FY 2008 Monitoring Report

Umpqua National Forest

September 2009

Dear Friends of the Umpqua National Forest:

Enclosed are the results of the fiscal year (FY) 2008 Umpqua National Forest monitoring activities. This report summarizes the monitoring that was completed, and what was learned as a result. Resource specialists have also formulated recommendations for changes in the monitoring program.

Please direct comments or questions on this report to: Joyce Thompson, Planning and Products Staff, Umpqua National Forest, 2900 NW Stewart Parkway, Roseburg, OR 97471, 541-957-3457.

/s/ Clifford J. Dils

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Introduction

The Umpqua National Forest annually monitors and evaluates programs and projects to determine whether they comply with management direction in its Land and Resource Management Plan (LRMP), as revised by the Northwest Forest Plan.

Monitoring and evaluation is an ongoing process, specifically designed to insure that LRMP goals and objectives are being achieved; standards and guidelines are being properly implemented; and environmental effects are occurring as predicted. The evaluation of monitoring results allows the Forest Supervisor to initiate action to improve compliance with management direction where needed, improve cost effectiveness, and determine if any amendments to the LRMP are needed to improve resource management.

Monitoring is conducted by field reviews of projects and by inventory and survey work conducted by Forest Service resource specialists and other cooperators.

This monitoring report for Fiscal Year (FY) 2008 is divided by resource areas with general overviews of the monitoring conducted in the Executive Summary, followed by detailed resource reports, which detail the results of the monitoring along with recommendations for future years.

Executive Summary

Fire and Fuels

For FY08, the Forest accomplished 1,873 acres of Wildfire Hazardous Fuels (WFHF) core accomplishment and an additional 4,451 acres of integrated acres through developing relationships with other resource areas. Brush Disposal (BDBD) accomplishments on the Forest included treatment on 821 acres. Results of all prescribed burns were evaluated on post monitoring burn forms attached to the District burn plans.

Budget shortfalls were the limiting factor in accomplishing additional acres; the Forest is poised to take on additional target if funds were made available.

Fisheries

For FY08, the Forest completed 29 miles of Level II stream surveys, operated 2 smolt traps on the Tiller Ranger District, and completed spawning ground surveys and redd counts on numerous streams across the Forest.

The streams surveys found that many streams within the managed landscape continue to have "at risk" or "not properly functioning" attributes, including high water temperature, lack of floodplain connectivity, scoured out stream channels and reduced large woody material, primarily because of past management practices. Recent instream work and other restoration efforts are improving some attributes and overall conditions in a small number of high priority streams; however, much work remains to be done to move existing conditions toward the desired condition on many more streams.

The smolt trap returns on the South Umpqua River continue to show low levels of production for anadromous fish, despite generally favorable ocean conditions, restricted harvest and high adult survival rates. Low productivity may be tied to redd scouring, a result of simplified spawning habitat in combination with altered stream flow regimes (higher, more frequent winter peaks). Additionally, structurally simplified rearing habitat in combination with high summer water temperatures are factors in reducing overall anadromous (juvenile) fish production.

Spawning surveys demonstrate that portions of the North Umpqua River and several of its tributaries within the Forest are disproportionately important in salmon and steelhead production, relative to the rest of the Umpqua basin. This is particularly the case for two of the "healthiest" populations, spring Chinook salmon and winter steelhead.

Heritage

Monitoring took place at 171 prehistoric or historic sites, and on 16 project areas, totaling 178 acres. Looting has declined since 2007.

Minerals

Not reported.

Range

The Forest livestock program is implemented primarily on the Tiller Ranger District. Approximately 47,790 acres of allotments, including the Drew Creek, Diamond Rock and Divide Allotments, as well as the Pickett Butte pasture of the Summit Allotment and the Collins Ridge pasture of the Acker Divide Allotment, were monitored during the 2008 grazing season. The Forest did not authorize use of the Joe Hall Pasture during 2008 because of operational considerations.

Recreation

Overall summer recreation use remained constant, although visitation on the Diamond Lake Ranger District decreased at Lemolo Lake for water quality reasons and increased at Diamond Lake Campground because of the improved water quality and recreational fisheries.

Effectiveness and validation monitoring occurred at the Ranger District level. The Diamond Lake Restoration Project FEIS, completed in 2004, continued to be implemented into 2008.

Soil and Water

Best Management Practices (BMP) checklists were written for 8 out of 20 ground-disturbing activities in FY08, or 40 percent. Those BMP checklists are being implemented. Twenty-eight streams were monitored for temperature at Forest Plan monitoring sites and many more on other streams. Monitoring showed that temperature has not changed on most streams, but 2008 was among the coolest seven years since monitoring began on some streams. Five streams were monitored for turbidity; the monitoring results showed that turbidity levels have not changed (attached graphs). No soil productivity reports were completed on the Forest.

Timber and Vegetation Management

The timber volume offered for sale from the Umpqua National Forest in FY 08 was over 50 million board feet, primarily from commercial thinnings. The Forest continues to use intermediate entries in those older managed plantations that present an opportunity for commercial thinning, while planning fuels reduction and density management projects in areas considered to be at risk of experiencing wildfire.

Transportation

Not Reported.

Visuals

Scenic quality continues to be assessed during project planning efforts across the Forest. Recently implemented thinning projects have had little to no impact on visual quality objectives.

Wild and Scenic Rivers

Not Reported.

Wilderness

Not Reported.

Wildlife and Threatened/Endangered Species

In 2008, the five-year monitoring study of the northern spotted owl (*Strix occidentalis caurina*) was discontinued, as responses were poor. This monitoring study was proposed and funded by the USFWS, and was to determine effects on spotted owls of forest management activities designed to reduce fuels and thin timber stands. As survey responses were poor and no spotted owls were located to band during follow-up surveys, the study was discontinued.

In 2008, the Forest coordinated with the Oregon Department of Fish and Wildlife (ODFW), as they continued to monitor deer and elk populations. In general, Forest-wide observations show that elk trends appear to be declining.

Townsend's bats are monitored at one site on the Forest. The population appears to be stable at the North Umpqua site.

Bald eagles were monitored at all four known sites on the Forest; pair occupancy was validated at only one of these sites. Peregrine falcon sites were also monitored. Eight of fourteen known sites were monitored with fluctuating reproductive success noted for FY08.

Finally, primary cavity nesters and landbirds were monitored on two project areas on the forest. A Breeding Bird Survey (BBS) route was monitored again within the boundary of the Apple Fire. The Forest is beginning to use monitoring data from nearby BBS routes adjacent to the Forest.

Detailed Resource Area Reports

Fire and Fuels

For FY08, the Forest accomplished 1,873 acres of WFHF core accomplishment and an additional 4,451 acres of integrated acres through developing relationships with other resource areas. Brush disposal (BDBD) accomplishments on the Forest included treatment on 821 acres. Results of all prescribed burns were evaluated on post monitoring burn forms attached to the District burn plans.

Budget shortfalls were the limiting factor in accomplishing additional acres; the Forest is poised to take on additional target if funds were made available.

What monitoring did the Umpqua National Forest do in 2008?

The Umpqua National Forest Land and Resource Management Plan (LRMP) requires monitoring as a periodic comparison between the end results that are realized and those projected in the LRMP. In Chapter V of the LRMP (Table V-1) there are specific items that require monitoring by the Fire Management Staff area. These are:

1. ET112/NFTM 51, stand destruction caused by wildland fires. The objective of monitoring here is to determine if plan output assumptions are not valid because of catastrophic losses from wildland fires. Unit of measure used to determine this is acres and percent of area damaged – this assessment is done following large scale wildfires and summaries are prepared when applicable and are not addressed in this monitoring report (see Rattle Fire Assessment as an example).
2. PF2 BDBD FFFP 54, fuels treatment. The objective listed is to determine if fuels treatments are meeting expected resource management and protection objectives. Unit of measurement is the percent of fuel treatment acres meeting resource management and protection objectives and acres of prescribed burning – this monitoring is done after projects are implemented and will not be addressed in this monitoring report.
3. PF11 FFFP 55, Fire Management. Objective is to determine protection from wildland fire for forest users, improvements, and forest resources are being met through a fire management program that is cost efficient and responsive to Land and Resource management goals and objectives. Unit of measure is acres and cost.
4. FA121/NFSW 56, Total Suspended Particulates (TSP). Objective is to attain compliance with State and Federal laws, Clean Air Act, and State Implementation Plan. Unit of measure is tons of TSP.

TSP[1] – According to the TSP production charts, the Umpqua NF remains well below the TSP goal. The guidelines that the Forest adheres to for smoke management, the Forest is allotted 6,550 tons for the year; the Forest was well below that amount. With this data, the Forest meets the objective set in monitoring item 4 as stated above.

What did the Forest learn in 2008?

Suppression/Presuppression

Fuels – The Forest fuels program continues to be constrained by a budget process that is driven, in part, by unit costs (i.e. $/acre). As expressed in the FY08 Deployment Criteria, we continue to have one of the highest unit costs in the region, which makes us less competitive for funding

[1] TSP is defined as any finely divided material (solid or liquid) that is airborne with an aerodynamic diameter smaller than a few hundred micrometers.

allocations when compared to east side forests despite having comparable fire hazard conditions. However, significant strides have been made in recent years to lower these costs. It is also important to recognize that unit costs will always be higher in the forest and fuel types found on the Umpqua, when compared to east-side forests. The Forest reports that thousands of additional acres of fuels treatments could be accomplished if fully funded.

TSP – The Forest continues to maintain excellent air quality standards. No smoke intrusions occurred in any designated areas from the prescribed burns. Prescribed fire smoke monitoring continues with audits being accomplished. Total tons and suspended particulates are much lower than historic figures. These low levels are maintained through reducing consumption by broadcast burning in the spring under high fuel moisture conditions and developing prescriptions that leave sufficient large woody material for long term site productivity.

Amendments

A Forest Plan amendment is needed to move RAWS station sites into administrative sites; additional planning is needed to maintain these permanent sites to standards set within RAWS station maintenance plans. The planning process needs to be funded and when budgeted, Fire Management will be closely involved in the process.

Recommendations

For FY2008, recommendations include:

Fuels – The Forest needs to continue to increase the rate of implementation of fuels treatments to reduce the risk of wildland fires in Wildland Urban Interface (WUI) and high value resource areas. The program needs to continue to develop strategies to lower unit costs, explore opportunities in stewardship contracting and biomass removals to offset fuels treatment costs with commercial removals, and build new, and improve existing, relationships with other resource areas to design projects that meet multiple objectives and leverage funding. The fuels program needs to better integrate with other resource areas to identify values, other than WUI, that require protection from uncharacteristic fire behavior. The program also needs to strive toward better understanding, prioritization, and communication of optimal locations of treatment areas to most efficiently allocate scarce funds. For example, treatment locations should be designed in a landscape context and positioned efficiently and purposefully to meet the future demands of large problem fires, Wildland Fire Use in appropriate areas, and in anticipation of increased use of the less intensive options available under Appropriate Management Response expected in future fire seasons. Program managers need to continue to demonstrate efficiency and make our case for funding that is equitable with the rest of SW Oregon. The Forest needs to remain engaged with the County and communities in any further community protection planning. The fuels program should continue to support, and encourage biomass technology and investment through nurturing partnerships, building awareness, supporting research and demonstration efforts, demonstrating and communicating supply availability, and including biomass extraction options in project planning.

TSP – The Forest will continue to monitor TSP levels. It is anticipated that if the budget allows increased treatment acres, we will remain within acceptable levels of compliance.

Fisheries

Forest Plan Monitoring Elements:

ME-06, Channel Cumulative Effects (Level II Stream Inventory), Table V-1, Page 14; ME-11, Smolt Trapping, Table V-1, Page 16; ME-12, Pool Quality, Table V-1, Page 16; ME-13, Aquatic Macroinvertebrates, Table V-1, Page 16; ME-24, Large Woody Material, Table V-1, Page 22.

Other Monitoring Elements:

Adult Salmon & Steelhead Spawning Surveys/Redd Counts

What monitoring did the Umpqua National Forest do in 2008?

ME-06: Two of the four Ranger Districts (Tiller- 12.2 miles and North Umpqua- 17.1 miles) conducted Level II Stream Surveys in 2008, totaling 29.3 miles. This represents 17% of the Forest Plan level of 176 miles annually.

ME-11: Two smolt traps (South Umpqua River & Jackson Creek) were operated in 2008, both at the Tiller Ranger District. This represents 20% of the Forest Plan level of 10 sites/year.

ME-12: No Pool Quality transects were inventoried in 2008. This represents 0% of the Forest Plan level of 8 transects.

ME-13: No macroinvertebrate sites were sampled or analyzed in 2008. This represents 0% of the Forest Plan (35 sites) level.

ME-24: No Large Woody Material transects were inventoried in 2008. This represents 0% of the Forest Plan level of 8 transects.

Other: Spawning Survey/Redd Counts were conducted on numerous streams on three of the four Ranger Districts for three different species.

- Tiller completed multiple surveys for coho salmon on transects in Dumont, Boulder, Joe Hall and Beaver Creeks in 2008. Additionally, Tiller completed several mid-summer spring Chinook holding counts in established index pools in the South Umpqua River.

- Diamond Lake completed multiple surveys for coho salmon on two stream transects in Boulder and Copeland Creeks. Additionally, Diamond Lake completed multiple surveys for steelhead in Copeland Creek.

- North Umpqua completed multiple surveys for steelhead on several transects in the Steamboat Creek watershed and an adult spring Chinook spawning survey on the mainstem North Umpqua River in 2008.

What did the Forest learn in 2008?

The Stream Survey work was conducted primarily to establish baseline conditions. Results further supports previous findings that many stream segments on the Forest in “managed” landscapes currently have numerous “At Risk” or “Not Properly Functioning” attributes, including: high summer water temperatures, loss of floodplain connectivity, altered (coarsened) streambed substrate composition, simplified and widened stream channel morphology, and reduced Large Woody Debris (LWD) loading. These watersheds are in need of substantial protection and/or restoration in order to achieve Forest Plan Desired Conditions and contribute to the recovery of desired native Threatened, Endangered and Sensitive (TES) fish and other aquatic organisms. Restoration will be based on FY-2000 Restoration Business Plan (as amended) priorities, e.g., Steamboat, Middle South Umpqua, Jackson and Middle North Umpqua watersheds. Planning for large-scale ecological restoration in the Upper South Umpqua watershed should be initiated.

Results from the Smolt Trapping conducted in both years shows a continuing trend of very low levels of production of several native anadromous South Umpqua River fish stocks, including: spring Chinook, coho, and searun cutthroat trout; despite recent favorable ocean conditions and resultant higher adult survival rates. This suggests that spawning and juvenile rearing habitat in many parts of the South Umpqua sub-basin remain impaired and are in need of restoration. The capture of large numbers of age 0 young-of-the-year coho, but very few mature age 1+ smolts, suggests that redd scouring, a result of simplified spawning habitat in combination with altered flow regimes (higher, more frequent peaks), is likely a serious factor limiting production. Additionally, structurally simplified rearing habitat in combination with high summer water temperatures is also likely a significant factor that reduces overall anadromous fish production. For further information, see Forest Monitoring Plan elements NFSW-9 (Stream Temperatures) and NFSW-10 (Sediment, Turbidity, and Streamflow).

Spawning Surveys continue to provide important information on differences and similarities in annual abundance and distribution of many of the Forest's native salmon and steelhead stocks. The change in native-stock adult abundance, which for some stocks is substantially determined by off-forest conditions (ocean productivity) and/or activities (harvest, brood collection) was mixed. Healthier stocks, such as North Umpqua spring Chinook and winter-run steelhead, saw generally constant numbers over the past 10-year average; while most of the more sensitive stocks, such as: searun cutthroat (Forestwide), coho (Forestwide), and South Umpqua spring Chinook, had small or no apparent increases in abundance. It is likely that natural production of the healthier stocks (both of which utilize the high quality rearing habitat afforded by the North Umpqua main-stem) was large enough to be able to take advantage of the excellent ocean conditions and reduced harvest levels over the past two years, as has been hypothesized as the reason for generally larger salmon returns (wild and hatchery) throughout the region for the period 2002-2006. Conversely, low natural productivity of the depressed stocks may have precluded a noticeable increase. No trends in abundance are evident at this time.

Amendments

No amendments are recommended at this time.

Recommendations

- At a minimum, increase present aquatic monitoring efforts to include at least 15 macroinvertebrate sites.
- Continue to make water quality and fish habitat/population monitoring the highest priority for limited NFIM funds.
- Complete Watershed Action Plans in accordance with the Regional Aquatic Restoration Strategy on Steamboat, Middle South and Jackson 5th field watersheds.
- Continue to emphasize implementation of the Restoration Business plan. Update the RBP to incorporate Hydropower Mitigation Fund opportunities.
- Initiate a more comprehensive effectiveness evaluation of recent large-scale habitat restoration work in the Steamboat, Jackson and Middle South Umpqua watersheds.

Heritage Resources

What monitoring did we do in 2008?

In addition to Forest Plan monitoring requirements, the Forest meets its monitoring obligations under the Programmatic Agreement between the United States Department of Agriculture Forest

Service Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Officer Regarding Cultural Resources Management in the State of Oregon by the USDA Forest Service. Monitoring is an added protection measure to prevent looting as required under the Archaeological Resource Protection Act of 1979. Law enforcement, Forest Service Heritage Program staff, and the Cow Creek Band of Umpqua Tribe of Indians continued to monitor archaeological sites considered a risk for looting. Monitoring took place at 171 prehistoric or historic sites, and on 16 project areas, totaling 178 acres.

What did we learn in 2008?

Archaeological looting has slightly decreased from 2007. Six incidents of archaeological looting were documented and an appropriate investigation was conducted for each incident. The Umpqua National Forest and the Cow Creek Band of Umpqua Tribe of Indians signed the Memorandum of Understanding between the USDA Forest Service Umpqua National Forest and Cow Creek Band of Umpqua Tribe of Indians 07-MU-11061500-024. This agreement allows for the sharing of information between the Tribe and Forest, Site Monitoring by the Tribe, surveillance equipment on loan from the Tribe to the Forest, and other Archaeological Stewardship activities. The Tribe contributed 1920 hours of volunteer labor completing site monitoring in FY08.

Amendments

No amendments are recommended at this time.

Recommendations

- Archaeologists will continue to survey in high probability areas during emergency activities.
- Consultation with the State Historic Preservation Office and Tribes will continue.
- Support of active law enforcement, the Site Stewardship Program, and public awareness needs to continue. The Forest is committed to work with law enforcement and other federal agencies to complete a heritage resource protection strategy.

Locatable and Salable Minerals

Element #57 – Administration of Locatable Minerals
Element #58 – Management of Rock Resources
Element #59 – Availability of Rock Material

What monitoring did we do in 2008?

Not reported in 2008.

Range, Livestock and Grazing

Resource Element

Umpqua National Forest Land and Resource Management Plan Chapter V: NFRG/DN12 (page V-20); NFRG/DN1 (V-46); NFRG/DN1 (V-48); NFRG-RBRB/DN221-DN222 (V-48)

What monitoring did we do in 2008?

Prior to the 2007 grazing season, the Forest issued new Term Grazing Permits and Allotment Management Plans, which are effective until 2016. These documents implement the 2006 Record of Decision. The ROD essentially continued the livestock grazing program that was in place at the time it was published, and added the 4,160-acre Joe Hall Pasture in the Summit Allotment. The allotments and pastures comprising the permitted grazing area under the ROD total 51,950 acres.

The Forest livestock program is implemented primarily on the Tiller Ranger District. Approximately 47,790 acres of allotments, including the Drew Creek, Diamond Rock and Divide Allotments; as well as the Pickett Butte and Joe Hall pastures of the Summit Allotment and the Collins Ridge pasture of the Acker Divide Allotment, were monitored during the 2008 grazing season. The yearly monitoring effort is conducted to assess how well permitted livestock grazing complies with the Forest Plan, as amended, and the Biological Opinions. The field notes and allotment monitoring reports are located at the Tiller Ranger District.

The 2008 range administration program, including the monitoring component, was fully funded.

What did we learn in 2008?

The Forest authorized 928 head months of livestock use, or about 49 percent of the use permitted by the ROD. This level of use is the lowest in recent years. It is the result of substantial nonuse by one permittee, as well as the 35-day delay in spring turnout, which reduced the number of grazing days.

The scheduled turnout date is May 1. However, range readiness assessments, which determine the actual turnout date on the basis of soil moisture conditions and plant phenology, showed unacceptably high soil moisture levels for most of May. Turnout for all allotments and pastures occurred on June 6 when soils were determined to be sufficiently dry and firm to withstand grazing.

The Forest maintains 17 permanent monitoring sites in the aforementioned allotments. These sites are located along perennial and fish-bearing streams, as well as in wetlands, meadows and conifer plantations. Monitored use includes forage utilization, as well as impacts to vegetation structure, riparian areas and streambank morphology.

Monitoring is conducted to assess compliance with the Forest Plan Standards and Guidelines. It is also intended to gather information for adaptive management applications that focuses on obtaining compliance through adjustments in management practices. The Forest Plan, itself, contains a number of management prescriptions for regulating livestock use to insure that grazing is compatible with other resource values. The ROD provides utilization standards for implementing these prescriptions. These use standards are detailed in Allotment Management Plans, which are in turn incorporated as special terms and conditions for the grazing permits.

The 2008 monitoring results indicate that permittees were able to comply with the provisions of the Allotment Management Plans. As shown in the following tables, all of the use standards were met. For the Drew Creek, Diamond Rock and Divide Allotments, the data, displayed in Table 1, was consistent with findings from prior years. Cattle impacts were actually lower for the Diamond Rock Allotment, where the permittee elected to take a 69 percent reduction in use for personal convenience.

This year marks the ninth full season of use for the three foregoing allotments after the Forest reconfigured its historic range program on the Tiller Ranger District. This change was implemented to continue to provide grazing opportunities, but within an environmental framework of moderate to low risks for resource impacts from livestock activities. This level of consistency demonstrates that the permittees for Drew Creek, Diamond Rock and Divide

Allotments have developed a pattern of use that allows livestock to be successfully grazed. The level of success reflects years of adaptive management, as well as good cooperation, timely monitoring and skillful application of practices.

Table 1. Summary of Grazing Use at Monitoring Sites on the Drew Creek, Diamond Rock and Divide Allotments.

Monitoring Sites	Site	Type	Threshold (%)	2008 Actual Use (%)
Threehorn	Riparian	Forage Use 1/	25	Not measurable
	Riparian	Vegetation Structure 2/	10	Not measurable
	Riparian	Streambank Stability 3/	20	Not detected
RD 1615	Riparian	Forage Use	25	10%
Crossover Meadows	Upland	Forage Use	25	Not measurable
	Riparian	Vegetation Structure	10	Not measurable
Peavine Camp	Riparian	Forage Use	25	Not measurable
B. Bates Meadow	Upland	Forage Use	25	<10
	Riparian	Vegetation Structure	10	<10
East Fork Cow Creek	Riparian	Forage Use	25	Not measurable
	Riparian	Streambank Stability	20	<1
RD 3201 MP 0.8	Riparian	Forage Use	25	Not measurable
Lower Camp Creek	Riparian	Forage Use	25	Not measurable
Upper Camp Creek	Riparian	Streambank Stability	20	Not detected

[1/] Forage use measures utilization by weight as compared to control plots.
[2/] Vegetation structure measures reduction in canopy cover of ground vegetation as compared to control plots.
[3/] Streambank stability measures the amount of bank instability, attributable to all causes, in key reaches.

The 2006 Range Monitoring Report disclosed that the Forest considers grazing use at Peavine Camp an indicator of livestock dispersal to the outlying, higher elevation areas of the Diamond Rock Allotment. This interest stems not only from encouraging the practice of distributing grazing among a large number of plantations; but more significantly, the need for reducing livestock use within, and impacts to, sensitive lower elevation wetlands and meadows. The 2004 and 2005 reports noted increased livestock use at the Peavine Camp monitoring site based primarily on sightings and signs. These observations were verified by actual measurable use during 2006 and 2007. There was no measurable use in 2008, the result of the considerably reduced numbers that were placed in this allotment.

The 2007 Range Monitoring Report indicated that adjustments would be made at B.Bates Meadow to find a lower balance of livestock use for the 2008 season. Even though the measured forage use at B.Bates in 2007 fell within the acceptable use threshold, this adjustment was considered to be a prudent precautionary measure because this area is susceptible to overgrazing, as indicated by records for livestock use prior to 1999. The reduced actual use disclosed in Table 1 reflects more the lower cattle numbers placed on the range than one induced by adjustments in practices. The Forest intends to pursue these adjustments in 2009.

The Range FEIS identified two sites for Survey and Manage species within the Diamond Rock Allotment. For Cypripedium montanum, it prohibited livestock use within a one-quarter mile buffer area surrounding the site to protect the species from grazing. There were no signs of livestock use within or near the buffer. The other species, the fungus, Sparassis crispa, had no required protection measures other than monitoring. No livestock use was detected at this site, either.

A third Survey and Manage species of concern with respect to livestock use, P. arcticum crateris, is not found on the Tiller Ranger District; but the FEIS required monitoring selected potential habitat because of its sensitivity to grazing and the very localized nature of its habitat. A second

monitoring site at RD 1615, established in 2002, in the Divide Allotment that encompasses a well-shaded seep and sedge community is being monitored for this purpose. While there was grazing use at RD 1651, no grazing was detected within the potential habitat.

Finally, an additional 27 cow-calf pairs were grazed for the first time in the Divide Allotment. This permitted use was authorized to replace an existing permit that was originally issued for the Whisky Camp Allotment, which was terminated by the ROD. Measurable use as a result, however it was well within the acceptable use threshold.

The Forest first authorized livestock grazing at Pickett Butte and Collins Ridge in 2003, based on adaptive management. These pastures, along with Joe Hall, which the ROD established in 2006, were delineated within existing allotments with the intent of reducing resource impacts. This was accomplished by selecting prime transitory range that has minimal potential for riparian conflicts. The adaptive management process is being applied to develop a pattern of use that conforms to the Forest Plan, as well as one that contains livestock to the pastures. As shown in the following table, the permittee was able to comply with the utilization standards during 2008.

Table 2. Summary of Grazing Use at Monitoring Sites on the Pickett Butte and Collins Ridge Pastures.

Monitoring Sites	Site	Type	Threshold (%)	2006 Actual Use (%)
RD 3113-110	Upland – TR 1/	Forage Use 2/	50	5
Branch Fence	Upland – TR	Forage Use	50	Not measurable
Branch Riparian	Riparian	Streambank Stability 3/	20	10
RD 3113-200	Riparian	Forage Use	25	10
	Riparian	Vegetation Structure 4/	10	<5
RD 2929 PP Meadow	Upland – Meadow	Forage Use	25	<5
Bullock	Riparian	Forage Use	25	<10
	Riparian	Vegetation Structure	10	<10
RD 2980-625	Riparian	Forage Use	25	<5
	Riparian	Streambank Stability	20	Not detected
Cedar Shelter	Riparian	Vegetation Structure	10	<10
Joe Hall Oak Meadows	Upland - Meadow	Oak Seedling Use	10	Not detected
RD 1610-350	Upland - Meadow	Forage Use	25	Not measurable
Joe Hall PFC	Riparian	Streambank Stability	20	2
Arch Site SWL	Riparian	Vegetation Structure	10	Not measurable

[1/] Transitory Range
[2/] Forage use measures utilization by weight as compared to control plots.
[3/] Streambank stability measures the amount of bank instability, attributable to all causes, in key reaches.
[4/] Vegetation structure measures reduction in canopy cover of ground vegetation as compared to control plots.

In general, the 2008 monitoring results shown in Table 2 are similar to the previous season. The trend of declining use continues at RD 3113-110 and Branch Fence, two important grazing areas in the Pickett Butte Pasture. For 2006, use was determined to be 15-20 percent and 15 percent, respectively, for the two sites. By comparison, the initial four year average use (2003-2006) for the former is 25 percent, while the latter averaged slightly more than 5 percent use. The 2008 use measurements are identical to those for 2007. The commercial thinning units comprising the RD 3113-110 area, particularly, afford season-long grazing opportunities that could be utilized more consistently with minimal impacts to other resources. At this time, a timber harvest re-entry is

being considered for these units. This treatment would enhance forage production and improve accessibility for cattle. In addition, the Forest and permittee have discussed other approaches, such as installing a water development or using supplements, to hold livestock in the area for longer periods of time to more fully utilize available forage. This adaptive approach could also reduce straying in the allotment. The Forest is coordinating with the Regional Office for increased funding to implement some of these measures.

The modified turnout pattern for Collins Ridge that was used for the past three years was again implemented in 2008. This approach was developed to minimize livestock use within the lower elevation pine and oak meadows below the junction of RD 2929/2929-300 at MP 3.3; and to reduce livestock encroachment of a private tract in the lower part of the pasture. In 2008, turnout again took place above MP 4.0. This adjustment in turnout location is an example of adaptive practices intended to find a reasonable pattern of grazing that balances protection of meadows with better utilization of transitory range within plantations along RD 2929, beginning immediately above MP 4.

Monitoring at the RD 2929 PP Meadow site, which represents livestock use of the meadow complexes, showed utilization to be at 10 percent in 2008 (<10 percent in 2007). This measurement compares to 15 percent in 2006, 10 percent in 2005 and 20 percent in 2004, when livestock were turned out below the aforementioned junction and allowed to travel upslope along RD 2929. Based on five years of adjusting turnout locations, it is very clear that turning out livestock a various distances from the RD 2929/2929-300 junction results in correspondingly different grazing intensities within the meadows. The data clearly points to avoiding turnout below the junction since it tends to result in a higher potential for resource damage.

On the forage utilization side of the ledger, the plantations along RD 2929 and RD 2890-700 saw fair to good utilization during 2008. Conversely, units along RD 3113-110 had only marginal use; and there was no measurable use in the Branch Fence unit. As pointed out in a previous paragraph, turnout is directed at these plantations to utilize the abundant forage and to hold livestock in areas with little potential for resource conflicts.

The turnout pattern is also modified to minimize straying into a private holding accessed by RD 2929-249 at MP 3.0. Although Oregon State law and Douglas County ordinances regulate livestock grazing on private lands, the Forest attempts to reasonably adjust grazing practices to reduce conflicts to the extent possible. This particular property has been annexed into the Douglas County Livestock District; and is presently classified as closed range. The landowner had experienced several instances of livestock encroachment during 2003 and 2004, when livestock were turned out below the access road. Since 2004, cattle were turned out at various distances above the aforementioned junction. The landowner reported one encroachment in 2008, as was the case for the 2005-2007 seasons, in contrast to multiple incidents in previous two years. Modifying turnout in this manner is intended to find a reasonable pattern of use that provides grazing opportunities while reducing resource and social conflicts.

In addition to the straying described above, there were six instances in which livestock strayed onto RD 2929, which is located below the allotment. All incidents were the result of cattle moving from the allotment to the road via intermingled private lands.

In each instance the permittee returned the strays to the allotment before resource damage occurred.

For the sixth consecutive year, grazing use at the RD 3113-200 monitoring site fell within the thresholds for riparian forage use and vegetation structure. The extent of livestock impacts here is an indicator of the degree of grazing success for the Pickett Butte Pasture. The wetlands were significantly impacted under the historic program, but the permittee is currently minimizing

livestock use through herd management. Region 10 EPA staff was satisfied with livestock use in this area during its 2005 visit. It will continue to receive management focus over the next several years to ascertain a reliable pattern of use.

The Joe Hall Pasture was grazed for the first time since it was established by the ROD in 2006. The permit authorized use by 20 cow-calf pairs; and use is monitored at four new key areas (Joe Hall Meadows, RD 1610-350, Joe Hall PFC and Arch Site SWL). While cattle use was observed elsewhere in the pasture, there was no appreciable use at the monitoring sites where grazing had taken place historically. This situation may be due to nearby logging operations disrupting use patterns. Since logging is expected to continue through the 2009 season, alternate, interim monitoring sites will be installed to monitor use, as well.

Amendments

No amendments were identified at this time.

Recommendations

- Continue to engage permittees to develop a common understanding of resource problems and common solutions to reduce risks.
- Continue to work with the permittee to develop adaptive solutions to resolve the straying concerns in the Pickett Butte and Collins Ridge pastures.

Recreation

Element #25- Developed Recreation; Element #26-Dispersed Unroaded Recreation; Element #32- Oregon Cascades Recreation Area; Element #33- ORV Use; Element #35- Special Interest Area Condition; Element #36-Recreation Use in Dispersed Roaded and Unroaded Environments.

What monitoring did we do in 2008?

#25 Developed Recreation:

At Diamond Lake Ranger District, overall summer recreation use remained constant, although visitation decreased at Lemolo Lake for water quality reasons and increased at Diamond Lake Campground because of the improved water quality and recreational fisheries.

#26 Dispersed Unroaded Recreation: No area was surveyed on the Diamond Lake District. In 2008 the Cottage Grove Ranger District conducted trail condition surveys along Trail #1400, #1401, and #1402 for the purpose of identifying trail maintenance needs.

#32 Oregon Cascades Recreation Area: No specific surveys completed.

#33 ORV's: Monitoring occurred forest-wide.

#35 Special Interest Area Condition: Implementation and validation monitoring was completed for the Brice Creek Old Growth Grove through a condition survey.

#36 Recreation Use in Dispersed Roaded & Unroaded Environments: Surveys and monitoring occurred across the forest.

What did we learn in 2008?

#25 Developed Recreation: Use on the Diamond Lake District showed an increase in winter trail use associated with the resorts. The long winter season, coupled with high snow packs drew visitors to the snowmobile and cross-country ski trails. Most of this use was generated around the two resorts, Diamond Lake and Lemolo Lake.

Because of the snow pack, Diamond Lake District did not have any campgrounds open for the start of fishing season. Diamond Lake was still frozen over and only a small area near the resort was open at Lemolo. All the campgrounds (except Hemlock and Lake in the Woods) opened as scheduled in mid-May on the North Umpqua District.

On the Diamond Lake RD, improvements and facility enhancements have been made to some of the sites with a combination of Recreation Site Improvement, Title II and Recreation Enhancement Act funding. Projects completed include new parking bumpers for 200 sites in the Diamond Lake Complex. Bumpers were used to keep vehicles on the asphalt and protect the vegetation. Another 500 mountain pine beetle-killed trees were felled and removed from the Diamond Lake Campground. Wolf Creek Job Corps built group barbeques for Broken Arrow group sites, South Shore Pavilion, Toketee Lake and Poole Creek group sites. Funding was also used to purchase a fax machine (for the visitor center to receive Daily Arrival Reports), new winter signs for snowmobile routes, and to fund interpretive programs at the amphitheater on Saturday evenings.

New roofs, funded by Title II, were placed on the Wolf Creek Pavilion and Steamboat Ball Field Pavilion on the North Umpqua District. Recreation Enhancement Act funds were used to maintain, replace filters, and repair the water system at Horseshoe Bend.

Visitor use – Developed overnight campsites at Diamond Lake were filled to capacity every weekend from mid-June through Labor Day. Thielsen View Campground and Broken Arrow were full several of these same weekends in the summer months. The campgrounds that did not receive full utilization were along State Highway 138 and in the vicinity of the Rattle Fire (Boulder Flat, Eagle Rock, Horseshoe Bend and Apple Creek), and Lemolo Lake area campgrounds because of a state advisory for blue-green algae for 6 weeks following the 4th of July weekend. The Districts did not notice a significant decrease in use based on the price of fuel as was predicted. It appeared as though people stayed closer to home, but stayed an extra night or two. PAOT's remained the same on both Diamond Lake and North Umpqua Districts, except for the closure of Boulder Flat for several weeks due to the Rattle Fire.

For the Tiller Ranger District, monitoring of recreation use was conducted. The demand for developed sites exceeds capacity on holiday weekends, summer weekends, and at some sites during hunting season. Use in "Industrial Camps" is primarily recreation use. Infra-Dev Rec module was updated. A Recreation Site Improvement project at South Umpqua Falls Campground replaced an old double toilet with two single accessible CXT's, graveled 10 campsites, replaced 10 fireplaces and 16 garbage cans. A Title II project aimed at correcting safety and accessibility issues at South Umpqua Falls Picnic Area replaced and repaired the fish ladder cover, replaced the information board, split rail fence, wheel stops, traffic barriers, garbage cans, and picnic table planks.

For the Cottage Grove Ranger District, monitoring of recreation use was conducted. The developed overnight campsites at Cedar Creek, Hobo, and Mineral continue to exceed capacity on summer holidays and most mid-late summer weekends. Two additional camp units were constructed at Cedar Creek which increased capacity from 50 to 60 PAOT's -- however, use still typically exceeds capacity during holidays. Two additional camp units were also constructed at Lund Park which increased capacity from 45 to 55 PAOT. One additional camp unit was constructed at Mineral which increased capacity from 10 to 15 PAOT. Traffic barriers were also installed at Hobo to concentrate use in designated areas in an effort to minimize further resource impacts.

Public rentals continue to be a popular and highly desired recreation opportunity with seasonal reservations continuing to increase. The 2008 use season was delayed a month due to deep and lingering snow levels. This resulted in a 42-day (65%) rather than a 65-day (100%) season for

Fairview Lookout. The Lookout was rented 100% of the available season. Musik Guard Station was also delayed in opening, resulting in a 70-day season instead of a 109-day season. There was 64% utilization, which was a 14% use increase over 2007.

The Cottage Grove Ranger District improved and made facility enhancements to Rujada, Cedar Creek, Lund Park Campgrounds and Musik and Fairview Lookout rentals. The District implemented and completed Rujada vegetative management, expansion, and play area improvements. Various improvements were made at recreation fee sites (Rujada, Cedar Creek and Lund Park). Fairview Peak Lookout and Musik Guard Station, both public rentals, received deferred maintenance attention. Management of the public rental program included contracts to a) repair lightning protection at Fairview Lookout, b) place propane tank the required distance from the lookout base, and install a road gate to minimize vandalism and improve public security of renters. Condition surveys were completed on 100% of the Cottage Grove RD recreation facilities.

#26 Dispersed Unroaded Recreation: The North Umpqua RD reported little impacts from use since 2007 in dispersed unroaded recreation areas. Condition surveys were conducted on the Tiller RD for Skimmerhorn. No change was reported at Tiller or Cottage Grove.

#32 Oregon Cascades Recreation Area: Not reported.

#33 ORV's: Summer ORV use was not formally monitored on the Diamond Lake District, although there was anecdotal evidence of increasing demand to access off-road vehicle routes from the Diamond Lake Recreation Area. The Winter Recreation Assessment & Use Guide for the Diamond Lake Ranger District was completed in 2006 and implementation is continuing. On the Tiller RD the use and demand is low across the District, except during fall hunting season. Use is increasing and some unacceptable resource damage is occurring in meadow areas such as Collin's Ridge.

On the Cottage Grove Ranger District, ORV use is steadily increasing along the open motorized trails as well as over most of the Bohemia Mining Area. Use at Champion Creek trailhead has increased significantly in the last two years and trailhead facilities are used beyond capacity during holidays and some summer weekends. The Bohemia area has many old access routes to mining claims and ORV use is becoming more and more common. Routes closed by vegetation are being reopened without permission from either the Forest Service or mining claimants. There is increased mixed use, overall, including vehicle, ATV and motorcycles. Mining claimant's complaints have increased from this illegal off-roading. Resource damage to cut slopes is increasing from ATV users trying to go around gates and earthen berm closures. Use is expanding beyond the currently offered routes. Minimal law enforcement patrols do not provide for ORV compliance.

#35 Special Interest Area Condition: The Brice Creek Old Growth Grove (OGG) area is readily accessible and use is moderate to heavy in some areas, specifically around creek side access points, with frequent interactions with other users. No use counts were conducted. Fee receipts and an ocular inspection indicate the visitor use was high during the summer. Condition surveys were completed on Camp Comfort and Lower Flood OGGs and Cow Creek Gorge Special Interest Area on the Tiller RD.

#36 Recreation Use in Dispersed Roaded and Unroaded Environments: The Tiller RD reported that "Public contacts are not adequate due to budgets and lack of personnel. Vegetation impacts continue in riparian reserves, especially in the South Umpqua River corridor." The District implemented a 'South Umpqua River Day Use Area' from Buckeye Bridge to Road 27, with a supporting Forest Order, road signs, and a 'Respect the River' brochure. Fishwatch funds were used for additional public contacts.

At Diamond Lake RD, dispersed use in the Lemolo Lake area is increasing. Increased damage has been noted on the shore-line and the district is evaluating the need to close some of the sites located on the north shore of Lemolo Lake. Much of the dispersed use on both Diamond and North Umpqua Ranger Districts occurs during rifle season for deer and elk. Lemolo 2 Forebay has had an open, undefined parking and camping situation. Funds from PacifiCorps were used to define camp sites with gravel surfacing and place boulder parking barriers. This has improved the situation and it is expected that revegetation will occur naturally.

Large camp fires, littering and home-made pit toilets and constructed tables or game stringers can be a problem when left by dispersed campers. Toketee has a resident Douglas County Deputy, who responds to many law enforcement issues. His presence is often enough to reduce the problem. The State Game Warden patrols the North Umpqua River area and makes a point of visiting developed and dispersed sites in the corridor. The Forest Service has noticed a decrease in problems along Steamboat Creek because of these patrols. District Forest Protection Officer patrols by individual recreation personnel are not encouraged due to personal safety concerns.

On the Cottage Grove Ranger District, dispersed use along Brice Creek continues to increase. Dispersed use along Layng Creek is not allowed due to the municipal watershed agreement, although occasional illegal camping occurs. Use along Sharps Creek is limited by the location of placer mining claims. Use of these placer claims is typically by the mining claimant(s) and therefore remains fairly constant. Trends indicate a slow, but gradual, increase in number of visits.

During winter/spring of 2007, Title II funds were utilized to install traffic control barriers and rehabilitate portions of the spur roads at four popular riparian dispersed sites along Brice Creek. These barriers closed areas immediately adjacent to Brice Creek. They remained intact during the 2008 summer recreation season and have significantly reduced resource damage and compaction from vehicles at these streamside sites. Revegetation on these sites was completed in 2008.

Residency, illegal drug-related activities, vandalism, and littering occur in the more remote dispersed/non-fee sites of the Cottage Grove RD. This has decreased somewhat with occasional law enforcement patrols. District Forest Protection Officer patrols are avoided due to personal safety concerns. Bohemia Mine Owners Association also provides fairly consistent patrols to monitor use and activities. Weekend recreation patrols were funded and conducted in the more visible and accessible dispersed sites. A few sites are not patrolled regularly (Gleasons Cabin and Cascade Bend) because of concerns about personnel safety – they are remote and out of sight and attract people who tend to abuse the site. Most of the dispersed use along Sharps Creek is related to recreation placer mining. Increased mineral funding to the district has provided for increased weekend and weekday patrols which are helping to control resource damage and expansion of dispersed riparian sites along Sharps Creek.

Amendments

No amendments are recommended at this time.

Recommendations

- Generally continue with present management direction and monitoring efforts for all recreation elements.

Element #25:

- On the Diamond Lake and North Umpqua Ranger Districts, with each passing year, the demand increases from hunters to leave developed campgrounds open for hunting season. This is difficult to do because the seasonal workforce returns to school and permanent

staff are not able to keep up on garbage removal and toilet cleaning. This is exacerbating the dispersed camping problems around Lemolo Lake, in particular. A management strategy should be developed to address this situation.

- Monitor results on recreation use of the implementation of the Diamond Lake Water Quality Final Environmental Impact Statement and Record of Decision.
- On the Tiller Ranger District, evaluate the parking safety and resource impacts at the South Umpqua Falls. Traffic controls and law enforcement is needed in the South Umpqua Falls Corridor. There is a need to designate day-use areas to reduce the human waste/water quality issues in the riparian areas. More site design and renovation is needed.
- On the Cottage Grove Ranger District, continue to consider further improvements to Hobo Camp to mitigate resource damage and unplanned expansion. Continue management of the public rental programs.

Element #26:

- Continue implementation of the Diamond Lake Winter Recreation Assessment & Use Guide.
- Continue to monitor Hardesty Unroaded Recreation Area once per year maximum or once every two years minimum. Willamette National Forest volunteers along with Cottage Grove RD volunteer Wayne Deeter cleared most of Trail #1400 in 2008. It was reported that the upper half was brushy and the road portion was grassed over on the north end. Volunteers concentrated on removing logs and brush. The signing on the Willamette side of the trail is poor and needs to be replaced.

Element #33:

- Continue volunteer support -- Two Jeep Clubs on the Cottage Grove RD continue to volunteer support to the 4 x 4 trails of Noonday and Sultana Way #1405, including the 'Oregon Trail 4-Wheel Drive Association' who continues to support the trail through the 'Adopt-a-Trail' program.
- The Umpqua NF continues to conduct environmental analysis for travel and access management on the Forest. Existing condition information has been gathered and the proposed action was published in April 2009. The Motor Vehicle Use Map is scheduled to be published at the end of 2009.

Element #35:

- Acquire funding to improve trail/improvements in the Brice Creek OGG area and develop an appropriate interpretive plan. Increase the frequency of inspections to enforce 'Pack-it-Out' policy.

Element #36:

- Consider an increase in frequency of inspections to enforce the "Pack-it-Out" policy.
- Seek opportunities for partnership to develop interpretive plans for Special Interest Areas on the Tiller RD and Cottage Grove Ranger Districts. Interpretive plans are needed.

Soil and Water

Forest Plan Monitoring Elements:

Element FW121/NFSW 1 – Soil Productivity; Element FW121/NFSW 3 – Soil and Water Best Management Practices; Element FW121/NFSW 9 – Stream Temperature; Element FW121/NFSW 10 – Stream Sediment, Turbidity and Streamflow.

What monitoring did we do in 2008?

The Umpqua National Forest LRMP requires monitoring the use of Best Management Practices (BMP's) to protect water quality, stream temperature, turbidity and streamflow, and soil productivity. The data for stream temperature and turbidity are attached to this summary.

Best Management Practices checklists were written for 8 out of 20 ground-disturbing activities (40%) in 2008. Checklists are required by the Forest Plan on all of these activities, and the requirement was not met.

The Forest Plan identifies 29 streams to have temperature measured each summer on the Forest. Twenty-eight (28) streams with long-term records are presented in this 2008 report, but several other Forest Plan sites were monitored that are not shown on the report graphs (see attachments to the Monitoring Report).

Five (5) streams were monitored to show if turbidity is changing for winter flows of the same size. Turbidity and flow was measured on Layng, Steamboat, Canton and Boulder Creeks, and the North Umpqua Wild and Scenic River in 2008. The Forest Plan requires four monitoring sites. The North Umpqua turbidity analysis for 2006 is presented in this report and 2007-2008 will be included next year. Layng Creek turbidity analysis for 2007 was not available last year. Both the 2007 and 2008 analyses for Layng Creek are included in this year's monitoring report.

The Forest Plan requires a minimum of 15 sites monitored and documented in at least one Soil Productivity report. No reports were produced in 2008.

What did we learn in 2008?

Best Management Practices (BMPs) are being planned and implemented, according to checklists written for timber sales and other activities planned or operated in 2008. BMP checklists were written for 8 out of 20 ground-disturbing activities. Checklists were written for 40% of the projects we planned in 2008. See the attachments to the Monitoring Plan for a table of Best Management Practices checklists written for activities on each Ranger District. Checklists will be used when these projects are implemented. A culvert replaced on Bogus Creek (2006 checklist) in the summer of 2008 met all BMPs for erosion control, slope stabilization, flow diversion and spill prevention

Long term stream temperatures did not change. Maximum summer water temperatures in 2008 were naturally cooler than the summer of 2007, as observed on all our streams. This summer's 2008 water temperatures were among the coolest 7 years during the last 40 years on some streams. The warmest water temperature of Steamboat Creek, monitored since 1969, was 74 degrees Fahrenheit, about three degrees cooler than last year. Other Forest stream temperatures were similar. All temperature data represents the average of the maximum daily temperatures, on the warmest 7 days in a row for that summer.

Two streams where temperatures have changed are Fish Creek (62 degrees) and Cedar Creek (65 degrees). Under a new hydropower license, in 2006 PacifiCorp stopped diverting flow from Fish Creek in summer for the first time since 1952. Flows increased from 20 cfs to 40 cfs and more during July and August. In 2008, Fish Creek was the coolest measured since the record began in 1996. On Cedar Creek, a tributary of Steamboat, water temperature has fallen from 75 degrees

Fahrenheit to 65 degrees as tall streamside conifers cut in 1972 were replaced by dense alders and conifers in the early 1990's.

Layng Creek and Brice Creek near Cottage Grove, tributaries of the South Umpqua, and Little River upstream from Glide and Cavitt Creek were all 1-3 degrees cooler this year than in 2007. Tributaries of the South Umpqua River were also 1-3 degrees cooler. The South Umpqua's Boulder Creek, a warm but important salmon and steelhead stream (and a focus of recent habitat restoration), was a warm 76.6 degrees Fahrenheit in 2008, only one degree cooler than last year.

Only Bear Creek, of the large streams on the attached graphs, met the Clean Water Act and Oregon standard of 60.8 degrees Fahrenheit in summer 2008 (see attachments to the Monitoring Plan). Fish Creek did not meet the standard of 64.4 degrees in effect upstream of Soda Springs dam. High stream temperatures are a mixture of natural causes (some streams never were cooler than the 60 degree temperature criteria), and management causes (removal of trees shading the streams and salvage of down logs in the stream bed). Most streams are naturally warmer than 60 degrees but are also warmer because of riparian and channel disturbance.

Turbidity is not changing on the streams monitored, when compared to recent years during comparable winter flows. Long term monitoring of Steamboat, Canton, and Layng Creeks show that high turbidity in the 1970's has decreased in these streams. In some years, turbidity increased, and then returned to relatively constant levels. Turbidity of the North Umpqua Wild and Scenic River was measured by the US Geological Survey in 2007 and 2008, but streamflow data for the river below Steamboat is not available yet. The analysis for the North Umpqua River in 2006 is repeated in this year's report. It shows that winter turbidity was slightly higher than 2002-2005, but still close to the median turbidity measured since 1993. Summer water clarity measured by turbidity (important for fishing and recreation on the river) was the second best on record in 2006. On Boulder Creek (a designated Wilderness), turbidity and streamflow have been measured since 1993. The only bridge access to Boulder Creek stream gage and turbidity sampler was destroyed by a falling tree in 2003. The bridge was replaced by 2006, and the turbidity analysis through 2008 is included in this report. Results show similar turbidity to 1993-2007. Turbidity of Layng Creek, the municipal water supply for the city of Cottage Grove, has been measured since 1977. Turbidity in 2007-2008 was higher than previous years, but still within the range of variability since 1980. The lower peak floods in 2007-2008 can cause this measure of turbidity to increase. Relative turbidity on Layng Creek in 2008 was the highest since 1977-1979, when concern over very turbid winter flows caused the annual monitoring program to begin.

Streamflow data from the Oregon Water Resources Department is necessary for the analysis of the North Umpqua River but is not yet available for 2007 or 2008. The North Umpqua turbidity analysis for 2006 is presented in this report and 2007-2008 will be included in next year's Forest Plan Monitoring Report. Layng Creek turbidity analysis for 2007 was not available for last year's report. Both the 2007 and 2008 analyses for Layng Creek are included in this year's monitoring report.

See Attachments for graphs of stream temperature and turbidity.

Soil productivity monitoring shows how timber harvest practices maintain soil characteristics and organic matter, or recommend ways to improve them. No soil productivity reports were completed in 2008.

Diamond Lake water quality improved in 2007, and monitoring results were similar in 2008. The Oregon Department of Fish and Wildlife posted this assessment of improved water quality in the lake in 2007: "Water quality standards in Diamond Lake are now being met (removal of nuisance algae, decreased chlorophyll a, and dissolved oxygen near saturation in the surface waters) and a

productive trout fishery is being restored to meet fish management goals. Two periods of pH excursion above the standard (8.5) were observed in 2007, however, average summer pH has declined over 1 pH unit from previous years. The results show that removal of invasive fish species can lead to recovery of a sport fishery and may be necessary to improve in (sic) water quality in some lakes." The websites below will have 2008 Forest Service and ODFW monitoring results when those reports are completed.

In July and August 2001-2006, Diamond Lake experienced up to a five-fold increase in density of algae in Diamond Lake, and a dominance of potentially harmful Anabaena flos-aquae blue-green algae. This alga can, and did, produce a neurotoxin that required closing Diamond Lake to water activities in some years. Hydrologists have monitored Diamond Lake since 1992 (this is not an element in the Forest Monitoring Plan) but samples were only taken monthly during the summer until 2001. This monitoring needs to be a part of the Forest Monitoring Plan. The Umpqua National Forest did weekly May-September early warning measurement of algae and public health risks at Diamond Lake from 2002 through 2008. In 2005 the Forest joined the Oregon Department of Human Services to carry out statewide guidelines for issuing joint public health advisories. Also, monitoring of the 2006 Water Quality Restoration of Diamond Lake began in November 2005, including (1) the flow of Lake Creek and drawdown of Diamond Lake, (2) water quality of Diamond Lake, groundwater around the lake, Lake Creek, and the North Umpqua River, and (3) aquatic life in Diamond Lake, Lake Creek and downstream. PacifiCorp, Oregon DEQ, the US Geological Survey and the Oregon Department of Fish and Wildlife are cooperating with the Umpqua National Forest to document water quality restoration.

Lemolo reservoir experienced blue-green algae blooms in 2006, 2007 and 2008, and water contact was restricted because of potential risks to human health from algae toxins. The Umpqua National Forest, PacifiCorp, and the Oregon Department of Fish and Wildlife cooperated in monitoring water quality and biological indicators in Lemolo in 2008.

Diamond Lake monitoring continued in 2008. Lemolo monitoring results from 2008 are available from the Forest hydrologist. Diamond Lake monitoring reports by the Umpqua National Forest and Portland State University are available on the Forest's web site:

http://www.fs.fed.us/r6/umpqua/projects/projectdocs/diamondlkresto/index.shtml

The Oregon Department of Fish and Wildlife also monitors water quality and aquatic life in Diamond Lake. Results of 2006, 2007 and 2008 monitoring is available at:

http://www.dfw.state.or.us/fish/diamond_lake/monitoring.asp

Amendments

Soil and Water elements should be amended in the Umpqua LRMP Monitoring Plan. Districts cannot always write Best Management Plan Checklists on every ground-disturbing activity. One solution is to amend the plan to require that a sample of activities have BMP monitoring. The monitoring could be randomly assigned by the Forest Supervisor, and done on a standardized form for that activity (timber sale, grazing allotment, road construction). A draft BMP monitoring amendment was completed in 2006, but the Plan has not been amended.

Forest Plan monitoring elements for landslides, public water supplies, cumulative effects analysis, and riparian shade measurements are no longer necessary and should be removed by amending the Plan. The Northwest Forest Plan limited harvest and other activities so that the thresholds in these elements are never reached.

Monitoring Elements FW121/NFSW 2, 5, 7, and 8 addressing the Forest Sediment Yield Model, Public Water Supplies, Cumulative Watershed Effects, and Riparian Vegetation effects should be eliminated from the Forest LRMP Monitoring Plan.

A Monitoring Plan Element should be added to monitor water quality, zooplankton, algae blooms and risks to public health on Diamond Lake and Lemolo Reservoir, where potentially harmful blooms have occurred (2001-2006 on Diamond lake and 2006-2008 on Lemolo), and to keep a watch on Toketee and Hemlock reservoirs where people swim or use lake water while camping. At a minimum, information should be posted at these and other recreation lakes to warn the public of potential risks from algae toxins.

Recommendations

Invasive Aquatic Species (IAS) have become a major issue in the Pacific Northwest and elsewhere, and comprise a threat to stream ecology, fisheries, recreation, hydropower, and municipal water sources. Establishment of New Zealand Mudsnails, Zebra or Quagga mussels, or Eurasian Milfoil for example, will ruin the North Umpqua salmon and steelhead fishery, foul fishing and boating at Diamond Lake, or cause hundreds of thousands of dollars to operation and maintenance of PacifiCorp turbines and waterways. Experience with Forest Plan Monitoring shows that the annual requirement to report has resulted in a long-term reliable record of important stream health indicators. Early detection of non-native invaders will likely prevent their spread, and avoid the costs of large-scale eradication programs. The Forest should amend the Forest Plan to monitor presence or absence of non-native aquatic plants and animals at raft launches and boat ramps on the North and South Umpqua River and roaded lakes where plant introductions are most likely to occur. For about $15,000 per year, Forest biologists, hydrologists or botanists could collect samples at 8 raft or kayak launches on the North and South Umpqua Rivers, and 3 lakes (Diamond, Hemlock and Skookum Pond). PacifiCorp impoundments have a monitoring requirement in the hydroelectric license already, and the same need exists on other Forest waters.

The Forest Plan should be amended to monitor BMPs on selected activities, remove monitoring elements that no longer apply, and add monitoring elements for water quality, zooplankton, and algae blooms in some lakes. Until then, the Monitoring Plan requires Best Management Practice Checklists on every ground-disturbing activity. Ranger Districts should continue monitoring in order to be in compliance with the Clean Water Act and our Memorandum of Understanding with Oregon DEQ.

Almost all named streams on the Umpqua National Forest are warmer than the Oregon water temperature standard. These “water quality limited streams” need Water Quality Restoration Plans (WQRPs), and the Forest worked with Oregon DEQ to show that the Northwest Forest Plan protects water quality on federal lands. In 2008 the Umpqua and Willamette National Forests submitted Water Quality Restoration Plans to the Oregon Department of Environmental Quality, in compliance with the Clean Water Act, for National Forest lands in the North and South Umpqua River and the Upper Row River basins. The data from water temperature monitoring is necessary so these streams can be compared to water quality standards. Water temperature monitoring is required by Water Quality Restoration Plans under the Clean Water Act and should be continued.

Turbidity and flow monitoring provides a long-term assurance that land management activities are not reducing the visibility in the clear waters of the North Umpqua Wild and Scenic River, that drinking water from Layng Creek is not more turbid for the City of Cottage Grove, and that Steamboat, Canton and Boulder Creeks provide suitable fish habitat. Turbidity monitoring in cooperation with the City of Cottage Grove has been important to answer questions about logging in the municipal watershed. When the City of Cottage Grove stops using Layng Creek as a water source, the monitoring should stop. Turbidity monitoring should continue on all streams, including Layng Creek (until no longer used by the City).

Soil productivity monitoring reports help soil scientists evaluate projects and share those results with the staff that plan ground-disturbing activities. The monitoring should continue and more soil science services are needed. The Umpqua has one soil scientist on the Timber Planning Team for planned harvest activities, and one soil scientist at Diamond Lake Ranger District to prevent, correct, and assess soil damage on the entire Forest from all other activities (vegetation and fuel

treatments, active timber sales, soil restoration, and past disturbance). All monitoring and service needs are not being met.

Finally, aquatic monitoring of water quality and fish has the best record of Forest conditions, dating from adoption of the Umpqua and Northwest Forest Plans in 1990 and 1994. Some of this monitoring has been done for 40 years, and all is important to meet NEPA, the Clean Water Act, NFMA, and monitoring commitments to our partners. The Forest should give water quality and fish habitat and population monitoring the highest priority for funding with NFIM (Inventory and Monitoring) and other funds.

Timber and Vegetation Management

The Umpqua National Forest Land and Resource Management Plan requires monitoring of annual volume offered, stocking of plantations, accomplishment of reforestation, growth of managed stands, and other silvicultural activities.

What did we learn in 2008?

We planted 1,126 acres in FY2008. Reforestation during this period was concentrated in the areas burned during the 2002-2003 fire seasons, specifically the Tiller Complex fires. All of these plantings were second or third time re-plants on harsh sites. A small amount of replanting was performed in the Kelsay Fire area. Cottage Grove planted 8 acres of gaps associated with commercial thinning harvests. Douglas-fir was the primary species planted although ponderosa pine, sugar pine, western white pine and a minor amount of some true fir species were also planted.

First-year seedling survival (Douglas-fir) was 82%, up from 77% reported for 2008 (Table 3). Third-year seedling survival and success was 77% for Douglas-fir for the 2008 growing season. The percent of seedlings meeting growth standards was 92%.

Currently there are 4,634 acres of reforestation needs identified on Forest.

The Forest continues to have a substantial backload of plantations in need of thinning, pruning, or release. Current timber stand improvement needs identified in FACTS are 38,145 acres. Timber stand improvement activities of pruning and pre-commercial thinning occurred on approximately 1169 acres during fiscal year 2008. Most of this work was accomplished through funding in other program areas.

In FY08, the Forest offered 50.5 million board feet for sale. The Forest awarded 45.1 million board feet. The downturn in the economy resulted in some timber sales with no bids during the fourth quarter of 2008.

Table 3. Silvicultural activities in FY 2008.

Activity	FY 08
Acres Planted during fiscal year	1126 acres
Seedling survival after first growing season (previous year)	82%
Seedling survival after third growing season (planted 3 years prior to survey shown)	77%

Amendments

No amendments are recommended at this time.

Recommendations

- Continue to closely monitor stock quality, production and handling practices to improve tree survival rates for Douglas-fir.

- Increase the internal leveraging of HF funds for mechanical fuels treatments in young stands needing stand density treatments.
- Prioritize pre-commercial thinning higher in KV Plans when opportunities are identified within sale areas to deal with a 20,000 acre backlog of PCT needs.

Transportation System

Elements #27- Transportation System Management; Element #28 – Road Construction; Element #29 – Road Closures

What monitoring did we do in 2008?

Not reported for FY 2008.

Visual Resources

Element # 30 - Visual Resource Condition

What monitoring did we do in 2008?

Informal field monitoring was conducted in selected viewsheds across the Forest including the North Umpqua River Canyon, the Rogue-Umpqua National Scenic Byway, the Lemolo Lake and Diamond Lake Recreation Composites and in winter recreation use areas along major travel ways.

What did we learn in 2008?

The Visual Resource Condition across the Forest is largely unchanged from 2006, as far as timber management activities. The Rattle Fire during the summer of 2008 visually altered a section of the Highway 138 corridor, where numerous snags and hazard trees were felled after the fire. The fire did burn in a mosaic pattern, resulting in some areas of high severity (trees completely burned), while other areas burned with low severity and were already re-growing by late fall.

The 2002 wildfires continue to visually modify portions of the viewsheds on both the Tiller RD and the North Umpqua RD into 2008, although the area burned by the Apple Fire along Highway 138 is beginning to regrow.

Scenic quality continues to be assessed during project planning efforts across the Forest. Emphasis on thinning strategies in forest vegetation has reduced some of the obvious visual quality conflicts typically associated with clear-cutting practices. Implementation of fuel reduction projects in the under-story of coniferous forests in wildland-urban interface areas has had beneficial effects on scenic quality and enhanced the visitor experience.

Generally the condition of the Umpqua National is in a natural appearing condition within scenic viewsheds, with the exception of forest fire areas that have occurred in the past five years. There are a few locations where human use has impacted scenic resources, such as the Bunker Hill area of the Lemolo Lake Recreation Area. The vegetative conditions of the conifers within the Diamond Lake and Lemolo Lake Recreation Areas are deteriorating due to insects and disease and down woody debris and have the potential to create huge deficits in the scenic conditions of those areas.

Amendments

No amendments are recommended at this time.

Recommendations

- Continue monitoring effects of the Diamond Lake Restoration Project implementation on visual quality for the Diamond Lake Recreation Area.

Wild and Scenic Rivers

What monitoring did we do in 2008?

Not reported in 2008.

Recommendations

- Continue present direction and monitoring.

Wilderness

Element # 31- Wilderness Condition

What monitoring did we do in 2008?

Not reported in 2008.

Wildlife, Plants and Threatened and Endangered Species

Resource Element - Sensitive Plants

Umpqua National Forest Plan Chapter V – 18, Table V-1; CT1/NFWF16 – Sensitive Plants and Animals

What monitoring did we do in 2008?

Not reported in 2008.

Resource Element - Wildlife

Northern Spotted Owl

CT1/NFWF 14 - Northern Spotted Owl; Umpqua National Forest Plan Chapter V -16, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element.

A proposed five-year monitoring study that began in 2005 was discontinued after three years (2005 – 2007). This monitoring study was proposed and funded by the USFWS, and was to determine effects on spotted owls of forest management activities designed to reduce fuels and thin timber stands. As survey responses were poor and no spotted owls were located to band during follow-up surveys the study was discontinued.

Surveys for spotted owls were not conducted in 2008.

What did we learn in 2008?

Surveys for spotted owls were not conducted in 2008.

Recommendations

Finalize the analysis of the data collected during the monitoring study and submit a report to USFWS on the results of this analysis.

Blacktail Deer and Roosevelt Elk

CT1/NFWF 15 - Blacktail deer and Roosevelt elk; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element, although there was coordination with ODFW on their annual elk and deer census. This census covers a wider area than the Forest. We utilize the data from the Indigo and Dixon wildlife management units (Figure 1).

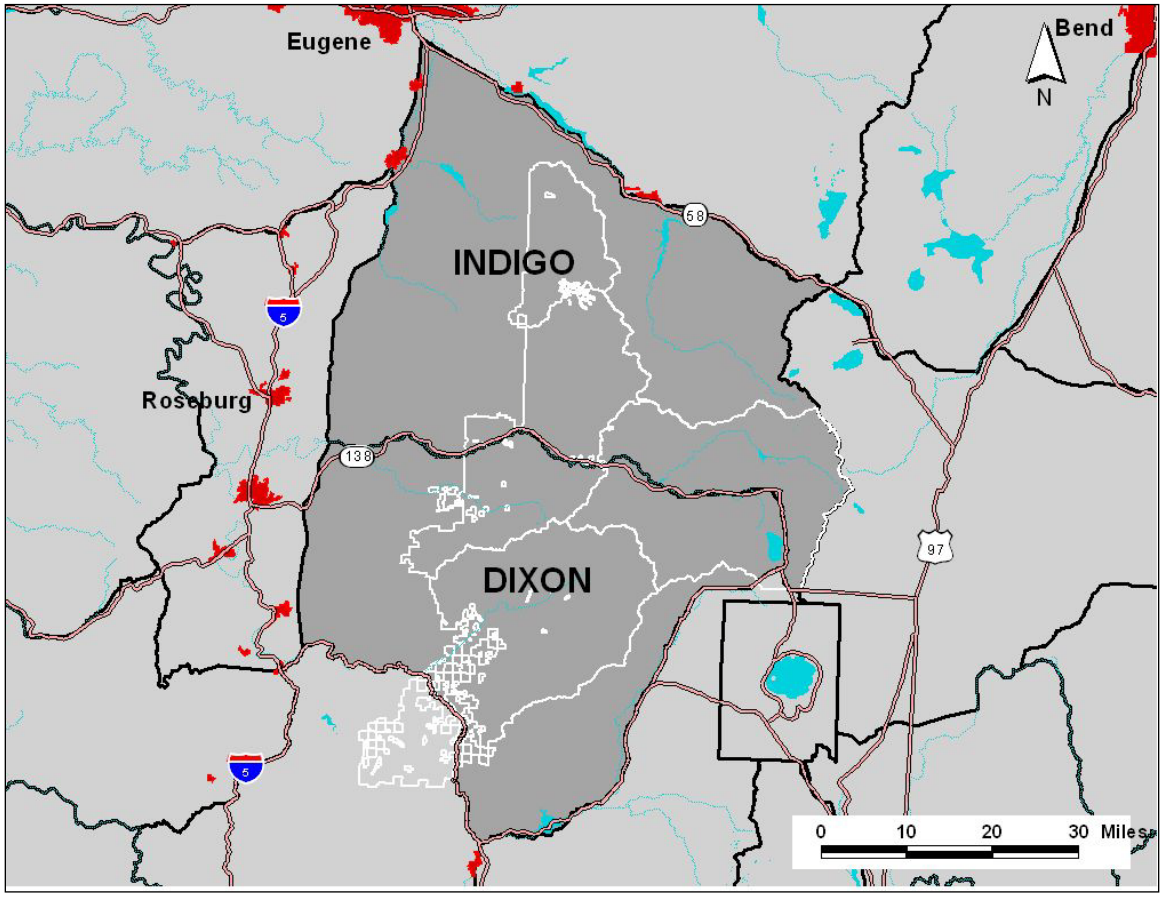


Figure 1. The Dixon and Indigo wildlife management units in relationship to the Umpqua National Forest.

What did we learn in 2008?

Trend data is analyzed by ODFW. Monitoring indicates that elk trends appear to be declining statewide, thought to be caused by decreasing amounts of forage habitat. While not available, deer trend data also indicates population declines.

Elk population numbers from the Indigo and Dixon wildlife management units have been provided by ODFW. These two management units are subdivided into smaller areas for trend

analysis. Although these areas do not align with the Forest boundary general population trends can still be determined.

There has been an overall decline in the elk population in both units. Elk numbers in the South Indigo unit declined sharply in 2006 but numbers increased the past two years. While elk numbers in the Dixon unit have fluctuated, the overall trend is that elk numbers are down in this management unit as well (Figure 2).

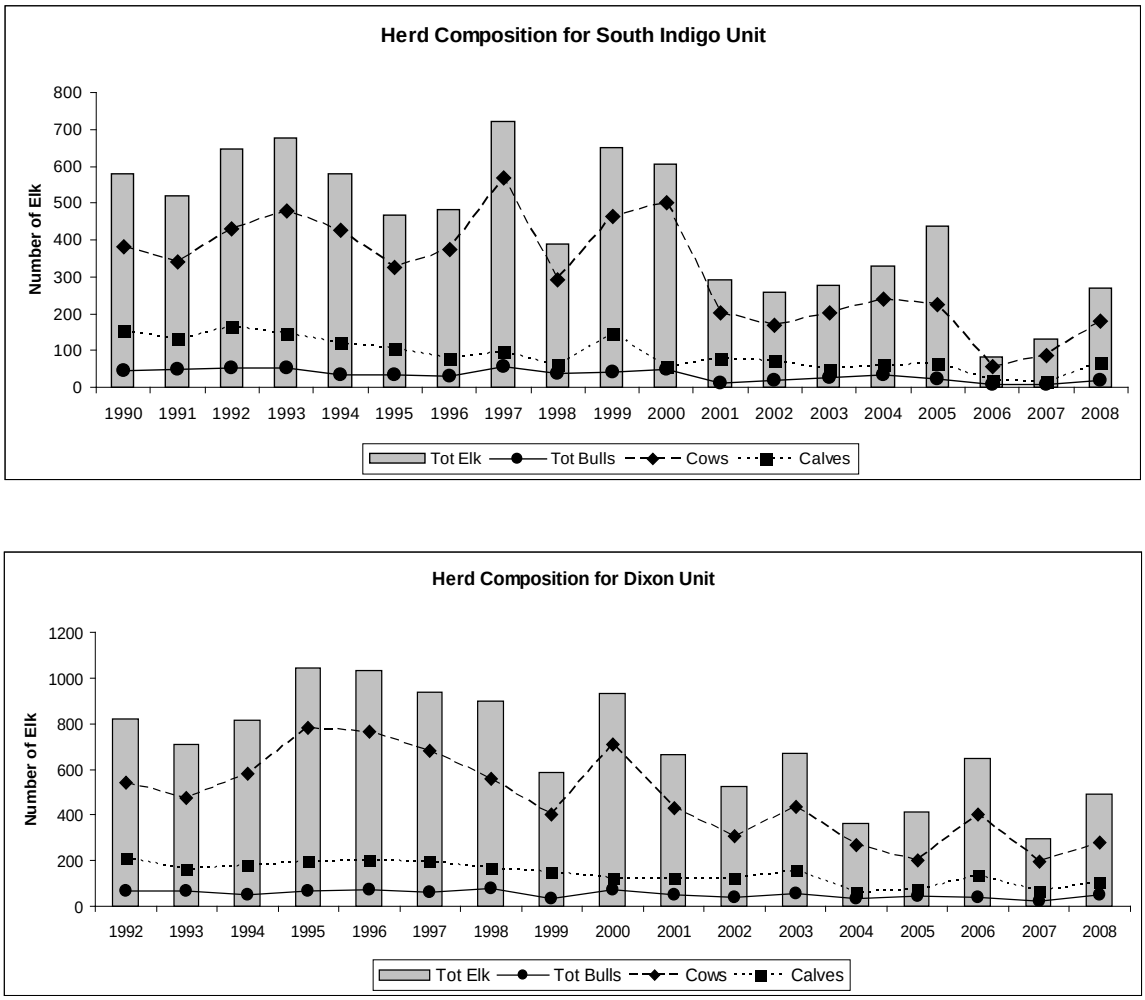


Figure 2. Elk population trends on the South Indigo and Dixon Management Units (ODFW).

Recommendations

Continue to coordinate with ODFW to monitor trends. Seek opportunities to provide forage habitat in appropriate locations during all vegetation management projects. Pursue and utilize partnerships to increase forage creation opportunities on public land.

Resource Element - Sensitive Animals - Townsend's Big-Eared Bat

CT1/NFWF 16 - Sensitive Plants and Animals; Townsend's big-eared bat monitoring; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element. NFWF dollars were used to conduct the annual exit count. In previous years Townsend's bats have been monitored at three sites on the Forest, but because of lack of funding only one site was monitored in 2008.

What did we learn in 2008?

An exit count was conducted at the main maternal colony site located on the North Umpqua RD. This site has been monitored since 1990 in either late July or early August. Some years were not monitored because of other priorities such as fire. A total of 407 bats were observed at this bat colony in 2008. Results of this monitoring indicate the population is stable and this continues to be an important site for Townsend's bats (Figure 3).

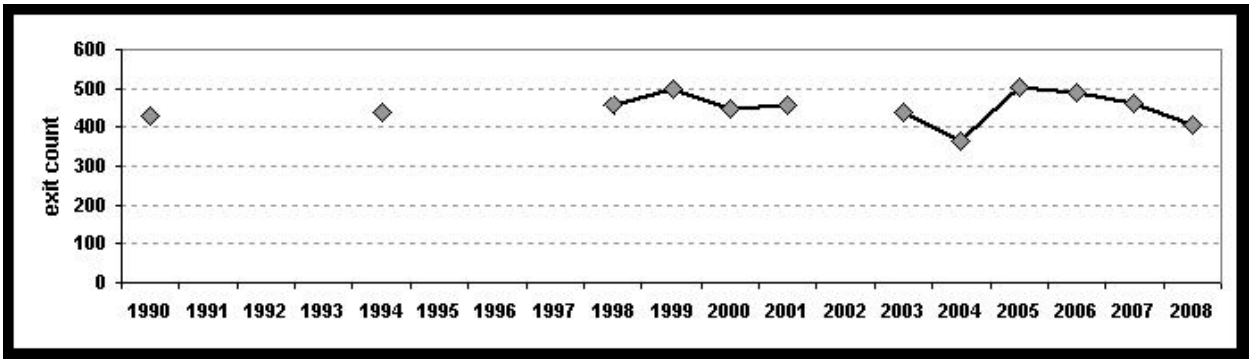


Figure 3. Annual exit counts for maternal colony on North Umpqua RD.

No exit count survey was conducted at the Diamond Lake RD site. The lock on the cave gate was cut in 2006 and has not yet been repaired.

A Forest-wide cave management plan has been completed that allows these sites to be protected. It is expected there will be continued occupancy at these sites, with the potential for successful reproduction.

Recommendations

- Continue to conduct annual exit counts to determine population trends.
- Conduct surveys of caves that have a high potential for occupancy by this species. Replace the lock at Diamond Lake with a sturdier type of lock.

Resource Element - Sensitive Animals - Western Pond Turtle

CT1/NFWF 16 - Sensitive Plants and Animals; Western pond turtle inventory and monitoring; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element.

What did we learn in 2008?

On the Tiller Ranger District placement of boulders for nest site protection at a recreation site was completed in 2007. This site was not monitored in 2008 and so the success of this site protection measure is unknown.

Recommendations

- Monitor known populations of western pond turtles on the forest to determine habitat use and population trends. Identify areas of potential pond turtle use for survey and monitoring. Protect known sites from predation.
- Continue to protect the Tiller site from predation and from habitat disturbance by the public utilizing the recreation site. Improve and restore habitat for the western pond turtle at this site. A proposal for this habitat protection project has been prepared.

Resource Element - Bald Eagles

CT1/NFWF 17 - Bald eagle monitoring; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element. NFWF dollars were used to survey the four known bald eagle sites on the forest. One bald eagle site management plan was updated.

What did we learn in 2008?

All four known sites were surveyed in 2008 but pair occupancy could be confirmed at only one. A late winter may have contributed to the lack of reproduction at our three higher-elevation sites. Ice came off very late in the season and all higher-elevation nests were degraded with no sign of recent work on them. An adult eagle was observed at only one of the high-elevation sites. A lower elevation site on the forest was occupied and successfully produced one young.

Bald eagles continue to be observed along the North Umpqua River. It is believed that a pair is nesting on the Forest along the river corridor although this has not been confirmed.

Recommendations

- Continue to monitor all known eagle sites for occupancy and reproductive success.
- Conduct surveys along the North Umpqua River to confirm the probable nest location of the bald eagle pair utilizing the river corridor.
- Update site management plans.

Peregrine Falcon Monitoring

CT1/NFWF 18 - Peregrine falcon monitoring; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element. NFWF dollars were used to monitor peregrine falcon sites.

A long winter with late snowmelt and roads that were either washed out or had extensive blowdown contributed to our monitoring effort being severely curtailed. Access into sites was

either late in the breeding season or not at all. Because of weather some surveys conducted were done in less than ideal survey situations.

What did we learn in 2008?

As a result of winter-like weather extending long into springtime the results for 2008 are considerably different than in previous years. Eight of fourteen known falcon sites could be monitored in 2008 although many initial visits to those sites were significantly delayed because of weather conditions. Sites where reproduction was unknown were affected by difficulty in getting to the sites in a timely manner, thus successful reproduction could be confirmed at only three sites.

Two volunteers assisted in monitoring one of our sites. Without their help it would have been very difficult to determine reproductive success at that site. There are two other areas on the forest where falcons have been observed but occupancy by a pair has not yet been determined; neither of these sites was surveyed in 2008.

Table 4. Peregrine Falcon Monitoring for FY 2008.

PEREGRINE FALCON 2008		
Eyrie ID	**Status**	**Young Produced**
OE-002	Adult observed	Unknown
OE-003	Pair occupancy	Unknown
OE-006	Not surveyed; could not access	N/A
OE-033	Pair occupancy	Yes
OE-055	Adult observed	Unknown
OE-056	Not surveyed; could not access	N/A
OE-064	Pair occupancy	Yes
OE-065	Pair occupancy; access a problem	Unknown
OE-069	Not surveyed; could not access	N/A
OE-072	Adult observed; access a problem	Unknown
OE-104	Adult observed; access a problem	Unknown
OE-117	Pair occupancy	Yes
OE-121	Not surveyed; could not access	N/A
OE-122	Not surveyed (wilderness)	Unknown
Site A	Not surveyed; access a problem	N/A

*Oregon Eyrie (OE) number is assigned by the regional peregrine falcon coordinator

Survey results indicate that peregrine falcons continue to occupy known sites on the forest, although reproduction can vary from year to year. The Umpqua National Forest is considered to be a source population for peregrine falcons in the state of Oregon, with young falcons on the forest likely dispersing to other parts of the state. In addition, there are areas of suitable habitat on the forest that have not been surveyed that could potentially support additional falcon pairs.
Recommendations

- Continue annual monitoring of all known sites.
- Maintain a good working relationship with our volunteers.
- Continue to develop a forest-wide falcon management plan with site-specific recommendations.

Pileated Woodpecker

CW1/NFWF 19 - Pileated woodpecker; Umpqua National Forest Plan Chapter V – 18, Table V-1.

What monitoring did we do in 2008?

Limited monitoring for this species was incorporated into broader monitoring for primary cavity nesters (see CW1/NFWF 21 below). No NFIM funding was provided for monitoring this Resource Element.

Pine Marten

CW1/NFWF 20 - Pine marten; Umpqua National Forest Plan Chapter V – 20, Table V-1.

What monitoring did we do in 2008?

No NFIM funding was provided for monitoring this Resource Element. However, Forest Service personnel cooperate with ODFW in conducting annual winter track counts in areas where marten occur. NFWF dollars were used. Five areas are monitored annually, as staffing, weather and snow conditions allow. These areas are:

1. Lemolo-Kelsay – located on Diamond Lake RD, east of Lemolo Lake to the Kelsay loop.
2. Mt Bailey – located on Diamond Lake RD, along the south and west slopes of Mt Bailey.
3. Warm Springs – located on Diamond Lake RD, west of Lemolo Lake outflow area up to the Calapooya Divide.
4. Huckleberry – located on the Tiller RD on the Rogue/Umpqua Divide
5. Skookum - located on Diamond Lake RD, near Skookum and Fish Mtn.

What did we learn in 2008?

Not all routes are surveyed every year nor is every survey effort consistent, so population trends are difficult to determine. However, when conducting surveys pine marten tracks have been identified on most of the survey routes (Figure 4).

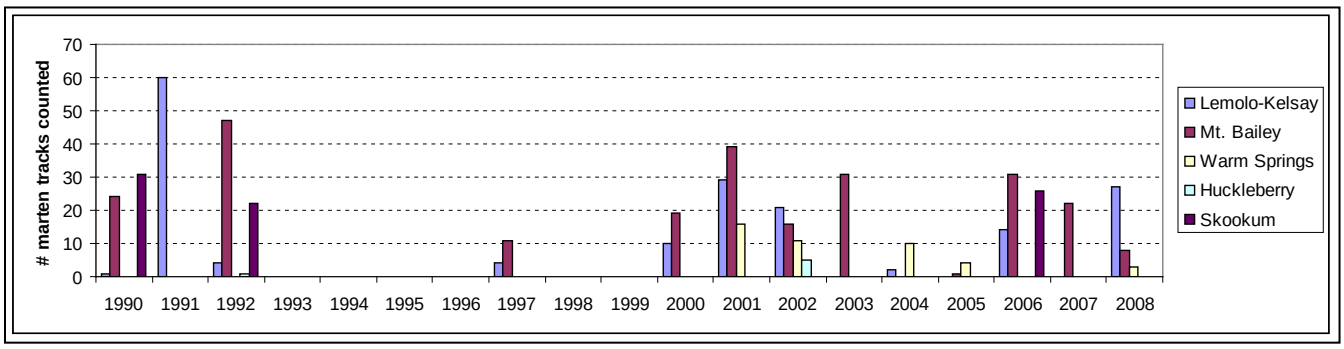


Figure 4. Winter track counts of pine marten on the Diamond Lake and Tiller Ranger Districts 1990-2008.

Dedicated pine marten areas as described as Prescription C5-IX in the Umpqua National Forest Land and Resource Management Plan (1990) were updated in 2008.

Recommendations

- Continue to assist ODFW with winter track counts as time and funding allow.

Primary Cavity Nester

CW1/NFWF 21 - Primary Cavity Nester; Umpqua National Forest Plan Chapter V – 20, Table V-1.

What monitoring did we do in 2008?

No NFIM dollars were available in 2008 to conduct monitoring associated with this resource element. NFWF dollars were used to conduct the surveys.

Two areas were monitored for landbirds (including cavity nesters). One area was on the Diamond Lake Ranger District and the other in the Apple Fire area on the North Umpqua Ranger District that burned in 2002. In addition to local monitoring, the Forest is utilizing monitoring data from nearby Breeding Bird Survey Routes (Sauer, J. R., J. E. Hines, and J. Fallon. 2005. The North American Breeding Bird Survey, Results and Analysis 1966 - 2005. Version 6.2.2006. USGS Patuxent Wildlife Research Center, Laurel, MD). This national monitoring provides many years of trend data for this area.

Diamond Lake RD

Volunteers from the local Audubon Society conducted another year of annual monitoring of bird routes on the Diamond Lake Ranger District. The number of routes surveyed has decreased from eleven routes done historically to four routes done currently. Six visits were completed for each route, for a total of 24 visits. Presence and abundance of bird species were documented.

North Umpqua RD

A Breeding Bird Survey (BBS) route was established within the area of the Apple Fire with surveys conducted along the 21.7 mile route (Figure 5). This BBS route has been surveyed post-fire and pre/post salvage logging (from 2003-2008) and has been surveyed for six consecutive years. The route was surveyed two years before logging, two years when logging was being conducted, and two years after logging.

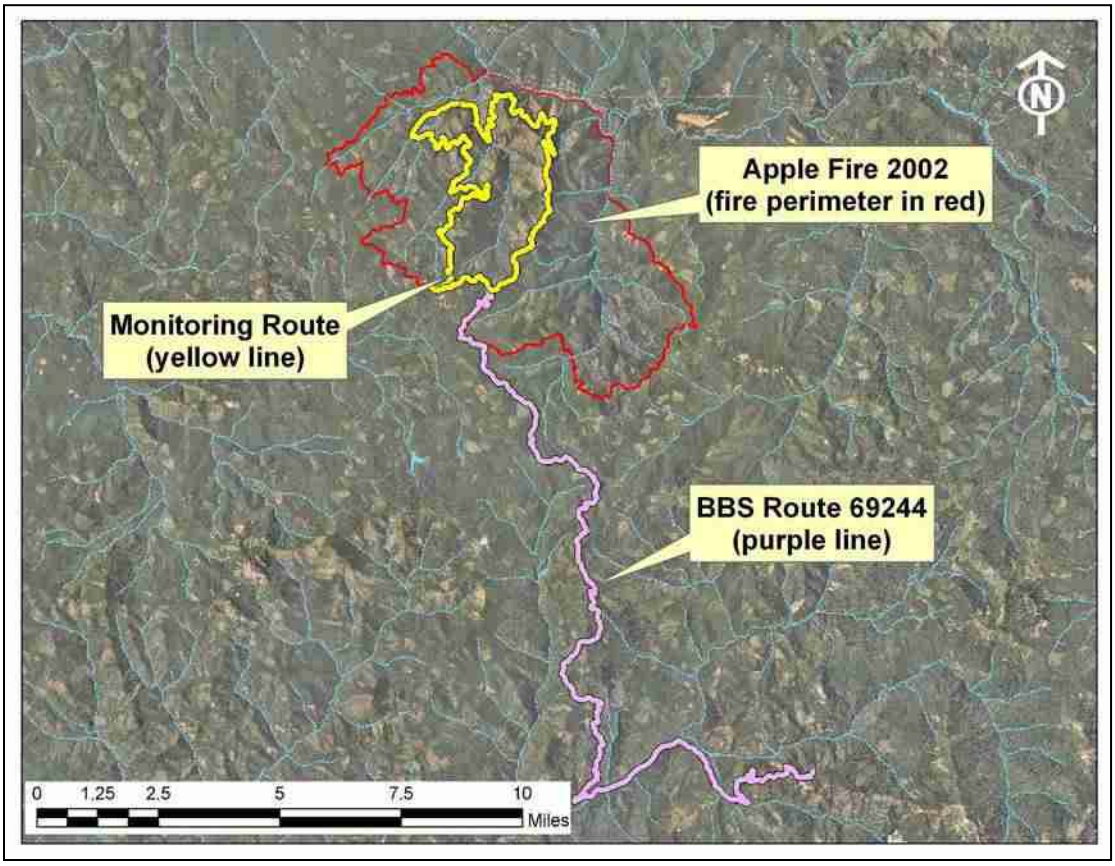


Figure 5. Apple Fire Breeding Bird Survey Monitoring Route and Cinderella BBS Route 69244

USGS Breeding Bird Surveys: These surveys are an important source of information regarding population trends for cavity nesters (and landbirds in general) on the forest. These BBS routes are part of a large-scale survey of North American birds, which started in 1966. Each BBS route is surveyed once annually in June by experienced birders.

There are two BBS routes located entirely on the forest (Figure 6), while another four routes within 10 air miles of the forest boundary. Names and locations of these six routes are as follows:

- Clearwater – 25 miles on the Umpqua NF
- Cinderella – 25 miles on the Umpqua NF
- Days Creek – 4 miles west of the Tiller RD
- Sams Valley – directly south of Tiller RD
- Warner Mountain - 3 miles east of the North Umpqua RD

- Winberry – 7 miles north of the Cottage Grove RD

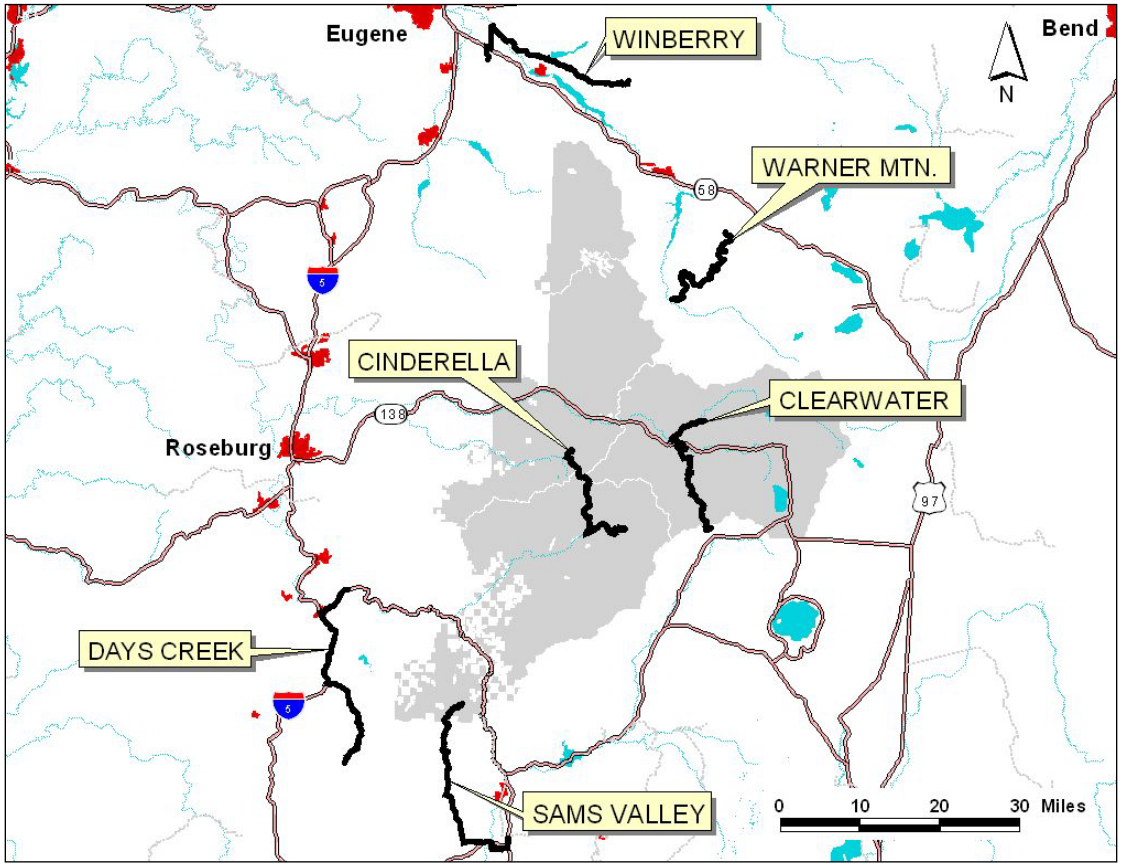


Figure 6. North American breeding bird survey routes on or near the Umpqua NF.

What did we learn in 2008?

The results of the Diamond Lake Ranger District monitoring are currently being entered into a database and have not yet been analyzed.

Apple Fire Area

To date, a total of 68 different bird species have been detected within the Apple Fire area. Species richness has remained stable. The June BBS annual species totals for the Baked Apple monitoring route increased from 39 to 44 species through 2006 but dropped back down to 40 species in 2007 and 2008.

Red-breasted sapsucker numbers decreased within the Apple Fire area. For two years the species was not detected but was heard again in 2007, with a slight increase in 2008. Hairy woodpeckers initially responded positively to the fire and pulse of snags created by it although their numbers have since declined. Flicker levels have remained relatively stable. Pileated woodpecker numbers have decreased, with no detections in last three annual surveys although the species was detected again in 2008 (Table 5; Figure 7).

Table 5. Primary cavity nester monitoring data from the Baked Apple Fire monitoring.

Primary Cavity Nesters	1993-2002	2003	2004	2005	2006	2007	2008
Red-breasted Sapsucker	2	3	1	not detected	not detected	1	2
Hairy Woodpecker	3	5	7	9	3	7	2
Northern Flicker	6	4	5	4	5	4	4
Pileated Woodpecker	2	not detected	1	not detected	not detected	not detected	3

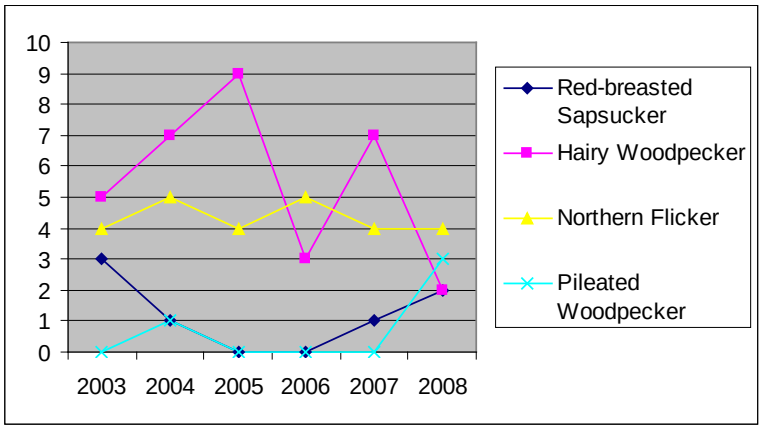


Figure 7. Primary cavity nester monitoring data from the Baked Apple Fire monitoring.

Information about cavity nesters has been collected for at least 13 years (range 13-36 years) along the BBS routes. The current trends for the six routes on or in proximity to the forest are shown in Table 6 and Figure 8.

Table 6. Primary cavity nester monitoring data from local BBS routes.

Primary Cavity Nesters	Population Trends					
	Clearwater (1991-2007)	Cinderella (1993-2007)	Days Creek (1971-2007)	Sams Valley (1993-2007)	Warner Mtn (1992-2007)	Winberry (1968-2007)
Red-breasted Sapsucker	↓	↓	↓	↓	↑	↔
Acorn woodpecker	Not Detected	Not Detected	↔	↑*	Not Detected	Not Detected
Downy Woodpecker	Not Detected	Not Detected	↑	↓	Not Detected	↑
Hairy Woodpecker	↔	↓*	↓	↔	↓*	↑
Northern Flicker	↔	↔	↔	↑	↔	↑
Pileated Woodpecker	↓	↔	↑	↔	↓	↑

↔ This symbol indicates a stable trend (≤2% change per year)
↑ This symbol indicates an increasing trend (>2% positive change per year)
↓ This symbol indicates an decreasing trend (>2% negative change per year)

* Statistically significant ($p<0.05$)

Both the Cinderella and Clearwater BBS routes are located on the forest. On these two routes red-breasted sapsuckers trends are decreasing, but the decrease is not statistically significant. Hairy woodpeckers are decreasing along the Clearwater route and this trend is statistically significant. Northern flicker populations appear to be stable. Pileated woodpecker populations have declined on the Cinderella route.

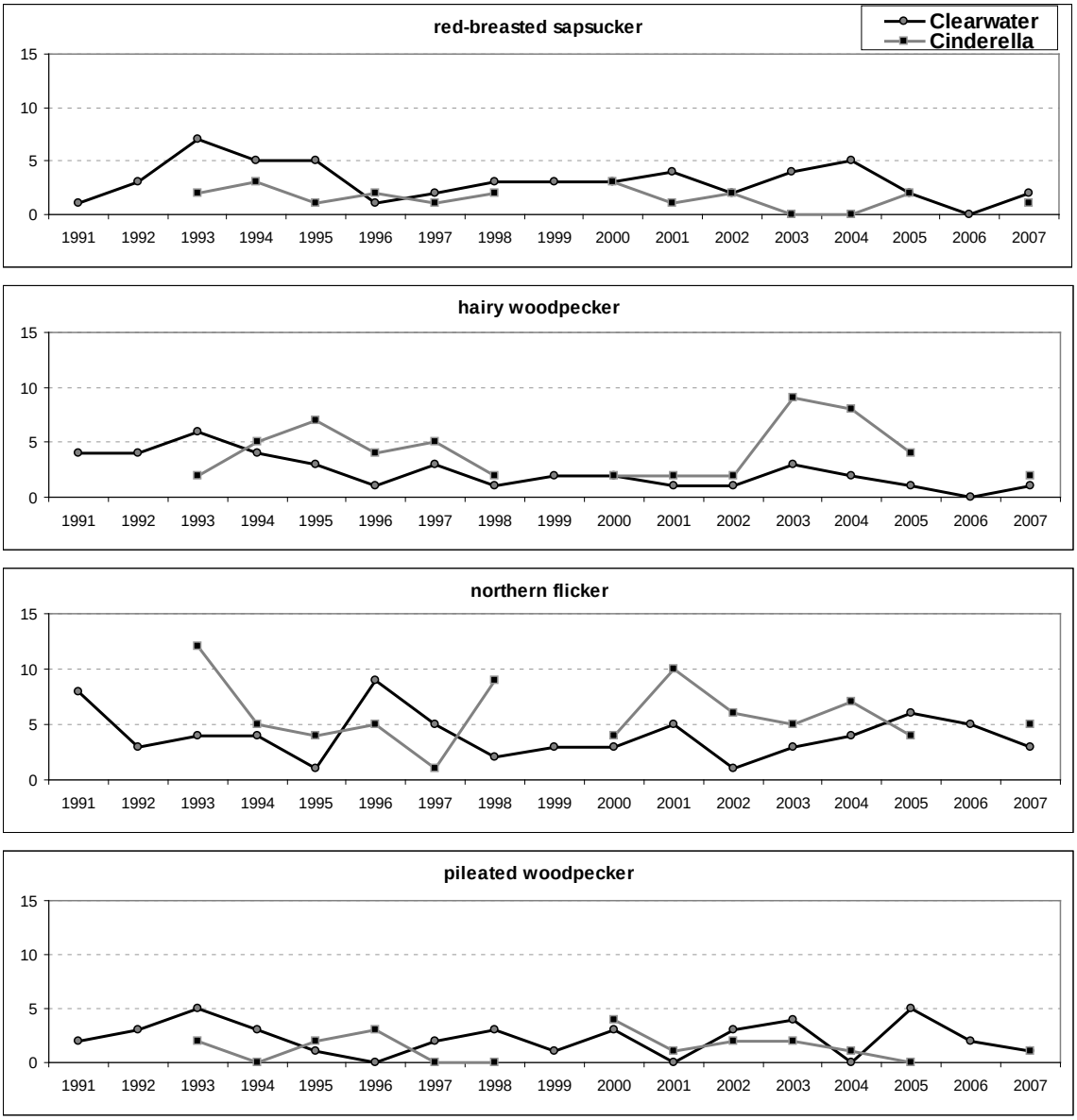


Figure 8. Primary cavity nester trends on the Umpqua NF.

Amendments

Amend the Umpqua National Forest Plan to integrate new information and management recommendations outlined in DecAID and the Conservation Strategy for Landbirds in Coniferous Forests of Western Oregon and Washington.

Recommendations

- Continue monitoring long term trends from BBS data, where possible, and continue project specific monitoring such as the Baked Apple Fire Salvage monitoring.
- Encourage the research community to focus their efforts on local studies that explore land management effects on land birds.

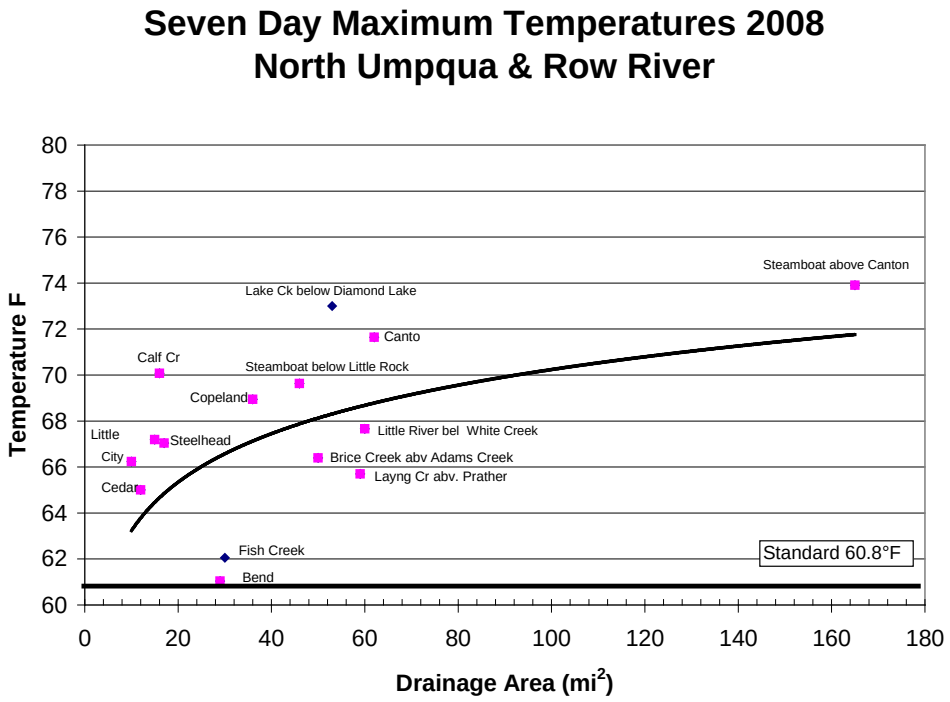
Appendix A - Attachments

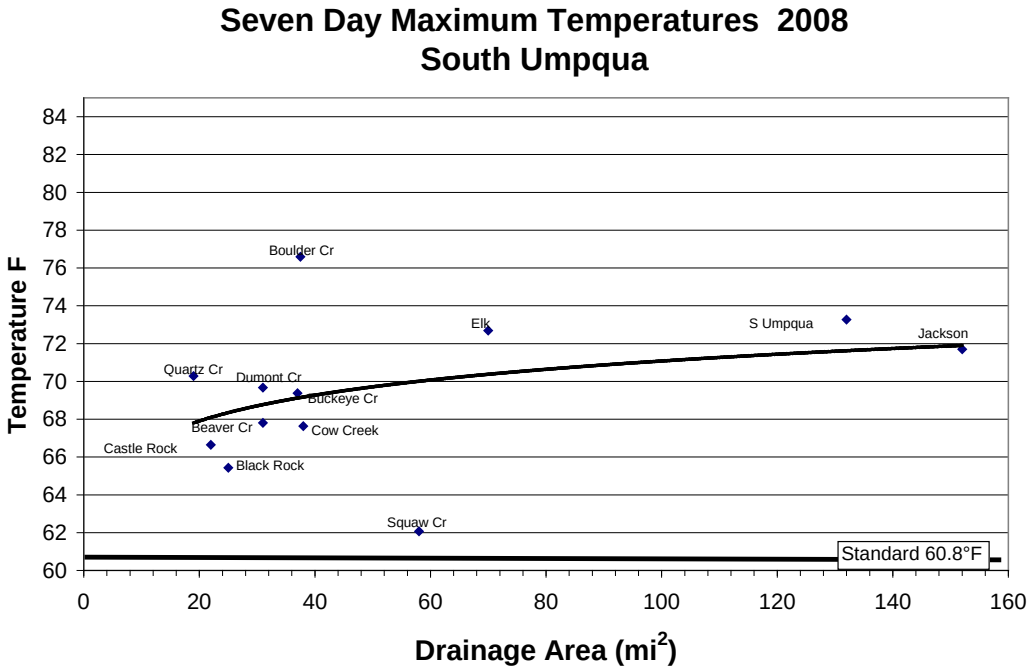
1. **Best Management Practices Table**
2. **Temperature Graphs**
3. **Turbidity Flow Graphs**

1. Fiscal Year 2008 BMP Checklists

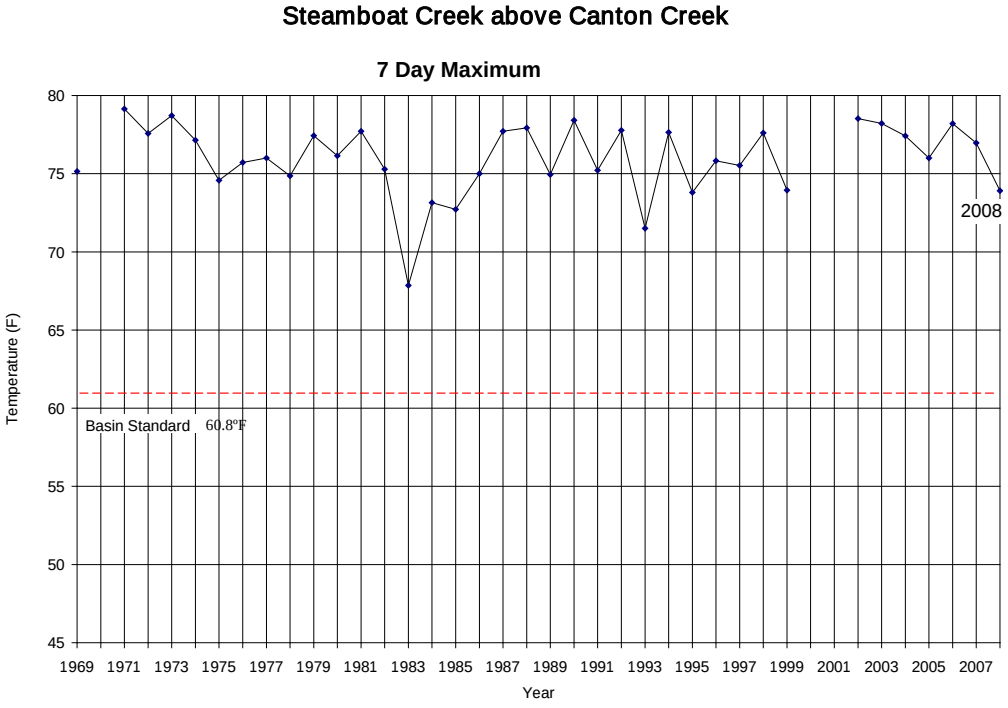
Ranger District	Environmental Documents signed For Ground-Disturbing Activities	Best Management Practice Checklists	Percent of Projects With BMP Checklists
Cottage Grove	5	1	**20%**
Tiller	6	2	**33%**
Diamond Lake	5	1	**20%**
North Umpqua	4	4	**100%**
Forest	**20**	**8**	**40%**

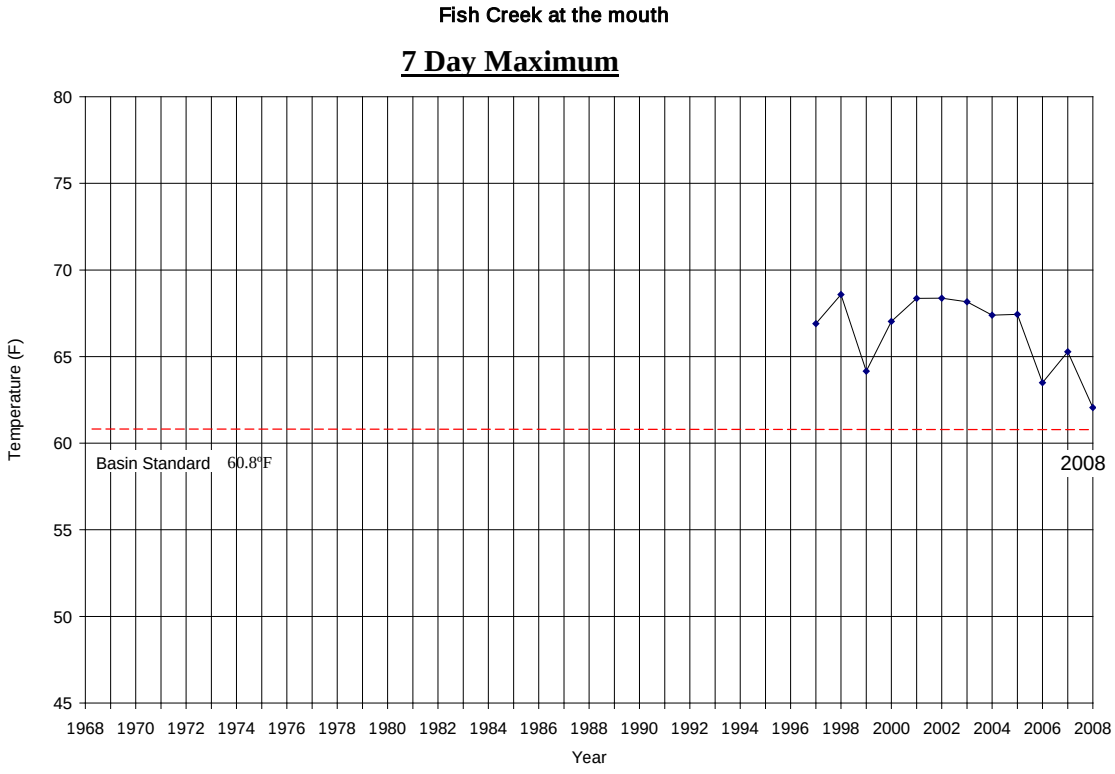
2. Temperature Graphs for the and North Umpqua, Row, and South Umpqua Rivers



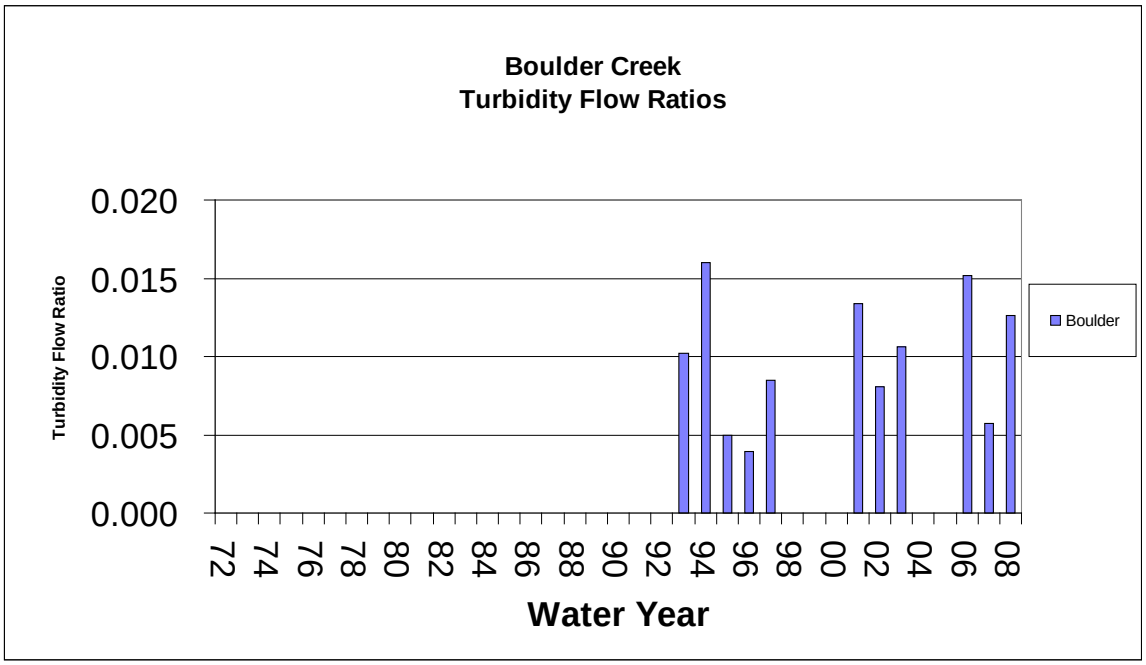


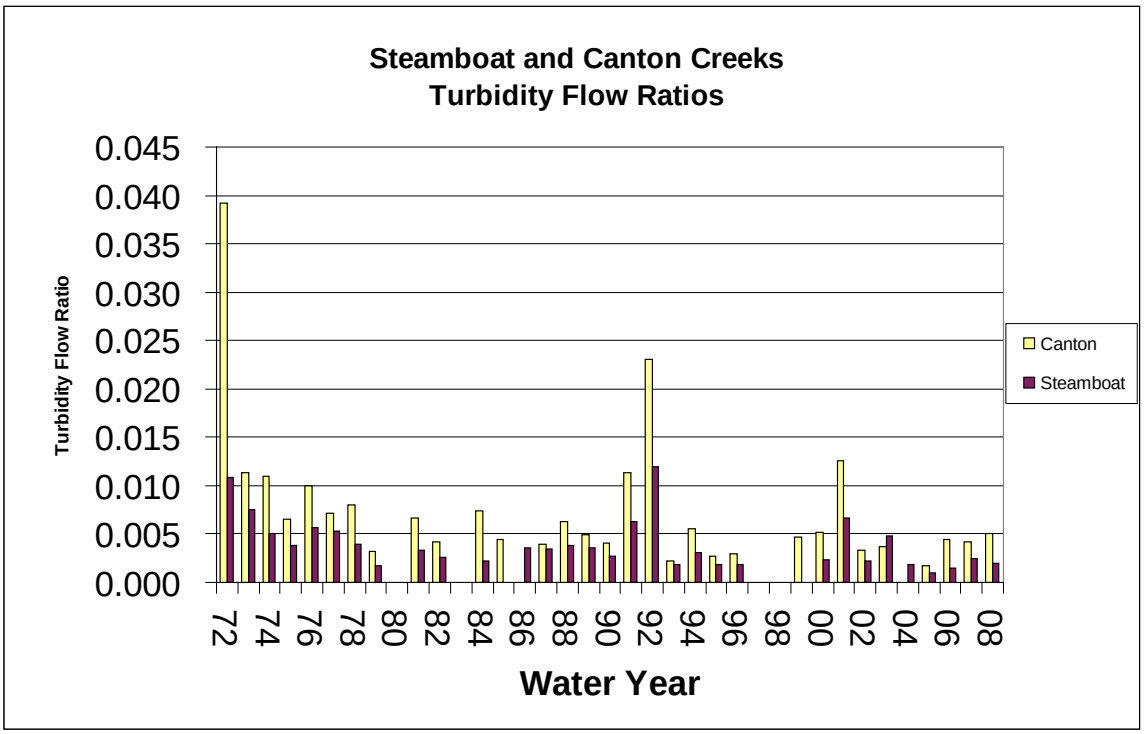
Temperature Graphs for Steamboat Creek above Canton Creek and Fish Creek.





3. Turbidity Flow Ratio's for Boulder Creek, Steamboat Creek, Canton Creek, and Layng Creek.





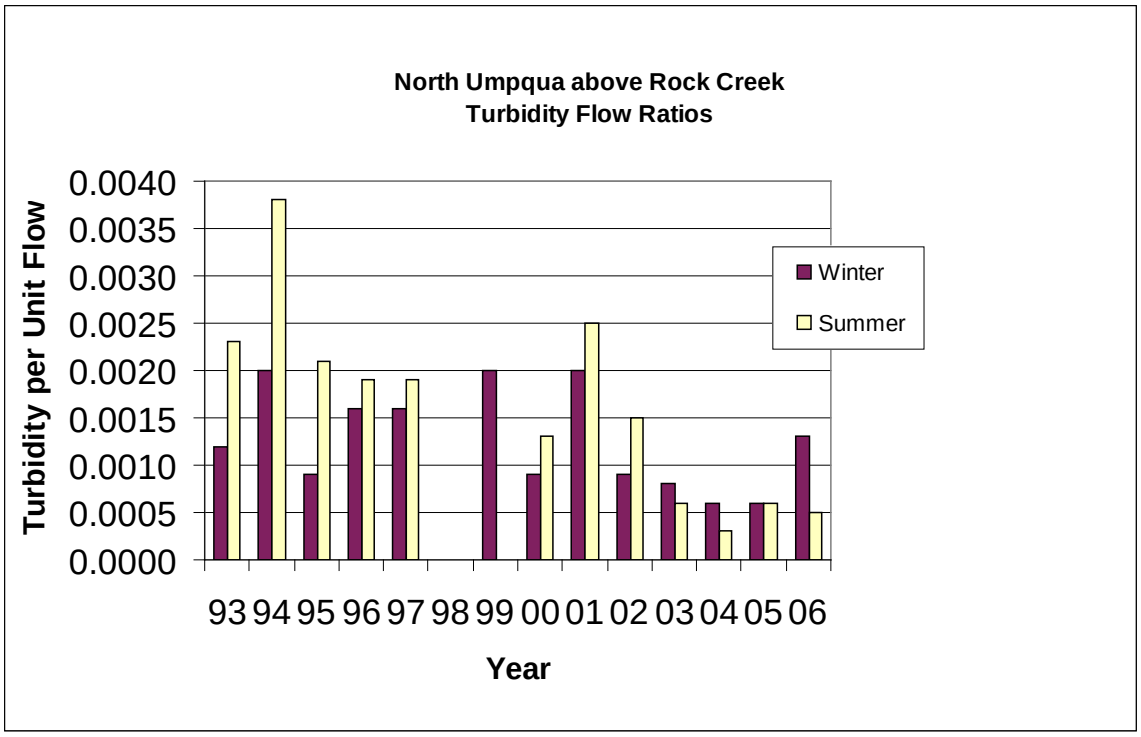
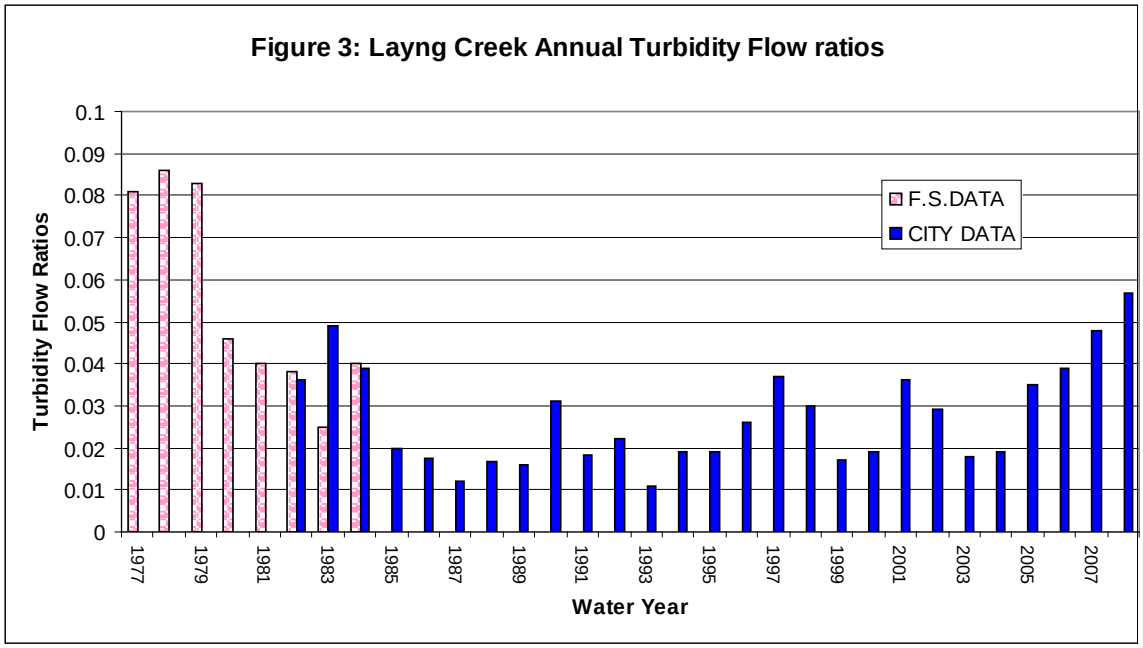


Figure 3: Layng Creek Annual Turbidity Flow ratios



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