Appendix H. Regional Forester's Sensitive Species List

For Siuslaw National Forest - Threatened, Endangered And Sensitive Species List

Updated June 13, 1996

SPECIES	STATUS RF/Fed/State/ONHP/Documented	HABITAT INFORMATION

RF = Regional Forester's List; Fed = Federal; State = Oregon; ONHP = Oregon Natural Heritage Program, D = Documented on Forest (all others suspected)

BIRDS

Gavia immer Common loon	S/-/-/2/D	Winters along the coast; nests on large lakes.
Pelecanus erythrorhynchos American white pelican	S/-/V/2/D	Large bodies of water; usually found east of the Cascades.
P. occidentalis californicus California brown pelican	S/E/E/2/D	Forages along coastlines and bays.
Branta canadensis leucopareia Aleutian Canada goose	S/T/E/1/D	Winter resident; forages in open pastures and marshes.
Haliaeetus leucocephalus Northern bald eagle	S/T/T/1/D Recovery Plan	Nests and roosts in mature and old growth conifers near large bodies of water.
Falco peregrinus anatum American peregrine falcon	S/E/E/1/D Recovery Plan	Nests and perches near cliffs near coasts and where prey is abundant.
Charadrius alexandrinus nivosus Western snowy plover	S/T/T/2/D	Nests on sandy beaches and in dunes.
Numenius americanus Long-billed curlew	S/**/-/4/D	Winters on mudflats and shorelines; breeds in grasslands.
Brachyramphus marmoratus Marbled murrelet	S/T/C/2/D Proposed Critical Habitat	Nests in old growth conifers within 50 miles of the coast.
Strix occidentalis caurina Northern spotted owl	S/T/T/1/D Designated Critical Habitat	Nests in mature coniferous forests with old growth component and characteristics.

SPECIES	STATUS RF/Fed/State/ONHP/Documented	HABITAT INFORMATION
MAMMALS		
Arborimus albipes White-footed vole	S/**/P/3/D	Small permanent drainages dominated by red alder with dense deciduous understory.
Gulo gulo luteus California wolverine	S/**/T/2/-	Remote areas, especially along timberline in mountains.
Plecotus townsendii townsendii Townsend's big-eared bat	S/**/C/2/D	Found in caves, rock crevices, mines, under bridges and in abandoned buildings.
REPTILES AND AMPHIBIANS		
Clemmys marmorata marmorata Northwestern pond turtle	S/**/C/2/D	Ponds, slow-moving streams and rivers, marshes.
Rana aurora Red-legged frog	S/**/U/4/D	Quiet streams, marshes, ponds, and moist forests.
INVERTEBRATES		
Ochrotrichia alsea Alsea micro caddisfly	S/ /-/3/D	Large streams and rivers with stable substrate of boulders and logs and moderate current.
Rhyacophila haddocki Haddock's micro caddisfly	S/**/-/3/D	High elevation creeks and seeps.
Speyeria zerene hippolyta Oregon silverspot butterfly	S/T/-/1/D	Open inland and coastal meadow habitat.
FISH		
Oncorhynchus clarki Umpqua River cuttroat trout	S/PE/-/-/D	Umpqua River watershed rivers and tributaries.
Oncorhynchus kisutch Coho	S/PT/-/-/D	

SPECIES	STATUS RF/Fed/State/ONHP/Documented	FLOWERING SEASON	HABITAT INFORMATION
PLANTS			
Abronia umbellata spp breviflora Pink sandverbena	S/**/E/1/D	May-Oct	Beaches and foredunes; open sand.
Anemone oregana var felix Oregon bog anemone	S/-/-/2/D	Mar-Jun	Coastal marshes and spagnum bogs.
Bensoniella oregana Bensonia	S/**/-/-/-		Intermittent streams or meadow edges in mixed evergreen forests; upper slopes, ridgetop saddles with north aspect.
Cardamine pattersonii Saddle mountain bittercress	S/**/C/1/D	May-Jun	Bogs, wet areas, moist cliffs and edges.
Carex macrochaeta Large-awn sedge.	S/-/-/2/-	Jun-Aug	Moist openings, usually close to beaches.
Carex pluriflora Several-flowered sedge	S/-/-/2/-	Jun-Jul	Sphagnum bogs, brackish water near the coast.
Cimicifuga elata Tall bugbane	S/**/C/1/-	Jun-Jul	Moist forest, along edges and roadsides; often north slopes with bigleaf maple.
Cordylanthus maritimus ssp. palustris Salt-marsh bird's beak	S/**/C/1/D	Jun-Aug	Coastal salt marshes,fringes of lakes and bogs.
Dodecatheon austrofrigidu Fridgid shooting star	S/**/-/1/-	May-Jun	On rocks below the high water line on rivers; mostly at higher elevation.
Dryopteris filix-mas Male fern	S/-/-/2/-	May-Aug	Along streams; dense shade
Erigeron peregrinus peregrinus var peregrinus Wandering daisy	S/-/-/2/-	Jun-Jul	Moist, grassy, open and rocky meadows in coastal mountains.
Erythronium elegans Elegant fawn-lily	S/**/C/1/D	May	High elevation meadows; bogs & rock cliffs; open conifer forests.
Filipendula occidentalis Queen-of-the-forest	S/**/C/1/D	May-Aug	Moist headwalls, seeps, wet rocks above high water along streams.

Updated 06/13/96

SPECIES	STATUS RF/Fed/State/ONHP/Documented	FLOWERING SEASON	HABITAT INFORMATION
PLANTS, con't.			
Fritillaria camshatcensis Black lily	S/-/-/2/-	May-July	Bogs and marshes.
Geum triglorum var campanulatum Western red avens	S/-/-/2/-	May-Jun	Exposed grassy and dry areas at high elevations.
Hydrocotyle verticillata Water pennywort	S/-/-/2/D	Jul-Aug	Dune deflation plains; bog edges, marshes and ponds.
Isopyrum stipitatum Dwarf rue-anemone	S/-/-/3/-	Feb-May	Bare, wet ground in deciduous woodlands, often along streams; lawns.
Lewisia columbiana var rupicola Rosy lewisia	S/-/-/2/-	Jun-Jul	Exposed gravelly and rocky slopes at higher elevation
Lilium occidentale	S/T/LE/1/-		Occurs in forest or brushy openings on poorly drained soils often along margins of ephemeral ponds/small channels under shrubs, potential habitat in south area of Oregon Dunes NRA.
Limbella fryei Frye's limbella moss	S/**/C/1/- ???		Sphagnum bogs; grows at base of willows and crabapples.
Lycopodium inundatum Northern bog club moss,	S/-/-/2/D	Jul-Oct	Dune deflation plains; coastal bogs, lake margins
Ophioglossum vulgatum Adder's tongue	S/-/-/2/D	Jul-Aug	Edges of lakes, ponds, dune deflation plains.
Plantago macrocarpa North Pacific plantain.	S/-/-/2/-	May-Aug	Sphagnum bogs; along lake shores.
Poa kellogii Kellogg's bluegrass.	S/-/-/2/-	Jun-Jul	Along edges of ponds, marshes and seeps.
Poa laxiflora Loose-flowered bluegrass	S/-/-/4/D	May-July	Forests on moist seeps, benches, stream edges.
Pohlia sphagnicola Pohlia moss	S/-/-/2/D	Year-round	Sphagnum hummocks in bogs near the coast.
Saxifraga hitchcockiana Saddle Mtn saxifrage	S/**/C/1/-	Apr-Aug	Grassy, rocky, or gravelly areas at higher elevations.

SPECIES	STATUS RF/Fed/State/ONHP/Documented	FLOWERING SEASON	HABITAT INFORMATION
PLANTS, con't.			
Scirpus cyperinus Wool-grass	S/-/-/2/-	Jul-Aug	Wet, low ground.
Senecio flettii Flett's groundse.	S/-/-/2/-	Jun-Jul	Open, rocky and tallus slopes.
Sidalcea hirtipes Hairy-stemed checker mallow.	S/-/C/1/D	Jun-Jul	Grassy meadows, coastal bluffs.
Silene douglasii var oraria Cascade Head catchfly	S/**/C/1/-	May-Jul	Grassy coastal bluffs.
Utricularia gibba Humped bladderwort.	S/-/-/2/-	Jul-Sep	Standing or slow-moving water, sloughs.
Utricularia minor Lesser bladderwort.	S/-/-/2/-		Standing or slow-moving water, sloughs.
Wolffia columbiana Columbia watermeal.	S/-/-/2/-		Ponds, floating below the surface.
Wolffia punctata Dotted watermeal	S/-/-/2/-		Ponds; free-floating.

STATUS CODES

FEDERAL:

Endangered (E) = Any species in danger of extinction throughout all or a significant portion of its range
Threatened (T) = Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
Proposed (P) = Proposed to be listed as threatened or endangered.
Category 1 Candidate (C1) = Taxa for which the US Fish and Wildlife Service has sufficient information to support a proposal to list the species as endangered or threatened.
Category 2 Candidate (**) = This federal status was eliminated in 1995. Species with a ** in the Federal status column were listed as Category 2 at the time the status was dropped.
Category 3A = Taxa for which the Service has persuasive evidence of extinction.
Category 3B = Names that on the basis of current taxonomic understanding do not represent taxa meeting the Endangered Species Act's definition of "species."
Category 3C = Taxa that have been proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

STATE

Endangered (E) = Native species determined to be in danger of extinction throughout all or any significant portion of its range or those listed as endangered on the Federal list
Threatened (T) = Native species likely to become endangered within the foreseeable future throughout all or a significant portion of its range or those listed as threatened on the Federal list.
Critical (C) = Native species for which listing as threatened or endangered is pending.
Vulnerable (V) = Native species for which listing is not believed to be imminent and can be avoided with adequate protective measures.
Peripheral or Naturally Rare (P) = Peripheral species refer to those whose populations are on the edge of their range. Naturally rare species are those whith historically low numbers due to naturally limiting factors.
Undetermined Status (U) = Species for which status is unclear and requires further scientific data.

OREGON NATURAL HERITAGE PROGRAM (ONHP):

List 1 = Taxa that are threatened with extinction throughout their entire range, or which are presumed extinct.
List 2 = Taxa that are threatened with extirpation or presumed extirpated from Oregon, but are more common or stable elsewhere
List 3 = Taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.
List 4 = Taxa of concern which are not currently threatened or endangered. Includes taxa which are very rare but currently secure, as well as taxa which are declining in numbers but are still too common to be proposed as threatened or endangered.

FOREST:

D = Documented on Forest. (All others suspected only).

REFERENCES

Federal Register Vol. 57, No. 10, January 15, 1992. Final Rule--Critical Habitat for the Northern Spotted Owl.

Federal Register Vol. 59, No. 18, January 27, 1994. Proposed Rule--Designation of Critical Habitat for the Marbled Murrelet.

Natural Heritage Advisory Council to the State Land Board. 1993. Oregon Natural Heritage Plan. State Land Board, Salem, OR. 158pp.

Regional Forester's Sensitive Species List. Region 6, USDA Forest Service. Latest revision June 10, 1991 (for plants; last updated 1989 for vertebrates).

Oregon Department of Fish and Wildlife. 1993. Oregon Wildlife Diversity Plan. Second Edition.

U.S. Department of Interior, Fish and Wildlife Service, August 23, 1993, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12.

Appendix I. Road Inventory for Indian/Deadwood Watershed Analysis

Appendix I lists all Forest Service and county roads included in Indian/Deadwood. Each road was rated for its potential to adversely impact aquatic resources (from 1 to 5, low to high, respectively). The following discussion describes how data sources were derived:

Slope position - from 7.5-minute USGS topographic maps, roads were identified as ridgetop, midslope or valley bottom. In general, it was assumed that ridgetop roads are more stable and less likely to impact aquatic resources, whereas, midslope and valley bottom roads would be more likely to deter proper riparian and instream function (i.e. interception and rerouting of subsurface flow, slides during intense storm events, stream crossings that may hinder fish passage or disruption of connectivity between the hill slope and valley bottom).

Slope stability - roads in the watershed were overlaid on a map showing soil type and slope mapped by the Soil Conservation Service. Past work by George Bush, Forest soils scientist, rated each soil/slope class as high, moderate or low for landslide and surface erosion potential based on specific soil characteristics and personal experience with these soil types and where on the landscape each type existed. If a particular road crossed an area dominated by a soil type that had high potential for landslides, the road was considered to have higher potential to negatively impact aquatic resources.

Roads that were sidecast built - using past road records and the knowledge of district personnel, a map was developed to show where sidecast and non-sidecast constructed roads exist in the watershed. Sidecast roads are considered higher risk to aquatic resources because overhanging fill material can become saturated during intense storm events and is more likely to fail, especially where midslope roads cross steep headwalls. Construction of this map was based almost entirely on memory of district personnel, when combined with other information, it was helpful in assigning an overall rating for each road.

Risk to known quality fish habitat - Paul Burns, the district fish biologist, constructed a map of existing fish habitat quality based on stream survey information and District knowledge. This was limited to streams with completed stream surveys. Stream survey components that were most influential to habitat quality included percent pools, number of deep pools, number of complex pools and amount of large wood present. Using this map showing location of quality habitat, roads that had potential to influence high quality fish habitat were identified. An example of "potential to influence" would include a midslope road, sidecast built in a slide prone area with several stream crossings above known high quality fish habitat. Roads that showed high risk to quality habitat coupled with high risk of instability were given a "5" rating in every case.

Presence of known problems - a full roads assessment was done for Indian/Deadwood by the Forest Engineering and Road Maintenance group which identified culvert drainage problems, road slumps, cutbank failures, sidecast pullback needs and any other road problems that were observed. Where any of these problems caused increased sedimentation or potential for mass movement, these roads were given a higher overall rating.

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Road #	Dist. (Miles)	Current Maint. (Co.,USFS)	Sub-Watershed	Land-scape Block	ATM[1/] Status	Year Built	Side-cast (Y/N)	Slope Position % Ridge top	Mid-slope	Valley Bottom	Risk to[/2] Known Quality Habitat	Stability[/3] Risk (Slope/ Soil)
2100000	5.07	USFS/CO	U. Indian	B		1924/65			30	70		H
2100639	0.31	USFS	Rogers	A		1968	N	80	20		H	H
2100640	4.03	USFS	Maria/Rogers	A		by 1965	80%	50	50		L	H
2116000	3.53	USFS	N.Indian	B/H4	S2	by73/64/10	Y	20	5	75	H	L
2116617	1.3	USFS	N.Indian	B/H4		by 1965	Y		60	40	M	M
2116618	0.63	USFS	N.Indian	H4		1964	Y	30	70		H	H
2127000	3.61	USFS	Long/Elk2	E		by 1965	Y	55	10	35	M	L
2127770	0.41	USFS	Elk2	E		1984	N	100			L	L
2127771	0.24	USFS	Elk2	E		1984	N	100			L	L
2160000	4.32	USFS	Herman/N.Indian	H4		by 1965	Y	40	60		H	M
2160620	1.02	USFS	N.Indian	H4		1970	Y	100			M	L
2160621	0.12	USFS	N.Indian	H4		1958	Y	100			M	L
2160622	0.37	USFS	N.Indian	H4		1964	Y	100			M	L
2170000	est. 1.8	USFS	Elk2/L.Indian	E/H1		by 1965	Y	100?				L
2170UK1	est. .25	USFS	Elk2	E		1964	Y	?				H
2170759	est. .15	USFS	Elk2	E		1958	Y	100				H
2170763	0.82	USFS	L.Indian	E/H1		1960	Y	100				M
2170764	1.05	USFS	L.Indian	H1		1973	50%	100				L
2170765	1.12	USFS	L.Indian	H1		1973	80%	100				L
2500A	est. 1.7	USFS	Elk2/L.Ind	E	S1		Y	100				
2500B	est. 2.6	USFS	Long/Rogers	A			Y	100			H	H
2500643	1.02	USFS	Rogers	A		1958/75	Y	100			L	L
2500649	0.87	USFS	Long	E		by 1965	Y	100			L	L
2500650	0.42	USFS	Long	E		1958	Y	100			L	H
2500654	1.52	USFS	Long	E		1957	Y	100			L	H
2500790	0.71	USFS	Elk2	E		1975	N	100			L	L
2500793	0.86	USFS	Elk2	E		1960	Y	100			L	L
3200000	10.3	USFS	Various-I&D	H1-5/E	S1	by 1965	Y	75	25		M	H
3200UK5	est. .50	USFS	Herman	H4		1973	Y	100			M	L
3200628	0.43	USFS	Herman	H4			Y				M	H
3200629	0.31	USFS	Herman	H4		1971	Y	100			M	L
3200UK4	est. .20	USFS	W.Fk.Dead	H5		1970	Y		100			H
3200646	1.95	USFS	Herman	H4		1965	Y	90	10		M	M
3200647	0.3	USFS	Herman	H4		by 1973	Y	100			H	H
3200650	1.65	USFS	W.Dead/Misery	H3/H5		1964	Y	25	75			M
3200651	0.32	USFS	W.Fk.Dead	H5		1974	N	100			L	M
3200653	0.75	USFS	W.Fk.Dead	H5		by 1973	Y		100		M	H
3200654	0.34	USFS	Herman	H4		1974	Y	100			L	H
3200UK3	est. .10	USFS	Herman	H4		1978	Y	100			L	L
3200670	0.34	USFS	Herman	H4		1982	N	100			M	L
3200671	0.43	USFS	Green Ck.	H1		1975	Y	100				L
3200672	2.98	USFS	Elk2/Herman	E/H4		1954	N		100			H
3200672U	est. .10	USFS	Elk2	H4		1973	N		100			H
3200UK2	est. .10	USFS	Elk2	E		1973	Y	100				L
3200675	0.68	USFS	Elk2	E		1965	N	100				L
3200676	0.24	USFS	Elk2	E		1972	Y	100				L
3200678	est. .20	USFS	Green Ck.	H1		1965	Y	100			L	L

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Known Prob.'s Pre-flood (Y/N)	Comments & Damage caused by February 7, 1996 storm	Overall Potential[4] Impact to Aquatics (5=high, 1=low)
Y	5 mod-large slides, 2 cutbank failures, 1 blocked culvert - rd reopened but repairs needed	4
		4
	Major slump and sidecast failure below slump @ 2 mi. - rd reopened	3
		2
Y	4 bad culverts; rd. washed out in 2 places where culverts are blocked - to be closed in '96	5
		4
	1 large slump, 3 small slides, 1 sidecast pullback - rd open	2
		1
		1
Y	4 sidecast pullbacks (pre-flood), 1-185' slump, 2 large slides - rd closed (1997 ERFO project)	5
		1
		2
		1
	1-20 cy slide and 1-150 cy slide - rd closed	1
Y	Unknown spur, NE1/4, S30; s.c. pullback, waterbar	4
		2
		2
Y	1 sidecast pullback area, end 50% not sidecast built	4
	20% of rd. not sidecast built at end	2
Y	ATM portion of 25 closed after flood due to large cutbank fail., now reopened	3
Y	non-ATM portion, various sidecast and slump problems (major repairs scheduled for '96, 97')	5
		2
		2
		3
		3
		1
	rock slide blocking road @ .3 miles	1
Y	6 major rd. bed slumps, 2 cutbank fail., 2 sidecast p.b.'s - rd open (ERFO '96)	4
	unknown spur above 3200628	3
		3
		3
	unknown spur just beneath 646 down to 35-acre unit	4
Y	Huge slide at top blocks any access, sidecast pullback needed near spur 3200647	4
Y	sidecast pullback needed throughout	5
	spur next to 651in very bad shape, major sidecast fail. @ .2 mi - waterbar and close	4
		2
		3
		3
	waterbar landing spur; in-unit slide below	2
		2
		2
	20-cy rock slide, shoulder failure - rd. passable	3
	unknown spur to 3200672 (sec. 30)	3
	between 3200675 and 3200672	2
		1
		2
		2

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Road #	Dist. (Miles)	Current Maint. (Co.,USFS)	Sub-Watershed	Land-scape Block		Year Built	Side-cast (Y/N)	Slope Position % Ridge top	Mid-slope	Valley Bottom	Risk to Known Quality Habitat	Stability Risk (Slope/ Soil)
3200740	0.28	USFS	L.Indian	H1		1980	N	100			M	L
3200741	0.2	USFS	L.Indian	H1		1980	N	100				H
3200742	0.09	USFS	L.Indian	H1		1978	N		100			H
3200UK1	est. .3	USFS	Green Ck.	H1		1969	N	100				H
3200751	4.21	USFS	GrnCk/L.Ind	H1		1969	50%	100			M	L
3200752	0.07	USFS	Green Ck	H1		1975	N	100				L
3200754	0.58	USFS	Green Ck.	H1		1964/75	Y	100				L
3200755	1.45	USFS	L. Indian	H1		1980	N	100			M	L
3200756	0.28	USFS	L.Indian	H1		1972	N	100				L
3200757	est. .25	USFS	Green Ck.	H1		1969		100				H
3200758	0.46	USFS	L.Indian	H1		1969	N	100				L
3200759	0.66	USFS	Elk2	E/H1		1968	Y	100				H
3200760	0.35	USFS	L. Indian	H1		1979	N	100			M	M
3200770	0.74	USFS	L. Indian	H1		1989	N	100				L
3200771	0.16	USFS	L. Indian	H1		1989	N	100				L
3250000	est. 2.6	USFS	Herman/N.Indian	H4/B	S2	by 1965	Y	100			L	L
3250514	0.44	USFS	N.Indian	B		1964/75	Y/N	100			L	L
3259000	7.79	USFS	Alph/WDd/Pan2	H5,6/G	S2	by 1965	Y	60	40			M-H
3259618	3.81	USFS	WFDead/Alpha	H5/G		by 1965	Y	80	20		M	M
3259620	1.14	USFS	WFDead/Alpha	H5/G		by 1973	Y	100				M
3259621	0.72	USFS	WFDead	H5		1965/89	50%	100				M
3259623	0.73	USFS	Alpha	G		1960	Y	100				M
3259625	1.09	USFS	WFDead	H5		1960/89	30%	90	10			M
3259631	0.91	USFS	WFDead	H5		1966/68	Y	50	50		L	H
3259632	0.46	USFS	WFDead	H5		1966	Y		100		M	H
3259633	0.35	USFS	WFDead	H5		1968	N		100		L	H
3259634	0.11	USFS	Pan2	H6		1983	N	100			L	M
3259635	0.39	USFS	WFDead	H5		1968	Y	100			L	H
3259636	est. .10	USFS	WFDead	H5		1968	Y	?			L	H
3259637	1.25	USFS	WFDead	H5		1964/67	75%	100			L	M-H
3259638	0.23	USFS	WFDead	H5		1964	Y	100			M	M
3259640	1.13	USFS	WFDead	H5		72/78/89	75%	50	50		L	M
3259641	0.53	USFS	WFDead	H5		1975	N	100			L	M
3259642	0.3	USFS	WFDead	H5		1979	N	100			L	H
3259643	1.44	USFS	Pan2	H6		64/69/89	90%	100			L	M-H
3259644	0.78	USFS	Pan2	H6		1957/69	Y	100			L	M
3259645	0.46	USFS	Alpha	G		1958	Y	40	60			M-H
3269000	5.78	USFS	Fail/Mis/WDead	H2,3,5/G		by 1965/73	65%	95	5		L	H
3269659	0.45	USFS	Misery	H3		1977	N	100				H
3269UK1	est. .30	USFS	Misery	H3			Y		100?			H
3269660	0.75	USFS	Misery/W.Dead	H3,5		by 1973	Y	100				H
3269662	0.11	USFS	Failor	H2		1977	Y	100			M	H
3278000	2.59	USFS	Herman	H4/E	S2	by 1973/65	Y	25	50	25		L
3278663	0.88	USFS	Herman	H4/E			Y	50	50		H	H
3278665	0.59	USFS	Herman	E		1971	N	100				L
3278666	0.15	USFS	Herman	E		1981	Y		100			H
3279000	5.6	USFS	GrnCk/Failor	H1,2/G		by1973/65	Y	90	10		M	M

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Known Prob.'s Pre-flood (Y/N)	Comments & Damage caused by February 7, 1996 storm	Overall Potential Impact to Aquatics (5=high, 1=low)
		1
		2
		3
	unknown spur above 3200751	1
Y	4 slides (1=500cy) and 1-150x25x10 slump @ 1 mi. - road closed	1
		1
		1
		1
		1
		2
		1
Y	includes 761 & 762	4
		1
		1
		1
		1
		1
	4 major slumps, 1 cutbank failure & 1 sidecast p.b. - road closed (ERFO '97)	3
Y	90'x1000' sidecast fail. to Cr; 100cy cutbank fail - both passable	3
		3
		3
		2
	2/3 built in 1980; 30 cy slide, culvert blocked .3 miles from jct. with 618 - rd. closed	2
		3
		4
		3
		1
		3
		3
Y	400' rd. slump and major slide below - road permanently closed	4
		3
Y	1 small cutbank fail. blocking rd., ditch and culvert @ .1; sidecast pullback needed	4
		2
		3
	last 1/4 = high slide risk	2
		2
		3
	3 major failures of rd. bed @ .4, 2.8 & 4.6 mi. - closed; lower 1/3 not sidecast built	3
	at top of 3269 near 3200	2
Y	unknown spur near 3269659 - oblit. candidate	4
		3
		3
Y	1 small see rd. assessment	4
Y	sidecast pullback throughout; oblit.- no access needed	5
		1
		4
Y	lower portion built in 1973; 2 small slides at 1.7 and 4.8 miles - open; system priority to waterbar	4

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Road #	Dist. (Miles)	Current Maint. (Co.,USFS)	Sub-Watershed	Land-scape Block	ATM Status	Year Built	Side-cast (Y/N)	Slope Position % Ridge top	Mid-slope	Valley Bottom	Risk to Known Quality Habitat	Stability Risk (Slope/ Soil)
3279667	0.38	USFS	Failor	H2			Y	100			M	L
3279668	0.35	USFS	Failor	H2		1956	Y	100			M	H
3279669	0.61	USFS	Green Ck.	H1		1974	Y	100				M
3279670	0.47	USFS	Failor	H2		1960	Y	100			M	M
3279747	0.38	USFS	Green Ck.	H1		1975	Y	100				H
3279748	0.31	USFS	Failor	H2/G		1973	Y	100				H
3279749	0.42	USFS	Failor	G		1973	Y	100				L
3279750	0.63	USFS	GmCk/LLake	G		1978	Y	50	50			H
3289000	5.57	USFS	Green Ck.	H1		by 1954/65	Y		10	90		M
3289UK1	est. .3	USFS	Green Ck.	H1		1968	Y			100		H
3315000	0.03	USFS	Up.Dead	C			Y	100			L	M
3315111	0.65	USFS	Up.Dead	C			Y	100			L	H
3315112	0.21	USFS	Up.Dead	C			Y	100				H
3500000	est. 2.6	USFS	NPan/UpDead	H6/C	Prim.	by 1965	Y	90	10		L	M
3500111	est. .25	USFS	Up.Dead	C		1964	Y	100			M	M
3500112	est. .30	USFS	Up.Dead	C		1964	Y	100			L	L
3500114	est. .5	USFS	Pan2	C		1964	Y	100			M	M
3500115	est. .2	USFS	Pan2	C		1964	Y	100			M	M-H
3500612	2.6	USFS	Misery/WFDead	H3,5		by 1965/73	67%	40	30	30	M	M-H
3500615	0.98	USFS	Misery/WFDead	H3,5		by 1973	Y	100				M
3500616	0.07	USFS	Misery	H3		by 1973	Y	100				M
3510000	est. 2.1	USFS	an2/NPan/UpDe	H6/C		1967	Y	100			M	M
3510622	0.72	USFS	Pan2	H6		1978	Y	100				L
3511000	2.16	USFS	Pan2/NPan	H6/C		by 1965/73	Y	100			M	L/H
3511111	0.19	USFS	Up.Dead	C			Y	100			L	L
3511112	0.15	USFS	NPan	C			Y	100			M	H
3511113	est. .10	USFS	NPan	C			Y	100			M	H
3511114	0.77	USFS	Pan2/NPan	H6		by 1973	Y	100				H
3515000	4.04	USFS	Up.Dead	C		by 1965	Y	35	65		H	M
3515113	0.83	USFS	Up.Dead	C		1961	Y	100				L
3515114	0.79	USFS	Up.Dead	C		1964	Y	100			M	L
3515115	0.25	USFS	Up.Dead	C		1961	Y		100		M	H
3515116	1.09	USFS	Up.Dead	C			Y	100			M	M
3515117	0.32	USFS	Up.Dead	C		1961	Y		100		H	L
3515118	0.77	USFS	Up.Dead	C			Y	40	60		H	M-H
3515119	0.51	USFS	Up.Dead	C		1964	Y	100				L
3515122	0.21	USFS	Up.Dead	C		1961	Y		100		H	M
3515126	0.36	USFS	Up.Dead	C		1961	Y	100			M	H
3515127	est. .5	USFS	Up.Dead	C			Y		100			M
3515130	0.08	USFS	Up.Dead	C		1961	Y	100			M	L
3515200	0.11	USFS	Up.Dead	C			Y	100			M	H
3520000	1.07	USFS	Pan2/UpDead	H6/C		by 1965	Y	100			M	M
3525000	5.13	USFS	Rock3/Buck	C/D		by 1965	Y	70	20	10	L	H/L
3525113	0.74	USFS	Elk	D			Y	100				M
3525125	0.24	USFS	Buck	D			Y	100			L	H
3526000	3.35	USFS	Buck/Elk	D		by 1965	Y	90	10		L	M
3526113	0.9	USFS	Elk	D			Y		100		M	M-H

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Known Prob.'s Pre-flood (Y/N)	Comments & Damage caused by February 7, 1996 storm	Overall Potential Impact to Aquatics (5=high, 1=low)
		3
		4
		3
		3
		3
		3
		2
		3
Y	1 slump, 2 small cutbanks, 1 sleused channel in rd - all passable	4
	unknown riparian spur to 3289 (NW corner of sec. 4)	3
		2
		3
		3
Y	2 sidecast pbs, part. plugged culv. @ 4.6, midslope slide risk = high; 1-350cy slide after flood	4
		3
		2
	stability varies (H,M&L)	2
		2
Y	Post-flood - 2 huge slides, 1 slump & many sidecast and culvert problems - closed @ .6	4
		3
		3
Y	slide @ .1 = plugged culvert; stability varies (L,M&H)	4
		1
Y	massive slump @ 2.1; stability varies (L&H)	3
		2
	slump @ .4	3
		2
		2
	stability varies (H,M&L)	4
		2
		3
		4
		3
		3
		4
		2
		4
		3
		4
		3
		3
		3
Y	partially plugged culvert at m.p. 1	3
		2
		2
	obliterated	2
		3

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Road #	Dist. (Miles)	Current Maint. (Co.,USFS)	Sub-Watershed	Land-scape Block	ATM Status	Year Built	Side-cast (Y/N)	Slope Position % Ridge top	Mid-slope	Valley Bottom	Risk to Known Quality Habitat	Stability Risk (Slope/ Soil)
3600000	5.44	County	Lower Lake	G	Hwy	pre1910				100		L
3700000	1.6	USFS	N.Indian	B	S1	by 1965	Y	100			L	L
3700573	0.93	USFS	N.Indian	B		1975	Y	50	50		M	H
5110000	1.77	County	Elk2	E	Co	by 1910	Y	50	50			H/L
5130000	17.3	County	Various-Indian	E	Co	pre1910/65				100		L
5134000	3.27	County	Long	E	Co	by 1910	Y			100	L	L
5140000	10.99	County	Various-Deadw.	G/H6	Co	by 1910	Y			100		L
5142000	3.82	County	W.F.Dead/Misery	G/H3,5	Co	by 1910	Y			100		L
5143000	1.49	USFS	W.F. Deadwood	H5		by 1910	Y			100	L	L
5800000	est. 2.1	USFS	Various-Indian	A/B	S1	by 1965	Y	50	50		H	M-H
5800637	0.65	USFS	Maria/Rogers	A		1967	Y		100		L	H
5800680	5.03	USFS	N.Indian/Up.Ind	B		by 75/63	Y	80	20		L	L
5800681	0.76	USFS	N.Indian	H4		by 1973	Y	100			H	M
5840000	9.39	USFS	Various-Indian	A/B/E		by 65/73	Y	90	10		L	L
5840622	0.17	USFS	Maria	A		1985	N		100		L	M
5840623	0.28	USFS	Up.Indian	B		1968	N	100				L
5840624	2.04	USFS	Maria	A		by 1973	Y	60	40		M	M
5840625	1.68	USFS	Maria	A		by 1973	Y	50	50		M	M
5840626	est. .25	USFS	Maria	A			Y	100			L	H
5840627	0.55	USFS	Maria	A		1968	N	100			L	L
5840628	0.32	USFS	Up.Indian	B		1968	N	100				H
5840630	0.66	USFS	Maria/Long	A		1972	N	100			L	L
5840631	0.41	USFS	Long	A		1972	N		100		M	L
5840632	0.54	USFS	Long	A		1972	N	100			L	L
5840633	0.65	USFS	Long	A		1973	Y	100			L	L
5840634	1.31	USFS	M.S. Indian	E		1969	Y	100			L	L
5840636	0.9	USFS	Long	A		by 1965/73	Y	100				L
5840637	0.12	USFS	Long	A					100			H
5840650	0.17	USFS	Long	E		1985	N	100				L
6300000	6.62	USFS	Alpha/UpDead	C/G		by24/52/65	Y	25	15	60	M	L
6300110	0.53	USFS	Up.Dead	C		by 1973	Y	100			M	M
6300118	0.68	USFS	Up.Dead	C		1958	Y		100		H	M
6300119	0.85	USFS	Up.Dead	C		1958	Y		100		H	L
6300122	0.45	USFS	Up.Dead	C		1961	Y		100		H	M
6300UK1	est. 1.1	USFS	Up.Dead	C			Y	100				H
6300126	0.5	USFS	Up.Dead	C			Y		100			H
6300131	0.35	USFS	Up.Dead	C		1958	Y	100				L

Appendix I - Roads Inventory for Indian/Deadwood Watershed Analysis

Known Prob.'s Pre-flood (Y/N)	Comments & Damage caused by February 7, 1996 storm	Overall Potential Impact to Aquatics (5=high, 1=low)
	HWY 36	1
		1
		4
	Stability: ridge=H; midslope=L	2
	Mainline access up Indian	3
		1
		1
		1
		1
Y	chronic cutbank\fill erosion above Rogers\Maria; flood - passable slump @ 39.3 mi. (ERFO '96)	5
		3
Y	sidecast pullback on spur in T16S, R10W, S3 and more	4
Y	sidecast pullback throughout	5
		1
		3
		1
	flood - 2 road slumps, both passable	3
		3
		2
		1
Y	sidecast pullback throughout	4
	80 cy slide @ .7 miles	1
		2
		1
Y	sidecast pullback	3
		2
	waterbar and close op. spurs	2
		3
		1
Y	flood - 2 major sidecast failures into creek & part. plugged culvert @ m.p. 4 (see culv. analysis)	3thru5
Y	culvert removed @ .3; possible rd oblit.	3
Y	stability varies (L&H); has waterbars but needs 3 culverts pulled	5
	small piece of hisk slide risk @ end of spur	4
		4
	6300126 comes off this unknown spur to 6300	3
		3
		2

Key:

1/ **ATM Status** - Prim. = Primary Forest Road - all highway vehicle travel encouraged
S1 = Secondary Forest Road, Low Clearance - passenger car travel acceptable
S2 = Secondary Forest Road, High Clearance - passenger car travel discouraged
Co. = County maintained

2/ **Risk to Known Quality Habitat** - High, Moderate or Low (See Appendix 4.3 for analysis methods)

3/ **Stability Risk (Slope/Soil)** - High, Moderate or Low (See Appendix 4.3 for analysis methods)

4/ **Overall Potential Impact to Aquatics** - 1-5 (See Appendix 4.3 for analysis methods)

Appendix K. Stream Habitat Condition Rating

CREEK NAME	REACH	% DEEP POOLS	LWD	COMPLEX POOLS	% POOLS
Elk	1	F	NF	NF	F
	2	PF	NF	NF	F
	TRIB 1	NF	NF	NF	PF
	TRIB 3	F	NF	NF	F
	TRIB 4	NF	NF	NF	F
Failor	1	P5F	NF	NF	F
	2	F	PF	NF	F
	3	F	NF	NF	F
	4	NF	NF	NF	PF
	TRIB 5	NF	NF	NF	PF
	TRIB 6	NF	NF	NF	NF
	TRIB 7	NF	NF	NF	PF
	TRIB 9	NF	NF	NF	NF
	TRIB 12	NF	NF	NF	NF
	TRIB 15	NF	NF	NF	NF
	TRIB 16	NF	NF	NF	NF
Gibson	1	F	NF	NF	F
	TRIB 1	NF	NF	NF	NF
	TRIB 4	NF	NF	NF	NF
	TRIB 5	NF	PF	NF	NF
Herman	1	NF	NF	NF	PF
	2	F	NF	NF	F
	3	NF	PF	NF	F
	TRIB 15	NF	NF	NF	NF
	TRIB 7	NF	NF	NF	NF
	TRIB 8	NF	NF	NF	NF
Long	1	PF	NF	NF	F
	2	F	NF	NF	F
	3	NF	NF	NF	PF
Maria	1	PF	PF	NF	F
	2	PF	NF	NF	F
	3	NF	NF	NF	PF
Maria Trib 5	1	NF	NF	NF	F
	2	F	PF	PF	F
N. Fork Indian	1	F	NF	NF	F
	2	F	NF	F	F
	3	F	NF	NF	F
	4	F	NF	NF	F
	5	F	NF	NF	F
	TRIB 10	NF	NF	NF	NF
	TRIB 12	F	NF	NF	F
	MANN CR.				
	TRIB 13	NF	NF	NF	F
	TRIB 23	F	NF	NF	F

CREEK NAME	REACH	% DEEP POOLS	LWD	COMPLEX POOLS	% POOLS
Pyle	1	NF	NF	PF	F
	2	F	NF	NF	F
	3	NF	NF	NF	NF
	TRIB 2	NF	NF	NF	NF
	TRIB 3	NF	NF	NF	PF
Rogers	1	F	NF	NF	PF
	2	F	NF	NF	F
	3	NF	NF	NF	NF
	4	NF	NF	NF	NF
	TRIB 25	NF	NF	NF	NF
	TRIB 26	NF	NF	NF	PF
	TRIB 8	F	PF	NF	F
Smoot	1	F	NF	NF	F
	2	PF	NF	NF	F
	TRIB 3	NF	NF	NF	NF
Taylor	1	F	NF	NF	F
	2	F	NF	NF	F
	TRIB 4	NF	PF	NF	F
Velvet	1	F	NF	NF	F
	TRIB 4	NF	NF	NF	NF
	TRIB 6	NF	NF	NF	NF
	TRIB 7	NF	PF	NF	NF
	TRIB 1 OF TRIB 7	NF	PF	NF	NF
	TRIB 9	NF	NF	NF	NF
West Fork Deadwood	2	NF	NF	NF	F
	4	F	NFN	NF	F
	6	F	NF	NF	F
	Panther Fk	NF	NF	NF	F
West Fork Indian	1	F	NF	NF	F
	2	F	NF	NF	F
	TRIB 1	NF	NF	NF	NF
	TRIB 2	NF	NF		PF
West Headwaters Deadwood	1	F	NF	PF	F
	2	F	PF	PF	F
	TRIB 2	NF	NF	NF	NF
	TRIB 3	NF	NF	NF	NF

F = Functioning for rearing habitat
PF = Partially functioning
NF = Not functioning

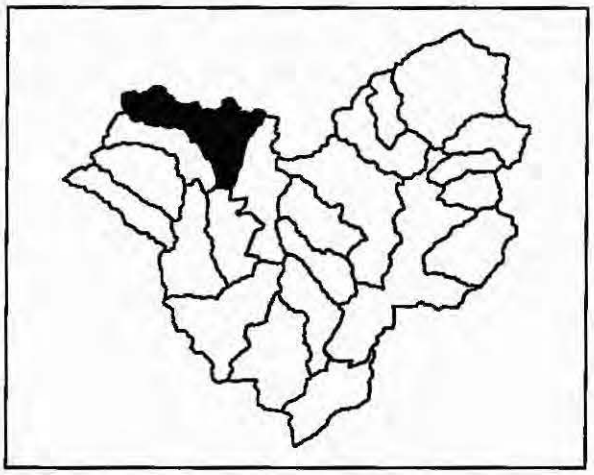
North Indian - 1710020615

At a Glance:

Sub-watershed size: 6.48 sq. miles (4149 acres)

Streams include: North Fork Indian Creek

Ownership: Siuslaw N.F. (87.2%)
Industrial Private (10.9%)
Private (1.8%)



History: There were two homesteads in the lower half of the subwatershed and grazing occurred throughout North Fork Indian Creek. Records indicate five sawmills existed in a tributary on the north side of North Fork Indian Creek, one of which existed before 1945.

Aquatics

Stream miles: 62.7
Stream density: 9.68 miles/sq.mile

Confinement & Gradient:

52.6 miles of *source* areas (confined and moderately confined, >8%)
4.0 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
6.1 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Much of the upper three miles of North Fork Indian Creek is very close to being in properly functioning condition except for the lack of large wood in the creek and on the floodplain. Stream improvement strategies consist of scattered riparian plantings of conifers for future large wood recruitment and deciduous trees for potential beaver habitat and use. The lower two miles are influenced by the current road placement and grazing along the creek. Beaver dams and instream structures have created pools for salmonid rearing in this section. Additional gains for fish habitat could be made by increasing the woody vegetation, willows and conifers on the streambanks to encourage stability. If grazing remains a component of management, proper fencing of pastures will be needed to ensure vegetative success and bank stability.

Survey information available:
- Summer, 1995, bracketed stream temperature monitoring on North Fork Indian Cr. (Ryans #902522 and #902524)
- Level II stream habitat surveys, August, 1991 and Sept.-Oct., 1994
- 1990 water users inventory identified 1 water use permitee in this subwatershed

Aquatic Priority for Restoration: **Moderate**

North Indian (continued)

Soils/Vegetation

Plant Association Groups:

RUSP - 37%	GASH - 30%
POMU - 31%	RHMA - 2%

Land Type Associations: 3C1, 3C

Dominant Soils:

Ridgetops - Preacher loam, Bohannon gravelly loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Blachly silty clay loam, Bohannon gravelly loam
Valley bottom - Meda loam, Nekoma silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 11% of subwatershed
Moderate potential - 39% of subwatershed
Low potential - 50% of subwatershed

Management

Natural acres:	1999 acres (48.2%)
Managed acres:	2141 acres (51.6%)
Non-timber land:	9 acres (0.2%)

System road miles: 14.2
Ridgetop roads: 8.94 mi. (62.9%)
Mid-slope roads: 2.32 mi. (16.3%)
Valley bottom roads: 2.96 mi. (20.8%)

System road density: 2.19 miles/sq.mile
ATM roads: 2116, 3250 and 3700

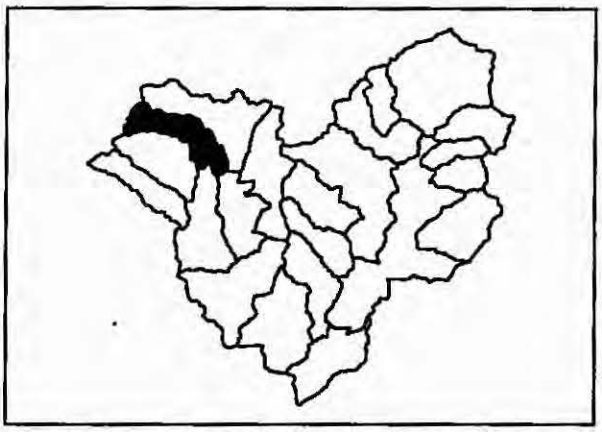
Upper Indian - 1710020615

At a Glance:

Sub-watershed size: 4.00 sq. miles (2559 acres)

Streams include: Upper mainstem Indian Creek

Ownership: Siuslaw N.F. (74.7%)
Private (25.3%)



History: There were at least four pre-1900 homesteads in the lower half of this subwatershed and grazing throughout the drainage extended up into the headwaters of Upper Indian Creek. There were six sawmills in this drainage, three of which were pre-1945.

Aquatics

Stream miles: 33.4
Stream density: 8.35 miles/sq.mile

Confinement & Gradient:

27.8 miles of *source* areas (confined and moderately confined, >8%)
2.2 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
3.4 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

This creek is largely in private ownership. Any stream improvements would have to be centered around large-scale partnerships. Unless opportunities to improve fish habitat develop, this area will be low priority for improvement work.

Survey information available: 1990 water users inventory identified 2 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Soils/Vegetation

Plant Association Groups:

RUSP - 38%	GASH - 25%
POMU - 34%	RHMA - 3%

Land Type Associations: 3B, 3C1

Upper Indian (continued)

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Blachly silty clay loam, Preacher loam
Sideslopes - Peacher-Bohannon-Slickrock complex
Valley bottom - Meda loam, Nekoma silt loam

Slope Stability

Predicted potential for slides and debris torrents:

High potential - 7% of subwatershed
Moderate potential - 34% of subwatershed
Low potential - 59% of subwatershed

Management

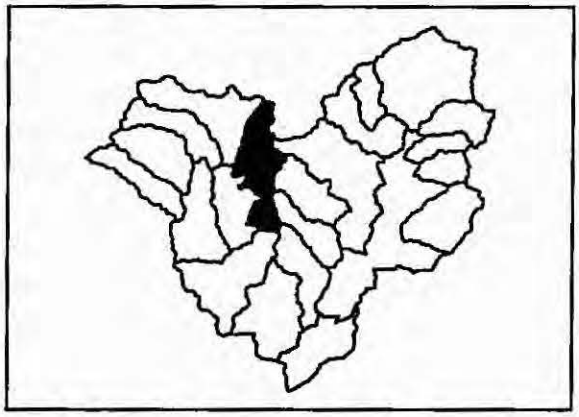
Natural acres:	1778 acres (69.5%)
Managed acres:	781 acres (30.5%)
Non-timber land:	0 acres

System road miles: 14.1
Ridgetop roads: 6.13 mi. (43.5%)
Mid-slope roads: 4.66 mi. (33.1%)
Valley bottom roads: 3.30 mi. (23.4%)

System road density: 3.53 miles/sq.mile
ATM roads: 2100

Herman - 1710020615

At a Glance:



Sub-watershed size: 5.53 sq. miles (3538 acres)

Streams include: Herman, Taylor and Gibson Creeks which are tributaries to Indian Creek

Ownership: Siuslaw N.F. (96.9%)
Private (3.1%)

History: There was one pre-1900 homestead in lower Herman Creek and a pre-1945 sawmill in lower Taylor Creek. Grazing occurred in lower Taylor Creek between the sawmill and Indian Creek. There were two historic trails in this subwatershed as well.

Aquatics

Stream miles: 50.8
Stream density: 9.19 miles/sq.mile

Confinement & Gradient:

44.1 miles of *source* areas (confined and moderately confined, >8%)
.6 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
6.1 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Herman - the upper 3/4 of Herman Creek is partially functioning as habitat for rearing of salmonids, but the absence of large wood in the creek limits this rearing potential. There is some beaver activity in Herman Creek that provides good rearing habitat. Planting of conifer in clumps and possibly willow could further enhance beaver habitat. Addition of wood from adjacent hillslopes and outside sources will promote short-term recovery of fish habitat. Herman Creek has the potential to be a major contributor to salmonid habitat within the Indian Creek watershed.

Taylor - Level II fish habitat surveys show that Taylor Creek is partially functioning as anadromous fish rearing habitat. Large wood is deficient and additions from adjacent hillslopes and outside sources would enhance the habitat. Planting of conifers in clumps where appropriate is recommended here. Although Taylor Creek does provide habitat off the heavily impacted mainstem of Indian Creek, this creek is not as high a priority as Herman Creek.

Gibson - Same as for Taylor except there may be more opportunity here for addition of large wood to the stream from adjacent hillslopes.

Survey information available: - Level II stream habitat surveys on Herman, Gibson and Taylor Creeks, Sept.-Oct., 1994
- 1990 water users inventory identified no water use permitees

Herman (continued)

Aquatic Priority for Restoration: **High**

Soils/Vegetation

Plant Association Groups:

RUSP - 35%	GASH - 31%
POMU - 31%	RHMA - 3%

Land Type Association: 3C

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Blachly silty clay loam, Preacher loam
Sideslopes - Preacher-Bohannon-Slickrock complex
Valley bottoms - Meda loam and Nekoma silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 20% of subwatershed
Moderate potential - 38% of subwatershed
Low potential - 42% of subwatershed

Management

Natural acres:	1939 acres (54.8%)
Managed acres:	1588 acres (44.9%)
Non-timber land:	11 acres (0.3%)

System road miles: 13.3
Ridgetop roads: 6.91 mi. (52.1%)
Mid-slope roads: 5.93 mi. (44.7%)
Valley Bottom roads: .43 mi. (3.2%)

System road density: 2.40 miles/sq.mile
ATM roads: 3200 (north half) & 3278

Mainstem Indian - 1710020615

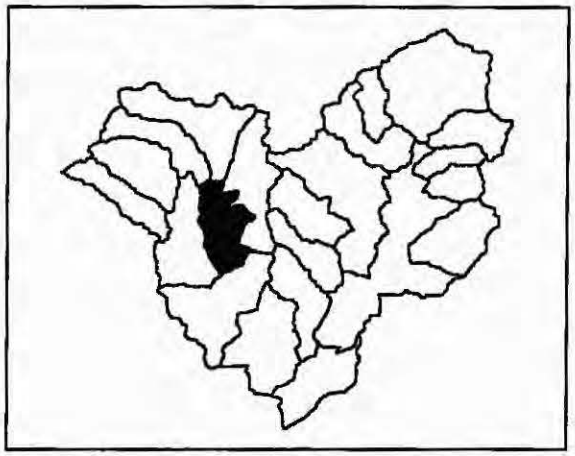
At a Glance:

Sub-watershed size: 4.10 sq. miles (2623 acres)

Streams include: Mainstem Indian Creek and Smoot Creek, a tributary to Indian Creek

Ownership: Siuslaw N.F. (63.6%)
Private (36.4%)

History: There was at least one pre-1900 homestead along the mainstem of Indian Creek and there were four post-1945 sawmills along the mainstem. Grazing historically occurred throughout the mainstem in this subwatershed.



Aquatics

Stream miles: 28.8
Stream density: 7.02 miles/sq.mile

Confinement & Gradient:
21.9 miles of *source* areas (confined and moderately confined, >8%)
.7 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
6.2 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
Through this reach there are a number of areas that are used by chinook salmon as spawning habitat. Grazing is the major activity along this reach of Indian Creek and consequently streambank stability, fine sediment introduction, and lack of riparian vegetation for shade are major problems. Little rearing habitat for salmonids exists. Primarily the mainstem is in private ownership and thus little stream restoration work can be done without development of partnerships, and will be a low priority for restoration until the partnerships are developed. First priority for restoration should be the re-establishment of woody vegetation in the riparian areas, more than just one row of alder along the banks.

Survey information available: - Level II stream habitat survey, October, 1994
- 1990 water users inventory identified 3 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Mainstem Indian (continued)

Soils/Vegetation

Plant Association Groups: no information available
Land Type Association: 3C

Dominant Soils:
Ridgetope - Bohannon gravelly loam, Blachly silty clay loam
Sideslopes - Preacher-Bohannon-Slickrock complex
Valley bottom - Nekoma silt loam, Meda loam, Eilertsen silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:
High potential - 15% of subwatershed
Moderate potential - 30% of subwatershed
Low potential - 55% of subwatershed

Management

Natural acres:	1662 acres (63.4%)
Managed acres:	741 acres (28.2%)
Non-timber land:	220 acres (8.4%)

System road miles: 11.3
Ridgetop roads: 4.39 mi. (38.8%)
Mid-slope roads: 2.24 mi. (19.8%)
Valley bottom roads: 4.68 mi. (41.4%)

System road density: 2.76 miles/sq.mile
ATM roads: 5140 & lower 3259

Maria - 1710020615

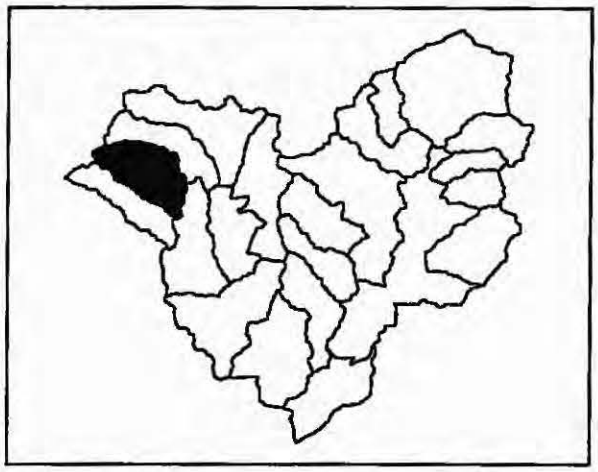
At a Glance:

Sub-watershed size: 4.80 sq. miles (3074 acres)

Streams include: Maria Creek and West Fork Indian Creek, both part of a **Key Watershed**

Ownership: Siuslaw N.F. (85.2%)
Private (14.8%)

History: There was one pre-1900 homestead on West Fork Indian and grazing occurred on at least 50% of West Fork Indian included in this sub-watershed. An historic trail also existed in the area.



Aquatics

Stream miles: 41.1
Stream density: 8.56 miles/sq.mile

Confinement & Gradient:

33.7 miles of *source* areas (confined and moderately confined, >8%)
2.2 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
5.2 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Maria Creek - The majority of Maria Creek is considered partially functioning for rearing of anadromous salmonids. Gravel and cobble are plentiful and occasional pieces of large wood along with beaver dams provide deep complex pools for salmonid rearing. Improvement strategies for Maria Creek include large wood additions from adjacent hillslope stands, planting of conifers in clumps on toe slopes and scattered planting of shade tolerant conifers in some areas beneath the mature hardwood canopy. The major tributary to Maria Creek from the north has a section of stream rated as 'functioning' for salmonid rearing habitat. The strategy in this tributary is to extend this functioning area down to the main stem of Maria Creek (see habitat condition map). Establishment of a partnership with Davidson in the lower portion of Maria Creek would also be beneficial to restoration efforts. There are some large landslides in this drainage from the February 1996 storm. These should be evaluated prior to implementation of the strategies discussed above.

West Fork Indian Creek - The upper two miles of West Fork Indian Creek are rated as 'partially functioning' due to lack of large wood which creates the deep complex pools needed by rearing salmonids. Cobble and gravel are abundant although fine sediments are a concern. Improvement strategies for this section of creek include large wood additions from adjacent hillslope stands, planting of conifers in clumps on toe slopes and scattered planting of shade tolerant conifers below the mature hardwood canopy. Two 318 units have been harvested in 1995,1996 within the drainage and associated KV projects are being planned in

Maria (continued)

association with these units to add large wood complexes to the creek. After these are completed, reconnaissance should be conducted to determine if further improvements are warranted. The next two miles of creek downstream are in private ownership and flow through an alder dominated stand. Although no formal stream surveys have been conducted on this section, gradient, substrate and riparian conditions are similar to that upstream, which probably lends to similar habitat conditions in this section. If partnerships could be developed here, similar strategies to those listed above should be employed.

Survey information available:
- Stream temperature monitoring from 1990-1995 on West Fork Indian
- (summer, 1995 - Ryan #903870).
- Level II stream habitat surveys in both Maria and W. Fk. Indian Creeks, July-Sept., 1990.
- 1990 water users inventory identified no water use permitees in this subwatershed

Aquatic Priority for Restoration: **High**

Soils/Vegetation

Plant Association Groups:

GASH - 33%	RUSP - 32%
POMU - 33%	RHMA - 2%

Land Type Association: 3B

Dominant Soils:

Ridgetop - Bohannon gravelly loam, Blachly silty clay loam, Preacher loam
Sideslope - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam
Valley bottom - Meda loam, Preacher-Bohannon-Slickrock cx, Bohannon gravelly loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 8% of subwatershed
Moderate potential - 41% of subwatershed
Low potential - 51% of subwatershed

Management

Natural acres:	2388 acres (77.7%)
Managed acres:	679 acres (22.1%)
Non-timber land:	7 acres (.2%)

System road miles: 8.30
Ridgetop roads: 4.29 mi. (51.8%)
Mid-slope roads: 3.78 mi. (45.7%)
Valley Bottom roads: .21 mi. (2.5%)

System road density: 1.73 miles/sq.mil
ATM roads: none

Rogers - 1710020615

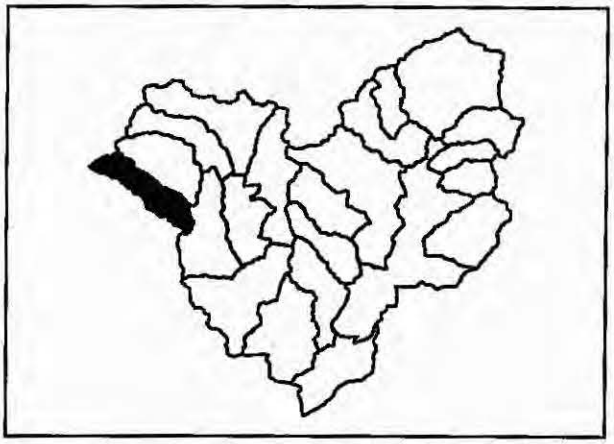
At a Glance:

Sub-watershed size: 3.52 sq. miles (2250 acres)

Streams include: Rogers Creek, tributary to West Fork Indian Creek. Rogers Creek is part of a **Key Watershed**

Ownership: Siuslaw N.F. (98.7%)
Private (1.3%)

History: There were two pre-1900 homesteads in lower Rogers Creek and grazing historically occurred in the lower half of this drainage.



Aquatics

Stream miles: 29.8
Stream density: 8.47 miles/sq.mile

Confinement & Gradient:

25.5 miles of *source* areas (confined and moderately confined, >8%)
.3 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
4.0 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Rogers Creek has high potential to be a major fish producer for the Indian Creek drainage. It currently has a relatively healthy run of chinook and coho salmon . The creek is low gradient and relatively moderately confined. The substrate is primarily gravels and cobbles throughout the system. The lower 2.5 miles of the creek has recently been acquired by the Forest Service. Within this section of creek current habitat conditions for the rearing of anadromous salmonids is fair. Occasional pieces of large wood can be found in connection with the stream channel which create some deep complex pools associated with good salmonid rearing. There is evidence of past stream cleanout efforts on the floodplain throughout this section of stream and noxious weeds (tansy and thistle) are scattered throughout the section as well. Future additions of large wood will create more deep complex pools, provide off-channel habitat, and increase floodplain connectivity with the stream. In addition, diversity of riparian vegetation will be increased through planting of conifers in clumps on toe slopes and scattered plantings of shade tolerant species beneath mature hardwoods. Diversity of currently existing riparian vegetation (i.e. elderberry thickets) should be maintained.

The 1-mile portion of Rogers Creek above the acquired land is in good condition. Beaver activity is high in this area with numerous dams providing floodplain interaction and deep complex pools for cover and feeding,. A substantial amount of large wood is present on the floodplain and in the stream that will be beneficial at high winter flows and will be recruited as the creek continues to meander.

Rogers (continued)

If there is any possibility of choosing 318 sales to be bought out or replaced, from a fisheries standpoint the Mister Rogers 3 units would be the highest priority. These stands located in a key watershed where we plan to establish aquatic refugia just do not make sense.

Survey information available: Level II stream habitat survey, July-August, 1990
1990 water users inventory identified no water use permitees in this subwatershed

Aquatic Priority for Restoration: **High**

Soils/Vegetation

Plant Association Groups:

RUSP - 41%	GASH - 21%
POMU - 38%	RHMA - 0%

Land Type Association: 3B

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Preacher loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam
Valley bottoms - Meda loam, Nekoma silt loam, Preacher-Bohannon-Slickrock complex

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 8% of subwatershed
Moderate potential - 46% of subwatershed
Low potential - 46% of subwatershed

Management

Natural acres:	1534 acres (68.2%)
Managed acres:	716 acres (31.8%)
Non-timber land:	0 acres

System road miles: 10.4
Ridgetop roads: 5.30 mi. (51.1%)
Mid-slope roads: 2.90 mi. (28.0%)
Valley bottom roads: 2.17 mi. (20.9%)

System road density: 2.95 miles/sq.mile
ATM roads: none

Long - 1710020615

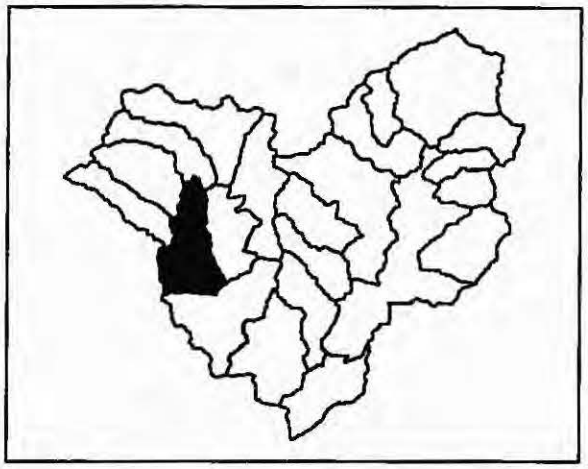
At a Glance:

Sub-watershed size: 5.45 sq. miles (3487 acres)

Streams include: West Fork Indian Creek; Pyle and Long Creeks, which are tributaries to W. Fk. Indian Creek

Ownership: Siuslaw N.F. (80.6%)
Private (19.4%)

History: There was one pre-1900 homestead on West Fork Indian Creek and grazing occurred all along West Fork Indian and lower Long Creeks in this subwatershed.



Aquatics

Stream miles: 47.1
Stream density: 8.64 miles/sq.mile

Confinement & Gradient:
38.3 miles of *source* areas (confined and moderately confined, >8%)
.5 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
8.3 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Lower West Fork Indian Creek - This section of West Fork Indian Creek is almost entirely on private ownership. Small alder-dominated strips line the banks throughout much of this section of creek. Other areas contain steep, actively eroding cutbanks where grazing has weakened the streambank and all woody vegetation has been removed. This section does provide a large amount of spawning habitat for chinook salmon. Rearing conditions for other salmonids is compromised by lack of wood , deep pools and potential temperature limitations caused by radiant heat warming the creek through sparse vegetation. If partnerships can be developed, improvement strategies would center around streambank stabilization and vegetation establishment along the creek to increase shade. Fencing to reduce impacts from grazing would speed up recovery of woody vegetation. Partnership with Davidson is first and foremost in this area. A large slide has blocked the road and entered the creek. Effects from this slide should be evaluated.

Long Creek - Level II stream habitat surveys indicate that Long Creek is partially functioning as anadromous fish rearing habitat. The addition of large wood to create deep complex pools would enable Long Creek to function better in the short term.

Survey information available: - Level II stream habitat surveys in Long Creek, July, 1990 and Pyle Creek, August, 1990
- 1990 water users inventory identified 7 water use permitees

Long (continued)

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

RUSP - 40%	GASH - 26%
RUSP - 33%	RHMA - 2%

Land Type Association: 3C

Dominant Soils:

Ridgetop - Bohannon gravelly loam, Blachly silty clay loam
Sideslope - Preacher-Bohannon-Slickrock complex, Preacher loam, Blachly silty clay loam
Valley bottom - Nekoma silt loam, Nehalem silt loam, Eilertsen silt loam, Meda loam,

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 11% of subwatershed
Moderate potential - 36% of subwatershed
Low potential - 53% of subwatershed

Management

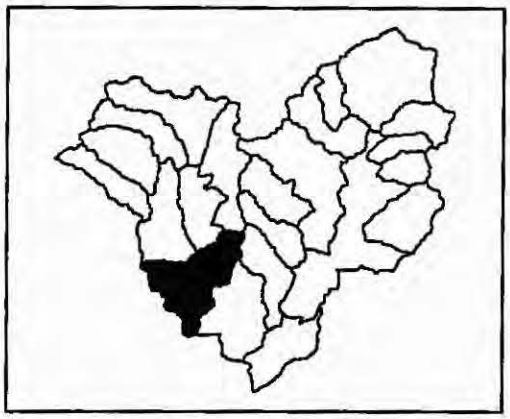
Natural acres:	2274 acres (65.2%)
Managed acres:	1045 acres (30.0%)
Non-timber land:	168 acres (4.8%)

System road miles: 15.5
Ridgetop roads: 9.24 mi. (59.5%)
Mid-slope roads: 1.66 mi. (10.7%)
Valley Bottom roads: 4.64 mi. (29.8%)

System road density: 2.85 miles/sq.mile
ATM roads: lower 2500

Elk2 - 1710020615

At a Glance:



Sub-watershed size: 7.43 sq. miles (4754 acres)

Streams included: Lower mainstem Indian Creek
Elk and Cremo, tributaries to
Indian Creek

Ownership: Siuslaw N.F. (63.2%)
Private (36.8%)

History: The lower mainstem of Indian Creek in this subwatershed includes two pre-1900 homesteads, historic grazing, two saw mills and one documented site where splash damming occurred in Indian Creek. There are also three historic Indian sites in this area.

Aquatics

Stream miles: 59.4
Stream density: 8.00 miles/sq.mile

Confinement & Gradient:

45.4 miles of *source* areas (confined and moderately confined, >8%)
4.0 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
10.0 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Level II stream habitat surveys indicate that Elk Creek is providing partially functioning anadromous fish rearing habitat. There is potential to work with a local landowner to improve conditions at the mouth of Elk Creek. The addition of large wood further upstream to create deep complex pools would improve fish habitat.

Survey information available:
- Level II stream habitat survey, August, 1990
- 1990 water users inventory identified 12 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Vegetation/Soils

Plant Association Groups:

RUSP - 48%	POMU - 32%
GASH - 19%	RHMA - 1%

Elk2 (continued)

Land Type Association: 3C2, 3C

Dominant Soils:

Ridgetops: Bohannon gravelly loam with some Preacher loam
Sideslopes: Preacher-Bohannon-Slickrock complex with some Bohannon gravelly loam
Indian Cr. Valley Bottom: Nehalem silt loam
Elk Cr. valley bottom: predominately Preacher-Bohannon-Slickrock complex

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 10% of subwatershed
Moderate potential - 31% of subwatershed
Low potential - 59% of subwatershed

Management

Natural acres:	2551 acres (53.7%)
Managed acres:	2032 acres (42.7%)
Non-timber land:	158 acres (3.6%)

System road miles: 16.6
Ridgetop roads: 6.65 mi. (40.0%)
Mid-slope roads: 4.25 mi. (25.6%)
Valley Bottom roads: 5.72 mi. (34.4%)

System road density: 2.24 miles/sq.mile
ATM roads: 5140, lower 3259 & 2500

Lower Indian - 1710020615

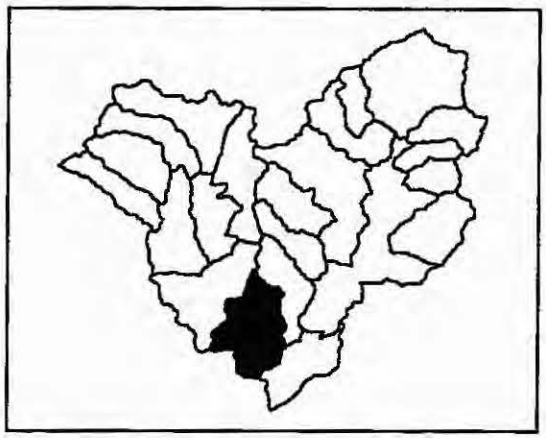
At a Glance:

Sub-watershed size: 6.63 sq. miles (4242 acres)

Streams include: Lower Mainstem Indian Creek
Velvet Creek, a tributary to
Indian Creek

Ownership: Siuslaw N.F. (94.6%)
Private (5.4%)

History: The lower portion of Indian Creek in this subwatershed includes two areas of historic grazing.



Aquatics

Stream miles: 59.0
Stream density: 8.90 miles/sq.mile

Confinement & Gradient:

49.6 miles of *source* areas (confined and moderately confined, >8%)
3.3 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
6.1 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Lower Mainstem Indian Creek - This area is dominated by bedrock substrate with small stretches of deposited gravel and cobble. Some past habitat improvement projects have collected sediments to agrade the stream channel and reduce the amount of bedrock. There is potential to work with partnerships in this area to continue the improvements. Scattered conifer planting should be conducted in conjunction with instream work. By adding these improvements the fish habitat complexity will increase and reductions in water temperature in summer may be possible.

Velvet Creek - Level II stream habitat surveys indicate that Velvet Creek is partially functioning as anadromous fish rearing habitat. The addition of large wood to improve habitat complexity is recommended. Beaver activity is noted and should be promoted through hardwood and willow planting. Some conifer plantings could also be done .

Survey information available:
- Summer, 1995, stream temperature monitoring on lower Indian Cr. (Ryan #902523)
- Level II stream habitat survey in Velvet Cr., October, 1994
- 1990 water users inventory identified 3 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Lower Indian (continued)

Soils/Vegetation

Plant Association Groups:

POMU - 41%	GASH - 24%
RUSP - 33%	RHMA - 2%

Land Type Association: 3C

Dominant Soils:

Ridgetop - Bohannon gravelly loam, Blachly silty clay loam
Sideslope - Preacher-Bohannon-Slickrock complex, Preacher loam, Digger rock outcrop complex
Valley bottom - Nehalem silt loam, Meda loam,

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 12% of subwatershed
Moderate potential - 40% of subwatershed
Low potential - 48% of subwatershed

Management

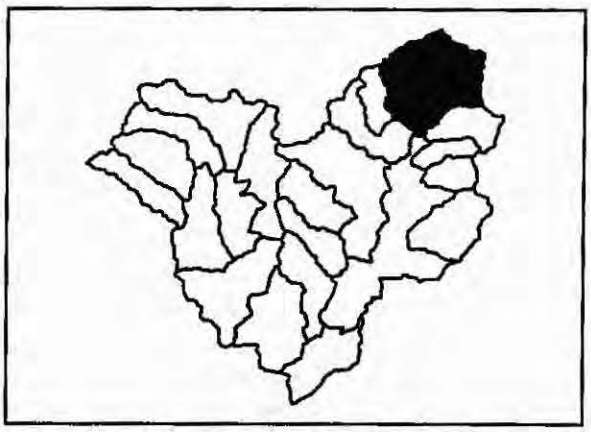
Natural acres:	2600 acres (61.3%)
Managed acres:	1614 acres (38.1%)
Non-timber land:	28 acres (0.7%)

System road miles: 16.9
Ridgetop roads: 11.06 mi. (65.3%)
Mid-slope roads: 1.72 mi. (10.2%)
Valley Bottom roads: 4.15 mi. (24.5%)

System road density: 2.55 miles/sq.mile
ATM roads: 5130 & lower 3200

Upper Deadwood - 1710020616

At a Glance:



Sub-watershed size: 10.34 sq. miles (6620 acres)

Streams include: The headwaters of Deadwood Creek

Ownership: Siuslaw N.F. (85.9%)
Industrial Private (7.0%)
Private (4.4%)
Bureau of Land Mgt. (2.7%)

History: There were two pre-1945 sawmills in the upper mainstem of Deadwood Creek and two documented locations where splash damming occurred in the same vicinity. Historically, grazing occurred on both mainstem Deadwood Creek and the lower portion of its western most tributary.

Aquatics

Stream miles: 78.5
Stream density: 7.59 miles/sq.mile

Confinement & Gradient:

65.0 miles of *source* areas (confined and moderately confined, >8%)
6.1 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
7.4 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Level II stream surveys have indicated that some of the upper tributaries of Deadwood Creek are in properly functioning condition for rearing of anadromous salmonids. This concentration of functioning areas provides a good opportunity for creating refugia for anadromous salmonids even though this area was not designated a key watershed. The main emphasis for this area is to expand the properly functioning sections of this subwatershed to add security for the fish. Additional on-site evaluations are needed to determine how to best approach securing good habitat. Partnerships exist with private landowners for cooperative projects in 1996 and beyond. These projects include installation of instream structures to add large wood for promotion of stream habitat diversity. Instream large wood additions are needed in the mainstem to catch sediments moving out of the tributaries and to promote floodplain interaction. Currently, much of the mainstem is dominated by bedrock. Clumpy riparian planting of conifers on toe slopes is needed, especially on the mainstem. The west headwaters need scattered underplanting of shade tolerant conifers underneath mature hardwoods. There is potential for clumpy release in hardwood/mixed pole stands in the drainage as well.

Survey information available:
- Level II stream habitat survey, Sept.-October, 1994
- 1990 water users inventory identified 8 water use permitees in this subwatershed

Upper Deadwood (continued)

Aquatic Priority for Restoration: **High**

Soils/Vegetation

Plant Association Groups:

POMU - 39%	RUSP - 25%
GASH - 34%	RHMA - 2%

Land Type Association: 3F

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Preacher loam, Blachly silty clay loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam
Valley bottom - Meda loam (mainstem Deadwood), Bohannon gravelly loam (headwaters)

Slope Stability

Predicted potential for slides and debris torrents:

High potential - 7% of subwatershed
Moderate potential - 40% of subwatershed
Low potential - 53% of subwatershed

Management

Natural acres:	4185 acres (63.2%)
Managed acres:	2407 acres (36.4%)
Non-timber land:	28 acres (.4%)

System road miles: 26.5
Ridgetop roads: 15.22 mi. (57.4%)
Mid-slope roads: 8.33 mi. (31.4%)
Valley bottom roads: 2.96 mi. (11.2%)

System road density: 2.56 miles/sq.mile
ATM roads: 6300

North Panther (Cougar) - 1710020616

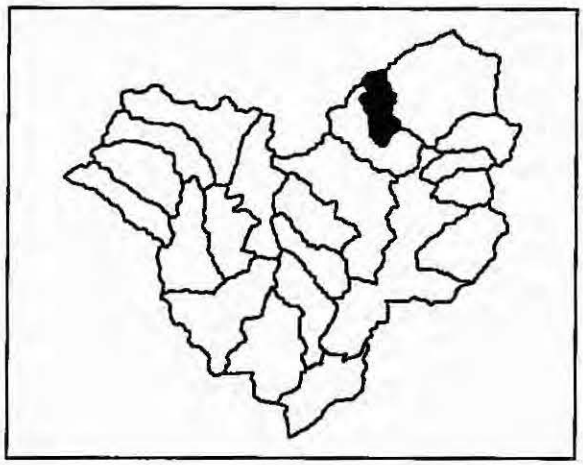
At a Glance:

Sub-watershed size: 2.16 sq. miles (1383 acres)

Streams include: North Fork Panther (Cougar) Cr.

Ownership: Siuslaw N.F. (93.7%)
Private (6.3%)

History: There was one pre-1945 sawmill in this drainage.



Aquatics

Stream miles: 19.8
Stream density: 9.17 miles/sq.mile

Confinement & Gradient:

17.3 miles of *source* areas (confined and moderately confined, >8%)
.5 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
2.0 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

This drainage has high potential for enhancement of rearing habitat for anadromous salmonids. Beaver activity is high and should be promoted further. There is potential for obtaining large wood from upslope some of the mature conifer stands remaining in this drainage. Where little beaver activity exists, planting of conifers in clumps in hardwood dominated areas is recommended. Additionally, scattered planting of conifers could be done in beaver prone areas, but additional cost would be incurred for protection of these seedlings. There is also potential for cottonwood and willow plantings in this drainage.

Survey information available: - Level II stream habitat survey, August, 1992
- 1990 water users inventory identified 1 water use permitee in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

POMU - 40% RUSP - 19% GASH - 36% RHMA - 5%

North Panther (continued)

Land Type Association: 3F

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Preacher loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam, Digger rock outcrop complex
Valley bottoms - Meda loam, Digger rock outcrop complex

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 16% of subwatershed
Moderate potential - 49% of subwatershed
Low potential - 35% of subwatershed

Management

Natural acres:	757 acres (54.7%)
Managed acres:	626 acres (45.3%)

System road miles: 4.6
Ridgetop roads: 4.53 mi. (98.3%)
Valley bottom roads: .08 mi. (1.7%)

System road density: 2.12 miles/sq.mile
ATM roads: 3500

Panther2 (Cougar)- 1710020616

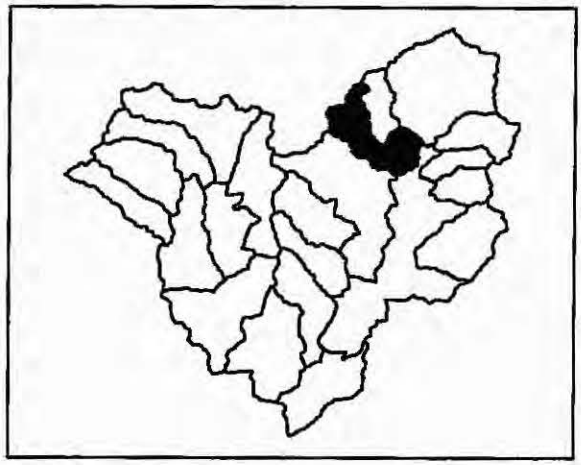
At a Glance:

Sub-watershed size: 4.49 sq. miles (2874 acres)

Streams include: Panther Creek

Ownership: Siuslaw N.F. (87.6%)
Private (11.3%)
Industrial Private (31.1%)

History: There was one pre-1945 sawmill in the upper portion of Panther (Cougar) Creek and grazing occurred in the lower two thirds of Panther Creek.



Aquatics

Stream miles: 38.5
Stream density: 8.57 miles/sq.mile

Confinement & Gradient:

32.4 miles of *source* areas (confined and moderately confined, >8%)
.3 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
5.8 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

The bottom half of Panther Creek is primarily in private ownership which means that any enhancement will need to be through partnerships. The upper half of the creek is in partially functioning condition. Large wood and associated complex pools are lacking so enhancement should focus on incorporation of large wood into the creek. Adjacent hillslopes could be the potential source for immediate introduction of wood into the upper half of the creek. With partnerships, wood from outside sources could be used to introduce large wood complexes to the lower half as well. Planting of conifer in clumps within the hardwood dominated riparian communities is recommended for long-term potential recruitment of large wood. There is also some potential for release of existing small conifers.

Survey information available: 1990 water users inventory identifies 6 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Panther2 (continued)

Soils/Vegetation

Plant Association Groups:

POMU - 37%	RUSP - 26%
GASH - 32%	RHMA - 5%

Land Type Association: 3C

Dominant Soils:

Ridgetop - Bohanon gravelly loam, Preacher loam
Sideslope - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam, Digger rock complex, Preacher loam
Valley bottom - Nekoma silt loam, Meda loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 11% of subwatershed
Moderate potential - 43% of subwatershed
Low potential - 46% of subwatershed

Management

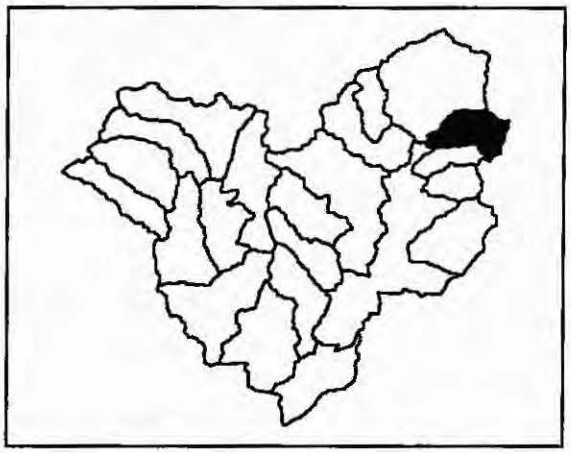
Natural acres:	1722 acres (60.1%)
Managed acres:	1145 acres (39.9%)
Non-timber land:	2 acres (0.1%)

System road miles: 13.2
Ridgetop roads: 9.30 mi. (70.5%)
Mid-slope roads: 1.46 mi. (11.1%)
Valley bottom roads: 2.43 mi. (18.4%)

System road density: 2.94 miles/sq.mile
ATM roads: none

Elk - 1710020616

At a Glance:



Sub-watershed size: 3.15 sq. miles (2015 acres)

Streams include: Elk Cr.; tributary to Deadwood Creek

Ownership: Siuslaw N.F. (74.9%)
Private Industrial (17.0%)
Bureau of Land Mgt. (5.2%)
State & Other Private (2.9)

History: Includes an historic trail, early grazing on lower Elk Creek and a pre-1945 saw mill.

Aquatics

Stream miles: 25.5
Stream density: 8.10 miles/sq.mile

Confinement & Gradient:

21.9 miles of *source* areas (confined and moderately confined, >8%)
2.4 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
1.2 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Elk Creek provides an opportunity to expand aquatic refugia already established on the upper section of Deadwood Creek. This creek has some mature natural stands that should supply some large wood to the stream and riparian zones in the future. Existing large wood on upslopes above Elk Creek could also be used for stream enhancement structures. Although the lower and probably most productive reach of the creek is in private ownership, the upper reaches could provide a large amount of productive salmonid habitat

Survey information available: 1990 water users inventory identified no water use permitees in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Vegetation/Soil

Plant Association Groups:

POMU - 39%	RUSP - 22%
GASH - 37%	RHMA - 2%

Land Type Association: 3F

Elk (continued)

Dominant Soils:

Ridgetops - Preacher loam

Sideslopes - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam, Digger rock outcrop complex

Valley bottom - Meda loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 10% of subwatershed

Moderate potential - 50% of subwatershed

Low potential - 40% of subwatershed

Management

Natural acres:	1558 acres (77.3%)
Managed acres:	452 acres (22.4%)
Non-timber land:	5 acres (0.3%)

System road miles: 3.64

Ridgetop roads: 2.54 mi. (69.8%)

Mid-slope roads: .89 mi. (24.5%)

Valley Bottom roads: .21 mi. (5.8%)

System road density: 1.16 miles/sq.mile

ATM roads: none

Buck - 1710020616

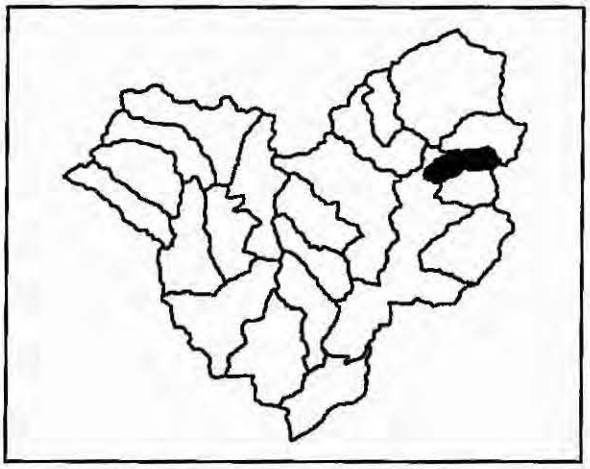
At a Glance:

Sub-watershed size: 1.74 sq. miles (1114 acres)

Streams include: Buck Creek, tributary to Deadwood Creek

Ownership: Siuslaw N.F. (82.8%)
Industrial Private (14.7%)
Private (2.5%)

History: Some grazing has occurred historically in the lower quarter of Buck Creek



Aquatics

Stream miles: 13.1
Stream density: 7.53 miles/sq.mile

Confinement & Gradient:
11.0 miles of *source* areas (confined and moderately confined, >8%)
0.0 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
2.1 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
This drainage provides an opportunity to expand the aquatic refugia in the Upper Deadwood subwatershed. The lower part of Buck Creek is in private ownership and has been fairly extensively logged. Planting of conifers in clumps where appropriate is recommended along the main stream. There are opportunities to add wood to Buck Creek from adjacent hillslopes. Buck Creek has substantial portion of the subwatershed in mature conifer that should act as good anchors for productive salmonid habitat.

Survey information available: 1990 water users inventory identifies no water use permitees in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

GASH - 46%	RUSP - 21%
POMU - 30%	RHMA - 3%

Land Type Association: 3F

Buck (continued)

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Preacher loam, Digger rock outcrop complex
Sideslopes - Bohannon gravelly loam
Valley bottom - Meda loam, Bohannon gravelly loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 6% of subwatershed
Moderate potential - 38% of subwatershed
Low potential - 56% of subwatershed

Management

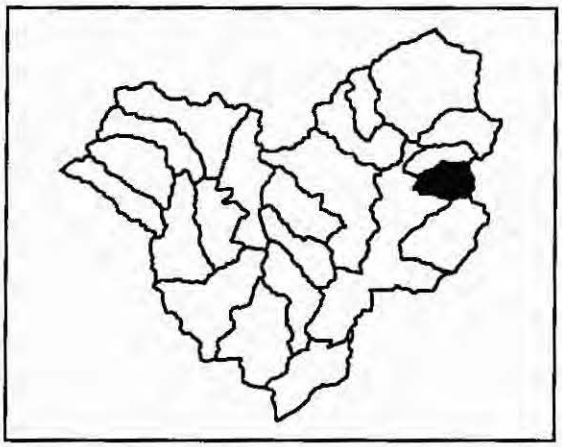
Natural acres:	585 acres (52.9%)
Managed acres:	518 acres (46.9%)
Non-timber land:	2 acres (0.2%)

System road miles: 6.2
Ridgetop roads: 4.19 mi. (67.4%)
Mid-slope roads: 1.77 mi. (28.5%)
Valley bottom roads: .26 mi. (4.1%)

System road density: 3.56 miles/sq.mile
ATM roads: none

Rock3 - 1710020616

At a Glance:



Sub-watershed size: 2.11 sq. miles (1349 acres)

Streams include: Rock Creek, tributary to Deadwood Creek

Ownership: Siuslaw N.F. (37.6%)
Bureau of Land Mgt. (32.0%)
State (25.2%)
Private (3.3%)
Industrial Private (1.9%)

History: Some historic grazing in lower Rock Creek.

Aquatics

Stream miles: 15.6
Stream density: 7.39 miles/sq.mile

Confinement & Gradient:

14.0 miles of *source* areas (confined and moderately confined, >8%)
0.0 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
1.6 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

This drainage is shared by the Forest Service and the Bureau of Land Management. Rock Creek supplies a large amount of gravel to mainstem Deadwood Creek. Some large pieces have accumulated in the creek after the February, 1996 storm. Evaluation of this material should be conducted to determine stability of the structure and whether it needs to be secured. Rock Creek is an important source of gravels to the mainstem Deadwood Creek and the mainstem should be managed to take advantage of this.

Survey information available: 1990 water users inventory identified no water use permitees in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

GASH - 43%	RUSP - 16%
POMU - 36%	RHMA - 5%

Land Type Association: 3F

Rock3 (continued)

Dominant Soils:

Ridgetop - Bohannon gravelly loam, Preacher loam
Sideslope - Digger rock outcrop complex, Bohannon gravelly loam
Valley bottom - Bohanon gravelly loam, Digger rock outcrop complex

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 17% of subwatershed
Moderate potential - 43% of subwatershed
Low potential - 40% of subwatershed

Management

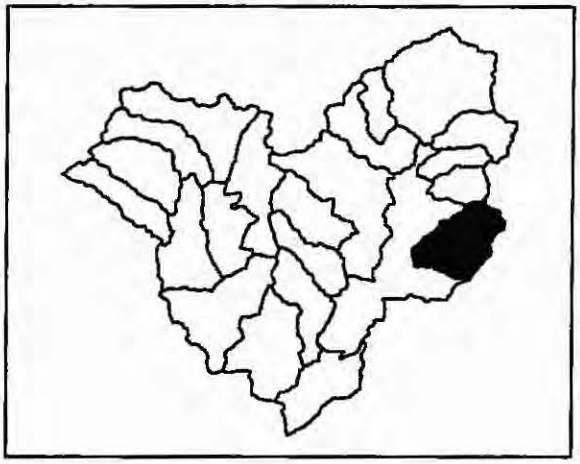
Natural acres:	1014 acres (75.7%)
Managed acres:	322 acres (24.1%)
Non-timber land:	3 acres (0.2%)

System road miles: 3.0
Ridgetop roads: 2.48 mi. (82.9%)
Mid-slope roads: .41 mi. (13.7%)
Valley Bottom roads: .10 mi. (3.4%)

System road density: 1.42 miles/sq.mile
ATM roads: none

North Bear - 1710020616

At a Glance:



Sub-watershed size: 5.08 sq. miles (3251 acres)

Streams include: Bear Creek and South Fork Bear Creek

Ownership: Bureau of Land Mgt. (79.1%)
Private (16.4%)
State (3.9%)
Industrial Private (0.6%)

History: There were four pre-1900 homesteads located at the bottom of Bear Creek and grazing occurred throughout Bear Creek and the lower portion of South Fork Bear. There is also an historic trail that loops around South Fork Bear Creek.

Aquatics

Stream miles: 44.3
Stream density: 8.72 miles/sq.mile

Confinement & Gradient:
39.5 miles of *source* areas (confined and moderately confined, >8%)
.4 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
4.4 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
The majority of this drainage is administered by the BLM with the lower sections in private ownership. This stream does contain some partially functioning stream which supports chinook, coho and steelhead. Large wood is lacking in this drainage and some structure work has been completed in the past. Additional structures and riparian plantings are planned for 1996 with ecosystem initiative funds. Beaver activity should be encouraged throughout this drainage.

Survey information available: 1990 water users inventory identified 1 water use permitee in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

GASH - 38%	RUSP - 24%
POMU - 34%	RHMA - 4%

North Bear (continued)

Land Type Association: 3F

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Blachly silty clay loam, Preacher loam
Sideslopes - Bohannon gravelly loam, Digger rock outcrop complex
Valley bottoms - Meda loam, Nestucca silt loam, Nehalem silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 14% of subwatershed
Moderate potential - 49% of subwatershed
Low potential - 37% of subwatershed

Management

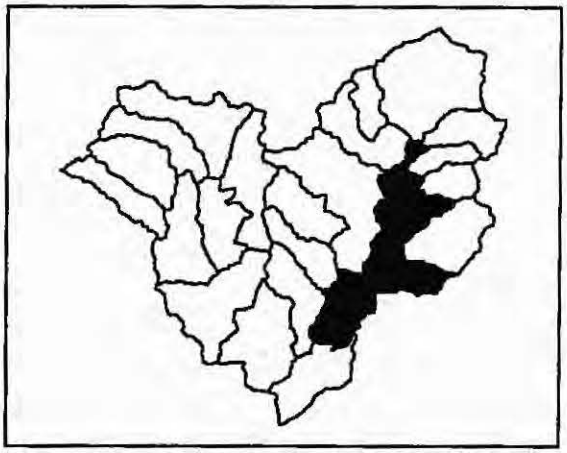
Natural acres:	2727 acres (83.9%)
Managed acres:	380 acres (11.7%)
Non-timber land:	54 acres (1.7%)

System road miles: 4.4
Ridgetop roads: 2.74 mi. (61.7%)
Valley Bottom roads: 1.70 mi. (38.3%)

System road density: 1.15 miles/sq.mile
ATM roads: none

Alpha - 1710020616

At a Glance:



Sub-watershed size: 12.57 sq. miles (8045 acres)

Streams include: Mainstem Deadwood Cr.
Deer, Raleigh, Shwartz & Alpha Creeks which are tributaries to Deadwood Cr.

Ownership: Private (30.7%)
Bureau of Land Mgt. (27.2%)
Siuslaw N.F. (26.6%)
Private Industrial (10.7%)
State (4.8%)

History: At least six pre-1900 homesteads on the mainstem of Deadwood which included grazing. Also, at least four documented splash dams at the upper end of this subwatershed on mainstem Deadwood Creek.

Aquatics

Stream miles: 89.5
Stream density: 7.12 miles/sq.mile

Confinement & Gradient:
68.0 miles of *source* areas (confined and moderately confined, >8%)
2.6 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
18.9 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
ODF&W collected habitat information on the mainstem with the 'Hire the Fisherman' program in 1995. The data has not been made available at this time. Generally, the stream is bedrock dominated with isolated stretches of fair substrate accumulations. Stream temperatures high in the mainstem and in most areas are too high to rear salmonids through the summer. Partnerships are very important to the partial recovery of this mainstem area. Structure work should be done in areas to take advantage of inputs from tributaries (esp. Rock Creek). Fencing and riparian plantings are important throughout the mainstem area.

Survey information available:
- Summer, 1995, stream temperature monitoring in upper Mainstem and the mouth of Deadwood Cr. (Ryan #902520 @ the mouth; Ryan #902527 @ the Sundstrom residence).
- 1990 water users inventory identified 29 water use permitees in this subwatershed
- 1995 ODFW stream survey

Aquatic Priority for Restoration: **Low, unless partnerships are developed.**

Alpha (continued)

Vegetation/Soil

Plant Association Groups:

POMU - 42%	GASH - 26%
RUSP - 29%	RHMA - 3%

Land Type Association: 3F

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Preacher loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Digger rock outcrop complex, Bohannon gravelly loam
Deadwood mainstem - Nehalem and Nekoma silt loams
Valley bottoms of tributaries to Deadwood - Meda loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 13% of subwatershed
Moderate potential - 40% of subwatershed
Low potential - 47% of subwatershed

Management

Natural acres:	6408 acres (79.7%)
Managed acres:	1637 acres (20.3%)

System road miles: 23.2
Ridgetop roads: 4.28 mi. (18.4%)
Mid-slope roads: 3.07 mi. (13.2%)
Valley Bottom roads: 15.86 mi. (68.3%)

System road density: 1.85 miles/sq.mile
ATM roads: 5140 & lower 3259

Misery - 1710020616

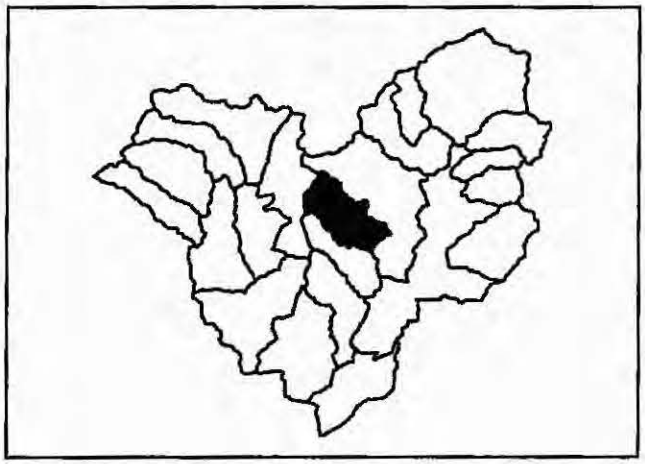
At a Glance:

Sub-watershed size: 4.04 sq. miles (2586 acres)

Streams include: Misery Creek

Ownership: Siuslaw N.F. (90.4%)
Private (5.8%)
State (3.8)

History: A pre-1945 sawmill was located half way up Misery Creek and grazing has historically occurred throughout this drainage up to the present day.



Aquatics

Stream miles: 32.8
Stream density: 8.12 miles/sq.mile

Confinement & Gradient:
28.1 miles of *source* areas (confined and moderately confined, >8%)
.9 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
3.8 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
The majority of the creek is in private ownership and therefore any improvements will have to be conducted through partnerships. Existing potential for partnerships is limited at this time but should they become available, they should be pursued.

Survey information available: 1990 water users inventory identified 2 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Soils/Vegetation

Plant Association Groups:

POMU - 31%	RUSP - 27%
GASH - 28%	RHMA - 4%

Land Type Association: 3C

Misery (continued)

Dominant Soils:

Ridgetops - Preacher loam, Bohannon gravelly loam
Sideslopes - Preacher-Bohannon-Siltrock complex, Preacher loam, Bohannon gravelly loam
Valley bottoms - Nekoma silt loam, Meda loam, Preacher-Bohannon-Slickrock complex

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 16% of subwatershed
Moderate potential - 38% of subwatershed
Low potential - 46% of subwatershed

Management

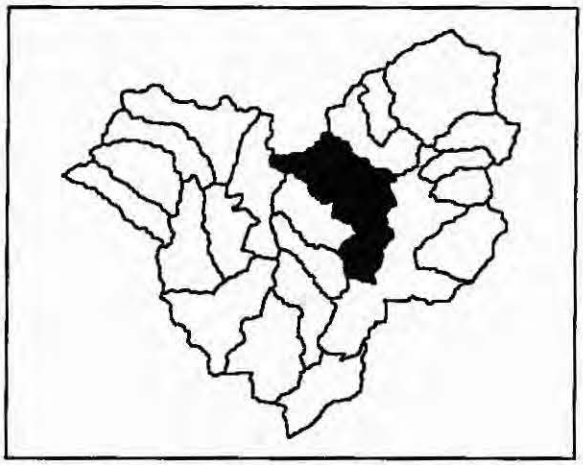
Natural acres:	1336 acres (51.7%)
Managed acres:	1216 acres (47.0%)
Non-timber land:	34 acres (1.3%)

System road miles: 10.3
Ridgetop roads: 4.29 mi. (41.5%)
Mid-slope roads: 2.82 mi. (27.3%)
Valley bottom roads: 3.22 mi. (31.2%)

System road density: 2.55 miles/sq.mile
ATM roads: none

West Deadwood - 1710020616

At a Glance:



Sub-watershed size: 9.67 sq. miles (6189 acres)

Streams include: The West Fork of Deadwood Creek which is a **Forest Key Watershed**

Ownership: Siuslaw N.F. (92.7%)
Private (6.5%)
State (0.8%)

History: There were two pre-1900 homesteads in the lower quarter of West Fork Deadwood Creek. In addition, there was a pre-1945 sawmill in the same area and historically, grazing occurred throughout the lower half of the subwatershed.

Aquatics

Stream miles: 81.7
Stream density: 8.44 miles/sq.mile

Confinement & Gradient:

66.8 miles of *source* areas (confined and moderately confined, >8%)
2.2 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
12.7 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Level II stream habitat surveys indicate that the West Fork of Deadwood is partially functioning as rearing habitat for anadromous salmonids. Large wood is deficient in the system and therefore habitat complexity is low. There is good partnership potential with new landowners in this drainage and should be emphasized. Riparian woody vegetation is lacking in many areas and planting of conifers in clumps as well as willow plantings will improve streambank stability and increase shade. Acquisition of upper section of private inholding should be pursued if opportunity presents itself. This drainage is a Forest key watershed and has high potential for being a major contributor to the anadromous salmon populations in the Deadwood watershed.

Survey information available:
- Summer, 1995, bracketed stream temperature monitoring on West Fork Deadwood Cr. (Ryans #902518 and #902519)
- Level II stream habitat survey, August, 1992
- 1990 water users inventory identified 9 water use permitees in this subwatershed

Aquatic Priority for Restoration: **High**

West Deadwood (continued)

Soils/Vegetation

Plant Association Groups:

POMU - 37%	GASH - 30%
RUSP - 30%	RHMA - 3%

Land Type Association: 3F

Dominant Soils:

Ridgetope - Preacher loam, Bohannon gravelly loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam, Digger outcrop complex
Valley bottom - Meda loam, Nekoma silt loam, Nehalem silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 12% of subwatershed
Moderate potential - 42% of subwatershed
Low potential - 46% of subwatershed

Management

Natural acres:	3359 acres (54.3%)
Managed acres:	2695 acres (43.5%)
Non-timber land:	135 acres (2.2%)

System road miles: 23.9
Ridgetop roads: 14.5 mi. (60.7%)
Mid-slope roads: 5.52 mi. (23.1%)
Valley bottom roads: 3.88 mi. (16.2%)

System road density: 2.47 miles/sq.mile
ATM roads: upper 3259

Failor - 1710020616

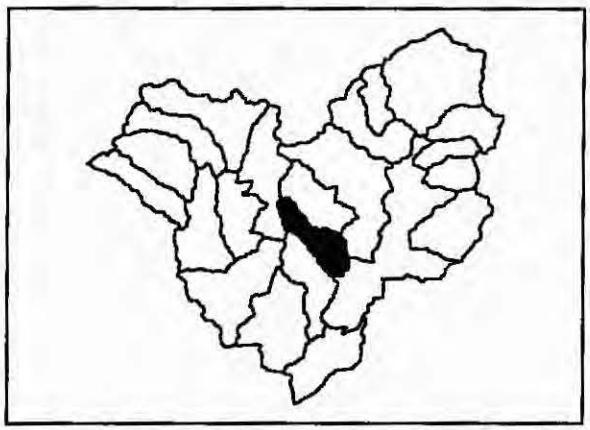
At a Glance:

Sub-watershed size: 3.16 sq. miles (2024 acres)

Streams include: Failor Creek

Ownership: Siuslaw N.F. (99.8%)
Other (0.2%)

History: There was one pre-1945 sawmill located just above the confluence with Deadwood Creek.



Aquatics

Stream miles: 24.2
Stream density: 7.66 miles/sq.mile

Confinement & Gradient:

20.4 miles of *source* areas (confined and moderately confined, >8%)
.2 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
3.6 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

Failor has been heavily harvested in the past but does not have an existing road on the valley bottom of the drainage. Level II fish habitat surveys indicate that the middle section of Failor Creek, associated with adjacent natural stands, is providing functioning rearing habitat for anadromous salmonids. The main emphasis in this drainage will be to expand existing functioning habitat. Upstream and downstream of the functioning section, the creek is only partially functioning as rearing, but these areas do meet some necessary requirements. Large wood needed to create deep complex pools is deficient, but addition of large wood from adjacent stands and wood accumulation from commercial thinning will help to remedy this deficiency. Riparian planting of conifers can be done throughout the length of the stream since historic photos show this area supported conifers throughout.

Survey information available:
- Summer, 1995, stream temperature monitoring at the mouth of Failor Cr. (Hobo #1933)
- Level II stream habitat survey, October, 1994
- 1990 water users inventory identified 1 water use permitee in this subwatershed
- **Good potential for monitoring at subwatershed scale**

Aquatic Priority for Restoration: **High**

Failor (continued)

Soils/Vegetation

Plant Association Groups:

POMU - 34%	GASH - 29%
RUSP - 34%	RHMA - 3%

Land Type Association: 3C

Dominant Soils:

Ridgetop - Preacher loam, Bohannon gravelly loam
Sideslope - Preacher-Bohannon-Slickrock complex, Bohannon gravelly loam, Preacher loam
Failor valley bottom - Preacher-Bohannon-Slickrock complex, Meda loam near the mouth

Slope Stability

Predicted potential for slides and debris torrents based on land form:

Low potential - 20% of subwatershed
Moderate potential - 35% of subwatershed
High potential - 44% of subwatershed

Management

Natural acres:	734 acres (36.3%)
Managed acres:	1290 acres (63.7%)

System road miles: 6.9
Ridgetop roads: 5.70 mi. (83.2%)

System road density: 2.17 miles/sq.mile
ATM roads: none
Mid-slope roads: 1.15 mi. (16.8%)

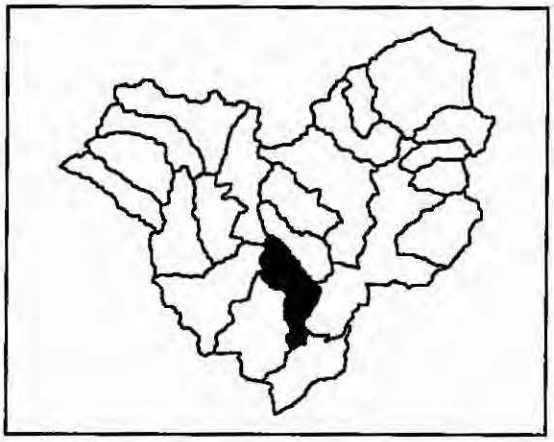
Green Creek - 1710020616

At a Glance:

Sub-watershed size: 4.16 sq. miles (2661 acres)

Streams include: Green Cr.

Ownership: Siuslaw N.F. (90.2%)
Private (6.3%)
State (3.5%)



Aquatic Statistics/Conditions

Stream miles: 34.2
Stream density: 8.22 miles/sq.mile

Confinement & Gradient:

29.4 miles of *source* areas (confined and moderately confined, >8%)
.1 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
4.7 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:

The lower half of Green Creek is primarily in private ownership, and without partnerships little fish habitat improvement is likely here. The stream above the private ownership has good potential for rearing of anadromous salmonids with a low gradient and fairly unconfined channel. Extensive beaver activity has provided good rearing conditions for young salmonids and the beaver activity should be promoted by plantings of willow and deciduous trees. Some large wood instream complexes could be added where valley confinement and gradient are higher.

Survey information available: 1990 water users inventory identified 2 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Moderate**

Soils/Vegetation

Plant Association Groups:

POMU - 40%	GASH - 28%
RUSP - 29%	RHMA - 3%

Green Creek (continued)

Land Type Association: 3C

Dominant Soils:

Ridgetops - Bohannon gravelly loam, Blachly silty clay loam, Digger gravelly loam
Sideslopes - Preacher-Bohannon-Slickrock complex (upper Green Cr.), Digger rock outcrop complex (lower Green Cr.), Bohannon gravelly loam
Valley bottom - Meda loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 12% of subwatershed
Moderate potential - 41% of subwatershed
Low potential - 47% of subwatershed

Management

Natural acres:	1259 acres (47.3%)
Managed acres:	1402 acres (52.7%)

System road miles: 17.2
Ridgetop roads: 9.01 mi. (52.3%)
Mid-slope roads: 3.77 mi. (21.9%)
Valley Bottom roads: 4.45 mi. (25.8%)

System road density: 4.13 miles/sq.mile
ATM roads: none

Lower Lake - 1710020617

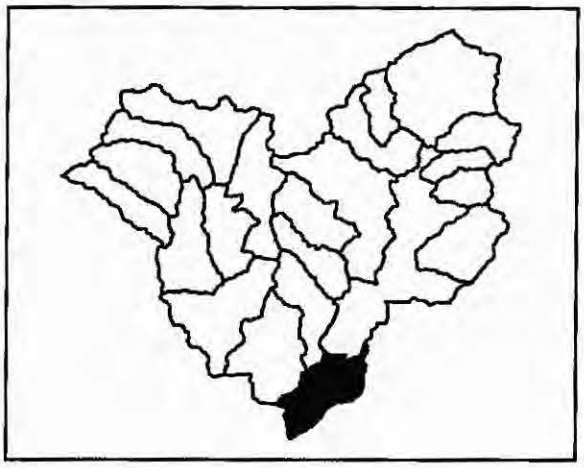
At a Glance:

Sub-watershed size: 4.24 sq. miles (2710 acres)

Streams include: Lower Mainstem Lake Creek

Ownership: Siuslaw N.F. (67.1%)
Private (23.2%)
Industrial Private (4.0%)
Oregon State Fish and Wildlife (3.3%)
State (2.4%)

History: There were two pre-1900 homesteads right at the confluence of Deadwood and Lake Creeks.



Aquatics

Stream miles: 31.8
Stream density: 7.50 miles/sq.mile

Confinement & Gradient:
26.1 miles of *source* areas (confined and moderately confined, >8%)
0.0 miles of *transport* areas (confined, 2-8% and moderately confined, 4-8%)
5.7 miles of *deposition* areas (moderately confined and unconfined, < 4%)

Fish habitat:
Lower Lake includes Lake Creek from just upstream of the confluence with Deadwood Creek to the confluence with the Siuslaw River. Lake Creek is wide (average over 200 feet) and is bordered by deciduous trees, primarily alder. There is a large amount of bedrock in this portion of Lake Creek and solar heating is a concern. There are scattered areas of chinook spawning habitat through this reach. Highway 36, which is directly adjacent to the creek, limits floodplain interaction and impacts the creek. There is little emphasis planned here for fish habitat restoration. There has been discussion about a possible land exchange in this area, but from a fisheries standpoint land exchanges elsewhere should be sought first.

Survey information available: 1990 water users inventory identified 14 water use permitees in this subwatershed

Aquatic Priority for Restoration: **Low**

Soils/Vegetation

Plant Association Groups:

POMU - 39%	GASH - 27%
RUSP - 30%	RHMA - 4%

Lower Lake (continued)

Land Type Association: 3F

Dominant Soils:

Ridgetops - Digger rock outcrop complex, Digger gravelly loam, Hembre silt loam
Sideslopes - Preacher-Bohannon-Slickrock complex, Digger rock outcrop complex
Valley bottom - Nehalem silt loam, Meda loam, Nekoma silt loam

Slope Stability

Predicted potential for slides and debris torrents based on land form:

High potential - 17% of subwatershed
Moderate potential - 38% of subwatershed
Low potential - 45% of subwatershed

Management

Natural acres:	1740 acres (64.2%)
Managed acres:	944 acres (34.8%)
Non-timber land:	27 acres (1.0%)

System road miles: 8.21
Ridgetop roads: 1.31 mi. (16.0%)
Mid-slope roads: .29 mi. (3.5%)
Valley Bottom roads: 6.61 mi. (80.5%)

System road density: 1.94 miles/sq.mile
ATM roads: none

Appendix L. Landscape Block Data

Table 1. Landownership by Landscape Block (acres)

Landscape Block	Federal	% fed.	State	Private, nonindustrial	Industrial	TOTAL
A	5780	90%	-	621	-	6,401
B	3204	82	-	693	-	3,897
C	7175	89	-	376	466	8,017
D	3493	77	354	121	540	4,508
E	7289	69	-	3257	-	10,546
F	2610	79	137	532	20	3,299
G	6891	57	623	3421	1161	12,096
H1	5721	92	94	396	-	6,211
H2	2020	99	-	4	-	2,024
H3	2337	90	99	151	-	2,587
H4	5816	91	-	137	454	6,407
H5	5743	93	50	402	-	6,195
H6	1803	97	-	58	-	1,861
TOTAL	**59,882**	**81**	**1357**	**10,169**	**2641**	**74,049**

Table 2. Vegetation Condition by Landscape Block (acres)

Block	Managed	Natural	% Nat.	Mature & L-S [2/]	% mature	Late-succ.[2/]	% L-S	Other	TOTAL
A	1730	4638	73%	3058	48%	1381	22%	-	6,368 ac.
B	1374	2491	64	1539	40	227	6	-	3,865
C	3032	4941	62	3240	40	976	12	28	8,001
D	1292	3157	71	2055	46	1082	24	10	4,459
E	3653	6333	60	3778	36	1201	11	542	10,529
F	380	2817	87	1206	37	303	9	54	3,251
G	1770	8764	74	2950 [1/]	32 [1/]	854 [1/]	7[1/]	1266	11,800
H1	2846	3298	53	1970	32	521	8	28	6,172
H2	1290	734	36	400	20	176	9	-	2,024
H3	1216	1336	52	872	34	317	12	34	2,586
H4	3136	3224	51	1929	30	445	7	20	6,380
H5	2695	3359	54	2307	37	324	5	135	6,189
H6	848	1006	54	237	13	1	<.1	-	1,854
TOTAL	25,262	46,098	63	25,541	NA	7,808	NA	2117	73,478

[1/] Based on 9,090 total acres in Landscape Block G, which excludes Lower Lake.

2/ If the Sect. 318 sales are harvested, the percent Mature/Late-Successional vegetation will drop to 43% in Block A and 35% in Block B. (500 acres of mature vegetation will be harvested, including 236 acres of late-successional vegetation.)

Table 3. Interior Forest Habitat by Landscape Block, in acres

Block	Mature/L-S	% mature	Late-succ.	% L-S	Interior - all mature	% of mature in interior	Interior - late-succ.	% of L-S in interior
A	3058	48%	1381	22%	367	12%	59	4
B	1539	40	227	6	148	10	-	-
C	3240	40	976	12	282	9	34	3
D	2055	46	1082	24	442	22	186	17
E	3778	36	1201	11	360	10	6	<1
F	1206	37	303	9	4	<1	-	-
G	2950 [1/]	32	854 [1/]	7	58 [1/]	2	4 [1/]	<1
H1	1970	32	521	8	215	11	-	-
H2	400	20	176	9	31	8	22	12
H3	872	34	317	12	31	4	2	<1
H4	1929	30	445	7	415	21	3	<1
H5	2307	37	324	5	179	8	-	-
H6	237	13	1	<.1	-	-	-	-
TOTAL	25,541	NA	7,808	NA				

[1/] Based on 9,090 total acres in Landscape Block G, which excludes Lower Lake.

Interior forest: Forest areas that are greater than 500 feet from an edge.
The following categories of vegetation were selected to assess current acres of interior mature conifer forest:

1. Stands of single-storied or multi-storied mature conifer or conifer-mix (at least 50% conifer) with and without remnants.
2. Stands > 80 years old or > 18" diameter at breast height.
3. Habitats > 500' from stand edge.

Interior late-successional forest ("biodiversity hotspots) were selected using the same categories, except the stands also had to contain multiple-stories and/or old growth remnants.

Table 4. Riparian Reserve Vegetation Characteristics by Landscape Block, in acres

Block	Managed Stands	Natural Stands	% Natural	Other Veg.	TOTAL
A	1585	3949	71%	-	5,534
B	1136	1872	62	-	3,008
C	2744	3625	57	-	6,369
D	981	2128	68	1	3,110
E	2712	4403	62	26	7,141
F	238	2147	90	-	2,385
G	1125	3460	75	9	4,594
H1	2740	2899	51	-	5,639
H2	1290	729	36	-	2,019
H3	1148	1183	51	5	2,336
H4	3027	2663	47	9	5,699
H5	2367	2939	55	32	5,338
H6	774	896	54	-	1,670
TOTAL	21,867	32,893	60	82	54,842

Appendix M. Priority Management Recommendations by Landscape Block

High priority projects are identified for each Landscape Block. In addition, each Landscape Block has been prioritized for terrestrial and aquatic resource management needs. The highest priority projects for the watershed are, therefore, those identified in the highest priority Landscape Blocks, e.g., Block A, C and H2.

The projects listed below are broken into two time periods--those that are recommended for early management (years 1-3) and those that could be implemented after the third year (e.g., years 4-10).

Each project has a purpose code identified:

T (terrestrial) = to improve vegetation for LSR conditions

R (Riparian Reserve) = to improve connectivity for terrestrial species thru Riparian Reserves.

A (aquatic resource) = to improve streamside vegetation and in-stream conditions for aquatic resources, to reduce risk of adverse impact to aquatic resources from roads.

M = miscellaneous purpose

The list of silvicultural treatments includes plantation units that meet criteria for terrestrial and /or aquatic objectives, as described in Chapter 6. In addition, units identified for precommercial thinning are currently age 10-18 years; units identified for commercial thinning are 25 years or older. The units selected for precommercial thinning need to be further screened to eliminate those already thinned. Units selected for commercial thinning were screened and those units already thinned are noted with an *.

Some of the plantation opportunities listed below may not appear to be high priority from a silvicultural perspective, i.e., they may be older than recommended for thinning or they may be at suitable stocking levels. However, the units have been identified as important for either aquatic or terrestrial objectives and should be evaluated during project planning stage to determine if they could be included for treatment along with other project work.

Appendix I lists all the Forest Service and county roads in the watershed. Each road has been rated (from 1 to 5, low to high respectively) for its potential to adversely impact aquatic resources. Criteria used to rate roads included slope position, slope stability, whether or not the road was sidecast built, risk to known quality habitat, presence of known problems, and ATM status. All roads rated 3-5 are considered high priority to stabilize and are included in each block's early management time period. The roads appear in order of priority based on their rating. At a minimum, all non-ATM roads that are listed should be waterbarred and closed in the first 3-year period. Additional operator spurs that were identified in the road assessment to be waterbarred and closed are included in the roads database with the associated road segment.

Landscape Block A (Mariah, Rogers)
Priorities: H - terrestrial
H - aquatic

First 3 years -

Silvicultural treatments:
The objective is to thin and underplant plantations to accelerate late-successional conditions by favoring late-successional species. The recommended levels of thinning and species to underplant varies by Plant Association Group. See Table 6.1.

Commercial thinning	Precommercial thinning
2133 004 (A/T)	2133 032 (A)
2133 017 (T) *	2133 035 (A)
2133 067 (A/T)	2133 036 (A)
2133 056 (T)	2133 037 (A)
2133 058 (A/T)	2133 040 (A/T)
2133 060 (A/T)	2133 044 (A\T)
2133 063 (A/T)	2133 054 (T)
2133 064 (A/T)	2133 069 (T)
2133 065 (A/T)	2133 089(T)
	2133 097 (T)

Roads to stabilize (A)

- (5) FR 2500B (upper 2.6 miles) - large amount of sidecast pullback and deep patching
  - waterbar and close two operator spurs off 2500
- (5) FR 5800 has chronic stability problems above Rogers and Maria; Close if monies to maintain road are unavailable and aquatic resources would be degraded.
- (4) FR 2100639
- (3) FR 2100640 - '96 storm - road slump with slide beneath @ m.p. 2.0; sidecast problems above Rogers Cr.
- (3) FR 5800637
- (3) FR 5840622
- (3) FR 5840624
- (3) FR 5840625
- (3) FR 5840633 - identified sidecast pullback
  (3) FR 5840637

The following roads should be stabilized and closed as soon as any necessary management activities are completed. Closing these roads will further the management objectives of: 1) protecting the Key Watershed and 2) restoring part of a secure, isolated area for wildlife:

- (2) FR 2500643
- (2) FR 5840626
- (2) FR 5840631
- (2) FR 5840636
- (1) FR 5840
- (1) FR 5840627
- (1) FR 5840630 - waterbar and close operator spur off this road
- (1) FR 5840632

In-stream projects (A)

- Evaluate effects of Feb. 1996 storm event.
- Rogers Cr. - 40 fish structures (1997)
- Mariah Cr. - locate opportunities to add large wood.
- W.Fk. Indian - KV work (1996/1997), and locate opportunities to add large wood.

Riparian Vegetation (A)

- Rogers Cr. - plant in and upstream of functioning stretches, especially where alders are in late-successional stands. Maintain existing riparian vegetation diversity.
- Rogers Cr. - plant clumps of trees in areas of sparse vegetation below functioning portion of Rogers Cr.
- W.Fk.Indian - plant clumpy patches of trees where vegetation sparse.
- Maria Cr. - make scattered plantings under old alders.

Miscellaneous (A)

- Control and reduce noxious weeds in old pasture lands along Rogers Cr.
- Explore partnership opportunity with Davidson for stream restoration work.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2133 005 (A/T)	2133 033 (T)
2133 021 (T)	2133 034 (T)
2133 049 (A/T)	2133 077 (T)
2133 055 (T)	2133 078 (T)
2133 068 (A)	2133 081 (T)
	2133 0_5 (T) - 1985 unit

Landscape Block B (N.Indian--upper portion, Upper Indian)
Priorities: H - terrestrial
M - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2131 001 (A)	2131 103 (A)
2131 004 (A/T)	2131 104 (A)
2131 034 (A)	2131 105 (A)
2131 038 (A)	2131 146 (T)
2131 042 (A)	
2131 144 (A)	

Roads to stabilize (A)

- (5) FR 2116617 - 4 bad culverts, road washed out @ m.p. .5, private access
- (4) FR 5800680 - sidecast pullback, waterbar and close at least 3 spurs off 680
- (4) FR 5840628 - sidecast pullback throughout
- (4) FR 2100 - '96 storm - 5 moderate to large failures affecting road bed, 2 small cutbank failures and 1 blocked culvert
- (4) FR 3700573
- Waterbar and close 2 operator spurs off 3250

In-stream projects (A)

- Evaluate effects of Feb. 1996 storm event.

Riparian vegetation (A)

- Upper Indian - release existing plantings.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2131 001 (A)	2131 103 (A)
2131 006 (A/T)	2131 104 (A)
2131 007 (R/A)	2131 105 (A)
2131 009 (T)	
2131 018 (A/T)	
2131 023 (R/T)	
2131 024 (R/A)	
2131 025 (A/T)	
2131 026 (T)	
2131 028 (A/T)	
2131 031 (T)	
2131 059 (T)	
2131 085 (A)	

In-stream projects (A)

- N.Indian Cr. - consider adding LWD to create complex pools; repair bank instability. (Beaver are prevalent in area.)

Riparian vegetation (A)

- N.Indian Cr. - high potential for willow planting in areas needing vegetation.
- N.Indian Cr. - plant clumpy patches of conifer along upper 2/3 of mainstem.
- Upper Indian Cr. - make clumpy plantings along 3/4 mile stretch on national forest land.

Miscellaneous (A) -

- Control and reduce noxious weeds along roadsides.

Landscape Block C (N.Panther--upper portion, Upper Deadwood)

Priorities: H - terrestrial
H - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
3505-2C1 (A/T)	3504-5C3 (A)
3505-1C1 (A/T)	3504-94D3 (A)
3504-40C3 (A/T)	3505-96D7 (A)
6160-7044 (A/T)	3505-153B1 (A)
3505-15B2 (A/T)	3505-39C2 (A)
3504-36D2 (A/T)	3505-154C3 (A)
3505-19B3 (A/T)	3505-53C1 (A)
6160-7024 (A/T)	3505-90B1 (A)
	3505-139D2 (A)
	6160-7005 (1985 unit at headwater)

Road to stablilize (A)

- (5) FR 6300118 - repair drainage problems (culverts and waterbar)
- (4) FR 6300 - at least 3 undersized culverts need replacing; partially plugged culvert @ mp 4
- (4) FR 3500 - partially plugged culvert @ 4.6; 2 sidecast pullbacks; deep patching needed throughout; '96 storm - 1-350 cy slide closed rd
- (4) FR 3515
- (4) FR 3515115
- (4) FR 3515118
- (4) FR 3515122
- (4) FR 3515127
- (4) FR 6300119
- (4) FR 6300122
- (4) FR 6300126
- (3) FR 3515117
- (3) FR 3315111
- (3) FR 3315112
- (3) FR 3500111
- (3) FR 3511112 - fix large slump @ .4
- (3) FR 3515114
- (3) FR 3515116
- (3) FR 3515126
- (3) FR 3515130
- (3) FR 3515200
- (3) FR 6300110 - culvert removal needed @ .3; possible obliteration
- (3) FR 6300UK1

In-stream projects (A)

- Evaluate effects of Feb. 1996 storm event.
- Mainstem Deadwood - look for opportunitites to add large woody debris and to include side channels. Note: On-site evaluation needed to determine how to secure good habitat.
- Pursue opportunities for partnerships

Riparian vegetation (A)
(Potential for clumpy release in deciduous/mixed pole stands; potential for cottonwood and willow throughout.)

- West headwaters - underplant with shade tolerant species scattered in mature deciduous.
- Plant conifers along toeslopes where potential for conifer survival is high.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
1960 unit (Fawn Cr.)	3504-5C3 (A)
3504-44C4(A)	3505-90B1 (A)
3505-154C3(A/T)	3505-139D2 (A)
3505-39C2(A/T)	
3505-12C2(A/T)	
3505-9C2(A/T)	
3505-5B1(A/T)	
3505-10C2 (A)	
6160-7008 (1977 unit) (A)	
6160-7021 (1961 unit) (A)	
3505-4C1 (A)	
3505-3B1 (A)	
6160-7019 (1973 unit) (A)	
6160-7043 (A/T)	
1974 unit (A)	

Riparian vegetation (A)

- Plant clumps of conifer on Upper Cougar Cr.
- Encourage private landowners to plant shade tolerant species under mature deciduous trees.

Miscellaneous

- Promote beaver habitat in N. Panther.

Landscape Block D (Elk, Buck, Rock3)
Priorities: H - terrestrial
M - aquatic

First 3 years -

Silvicultural treatments:
Commercial thinning
3505-23C4 (T)
3505-2204 (A) (6160-8002)

Roads to stabilize (A)
- (3) FR 3525 - repair partially plugged culverts and slide associated with a culvert.
- (3) FR 3526113
- BLM 16-8-35.10 - 2 sidecast failures.

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event, especially wood additions.

Miscellaneous
- Assist Deadwood community group in layout and construction of Elk Cr. trail.
- Explore opportunity to acquire state-owned land in lower portion of watershed to enhance opportunity to manage LSR. (Note: part of the parcel is in Landscape Block F. State is interested in exchanging this parcel.)

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
3505-35D3 (A)	3505-142B5 (A)
1964 unit (A)	3505-114C5 (A)
3505-78C5 (A)	3505-29D4 (A)
3505-32C5 (A)	6 units in Rock Cr. (1983-1992)
3505-30C4 (A)	
3505-24D4 (A)	
3505-35D3 (A)	
3505- (1963 unit)	

Riparian Planting (A)
- Plant clumps of riparian species along Buck and Rock Creeks.

Landscape Block E (mainstem Indian Cr., including Elk2, Herman--SW portion, Long--lower portion)
Priorities: M - terrestrial
L - aquatic

First 3 years -

Silvicultural treatments:
Commercial thinning
2154 040 (T-eagle)

Roads to stablilize (A)
- (5) 3278663 - sidecast pullback throughout; oblit. - no access needed
- (4) 3278000 - ATM
- (4) FR 2170UK1 (T17S, R10W, NE corner of S14) - Sidecast pullback and waterbar
- (4) FR 3200000 - Deep patching needed in several places, slump at mp .2 from '96 storm
  (See Block H4 for more storm info for FR 3200000)
- (4) FR 3278666
- (4) FR 3200759 - several sidecast failures
- (3) FR 3200672 - '96 storm - 20 cy rock slide @ 1.8, shoulder failure with pipe end exposed @ 2.4
- (3) FR 3200672UK1 (T16S, R9W, SE S30)
- (3) FR 2500000 (bottom portion = ATM)
- (3) FR 2500650
- (3) FR 2500654
- (3) Old spur off 3278 (T16S, R9W, S30) - remove wooden culverts and decommission
- (3) CO 5130

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2154 041 (T-eagle)	2154 101 (T-eagle)
2154 043 (T-eagle)	2134 10 ? (T-eagle)
2154 045 (T-eagle)	2134 040 (A)
2134 004 (A)	2134 043 (A)
2134 005 (A)	2134 044 (A)
2134 006 (A)	2134 107 (A)
2134 007 (A)	2134 109 (A)
2134 019 (A)	2134 112 (A)
2134 036 (A)	2134 114 (A)
2134 038 (A)	2134 123 (A)
2134 042 (A)	
2154 006 (A)	
2154 007 (A)	
2154 035 (A)	
2154 039 (A)	
2154 040 (A)	
2154 042 (A)	

In-stream projects (A)
- Evaluate opportunity to remove partial fish barrier on Smoot Cr.
- Elk Cr. - enhance deep pools with large woody debris.

- Explore partnership potential for in-stream work in mainstem Indian Cr.
- Explore opportunity for partnership with new landowner on mainstem Indian Cr.

Riparian vegetation (A)
- Elk Cr. - do clumpy planting along creek.
- Encourage private landowners to plant some conifer along streambanks.

Miscellaneous (A)
- Evaluate culvert fish passage capacity at mouth of Elk Cr.

Landscape Block F (N.Bear)

Priorities: L - terrestrial
M - aquatic

First 3 years -

Road work (A)

- BLM 16-8-20.00 - sidecast failure

In-stream projects (A)

- Raleigh Cr. - add wood structures to improve pool habitat and increase cover
- Rock Cr. - add wood and rock structure complexes.
- S.Fk. Bear Cr. - locate opportunities to add additional wood structures.
- Continue partnership with Howard Pazdral in 1996 for in-stream structures and riparian planting

Riparian vegetation (A)

- Plant scattered shade-tolerant species, e.g., cedar, in deciduous-dominated areas.

Later time period -

Silvicultural treatments:

Precommercial thinning

1987 unit
1988 unit
1990 unit
1992 unit

Landscape Block G (mainstem Deadwood, Lower Lake)
Priorities: L - terrestrial
M - aquatic

First 3 years -

Roads to stabilize (A)

- (3) FR 3259645
- (3) FR 3279750 - priority to waterbar and close
- (3) FR 3259 (lower portion)
- Initiate development of cooperative relationship with county road maintenance department. Encourage county to begin culvert replacements/road relocations, etc. as needed to reduce impact of road on stream function.

In-stream projects (A)

- Participate in stream structure projects planned for 1996 with Deadwood residents.
- Pursue project planning with landowners interested in stream restoration for future years.
- Evaluate effects of Feb. 1996 storm event.

Riparian vegetation (A)

- Initiate project planning with private landowners interested in planting scattered conifer and deciduous trees, e.g., willow, along stream.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2141 074 (A)	1986 unit (BLM)
1956/58 units (A)	
1952 unit (A)	

Miscellaneous (T)

- Explore opportunity to acquire state-owned land parcels (2 in northern porion) to improve LSR conditions. (State is interested in exchanging these parcels.)

Landscape Block H1 (Lower Indian, Green Cr.)
Priorities: M - terrestrial
M - aquatic

First 3 years -

Silvicultural treatments:
Commercial thinning
2143 091 (R/A)
2143 095 (R/A)
2143 137 (R/A)

Road to stabilize (A)
- (4) FR 2170764 - sidecast pullback and waterbar
- (4) FR 3289000 - 2 cutbank failures and a road slump from '96 storm; additional culvert work
- (4) FR 3279000 - sidecast pullback, waterbar and close
- (3) FR 3200742
- (3) FR 3279669 - priority to waterbar and close
- (3) FR 3279747 - priority to waterbar and close
- (3) FR 3289UK1 (T17S, R9W, NW corner of S4) - waterbar and close riparian road

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event.
- Dismantle Green Cr. bridge and place in stream as fish structures.

Riparian vegetation (A)
- Plant willow in middle section of Green Cr. to encourage beaver activity.

Miscellaneous (T)
- Explore opportunity to acquire state-owned lands to improve ability to manage for bald eagle nesting habitat. (State is interested in exchanging property.)

Later time periods -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2143 012 (A)	2143 011 (A)
2143 026 (A)	2143 017 (A)
2143 027 (A)	2143 032 (A)
2143 028 (A)	2143 036 (A)
2143 029 (A)	2143 052 (A)
2143 030 (A)	2143 053 (A)
2143 031 (A)	2143 055 (A)
2143 033 (A)	2143 074 (A)
2143 045 (A)	2143 078 (A)
2143 047 (R)	2143 081 (A)
2143 054 (A)	2143 098 (R)
2143 057 (A)	2143 127 (A)
2143 058 (A)	2143 158 (A)
2143 078 (A)	
2143 082 (A)	
2143 086 (A)	
2143 087 (A)	
2143 091 (A)	

2143 092 (A)
2143 095 (A)
2143 097 (A)
2143 099 (R)
2143 102 (A)
2143 137 (A)
2143 143 (A)
2143 ? (1959 unit)(A)
2154 006 (A)
2154 007 (A) *
2154 008 (A) *
2154 035 (A)
2154 039 (A)
2154 040 (A)
2154 042 (A) *

In-stream projects (A)

- Pursue partnership with private landowners in lower mainstem of Indian Cr. to assist with in-stream structures.

Riparian vegetation (A)

- Velvet Cr. - plant clumps of riparian vegetation and possibly release conifers.
- Green Cr. - plant clumps of vegetation on toeslopes at top and bottom of drainage.

Miscellaneous (A)

- Lower Indian Cr. dispersed camping sites - manage erosion problems or consider removal of sites.
- Participate in riparian research project (S.Chan's plots)

Landscape Block H2 (Failor)
Priorities: H - terrestrial
H - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2142 012 (A/R)	2142 053 (A/R)
2142 051 (A/R)	2142 058 (A/R)
2142 054 (A/R)	2142 059 (R)
2142 057 (A/R)	2142 106 (R)
2142 060 (A/R)	
2142 061 (A/R)	
2142 062 (A/R)	

Roads to stabilize (A)
- (4) FR 3279668 - priority to waterbar and close
- (3) FR 3279667 - priority to waterbar and close
- (3) FR 3279670 - priority to waterbar and close
- (3) FR 3279748 - priority to waterbar and close
- (3) FR 3269000
- (3) FR 3269662

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event.
- Failor Cr. - locate opportunities to add large woody debris

Riparian vegetation (A)
- Plant clumps of vegetation and release conifers in upper Failor first.

Miscellaneous
- Initiate subbasin monitoring of effects of management activities on stream conditions.

Later time period -

Silvicultural treatments:

Commercial thinning
2142 008 (A) *
2142 010 (A)
2142 011 (A)
2142 052 (A)
2142 054 (A) *
2142 055 (A) *
2142 060 (A)
2142 065 (A)

Riparian vegetation (A)
- Plant clumps of vegetation along lower Failor Cr.

Landscape Block H3 (Misery)
Priorities: M - terrestrial
L - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2142 004 (A/T/R)	2142 078 (A/R)

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2142 002 (A)	2142 047 (A)
2142 003 (A)	
2142 004 (A)	
2142 016 (A)	
2142 025 (A)	

Roads to stabilize (A)
- (4) FR 3269UK1(T16S, R9W, NW corner S27) - sidecast pullback and possible decommission.
- (4) FR 3500612 - '96 storm - 400 cy slide blocking rd. @ .8, rd. slump @ 1.3, sidecast pullback @ 1.75, huge sidecast blowout @ 1.85 where 1/2 of road bed is gone, sidecast problems from 2-2.75
- (4) FR 3200650
- (3) FR 3269660
- (3) FR 3500615
- (3) FR 3500616

Riparian Vegetation (A)
(Note: limited opportunity due to private land ownership)
- Small section below private - make clumpy planting of shade tolerant conifer under deciduous species.

Miscellaneous (A/T)
- Explore opportunities for land acquisition along Misery Cr.
- Explore opportunity to acquire state-owned land parcel between Misery Cr and W.Fk. Deadwood Cr.. (State is interested in exchanging the property.)

Landscape Block H4 (Herman)

Priorities: M - terrestrial
M - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning

2132 026 (A/T)
2132 029 (A/T)
2131 050 (R/A) *
2131 069 (R/A) *

Roads to stabilize (A)

- (5) FR 2160 -sidecast pullback, replace culverts, waste removal, waterbar
- (5) FR 3200647 - sidecast pullback, waterbar, fix other drainage problems
- (5) FR 5800681 - sidecast pullback throughout
- (4) FR 2116618
- (4) FR 3200646 - sidecast pullback near jct with 647
- (3) FR 3200UK5 (T16S, R9W, SE S6)
- (3) FR 3200628
- (3) FR 3200629
- (3) FR 3200654

In-stream projects (A)

- Evaluate effects of Feb. 1996 storm event.
- N.Fork Indian - maintain existing structures.

Riparian Vegetation (A)

- Plant conifers along N. Fork Indian.
- Establish riparian vegetation in open meadow areas along N. Fk. Indian Cr. to restore lands within grazing allotment.

Later time period -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2132 002 (A)	2132 009 (A)
2132 003 (A)	2132 095 (A)
2132 006 (A)	2131 041 (A)
2132 007 (A)	2131 042 (A)
2132 011 (A)	2131 071 (A)
2132 021 (A)	2131 072 (A)
2132 026 (A)	2131 086 (A)
2132 046 (A)	2131 130 (A)
2132 048 (A)	2131 134 (A)
2131 049 (A)	2131 140 (A)
2131 070 (R)	
2131 073 (A)	
2131 074 (A)	
2131 075 (A)	
2131 080 (A)	
2131 081 (A)	
2131 087 (A)	
2131 088 (A)	
2131 090 (A)	

2131 091 (A)
2131 092 (A)
2131 093 (A)

Instream projects (A)

- Herman, Gibson, Taylor Creeks - explore opportunities to add large woody debris to streams.

Riparian vegetation (A)

- Herman - do clumpy plantings along creek above private land.
- Gibson - do clumpy plantings along creek above private land

Miscellaneous (A/T)

- Identify management strategy for accommodating grazing on FS allottment along N. Fk. Indian (Mann Creek).
- Control and reduce noxious weeds along N. Fk. Indian (Mann Creek).

Landscape Block H5 (W.Fk. Deadwood)
Priorities: M - terrestrial
H - aquatic

First 3 years -

Silvicultural treatments:

Commercial thinning	Precommercial thinning
2141 007 (T)	2141 012 (T)
2141 010 (A)	2141 042 (A)
2141 011 (A)	2141 135 (A)
2141 016 (A)	2141 137 (A)
2141 038 (A)	2141 138 (A)
2141 039 (A)	
2141 040 (A)	
2141 046 (A/R/T)	
2141 047 (A/R/T) *	
2141 053 (A)	
2141 061 (A)	
2141 080 (A)	
2141 098 (A)	
2141 108 (T)	
2141 149 (A)	
2142 023 (A)	
2142 026 (A)	

Roads to stabilize (A)

- (4) FR 3200 - '96 storm - 4 major slumps barely passable, 2 smaller cutbank failures
- (4) FR 3200UK4 (T16S, R9W, S8 - down to 35-acre unit)
- (4) FR 3259632
- (4) FR 3259637 - '96 storm - 400' of slumping road bed - old hillside instability - major reconstr.
- (4) FR 3259640 - '96 storm - 20 cy cutbank failure closing road @ .1
- (3) FR 3259 (upper portion) - '96 storm - 2 sidecast failures affecting road bed, 1-10 cy cutbank failure
- (3) FR 3259618 - culvert needed @ mp .5, slide @ mp 2.85; '96 storm - sidecast failure @ 1.1 (from CO 5142) that went 1000' to the creek; 100 cy cutbank failure at 2.7 from 5142
- (3) FR 3259620
- (3) FR 3259621
- (3) FR 3259631
- (3) FR 3259633
- (3) FR 3259635 - waterbar and close spurs here
- (3) FR 3259636
- (3) FR 3259638
- (3) FR 3259642

In-stream structures (A)

- Evaluate effects of Feb. 1996 storm event.
- Work with new landowner in lower W. Fork Deadwood.

Riparian vegetation (A)
(High potential for willow.)

- Make clumpy planting in upper portion of watershed.
- Release existing young conifer throughout middle section.
- Work with new landowner in lower W. Fork Deadwood.

Later time period -

Silvicultural treatments:
Commercial thinning
2142 024 (A)
2141 041 (A)
2141 049 (A)
2141 058 (A)
2141 063 (A)
2141 064 (A)
2141 083 (A)
2141 106 (A)

In-stream projects (A)
- Add large woody debris complexes.

Riparian vegetation (A)
- Make scattered planting of conifer in middle section.

Miscellaneous (A)
- Explore opportunities for land acquisition in upper portion of drainage.

Landscape Block H6 (Panther)
Priorities: L - terrestrial
L - aquatic

First 3 years -

Silvicultural treatments:
Commercial thinning
2141 005 (A/R/T)

Road projects (A)
- (4) FR 3510 - slide @ .1 plugging culvert; waterbar and close 2 spurs off this road.
- (3) FR 3511 - massive slump @ 2.1
- (3) FR 3520

In-stream projects (A)
- Evaluate effects of Feb. 1996 storm event.

Later time period -

Silvicultural treatments:
Commercial thinning
2141 001 (A)
2141 006 (R/T)
2141 085 (A)
2141 107 (A)

In-stream projects (A)
- Locate opportunities to add large woody debris to Panther Creek.

Riparian vegetation (A)
- Make clumpy planting of conifers along creek.
- Explore possibility of planting willows to encourage beaver activity.

Appendix N. Subwatershed Priorities for Restoration

Team members involved with the aquatic resources devised a systematic approach to rate subwatersheds in the Indian and Deadwood drainages according to their potential for successful restoration (High rating = high potential to restore). In most cases this strategy sought to locate the best existing aquatic habitat in an attempt to focus restoration efforts and dollars in areas where refugia, that may buffer existing habitat from disturbances, can be maintained and enhanced. In some cases a somewhat longer timeframe for restoration was considered in the potential. The ten criteria devised consider natural characteristics and managed conditions (criteria 1-6) as well as the potential to influence conditions (criteria 7-10) within the 22 subwatersheds in the Indian/Deadwood watershed. The following descriptions outline the thinking behind each criterion:

1. Northwest Forest Plan or Forest Key Watershed

0 = No
2 = Yes

The Aquatic Conservation Strategy of the Northwest Forest Plan designated key watersheds where special attention must be given to the management of at-risk fish populations (tier 1) and high water quality (tier 2). Three subwatersheds in the Indian Creek drainage were designated as tier 1 watersheds and should be considered priority areas for restoration. In addition, West Fork Deadwood is a subwatershed that is highlighted as "key" by the Forest.

2. Percent natural stands in watershed

0 = Low percentage (< 55%)
1 = Medium percentage (55-75%)
2 = High percentage (> 75%)

Subwatersheds with a higher percentage of natural stands were considered somewhat more stable because of root strength in established natural stands. Natural stands include sources of large wood that could either fall into the stream over time or could be used in stream habitat improvement projects. In general natural stands would provide more shading to the stream where conditions are within reach of the stream channel. Subwatersheds with a higher percentage of natural stands will also have riparian areas and stream courses that are less impacted by management activities than a subwatershed with a low percentage of natural stands.

3. Number and position of roads under County and Forest Service control

0 = Dominated by ridgetop roads
1 = Dominated by midslope/valley bottom roads
2 = Dominated by midslope/valley bottom roads with known problems

This criterion attempts to identify subwatersheds that have a high incidence of roads that are identified as higher risk to failure based on slope position, construction method and known problems in need of repair. The assumption made is that ridgetop roads are generally more stable and less likely to negatively impact aquatic resources ,whereas, midslope and valley bottom roads would be more likely to deter proper riparian and instream function (i.e. slides during intense storm events, interception and rerouting of subsurface flow, stream crossings that may hinder fish passage or disruption of connectivity between the hillslope and valley bottom).

4. **Potential aquatic habitat on federal lands in unconfined and moderately confined channels, < 4% gradient.**
   - **0 = Private dominated**
   - **1 = 50/50 Private/USFS**
   - **2 = USFS dominated**

This criterion gives preference for restoration to subwatersheds that include longer, more continuous instream and riparian areas within federal management. The confinement and gradient limitations within this criterion are based on the assumption that unconfined and moderately confined stream segments less than 4% gradient are generally where the best anadromous fish habitat is located. Fragmented ownership of a stream channel makes it more difficult to implement restoration strategies, especially where segments adjacent to federally managed reaches have been degraded and cumulative effects of negative impacts influence the entire stream. A higher rating implies higher likelihood of intact aquatic refugia and better accessibility for riparian and instream restoration projects.

5. **Current aquatic habitat condition**
   - **0 = Very poor condition; no functioning habitat**
   - **1 = Habitat partially functioning**
   - **2 = Presence of functioning habitat**

Based on Level II stream surveys, this criterion helps to define where functioning salmonid rearing habitat can be maintained, enhanced and expanded. Information used to rate each subwatershed included percentage of each stream reach in pools, percentage of deep pools, percentage of complex pools, amount of large wood in streams, known locations of anadromous fish spawning and rearing, locations of high beaver activity and riparian condition throughout the Indian and Deadwood drainages.

6. **Presence or absence of large woody debris in the stream based on management practices.**
   - **0 = Pre-buffer with cleanout (pre-1980)**
   - **1 = Buffer with cleanout (1980-1985)**
   - **2 = Buffer and no cleanout (post-1985)**

This criterion looked at managed areas near streams in each subwatershed and used plantation age to determine how buffers and stream cleanout practices may have affected amounts of large woody debris in these streams during three distinct periods. This criterion assumes the following practices took place during each period:

1. Before 1980, assume no riparian buffers were left and stream cleanout was the norm.
2. Between 1980 and 1985, assume buffers were left but some stream cleanout continued.
3. After 1985, assume buffers were left and stream cleanout was no longer being practiced.

7. **Riparian function in terms of influence on stream temperature, wood supply and floodplain condition.**
   - **0 = Low (function)**
   - **1 = Moderate (function)**
   - **2 = High (function)**

Where mature conifers naturally occur in the riparian area, they provide more long-term sources of shade and large woody debris than deciduous riparian trees for both instream and floodplain function. Current seral stage and species composition were used to locate areas that are dominated by deciduous or deciduous/conifer mix . In addition, stand age was used to identify areas where average stand diameter is insufficient to serve as large woody debris in the floodplain and in-stream. Large woody debris was assumed to begin to reach a functional diameter from plantation age = 30 years. Examples of high and low end criteria are as follows:

Low Functioning = Plantation < 30 years, Hardwood dominated and/or meadow dominated.

High Functioning = Natural late/mature conifer dominated or mature conifer/hardwood mix.

8. Percent federal lands in watershed

0 = Low percentage (< 75% Federal)
1 = Medium percentage (75-85% Federal)
2 = High percentage (> 85% Federal)

This criterion attempts to give a higher rating to subwatersheds that are dominated by federal ownership. A higher rating implies more ability to influence management practices and potential to create or enhance late successional conditions. Higher percent federal ownership also allows more accurate estimation of future management and the effects that management may have on stream function.

9. Potential for private landowner cooperation

0 = Low
1 = Moderate
2 = High

Where stream and riparian work is dependent on private landowner cooperation, subwatersheds were rated on potential for this cooperation. The subwatersheds rated highest include those private landowners that are either currently working with the Forest Service to improve aquatic conditions, or have indicated a willingness to cooperate in the near future.

10. Potential for influencing riparian area by thinning (time to LSR condition, distance of unit from stream, potential to create habitat [i.e. LWD availability] and proximity to known functioning fish habitat).

0 = Low potential
1 = Moderate potential
2 = High potential

This criterion sought to identify plantations with the highest potential to affect riparian character through thinning. Factors included distance of units from streams, proximity to known functioning fish habitat, potential to create or enhance complex fish habitat in stream and time required to reach LSR conditions

The following table gives criterion numbers for each subwatershed, its cumulative total score and the resulting rating based on the final score. Map 6.2, Aquatic Priorities, displays this rating.

Criteria =>	1	2	3	4	5	6	7	8	9	10	Total	Rating
Sub-Watershed												
N. Indian	0	0	2	2	2	0	1	0	0	2	9	MOD
Up. Indian	0	1	2	0	0	0	0	0	0	0	3	LOW
Herman	1	1	2	2	2	0	1	0	1	2	12	HIGH
M.S. Indian	0	0	1	0	0	0	0	1	0	0	2	LOW
Maria	2	2	1	1	2	2	1	1	1	1	14	HIGH
Rogers	1	1	1	2	2	2	2	0	2	0	13	HIGH
Long	1	1	0	0	1	2	1	2	0	0	8	MOD
Elk2	1	0	1	0	0	0	1	1	1	0	5	LOW
L. Indian	1	1	1	2	2	0	1	1	1	1	11	HIGH
Up. Dead	0	1	2	1	2	0	2	2	1	2	13	HIGH
N. Pan	0	0	0	1	2	0	1	0	2	1	7	MOD
Pan2	1	1	0	1	1	0	1	0	0	0	5	LOW
Elk	1	2	0	0	1	0	1	1	2	0	8	MOD
Buck	0	0	0	2	1	0	1	1	1	1	7	MOD
Rock3	1	2	1	2	0	0	1	1	1	0	9	MOD
N. Bear	1	2	1	0	1	0	1	1	1	0	8	MOD
Alpha	0	2	1	0	0	0	0	2	0	0	5	LOW
Misery	0	0	1	0	2	0	0	1	1	0	5	LOW
W. Dead	0	0	2	1	2	2	1	1	1	2	12	HIGH
Failor	0	1	0	2	2	0	2	1	1	2	11	HIGH
Green Ck	0	0	2	1	1	0	1	0	0	1	6	MOD
L. Lake	1	0	1	0	0	0	0	0	0	0	2	LOW

Rating Key: Total Score: 1-5 = Low Priority
6-10 = Moderate Priority
11-14 = High Priority

The final step taken to complete the aquatic restoration strategy was to identify restoration projects by subwatershed. These projects fell into five different categories related to their importance in terms of watershed restoration: road work, riparian vegetation, in-stream work, upland thinning and miscellaneous projects. Concepts behind the objectives of these categories of projects are discussed in Chapter 6. This project list has been incorporated into Appendix M, which lists priority projects by landscape block.