses-Sales: Similar to yellow starthistle present status exponential threat (10-28)
2. Economic Impacts-Sales: Exponential expansion possibility. Evaluated at Yellow Starthistle acres. But at 4 acres per AUM. This species may cover both range and meadows. 7.2 / 4 = 1.8 times Yellow Starthistle
Source: Study.

Table C.4
Economic Evaluation Models

Species: 4 - Scotch Broom
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						50%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						2.00															
AUMs						375,000															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres												50%									
Growth of MBF per Year per Acre												0.125									
Sales at per MBF												$500.00									
Est. Timber Acres Affected												750,000									
Timber Industry IMPLAN coefficient													0.88								
Rent														$10.00							
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															50%		16%				
Est. at Net Acres per AUM															2.00						
AUMs															375,000						
Est. Wildlife Affected Acres																	240,000				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	16,000,000	1,500,000				$9,952,500	$5,373,750	$3,750,000				$46,875,000	$41,250,000	$7,500,000	$1,616,250	$1,066,725	$2,971,200	$58,443,750	$47,690,475	1,908	$14,221,200
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Timber Production-Sales: Assumes tree growing ability reduced by 50%.
Source: Study.

Table C.5
Economic Evaluation Models

Species: 5 - Knapweeds
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production						Timber Production			Wildlife			Economic Impacts			
						Component A			Component B											Jobs at	
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	$25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						100%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						7.30															
AUMs						248,711															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															7.30						
AUMs															248,711						
Est. Wildlife Affected Acres																	290,495				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	3,622,380	1,815,591				$6,600,792	$3,564,030	$2,487,111							$1,071,945	$707,484	$3,596,323	$7,672,737	$4,271,514	171	$6,083,434
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Source: Study.

Table C.6
Economic Evaluation Models

Species: 6 - Gorse
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						50%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						2.00															
AUMs						7,839															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres												50%									
Growth of MBF per Year per Acre												0.125									
Sales at per MBF												$500.00									
Est. Timber Acres Affected												15,677									
Timber Industry IMPLAN coefficient													0.88								
Rent														$10.00							
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															50%		16%				
Est. at Net Acres per AUM															2.00						
AUMs															7,839						
Est. Wildlife Affected Acres																	5,017				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	300,000	31,354				$208,034	$112,326	$78,385				$979,813	$862,235	$156,770	$33,784	$22,297	$62,106	$1,221,630	$996,858	40	$297,261
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Timber Production-Sales: Assumes tree growing ability reduced by 50%.
Source: Study.

Table C.7
Economic Evaluation Models

Species: 7 - Leafy Spurge
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone					100%																
Sales per Gross Acre			$0.13																		
Range Cattle OR I/O Coefficient				0.54																	
2. Agriculture Production																					
Est. at % of Net of Affected Acres						100%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						2.60															
AUMs						2,817															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															2.60						
AUMs															2,817						
Est. Wildlife Affected Acres																	1,172				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	12,700	7,324	$1,651	$892	$1,651	$74,761	$40,367	$28,169							$12,141	$8,013	$14,507	$88,553	$49,271	2	$44,328
B: POTENTIAL SPREADING																					
Potential Spreading Factor																		20	20	20	20
Total Estimated Potential Impact	--	3,600,000																$1,771,062	$985,421	39	$886,552

Notes: 1. Cattle Losses-Sales: Estimated at 10% Tansy Ragwart Losses or $0.13 per gross acre
2. Cattle Losses-Personal Income: Rangeland cattle Oregon I/O coefficient X-54
3. Between 1950 and 2000, the infestation in parts of the mountain west grew from 100.000 acres to 2,000,000 acres; a 20 fold increase.

Source: Study.

Table C.8
Economic Evaluation Models

Species: 8 - Rush Skeletonweed
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production						Timber Production			Wildlife			Economic Impacts			
						Cattle			Ag												
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						50%			50%												
Est. Net Affected Acres									30,000												
Est. at Net Acres per AUM						2.00															
AUMs						15,000															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient										0.68											
% of Ag. Production (Income)																					
% of forgone production (sales)											100%										
Bushels per Acre									45												
Sales per Bushel									$3.30												
Sales per Acre									$148.50												
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	2,000,000	60,000				$398,100	$214,950	$150,000	$4,455,000	$3,029,400	$4,455,000							$4,853,100	$3,244,350	130	$4,605,000
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Source: Study.

Table C.9
Economic Evaluation Models

Species: 9 - Purple Loosestrife
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Sales per AUM																					
Grazing Fee per AUM																					
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre															$1,928.00	$1,273.00					
Wildlife View Value Per Day																	$26.00				
Impacts Per Day																	$49.78				
Ratio of Value to Imp.																	0.52				
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	3,646	2,230													$4,299,440	$2,838,790	$1,482,695	$4,299,440	$2,838,790	114	$1,482,695
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Source: Study.

Table C.10
Economic Evaluation Models

Species: 10 - White Top and Perennial Pepperweed
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone					100%																
Sales per Gross Acre			$0.13																		
Range Cattle OR I/O Coefficient				0.54																	
2. Agriculture Production																					
Est. at % of Net of Affected Acres						95%			5%												
Est. Net Affected Acres																					
Est. at Net Acres per AUM						2.00			0.50												
AUMs						562,555			118,433												
Sales per AUM						$26.54	$14.33		$26.54	$14.33											
Grazing Fee per AUM								$10.00			$10.00										
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															2.00						
AUMs															592,163						
Est. Wildlife Affected Acres																	189,492				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	2,322,187	1,184,326	$301,884	$163,018	$301,884	$14,930,206	$8,061,411	$5,625,549	$3,143,201	$1,697,139	$1,184,326				$2,552,223	$1,684,467	$2,345,913	$20,927,514	$11,606,035	464	$9,457,672
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Cattle Losses-Sales: Estimated at 10% Tansy Ragwart Losses or $0.13 per gross acre
2. Cattle Losses-Personal Income: Rangeland cattle Oregon I/O coefficient 0.54
3. 95% pasture and 5% meadow Hay. Meadow Hay is evaluated at 0.5 acres per AUM.
Source: Study.

Table C.11
Economic Evaluation Models

Species: 11 - Scotch Thistle
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone					100%																
Sales per Gross Acre			$0.13																		
Range Cattle OR I/O Coefficient				0.54																	
2. Agriculture Production																					
Est. at % of Net of Affected Acres						100%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						7.30															
AUMs						72,164															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															7.30						
AUMs															72,164						
Est. Wildlife Affected Acres																	84,288				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	1,011,134	526,800	$131,447	$70,982	$131,447	$1,915,243	$1,034,116	$721,644							$311,028	$205,279	$1,043,485	$2,357,719	$1,310,376	52	$1,896,577
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Cattle Losses-Sales: Estimated at 10% Tansy Ragwart Losses or $0.13 per gross acre
2. Cattle Losses-Personal Income: Rangeland cattle Oregon I/O coefficient 0.54
Source: Study.

Table C.12
Economic Evaluation Models

Species: 12 - Mediterranean Sage
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production						Timber Production			Wildlife			Economic Impacts			
						Component A			Component B												
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						100%															
Est. Net Affected Acres																					
Est. at Net Acres per AUM						7.30															
AUMs						34,247															
Sales per AUM						$26.54	$14.33														
Grazing Fee per AUM								$10.00													
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM															$4.31		$12.38				
Recreation Coefficient (% of sales)																0.66					
Est. at % of Net of Affected Acres															100%		16%				
Est. at Net Acres per AUM															7.30						
AUMs															34,247						
Est. Wildlife Affected Acres																	40,000				
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	1,275,077	250,000				$908,904	$490,753	$342,466							$147,603	$97,418	$495,200	$1,056,507	$588,171	24	$837,666
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Source: Study.

Table C.13
Economic Evaluation Models

Species: 13 - Purple Starthistle
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Sales per AUM																					
Grazing Fee per AUM																					
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	80	1																N/A	N/A	N/A	N/A
B: POTENTIAL SPREADING																					
Potential Spreading Factor																		3.6	3.6	3.6	3.6
Total Estimated Potential Impact	--	2,000,000																$15,285,162	$8,494,797	340	$12,300,655

Notes: 1. Cattle Losses-Sales: Similar to yellow starthistle present status exponential threat (10-28)
2. Economic Impact-Sales: Exponential expansion possibility. Evaluated at Yellow Starthistle acres. But at 2 acres per AUM. This species may cover both range and meadows. 7.2 / 2 = 3.6 times Yellow Starthistle.
Source: Study.

Table C.14
Economic Evaluation Models

Species: 14 - Hawkweeds
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production						Timber Production			Wildlife			Economic Impacts			
						Component A			Component B											Jobs at	
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	$25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres						95%			5%												
Est. Net Affected Acres																					
Est. at Net Acres per AUM						2.00			0.50												
AUMs						48			10												
Sales per AUM						$26.54	$14.33		$26.54	$14.33											
Grazing Fee per AUM								$10.00			$10.00										
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	600	100				$1,261	$681	$475	$265	$143	$100							$1,526	$824	0.03	$575
B: POTENTIAL SPREADING																					
Potential Spreading Factor																		15,000	15,000	15,000	15,000
Total Estimated Potential Impact	--	1,500,000																$22,890,750	$12,359,625	494	$8,625,000

Notes: 1. Economic Impact-Sales: An infestation with 1,500,000 net acres is possible. Based on infestation in neighboring states.
2. 95% pasture and 5% meadow Hay. Meadow Hay is evaluated at 0.5 acres per AUM.
Source: Study.

Table C.15
Economic Evaluation Models

Species: 15 - Spartina
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A (Oyster; Potential)			Agricultural Production: Component B			Timber Production			Wildlife (Potential)			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Sales per AUM																					
Grazing Fee per AUM																					
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)						7,000															
Percent of Oyster Production Affected						50%															
Oyster Production Affected						3,500															
Oyster Production per Acre						$220	$326	$4.30													
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre															$1,928.00	$1,273.00					
Wildlife View Value Per Day																	$26.00				
Impacts Per Day																	$49.78				
Ratio of Value to Imp.																	0.52				
Bay and Lake Exp. per Boat Day																					
Boat Days Per Acre																					
Bay and Lake Income Imp. per Boat Day																					
Bay and Lake Use per Boat Day																					
Total Estimated Current Impact	5	0																N/A	N/A	N/A	N/A
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	64,000	12,800				$770,000	$1,139,600	$15,050							$24,678,400	$16,294,400	$8,510,534	$25,448,400	$17,434,000	697	$8,525,584

Notes: 1. Economic Impact-Sales: In Washington infestations have grown from 4-5 acres in 1945 to 3,600 acres in 1999. The potential net infestation in Oregon is estimated to be 20 percent of the total gross acre potential infestation. Changes from mudflats to salt marshes.
2. At present there are about 7,000 acres in oyster production in Oregon. This includes leased state, county, and port leased lands. Average production is about $220 per acre per year for these lands. The potential is for 50 percent of these lands to be infested by spartina (i.e. 3,500 acres). The lease rate on state lands is $4.30 per acre. This is used as the economic value per acre for oyster production. The sales per acre are $220 per acre. Personal income is 1.48 times the sales value.

Source: Study.

Table C.16
Economic Evaluation Models

Species: 16 - Brazilian Elodea
Date: December 26, 2000

	Acres Affected		Cattle Losses			Agricultural Production: Component A			Agricultural Production: Component B			Timber Production			Wildlife (Potential)			Economic Impacts			
	Gross	Net	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Economic Value	Sales	Personal Income	Jobs at $25,000 Per FTE	Economic Value
A: CURRENT CONDITIONS																					
1. Cattle																					
% of Sales Forgone																					
Sales per Gross Acre																					
Range Cattle OR I/O Coefficient																					
2. Agriculture Production																					
Est. at % of Net of Affected Acres																					
Est. Net Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Sales per AUM																					
Grazing Fee per AUM																					
Ag. Production Coefficient																					
% of Ag. Production (Income)																					
% of forgone production (sales)																					
Bushels per Acre																					
Sales per Bushel																					
Sales per Acre																					
Oyster Production (approximate; acres)																					
Percent of Oyster Production Affected																					
Oyster Production Affected																					
Oyster Production per Acre																					
3. Timber																					
Est. at % of Net of Affected Acres																					
Growth of MBF per Year per Acre																					
Sales at per MBF																					
Est. Timber Acres Affected																					
Timber Industry IMPLAN coefficient																					
Rent																					
4. Wildlife																					
Grazing Fee per AUM																					
Recreation Coefficient (% of sales)																					
Est. at % of Net of Affected Acres																					
Est. at Net Acres per AUM																					
AUMs																					
Est. Wildlife Affected Acres																					
Restoring of Wetlands - $ per Acre																					
Wildlife View Value Per Day																					
Impacts Per Day																					
Ratio of Value to Imp.																					
Bay and Lake Exp. per Boat Day															$45.39						
Boat Days Per Acre															15	15	15				
Bay and Lake Income Imp. per Boat Day																$29.96					
Bay and Lake Use per Boat Day																	26.00				
Total Estimated Current Impact	90,000	9,074													$6,178,033	$4,077,856	$3,538,860	$6,178,033	$4,077,856	163	$3,538,860
B: POTENTIAL SPREADING																					
Potential Spreading Factor																					
Total Estimated Potential Impact	--	--																			

Notes: 1. Economic Impact-Sales: Oregon lake (Lake Lytle) is approximately 200 acres. It has lost 3000 boating days due to infestation. The potential is for 60 additional lakes to be infested to the same degree at a lose of 15 boating days per acre.
Source: Study.