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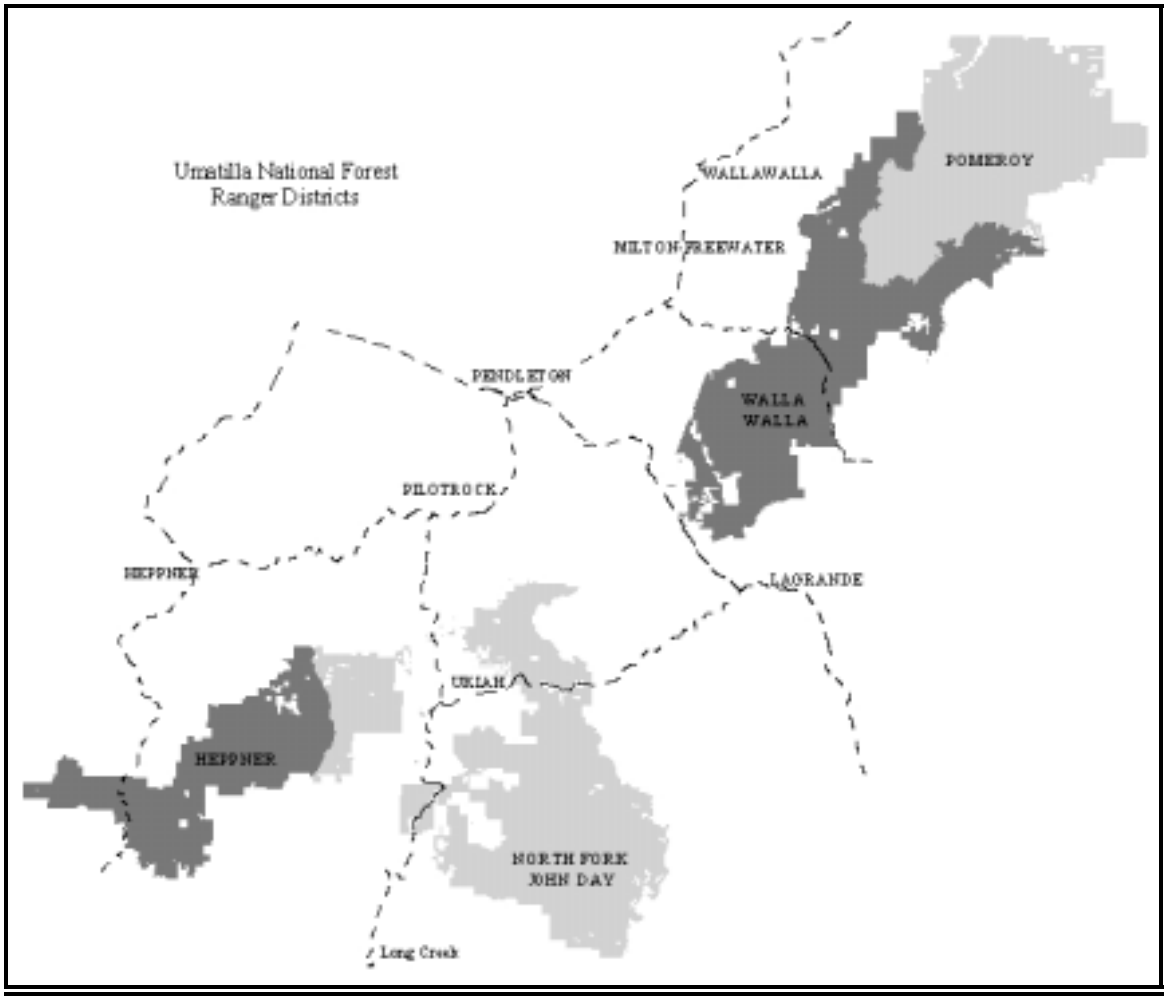
Umatilla National Forest
Ranger Districts
WALLAWALLA
POMEROY
MILTON-FREEWATER
PENDLETON
WALLA
WALLA
PILOTROCK
HEPPNER
LAGRANDE
UKIAH
HEPPNER
NORTH FORK
JOHN DAY
Long Creek

SECTION U

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LIST OF TABLES AND FIGURES

MONITORING ITEMS NOT REPORTED FOR FY2000

A number of Monitoring Items from the Umatilla Forest's 1994 Monitoring Strategy were not reported in FY2000. Some items need only to be reported at predetermined intervals to detect trends; some were purposely deferred pending updated monitoring protocols or direction; while others were deferred due to lack of funding, personnel issues, or other work priorities.

Monitoring Items that were not reported are as follows:

Item 3	Water Quantity
Item 6	Stream Sedimentation
Item 7	Stream Channel Morphological Features
Item 8	Fire Effects - Wildfire on Water and Soils
Item 9	Riparian Vegetation
Item 11	Range Condition and Trend
Item 16	Stand Management - Ponderosa Pine Regeneration
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FOREST PLAN AMENDMENTS FOR FY2000

One nonsignificant Forest Plan amendment was prepared in fiscal year 2000.

Amendment number	Date	Summary and Comments
25	06/12/00	Eden Timber Sale and Fire Reintroduction Project Environmental Assessment. Adjusted the boundary of a C1 Dedicated Old Growth area.

SUMMARY OF FINDINGS AND RECOMMENDED ACTIONS

The Summary of Recommended Actions, beginning on page U-6, shows all Umatilla Monitoring Items and whether they were deferred, consolidated with the other Blue Mountain Forests (Section C), or reported in this section (U). The table summarizes the key findings and the recommended actions to be taken because of this year's monitoring for the Umatilla National Forest. A more complete analysis of this years reported monitoring items can be found later in this section (U) or in the Coordinated Monitoring Section (C).

Categories of recommended actions are identified in the table as follows:

Change Practices (CP) - Indicates that the results of current practices are outside the thresholds of variability and/or are not meeting specific direction set by the Forest Plan. A change in practice or procedure may be needed.

Further Evaluation (FE) - Indicates that results may or may not have exceeded the threshold of variability, but additional information or evaluation is needed to better identify the cause of the concern and/or determine future actions.

Amend Forest Plan (AP) - Indicates that results are inconsistent with the Forest Plan, or the Forest Plan direction was not clear. The Forest Plan may need to be changed or clarified through the amendment or revision process.

Continue Monitoring (CM) - Indicates we will continue with the current protocol.

Not Evaluated (NE) – The monitoring item was not evaluated this year.

Summary of Recommended Action

♦ 2000 Monitoring Report ♦

Umatilla National Forest

Report Section*	MI #	Monitoring Item (MI)	1999 Action	2000 Recommended Action			Remarks**
				Change Practice	Further Eval.	Amend Forest Plan	
I. PHYSICAL RESOURCES							
COORD	1	Air Quality	CM				"Air Quality and Smoke Management". Emission levels continued downward trend. One wildfire smoke intrusion in La Grande. Continue to monitor.
UMA	2	Soil Productivity	CM				Activities are meeting Forest Plan standards and guidelines. BMPs working properly. Continue to monitor.
DEF	3	Water Quantity	NE				Not evaluated in FY2000.
UMA	4	Water Quality	CP		X		Monitored BMPs effective. More complete Forest-wide review is needed. Data storage and interpretation needs to be completed.
UMA	5	Stream Temperature	CP FE	X	X		Most streams not meeting state water quality standards for temperature.
DEF	6	Stream Sedimentation	NE				Not evaluated in FY2000.
DEF	7	Stream Channel Morphological Features	NE				Not evaluated in FY2000.
DEF	8	Fire Effects - Wildfire on Water and Soils	CM				Not evaluated in FY2000.
II. BIOLOGIC RESOURCES							
DEF	9	Riparian Vegetation	NE				Not evaluated in FY2000.
COORD	10	Level of Utilization	CP FE		X		"Forage Utilization". 99% of monitored pastures met standards. 60% of total pastures were monitored. Some pastures not receiving adequate monitoring.
DEF	11	Range Condition and Trend	NE				Not evaluated in FY2000.
COORD	12	Noxious Weeds: Invasive Vegetation	CM				"Vegetation Management and Noxious Weeds". 8,638 gross acres treated. 106 acres of new sites in FY2000. Yellowstar thistle and knapweed infestations extensive on north end Districts. Continue to monitor.
COORD	13	Silvicultural Harvest Method	AP		X	X	"Harvest Method and Acres". Harvest at 21% of level planned in Forest Plan. Primarily shelterwood and unevenage methods. No clearcut acres.

* More information on items can be found in: UMA = Umatilla; COORD = Coordinated; ACCOM RPT = Accomplishment Report Table at the end of the Umatilla section. DEF = Deferred (not evaluated FY2000

** Items in quotation marks note title of items in the Coordinated Section if different from the Forest monitoring title.

Report Section*	MI #	Monitoring Item (MI)	1999 Action	2000 Recommended Action			Remarks**
				Change Practice	Further Eval.	Amend Forest Plan	
COORD	14	Created Openings	CM				"Harvest Method and Acres". No activities proposed that would exceed standards. Continue to monitor.
COORD	15	Stand Management - Regeneration	FE				"Reforestation". 5,498 acres were planted, and 3,986 acres were naturally regenerated. NFMA reforestation standards generally met. Continue to monitor.
DEF	16	Stand Management - Ponderosa Pine Regeneration	NE				Not evaluated in FY2000.
UMA/ ACCOM RPT	17	Stand Management – Noncommercial Thinning.	CM	X		X	3,567 acres treated. Backlog accumulating. Forest Plan projections underestimated need.
COORD	18	Fire Effects - Prescribed Fire	CM	X		X	"Fire Managed for Resource Benefits". 3 natural ignitions within wilderness, all suppressed. More non-activity fuels treated than predicted in Forest Plan.
COORD	19	Vegetation Management	CM				"Vegetation Management and Noxious Weeds". 2,373 acres treated (1,468 acres reforestation site prep, 390 acres stand release, and 515 acres wildlife habitat improvement). Continue to monitor.
DEF	20	Threatened, Endangered, and Sensitive Plants	CM				Not evaluated in FY2000.
COORD	21	Insect and Disease Control	CM				"Insects and Diseases". Douglas-fir tussock moth reached outbreak status. Viral insecticide used on Pomeroy and Walla Walla Districts. Increased trend in Douglas-fir beetle Continue to monitor.
UMA	22	Anadromous and Resident Fisheries	CM				Chinook salmon redd counts were up in FY2000, but overall trends are generally downward. Bull trout redd counts were down slightly. Continue to monitor.
COORD	23	Elk/Deer Habitat and Estimated Populations	FE	X		X	"Elk/Deer Habitat". HEI no longer a useful tool to evaluate elk habitat.
COORD	24	Old Growth Tree Habitat	NE		X		"Old Growth Habitat". Umatilla-Meacham Ecosystem Analysis showed declines in old forest from historic levels.
COORD	25	Dead and/or Defective Tree Habitat	FE				Two monitored timber sales met or exceeded standards. Continue to monitor.
DEF	26	Pileated and Northern Three-Toed Woodpecker Populations	NE				Not evaluated in FY2000.

Report Section*	MI#	Monitoring Item (MI)	1999 Action	2000 Recommended Action			Remarks**
				Change Practice	Further Eval.	Amend Forest Plan	
DEF	27	Pine Marten	NE				Not evaluated in FY2000.
UMA	28	Threatened/Endangered/Sensitive Wildlife and Fish Species	CM				One eaglet fledged. Negative results for lynx. Continue to monitor.
DEF	29	Plant and Animal Diversity	NE				Not evaluated in FY2000.
III. RESOURCES AND SERVICES TO PEOPLE							
DEF	30	**A. Forest Plan Implementation** Management Areas/Standards and Guidelines	AP				Not evaluated in FY2000.
DEF	31	**B. Recreation** Primitive/Semi-Primitive Recreation and Roadless Areas	CM				Not evaluated in FY2000.
COORD	32	Off-Highway Vehicle (OHV) Use	NE				OHV use is managed by each district to address specific resource concerns. Develop Tri-Forest management strategy. Continue to monitor.
ACCOM RPT	33	Developed Sites	NE			X	PAOTs in Accomplishment Report. 405% of projected Forest Plan level.
COORD	34	Wild and Scenic Rivers	NE				Free flowing characteristics of eligible and designated rivers were protected. Continue to monitor.
DEF	35	Existing Visual Condition	NE				Not evaluated in FY2000.
DEF	36	Nonconforming Uses	NE				Not evaluated in FY2000.
DEF	37	Limit of Acceptable Change (LAC) and Amount of Primitive Wilderness Resource Spectrum (WRS)	NE				Not evaluated in FY2000.
COORD	38	Allotment Planning	CM		X		"Allotment Management Planning". No AMPs were completed in FY2000. Continue to pursue updates.
ACCOM RPT	39	Range Outputs	CM				Permitted grazing was at 110% of Forest Plan levels. Continue to monitor.
ACCOM RPT	40	Range Improvement	CM				148 non-structural and 45 structural improvements were made. Continue to monitor.
DEF	41	Identification of Lands Suitable for Timber Management	CM				"Timber Suitability". Not evaluated in FY2000.
DEF	42	Timber - Yield Projection	NE				Not evaluated in FY2000.

				2000 Recommended Action			
Report Section*	**MI #**	**Monitoring Item (MI)**	**1999 Action**	**Change Practice**	**Further Eval.**	**Report Section***	**MI#**
COORD	43	Timber Offered for Sale	FE AP		X	X	Total Program Sale Quantity was at 11% of Forest Plan level. Local outlets for salvage material decreased.
UMA	44	Availability of Firewood	CM				Current demands are being met. Number of permits and volume sold at lowest level since Forest Plan was initiated. Continue to monitor.
COORD	45	Mineral Development and Rehabilitation (MDR) Accessibility	CM		X		"Minerals". Standards and guidelines are being met. Increasing demand for landscape material.
COORD	46	Forest Road System	CM				"Roads". 49.71 miles of road decommissioned or closed. Continue to monitor.
COORD	47	Open Road Density	NE				"Roads". 78% of watersheds meet desired condition of 2.0 miles/sq mile. Continue to monitor.
DEF	48	Trails	NE				Not evaluated for FY2000.
COORD	49	Fire - Program Effectiveness	CM				"Wildland Fires". Lowest number of fires on record in FY2000. Majority of acres burned were human caused. Continue to monitor.
COORD	50	Cultural Properties/Sites	NE				"Cultural and Historic Site Protection". No sites suffered any impact from project activities. Restoration work at Fremont Powerhouse continued. Continue to monitor.
DEF	51	Effects of Forest Management Activities on Special Interest Areas	NE				Not evaluated for FY2000.
DEF	52	Research Natural Areas (RNAs)	NE				Not evaluated for FY2000.
UMA	53	National Environmental Policy Act (NEPA)/National Forest Management Act (NFMA)	CM		X		Informal reviews found NEPA requirements were met.
IV. SOCIAL AND ECONOMIC * **							
COORD	54	Changes in Income Levels, Populations, and Employment	CM				"Socio-Economics". Employment and income related to timber harvesting continues to decline. Continue to monitor.
COORD	55	Payments to Counties	CM				"Socio-Economics". Payments to counties continue to decline. Continue to monitor.
DEF	56	Lifestyles, Attitudes, Beliefs, Values, and Social Organizations	NE				"Socio-Economics". Not evaluated for FY2000.
DEF	57	Forest Contributions to the Local Timber Supply	NE				"Socio-Economics". Not evaluated for FY2000.
DEF	58	Forest Budget	NE				"Socio-Economics". Not evaluated for FY2000.
DEF	59	Costs/Values of Forest Plan	NE				"Socio-Economics". Not evaluated for FY2000.

***A new budget process (FFIS) delayed report generation for many of the budget items.

Soil Productivity
Item 2

Questions: Are management practices/projects resulting in conditions that comply with Forest-wide Standards and Guidelines for the management of the soil resource? Do Forest-wide Standards and Guidelines adequately protect long-term site productivity? Is soil productivity maintained or enhanced over time?

Soil monitoring during fiscal year 2000 looked at fire suppression, proposed research natural areas, timber harvest, and fuels treatment activities. Monitoring was also completed on the erosion control work associated with the removal of several log decks.

Fire Suppression

Milepost 244, 245 wildfires in Meacham Canyon burned in mosaic grass/shrub/timber vegetation typical of the lower elevations on the west side of the Forest. Suppression activity included use of bulldozer and handline construction. Dozer lines were restricted to ridge-tops where 2-track vehicle trails already existed. One additional section of dozer line was constructed partway down a ridge to access the Milepost 245 Fire from the top.

Care was taken to limit the amount of earth movement to the minimum needed for adequate line efficacy. Rehabilitation efforts were completed in a timely fashion and as designated in the rehabilitation plans for the suppression effort. Waterbarring is considered a standard water drainage treatment to reduce erosion from water concentration on linear compacted surfaces such as roads. They also are often used on areas such as bulldozer fireline. Waterbarring was utilized on a dozer line on the MP245 Fire. Bulldozer fireline on MP244 fire were primarily on shallow soils and fractured bedrock, and presented little erosion or sediment transport hazard. Therefore, it was decided to reshape and remove berms from the dozer line on MP244 fire.

Conditions were monitored in late October during native seeding operations for invasive species suppression. Early, substantial fall rains created ideal sprouting conditions (and heightened erosion risk) and vegetative response was greater than anticipated. Erosion from fall rains was limited to a few short sections (10 to 20 feet) along steeper portions of two dozer lines, one waterbarred, the other reshaped but without waterbars. This consisted of one or two shallow rills (1-3 inches deep and across) at each site. Mobilized fines on the dominantly shallow soil, rock, and cobble/gravel ridges traveled less than 20 feet before redeposition. The remainder of the several miles of dozer line showed no erosion and seeded grass species were germinating and growing, along with remaining native and exotic introduced species, especially cheat grass.

No erosion was noted on the handline, but little handline was reviewed on this fall visit. Ongoing monitoring will continue to evaluate the dozer and handline treatments for erosion and will compare the effects between different treatments. As of October 31, grass resprout and germination was well along as anticipated during BAER assessment. It was determined during the BAER assessment that (additional) erosion control measures, including seeding for erosion reduction only, would not be necessary due to existing rootstock that was expected to survive and resprout. The seeding of native species and cultivar native and non-native species was intended to suppress expansion of aggressive, undesirable non-native invasive vegetation such as cheat grass and Medusa head. Limiting treatments to the invasive species suppression seeding seems to be validated- vegetative recovery was actually faster than expected due to the existing rootstock and plentiful fall moisture. Unfortunately, also as expected, much of the regrowth on the lower slopes is of introduced species such as cheat grass and Medusa head. Monitoring is planned to assess the effectiveness of the invasives treatments (seeding).

Elk Flat Research Natural Area (RNA)

This area was visited in June 2000 during a review to decide whether to pursue the designation of the area as a Research Natural Area. Observation at the time showed stable conditions throughout the site from an erosion standpoint. Grazing (wildlife or livestock) and other management activities are not degrading the surface conditions. It was noted that the aspen stands are largely in decline. Roads in the immediate area appear adequately maintained and do not appear to be substantially contributing sediment to area water courses.

Timber Harvest Activities

The Gobbler sale area was revisited in 2000, near sale closure, to continue ongoing monitoring of the harvest operations. Post-operational monitoring of unit #3, a commercial thinning of a plantation, was conducted. The site had been prepared by mechanical piling of slash and planted. A visual assessment of this unit would put it into a moderate to high category of soil/site disturbance. Quantitative transecting for existing condition was not attempted on this unit this year.

The current operations (complete at the time of this visit) indicated an excellent result relative to soil effects with virtually no soil exposed to erosion hazard, and well-spaced harvester trails for maximum utility of the harvester/forwarder system. There was a relatively even slash mat on harvester trails providing good support for the equipment with only a few areas (short 10-20' sections) subject to compaction due to insufficient downed wood or slash. (Figures U-1 and 2).

Figure U-1
HARVESTER/FORWARDER TRAIL

Figure U-2
HARVESTER OPERATING ON SLASH MAT

Detrimental soil impacts were estimated at 1-3%, with compaction being the dominant impact. Soil protection guidelines were met with this operation. Research needs to further pursue the question of soil disturbance in previously undisturbed, natural systems, including recovery rates.

Tarweed Timber Sale on NFJD Ranger District closed in FY2000. Final requirements included subsoiling temporary roads and machine trails. The project area has a considerable amount of shallow or very shallow soils and required continual assessment while operating subsoiling equipment. The Tilth subsoiler was used on the last areas on the sale to be subsoiled, with operations monitored by the sale administrator and soil scientist. Several areas of temporary roads/trails did not need treatment as they had either very shallow soils or were fractured rock to the surface. The contractor did a good job of identifying which areas were suitable for decompaction. Objectives of increased filtration and fracturing of compacted surfaces were achieved in subsoiled areas.

Overall, objectives for soil protection and rehabilitation in the Tarweed Timber Sale area were met. Two units showed sign of operations in too-wet conditions in the first year of the sale and have been noted previously. This was corrected promptly at the time and further operations produced little adverse impact throughout the remainder of the sale operations.

Mechanical Fuels Treatments

Tarweed unit 121 was treated with a Slashbuster machine (track mounted machine which utilizes a rotary head to break up activity fuels and create planting opportunities) after completion of harvest activity. Additional impacts were only identifiable in 3 or 4 spots within the unit where a track rut was evident from the fuels treatment. The overall added impact from this operation would be in the 0-2% range and as such the total cumulative detrimental impacts from both the harvest and fuels treatments would be in the 5-8% range.

Big Tower Log Decks

An agreement between the Forest Service and plaintiffs in the Big Tower Project litigation required effects monitoring of six log decks following the removal of the logs and completion of erosion control work. Post operational rehabilitation of the landing areas could not be completed as originally planned because of

the premature waterbarring of the temporary access roads. The decks and surrounding areas were visited again (initially checked in the spring of 2000 with no erosion noted) in October of 2000, following the summer season. Spring/summer thunderstorms had again occurred in the area with at least one heavy downpour from a storm cell passing through the burned area in the headwaters of Cable Creek, and Oriental and Texas Bar Creeks. There was concern of overland flow and erosion damage in the burn area from the high intensity rainfall as reports were received following the storms that Cable Creek was heavy with sediment.

An aerial observation indicated a small slump (estimated at less than 2 acres) in upper South Fork Cable Creek. This may have been initiated this past year after the storm event and is the likely source of much of the sediment noted in Cable Creek near Ukiah, Oregon after the thunderstorm. Deck 1 is just above this area and probably experienced the same storm cell.

Deck 1: The thunderstorm appears to have crossed this area as evidenced by some rills on the closed road. There is no erosion evident except on the closed spur road behind the deck (this road is scheduled for obliteration in the Tower Fire Environmental Impact Statement (EIS)). The road obliteration needs to occur to eliminate the rilling occurring between existing waterbars. The generated sediment is settling behind the waterbars and the lower road closure barricade, and drops out after less than 50 feet or so if carried off the road surface. Road obliteration would eliminate this sediment movement.

Deck 2: No change from last fall or spring. No erosion or soil movement is evident.

Deck 3: No erosion evident, area is quite stable. The access road is stabilizing with seeded vegetation becoming well established but could use additional work and obliteration in unseeded areas. The premature closure of the road will likely make it unfeasible to do any additional erosion control work on the road or the landing area. The inability to decompact the landing due to the cull logs will leave the site in a condition of reduced productivity.

Decks 4 and 5: Waterbars and log placement are working well, no erosion was evident. Cull log piles are still a problem, they will be difficult to remove or scatter if desired. Decompaction of the landings would have been preferable but the agreement precluded that work. These landings will likely not be used for many years.

Deck 6: The deck and landing area looks good and is not experiencing any erosion. The road which goes toward the northwest from the junction with the main road is still running too much runoff down the road surface itself and needs the treatment planned in the Tower Fire EIS. The cull log situation at this landing is similar to the situation at the other decks.

Findings:

- Operations/activities are meeting Plan standards and guidelines for detrimental impacts to soils, with BMP's for soil productivity and erosion protection working properly.
- Soil concerns are adequately considered in NEPA documents.
- Big Tower log deck conditions are stable with erosion control treatments doing an adequate job. It would have been preferable to do a more complete close-out of the landings, temporary roads, and utilized closed road.
- The changes in harvest systems, site preparation, and prescribed burning that has occurred on the Umatilla over the last ten years have been a response to monitoring and concern over undue/undesired disturbance levels. The Forest has been in the forefront of specifying low-impact operations for ground-disturbing activities and providing opportunities for innovative use of various systems to use as examples of what is possible, while providing a balanced approach to costs and requirements. This is adaptive management, incorporating new technology to deal with the desire to keep disturbance levels at minimum feasible limits.

Recommended Actions:

- Additional monitoring by soil and water specialists is needed, particularly to track restoration project recovery. This work is currently limited due to workload, funding and priority considerations.
- Additional existing condition assessment work during the project plan development phase is needed to improve cumulative effects analysis and ensure all treatable conditions are identified (to provide for a complete rehabilitation package).
- Research needs to further pursue question of soil disturbance in natural systems including recovery rates to assist in validating soil protection guidelines.
- Previous restoration projects could use increased monitoring to determine recovery rates and if anticipated results have been achieved.
- Continue experimentation and innovation in the use of a variety of systems to achieve resource management objectives, while maintaining costs.

Water Quality
Item 4

Questions: Are Forest management activities or other factors affecting water quality parameters in Forest streams? Has the Forest met its designated obligations and responsibility with respect to management of non-point source pollution? Did the Forest comply with the Clean Water Act as outlined in memorandum of understandings (MOUs) with the States of Oregon and Washington? What is the long-term trend in water quality? Are Best Management Practices and other measures implemented as designed to protect water quality? Are Best Management Practices and other practices effective in meeting water quality goals?

Baseline Monitoring

The Forest operated 10 automated pumping samplers on the following streams: Tucannon River (two locations), Pataha Creek, Umatilla River (3 locations), Desolation Creek, and Skookum Creek (two locations). Daily (composite) samples were analyzed for suspended sediment (mg/l), turbidity (NTU), total dissolved solids (mg/l), and conductivity (mmhos). These data have not been summarized or interpreted.

Grab samples were collected at 14 locations (nine streams and one lake) on the Heppner District. Samples were collected 4 times per year and analyzed for dissolved oxygen (mg/l), coliform bacteria (total, fecal, and *E. coli*), suspended solids, total dissolved solids, conductivity, nitrates, and pH. These data have not been summarized or interpreted.

Discussion:

The Environmental Protection Agency's national water quality data storage system STORET is undergoing major revision and update. While this system is considered the standard for storage of Forest Service data, it is not yet operational or fully supported. The Forest has more than a year of backlogged data that has not been entered into any database.

Project Monitoring

Willow Creek Road Project water quality monitoring, conducted as part of a Federal Highway Administration road reconstruction project (Forest Road 53, Heppner Ranger District), was terminated on May 31st 2000. Weirs for measuring discharge, pumping samplers, and recording thermographs were installed in the winter of 1996. General objectives were to measure the impacts of road reconstruction activities on Willow Creek, a tributary to the Columbia River. Specific objectives included measuring effects of road reconstruction on fine sediment, discharge, and water temperature. Construction began in 1998 and was completed in the fall of 1999. Monitoring continued for one runoff season after completion of construction activities.

Measurements of suspended sediment ranged from less than 0.5 mg/l to around 198 mg/l. As expected the downstream location, monitoring site 1, tended to have the highest suspended sediment concentration and load. In addition to the sediment entering Willow Creek from upstream tributaries, stream bank erosion within the reach between monitoring sites 1 and 4 appears to contribute a significant amount of fine sediment. The accelerated bank erosion rate has likely resulted from discharge increases caused by the Smith Ditch interbasin water transfer.

Mitigation measures were identified in the NEPA document. Objectives were to provide stability to cut and fill slopes, increase cover, reduce erosion, increase infiltration, enhance plant diversity, and enhance aesthetic values.

Vegetation mitigation measures included:

- Hydro-seeding (Figure U-3) all new cut and fill slopes (25 acres treated over 2 miles length) and 10 spoil and waste areas (disked, harrowed and hydroseeded over 5 acres total area). Components of the mix were: mulch (wood fiber), grass and forb seed mix (8 species of native and nonnative), fertilizer (Biosol^{TM}) in 2000 only, and tackifier, in a water-base mix. These materials were applied with a contracted hydro-seeder.
- Shrub and conifer plantings on cut slopes and one waste area (at Forest Road 21 road junction). Species included bearberry, boxwood, willow, lodgepole, grand fir, and spruce.

These mitigation measures were implemented over a 3 year period, with completion in the fall of 2000. Initial observations include overall good survival of planted species; areas with deeper spoils (spoil site) doing well, compared to steeper cut slopes with shallower soils which had lower survival. Additional treatments and combinations trials were installed in 2000 to improve survival and recovery. These included reseeding with fertilizer application (20 acres). Six experimental treatments of soil preparation were set up in 2000 to test germination and survival of seeded species (Table U-1). Results will be reported in the 2001 monitoring report. Photo monitoring sites and ocular transects were established for further evaluation of planting survival and treatment effectiveness.

Table U-1
WILLOW CREEK ROAD EROSION COMBINATION TRIALS

Treatment	Combinations
Harrow and seed	Rip, harrow and seed, double pass
Rip and seed	Scarify with tractor
Rip, harrow and seed, single pass	Control (seeded, no additional treatment)

Figure U-3
HYDRO-MULCHING ROADCUT SLOPE ON FOREST ROAD 53

Evaluation:

Direct linkage of water quality monitoring results to on-site erosion control practices may not be possible because water quality sampling was terminated prior to installation of some of the above measures. In general, results indicate that road construction had limited (short duration and localized) impacts on water quality.

BMP Monitoring

Site visits were made to two timber sales on the Pomeroy District, the Upper Charley planning area (proposed) and ongoing Lick Creek timber sale (both projects are located in the Asotin Watershed). On the Charley sale, riparian protection areas were identified and agreed upon in two harvest units. Watershed improvement needs were noted in one unit (Unit 126); an existing skid road, ATV use, and cattle were causing resource damage (loss of vegetation, soil displacement and compaction, and gully erosion) around a spring. At the Lick project, a temporary access road and skyline logging systems were observed. The temporary road should be obliterated after use by replacing sidecast soil and scattering logging debris. Skyline logging of whole trees appeared to have minimal effects on soils (no exposure or displacement from dragging).

Annual reviews of Forest projects for BMP implementation and effectiveness were not completed on all Districts this year.

Recommended Actions:

- Install and input backlogged data into the new STORET database.
- Schedule site visits to timber sales and other projects on all Districts in 2001.
- Continue to report results from project-level monitoring.

Stream Temperature
Item 5

Questions: Is project implementation in riparian areas resulting in attainment of desired future conditions for stream surface shading and/or in-stream water temperatures? What are the long-term changes and trends in stream temperatures? Are the long-term changes meeting Forest Plan objectives? What are the cumulative effects of Forest management activities on stream temperatures?

Water temperatures were measured at 139 locations across the Forest with recording thermographs, devices used for continuous recording of water temperatures. Summer water temperatures reached maximum in mid to late July. Stream temperature conditions varied across the Forest as shown by two examples from the north half of the Forest (George Creek and Tucannon River at Panjab Creek) and two from the south half (Hidaway Creek and Wall Creek) (Figures U-4 and U-5).

A summary of the maximum 7-day average of the daily maximum temperatures for selected streams across the Forest over the past 5 years shows year-to-year variability resulting from seasonal differences in climate, water supplies, and overall watershed condition. Differences in annual maximum water temperatures are most evident where large-scale changes in watershed conditions have occurred such as watersheds that have had extensive wildfire (Table U-2).

Temperature monitoring has expanded over the past 10 years with the availability of low-cost data recorders, resulting in an increase in the number of sites being monitored. Older data loggers are gradually being replaced with newer instruments that have greater storage capacity. Continuing improvements in data quality included accuracy checking of data loggers with NIST thermometer. This year, many sites were already over the state standard at the time of spring deployment. Emerging questions include the need for information on spawning conditions for bull trout (fall spawning) and steelhead (spring spawning).

Figure U-4
SUMMER STREAM TEMPERATURES, 2000
(Mean daily temperatures, degrees Fahrenheit)

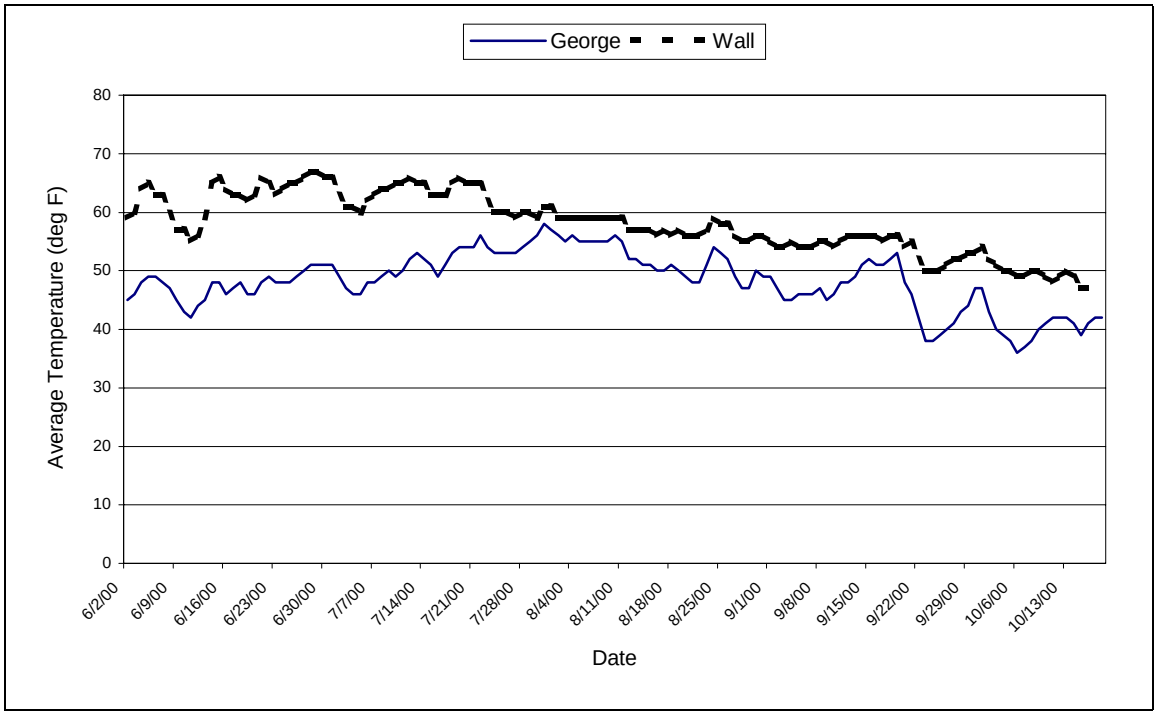


Figure U-5
SUMMER STREAM TEMPERATURES, 2000
(Mean daily temperatures, degrees Fahrenheit)

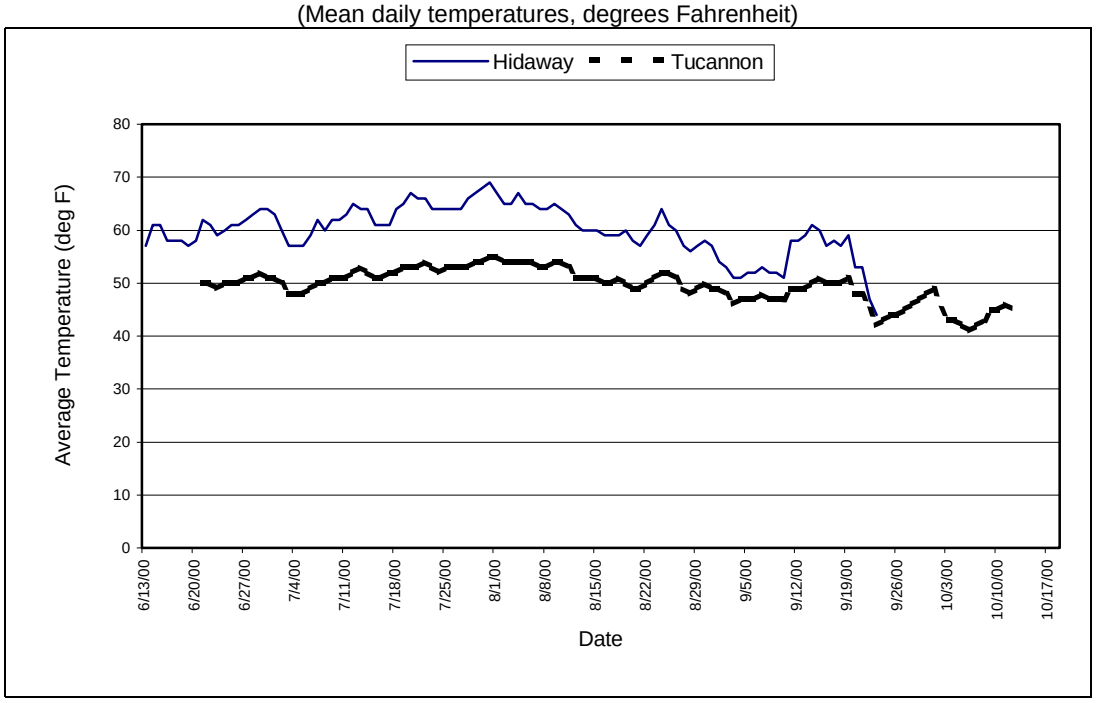


Table U-2
ANNUAL SUMMER MAXIMUM WATER TEMPERATURES AT SELECTED STATIONS, 1996-2000.
(7-Day moving average of the daily maximum, ºF)

Stream Name	Basin	1996	1997	1998	1999	2000	Temp Standard	# days in '00 above Standard
Henry Cr @FB	John Day	72	71	75	72	69	64	61
Herren Cr.	Willow	61	62	64	ND	63	64	2
Wall Cr @FB	NF John Day	68	68	77	76	74	64	>48
Hidaway Cr[1]		75	77	78	75	77	64	>86
White Creek[2]		63	62	63	60	63	64	2
SF Desolation[3]		62	62	62	60	64	50	71
NFJD@Camas		76	ND	76	74	78	64	>69
NF Meacham	Umatilla	67	67	70	68	69	50	92
Umatilla @FB (Corp.)		63	64	ND	64	64	50	112
NF Touchet @FB	Walla Walla	ND	ND	59	55	57	61	0
Lookingglass@FB	Grande Ronde	56	55	55	55	55	50	78
NF Asotin @Lick Cr	Snake R (WA)	ND	ND	69	65	70	61	82
SF Asotin @FB		ND	ND	60	67	60	61	1
Panjab Cr		57	58	60	60	60	61	1

ND=No Data
FB=Forest Boundary
1 Stream in 1996 Tower fire area
2 Stream in 1994 Boundary fire area
3 Stream in 1996 Summit fire area

A promising technique for measuring surface water temperatures increasingly in use is aerial mapping using infrared radar, or “FLIR” (Forward-Looking Infrared Radar). Many streams in northeastern Oregon have been mapped using the FLIR technology, and the data are increasingly being used to map temperature profiles along river reaches, identify cold-water refuge areas, and augment thermograph monitoring.

FLIR data are being used in development of Total Maximum Daily Loads (TMDLs). For example, FLIR data were used as part of the Umatilla TMDL (submitted to EPA for final approval in March, 2001) to profile stream temperatures from the National Forest in the headwaters, downstream to the mouth at the Columbia River. Examples include spatial imaging of temperature conditions at the forks of the Umatilla and confluence of Meacham Creek and the Umatilla River.

Evaluation:

Five or more years of thermograph data are available for many stations across the Forest. These data show year-to-year variability and provide evidence of trends such as elevated temperatures following wildfire. Overall, most streams are not meeting state water quality standards. Achieving target temperature standards may not be possible in all streams, and under circumstances such as after wildfire where recovery of riparian vegetation may take 5 to 10 years

Recommended Actions:

- Continue emphasis on stable monitoring program with assurance of quality procedures in all phases of data collection.
- Deploy thermographs earlier in the spring and delay fall recovery to improve summer coverage.
- Establish year-round monitoring at selected stations to improve understanding of spawning and rearing conditions.
- Focus efforts on minimizing management activities that degrade streamside conditions, and accelerate recovery of stream shade and channel function by implementing practices such as road decommissioning and riparian planting.

Stand Management – Noncommercial Thinning
Item 17

Questions: How many acres received a stocking-level control treatment? How many of the acres needing stocking-level control were treated?

The total acreage of stocking-level control accomplished during fiscal year 2000 was 3,567 acres. The Forest Plan projected amount was 2,852 acres (Forest Plan, Table 4-20, page 4-41; combination of precommercial thinning and release). Thus, the fiscal year 2000 accomplishment is about 25 percent above the Forest Plan projected output. The acreage reported is outside the Forest Plan's threshold of variability (20% deviation). Table U-3 shows the actual output from 1995 to 2000 and the percentage of the actual output measured against planned output.

Table U-3
ACRES OF NONCOMMERCIAL THINNING BY YEAR

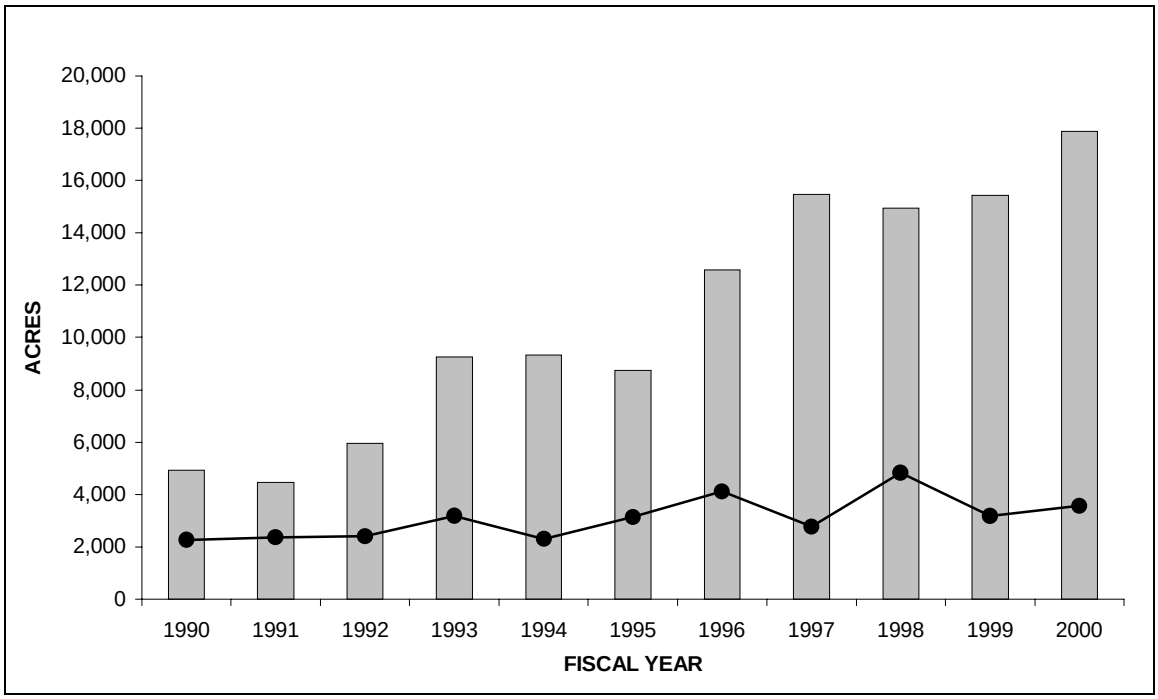
1995	1996	1997	1998	1999	2000	6 Year Average	Percentage of Forest Plan (Actual/Planned) 6 Year Average
3,132	4,127	2,769	4,841	3,175	3,567	3,602	+26%

Based on the 6-year average, stocking-level accomplishment exceeds Forest Plan projections. However, the Forest's need for stocking-level control has continued to grow at a rapid rate, indicating that Forest Plan projections may have seriously underestimated future needs with respect to noncommercial thinning and release. Figure U-6 shows stocking-level attainment versus need for the Forest Plan period, 1990 to 2000.

As stated in previous monitoring reports, the Forest continues to accumulate a backlog of acres needing stocking-control treatment. If shifts in funding or priorities do not occur (e.g., shifting the priority from reforestation to stocking-level control), the acreage that needs stocking-level control will continue to grow rapidly.

Thinning is an active restoration technique affecting small-diameter trees. It can be used to reduce wildfire risk and improve forest health, to develop or protect fish and wildlife habitat, to encourage undergrowth vegetation, to promote late-successional characteristics for biological diversity, and to accomplish a variety of other land management objectives. The Forest Plan did not anticipate many of these uses for stocking-level control and that is probably one reason for the Plan's relatively low projections with respect to release and noncommercial thinning.

Figure U-6
STOCKING LEVEL CONTROL: ATTAINMENT (line) VERSUS NEED (bars)



Recommended Action:

- Even though the Forest has exceeded Plan projections (based on the 6-year average) and this average is outside of Plan thresholds, a change is needed to address the backlog of acres needing stocking-control treatment. Funding for these treatments has been lacking for several years and the backlog is increasing. Under the current management scenario it is unlikely the Forest would be able to treat all of the over stocked acres, even if treating all the acres was determined to be desirable. Additional issues to be considered include fish and wildlife habitat needs and ecosystem sustainability. Stand management for stands of noncommercial size needs to be evaluated and adjusted during revision of the Forest Plan.

Anadromous and Resident Fish
Item 22

Questions: Are the population trends for anadromous and resident fish Management Indicator Species stable to improving? Are Forest Plan goals, objectives, and desired conditions for anadromous fish being achieved? Is fish habitat capability improving as projected in the Forest Plan?

Summer steelhead trout *Oncorhynchus mykiss* and resident redband trout *Oncorhynchus mykiss gairdneri* were recognized as management indicator species for streams and riparian habitats in the Umatilla Forest Plan. Habitat requirements of these selected species were presumed to represent those of a larger group of species. Summer steelhead and redband are among the most well distributed fish species on the Forest. While they don't require the coldest water of species on the Forest, they do require good water quality.

All anadromous fish in Region 6 were added to the Regional Forester's Sensitive Species List in August 1997. Even though steelhead was selected in 1990 to represent anadromous fish and redband trout was selected to represent resident fish, it is now necessary to assess the status of all anadromous fish with emphasis on those listed under the Endangered Species Act to monitor Forest Plan performance. An updated list of Aquatic Management Indicator Species would include all stocks of steelhead trout *Oncorhynchus mykiss*, chinook salmon *Oncorhynchus tshawytscha*, bull trout *Salvelinus confluentus*, resident redband trout *Oncorhynchus mykiss gairdneri*, and margined sculpin *Cottus marginatus*.

Steelhead

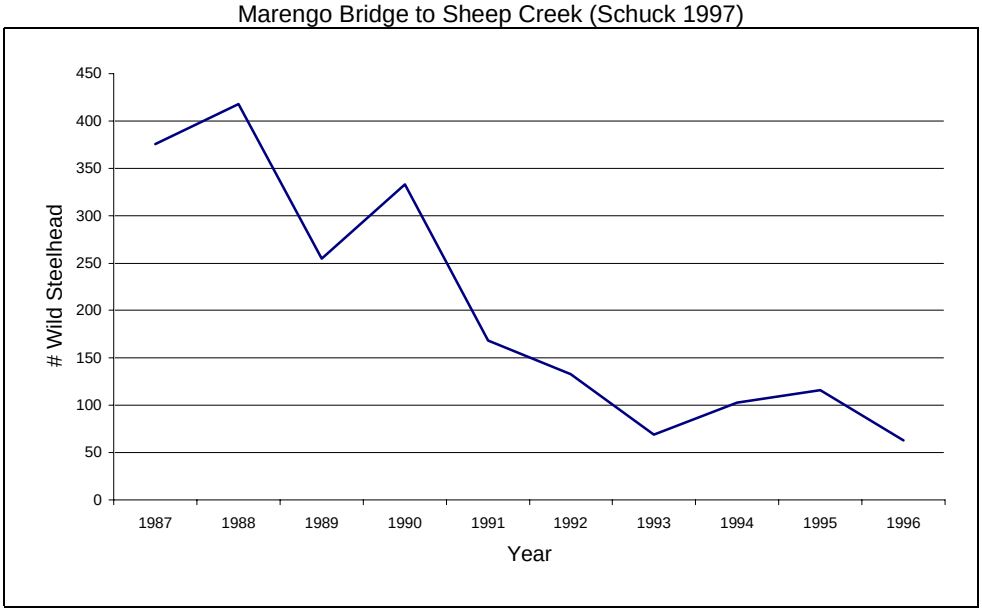
Steelhead trout in the Snake River Evolutionary Significant Unit (ESU) were listed under the Endangered Species Act as a threatened species in August 1997. The status of Snake River steelhead on the Umatilla National Forest was reviewed as part of the project screening activity required by the National Marine Fisheries Service (NMFS) in August 1998. The following is a summary of information used in that review.

Prior to 1970, annual returns of native steelhead to the Tucannon River were estimated by the Washington Department of Fisheries (WDF et al., 1990) to average 3,400 fish or 3 percent of the total Snake River steelhead run return. The sport fishery allowing the harvest of wild fish was closed in 1974, with the in-river sport catch ranging from a high of 689 in 1957 to a low of 24 fish in 1973. The estimated number of returning wild fish has steadily declined for the period 1987 to 1996 (Figure U-7).

Redd surveys are not a good indicator of wild steelhead production in the Tucannon River because both wild and hatchery steelhead spawn together, and the operation of the weir/trap at the Tucannon River hatchery may have effected upstream migration of adult steelhead in past years.

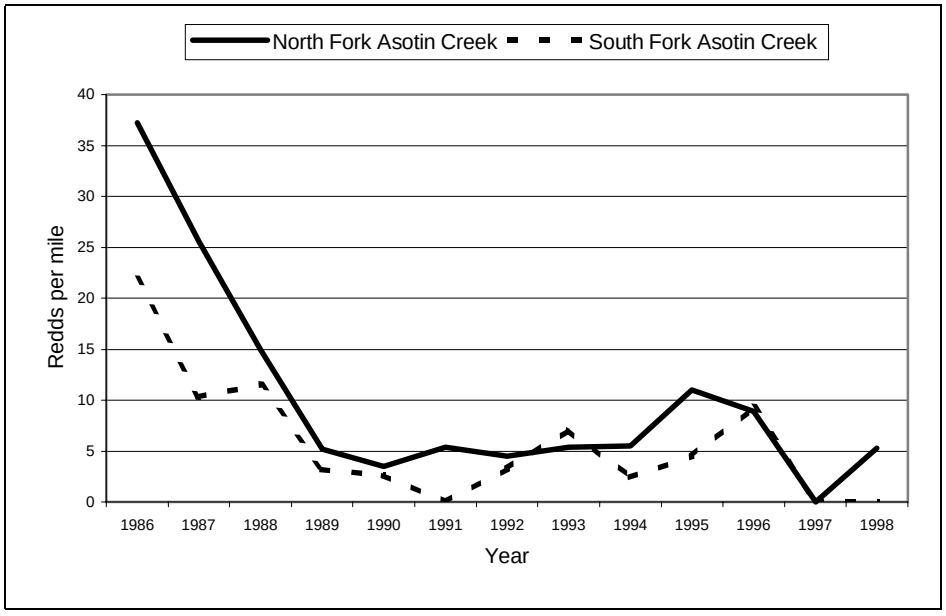
In the fall of 1997 a permanent adult steelhead and salmon trap was installed at the Tucannon Fish Hatchery by the Washington Department of Fish and Wildlife. The trap was checked daily by hatchery personnel beginning in October 1997 and continuing through June 30, 1998 (WDFW 2000). Fifteen wild steelhead and 60 steelhead of hatchery origin were trapped and passed upstream at Tucannon Fish Hatchery site in the first year of operation.

Figure U-7
ESTIMATED WILD STEELHEAD ESCAPEMENT -- TUCANNON RIVER
Marengo Bridge to Sheep Creek (Schuck 1997)



Asotin Creek supported a run of over 1,000 steelhead from 1954 to 1961 (Schuck, personal communication). The present annual return of between 120 and 170 adults is below the Washington State escapement goal of 225 spawning steelhead. Spawning habitat on the Forest is restricted to approximately 10 miles of the North Fork of Asotin Creek. Other steelhead tributaries with headwaters on the Forest are Charlie Creek, George Creek, and South Fork Asotin Creek. Figure U-8 displays the steelhead spawning survey results by the Washington Department of Fish and Wildlife since 1986 (no date was available for both locations in 1997 and South Fork Asotin Creek in 1998) (Schuck, Viola, and Keller, 1997).

Figure U-8
STEELHEAD SPAWNING GROUND SURVEYS -- REDDS PER MILE
Asotin Creek Watershed

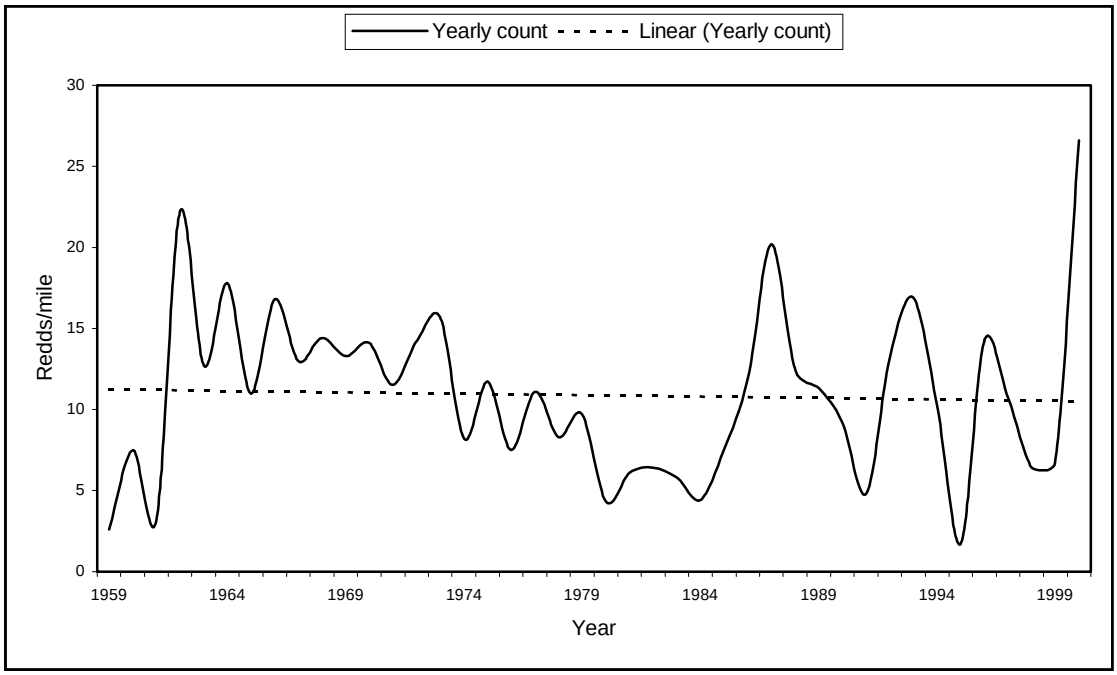


On March 25, 1999, the Steelhead in the Mid-Columbia ESU were listed by NMFS under the Endangered Species Act as a Threatened species. The John Day, Umatilla, and Walla Walla River drainages are in the Mid-Columbia ESU. Biological Assessments of on-going and proposed activities are being prepared at this time to document the environmental baseline and assess effects of Federal actions.

Chinook Salmon

The Oregon Department of Fish and Wildlife (ODFW) established spring chinook spawning distribution and abundance index reaches in the John Day River drainage in 1959. The purpose of the monitoring is to document the Chinook spawning trends in the basin. Redds are counted on representative reaches of streams each year. Index reaches on the North Fork John Day River, Granite Creek, Clear Creek, and Wenaha River are on the Umatilla National Forest. Figure U-9 displays the redd count trend, summarized in redds per mile, for the John Day basin with data from the last 41 years. The dotted line indicates the overall trend.

Figure U-9
JOHN DAY RIVER BASIN CHINOOK SALMON REDD COUNTS 1959-2000



Spring Chinook spawning was way up in 2000 as shown in Table U-4, a summary of the last 8 years of data from index reaches on the North Fork John Day River and its tributaries Granite Creek and Clear Creek.

Table U-4
ODFW CHINOOK REDD COUNTS - REDDS/MILE
North Fork John Day River Drainage

Index Reach	1992	1993	1994	1995	1996	1997	1998	1999	2000
North Fork John Day	18.8	21.1	11.2	1.5	16.2	10.9	5.6	6.7	26.9
Granite Creek	16.5	19.8	14.5	2.2	14.7	10.0	8.4	11.6	28.0
Clear Creek	11.7	25.6	4.0	2.8	9.5	7.2	2.8	3.8	20.0

The long-term trends for spring chinook redd counts on the North Fork John Day River is slightly up as shown in figure U-10 and down for the Granite Creek system, Figure U-11, which includes both the Granite Creek and Clear Creek index sites.

Figure U-10
NORTH FORK JOHN DAY RIVER CHINOOK SALMON REDD COUNTS 1964-2000

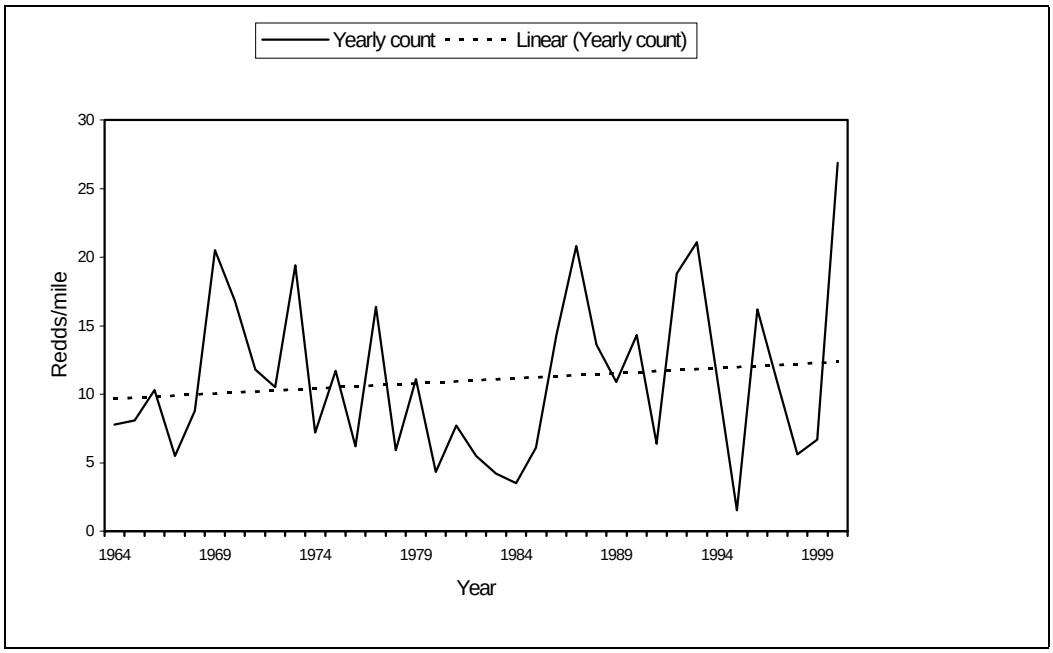
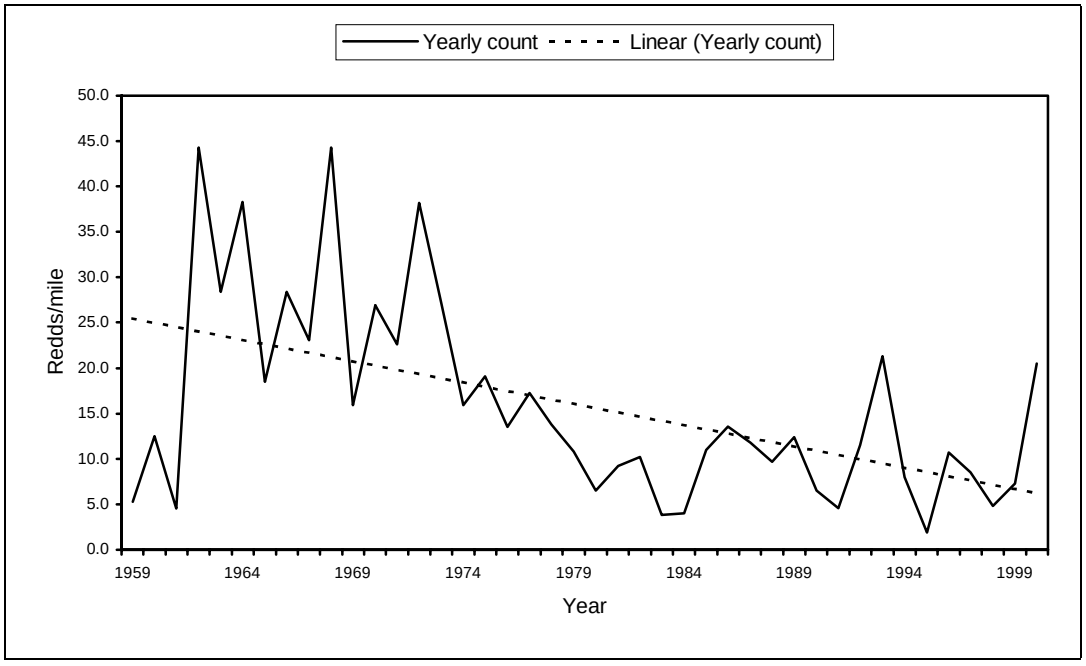


Figure U-11
GRANITE CREEK SYSTEM CHINOOK SALMON REDD COUNTS 1959-2000



The National Marine Fisheries Service listed the Snake River spring chinook salmon and Snake River fall chinook salmon as threatened species in May 1992. Critical habitat was designated for both species in December 1993. Fall chinook and their critical habitat are not found on the Umatilla National Forest but are downstream from several of the Forest's Snake and Columbia River tributaries. Snake River spring chinook are found in the Tucannon watershed and major Grande Ronde tributaries on the Forest. Table U-5 lists data from index reach monitoring within the Wenaha River wilderness on the Forest. Chinook numbers have declined within the wilderness at approximately the same rate as other, more developed subwatersheds in the Grande Ronde subbasin (ODFW 1990).

Table U-5
CHINOOK COUNTS BY INDEX REACH -- OREGON

	Year	No. of Redds	No. of Carcasses	No. of Live Fish
ODFW MEASUREMENTS				
S. Fork Wenaha River (above Milk Cr. to Forks)	1994	12	0	2
	1995	2	0	1
	1996	28	3	16
	1997	35	9	11
	1998	24	11	13
	1999	-	-	-
	2000	57	13	27
Wenaha River (Forks to Crooked Creek)	1994	30	5	18
	1995	18	3	10
	1996	69	11	54
	1997	33	27	18
	1998	38	12	31
	1999	-	-	-
	2000	61	19	48
Milk Creek (tributary of Wenaha River	1994	0	0	0
	1995	0	0	0
	1996	0	0	0
	1997	0	0	0
	1998	0	0	0
	1999	-	-	-
	2000	0	0	1
Butte Creek (tributary to Wenaha River)	1994	0	0	0
	1995	1	0	0
	1996	5	1	3
	1997	4	1	0
	1998	3	0	0
	1999	-	-	-
	2000	1	0	1

Chinook salmon spawning escapement potential prior to mainstem Columbia River and Snake River dam construction was estimated at 20,000 fish (Van Cleave and Ting, Oregon Fish Commission, unpublished report). Actual escapement in 1957 was estimated at 12,200 spring chinook (ODFW 1990). An estimated 8,400 spring chinook returned to the Grande Ronde subbasin in the early 1970s (Smith 1975). Since 1975, Grande Ronde spring chinook must pass a total of four mainstem Columbia River dams and four mainstem Snake River dams. Annual escapement estimates by ODFW for 1977 through 1987 range from 324 to 1,715.

Lookingglass Creek is a tributary of the Grande Ronde River and was considered one of the major spring chinook producers in the subbasin. The wild spring chinook of Lookingglass Creek were incorporated in the Lookingglass Creek hatchery stock developed after completion of the hatchery in 1982. Although some returning adults are able to pass over the hatchery weir each year and spawn naturally, it is currently believed that these fish are of hatchery origin. The wild spring chinook population of Lookingglass Creek is extirpated.

Asotin Creek chinook spawning ground surveys conducted by the Washington Department of Fish and Wildlife (WDFW) were reported in the 1997 Annual Report for the Tucannon River Spring Chinook Hatchery Evaluation, September 1998. Spawning ground surveys have been conducted by WDFW since 1984. The results of these surveys are included in Table U-6. The WDFW concludes that the survey results indicate spring chinook salmon in Asotin Creek have been extirpated. Any adult salmon that return in future years will likely be strays from other basins.

Table U-6
CHINOOK SALMON COUNTS ON NORTH FORK ASOTIN CREEK - 1984-1997

Year	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Redds	21	8	1	3	1	0	2	0	0	2	0	0	0	0
Live Fish	12	7	3	6	0	0		0	0	0	0	0	0	0
Carcasses	5	1	0	0	0	0	0	0	0	1	0	0	0	0

Historic Tucannon River runs of spring chinook salmon averaged approximately 2,400 adults annually (WDFW, 1992). The Lyons Ferry and Tucannon hatcheries were built with a mitigation goal of 1,152 spring Chinook salmon of Tucannon River stock under the Lower Snake River Compensation Plan. The hatcheries were to compensate for the loss of spring chinook production due to hydroelectric development. The mitigation goal of 1,152 spring chinook has not been achieved. Data published in the Tucannon River Spring Chinook Salmon Hatchery Evaluation Program (WDFW, 2000) shown here in table U-6 and conclusions reported suggest that the natural spring chinook salmon population is being replaced by hatchery stock.

Table U-7
ESTIMATED SPRING CHINOOK SALMON ESCAPEMENT TO THE TUCANNON RIVER, 1985-1999

Year[1]	Total Redds	Fish/Redd Ratio[2]	Spawning fish in the river	Broodstock Collected	Pre-spawning Mortalities	Total Escapement	Percent Natural
1985	189	2.85	539	22	0	561	100
1986	200	2.85	570	116	0	686	100
1987	185	2.85	527	101	0	628	100
1988	117	2.85	333	125	0	458	96
1989	106	2.85	302	169	0	471	77
1990	180	3.39	610	135	7	753	66
1991	90	4.33	390	130	8	258	49
1992	200	282	564	97	81	753	55
1993	192	2.27	436	97	56	589	54
1994	44	1.59	70	70	0	140	70
1995	5	2.20	11	43	0	54	39
1996	68	2.00	136	80	11	247	66
1997	73	2	146	97	45	351	46
1998	26	1.94	51	89	4	144	59
1999	41	2.60	107	136	2	245	1

1 In 1994, 1995, 1998 and 1999, fish were not passed upstream; and in 1996 and 1997, high pre-spawning mortality occurred in fish passed above the trap, therefore the fish/redd ratio was based on the sex ratio of broodstock collected.
2 From 1985-1989 the TFH trap was temporary, thereby underestimating total fish passed upstream of the trap. The 1985-1989 fish/redd ratios were calculated from the 1990-1993 average, excluding 1991 because of a large jack run.

Spring chinook returning to the Tucannon River are stopped at the Tucannon Fish Hatchery trap. Fish are not passed above the trap but each year a few fish have been found above the trap. It is thought that they jump the hatchery intake dam during high spring flows. Natural spawning is not taking place on the National Forest. There is natural spawning below the Tucannon Fish Hatchery trap.

Bull Trout

Columbia River bull trout (*Salvelinus confluentus*) were listed as a threatened species by the U.S. Fish and Wildlife Service in June 1998. Bull trout are present on the Umatilla NF in the Umatilla, Walla Walla, Tucannon, Asotin, Wenaha, Lookingglass, and North Fork John Day drainages. The Forest, in cooperation with Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, and Confederated Tribes of the Umatilla Indian Reservation, have been conducting bull trout spawning surveys within the Umatilla, Walla Walla, Tucannon, and Wenaha Rivers, and Lookingglass Creek drainage. Results are displayed in Table U-8. Additional time is needed to determine population trends.

Table U-8
BULL TROUT REDD COUNTS

Subwatersheds	Miles Surveyed	Total Bull Trout Redd Count						
		1994	1995	1996	1997	1998	1999	2000
Tucannon	8.5	131	114	184	78	108	222	151
Lookingglass Creek	12.3	15	16	29	39	62	57	53
Touchet	8.2	86	27*	64	41*	95	146	117
Mill Creek	15.7	191	165	134	118	137	190	191
S.F. Walla Walla	21.5	143	114	177	180	276	431	336
Umatilla	18.7	39	22	37	32	84	154	143
TOTAL	84.9	605	458	625	488	762	1,200	991

* Counts may be low due to late season monitoring.

Resident redband trout

Resident redband trout, a subspecies of rainbow trout east of the Cascade Mountains, may share a common gene pool with anadromous steelhead trout in the same geographic area. Resident fish are generally considered part of the steelhead Evolutionary Significant Unit (ESU) but may not be included when an anadromous life form is listed under the Endangered Species Act. The National Marine Fisheries Service did not include resident redband trout in the steelhead listings.

Fire Recovery

The North Fork John Day Ranger District has been monitoring recovery of fish populations in streams that experienced fish kills caused by the 1996 Tower Fire. This was the fifth and last year of population monitoring in affected and control reaches. Population estimates are for resident redband trout within 100-meter sample areas, except where noted. The Tower Fire effects monitoring study of fish populations field work is completed. Preliminary results are displayed in Table U-9. The results will be published in the near future.

Table U-9
REDBAND TROUT POPULATION ESTIMATES
for the surveyed reach (standard error in parentheses)

Stream	Reach	1996	1997	1998	1999	2000
Texas Bar	Treatment #1	No Fish	3 (0)	20.5 (2.2)	(1.1)	43.7 (3.7)
	Treatment #2	No Fish	2 (0)	36 (1.4)	107.8 (3.5)	34.8 (1.2)
South Fork	Treatment #1	31.7 (2)	96.4 (4.1)	59.5 (7.0)*	(5.3)	87.9 (1.9)
Cable	Treatment #2	No Fish	96.9 (4.1)	103.2 (3.7)	400.3 (4.8)	73.1 (2.75)
Oriental	Treatment #2	No Fish	5.3 (1.0)	--	39.5 (2.6)	26.9 (0.5)
Texas Bar	Control #1	76.5 (4.2)	136.9 (5.3)	112.5 (3.3)	(2.4)	108.2 (6.32)
	Control #2	128.2 (9.7)	150.2 (6.5)	170.7 (6.1)	91.7 (3.5)	74.8 (3.1)
Hidaway	Control #2 (50m)	84.3 (6.6)	47.6 (1.0)	107.4 (5.5)	--	--
Oriental	Control #1	77.8 (7.9)	67.8 (3.7)	2 (0)**	(4.1)	85 (4.7)
	Control #2	94.3 (6.3)	50.7 (2.7)	1 (0)**	57.4 (2.2)	42.4 (1.6)
Frazier	Control	--	--	55.7 (1.2)	28.5 (3.8)	33.8 (2.21)
Battle	Control	--	--	63.0 (5.6)	42.7 (1.8)	79 (4.3)
Sponge	Control	--	--	28.8 (1.3)	37.0 (3.9)	50 (2.7)

* Treatment #1 in South Fork Cable was moved during 1998; the new reach partially overlaps the old reach.
** Oriental Creek experienced a debris torrent in spring of 1998, altering habitat and likely pushing all fish out of the stream.

Evaluation:

It is well recognized that the recovery of listed species in the Columbia Basin will require a coordinated effort across all land ownerships and actions that effect salmon. Fish habitat on the National Forest is generally in better condition then habitat on non-federal land.

Recommended Action:

- Almost all subwatersheds on the Umatilla National Forest contain habitat for at least one listed aquatic species. The Forest should continue to work closely with the Regulatory Agencies toward recovery of the listed species and restoration of their designated critical habitat. Through consultation with the Regulatory Agencies, the Forest should protect habitat that is in the best condition and work to restore fish habitat that presently supports fish populations at lower levels because habitat is in poorer condition.

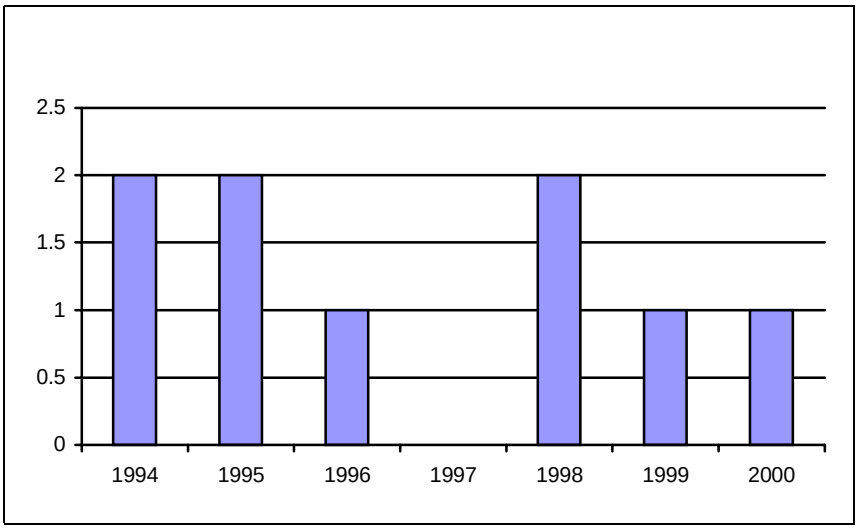
Threatened/Endangered/Sensitive Wildlife Species
Item 28

Questions: Bald Eagles: *Are potential habitats, including nest sites, communal roosts, and associated foraging habitats, being identified and planned to assure species recovery as specified in the Recovery Plans and in the Forest Plan? Are wintering populations stable or increasing?*
Peregrine Falcons*: Are nesting and associated foraging habitats being identified? Are potential nest habitats identified and being managed to maintain suitability?*
Sensitive Species*: Are potential habitats being identified and protected to maintain identified species and to ensure management standards are being met?*

Bald Eagle

Monitoring occurred at the Dry Creek bald eagle nest site in fiscal year 2000. However, only one visit occurred by mid summer, because of reduced funding. During the visit, one fledged young eaglet was observed at the nest site. Since 1994, this nest has fledged nine eaglets, for an average of 1.3 eaglets fledged per year, Figure U-12. In 1999, the Heppner Ranger District implemented the Dry Creek site-specific management plan.

Figure U-12
DRY CREEK EAGLE NEST SITE
Number of Eaglets Fledged



A potential nest site on the North Fork John Day Ranger District, monitored in the spring and summer, yielded no observed eagle use at the site.

Two winter bald eagle survey routes monitored since 1991 on the North Fork John Day Ranger District, were run in January 2000. The survey resulted in no active winter roosts along the route in 2000.

Canada Lynx

Inventories occurred in FY2000 on the North Fork John Day Ranger District to determine lynx presence/absence. The District used the National Lynx Detection Protocol ((McKelvey, et al 1999) i.e. scented, studded carpet pad to collect facial hair). The survey has 25 transects with five stations on each transect which cover approximately 125 square miles of habitat.. Carpet pads collected with hair are analyzed for lynx DNA. Results of the survey are pending.

Peregrine Falcon

Surveys did not occur on the Forest for peregrine falcons in FY2000. However, a suspected nest site visited in the North Fork John Day Wilderness during the non-nesting season yielded no observed peregrine falcons. In 2001, a protocol survey is planned for the area. Incidental falcon sightings continue to occur in July and August at various locations on the Forest. These late season observations could be dispersing juveniles or individuals migrating through the area. The Forest has no documented peregrine falcon aeries.

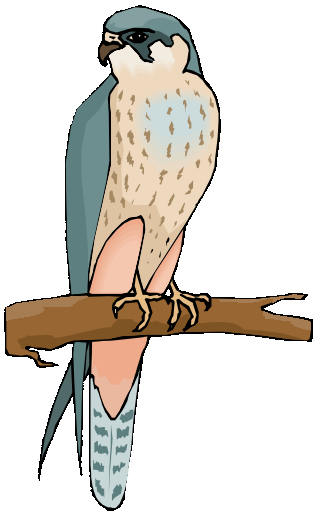
Sensitive Species

The project "Specialist Report" or Biological Evaluation identifies and provides protective measures for Sensitive species potential habitat on the Forest. These reports contain results of the evaluation, standards, and recommendations for managing those species. In addition, the completed watershed analysis (Umatilla and Meacham) identifies habitat and recommendations for restoration or improvement.

Management activities in FY2000 did not adversely affect Threatened and Endangered (T&E) species or their habitat on the Forest. Potential impacts are typically reduced or mitigated to a "not likely to adversely affect" on the species. Effects on T&E species continue to be documented in the project Biological Evaluation or Biological Assessment. The Forest continues to use the project evaluation process to analyze T&E species and their habitat.

Recommended Actions:

- Continue monitoring bald eagle nest sites and winter roosting routes on the Forest. Document results and/or findings in the NRIS-Fauna database.
- Continue monitoring for lynx on the North Fork John Day Ranger District. Expand the survey protocol to the Walla Walla Ranger District in FY 2001.
- Investigate peregrine falcon sighting for potential aeries on the Forest.
- Continue to analyze impacts to Threatened, Endangered, and Sensitive species and their habitats. Document finding and evaluations in the project Specialist Report and/or Biological Evaluation/Assessment.



Availability of Firewood
Item 44

Questions: How much firewood is being provided? Is sufficient fuelwood being offered to the interested public?

The Forest provided 2.7 million board feet of firewood in FY2000 (Table U-10), approximately 18 percent of the Forest Plan projected amount of 15 MMBF. Significant reductions in firewood sold in 2000 may have been a reflection of the locally mild winters over the past few years.

Table U-10
FIREWOOD PROGRAM - CHARGE PERMITS ISSUED 1989-2000

Year	Number	MMBF
1989	4,794	12.4
1990	3,871	8.0
1991	3,792	8.7
1992	2,838	6.8
1993	3,786	9.5
1994	2,373	5.5
1995	3,214	9.2
1996	2,115	5.9
1997	2,724	5.2
1998	2,308	4.0
1999	2,869	4.1
2000	1,787	2.7

Demand for firewood may increase in response to escalating energy costs and predictions of power shortages. The new co-generation plant located in Heppner may also become a factor in the local fuelwood market. The Forest continues to anticipate a surplus of firewood for the next several years, especially on the south end districts. However, the size and species of wood available and the increasing distance of available supplies from population centers may not meet public demand as well as has been possible in the past.

Recommended Action:

- Continue to monitor.

National Environmental Policy Act (NEPA)/National Forest Management Act (NFMA)

Item 53

Questions: Are project-level decisions made using appropriate NEPA/NFMA procedures including analysis of cumulative effects? Are project-level decisions tiered to, and in accord with, the Forest Plan?

In FY2000, six environmental assessments (EAs) and 35 categorical exclusions (CEs) were prepared on the Umatilla National Forest. The number of CEs prepared in FY2000 is slightly lower than the number prepared in FY 99, when 42 CEs were completed. Although the number of EA's prepared this year is up slightly from FY 99, the number is still well below the number prepared in the early and mid 1990s. This can be attributed to several factors. First, the timber sale planning workload has been declining and in the past, many of the EAs were prepared for timber harvest. Second, the Forest is in the process of preparing several restoration environmental impact statements (EISs) that will be completed in FY 2001. Since these documents normally cover a large area and include several different projects, they may take the place of several EAs.

The CEs covered a wide range of activities. However in September 1999, a nation wide injunction was issued that precluded the use of the timber harvest CE category. Until the court case is settled, CEs may no longer be used to document timber harvest.

Because of the limited number of EAs completed, no formal NEPA/NFMA compliance reviews were conducted by the Forest Interdisciplinary (ID) team this fiscal year. Several less formal reviews by ranger district NEPA coordinators and district management teams, as well as Supervisor's Office staff were conducted. Generally, it was found that all NEPA requirements were being met.

Recommended Action:

- The Forest is completing fewer, but more complex environmental documents. The Forest NEPA coordinator needs to evaluate the need for additional training to facilitate completion of the large environmental impact statements.

The following table provides a summary of selected Forest accomplishments and resource outputs for FY2000. Where possible, these are compared to Forest Plan estimates, but in many cases, the unit of measure has changed since the Forest Plan was completed and direct comparison is no longer possible.

Table U-11
FOREST ACCOMPLISHMENTS – FISCAL YEAR 2000

Resource Activity/Output	Unit of Measure	Forest Plan Projection (Avg/Year)	Actual FY2000 Forest Output	% Actual to Forest Plan
FIRE				
Natural Fuel Treatment	Acres	3,400	5334	157
Activity Fuel Treatment	Acres	5,800	834	14
FISH				
Anadromous Stream Restored/Enhanced	Miles	Not Specified	26	NA
Inland Stream Restored/Enhanced	Miles	Not Specified	13	NA
RANGE				
Permitted Grazing – Sheep & Goats			31,000	
Permitted Grazing - Cattle & Horses	AUM	58,000 (combined)	32,600	110
Non-structural Improvements		Not Specified	148	NA
Structural Improvements		Not Specified	45	NA
Noxious Weed Treatment	Acres	Not Specified	5325	NA
RECREATION				
Trail Construction/Reconstruction	Miles	30	9.1	30
Developed Recreation Capacity	PAOTS	255,000	1,031,783	405
ROADS				
Construction	Miles	92	0	0
Reconstruction	Miles	94	20.79	22
Decommission	Miles	Not Specified	19.41	NA
Obliterated	Miles	Not Specified	0	NA
THREATENED, ENDANGERED, and SENSITIVE SPECIES				
Aquatic Habitat Restored/Enhanced	Miles	Not Specified	2	NA
Terrestrial Habitat Restored/Enhanced	Acres	Not Specified	0	NA
TIMBER				
Total Program Sale Quantity	MMBF	159	17	11
Reforestation (planting)	Acres	4,400	5,498	125
Reforestation (natural)	Acres	3,100	3,986	129
Timber Stand Improvement	Acres	2,900	3,567	123
WILDLIFE				
Habitat Restored/Enhanced	Acres	10,000	1945	19
Habitat Structures	Structures	75	5	7
WATER				
Watershed Improvements	Acres	454	198	44