AIR QUALITY: Standards and Guidelines

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Comply with State, Federal Air Quality Standard, Clean Air Act	Each burn	Any adverse public reaction; smoke in inhabited area or exceeds Federal Standards of inhalable particulate matter (PM-10) no greater than 150 µg/m³

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Prescribed Burn Plans, Fire Dispatch

Unit of Measure: Acres burned

Findings: All prescribed burns complied with the State of Idaho Air Quality Standards and the Federal Clean Air Act. No inhabited areas exceeded inhaled particulate matter (PM-10) greater than 150 micrograms per cubic meter. One prescribed burn did experience a slight smoke inversion for a few hours; then the wind increased and blew it out. The particulates at this time did not exceed the µg/m³.

Prescribed burns:
1997 – 2,178 acres
1998 – 5,223 acres
1999 – 22,270 acres
2000 – 10,684 acres
2001 – 7,866 acres
2002 – 3,097 acres
2003 – 5,058 acres

Variability: Predicted prescribed burn standards were not exceeded. Recommend that monitoring be done either in the spring or fall, as needed, for units which may have off-site affects.

Evaluation: Prescribed burn level meets State and Federal air quality standards.

Appropriateness: Continue at current level to meet the legal requirements.

AIR QUALITY: Effects of Pollutants to Ecosystems

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2 (BL)	Effects of atmospheric pollutants to natural ecosystem	Annually	Significant change in pH of high alpine lakes in granitic watersheds. Decrease in ANC over time. Increase in nitrates plus sulfates.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Baseline

Data Source: USDA-FS – Fort Collins Water Lab and Salmon and Challis Lake Sampling Report.

Unit of Measure: pH (potential hydrogen), ANC (acid neutralizing capacity), mg/L (milligrams/liter) or µeq/L (milliequivalents/liter).

Findings: Robert C. Musselman at the Rocky Mountain Forest and Range Experiment Station (3/19/04) states that lake chemistry data from the Forest lakes indicate no major problems in regard to nitrates and sulfates. The only items that need to be monitored for long term data are some of the lakes with an ANC of <50 milliequivalents per liter. All laboratory analysis is available at the Salmon-Challis National Forest Supervisor's Office, Salmon.

Variability: Some variability between the same lakes exist and might be caused by time of year in which the samples were collected and the amount of runoff into the lake systems. Recommend monitoring in spring after snow melt and again in late summer.

Evaluation: Information gathered does not reflect our management activities, but rather outside influences on our National Forest land. This baseline data is needed to determine future acid deposition and establish a long-term (10 year) monitoring program.

Appropriateness: Continue monitoring as funding allows. Annual long-term monitoring suggested on the following lakes for acid rain deposition effects:

Low Sensitive ANC <50 µeq/l (milliequivalents/liter)

Harbor Lake
Wilson Lake
Hat Creek Lake – SE
Glacier Lake
Mill Lake - Upper
Crimson Lake
Knapp Lake

AIR QUALITY: Lichen Analysis – Effects to Ecosystems

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
BL-1	Lichen Elemental Analysis	Annual	Sulfur >0.2%; is potentially hazardous in lichens and ecosystems

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Baseline

Data Source: Brigham Young University (funding is part of BYI Challenge-Cost Share Agreement.

Unit of Measure: Percent and parts per million (ppm)

Findings: Complete analysis is unavailable for part of 1992, 1994, 1996, 1997, 1998, 1999, 2001 and 2002 at this time.

Observations from the elemental analysis data:

1) Sulfur concentrations are consistently within background levels (this applies to both baseline values and follow-up values.

2) Several metals are slightly to clearly elevated at some sites, apparently with several distinctive patterns (in terms of location):

1. Chromium (9.5-48 ppm) and nickel (6-11.8 ppm) values are somewhat elevated at Big Eightmile Creek, Bernard Creek, East Horse Creek (2 samples), Marsh Creek Transfer Station, and Magpie Creek (also with elevated arsenic).

2. Several sites show some unusual iron accumulation, as reflected in high Fe/Ti ratios (8.78-11.4); specifically, Marsh Creek Transfer Station, Allen Lake, Magpie Creek, Cold Meadows Guard Station, Chamberlain Basin, Iron Bog RNA, Colson Creek, Patterson Creek (2 samples), Loon Creek (Tin Cup Campground), and North Baldy.

3. Two sites (relatively close together) show elevated levels of chromium (10.8-11.3 ppm) and arsenic (5.68-8.34 ppm); specifically, Loon Creek (at Tin Cup Campground) and Loon Creek Pass.

4. Five sites show slightly elevated lead concentrations (32.1-51 ppm); specifically, Horse Thief Canyon (also with slightly elevated nickel), Bernard

Creek, Horse Creek (also with elevated arsenic), Allen Lake (also with elevated arsenic), and Mount Baldy.

5. Two sites show unusually high copper concentrations as reflected in high Cu/Zn ratios (1.39-1.58); specifically, Allen Lake and Mount Baldy.

Lichen samples have been collected at total of 85 sites. About 44 lichen sites have had an elemental analysis completed.

Variability: No limits have been exceeded.

Evaluation: This monitoring is not of our management activities but of outside influences on our National Forest land.

Appropriateness: Discontinue monitoring as a Forest Plan monitoring report requirement since baseline data has been established. Continue monitoring on selected sites as funding allows us to determine any changes.

AIR QUALITY: Health Hazards

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
BL-2	Particulate Deposition	Bi-weekly	Exceed Federal Clean Air Act (CAA) Requirements

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Baseline

Data Source: University of California, Davis and USDA-FS reports, Supervisor's Office.

Unit of Measure: Nanograms/m^3 and micrograms/m^3

Findings: In 1989 an automated 35 mm camera was located on Middle Fork Peak Lookout (9.127 feet), about 36 air miles southwest of Salmon. The visibility target was Big Baldy Mountain, about 30 air miles southwest of the lookout, on the Boise National Forest, within the Frank Church – River of No Return Wilderness. The camera data was collected during the summer and early fall only. At this same time, a Stacked Filter Unit (SFU) air sampler that collected Particle Mass of approximately 10 micron size was installed on South Baldy Mountain (9,149 feet), about 6 air miles west of Salmon. This air sampler collected data during the same time as the camera, summer through early fall only. In the fall of 1993, the visibility camera and particle sampler were both relocated to North Baldy Mountain. This new monitoring site was located about 6 miles west of Salmon, near the 9,000 foot elevation. The new camera target was located at West Pintler Peak in the Anaconda-Pintler Wilderness north of Wisdom, Montana, about 60 air miles northwest of North Baldy Mountain. The SFU sampler was replaced with an IMPROVE Module A sampler that measures particle matter of less than 2.5 microns (PM 2.5). It was part of the Nationwide Interagency Monitoring of Protected Visual Environments (IMPROVE), consisting of about 75 sites.

The reconstructed fine mass plots show patterns typical of high elevation sites in and near Idaho. The dirtiest days occurred in the summer or autumn (from wildfire smoke) with episodes dominated by organics (soot and smoke particles). The best visibility occurs in the winter, with Standard Visual Ranges on the cleanest days of roughly greater than 350 km.

For the five-year period from 3/1993 – 2/1998, Salmon ranked as the 69th dirtiest site (only 6 sites were cleaner) out of the 75 sites with an A-module IMPROVE aerosol sampler, because of the large amounts of wildfire smoke from on and off the Forest, to the southwest, west, and northwest.

No significant trends in summer mean fine mass exist at the Salmon Site (9,000 feet) from 1989 to 1999. The summer mean fine mass at Salmon is generally about 4 micrograms per cubic meter, but can range from about 2 to 7.

The following information represents the visibility and air sampler data for the Salmon National Forest and the Frank Church – River of No Return Wilderness from 1989-1999:

Standard Visual Range (Km)	Fine Mass (micrograms per cubic meter)
350+	<0.4
220-300	0.7-1.2
100-150	1.5-2.4
50-80	4-8
4-8	>15

In 1991, a great deal of smoke from the Rush Creek Prescribed Natural Fire (Frank Church – River of No Return Wilderness) to the west combined with smoke from the Selway-Bitterroot Wilderness to the northwest. Particle sampling readings at 9,000 feet were as high as 35 µg/m³. In the Salmon Valley, readings from the State of Idaho (PM-10) site was around 128 to 146 µg/m³ on certain days. In 1992, the Boise Foothills Fire about 150 miles southwest of Salmon produced an excessive amount of smoke from the burning of 270,000 acres. At the high elevation air monitoring site, the particle sampler recorded 64 µg/m³ while in the Salmon Valley on the same day, at the State of Idaho site, readings were 136 µg/m³. Also, during this same time, four major forest fires (14,000 acres) were active on the Payette National Forest, west of the site. Visibility at the 9,000 foot site was less than 1 mile and in the Salmon Valley, visibility was good for 1 mile, fair from 1-3 miles, and poor beyond 3-5 miles.

During August 1994, the 5 highest readings averaged 21 µg/m³ because of the Corral Creek Complex and Chicken Peak Complex on the Payette, the local Power Line Fire, fires on the Boise, and the Pioneer Fire on the Challis. This smoke continued through the end of September. For August 1996, the Swet and Bridge Fires on the Forest, and a major Oregon fire, produced the two highest readings, averaging 15 µg/m³ at the 9,000 foot site. The Salmon Valley was also heavily affected by all fires, since the wind brought smoke up the Main Salmon River into the area, and the Salmon site recorded a 71 and a 64 µg/m³. In 1997, only two days had a high reading of 14 µg/m³ each. Although no large local fires were active, some smoke was documented from the Boise and Payette prescribed fires.

In 1998, at the end of August and September, readings averaged 15 µg/m³ at the high elevation site while the Salmon Valley received readings around 102 µg/m³. These smoke events were produced from numerous fires down the Main Salmon River: Payette fires, Main Salmon Complex, Jackass, .38 Mowitch, Ebenezer, Cayuse, and Sheepeater. The next highest event was in 2000 from the Clear Creek Fire. Two high event days were August 2 with 40 µg/m³ and the 5th with 38 µg/m³ at the 9,000 foot elevation site, while in the Salmon Valley, 7 days had PM-10 readings above 150 µg/m³. The highest one-hour reading of PM-10 was 982 µg/m³. On 275 occasions, the 1 hour reading was

above 150 µg/m³. The high elevation Forest monitoring site was terminated on August 5, 2000 after major technical problems.

The spring of 1998 was the dirtiest yet measured due to a very large (~ 5.5 µg/m³) soil concentration spike. This spike in soil concentrations was also measured at the Sawtooth and Sula Peak sites. This sharp spike was the result of one of several intense dust storms generated over the Gobi Desert. A dust cloud about 1,000 km long started on April 19 and was transported across the Pacific Ocean, reaching North America within 5 days. It arrived on the West Coast on April 25 and persisted until the beginning of May. The dust cloud stretched from Southern California to Canada and inland to the Colorado Plateau. The chemical composition was uniform and had a volume diameter of 2-3 microns, creating a health hazard to the public in some areas. Wind-blown dust originating from the arid deserts of Mongolia and China is a well-known springtime meteorological phenomenon throughout East Asia.

The autumn of 1998 was also dirtier than previous years (possibly because of an increase in wildfire activity throughout the summer and early fall). This would also probably be true through 2003 (including the worst summer in 2000), because of the many large fires on the Forest during the summer. No permanent air deposition monitoring stations were located on the Forest after the 2000 Clear Creek Fire. During the winter months, the deposition drops down to between 0.3 to 0.7 µg/m³. The normal readings from spring through fall, without smoke impacts, varies from 2-6 µg/m³.

Variability: Federal CAA requirements were not exceeded on the Forest, except for short durations near the fires.

Evaluation: This site did monitor our wildfire smoke particulate matter, but not local management activities, none of which emitted enough particulate into the atmosphere or were close to the monitoring site. Particulate deposition was collected from off-Forest and included air current materials from Southern California northward, including Canada and Montana.

Appropriateness: Discontinue as a Forest Plan monitoring report requirement. This site was terminated on August 5 during the 2000 Clear Creek Fire, when technical problems with frequency interference overrode the local flight following for aircraft. The flight following relay and this equipment was located at the same site. Since this site has similar air chemistry (particle deposition) to the Sula site north of Lost Trail Pass, we removed all of our equipment. We will use the Sula data in the future when required.

AIR QUALITY: Air Deposition Effects on Macroinvertebrates in the Ecosystem

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
BL-3	Macroinvertebrate Species Numbers	Annually	Decrease in mayflies and caddisflies

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Baseline

Data Source: USDA-FS, Regional Ecologist and Salmon Supervisor's Office reports

Unit of Measure: Number of species

Findings: Laboratory analysis from the Salmon and Challis National Forests has indicated that 49 lakes have a pH of less than the critical 6.5. The following lakes have pH less than 6.0, which is critical for amphipods: Harbor; Wilson; Knapp #13, 14, 18, 25; Crimson #32, 36, 38, 39; Tango #31, 42; Shoban; Crater; Gooseneck; Skyhigh; and Reynolds. None of the lakes sampled at this time have pH less than 5.0, but not all of the lakes have been sampled for pH. Of those sampled, only Harbor Lake has been sampled for macroinvertebrates (in 1988) and also has a critical pH of 5.59.

Variability: Three stations were sampled in Harbor Lake in August 1988 with the primary purpose to establish baseline data for monitoring air quality. The macroinvertebrate community had fairly good diversity with most of the species tolerant of sedimentation or organic nutrients. There was a moderately tolerant caddisfly species, *Lepidostoma*, that would be a good species for indicating possible habitat degradation. Other possible indicator species would be the *Baetid* mayfly and *Cinygmula* mayfly found in this community, which are reported to be sensitive to changes in pH, particularly lower pH levels. They would be excellent indicators for air quality, because they are tolerant to many forms of common disruptions in the environment.

Evaluation: Macroinvertebrates are the first link in an ecosystem to show a potential crisis starting. We need to establish a good baseline data base at this time to determine any future decrease in species on selected lakes. The loss of fish populations is one of the LAST biological effects of acidification. We need to continue to monitor and increase monitoring from a low to a high level on selected sensitive lakes. With documentation from the National Atmospheric Deposition Program showing an increase in nitrates, we must establish a good baseline data base at this time.

Appropriateness: Continue to monitor on Harbor Lake and establish additional baseline monitoring stations on selected lakes over a five-year period if funding allows.

BUDGET: Receipt Shares to Counties

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Receipt Shares to Counties	Annually	Not Applicable

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Validation

Data Source: Reports from Regional Office, National Forest Receipts, and Idaho Public Lands Report.

Unit of Measure: Dollars

Findings:

Salmon and Challis National Forests
COMBINED RECEIPT SHARES TO COUNTIES
(Dollars)

Year	Idaho	Blaine	Butte	Clark	Custer	Lemhi	Valley	Total
1997	10,927	74	6775	88	56,831	281,290	11,844	367,809
1998	8,605	126	11,492	150	96,688	231,563	9,327	357,951
1999	29,211	273	25,060	328	210,853	763,371	31,661	1,060,757
2000	2,806	87	7,930	104	66,726	82,308	3,041	163,002
2001	X	X	X	X	X	X	X	X
2002	X	X	X	X	X	X	X	X
2003	X	X	X	X	X	X	X	X
4 yr Average	**12,887**	**140**	**12,809**	**168**	**107,775**	**339,633**	**13,968**	**487,380**

In 2001 the Forest Service changed the way it handled payments to States for both the Twenty-five Percent Fund and the PILT funds. These figures are no longer available to the Salmon-Challis National Forest.

The Salmon and Challis National Forests are located primarily in Custer and Lemhi Counties, Idaho. The percent of Federal ownership in these counties is 93 percent and 90 percent, respectively. County governments receive Federal payments to compensate for lost property tax revenue from two major sources:

> **1. Twenty-five Percent Fund** – The Act of May 23, 1908, authorizes 25 percent of all payments received by the Forest Service during any fiscal year to be paid to the states. These payments are distributed to the counties in which they were earned.

2. Payment in Lieu of Taxes (PILT) – Public Law 97-258 authorizes payment to counties containing Federal lands (Forest Service and BLM). PILT amounts depend on several variables. In Lemhi County, payments result from a $0.10 per acre limit. In Custer County, payments are governed by a population factor.

Variability: PILT payments have been very constant from year to year, while the 25 percent fund receipts have not.

Evaluation: In order to understand the variability of 25 percent fund receipts, it must be divided into its individual resource components. The tables below identify how timber, grazing, recreation, special uses, and other resource areas contributed to the total funding from 1997 to 2003 for the Salmon and Challis National Forests.

Salmon-Challis National Forest
(Salmon Area)
Source of 25 percent Fund Receipts
(Dollars)

Year	Forest Plan	*Timber	Lands	Rec-Land	Power	Minerals	Rec User	Range	Total
1997	679,000	-116,165	8,903	139,872	4,419	742	42,763	43,582	124,116
1998	679,000	31,753	14,188	79,773	4,383	585	114,348	40,618	285,648
1999	679,000	10,680	9,564	18,619	4,810	4,004	160,456	42,338	250,471
2000	679,000	2,832	14,332	7,717	5,111	480	111,003	46,460	187,935
2001	679,000	16,998	14,281	7,722	4,844	859	85,295	43,280	173,279
2002	679,000	6,798	16,938	5,740	4,703	889	101,369	36,807	173,244
2003	679,000	16,203	14,401	8,102	3,913	1,386	88,985	37,844	170,834
Average:	679,000	-4,414	13,230	38,221	4,598	1,278	100,603	41,561	195,075

Salmon-Challis National Forest
(Challis Area)
Source of 25 percent Fund Receipts
(Dollars)

Year	Forest Plan	*Timber	Lands	Rec-Land	Power	Minerals	Rec User	Range	Total
1997	247,000	-14,077	4,069	114,177	273	1,735	32,724	93,976	232,877
1998	247,000	1,966	4,344	62,702	232	4,811	86,573	89,781	250,409
1999	247,000	2,644	4,251	7,782	233	2,773	82,705	86,173	186,561
2000	247,000	2,730	4,684	7,915	236	2,974	204,574	84,288	307,401
2001	247,000	3,743	7,342	3,447	240	1,340	187,175	72,330	275,617
2002	247,000	2,235	7,575	971	245	2,070	193,181	76,026	282,303
2003	247,000	1,965	8,584	3,063	246	918	195,094	74,212	284,082
Average:	247,000	172	5,836	28,580	244	2,374	140,289	82,398	259,893

*Figures for timber include dollars from the National Forest Fund, salvage sale, Knutson-Vandenberg (KV) fund, and purchaser road credits

Timber receipts are shown as negatives in both the Salmon and Challis areas due to the transfer of dollars previously deposited to the National Forest Fund accounts and subsequently transferred back and deposited to salvage sale funds and Knutson-Vandenburg funds.

The twenty-five percent fund receipts has been relatively constant for many resources areas. Recreation use has shown consistent increases while timber has shown a continuing decline.

PILT payments have also undergone a modification in payment method. Some counties have elected to change from an annual variable rate to a fixed average rate as a means of maintaining consistency.

Appropriateness: Continue as a Forest Plan monitoring requirement. The actual receipts to Counties is no longer available to the Forest, however, the data is available through State sources.

BUDGET: Comparison of Forest Plan Budget – Actual Budget by Resource

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Comparison of Budget by Resource	Annually	Not Applicable

Monitoring Requirement: Originally this item was listed as a Salmon Forest Plan requirement but it is not specifically identified in the Forest Plan.

Monitoring Type: Validation

Data Source: Regional Office database files

Unit of Measure: 1000 X Dollars

Findings:

Salmon and Challis National Forests
COMPARISON OF FOREST PLAN BUDGET AND ACTUAL DOLLARS RECEIVED
(1000 X Dollars)

RESOURCE	FOREST PLAN	FY '97	FY '98	FY '99	FY '00	FY '01	FY '02	FY '03*	AVG.	% PLAN
Recreation/Heritage/Wilderness (NFRM/NFHF/NFWM = NFRW)	4,119	2,934	2,341	1,710	1,932	2,494	2,658	2,599	2,388	58%
Wildlife & Fish (NFAF/NFIF/NFTE/NFWL = NFWF)	1,500	1,091	1,299	1,217	1,247	1,634	1,379	1,269	1,293	86%
Range (NFRG)	1,185	413	446	474	581	723	746	723	707	60%
Timber (NFTM)	4,886	1,108	880	763	669	585	597	609	724	15%
Vegetation/Watershed/Air (NFFV/NFRV/NFSI/NFSO = NFVW)	643	529	949	1,132	1,842	1,782	1,926	2,158	1,563	243%
Minerals/Geology (NFMG)	1,369	569	635	744	638	735	819	881	724	53%
Lands (NFLA/NFLL = NFLM)	588	251	243	223	359	374	194	166	245	42%
Facilities/Capital Improvements & Maint. (CNRF=PAFC/NFRD/NFFA=PAMF= CMFC)	4,103	788	516	333	960	1,088	466	562	746	18%
Planning/Ecosystem Inv. & Monitoring (NFIM/NFPN)	583	1,230	1,141	1,108	1,139	1,053	971	1,028	1,099	189%
Protection (WFPR)	2,231	2,734	2,509	2,941	2,989	4,459	4,432	5,201	3,773	169%
General Admin (NFGA = Cost Pools)	3,517	2,331	2,343	2,312	4,419	5,064	5,307	5,203	4,036	115%
TOTAL:	24,724	13,978	13,302	12,957	16,775	19,991	19,495	20,399	17,298	70%

*Allocation Base + Earmarks (did not use Allocation Less Withdrawal)

Variability: Most resource areas were funded below Forest Plan levels. However, several resource areas were funded well above the Forest Plan levels, most noticeably Vegetation/Watershed/Air which includes such activities as weed treatments. Timber and Facilities/Capital Improvements were funded noticeably lower than Forest Plan levels over the last seven years validating the downward trend towards these Forest activities.

Evaluation: The budget, which comes from Congress, is influenced by social, political, and legal factors. The budget for any one resource area could increase or decrease based on social trends.

Appropriateness: Continue to report as a Forest Plan monitoring requirement. This information shows the dynamics of funding trends being influenced by social, political, and national interests. Including it as part of the Forest Plan monitoring report is one way to distribute the information.

BUDGET: Capital Investments

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Capital Investments	Annually	Meet Forest Plan Objectives and Targets

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Implementation

Data Source: Management Attainment Report

Unit of Measure: Structures and miles

Findings:

Salmon and Challis National Forests
CAPITAL INVESTMENTS - CONSTRUCTION

Year	Miles Trails	Miles Trail/Wldns	Structure Fish	Structure T&E	Structure Wildlife	Structure Range	Miles Roads
Forest Plan	8	0	52	0	28	39	35
1997	3	0	0	53	51	23	7
1998	7	0	0	0	59	25	7
1999	34	0	0	0	0	5	30
2000	24	0	0	0	0	5	10
2001	15	0	0	0	9	3	0
2002	22	0	0	0	0	0	0
2003	43	0	0	0	0	0	21
Avg.	**21**	**0**	**0**	**8**	**17**	**9**	**11**

Variability: The outputs were highly variable, mostly because they are dependent on the budget, which is influenced by social and biological factors.

Evaluation: Forest Plans predictions for outputs were based on knowledge of social and biological factors available at that time. We are unable to correctly predict what the budget will be over a ten-year period.

Appropriateness: Continue to report as this is useful information for employees and the public as a means of showing trends in implementing Forest Plan direction and therefore should be part of the Forest Plan monitoring requirement.

BUDGET: Returns to U.S. Treasury

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Returns to Treasury	Annually	Not Applicable

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Validation

Data Source: Forest Financial Statements

Unit of Measure: Dollars

Findings:

Salmon-Challis National Forest
(Salmon Area)
RETURNS TO U.S. TREASURY
(Dollars)

Year	Forest Plan	Timber	Lands	Rec-Land	Power	Minerals	Rec User	Range	Total
1997	679,000	-116,165	8,903	139,872	4,419	742	42,763	43,582	124,116
1998	679,000	31,753	14,188	79,773	4,383	585	114,348	40,618	285,648
1999	679,000	10,680	9,564	18,619	4,810	4,004	160,456	42,338	250,471
2000	679,000	2,832	14,332	7,717	5,111	480	111,003	46,460	187,935
2001	679,000	16,998	14,281	7,722	4,844	859	85,295	43,280	173,279
2002	679,000	6,798	16,938	5,740	4,703	889	101,369	36,807	173,244
2003	679,000	16,203	14,401	8,102	3,913	1,386	88,985	37,844	170,834
Average:	679,000	-4,414	13,230	38,221	4,598	1,278	100,603	41,561	195,075

Salmon-Challis National Forest
(Challis Area)
RETURNS TO U.S. TREASURY
(Dollars)

Year	Forest Plan	Timber	Lands	Rec-Land	Power	Minerals	Rec User	Range	Total
1997	247,000	-14,077	4,069	114,177	273	1,735	32,724	93,976	232,877
1998	247,000	1,966	4,344	62,702	232	4,811	86,573	89,781	250,409
1999	247,000	2,644	4,251	7,782	233	2,773	82,705	86,173	186,561
2000	247,000	2,730	4,684	7,915	236	2,974	204,574	84,288	307,401
2001	247,000	3,743	7,342	3,447	240	1,340	187,175	72,330	275,617
2002	247,000	2,235	7,575	971	245	2,070	193,181	76,026	282,303
2003	247,000	1,965	8,584	3,063	246	918	195,094	74,212	284,082
Average:	247,000	172	5,836	28,580	244	2,374	140,289	82,398	259,893

Timber receipts are shown as negatives in both the Salmon and Challis areas due to the transfer of dollars previously deposited to the National Forest Fund accounts and subsequently transferred back and deposited to salvage sale funds and Knutson-Vandenburg funds.

Variability: As expected, there is a wide range of variability within the resources areas. The total performance is generally in line with the Challis Forest Plan prediction but significantly less than the Salmon Forest Plan prediction, primarily due to reduced timber sales.

Evaluation: Information is useful for comparison between resources and for comparison among years within a resource. However, the information does not reflect the cost to government to administer the program or the social benefits of the program.

Appropriateness: Continue to report; this is useful information for employees and the public. Although this information does not disclose whether or not we are moving toward desired future conditions, it does show trends and the flaws of predicting monetary returns to the U.S. Treasury and therefore should be part of the Forest Plan monitoring requirement.

BUDGET: Comparison of Forest Target Accomplishment

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-1	Comparison of Accomplishment	Annually	N/A

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking

Data Source: Forest reports provided by Regional Office (Management Attainment Report)

Unit of Measure: Various by target

Findings:

Salmon and Challis National Forest
ACCOMPLISHMENT OUTPUTS

DESCRIPTION	MEASURE	1997	1998	1999	2000	2001	2002	2003	FOREST PLAN
Recreation Use	Permits	179	205	205	205	204	128	129	N/A
Trail Construction	Mile	2.8	7	34	24	15	22	43	8
Wilderness Mgmt	Acres (x1000)	X	X	1,207	1,215	2,036	X	0	1,280
Soil & Water/ Watershed Improvement	Acres/ Watersheds	81/123	75/0	45/114	111/0	200/0	56/0	95/0	150/na
Wildlife Habitat Improvement	Acres	1,648	1,038	8,586	6,316	7,068	5,105	4,191	1,395
Wildlife Habitat Improvement	Structures	51	59	0	0	9	X	X	28
T&E Improvement	Acres	50	50	10,663	5,761	9,617	29,250	0	501
Anad Fish Improvement	Structures	X	X	X	X	X	X	X	22
Anad Fish Improvement	Acres	235	2	0	2	3	0	0	62
Inland Fish Improvement	Structures	X	X	X	7	X	X	X	25
Inland Fish Improvement	Acres	0	22	0	0	11	73	0	210
Range Improvement	Structures	23	25	5	7	3	0	0	39
Range Improvement	Acres	982	400	750	0	942	0	0	2,100
Fuel Treatment	Acres (x1000)	2,178	5,223	16,400	10,480	0	0	320	5,200
Noxious Weed	Acres	1,320	1,981	2,190	1,611	1,790	1,662	5,499	435
Minerals Leases	Operations	220	91	108	112	116	150	105	370
Land Exchanges	Acres	157.3	78.5	X	59.2	X	0	0	6,005
Road Construction	Mile	2	0	0	0	X	2	X	24
Road Reconstruction	Mile	2.8	6.9	29.9	10	X	X	21	50
Road Const. Timber PU	Mile	4.1	0	X	X	X	X	X	49
Road Reconstruct. Timber	Mile	0	3.6	X	X	X	X	X	20

X= Entry was not made on the Management Attainment Report (MAR)

Variability: The tracking of targets changed considerably since the implementation of Forest Plans. The Forest Plan targets are from the 1992 Forest Plan update data base.

Evaluation: The Forest Plans' projected outputs were based on the available knowledge of budget projections, laws, social factors and biological conditions. These things have changed, making it difficult to predict outputs accurately.

Appropriateness: This monitoring item is not included as a Forest Plan requirement, but rather as a tracking item. This is useful information for employees and the public. It shows trends in how current accomplishments are outside the scope of expectations and should be included in some sort of reporting system. Including it as part of the Forest Plan monitoring report is one way of presentation.

EXTERNAL EFFECTS: National Forest Management on Adjacent Land and Communities (1996)

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-1	Effects of Nat'l Forest Mgmt on Adjacent Land and Communities	Annual	Not applicable

Monitoring Type: Not a required monitoring item

Data Source: Tracking

Unit of Measure: Not Applicable

Findings:

Effects of Management
Ongoing management direction is continually affecting the management of the Forest. PACFISH/INFISH, Wilderness management, Wild and Scenic River management, Healthy Forest and Hazardous Fuels Initiatives, noxious weed management, and Threatened and Endangered species listings are prime examples of ongoing and new direction affecting Forest management. These directions and initiatives ultimately affect adjacent lands (including public, private, and State lands) and also local communities.

Environmental Education
The Forest Service provides educational and informational programs and materials to the communities within the forest including Leadore, Salmon, Challis and Mackay. Many of the programs were presented in the field to groups of school children, teachers and or adults. The presentations were part of annual educational programs including weeds awareness, wildflowers, fisheries and watershed, Lewis and Clark history, special events and individualized requests. The programs reached all grades of school age children and numerous community organizations and youth groups as well as the community in general. The Forest Service cooperates with other local resource agencies to present these programs and provide the materials such as the educational trunks. The Forest owns 4 educational trunks (Aqua, Bat, Tree and Wildlife) that can be used by Forest Service presenters or can be loaned to any school or group for presentations. The trunks are full of books, cassette and video tapes, colored slides, puppets, and posters about the subject.

The following is a list of the programs employees from the Forest are involved in:

Title	Commitment	Target Audience	Partners
Celebrate Wildflowers! Walks	Annually in May	1st & 5th grade	BLM, IDF&G
Food Webs - Outdoor Classroom	Annually on Earth Day (April)	4rth grade	
Tower Creek Watershed Study	Twice yearly – fall and spring	4rth grade	BLM, IDF&G
Science Day	Annually – fall	8th grade	BLM, IDF&G, Lemhi County
Kid's Ice Fishing Derby	Annually, January or February	All under 18	BLM, IDF&G, NOAA – Fisheries, USFWS
Idaho State University Science Trek	Annually – May	3-5th grade	
Noxious Weed Identification & Prevention	As requested	All, including adults	BLM, IDF&G, CWMA
Fishing Derby	Annually – June	All under 18	BLM, IDF&G, NOAA – Fisheries
Kids Career Day	Annually – May	2nd grade	
Vegetation or Minerals & Geology Presentation	Annually – fall	Cub Scout merit badge	
Natural Resource Management	As requested	7th grade	
Boy Scouts Eagle Scout projects	As requested	Boy Scouts	
Agriculture Class		High School	
Idaho State Envirothon Competition	Annually	High School	BLM, Idaho Association of Soil Conservation Districts
Natural Resource Day	Annually	Grade School	
4H Camp	Annually – June	Grade School	
Lemhi and Custer County Fair Booths	Annually	All	
Minerals & Geology	Annually	2nd & 3rd grade	BLM
Vegetation	Annually	2nd grade	
Career Day	As requested	High School Juniors	
Fire Information / Prevention	As requested	Grade School and Middle School	
Idaho Youth Ranch – good camping practices and misc natural resource topic	Annually – summer	10 – 18 yr old	
St. Louise Catholic Church Camp -- good camping practices and misc. natural resource topic	Annually	7 – 16 yr old	
Lewis & Clark	As requested	All ages	BLM, adjacent national forests

Forest Service Employment and Hosted Programs
The number of permanent employees the Forest employs has varied from approximately 173 to 223 between 1997 and 2003. The fire season of 2000 and the implementation of the National Fire Plan enabled the Forest to increase the permanent workforce to 179 by 2001. As FY 2003 ended and much of the back-log rehabilitation work created by the fires was accomplished the Forest found itself in a period of declining budgets and a surplus of employees.

In addition to the permanent work force the Forest employs numerous seasonal employees annually. A large percentage of these seasonal employees are hired locally with many students coming from out of the area as well.

The Forest also hires local youth in the Youth Employment Program. Numerous youth performed 12.3 person-years of work from 1997 – 2003 with a variety of job duties including clerical, weed inventory/treatment, web page development, and range betterment projects. In addition, the Forest also utilized the Hosted Program for .27 person-years in a variety of Forest activities.

Central Idaho Resource Advisory Committee
This is a 15 member group of citizens that recommends projects to the Forest Service under the Secure Rural Schools and Community Self-Determination Act. Members serve 3 year terms. The RAC works closely with the Forest Service to select resource improvement projects on Federal lands or non-Federal land where the project would benefit resources on Federal lands. The Central Idaho RAC has recommended projects totaling $375,000 in the past three years. Projects included spraying noxious weeds, fuels reduction, water quality improvement, road maintenance, portable toilets during high recreational use periods, and Youth Conservation Corp projects. The group is an example of collaboration between the agency and the counties within the Forest boundaries.

Coordinated Weed Management Areas
The forest is involved in Coordinated Weed Management Areas in Custer, Lemhi, Butte, and Idaho Counties. Funding, knowledge, skills and tasks are shared between the local county extension offices, BLM, Forest Service and the general public on the war against invasive and noxious weeds.

Appropriateness: This monitoring item is not a Forest Plan monitoring requirement. However, it provides some interesting information and therefore should be considered for inclusion into any future Forest accomplishment reports.

External Effects: Effects of Other Agencies on the National Forest

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-2	Effects of other agencies on the National Forest	Annually	Not Applicable

Monitoring Requirement: Not a required Forest Plan monitoring item

Monitoring Type: Tracking

Data Source: Program Leads

Unit of Measure: Not Applicable

Findings:

The Forest worked with many agencies from 1997 – 2003 including federal, state and county branches.

Through cooperative agreements, Lemhi, Custer, and Butte County Sheriffs Departments assist the Forest with routine patrols. Through similar agreements with Lemhi County, road maintenance responsibilities are shared to improve efficiency and effectiveness.

One of the most prominent efforts has been with the Salmon Field Office of the Bureau of Land Management. The Forest Supervisors' Office and Salmon/Cobalt Ranger District collocated with the Salmon Field Office early in 2001 into the Salmon Public Lands Center. The Public Lands Center has one front office reception area where there is no distinction between agencies. The BLM and FS also have agreements to share employees for the front office and in telecommunications. Additionally the Forest and BLM coordinate in fire fighting responsibilities through the Central Idaho Dispatch Office located within the Public Lands Center building.

The Forest consults with two regulatory agencies, the United States Fish and Wildlife Service and NOAA Fisheries, on the effects of proposed projects on threatened and endangered species habitat.

Appropriateness: This monitoring item is not a Forest Plan monitoring requirement. It may provide some valuable information and therefore should be considered for future inclusion into Forest accomplishment reports, where appropriate.

FACILITIES: Road Construction

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Road Construction	Annually	Only when mileage constructed exceeds planned mileage by 10 percent (Salmon); deviated by more than 10% (Challis).

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Annual Road Accomplishment Report

Unit of Measure: Miles

Findings:

Salmon and Challis National Forests
ROAD CONSTRUCTION

Year	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
Salmon	1.0	2.0	0.0	0.6	0.0	0.0	0.1	1.1
Challis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Figures include purchaser credit and capital investment program roads

Variability: Salmon predicted 27 miles/year (pg. IV-85) for this decade; Challis predicted 1.9 miles/year (pg. V-2). Both Forests are below their predicted mileage due to reversal of timber sale decisions on appeal, withdrawal of timber sales, and the emphasis on helicopter yarding on remaining large sales. Logging systems have changed over the life of the plans, resulting in less miles of needed road construction, even if the timber program was producing sales. Roads support resource activities and, generally, aren't a stand-alone target, except for the arterial/collector road system. For these, the Forest requests funding from the Region where the Region then prioritizes and funds according to overall regional needs.

Evaluation: Road construction supports other resource activities. As resource activities changed over the planning period so did the need for road construction. In the Salmon NF, road construction has not exceeded planned mileage. For the Challis National Forest, with zero roads constructed, a deviation of greater than 10% has occurred. However, no further evaluation is needed.

Appropriateness: Continue as a Forest Plan monitoring report requirement even though targets and resource needs are outdated. Also, this item is tracked and available in the Road Accomplishment Report and entered into INFRA corporate database.

FACILITIES: Road Reconstruction

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Road Reconstruction	Annually	Only when mileage constructed exceeds planned mileage by 10 percent (Salmon); deviates by more than 10% (Challis).

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Annual Road Accomplishment Report

Unit of Measure: Miles

Findings:

Salmon and Challis National Forests
ROAD RECONSTRUCTION

Year	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
Salmon	6.4	6.9	11.9	25.1	0.0	0.0	0.0	24.4
Challis	0.0	0.0	3.6	6.5	0.0	0.0	0.0	2.8

Figures include purchaser credit and capital investment program roads

Variability: Salmon predicted 17 miles/year for this decade (pg. IV-85); Challis predicted 20.8 miles/year (pg. V-2). Both Forests are below their average for predicted mileage due to reversal of timber sale decisions on appeal, withdrawal of timber sales, and the emphasis on helicopter yarding on remaining large sales. Logging systems have changed over the life of the plans resulting in less miles of needed reconstruction, even if the timber program was producing sales. Funds for arterial/collector road reconstruction projects are competed region-wide, and the region sets priorities for funding based on overall regional needs.

Evaluation: Due to emphasis on fish habitat, many existing roads could receive some reconstruction to reduce sedimentation and for fish passage. Road reconstruction supports other resource activities. As resource activities changed over the planning period so did the need for road reconstruction. In the Salmon NF, road construction has not exceeded planned mileage. For the Challis NF, with zero roads constructed, a deviation of greater than 10% has occurred. However, no further evaluation is needed.

Appropriateness: Continue as a Forest Plan monitoring report requirement. This item is not a resource output yet supports resource activities to the extent necessary. In addition, the activity is tracked annually in Road Accomplishment Reports and entered into INFRA corporate database.

FACILITIES: Road Closures

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Road Closures	Annually	If 15% of the newly constructed roads are open without meeting the stated criteria; or if 15% of the existing roads are closed without meeting the stated criteria.

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Implementation

Data Source: Forest Travel Plan.

Unit of Measure: Number of roads

Findings: This information has not been tracked through the life of the Plan and is not available at this time. Miles of road decommissioning has been tracked, but this doesn't relate to new or existing roads being closed for this monitoring item.

The Salmon Travel Plan has not been updated for 16 years. No comprehensive method exists to monitor this activity through Engineering or the Ranger Districts.

Variability: Not assessable

Evaluation: Unknown if meeting evaluation conditions or not. However, with extreme public interest in roads/access, any proposed action affecting roads or access is highly scrutinized. The roads analysis process is required anytime road management is being addressed.

Appropriateness: Continue as a Forest Plan monitoring report requirement. This item has not been tracked during the life of the Plan. Resource issues/benefits drive road closures and access needs drive keeping roads open. It's more appropriate to track habitat/watershed improvements and meeting access needs.

FACILITIES: Road Maintenance

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Road Maintenance	Annually	A 20% deviation from expected miles/year or a road condition not meeting objectives of management.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Road logs and condition surveys, road crew foreman maintenance logs.

Unit of Measure: Miles

Findings:

Year	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
Challis	490	447	439	198	310	365	313	240

The average mileage bladed over the last eight years is 350 miles/year; more than 20% deviation from projected (pg. IV-44). Condition surveys are done for deferred maintenance reporting requirements but don't track annual road maintenance accomplishments. Condition surveys are done on a four-year rotation for ML 3-5 roads and only randomly sampled (average 2%) for ML 1 and 2 roads annually.

Variability: Predicted mileage is 560 miles/year. Accomplishment is only 63 percent of predicted due to significantly reduced budgets and lack of purchaser (timber) maintenance since very few timber sales are being offered.

Evaluation: N/A

Appropriateness: Continue as a Forest Plan monitoring report requirement. Road maintenance is reported annually in Road Accomplishment Report and condition is tracked in INFRA database. Road maintenance is purely a function of available funding and has nothing to do with forest planning or resource outputs. Maintenance is performed in support of resource activities and public access needs which will continue in the future.

FACILITIES: Bridge Construction and Reconstruction

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5	Bridge Construction and Reconstruction	Annually	A 10% deviation from projected quantities.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Annual Accomplishment Reports

Unit of Measure: Each

Findings:

Year	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03
Challis	0	0	4	0	0	1	0	0

Variability: There is no specific target/goal for bridge construction/reconstruction identified in the Challis Forest Plan.

Evaluation: Bridges got lumped in with roads for this evaluation; no target exists for bridge replacement/repair.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Bridge inspections/condition/repairs are tracked in INFRA database and reported annually in Road Accomplishment Report. This item is not a resource output but supports resource/access activities.

FACILITIES: Buildings

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-6	Buildings	Annually	Identified deficiencies are not corrected.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Inspection Reports (replaced by INFRA database)

Unit of Measure: Each

Findings: Currently, facility inspections/repairs are tracked in INFRA, as required, and that is all that's being done. According to the Forest Facilities Engineer, the Forest is current on their annual inspection and reporting requirements for INFRA.

Formal (written) inspection reports are done for INFRA reporting and data entry into the database.

Deficiencies, other than health and safety, are only occasionally corrected.

To properly maintain our structures, the budget would have to be approximately tripled (from 1995 report).

Variability: N/A

Evaluation: Deferred building maintenance is tracked in INFRA, and projects are prioritized from these reports.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Building inspections are tracked in INFRA database and are not a resource output.

FACILITIES: Dam Administration

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-7	Dam Administration	Annually	Identified deficiencies are not corrected.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Inspection Reports

Unit of Measure: Each

Findings: Annual inspections are required on only two dams, which are permittee-owned/operated and inspected annually by the State. An additional five dams are owned by the Forest Service, operated under special use permits, with inspection responsibility by the permittees every three to five years. The Forest Facilities Engineer doesn't receive copies of any of the inspection reports, but states that all meet inspection requirements.

It is unknown whether identified deficiencies on all dams are corrected in a timely manner.

Emphasis on the program is low. Repairs are done on a 'catch when you can' basis. Even on the permittee-owned dams, enforcement of repairs is not stressed.

Variability: Unknown

Evaluation: Facilities engineer doesn't receive reports in order to evaluate.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Dam deferred maintenance duties and findings are reported in INFRA database. Inspections are valid but inclusion into the monitoring report is questionable.

FIRE: Adequacy of Fire Prevention Programs

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Person-caused fires	Annually	Major increase in person-caused fires

Monitoring Requirements: Salmon and Challis Forest Plans

Monitoring Type: Effectiveness

Data Source: Annual Fire Report

Units of Measure: Number of person-caused fires and acreage

Findings:

Salmon-Challis National Forest
Number of person-caused fires and Acreage

Year	# Of person-caused fires	Acreage
1997	6	1
1998	7	31
1999	26	1,024
2000	22	113
2001	24	328
2002	22	35
2003	24	33,114

Variability: The trend for number of person-caused fires tracks with the drought trend and the use of ATVs. As the use of ATVs and other outdoor recreation uses increases, we expect to see an increase in person-caused fires.

Evaluation: Prevention program is shown to be effective at leveling off the number of person-caused fires. Large acreage of fires in 2003 was due to a wilderness fire during extreme fire weather conditions and located in a remote inaccessible portion of the Forest.

Appropriateness: Continue as a Forest Plan monitoring report requirement.

FIRE: Wildfire and Acres Burnt

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Frequency of wild fire occurrence by size, distribution, intensity, and acres burnt.	Annually	20% increase (Salmon) in cumulative 5 year average; 30% increase (Challis)

Monitoring Requirements: Salmon and Challis Forest Plans

Monitoring Type: Validation

Data Source: Annual Fire Report

Units of Measure: Number of wildfires and total acres

Findings:

Salmon-Challis National Forest
Number of wildfires and Acreage

Year	# Of wildfires	Acreage
1997	54	102
1998	133	12,905
1999	92	3,407
2000	130	417,260
2001	82	24,266
2002	102	6,340
2003	109	62,993

Variability: The trend for number of fires and area burned tracks with the drought trend, fire weather, and available fire suppression resources at the time of fires. Area burned trends will likely continue to increase due to the un-natural fuel accumulations caused by fire exclusion and other management activities over the last 50 to 100 years.

Evaluation: The trends of increasing area burned have been recognized as a national issue across the western United States and congress and agencies are addressing the problem in multiple ways, including the National Fire Plan, Healthy Forest Initiative, and the Healthy Forest Restoration Act.

Appropriateness: Continue as a Forest Plan requirement and expand the report by analyzing and displaying the post fire severity of the area burned by Fire Regime Group (per Fire Regime Condition Class methodology).

FIRE: Reduction in Fuel Loading from Forest Activities

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Field measurements after activity or fuel treatment	Sample 30% of Projects	Exceeding fuel level guidelines by 10% (Salmon); + or – 20% of Regional standards (Challis)

Monitoring Requirements: Salmon and Challis Forest Plans

Monitoring Type: Validation

Data Source: Annual Fire Report

Units of Measure: Number of acres treated

Findings:

Salmon-Challis National Forest
Fuel Reduction Acres Treated (including fire-use fires)

Year	Number of acres treated
1997	4,778
1998	10,123
1999	34,970
2000	10,684
2001	7,866
2002	3,366
2003	6,004

Variability: Field observations of projects indicated standards were met. Fuels treatment by mechanical methods and planned ignition will continue to increase. Area treated by fire-use (un-planned natural ignitions) will vary depending on the factors related to expected fire behavior (fire effects/benefits) and potential risks.

Evaluation: The National Fire Plan, Healthy Forest Initiative, and the Healthy Forest Restoration Act provide direction to increase the number of fuels treatment acres as related to wildland urban interface, fire regime condition class, and other important resource and social concerns.

Appropriateness: Continue as a Forest Plan monitoring report requirement and, for fire-use fires, expand by analyzing and displaying the post fire severity of the area burned by Fire Regime Group (per Fire Regime Condition Class methodology).

FIRE: Fire Management Effectiveness Index

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Fire Management Effectiveness	Annually	20% increase in FMEI

Monitoring Requirements: Salmon National Forest Plan

Monitoring Type: Effectiveness

Data Source: NFMAS Planning

Units of Measure: Fire Management Effectiveness Index (FMEI) (See FP page V-13)

Findings: Values used to calculate the FMEI are no longer used in NFMAS. The FMEI can no longer be calculated per Forest Plan direction.

Variability: Not applicable.

Evaluation: Congress, the scientific community, and the executive branch of the United States Government have provided the Forest Service with specific direction related to undesirable fire behavior via the National Fire Plan, Healthy Forest Initiative, and the Healthy Forest Restoration Act.

Appropriateness: Discontinue as a Forest Plan monitoring report requirement. FMEI is no longer a valid or functioning index in fire management.

FISHERIES: Anadromous and Resident Habitat

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	R1/R4 Basin Surveys of Fish Habitat	To be determined post-baseline	Future monitoring frequency should be established based on the level of management or possible change to baseline conditions from natural disturbances such as fire.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: District Offices and Supervisor's Office fisheries files

Unit of Measure: Number of streams and miles of inventory

Findings:

Salmon National Forest

Year	Number of Streams Inventoried		Miles of Stream Inventoried	
	(Anadromous)	(Resident)	(Anadromous)	(Resident)
1997				
1998	1	1	3.5	4.25
1999		2		1.25
2000				
2001	1		9	
2002		1		1.25
2003				

Challis National Forest

Year	Number of Streams Inventoried		Miles of Stream Inventoried	
	(Anadromous)	(Resident)	(Anadromous)	(Resident)
1997	4	6	0.25	20.5
1998	0	0	0	20
1999	9	22	0.5	24.25
2000	6	13	0.5	20.75
2001	1	1	7	27
2002	1	1	7	17
2003	0	0	0	0

Variability: The R1/R4 Basin survey methodologies employed on both the Salmon and Challis National Forests since 1991 assess a wide variety of physical and biological

components of the aquatic environment. Individual habitat parameters each present their own unique levels of variability with respect to both time and space, and may themselves be influenced by or strongly dependent upon other associated parameters. Surveys are designed to attempt to normalize or minimize the influence of the most highly variable of these parameters, such as streamflow, although the relatively short windows of accessibility associated with mountain climates place survey operations into a timeframe of highly variable streamflow.

Evaluation: Since 1997, approximately 165 miles of R1/R4 basin-wide surveys have been completed on streams within the Challis and Salmon National Forests. Initial R1/R4 aquatic habitat survey objectives are expected to be complete by 2004. Long-term project design calls for rescheduling of follow-up operations on a five or ten year rotational basis. As with other monitoring elements, actual scope and schedule of future activities is expected to be dependent upon budgetary constraints.
The Water monitoring section of this report contains information on sediment monitoring (FP-1), bank stabilization (FP-3), and instream flows (FP-5). The Range monitoring section of this report contains information on riparian vegetation conditions (FP-1).

Appropriateness: Continue to monitor and report as a Forest Plan monitoring requirement but at a reduced level of intensity. Since 1991, R1/R4 basin wide survey operations have been the primary mechanism utilized by both the Challis and Salmon National Forests to characterize the aquatic and riparian habitats of Forest streams. Future operations are designed to supplement original surveys and identify, as determined by analysis and monitoring needs, future changes in specific habitat parameters. A national database (NRIS) has been developed to serve both as a repository and processing mechanism for all current and future data. Program outputs have been and will continue to be a primary source of information for both NEPA project documentation and assessment of compliance with PACFISH and INFISH Riparian Management Objectives.

FISHERIES: Water Quality

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Indicate Further Evaluations
FP-2	Water Quality (Chemical Components)	Dependent on Nature and Scope of Proposed Project	Known or suspected change in water quality, which: May exceed EPA standards for safe drinking water (> 250 mg/l of MgCl) or May exceed 400 mg/l of MgCl[1]

[1] **Programmatic Biological Assessment for Road Maintenance , 2002.**

Monitoring Requirement: Salmon and Challis Forest Plans do not require monitoring of chemical components. However, the Salmon-Challis Forest began a 5-year pilot program in 2003. The Forest will monitor levels of magnesium (Mg), chloride (Cl), alkalinity and total dissolved solids (TDS) in selected waterways. Monitoring sites are established along selected roadways, which are treated with magnesium chloride (MgCl) or magnesium chloride plus ligninsulfonate for dust abatement.

Monitoring Type: Baseline/Effectiveness

Data Source: District and SO fisheries files

Unit of Measure: mg/l

Findings: No water chemistry monitoring sites revealed concentrations of MgCl above 2.5 mg/l. See the results of 2003 Salmon-Challis National Forest Road Treatment Monitoring in the table below.

Salmon National Forest

Location	Date	Time	Sample	Mg (mg/l)	Cl (mg/l)	TDS (mg/l)	Alkalinity (mg/l)
Salmon River Above Treatment Area	06/10/03	15:20	Pre-Treatment Baseline	3.03	1.24	58.0	47.5
Salmon River Below Treatment Area	06/10/03	16:15	Pre-Treatment	2.59	1.10	43.0	39.4
Salmon River Below Treatment Area	06/11/03	9:10	Post-Treatment	2.52	1.04	45.0	40.4
Salmon River Below Treatment Area			Rainfall/Runoff Event				
Panther Creek Above Treatment Area	06/10/03	16:54	Pre-Treatment Baseline	1.09	0.68	33.0	19.2
Panther Creek Below Treatment Area	06/10/03	17:25	Pre-Treatment	1.05	0.69	30.0	20.2
Panther Creek Below Treatment Area	06/11/03	14:25	Post-Treatment	1.02	0.71	33.0	19.2
Panther Creek Below Treatment Area			Rainfall/Runoff Event				
Moccasin Creek Below Treatment Area	06/18/03	8:30	Pre-Treatment	1.06	2.41	28.0	n/a
Moccasin Creek Below Treatment Area	06/18/03	21:00	Post-Treatment	1.06	2.04	30.0	n/a
Moccasin Creek Below Treatment Area	07/08/03	10:52	Rainfall/Runoff Event	1.05	2.35	35.0	n/a

Variability: Based upon review of available data, natural background levels of the measured water chemistry parameters (Mg, Cl, TDS, and alkalinity) are not generally considered to display high levels of variability. Geologic parent materials can influence levels of alkalinity, but ranges observed within each setting still show relatively narrow bands of variability. These relatively narrow levels of variability enable ready identification of management-related impacts to water chemistry.

Evaluation: Results of 2003 forest road treatment monitoring operations are displayed in Table 1. Overall, only insignificant changes were observed in measured parameters between pre-treatment, post-treatment, and runoff samples. Greatest spatial differences (between sites) were observed in TDS and alkalinity values. The 2003 results support the effectiveness of existing Best Management Practices and mitigation measures associated with road treatment operations in preventing treatment compounds from migrating off road surfaces and into adjacent waters.

Appropriateness: Discontinue as a Forest Plan monitoring report requirement. The Salmon-Challis Forest 5-year pilot monitoring program establishes sampling protocols and sites to be monitored. However, project design will retain a level of flexibility sufficient to effectively and promptly respond to unforeseen opportunities to improve the effectiveness of operations in documenting the transport of road treatment compounds relative to aquatic environments. This flexibility may be manifested in adjustments of number or locations of sampling sites, and/or frequency or timing of sample collections. At the conclusion of the five-year pilot monitoring program, results will be jointly assessed by Forest Service and Regulatory Agency personnel to determine the need for, and scope of, any continued monitoring activities.

FISHERIES: Anadromous Fish Spawning Surveys

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Chinook Salmon Spawning Activity and Location	Annually	(Not applicable)

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Baseline

Data Source: District and SO fisheries files

Unit of Measure: Number of Chinook salmon redds

Findings:

Salmon National Forest

Survey Year	Stream Name	Completed Chinook Salmon Redds Observed[1]
1997	Camas Cr.: Castle to Hammer North Fork Salmon River	Not counted 10
1998	Camas Cr.: Castle to Hammer North Fork Salmon River	16 3
1999	Camas Cr.: Castle to Hammer North Fork Salmon River	3 2
2000	Camas Cr.: Castle to Hammer North Fork Salmon River	5 118
2001	Camas Cr.: Castle to Hammer Panther Cr.: Napias to Musgrove & 3 tribs. North Fork Salmon River	94 61 102
2002	Camas Cr.: Castle to Hammer North Fork Salmon River	84 36
2003	Camas Cr.: Castle to Hammer North Fork Salmon River Hayden Creek: Boulder Flat	93 36 4

Challis National Forest

Survey Year	Stream Name	Completed Chinook Salmon Redds Observed[2]
1997-2003	No FS surveys conducted	

[1]North Fork District redd counts are conducted in association with Idaho Department of Fish and Game spawning survey operations.

[2]The Yankee Fork District participates in chinook redd counts in a support capacity to the Sho-Ban Tribes. The District does not keep data on chinook redds; only bull trout redds have been recorded and the information kept at the District.

Variability: Annual Chinook salmon redd counts reflect the cumulative influence of a multitude of factors affecting the survival of this Federally listed species. The highly

migratory life cycle of this fish exposes all individuals to a wide variety of natural and human-caused mortality factors, which collectively determine the size of the returning adult population utilizing Forest production habitats. Variations in the spatial and temporal significance of these individual factors can exert varying influences on the size of adult spawning populations, resulting in fluctuations greatly exceeding those anticipated solely in response to changes in available on-forest spawning and rearing habitat quantity or quality.

Evaluation: The drastic decline of Chinook salmon throughout the Snake River drainage has been reflected in the trend of observed spawning activity within index streams of the Salmon and Challis Forests. The fluctuation of returning adults may be more of an indication of weather patterns, stream flows and ocean conditions.
Appropriateness: Continue to monitor as a Forest Plan requirement. Due to the high level of variability resulting from the collective influence of numerous other factors, redd counts cannot be regarded as an appropriate measure of the current condition of Forest anadromous fish production habitats, or of the effectiveness of Forest management actions in protecting or improving production habitat quality. Continued monitoring of index streams is recommended to identify the status of individual spawning populations and prioritize recovery efforts for on-forest populations and historical habitat areas.

FISHERIES: Anadromous and Resident Habitat Quality – Macroinvertebrates

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
BL-1	Macro-invertebrates	To be determined post-baseline	Major observed change in macroinvertebrate numbers and distribution

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Baseline

Data Source: District Offices

Unit of Measure: Species abundance (Surber Sampler)

Findings:

Macroinvertebrate Sampling

Forest	Year	Stations Surveyed
Salmon	1997-2003	0
Challis	1997-2003	0

Variability: Benthic macroinvertebrate communities may be significantly influenced by a relatively small number of physical, chemical and biological factors. Within the aquatic communities, individual species may display various levels of relative tolerance to a number of parameters such as water temperature, dissolved oxygen, pH, water velocity, sediment levels, or concentration of various chemical compounds. Changes in one of these parameters, if affecting a species that constitutes a large proportion of the total community, can produce a significant change in community biomass or structure.

Evaluation: The 1988 Salmon Forest Plan identified macroinvertebrate as Management Indicator Species (MIS). The 1988 Plan did not identify a monitoring requirement of these aquatic species. Sampling of macroinvertebrates was not conducted from 1997 – 2003. In the past, Forest wide macroinverterbrate investigations have complemented water chemistry and stream temperature studies in providing a baseline characterization of physical, chemical, and biological conditions. Recent funding for data gathering and laboratory analyses has not been obtained at a level necessary to maintain this level of study.

Appropriateness: Discontinue as a Forest Plan monitoring requirement. The 1988 Forest Plan MIS list was amended in 2004 through a Forest Plan Amendment removing macroinvertebrates as an MIS.

FISHERIES: Resident and Anadromous Fish Populations – Presence/Absence

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Population presence/ absence – methodology (snorkel, seine, electrofish, visual, and other)	To be determined post-baseline	Identified water quality problems

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Baseline

Data Source: District Offices, Supervisor's Office, Rocky Mountain Research Station, and Idaho Department of Fish and Game.

Unit of Measure: Identification by species

Findings:

Salmon National Forest

Year	Number of Streams Surveyed	Number of Streams in Which Species were Found		
		Chinook	Steelhead	Bull trout
1997	45	0	9	15
1998	31	12	2	9
1999	53	1	3	16
2000	31	3	0	10
2001	38	3	18	12
2002	73	32	18	30
2003	13	1	1	4

Challis National Forest

Year	Number of Streams Surveyed	Number of Streams in Which Species were Found		
		Chinook	Steelhead	Bull trout
1997	47			13
1998	0	0	0	0
1999	20			16
2000	7			5
2001	50			13
2002	76			25
2003	51			14

In 1990 the Salmon National Forest completed consolidation of existing fish species distribution records into a GAWS Level I Stream Habitat Inventory Report which identified all known presence/absence determinations, by species, for all named as well as unnamed perennial streams of the Salmon Zone. Available data indicated the presence of resident populations of native rainbow trout, westslope cutthroat trout, bull trout, and mountain whitefish, introduced resident populations of eastern brook trout, and anadromous stocks of steelhead and spring and summer Chinook salmon. Information on hatchery plantings was also summarized by drainage. Several additional species of non-game fish such as squawfish, suckers, shiners, and sculpins, while known to occur in the Forests' waters, were not included in these listings.

Since 1991, the Salmon-Challis Forest utilized R1/R4 basin-wide survey methodologies to describe the physical habitat conditions of Forest streams. Snorkel surveys for presence/absence of fish species have complemented the basin-wide stream inventories. As successful snorkeling conditions mandate water temperatures above nine degrees C (48 degrees F) (to promote fish activity within the stream's water column and away from the substrate plane), observations were made in most, but not all, survey reaches. These surveys and supplemental electrofishing inventories have in the last 12 years been the primary data source utilized to update the Forests' fish species distribution database, as originally summarized within the original 1991 GAWS Report.

Variability: Species distributions are dependent upon a variety of factors which collectively determine both the suitability, availability, and/or use of aquatic habitats. Physical barriers to upstream fish passage may limit distributions to only downstream reaches of a drainage, or may serve to isolate populations which may have become established above such barriers at some time in the past. Water temperature regimes exert a strong influence on both the distribution of fish species and the seasonal suitability of aquatic habitats.

In addition to being a primary determinant of suitability for different species, water temperature extremes may cause significant migration out of warm river systems and into cooler tributary streams in the summer months, and from areas susceptible to formation of anchor ice to the deeper pools of major rivers during winter. Insufficient flow volumes or physical habitat development may dictate utilization by only certain juvenile stages.

Evaluation: Fish species presence/absence surveys are an ongoing component of the Salmon-Challis National Forest Fisheries Program. Species distributions provide the third component, (along with assessments of physical and chemical parameters) of the aquatic environment for characterization of the aquatic resource. Determinations of fish species and their distributions are the cornerstone upon which virtually all fisheries support work is based, including NEPA project documentation and assessments, Sensitive Species Biological Evaluations, and Federally listed Threatened and Endangered Species Biological Assessments for Section 7 consultation procedures. Consolidation and documentation of fish distribution data on the Lost River and Challis Ranger Districts, into a readily accessible format represents a significant portion of those

District's recent resource documentation efforts, and has significantly improved data acquisition for both Supervisor's Office and District personnel, as well as outside agencies or other interested parties.

Appropriateness: Continue to monitor and report to update the Forest's fish species distribution GIS and NRIS databases. Field observations are expected to continue at a high level of activity in association with scheduled R1/R4 basin wide survey operations.

FREEDOM OF INFORMATION ACT (FOIA): FOIA Requests

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-1	FOIA Requests	Annually by Fiscal Year	Not applicable

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking

Data Source: FOIA Annual Report

Unit of Measure: Percent of requests by resource, cost to the government and fees collected.

Findings: In 2003, 72 FOIA requests were received and processed at an estimated cost of $13,006.56. Processing fees of $1,172.00 were collected.

The following tables list the percent of requests by resource area, the key requestors and the annual number of requests from 1997 through 2003.

Resource Area

Resource Area	Percentage
Mining	2
Timber	12
Grazing	40
Wilderness	10
Fish	3
Roads	7
Personnel	2
Outfitters	6
Easements	1
Fire	12
Trails	2
Bear Baiting	1
Roadless	2

Key Requestors

ORGANIZATION	NUMBER OF REQUESTS
Land and Water Fund of the Rockies	6
Advocates for the West	4
Western Watersheds Project	18
Idaho Conservation League	12
The Ecology Center	7
Defenders of Wildlife	3
National Organization of Rivers	8
Idaho Outfitters and Guides Assoc.	11
Wilderness Watch	8
Center for Biological Diversity	5

Total Number of Requests from 1997 Through 2003

YEAR	NUMBER OF REQUESTS
1997	49
1998	56
1999	56
2000	69
2001	72
2002	106
2003	72

Variability: Not Applicable

Evaluation: The number of FOIA requests is quite variable from year to year. The cost of processing FOIA requests is continuing to rise; the average cost to process a request in 1996 was $47.70 compared to $180.64 in 2003. This indicates not only the increased cost of processing time but also the increase in complexity of Forest activities.

Appropriateness: Although this is not a required monitoring item in the Forest Plan, it does provide interesting information on the increased interest in Forest activities and, therefore, should continue to be monitored and reported.

HERITAGE: Site Deterioration

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Site deterioration	Annually	Cultural properties lose characteristics that make them eligible to the National Register of Historic Places

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Effectiveness

Data Source: Project inventory reports and monitoring reports

Unit of Measure: Number of sites monitored and number of sites in which National Register of Historic Places characteristics have deteriorated.

Findings:

Year	# Sites Monitored		# Sites Deteriorated		% Sites Deteriorated	
	Salmon	Challis	Salmon	Challis	Salmon	Challis
1997	146	68	43	14	29	21
1998	131	17	16	2	12	13
1999	70	22	13	1	19	5
2000	221	46	40	18	18	40
2001	140	68	7	4	5	6
2002	44	36	2	0	5	0
2003	56	39	1	5	2	13

Variability: The relatively high levels of sites that are deteriorated exceed appropriate levels from 1995 through 2000. However, the trend since then, with the exception of FY 2003 on the Challis seems to be six percent or less of the sites have deteriorated. It is interesting to note that the majority of site deterioration in 2000 was to the fact that about 450,000 acres of the Salmon-Challis NF burned that summer. The reason for the overall decrease from 2001 to the present is not known and longer-term study may help identify the cause or suggest it is due to sample bias.

Evaluation: A review of site data suggests that over time the majority of sites monitored are not deteriorating. For the most part site deterioration is generally due to wildfires or a lack of proactive Heritage management, rather than poor project performance. Archaeological sites are damaged by various forms of erosion, animal impacts,

weathering, nondesignated camping, wildfire and vandalism. Very little damage is due to direct project impacts, and most of those occurred many years ago. Forest Plan standards and guidelines are adequate to protect these sites; however, sufficient time and money is needed to correct these problems, where appropriate.

Appropriateness: Continue to monitor as a Forest Plan requirement. This type of monitoring is Mandatory under Section 106 and 110 of the National Historic Preservation Act.

HERITAGE: Site Preservation

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-1	Site preservation	Annually	Cultural properties are not preserved according to management plans

Monitoring Requirement: Not a required monitoring item. Identified only as a Tracking Item.

Monitoring Type: Tracking

Data Source: Management plans and site monitoring reports

Unit of Measure: Number of sites slated for preservation and number of sites not preserved.

Findings:

Year	# Sites Proposed for Preservation		# Sites Preserved		% Sites Preserved	
	Salmon	Challis	Salmon	Challis	Salmon	Challis
1997	7	4	5	2	71	50
1998	12	6	12	6	100	100
1999	5	0	4	0	80	100
2000	21	15	18	13	86	87
2001	9	3	9	3	100	100
2002	2	8	2	8	100	100
2003	4	9	4	9	100	100

Variability: Those sites that have not yet been preserved are generally associated with projects that have not been implemented. In all cases, the preservation of these sites will be accomplished in out-years. The trend for preservation from 1995 to 1996 actually dropped, owing to a decrease in overall funding, while current trends have increased to 100% preservation.

Evaluation: To date the data suggests that we are following through with planned preservation projects as funding and project implementation schedules allow.

Appropriateness: Continue to monitor and report as a Tracking Item. Monitoring is mandatory under Section 106 and 110 of the National Historic Preservation Act.

HERITAGE: Interpretation

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-2	Interpretation	Annually	Cultural properties are not interpreted to the general or scientific public

Monitoring Requirement: Not a required monitoring item. Identified only as a Tracking Item.

Monitoring Type: Tracking/Implementation

Data Source: Forest Archaeologist

Unit of Measure: List of interpretive products

Findings:

Year	Forest	Name of Interpretive Product
2003	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support Bonanza PIT Project School presentations
2003	Salmon	Sextants to Satellites Heritage Expedition L&C Interpretive Sign Production School presentations
2002	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support Bonanza PIT Project School presentations
2002	Salmon	Sextants to Satellites Heritage Expedition Lemhi Pass and Wagonhammer Interpretive sign manufacture School presentations
2001	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support PIT Project Whiteknob Interpretive sign design School presentations Whiteknob PIT Project
2001	Salmon	Sextants to Satellites PIT Project Design work on five interpretive sites on Salmon River Fawn Creek Buffalo report and interpretive display School presentations

2000	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support Whiteknob PIT project School presentations
2000	Salmon	L&C website design Development and installation of interpretive signs at six Salmon River sites Installation of three interpretive signs at Leesburg L&C National Historic Trail, Middle Fork Salmon River and Leesburg interpretive tours School presentations
1999	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support School presentations
1999	Salmon	L&C Campsite PIT Project School presentations
1998	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support School presentations Little Bayhorse Lake Brick Kiln interpretive signs and report
1998	Salmon	L&C Trail Mapping PIT Project School presentations
1997	Challis	Yankee Fork Gold Dredge Interpretive Association Support Land of the Yankee For Interpretive Association Support Little Bayhorse Brick Kiln PIT Project School presentations
1997	Salmon	California Bar PIT Project School presentations Thunder Mountain Trail interpretive report

Variability: Interpretive products vary over time depending on funding and workload.

Evaluation: The number of interpretive projects completed on the Forests provides a moderate level of public interpretation. The interpretive program has attempted to provide a wide variety of locations and styles of interpretation to reach the local audiences. The trend to provide more interpretive signs along the Salmon River Road and a greater push toward larger scale interpretive events should allow for even greater interpretive potential for the local public in the near future. Numerous interpretive signs were designed and installed in preparation for the Lewis and Clark Bicentennial Commemoration. An interpretive program is strongly suggested under Section 110 of the National Historic Preservation Act.

Appropriateness: Continue to monitor and report as a Tracking Item as a means to share Heritage activities to internal staff and the public.

HERITAGE: Middle Fork of the Salmon Wild & Scenic River Management Plan: Campsites with Cultural Values

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2 MFWSR-6	Cultural site stability	As needed	Detrimental site instability from activities

Monitoring Requirement: Salmon Forest Plan; Middle Fork of the Salmon Wild & Scenic River Management Plan

Monitoring Type: Implementation/Evaluation

Data Source: Field observations

Unit of Measure: Qualitative interpretation

Findings: No monitoring of campsite activity with potential cultural significance was performed within the reporting period.

Variability: Not applicable

Evaluation: Not applicable

Appropriateness: Continue as a Forest Plan monitoring and report requirement on an 'as needed' basis.

Human Resources: Volunteers

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
TR-1	Resource Work Accomplished	Annually	Not Applicable

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking

Data Source: Human Resource Programs Accomplishment Report #FS-1800-AR; MAR Report

Unit of Measure: Number of volunteers and person-years

Findings:

The table below shows the number of hours and the person-years contributed to the Forest by volunteers since 1997. Volunteer work has been performed in a number of resource areas including Recreation, Fish and Wildlife Management, Range Management, Soil and Water, and others.

Year	Volunteers	
	Hrs	Person yrs
2003	4687	2.6
2002	19764	10.5
2001	9396	5.22
2000	17944	9.96
1999	12820	9.05
1998	5466	3.04
1997	30438	16.91
Totals:		57.28

Appropriateness: This monitoring item is not a Forest Plan monitoring requirement. It may provide some valuable information and therefore should be considered for future inclusion into Forest accomplishment reports, where appropriate.

Human Resources: Economic and Social Programs

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
TR-2	Economic/Social	Annually	Not Applicable

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking

Data Source: Human Resource Programs Accomplishment Report #FS-1800-AR;

Unit of Measure: Number of enrollees per year

Findings:

The Forest has been involved in the Student Conservation Association (as volunteers), Youth Conservation Corps, and the Senior Community Service Employment Program over the past 5 years. Work in all resources was completed using these programs.

The following table lists the number of hours and person years accomplished in each of these programs from 1997 through 2003:

Year	YCC		SCSEP	
	Hrs	Person yrs	Hrs	Person yrs
2003	3450	1.92	-	-
2002	3850	2.14	7893	4.39
2001	2999	1.67	8100	4.50
2000	1359	.75	10782	5.99
1999	2862	1.59	10782	5.99
1998	1890	1.05	13482	7.49
1997	2358	1.31	11502	6.39
Totals:		10.43		34.75

Appropriateness: This monitoring item is not a Forest Plan monitoring requirement. It may provide some valuable information and therefore should be considered for future inclusion into Forest accomplishment reports, where appropriate.

INSECTS AND DISEASE: Species

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Insect and Disease	Annually	Determine if outbreaks are likely to reach epidemic levels

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Effectiveness

Data Source: Aerial Pest Detection Survey, Forest Pest Management, Boise Field Office

Unit of Measure: Number of trees killed on infected acreage by species.

Findings: Annual flights are made in areas identified as moderate to high potential for insect and disease activities. Below are the survey results.

Salmon National Forest
Total Number of Infected Acres/Trees Killed by Species

Year	Mt. Pine Beetle	DF Bark Beetle	Western Pine Beetle	Spruce Beetle	Subalpine Fir Mortality Complex	Western Spruce Budworm
1997	/1000	300/400			300/3100	
1998	/100	700/1200				
1999	/200	600/950				
2000	/100	400/1600			500/1900	
2001	25/30	5304/8315	45/25		1587/2801	
2002	560/1021	2029/3523	175/42	5/5	3237/10,507	
2003	6322/17,869	13,794/35,216	719/2059		6645/15,660	13,322/

Challis National Forest
Total Number of Infected Acres/Trees Killed by Species

Year	Mt. Pine Beetle	DF Bark Beetle	Western Pine Beetle	Spruce Beetle	Subalpine Fir Mortality Complex	Western Spruce Budworm
1997	250/500	100/250			1000/2200	
1998	400/600					
1999	5100/7000	400/50				
2000	2400/5300	100/100			300/1700	
2001	7581/19,401	100/220		60/301	2073/10892	
2002	17,915/195,087	230/460	5/1	5/10	2351/5720	
2003	48,267/203,073	2287/5424	1345/3035	43/100	5669/14362	488/

Aerial inventory indicated that no trees were directly killed by the Douglas fir Tussock Moth or the Western Spruce Budworm on either the Salmon or Challis National Forests.

Variability: Epidemic levels occurred only in isolated areas and were not widespread.

Evaluation: In the late 1990s the Salmon and Challis National Forests' timber sale program focused on the control of insect and disease problems, primarily in the Douglas fir and ponderosa pine types. More recently, little has been done to avoid the widespread insect epidemics.

Appropriateness: Continue as a Forest Plan monitoring and report requirement. Monitoring insect and disease activities is required by the National Forest Management Act. This information is needed to assess Forest health and is useful in guiding Forest management activities.

LANDS: Right of Way Acquisitions

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Road and Trail Rights-of-Way Acquisitions	Annually	If accomplishment in the first six years is less than 50% of the plan's program, evaluate the program. If adjustments are required, place them in the next plan period.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Rights-of-Way Acquisition Report

Unit of Measure: Number of cases

Findings:

	Forest Plan	1997	1998	1999	2000	2001	2002	2003	total	Avg.
Salmon	4 to 5	2	6	5	0	1	0	3	17	2.5
Challis	4	0	5	0	2	0	1	0	8	1

Variability: Rights-of-way acquisitions have not been accomplished at the planned rate of four to five per year for the Salmon National Forest and four per year for the Challis National Forest. The Salmon Forest accomplished an average of about 2.5 per year and the Challis Forest, one per year.

Evaluation: Change objective in Forest Plans from acquiring eight to ten rights-of-way annually to two rights-of-way annually for the combined Forests, to reflect the degree of difficulty and time required to accomplish this objective.

Effect on the local community is that public access is not assured where rights-of-way have not been acquired.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Required as a Budget MAR target.

LANDS: Occupancy Trespass

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Occupancy Trespass	Annually	A stable or increasing number of trespass cases

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Survey Reports, Management Attainment Report

Unit of Measure: Case

Findings: Occupancy trespass can take several forms from a misaligned fence to structural buildings. Cases of structural trespass have been resolved primarily through The Small Tracts Act. Resolving occupancy trespass through the Small Tracks Act has resulted in approximately 2 cases per year across the Salmon-Challis National Forest.

	1996	1997	1998	1999	2000	2001	2002	2003	Total
Salmon	0	0	3	2	2	3	3	0	13
Challis	0	1	0	0	0	0	0	1	2

The current number of occupancy trespass incidences is eight (3 on the North Zone [Salmon Forest] and 5 on the South Zone [Challis Forest]). Occupancy trespasses were tracked through the Encroachment Action Plan for the Salmon National Forest, November 1992, however this plan has not been maintained since the Forests were combined in 1995. The Forest Surveyor began documenting discoveries of occupancy trespass in fiscal year 1996.

Variability: Actual performance is lagging behind, but is close to predicted performance. Progress in resolving cases has been slow. The main problem causing the delay in processing cases has been the changes of ownership and, to some extent, changes in Forest Service personnel working on the cases. The application and processing of these cases starts over with each change of ownership.

Evaluation: An Encroachment Action Plan for the Salmon and Challis National Forests should be prepared and updated as needed per FSM direction in R-4 Supplement 5500-92-1, Effective 10/9/92, which also states that each National Forest shall incorporate into the Forest Plan their Encroachment Action Plan.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Continue to track resolved occupancy trespass cases through the Small Tracts Act.

LANDS: Person Years to Implement

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Number of person years to implement planned direction	Annually	Actual count at end of year deviates from predicted by 10% or more.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Validation

Data Source: Project Work Plans

Unit of Measure: Person Years

Findings: The last year this monitoring item was reported was 1995. At that time the average person years to implement the planned actions was 3.7. There are several people involved in the Lands program, each with a variable fraction of work time allocated to Lands activities. Since 1995 the average person years for Lands has not changed significantly.

Variability: There has been little variation in person years for Lands during the Plan period.

Evaluation: The person year number is at a minimum needed to maintain a Lands program. We do not anticipate significant deviation. This is a monitoring item in the Challis Forest shown on page V-15 of the Forest Plan. The predicted number of person years was not included.

Appropriateness: Continue as a Forest Plan monitoring report requirement even though Lands is the only activity that has a monitoring item related to person years to implement planned direction.

LANDS: Goals and Objectives

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Monitor accomplishment of funded goals and objectives approved in the annual program of work.	6 months	Failure to meet reported targets.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Performance Review/Management Attainment Report

Unit of Measure: Targets

Findings: Accomplishments comparing planned actions to actual accomplishments are designed to be reported through the Management Attainment Report (MAR). A summary of the MAR accomplishments is included in this Monitoring Report as part of the Budget (TR-1) monitoring items. Planned activities were generally accomplished from 1996 through 2003. The only exceptions were 2002 and 2003 when emergency fire activities shifted priorities.

Variability: Accomplishment is estimated to be less than what was planned. Stating whether or not a Lands related MAR target was attained is not meaningful without some explanation on why it was not attained. Many things contribute to meeting or not meeting Lands goals and objectives, such as budget constraints and the willingness of private landowners to exchange or sell.

Evaluation: The Data Source for this item is not appropriate. Performance reviews are not available for public disclosure. The MAR information is available through other sources. The MAR reporting system has been modified several times since 1996. This results in difficulties in data interpretation and comparing yearly findings. Interpretation of the various Lands actions is clouded in terminology (i.e., authorizations administered, land use proposals processed, special use permits processed, special use permits administered) from one yearly MAR to another.

Appropriateness: Continue as a Forest Plan monitoring requirement. Maintain a tracking system of planned activities and accomplishments through a consistently applied Management Attainment Report (MAR).

LANDS: Administration and Inspection

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5	Special Use Permit administration and inspection	Annually	Deviations from terms and conditions of the permit

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Implementation

Data Source: Forest Land Use Reports (FLUR) and Special Use Data System (SUDS) reports

Unit of Measure: Case

Findings: This report displays the number of Special Use Permits administered but not the number of permits inspected.

Salmon-Challis National Forest
Special Use Permit Administration
Non-Recreation

Year	Permits
1996	301
1997	296
1998	290
1999	269
2000	269*
2001	271
2002	272
2003	271

*no data available. Presume unchanged from previous year

Variability: The number of non-recreational Special Use Permits has stabilized since 1999. Inspections are performed on a variable cycle depending on the type of permits. With the advent of the INFRA database, information on permit inspections can be queried at the Forest or District level.

Evaluation: The SUDS reporting system was instigated in 2000 which allowed compatible reporting into the INFRA corporate database.

The "Conditions Which Initiate Further Evaluation" for this monitoring item is not relevant for Forest Plan monitoring. When deviations from the "terms and conditions of the permit" are encountered, administrative actions are taken on the permit. The deviations do not provoke a Forest Plan action. In addition, "inspection" of permits is not

a valid Forest Plan monitoring item. Inspections, per se, are operational and provide information on a district or more local scale.

Appropriateness: Continue as a Forest Plan monitoring report requirement. Continue to report through the SUDS reporting system and INFRA.

LANDLINES: Location

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Landline location	Annually	If attainment varies from assigned target by more than + or – 10 percent.

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Implementation

Data Source: Management Attainment Report (MAR)

Unit of Measure: Miles per year

Findings:

Combined Salmon and Challis Landline Target and Attainments

Target	1997	1998	1999	2000	2001	2002	2003	Avg.
Planned	19	20	4	7	1	0	0	7
Attained	24	12	0	10	0	0	0	6

Variability: The Salmon Forest Plan on page IV-83 shows the annual target to survey and post 14 to 17 miles of National Forest boundaries. The Challis Forest Plan did not set a target for this monitoring item. In 1995, the combined target for both Forests was reduced to 12.

Evaluation: What is actually planned for each year is below the Forest Plan target, indicating budget allocations and priorities vary considerably, the last few years being relatively non-existent.

Appropriateness: Continue as a Forest Plan monitoring requirement even though the targets and trends are no longer meaningful. Tracking of this activity is being maintained and is available in the Management Attainment Report.

MINERALS: Designated Gravel and/or Riprap Sources

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Designated gravel and/or riprap sources	Annually	Problems which do not meet Forest Plan objectives

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Validation

Data Source: Engineers or Project Administrators for ongoing projects.

Unit of Measure: Annual inspections

Findings: Permits were issued for riprap, sand and gravel, and building stone with an annual average of approximately 300 cubic yards of material.

Variability: Access to suitable materials is keeping up with demand.

Evaluation: Although no formal evaluation of pits has been conducted, there have been no reported problems with permit compliance. The Railroad Canyon pit on the Leadore District is scheduled for close out and reclamation in 2004.

Appropriateness: Continue as a Forest Plan monitoring requirement. Monitoring standards are appropriate.

MINERALS: Lease Stipulations and Forms

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Adequacy of lease requirements	Annually	Inadequate to meet Forest Plan objectives

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Validation

Data Source: Project Administrators Annual Reports

Unit of Measure: Compliance with lease stipulations

Findings: There are many permitted activities regarding Mineral Management on the Forest; material permits, plans of operations, exploration, etc. There are three mineral leases in the Challis area and no leases in the Salmon area. However, none of the Challis leases are active.

Variability: N/A

Evaluation: Since there are no active leases on the Forest, there has been no formal evaluation of leases conducted.

Appropriateness: Continue as a Forest Plan monitoring requirement. Appropriate lease inspection and administration will occur should leases become active.

MINERALS: Reclamation Results

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Reshaping and Vegetation of Disturbance	Annually	Any unacceptable or unexpected results not meeting requirements

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Effectiveness/Validation

Data Source: Project Administrator's file documentation

Unit of Measure: Compliance with plan requirements

Findings: Final reclamation plans were completed and inspected for a number of exploration projects and mine projects.

Variability: Topographical, vegetation, aspect, and elevation have been dealt with successfully in meeting reclamation standards.

Evaluation: Reclamation plans and practices have been successful.

Appropriateness: Continue as a Forest Plan monitoring requirement.

MINERALS: Locatable Plans of Operation

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Compliance with Plan of Operations	During operations/annually	Any unacceptable or unexpected results not meeting Plan Standards

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation/Effectiveness

Data Source: Project Administrator's file documentation

Unit of Measure: Compliance with Plan requirements

Findings:

Active Mines

The Forest has no actively producing mines. The mines formerly producing are now administered by the State or in the reclamation phase.

1. **Thompson Creek's Molybdenum Mine**, located on the Yankee Fork Ranger District, went to patent and is administered by the State of Idaho.

2. **Hecla's Grouse Creek Mine**, on the Yankee Fork Ranger District, suspended active mining operations in 1997. Portions of the project went to patent and pending applications are anticipated to be completed in 2004. Currently the Forest Service is administering the site which is in the dewatering phase and working with the company to produce a final reclamation plan.

3. **Meridian Gold's Beartrack Mine**, located on the Salmon/Cobalt Ranger District ceased mining activity in March of 2000. The project is in the reclamation phase with over 60% of the earthwork and seeding completed. It is anticipated the project will be in the monitoring phase in 2007.

4. **U.S. Antimony's Yellowjacket Mine**, located on the Salmon and Cobalt Ranger Districts is being monitored for vegetation establishment on the reclaimed area.

Exploration Plans of Operation

The Forest responds to 6 to 8 plans of operation annually. Since 1997, a number of active exploration programs were permitted; drilling activity occurred and reclamation work completed on all disturbance. In addition to reclamation, Abandoned Mine Lands inventory and mitigation of sites has been initiated on the Forest with facilities removal, plugging of shafts, etc. as an ongoing active program. The Forest in 2003 removed or otherwise disposed of 6 structures with millsites, and other structures involved in trespass. The anticipated contract award for the Pope Shenon removal action is expected in 2004.

Monitoring

Monitoring is conducted in the form of site visits by the Forest Service and an Interagency Task Force of State agencies on the large mines. Additionally, for surface and ground water sampling, aquatic life, archaeology, reclamation activities, etc., are compiled and submitted to the appropriate agencies annually. Agencies conducting site reviews of active mines since 1997 include the Environmental Protection Agency, National Marine Fisheries Service, Fish and Wildlife Service, Idaho Department of Water Resources, Idaho Department of Health and Welfare, Division of Environmental Quality, Idaho Department of Lands, Army Corps of Engineers, and the Idaho Department of Fish and Game.

Blackbird Mine Cleanup

This long-term project involves the Forest Service as a trustee of the mine site, along with the Environmental Protection Agency and the National Oceanic and Atmospheric Administration. EPA is the lead agency in charge of the cleanup.

Variability: The number of inspections conducted varies. On average, large mine operations receive a minimum of one visit/contact per week. Active operations vary depending on level of activity, but inspections of exploration operations are usually conducted once every ten days.

Evaluation: The Forests have an active administration program. Operations are in compliance.

Appropriateness: Continue as a Forest Plan monitoring requirement.

PLANNING: Appeals

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Future Evaluations
TR-1	Forest Plan, Project and non-NEPA decision appeals	Annually	Appeals in which the Forest Service decision is not affirmed

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking

Data Source: Intermountain Regional Appeal Annual Report and Forest Records

Unit of Measure: Number of Appeals

Findings:

This section contains a list of appeals received by the Salmon-Challis National Forest. There are four parts to this section:

Part 1. A list of Forest Plan appeals (under regulation 217)
Part 2. A list of individual project appeals (under regulation 215) with their decisions;
Part 3. A list of permit appeals (under 251) with their decisions; and
Part 4. A comparison of the number of appeals under regulations 217, 215, and 251 for fiscal years 1997– 2003.

PART 1

There have been no Forest Plan actions from 1997 through 2003 and therefore, no appeals submitted.

PART 2

Since 1997 The Salmon-Challis National Forest received twenty-five project level appeals under regulation 215. Seven of these appeals were dismissed due to appeals being filed that did not follow the 215 appeal regulations. Fifteen decisions were affirmed by the Appeal Deciding Official for being in compliance with applicable laws, regulations, and policy. Three decisions were withdrawn and one decision was reversed.

PART 3

A total of twelve permit appeals were received from 1997-2003. The Appeal Reviewing Officer affirmed six of these appeals; two appeals came to agreement during mediation; the appellants withdrew two appeals; and two decisions were withdraw.

PART 4

Table 1 – Comparison of Appeal Numbers

Fiscal Year	Forest Plan (217)	NEPA Decisions (215)	Permit (251)	Total Appeals
1997	0	5	1	6
1998	0	4	0	4
1999	0	7	0	7
2000	0	0	1	1
2001	0	6	2	8
2002	0	2	1	3
2003	0	1	7	8

Variability: There is a lot of variability with appeals over the past years.

Evaluation: It is unclear whether the changes in the number of appeals is a response to a reduction in the quantity of decision made, changes in society's values, demographic shifts, better awareness of and ability to challenge decisions, concerns over Forest Service decisions, or a combination of these and other factors.

Appropriateness: Continue to monitor and report for informational purposes with a revision to the Conditions Which Would Initiate Further Evaluations. This would not require a Forest Plan Amendment because this is a Tracking Item and not a monitoring item as defined in the Forest Plans. It is recommended that future monitoring compare the number of appeals to the number of decisions. This may lead to a better understanding if the number of appeals is in response to the number of decisions being made. In addition, it is more informative to track appeal issues and individual recommendations to the appeal to assure consistency in resolution the appeal issues.

Project Decision Appeals Table (215 Regulations)

No.	Year	Unit	Appellant	Project	Issues	Decision
1	1997	LRRD	Idaho Sporting Congress	Alder Creek Road Construction	FS does not have jurisdiction to make decisions for BLM; no scientific analysis; insufficient IDT	Affirmed
2	1997	SO	Northern Rockies Preservation Project	East Beartrap Timber Sale	Appeal Dismissed	Appeal Dismissed
3	1997	SO	Alliance for the Wild Rockies; Idaho Sporting Congress; Ecology Center; Friends of the Clearwater	East Beartrap Timber Sale	Cumulative Impacts; Roadless; Violates NEPA	Affirmed
4	1997	LRD	Friends of the Bitterroot; Alliance for the Wild Rockies; Ecology Center; Idaho Sporting Congress; Friends of the Clearwater	Grizzly Hill C&H Allotment EA	Appeal Dismissed for AWR, EC, ISC, FOC for not having participated through the environmental analysis process	Appeal Dismissed
5	1997	LRD	Friends of the Bitterroot	Grizzly Hill C&H Allotment EA	Cumulative Effects; Range Trend; Predetermined Decision; Array of Alternatives; Inconsistent and Contradictory Information; Riparian Utilization; Failure to comply with the Clean Water Act, ESA, NFMA	Affirmed
6	1998	SO	Friends of the Clearwater; Alliance for the Wild Rockies; Ecology Center; Idaho Sporting Congress; Northern Rockies Preservation project	East Beartrap Timber Sale	Cumulative Impacts; Roadless; Violates NEPA	Affirmed
7	1998	CRD	Alliance for the Wild Rockies	Lower Horn Resale Timber Harvest	Decision Withdrawn and Appeal Dismissed	Withdrawn
8	1998	SCRD	Forest Guardians	Phelan Lodgepole Timber Sale	Appeal Dismissed	Appeal Dismissed
9	1998	SCRD	John R. Swanson	Phelan Lodgepole Timber Sale	Appeal Dismissed	Appeal Dismissed
10	1999	SO	Forest Guardians	Boulder Springs Timber Sale	Social and economic contributions; FS needs to complete EIS	Affirmed

11	1999	SO	Intern American Wildlands	Boulder Springs Timber Sale	Purpose and Need; NEPA and NEPA Adequacy	Affirmed
12	1999	SO	Jeff Juel - Ecology Center	Boulder Springs Timber Sale	Riparian Area Management; Water Quantity and Quality; Wildlife; TES; Roadless Areas; Timber; Response to comments	Affirmed
13	1999	SO	American Wildlands	Cohen Salvage Sale	EIS required; Range of Alternatives; Cumulative Impacts	Reversed
14	1999	SO	Friends of the Clearwater; Wilderness Watch; Ecology Center; Friends of the Bitterroot	Frank Church – River of No Return Wilderness Noxious Weed Treatment	NFMA monitoring requirements; NEPA; Unnatural Human Ignitions; Noxious Weeds; Site-specific actions; Range of Alternatives; Supplemental DEIS; Monitoring; Wilderness Act	Affirmed
15	1999	SCRD	Friends of the Bitterroot	Hat Creek H&C Allotment	NEPA; NFMA	Affirmed
16	1999	RO	Western Mining Action; Land and Water Fund of the Rockies; Boulder White Clouds Council; Idaho Conservation League	Thompson Creek Mine Interim Supplemental Plan of Operations	No Issues Listed	Affirmed
17	2001	YFRD	Western Watersheds Project	Basin Creek Prescribed Burn	Violates NEPA; ESA; NFMA; Fails to provide site-specific impacts of unauthorized use; to analyze cumulative effects; to rely on accurate scientific analysis; Grazing impacts not analyzed adequately; Grazing impacts on fire frequency and fuel loading; does not comply with the conservation measures of Canada Lynx Conservation Assessment	Affirmed
18	2001	LRRD	Ecology Center	Buck-n-Bird Timber Stand Improvement and Prescribed Fire Project	Comments not adequately considered; soil - productivity, cumulative effects, management standards, monitoring, ; violates NFMA; cumulative effects on soils not addressed; Purpose and Need; biodiversity; historical conditions of trees; travel management; old-growth; snag retention; wildlife populations	Affirmed
19	2001	SO	Sevy Guide Services, Inc.	Sevy Guide Services, Inc. – Plan of Operation	Decision Withdrawn	Withdrawn
20	2001	SO	Ecology Center; Friends of the Clearwater; Forest Conservation Council; Friends of the Bitterroot; The National Forest Protection Alliance	Silverbird Post Fire Harvest Project	Response to Comments; Biodiversity; Soil; Economics; Cumulative Impacts; EIS Required;	Affirmed

21	2001	SO	Alliance for the Wild Rockies	Silverbird Post Fire Harvest Project	NEPA; Significant Impacts; Adequate Array of Alternatives; ESA; No Effects BA; Monitoring; Sediment Delivery; Water Quality; Vegetation Recovery; NFMA; Lynx; MIS	Affirmed
22	2001	SCRD	Ecology Center	Williams Creek Post and Pole Timber Sale	Lack of Data; NEPA; NFMA; Wildlife Population Viability; Lynx; Historic Range of Variability; Biological Corridors and Fragmentation; Soil; Roadless	Affirmed
23	2002	NFRD	Ecology Center	Harvey Fredrick's Plan of Operation	Appeal Dismissed	Appeal Dismissed
24	2002	NFRD	Ecology Center	Rodney Brown's Plan of Operation	Decision not subject to appeal – Appeal Dismissed	Appeal Dismissed
25	2003	LRD	Committee for the High Desert	South Hayden and Little Sawmill Allotments	Did not comment during comment period – Appeal Dismissed	Appeal Dismissed

Permit Appeals (251Regulations)

No.	Year	Unit	Project	Decision
1	1997	LRRD	Sunset Trust Organization Term Grazing Permit	Affirmed
2	2000	NFRD	Grover Mining Claim	Affirmed
3	2001	SCRD	Moen Appeal and Mediation	Agreement Met
4	2001	MFRD	Whitworth Appeal and Mediation	Agreement Met
5	2002	SO	White Water West, LLC	Affirmed
6	2003	NFRD	Williams Special Use Permit	Appeal Withdrawn
7	2003	CRD	Morgan Creek Cattle Association	Withdrawn with new Decision Issued
8	2003	SO	Paradise Gold Claim Operating Plan	Appeal Dismissed
9	2003	LRRD	Leadbelt Allotment	Affirmed
10	2003	LRRD	Leadbelt Allotment	Affirmed
11	2003	SCRD	Diamond – Moose Association Members	Decision Withdrawn
12	2003	LRRD	Antelope C&H Allotment	Affirmed

PLANNING: Validity of Forest Plans

Monitoring Item	Activity to be Measured	Monitoring	Conditions Which Initiate Further Evaluations
TR –2	Resource conditions, Changes in Desired Future Conditions, Validity of Forest Plans	Annually	Lack of amendment initiation after a need is identified

Monitoring Requirement: Not a required monitoring item

Monitoring Type: Tracking/Validation

Data Sources: Amendment List

Unit of Measure: Number of Amendments

Findings: There have been 8 amendments for the Salmon Land and Resource Management Plan and 16 for the Challis Land and Resource Management Plan since the plans were signed and 3 for the Salmon and 0 for the Challis from 1997 through 2003. All of the amendments, from Plan initiation through 2003, are listed in the following table.

Evaluation: Forest Plans were never meant to be static documents that would never need adjustment. Through Monitoring and Evaluation Reports, the validity of Forest Plans is examined. As Plans are implemented, changes in Forest Service policies and regulations, congressional intent, public expectations, land conditions, biotic conditions and budgets are likely. Forest Plans were intended to be dynamic and respond to these changes. The Forest Service keeps the plans up to date through the amendment process.

Appropriateness: Continue to monitor, report, and update the Forest Plans through amendments.

Salmon Amendment Number	Date	Title	Description
1	5/8/91	Cache Settlement	Adds the Chief's Cache Settlement Agreement to the Frank Church – River of No Return (FC-RONR) Wilderness Plan. This relates to the storage of items and removal of plumbing fixtures from the Wilderness and modifies the implementation schedule. Amendment is result of litigation settlement.
2	4/15/92	Grazing Monitoring Procedures	Clarifies and corrects range management issues.

3	7/20/94	Outfitter and Guide	Incorporates the Court-approved Remedial Plan concerning camps in the wilderness, into the FC-RONR Wilderness Plan. Replacement of 3 pages with 4 pages. Amendment is result of litigation settlement.
4	2/24/95	PACFISH	Incorporates interim standards and guidelines giving direction to protect anadromous fisheries. Includes Riparian Management Objectives (RMOs) and Riparian Habitat Conservation Areas (RHCAs). There are also additional agency commitments in the PACFISH Biological Opinion.
5	04/25/96	Research Natural Areas	Change from Proposed to Established Research Natural Area (RNA). New Management Area becomes 6A. Allan Mountain RNA; Kenny Creek RNA; Davis Canyon RNA; Dry Gulch-Forage Creek RNA; Frog Meadows RNA; Mill Lake RNA; Bear Valley RNA; Colson Creek RNA; Dome Lake RNA; Deadwater Proposed RNA dropped from becoming an RNA due to over 60% of vegetation being non-native.
6	03/26/98	Elk Hiding Cover	Three units in the 1998 East Beartrap Timber Sale will temporarily (3-5 years) exceed Forest Plan Wildlife Standards and Guidelines for Management area 5B (Forest Plan, page IV-121).
7	07/07/00	Lewis and Clark National Historic Trail	Recognized and Protected the Lewis and Clark Trail and updated the update direction for the Lemhi Pass National Landmark
8	01/07/02	Lemhi Pass National Historic Landmark	Management direction for public access and protection of the Lemhi Pass National Historic Landmark.

Challis Amendment Number	**Date**	**Title**	**Description**
1	5/8/91	Cache Settlement	Adds the Chief's Cache Settlement Agreement to the Frank Church – River of No Return (FC-RONR) Wilderness Plan. This relates to the storage of items and removal of plumbing fixtures from the Wilderness and modifies the implementation schedule. Amendment is result of litigation settlement.
2	3/15/92	Travel Management This was <u>Reversed</u>	Allows motorized use on designated routes in the Borah Peak and Pioneer Mountains proposed Wilderness areas and on one designated trail in the north Lemhi's semi-primitive non-motorized area. Amendment #2 was reversed on 6/22/92 by the Regional Forester based on an Administrative Appeal.
3	5/15/92	Soldiers Lakes RNA	Change from Proposed to Established Research Natural Area.
4	5/15/92	Surprise Valley RNA	Change from Proposed to Established Research Natural Area
5	5/15/92	Merriam Lake Basin RNA	Change from Proposed to Established Research Natural Area
6	5/15/92	Middle Canyon RNA	Change from Proposed to Established Research Natural Area

7	5/15/92	Smiley Mountain RNA	Change from Proposed to Established Research Natural Area
8	5/15/92	Mahogany Creek RNA	Change from Proposed to Established Research Natural Area
9	7/26/93	Travel Management	Allows motorized use on designated routes in the Borah Peak, Pioneer Mountains and Boulder/White Clouds Proposed Wilderness Areas and one designated trail in the North Lemhi's Semi-Primitive non-motorized area.
10	7/20/94	Outfitter and Guide	Incorporates the Court-approved Remedial Plan concerning camps in the wilderness, into the FC-RONR Wilderness Plan. Replacement of 3 pages with 4 pages. Amendment is result of litigation settlement.
11	2/24/95	PACFISH	Incorporates interim standards and guidelines giving direction to protect anadromous fisheries. Includes Riparian Management Objectives (RMOs) and Riparian Habitat Conservation Areas (RHCAs). There is also additional agency commitments in the PACFISH Biological Opinion.
12	7/28/95	INFISH – Lost River RD only	Incorporates INFISH (Inland Native Fish Strategy for Intermountain, Northern and Pacific NW Regions) strategies. This interim direction applies to inland fisheries found on Lost River Ranger District..
13	09/18/96	Big Hill Electronic Site	Communication Site
14	11/21/96	Sheep Mountain RNA	Change from Proposed to Established Research Natural Area
15	11/21/96	Cache Creek Lakes RNA	Change from Proposed to Established Research Natural Area
16	11/21/96	Mystery Lake RNA	Change from Proposed to Established Research Natural Area

RANGE: Condition and Trend

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
FP-1	Condition and trend of vegetation and soils	Annually	If trend is down or if condition is poor and trend is static

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Effectiveness

Data Source: Field Exam

Unit of Measure: Each previous comprehensive Forest Monitoring Report modified the unit of measure for this monitoring item. In 1995, the number of sites was used, while in 1996 the number of monitored acres were used, both comparing the results to meeting management objectives. This report is showing current conditions and trends.

Findings:

Uplands – Since 1997, a dramatic reduction of upland monitoring efforts has occurred as more focus was spent on riparian and aquatic areas. Upland nested frequency monitoring was originally designed around a 5 to 7 year re-read cycle, but these efforts have been effectively removed from the monitoring priority. The few that were completed were not evaluated for trend or for representative acres, the 1996 monitoring reporting unit.

Riparian – Greenline transects are designed to monitor the condition and trend of the riparian vegetation through analyzing the amount of late seral riparian plant communities. Long-term repeat monitoring of study areas is on a 3 to 5 year re-read cycle. Monitoring site locations have been expanded since their initiation in 1990 and especially since 1997. Currently, the available data indicates the Forest-wide condition and trend as assessed through the riparian greenline data shows:

44 study areas at potential natural condition (PNC)
43 study areas in late seral condition
31 study areas in mid-seral condition
23 study areas in early seral condition
5 study areas in very early seral condition

32 study areas with upward trend
28 study areas with static trend
13 study areas with downward trend
43 study areas are within the re-read 3 to 5 year interval cycle
30 study areas are not within the scheduled re-read cycle

Variability: As discussed above, monitoring priorities shifted from upland monitoring to riparian and aquatic monitoring in 1997. The upland effectiveness monitoring nested frequency sites have not been abandoned, but have not been maintained at the 5-7 year re-read cycle. Given the available resources and priorities, future effectiveness monitoring on the uplands will only be possible in a few locations each year.

Evaluation: Comparisons and evaluations at the Forest level can be made on an annual basis by incorporating the findings from those sites scheduled for re-reading.

Appropriateness: Continue as Forest Plan monitoring requirement.

RANGE: Compliance With Standards

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Compliance with forage utilization standards	Annually	Forage utilization exceeds allowable use by 10 percent (Challis Plan)

Monitoring Requirement: Salmon (amended) and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Field Exam. Endangered Species Act Section 7 Reports, PACFISH/INFISH Biological Opinions

Unit of Measure: Percent utilization. Methods of monitoring utilization have progressed over the last several years to include measuring stubble heights on riparian herbaceous vegetation and on woody browse species.

Findings:

Uplands **–** Since 1997, upland monitoring efforts have been dramatically reduced by increased focus on riparian and aquatic areas. Monitoring upland grazing use continued in 1997 and 1998, but these efforts have been basically removed from the monitoring priority. Since 1999, upland utilization has largely been estimated based on observations, rather than quantifiably measured.

Riparian – Monitoring grazing use has been the focus in riparian areas where livestock tend to concentrate. Riparian grazing use has been monitored through measuring stubble heights of riparian hydric species and monitoring browsing of riparian woody species. The Forest provided the monitoring data in ESA Section 7 annual reports. The format and content of these reports have changed considerably over the years, and beginning in 1999, only contained summaries regarding riparian monitoring. The table below displays the utilization monitoring performed on riparian study areas (in the form of stubble height and woody browse monitoring) and upland areas where utilization studies were performed on key forage grass species. Beginning in 1999 when the ESA report was consolidated to include all the Forests within PACFISH /INFISH, data was summarized, by Forest, as meeting or not meeting only riparian grazing use standards.

	Riparian		Uplands	
	Performed	*Met (%)*	*Performed*	*Met (%)*
1997	235	204 (87%)	139	136 (98%)
1998	253	223 (88%)	156	151 (97%)

Riparian			
Year	*Number of Monitored Pastures*	*Number Pastures Meeting Standards*	*Percent Pastures Meeting Standards*
1999	196	164	84%
2000	100	76	76%
2001	126	97	77%
2002	68	47	69%
2003	87	76	87%

Variability: Previous consolidated Forest Plan monitoring reports (1995 and 1996) addressed the issue of Conditions Which Initiate Further Evaluations (i.e. "exceeding the standard by 10 percent"). This was incorrectly interpreted in previous reports and will not be evaluated in this comprehensive report. Conditions which may initiate further evaluation are dependent upon the individual site characteristics and are typically triggered regardless of by how much the standard was exceeded.

Evaluation: The percentage of pastures with riparian areas being monitored and meeting standards varies widely, since many riparian areas are not grazed under refined grazing rotations and more restrictive management efforts. Continued improved efforts by permittees and agency personnel are expected to reduce the number of sites which exceed the standards.

Appropriateness: Continue as a Forest Plan monitoring requirement. This is a mandatory item agreed to during consultation with National Marine Fisheries Service and U.S. Fish and Wildlife Service.

RANGE: Forage Improvement

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Range Forage Improvement	Before treatment, second and fifth year after treatment	None

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Effectiveness

Data Source: Field Exam

Unit of Measure: Acres

Findings: This monitoring item was listed only in the Salmon Forest Plan. Forage improvement projects, although identified in the plan, have been non-existent since the mid-1990s, primarily because of lack of money and the need to comply with various environmental laws and regulations. This monitoring item will be reported only when this type of project occurs.

Variability: Not applicable.

Evaluation: Improvement projects will be evaluated if and when projects are completed.

Appropriateness: Continue as a Forest Plan monitoring requirement. Forage improvement projects will be evaluated should they occur in the future.

RANGE: Predator Losses

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Predator Losses	Annually	Losses exceed 2 percent

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Baseline/Implementation

Data Source: Permittee reports, field observation

Unit of Measure: Each loss

Findings: The annual permittee submitted range report encourages, but no longer requires the reporting of livestock losses from predators. This information is not readily or reliably available.

Variability: Not applicable

Evaluation: Data is not available

Appropriateness: Discontinue as a Forest Plan monitoring requirement. This information is not readily or reliably available.

RANGE: Frank Church – River of No Return Wilderness Management Plan: Grazing Use in Unique Vegetation Sites

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5 FC-RONRW-2	Grazing Use	As needed	Grazing use is altering natural ecological succession

Monitoring Requirement: Salmon Forest Plan; Frank Church – River of No Return Wilderness Management Plan

Monitoring Type: Implementation/Evaluation

Data Source: Field observations and measurements

Unit of Measure: Qualitative and quantitative evaluation and interpretation

Findings: Only two allotments reside within the Frank Church – River of No Return Wilderness. Although both allotments are monitored for grazing use, neither supports unique vegetation sites that warrant specific grazing use monitoring as a means to evaluate natural ecological succession.

Variability: Not applicable

Evaluation: Not applicable

Appropriateness: Continue as a Forest Plan monitoring requirement even though specific grazing use monitoring as a means to evaluate natural ecological succession is not warranted.

RECREATION: Developed Recreation – Site and Facility Condition

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Recreation Facility Condition	Annually	Deterioration of site beyond that anticipated under normal use.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 1998, the Forest began implementing a new mandatory inventory and database system called Infrastructure (INFRA).

Unit of Measure: Dollars needed for the maintenance, repair, rehabilitation or replacement of developed recreation facilities.

Findings: Available funding is insufficient to prevent the gradual decline in quality and lifespan of facilities at most developed recreation sites. Order of magnitude is that current funding levels are approximately 10-15% of the actual need.

Variability: Predicted performance was that the Forest would make steady improvement in the quality of our developed recreation sites. Other higher priority demands for limited funding has precluded a general trend toward improvement and has resulted in a general trend of decline.

Evaluation: Data collected and reported through INFRA indicates investments needed for the operation and maintenance of all developed recreation facilities. Needs identified are then requested through the out year budget process.

Appropriateness: Continue trend information as a Forest Plan monitoring requirement and a mandatory reporting item. INFRA provides the detailed information. Mandated target is 20% of all facilities inventoried each year.

RECREATION: Developed Recreation – Amount and distribution of actual use compared with projections.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Recreation use at developed sites	Annually	Use beyond est. maximum level

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 2003, the Forest implemented a new mandatory survey and data collection program called the National Visitor Use Monitoring (NVUM) project.

Unit of Measure: Recreation Visitor Days (RVD's) through 1995.
Recreation Visits starting in 2003.

Findings: The use numbers shown below are totals for both the Salmon and Challis National Forests, and include developed, dispersed (now General Forest Area), and wilderness use. The average annual use for the two Forests as projected in the Forest Plans was approximately 1,079,000 Recreation Visitor Days (RVD's).

Recreation Visitor Days

Year	Use
2003	466,835 Visits
1996	1,308,400 RVD's
1995	1,373,000 RVD's
1994	1,548,000 RVD's
1993	1,645,000 RVD's

Variability: Comparison between "old" RIM use in RVD's, based entirely on office estimates, and "new" NVUM use in VISITS, based on scientific sampling techniques, is meaningless.

Evaluation: Trend information will be available after 2008 and 2nd round of NVUM.

Appropriateness: The new National Visitor Use Monitoring project provides the scientific sampling techniques necessary to obtain accurate visitor use estimates. Continue as a Forest Plan monitoring requirement and mandatory reporting item. Decrease the monitoring frequency from annually to a 5 year cycle per the national schedule for NVUM. Surveys and estimation of use will occur on a Forest-wide basis every five years. Next sample year for the Salmon-Challis NF is 2008. The 2008 results compared to the 2003 results will provide important trend information.

RECREATION: Developed recreation – Facility Capacity (whether construction & reconstruction of facilities is keeping pace w/ demand).

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Occupancy versus capacity of dev. facilities	Annually	PAOT and PAOT Days greater than or equal to 90% of projected demand.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Validation

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 2003, the Forest implemented a new mandatory survey and data collection program called the National Visitor Use Monitoring project.

Unit of Measure: Recreation Visitor Days (RVD's) through 1995.
Recreation Visits starting in 2003.

Findings: There is unused capacity at virtually all developed recreation sites on the Forest at virtually all times.

Variability: Growth in recreation use of the Forest is generally slower than previously predicted.

Evaluation: Non-scientific sensing and observations of field going personnel indicate that there are virtually no developed recreation sites on the Forest that are fully occupied other than a couple of major Federal holidays each year.

Appropriateness: Continue as a Forest Plan monitoring requirement. There is a component in the Infrastructure system that addresses use beyond capacity along with specific work tasks to be employed should use approach capacity. Further, should developed recreation sites ever become filled during more than major holiday weekends, the Forest would consider adding those specific developed sites to the National Recreation Reservation System.

RECREATION: Developed recreation – Soil and vegetation loss at developed sites.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Soil or vegetation losses at developed sites as a result of use.	5 years	Campsite condition below Class III using the Limits of Acceptable Change process.

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Implementation

Data Source: Transect photo points.

Unit of Measure: Limits of Acceptable Change (LAC) classes.

Findings: LAC was never implemented on the Forest.

Variability: Significant degradation of soil or vegetation at developed sites has not occurred.

Evaluation: There is a general sense that soil or vegetation conditions at developed recreation sites are not substantially different today than 15 years ago.

Appropriateness: Continue as a Forest Plan monitoring requirement. There is a component in the Infrastructure (INFRA) database that addresses site condition and setting along with identification of work tasks should such losses occur.

RECREATION: Dispersed recreation – Site condition

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5	Recreation Site Condition	Annually	Salmon – Dispersed sites rated Frizzell Condition Class 4/5. Challis – Campsite condition below Class III using the Limits of Acceptable Change process.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Field inventory evaluating natural conditions at popular dispersed (non-developed) campsites using the Frizzell method (Salmon NF) or the Limits of Acceptable Change (LAC) process (Challis NF).

Unit of Measure: Frizzell Condition Class rating (Salmon NF) or Limits of Acceptable Change (LAC) Condition Classes (Challis NF).

Findings: Neither system, Frizzell or LAC, has been implemented on either Forest in General Forest Areas (GFA's).

Variability: Predicted performance was that the two Forests would undertake a widespread inventory and evaluation of all popular dispersed camping spots in the General Forest Area. Inventory was never done.

Evaluation: Although there is no data to evaluate for the above described item, the new Infrastructure (INFRA) program includes a component for natural setting in the General Forest Area. Natural resource degradation as a result of recreation use is evaluated to determine rehabilitation or restoration needs on a specific site or location basis.

Appropriateness: Continue as a Forest Plan monitoring requirement recognizing data sources are outdated. Continue to identify adverse resource effects as a result of recreation use through the INFRA program.

RECREATION: Dispersed recreation – Amount and distribution of actual use compared with projections.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-6	Recreation use in General Forest Area	Annually	Use beyond est. maximum level

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 2003, the Forest implemented a new mandatory survey and data collection program called the National Visitor Use Monitoring (NVUM) project.

Unit of Measure: Recreation Visitor Days (RVD's) through 1995.
Recreation Visits starting in 2003.

Findings: The use numbers shown below are totals for both the Salmon and Challis National Forests, and include developed, dispersed (now General Forest Area), and wilderness use. The average annual use for the two Forests as projected in the Forest Plans was approximately 1,079,000 Recreation Visitor Days (RVD's).

Recreation Visitor Days

Year	Use
2003	466,835 Visits
1996	1,308,400 RVD's
1995	1,373,000 RVD's
1994	1,548,000 RVD's
1993	1,645,000 RVD's

Variability: Comparison between "old" RIM use in RVD's, based entirely on office estimates, and "new" NVUM use in VISITS, based on scientific sampling techniques, is meaningless.

Evaluation: Trend information will be available after 2008 and 2nd round of NVUM.

Appropriateness: Continue as a Forest Plan monitoring requirement and mandatory reporting item. The new National Visitor Use Monitoring project provides the scientific sampling techniques necessary to obtain accurate visitor use estimates. Decrease the monitoring frequency from annually to a 5 year cycle per the national schedule for NVUM. Surveys and estimation of use will occur on a Forest-wide basis every five years. Next sample year for the Salmon-Challis NF is 2008. The 2008 results compared to the 2003 results will provide important trend information.

RECREATION: Dispersed recreation – Off road vehicle travel.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-7	Acres damaged by off highway vehicle (OHV) use to the point of triggering active rehabilitation	Annually	Acres increase by 10% over last inventory

Monitoring Requirement: Salmon and Challis Forest Plans. See also Soil FP-3.

Monitoring Type: Baseline/Implementation

Data Source: Field inventory.

Unit of Measure: Acres

Findings: Inventory was never conducted.

Variability: Not applicable

Evaluation: Not applicable

Appropriateness: Continue as a Forest Plan monitoring requirement. A new Code of Federal Regulation is being proposed to close National Forest System lands to motorized use except for designated routes. Routes selected will be suitable for motorized use. Cross-country travel off designated routes will no longer be permitted.

RECREATION: Dispersed recreation – Trail conditions.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-8	Trail condition	10% Annually	Trail mileage classed as substandard exceeds management objectives or increase in substantiated complaint letters from the public.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Trail condition surveys.

Unit of Measure: Miles of trail.

Findings: Available funding is insufficient to prevent the gradual decline in quality and condition of the trail system. Order of magnitude is that current funding levels are approximately 10% of the actual need to prevent further degradation of the system.

Variability: Predicted performance was that the Forest would make steady improvement in the quality and condition of our trail system. Other higher priority demands for limited funding has precluded a general trend toward improvement and has resulted in a general trend of decline.

Evaluation: Data collected and reported through INFRA indicates investments needed for the operation and maintenance of all developed recreation facilities. Needs identified are then requested through the out year budget process.

Appropriateness: Continue trend information as a Forest Plan monitoring requirement and a mandatory reporting item. INFRA provides the detailed information. Mandated target is 20% of all trails inventoried each year.

RECREATION: Wilderness – Campsite condition.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-9	Condition of wilderness campsites	5 years	Limits of Acceptable Change (LAC) analysis shows that the condition class has declined one class on 25% of inventoried sites.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Field inventory

Unit of Measure: Campsites by Condition Class

Findings: Neither Forest implemented Limits of Acceptable Change process. Instead, the revised Frank Church- River of No Return Wilderness Management Plan adopted the Frissell method of determining campsite conditions. The Frissell system employs 5 classes ranging from Class I (most natural) to Class V (most modified). A survey and inventory of most campsites located within the Forests' portion of the Frank Church – River of No Return Wilderness (910 campsites) indicates that on a wilderness-wide basis approximately 20% of campsites are in Class I (182 camps), 27% in Class II (248 camps), 26% in Class III (236 camps), 20% in Class IV (183 camps) and 7% are in Class V (61 camps). Direction is to undertake rehabilitation actions on Class IV and Class V sites.

Variability: Not applicable.

Evaluation: Change monitoring method from a LAC based system to the Frissell system. Establish a 10 year cycle for repeat of survey.

Appropriateness: Continue Wilderness Campsite Condition as a Forest Plan monitoring requirement. The Frissell method for estimating condition classes will continue to be used.

RECREATION: Wilderness – Amount and distribution of actual use.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-10	Recreation use in designated Wilderness	Annually	Use beyond est. maximum level

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 2003, the Forest implemented a new mandatory survey and data collection program called the National Visitor Use Monitoring (NVUM) project.

Unit of Measure: Recreation Visitor Days (RVD's) through 1995.
Recreation Visits starting in 2003.

Findings: The use numbers shown below are totals for both the Salmon and Challis National Forests, and include developed, dispersed (now General Forest Area), and wilderness use. The average annual use for the two Forests as projected in the Forest Plans was approximately 374,000 Recreation Visitor Days (RVD's).

Recreation Visitor Days

Year	Use
2003	34,178 Visits
1996	437,100 RVD's
1995	447,000 RVD's
1994	477,000 RVD's
1993	374,000 RVD's

Variability: Comparison between "old" RIM use in RVD's, based entirely on office estimates, and "new" NVUM use in VISITS, based on scientific sampling techniques, is meaningless.

Evaluation: Trend information will be available after 2008 and 2nd round of NVUM.

Appropriateness: The new National Visitor Use Monitoring project provides the scientific sampling techniques necessary to obtain accurate visitor use estimates. Continue as a Forest Plan monitoring requirement and mandatory reporting item. Decrease the monitoring frequency from annually to a 5 year cycle per the national schedule for NVUM. Surveys and estimation of use will occur on a Forest-wide basis every five years. Next sample year for the Salmon-Challis NF is 2008. The 2008 results compared to the 2003 results will provide important trend information. It will be

necessary to add extra survey days specific to wilderness during the 2008 survey in order to most accurately assess Wilderness use as distinct from Forest use.

RECREATION: Salmon Wild & Scenic River Management Plan – Recreation segment – User Demands.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-11 SWSR(rec)-1	Reported conflicts between user groups	Annually	Recurring conflicts which could be resolved through regulations

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Written or verbal reports of conflicts.

Unit of Measure: Each report.

Findings: Conflicts between user groups have not developed. Use for most of the year generally remains low. Conflicts within a user group have occurred during spring and fall steelhead seasons. Leaving unoccupied camps became a problem. The Special Order for length of stay was relaxed from 14 days to 16 days to encompass 2 weekends, with a special emphasis on enforcement. The problem has been generally resolved.

Variability: Predicted growth in use of the Recreation segment of the Salmon Wild & Scenic River has not occurred.

Evaluation: This anticipated issue has not developed as yet.

Appropriateness: Continue as a Forest Plan monitoring requirement and a mandatory reporting item. Continue to track at the Ranger District level.

RECREATION: Salmon Wild & Scenic River Management Plan – Recreation segment – Allocation system.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-12 SWSR(rec)-2	Need for restrictions	Annually	Recurring conflicts which could be resolved through regulations or an allocation system

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Effectiveness

Data Source: Written or verbal reports of conflicts.

Unit of Measure: Each report.

Findings: As stated under FP-11, anticipated conflicts due to use levels have not occurred. There is no need at the present time, nor in the foreseeable future, for a launch allocation system between private and commercial boating use on the Recreation segment of the Salmon Wild & Scenic River.

Variability: Predicted growth in use of the Recreation segment of the Salmon Wild & Scenic River has not occurred.

Evaluation: This anticipated issue has not developed as yet.

Appropriateness: Continue as a Forest Plan monitoring requirement and a mandatory reporting item. Continue to track at the Ranger District level.

RECREATION: Salmon Wild & Scenic River Management Plan – Recreation segment – Boating use.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-13 SWSR(rec)-3	Amount of boating use of the Recreation segment of the Salmon River	Annually	Recurring conflicts which could be resolved through regulations or an allocation system.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Voluntary self-registration system at boat launches supplemented by random observation.

Unit of Measure: Number of boaters.

Findings: Self-registration system was never implemented.

Variability: Predicted growth in use of the Recreation segment of the Salmon Wild & Scenic River has not occurred.

Evaluation: This anticipated issue has not developed as yet.

Appropriateness: Continue as a Forest Plan monitoring requirement and a mandatory reporting item. Continue to track at the Ranger District level.

RECREATION: Salmon Wild & Scenic River Management Plan –Wild segment – Visitor use.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-14 SWSR(wild)-8	Amount of recreation use of the Wild segment of the Salmon River	Annually	Use beyond estimated maximum level

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Baseline

Data Source: Annual Recreation Information Management (RIM) Report (through 1995). In 2003, the Forest implemented a new mandatory survey and data collection program called the National Visitor Use Monitoring project. Use data during the controlled permit season is available from the permits.

Unit of Measure: Recreation Visitor Days (RVD's) through 1995.
Recreation Visits starting in 2003.

Findings: The most accurate information available for use of the Wild segment of the Salmon Wild & Scenic River is the mandatory permit system which is in place from June 20 through September 7 of each year. The permit tracks number of people in the party as well as their length of stay. The next most accurate piece of information comes from the National Visitor Use Monitoring project, however use calculations in that process are on a Forest-wide basis, therefore site-specific locational information is not available from this first round of surveys. Future surveys will have a mechanism for gathering more site-specific use data should the Forest have the need for such data. The next survey cycle for our Forest will be in 2008. The least useful information came form RIM, where use estimates were entirely guessed at with virtually no basis in scientific sampling techniques.

Variability: Comparison of today's Unit of Measure, Site Visits, with RIM's previous Unit of Measure, Recreation Visitor Days, is meaningless. Our next opportunity to determine use trends will come from round 2 of NVUM, scheduled for 2008. Use figures during the control season continue to be our most reliable information during that season.

Evaluation: Data and trends will best be evaluated after 2008.

Appropriateness: Continue as a Forest Plan monitoring requirement. Continue to track float use levels during the control season at the Ranger District level.

RECREATION: Frank Church - River of No Return Wilderness Management Plan – Middle Fork of the Salmon River – Launch Allocation.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-15 FCWMP-1	Allocation of launches between outfitted and non-outfitted groups on the Middle Fk of the Salmon River	Annually	Significant number of unused launches by either group or significant changes in demand for launches by either group.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Effectiveness

Data Source: Ranger District records of launches used by outfitted and non-outfitted groups.

Unit of Measure: Launch

Findings: Current allocated launches are fully utilized by both groups.

Variability: Actual performance matches predicted performance.

Evaluation: Recent Management Plan revision for the Frank Church – River of No Return Wilderness maintained the current allocation of launches on the Middle Fork of the Salmon River.

Appropriateness: Continue as a Forest Plan monitoring requirement and a mandatory reporting item. Continue to track at the Ranger District level and make adjustments as needed through standard management actions.

RESEARCH NATURAL AREAS: Number and Acres

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
TR-1	Number of RNAs and total acres	Annually	N/A

Monitoring Requirement: This item is identified as a Tracking Item

Monitoring Type: Tracking/Implementation

Data Source: Establishment records

Unit of Measure: Number and acreage

Findings: The last three proposed RNAs were designated in the Challis area by Plan Amendment in November 1996. These were Sheep Mountain, Cache Creek Lakes, and Mystery Lake. All the proposed RNAs identified in the two Forest Plans have been designated except for the Deadwater RNA which was dismissed due to excessive non-native vegetation that detracted from its RNA characteristic. No more RNAs are proposed.

Salmon and Challis Forest-wide RNAs:

Allan Mountain	1,650 Acres
Kenney Creek	1,690
Davis Canyon	1,215
Dry Gulch – Forge Creek	3,235
Frog Meadows	330
Mill Lake	720
Bear Valley	2,530
Colson Creek	280
Dome Lake	1,415
Gunbarrel	1,600
Soldier Lakes	155
Surprise Valley	1,470
Merriam Lake Basin	740
Middle Canyon	2,200
Smiley Mountain	3,080
Mahogany Creek	3,650
Cache Creek Lakes	795
Mystery Lake	517
Sheep Mountain	1,542
Iron Bog	434
Meadow Canyon	3,880 (part on Targhee)
TOTAL	33,128 acres

Variability: N/A

Evaluation: N/A

Appropriateness: Discontinue as a Forest Plan monitoring and reporting item. Tracking and implementation of RNA establishment has been complete.

SOIL: Natural Erosion

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Natural soil erosion for on-site loss	Annually	Exceeding local soil loss tolerance levels

Monitoring Requirement: This is not a required monitoring item in either the Challis or Salmon Forest Plans. Item #7 of the Salmon Forest Plan addresses monitoring naturally unstable areas with photo points.

Monitoring Type: Baseline

Data Source: Forest Erosion Troughs Report and Engineering Road Crew Reports

Unit of Measure: pounds/acre (tons/acre)

Findings: On the Salmon portion there are numerous natural debris flows from steep hillsides along the Salmon River Road below North Fork. These occur during high intensity storm events. Sediment flows sometimes block traffic for a few hours to a few days. Approximately 80 percent of the soil and rocks occurring on the Salmon River Road comes from natural debris flow events. About 20 percent results from steep cutbanks. Annually, between 1.0 ton (2,000 pounds) and 4.0 tons (8,000 pounds) of material is removed from the Salmon River Road by the road crew or contractors. This includes only the Lower Salmon River Road.

Two soil erosion trough sites were established in April 1985 within the former Salmon National Forest to provide data for the next Forest Plan. The following is information from these two sites located between Indianola and Colson Creek, along the main Salmon River.

Spring Creek Erosion Trough (G120bs-1 granite landtype; elevation 4,500 ft.; south/southwest aspect; granite soil, 65 percent slope, rainfall is about 15 inches). The contents of the Spring Creek erosion trough were collected on October of 1999 after a 16 month operation period. The collected sample was dried and sieved through a #10 mesh screen to separate the soil and gravel components. Each component was then weighed and totaled in grams and then converted into pounds per acre for the sample period. The Spring Creek site displayed an annual erosion rate of 80 pounds per acre during the 1999 sampling period (16 months), with soil (<2mm) and gravel (>2mm) components of 12 and 68 pounds per acre, respectively.

The observed nine year average erosion rate for the soil particles was calculated at 50 pounds per acre per year (0.03 tons per acre per year). Their average erosion rate for gravel sized materials was calculated at 83 pounds per acre per year (0.04 tons per acre

per year). Combination of these two mean erosion rates produced an overall mean soil and gravel erosion rate of 133 pounds per acre per year (0.07 tons per acre per year) at the Spring Creek site. The last year collected was 1999.

Brushy Gulch Erosion Trough (G120cs-1 granite landtype; elevation 4,700 feet; south aspect; granite soil; 30 percent slope; rainfall about 15 inches). The contents of the Brushy Gulch erosion trough were collected on October of 1999 after a 16 month operation period. The collected sample was dried and sieved through a #10 mesh screen to separate the soil and gravel components. Each component was then weighed and totaled, and then the grams weighted were converted into pounds per acre for the sample period. The Spring Creek site displayed an annual erosion rate of 4,736 pounds per acre during the 1998 sampling period, with soil (<2mm) and gravel (>2mm) components of 2,686 and 2,050 pounds per acre, respectively. While the 1999 sampling interval encompassed a 16 month period, no significant rains were observed after June.

The observed 12 year average erosion rate for the soil particles was calculated at 785 pounds per acre per year (0.39 tons per acre per year). Their average erosion rate for gravel sized materials was calculated at 755 pounds per acre per year (0.38 tons per acre per year). Combination of these two mean erosions rates produced an overall mean soil and gravel erosion rate of 1,540 pounds per acre per year (0.7 7 tons per acre per year) at the Brushy Gulch site. The last year collected was 1999.

Natural High Intensity Storm Erosion Yields From the Engineering Road Crew Data:

Major destructive natural debris flows from high rainfall events on steep hillsides occur along the Salmon River Road below North Fork and the lower Panther Creek Road whenever we have high intensity short duration storms. Approximately 100 percent of the soil and rocks occurring on the Salmon River Road comes from natural debris flow events. About 20 percent results from the steep cut banks. Annually, there is between 1 ton (2000 pounds) and 4 tons (8000 pounds) of material that is removed annually from the total length of the Salmon River Road from North Fork to Corn Creek, a distance of about 46 miles.

On July 25, 2003 a high intensity rainfall event occurred on the lower Panther Creek Road and required approximately 2,000 cubic yards of material to be removed from the road system. This closed the road until the crews could open it for traffic. This same storm a few minutes later traveling northeast, reached the Main Salmon River Road area between Panther Creek and just above Dutch Oven and created road debris from the steep hillside south of the road. It required about 1,200 cubic yards of material to be removed from the road and it was closed for about 2 days. Approximately 500 river runners from off the Middle Fork of the Salmon River and 50 local persons including forest fire persons were affected since they were on their way to Salmon and to the Cramer fire camp. This storm was estimated to exceed the 100 year-15 minute storm intensity of 0.65 inches.

On August 5, 2003 another 100 year –15 minute storm occurred at the Cramer Fire, (about 0.69 inches) and closed the road again when the Long Tom Creek blew out and removed the culvert under the main road. The road being closed affected approximately 110 persons, all who just got off floating the Middle Fork of the Salmon River. This closed the road for about 1 day until it could be reopened. Approximately 800 cubic yards of material was removed. The total amount of debris from the July 25th and August 5th high intensity storm events totaled approximately 19, 200,000 pounds (9600 tons) of material. The Cramer area produced approximately 3,040,000 pounds (1520 tons) of material to be removed, between Panther Creek and Dutch Oven area about 4,560,000 pounds (2280 tons) of material and on the Panther Creek Road is was about 7,600,000 pounds (3800 tons). The total amount of debris from the July 25th and August 5th high intensity storm events totaled approximately 15,200,000 pounds (7600 tons) of material. This two-storm total of 15,200,000 pounds, when added to the normal amount removed from the total length of the Salmon River Road of 3,800,000 pounds (1900 tons), produces a total of 19,000,000 pounds or 9,500 tons.

Variability: Not applicable

Evaluation: Any natural high intensity storm produces an increased amount of material above the natural background rates. This increases the need for the road crew, plus any emergency contractors that are required, to open the roads.

Appropriateness: Continue monitoring but not as a Forest Plan monitoring requirement. Erosion troughs should be continued to provide a representative baseline erosion database for all climatic conditions and different soil/geology. These existing sites could be either dropped for further monitoring or put on an extended repeat schedule. New sites should be added to the southern end of the Forest to assess natural erosion on the Challis volcanic and sedimentary soils to enlarge our database of natural erosion rates and thus help contribute to the fisheries and range allotment programs. Suggest the South Zone road crew keep records of hillside materials that need to be cleaned off the roads and from the natural sediment off the hillside on the inside ditches when cleaned out.

SOIL: Ground Disturbing Activities With the Potential to Alter Soil Productivity

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Disturbing activities altering soil productivity	Appropriate sample of projects	Detrimental soil productivity levels

Monitoring Requirement: Challis (item #2) and Salmon (item #4) Forest Plans. This monitoring item is closely related to and tiers to monitoring item Water FP-4.

Monitoring Type: Implementation/Effectiveness

Data Source: Field measurements, observations, Soil Quality Assessments

Unit of Measure: Ground cover, soil compaction

Findings: From 1997 through 2002 representative potentially ground disturbing projects were sampled. Visual estimates and transects were performed monitoring the amount and effectiveness of ground cover. Beginning in 2003, the Soil Quality Assessment process was initiated which includes qualitative observations and quantitative sampling of erosion indicators, ground cover, and soil compaction (bulk density). A representative list of projects monitored is shown below, by year.

1997: State BMP audit- three timber sales—Lost River District
1998: Soil erosion monitoring—Sawmill Canyon area, Lost River District
Soil erosion monitoring—Firebox Meadows, Lost River District
1999: Range BMP monitoring—three grazing allotments, Lost River, Salmon-Cobalt, and Leadore districts
2000: Fire suppression rehabilitation monitoring—Clear Creek Fire, Salmon-Cobalt District
2001: Soil disturbance monitoring—Moccasin Aspen Restoration Project, Salmon-Cobalt District
Fire suppression monitoring—Deep Creek Ridge area, Clear Creek Fire, Salmon-Cobalt District
Fire suppression rehabilitation monitoring—Blackbird Jeep Trail area, Clear Creek Fire, Salmon-Cobalt District
2002: Fire suppression rehabilitation monitoring—Rooker Basin area, Clear Creek Fire, Salmon-Cobalt District
Fire suppression rehabilitation monitoring—Deep Creek Ridge area. Clear Creek Fire, Salmon-Cobalt District
Soil compaction (penetrometer) and ground cover monitoring—Silverbird Salvage Project, Salmon-Cobalt District

Long-term soil productivity coarse woody debris—Williams Post & Pole Project, Salmon-Cobalt District

2003: Bulk density sampling and Soil Quality Assessment—Lost River grazing allotments, Lost River District
Bulk density sampling and Soil Quality Assessment—Salmon-Moose Fuels Project, Salmon-Cobalt District
Bulk density sampling and Soil Quality Assessment—Upper Eddy Basin, Challis District
Bulk density sampling—Gibbonsville Project, North Fork District
Bulk density sampling—William Post & Pole Project, Salmon-Cobalt District
Soil Quality Assessment—Silverbird Post-Fire Salvage, Salmon-Cobalt District

Variability: Monitoring only a representative of potentially detrimental projects is not occurring. Virtually all projects that have the potential to detrimentally affect soil productivity are being sampled at some level appropriate for the project.

Evaluation: The general results of the monitoring and soil quality assessments indicated no unanticipated short-term or long-term alteration of soil productivity.

Appropriateness: Continue as a Forest Plan monitoring requirement. This type of resource monitoring is being implemented at the project level. There is a direct relationship with the goals, direction, standards, and guidelines of the Forest Plans.

SOIL: ORV Damage

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Sequential photo points of ORV damage	Annual	Closure of areas upon evidence of watershed damage

Monitoring Requirement: Salmon Forest Plan. See also Recreation FP-7.

Monitoring Type: Baseline/Implementation

Data Source: Standard methods

Unit of Measure: Photo interpretation and evaluation

Findings: No photo points were established for the purpose of evaluating ORV damage

Variability: Not applicable

Evaluation: Soil disturbance and accelerated erosion from ORVs is a concern on the Forest. The use of ORVs on and off roads and trails has increased dramatically over the last ten years.

Appropriateness: Continue as a Forest Plan monitoring requirement. Consider initiation of a monitoring protocol and monitor ORV use as a Forest Plan monitoring requirement once the pending Forest Service wide formal direction has been established regarding ORV use.

SOIL: Benchmark Soils

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Recognize and establish benchmark soils that are representative of large areas	Continuous	Initiate further investigation after establishing representative sampling sites

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Baseline/Implementation

Data Source: Land Types, Land Type Associations

Unit of Measure: Number

Findings: Numerous Land Type Associations have been identified as benchmark soil types representing the larger, more dominant land types within the Forest.

Variability: N/A

Evaluation: Soil map unit descriptions accompany the various soil and land type surveys that have been accomplished over the years on the Forest. Map unit descriptions identify and describe the various characteristics and properties of the major soil types within the map unit. At the project level, the soil characteristics at the site level are compared to those described for the Land Type. Any significant differences are evaluated and used to modify the proposed project design to eliminate or minimize adverse effects to the soil resource.

Appropriateness: Continue as a Forest Plan monitoring requirement. However, the recognition and establishment of formalized ‘benchmark’ soil types representing larger areas is not necessary. Representative soil types are already identified as part of the Land Type and soil mapping process.

SOIL: Comparing Erosion for Various Forest Practices

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5	Quantified project level erosion sampling	4 plots per year	Exceeding local soil loss tolerance level evaluations

Monitoring Requirement: Challis (item #1) and Salmon (item #3) Forest Plans

Monitoring Type: Implementation

Data Source: Erosion troughs, fabric clothe, 3-F erosion bridge

Unit of Measure: tons/acre

Findings: No project level quantified erosion studies have been performed.

Variability: Not applicable

Evaluation: Not applicable

Appropriateness: Continue as a Forest Plan monitoring requirement. Establishing quantitative soil erosion studies such as those listed at the project level is desired in order to evaluate the effects of management practices or the effectiveness of mitigation measures.

SOIL: Soil Survey Activities

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-6	Soil survey activities	Annually, fiscal year program of work target	+/- 25% of Plan direction

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Baseline

Data Source: Progress reviews; Management Attainment Report

Unit of Measure: Acres surveyed

Findings:

Year	Acres	Location	Type
2000	40,000	Allison Creek	Land Systems Inventory

Variability: The opportunity to plan and complete soil surveys is totally dependent upon a reliable budget source which has not been available in the recent past.

Evaluation: The two Forest have preformed several soil surveys over the years using a variety of survey methods appropriate at the time. Considerable effort is underway to consolidate these many surveys into compatible Land Type Associations that can be incorporated into the NRIS corporate database and used and understood by all resource specialists regardless of the project location or survey vintage.

Appropriateness: Continue as a Forest Plan monitoring requirement. Should funding become available and soil surveys become a priority reportable units will be adequately monitored and reported.

SOIL: Naturally Unstable Areas

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-7	Naturally unstable areas	Annual	Sites which are not stable due to natural conditions

Monitoring Requirement: Salmon Forest Plan. See also Soil FP-1 Natural Erosion.

Monitoring Type: Effectiveness/Validation

Data Source: Observations of incidences, landslide data files

Unit of Measure: Number of events

Findings: Several areas of natural soil instability are present throughout the Salmon-Challis National Forest. Incidences of natural debris flows have been recorded and photographically captured. Landslide prone areas have been identified on topographic maps indicating where historical mass wasting prone soils are located.

Variability: Not applicable

Evaluation: Knowing where natural soil instability is located and the types of soils prone to instability assist Forest specialists in planning and managing Forest activities.

Appropriateness: Continue as a Forest Plan requirement. These sites should be monitored by maintaining a photographic report file of incidences and maintaining the landslide prone map files as additional areas are further investigated.

SOIL: Vegetation and Soil Conditions: Salmon Wild & Scenic River Management Plan (Wild Segment): Campsites

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-8 SWSR(wild)-2	Vegetation and soil stability	Every three years	Detrimental site instability from activities

Monitoring Requirement: Salmon Forest Plan; Salmon Wild & Scenic River Management Plan

Monitoring Type: Baseline/Implementation/Evaluation

Data Source: Photo points, field observations

Unit of Measure: Qualitative interpretation

Findings: Photo points were never established in the seven selected campsites (Devil's Toe, Bargamin Creek, Big Mallard, Corey Bar, Rhett Creek, Bull Creek, and Horse Creek). David Cole of the Aldo Leopold Wilderness Research Institute has been conducting campsite investigations on a randomized sample of eleven campsites from 1996 through 2002. Two (Devil's Toe and Bargamin Creek) of the seven campsites were included in his report. His findings are summarized below.

The campsites are generally large in size with abundant social trails and satellite sites. Vegetation is sparse with abundant sand and rock below the high water mark. The size of campsites, the extent of satellite sites, and the amount of social trails increased from 1996 through 2002, especially above the high water line.

Variability: The information from the Cole report could be used as a baseline to establish additional monitoring sites on the other 5 campsites, or re-evaluate the original campsite selection to include Cole's campsites.

Evaluation: Trends in campsite expansion and extent of social trails are increasing on at least two of the selected 7 campsites and on the other nine studied by Cole.

Appropriateness: Continue as a Forest Plan monitoring requirement. Use the Cole report to select additional sites for quantitative sampling and/or photographic record.

TIMBER: Offer, Sold, and Cut

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Timber Sold	Annually	Timber offer not progressing as scheduled

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: PTSAR, PSS, TCS, and TSPIRS Reports

Unit of Measure: Volume: MBF; Area: Acres

Findings:

Refer to the table on the next page for a summary of the volumes offered, sold, and cut on the individual Salmon and Challis Units and a total for the combined Forests.

Planned logging is listed in the Salmon and Challis Forest Plans and is stored in our Timber Activity Control System (TRACS) and Forest Plan Timber Summary (FPTS) Area. The volume in Thousand Board Feet (MBF) and the Acres sold in a given year are stored in the Program Sale Statement (PSS) Area and Timber Cut and Sold (TCS).

Two categories of timber volume exist: 1) The Allowable Sale Quantity, which is the quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the "average annual sale quantity." 2) The second category of volume is an estimated amount of volume called Non-Chargeable Volume in TRACS. This is volume from trees not used in the determination of ASQ, such as fuelwood from logging residue, etc. These two categories are listed as "ASQ" and "NON-ASQ" in the tables on the following pages.

Salmon Unit "Planned"			Challis Unit "Planned"		
	MBF	ACRES			
ASQ	21,630		ASQ	3,000	
Non ASQ	2,800		Non ASQ	2,300	
Total	24,430	4,635	Total	5,300	1,575

Volume Sources:
Salmon Forest Plan Page VII-A-8, EIS Page IV-34, Page II-137
Sawtimber = 21,147 MBF + Roundwood = 169 MCF x 3.3 = 558 = about 21,700 ASQ.
The TRACS 21,630 value is due to rounding.
Fuelwood (NON-ASQ) = 814 MCF x 3.47 = 2,800 MBF

Challis Forest Plan Page IV-39. ASQ = 3,000 MBF. NON-ASQ = 2,250, 2,300 in TRACS. Acres sources: Salmon Plan Page III-1, EIS Page IV-34. Sawtimber = 4,012. Challis Plan Page IV-40, Sawtimber = 550 acres. Acres are increased in TRACS for Roundwood and Fuelwood.

Variability: Salmon offered and sold ASQ volumes were only 9% of the Forest Plan average, the bulk of which occurred between 1997 and 2001. Challis' sold ASQ has been right at the planned level until 1998, and then dropped to approximately 50% of the Forest Plan average.

Evaluation: Section 7 Consultation for salmon under ESA began late in 1992, and marked the beginning of reduced volume offer on the Salmon Unit.

Appropriateness: Continue as a Forest Plan monitoring requirement as a means of displaying the trends of timber sales from Forest Plan projections.

MBF VOLUME: Offered, Sold, and Cut. ACRES Sold and Cut; Salmon and Challis Units FY 97 through FY 03

		SALMON UNIT			CHALLIS UNIT			COMBINED SCF			REMARKS
FY	SOURCE OF INFO	MBF OFFER	MBF or AC CUT	MBF or AC CUT	MBF OFFER	MBF or ACRES SOLD	MBF or AC CUT	MBF OFFER	MBF or AC SOLD	MBF or AC CUT	
		PTSAR	PSS	TSPIRS	PTSAR	PSS	TSPIRS	PTSAR	PSS/TCS	TSPIRS	
97	ASQ NON ASQ TOTAL VOL TOTAL AC.	2983	2498	739	2720	2720	85	5703	2554 2664 5218	5903 2689 8592 824	
98	ASQ NON ASQ TOTAL VOL TOTAL AC.	7198	4016	369	1936	1936	268	9134	3762 2190 5952	4922 2670 7592 637	
99	ASQ NON ASQ TOTAL VOL TOTAL AC.	5181	4924	1190	1510	1510	194	6691	3671 2763 6434	2738 2341 5079 1384	
00	ASQ NON ASQ TOTAL VOL. TOTAL AC.	5523	4890	379	924	924	105	6447	3872 1942 15,814	2150 1975 4125 484	
01	ASQ NON ASQ TOTAL VOL. TOTAL AC.	2142	1594	699	1568	1568	0	3710	134 3028 3162	1986 2716 4702 699	.
02	ASQ NON ASQ TOTAL VOL. TOTAL AC.	1224	1224	1002	1332	1332	4	2556	487 2717 2556	4979 2246 7225 1006	
03	ASQ NON ASQ TOTAL VOL. TOTAL AC.	2536	2780	103	1328	1280	0	3864	1210 2850 4060	1231 2674 3905 103	
Ave Per YR.	ASQ NON ASQ AV TOT VOL AV TOT AC. No. Yrs. Av.	16	16	16	16	16	16	16	9794 2040 11,834 16	 14,095 2004 16	

TIMBER: Fuelwood Sold

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Fuelwood cut	Annually	Significant drop in volume indicating a change in supply/demand

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: TSPIRS Report 1988-1998
Annual Free Use Report 1997-2003 – combination of the Salmon and Challis NFs changed the reporting system. After 1996, we can only show Free Use. The commercial and personal use are incorporated into the Offered, Sold and Cut Report.

Unit of Measure: MBF

Findings:

Salmon NF

Year	1997	1998	1999	2000	2001	2002	2003	Average
Fuelwood: Personal Use Free Use	988	557	1050	989	591	283	60	637.7
Total	988	557	1050	989	591	283	60	637.7

Challis NF

Year	1997	1998	1999	2000	2001	2002	2003	Average
Fuelwood: Personal Use Free Use	0	0	0	0	0	0	167	167
Total	0	0	0	0	0	0	167	167

Variability: The Challis National Forest did not provide Free Use firewood until 2003.

Evaluation: The trend since 1997 shows a decline in the annual permits for this product. The annual demand for fuelwood may be changing. The supply of fuelwood is apparently adequate to meet demand.

Appropriateness: Discontinue as a Forest Plan monitoring requirement. The change in reporting systems makes this item unavailable.

TIMBER: Reforestation and Stand Improvement

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Reforestation and Timber Stand Improvement	Annually	Significant reduction in Forest Plan outputs

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: TRACS and Reforestation/TSI Annual Accomplishment Report

Unit of Measure: Acres

Findings:

Salmon National Forest

Forest Plan (FP) Year	FP Annual Output	1997	1998	1999	2000	2001	2002	2003	Avg
Planting		238	66	143	91	348	443	0	190
Site Prep Nat		391	348	216	0	0	0	0	136
Total Reforestation	1870	629	414	359	91	348	443	0	326
*Cert w/o S.P.		1221	108	367	48	0	2	0	485
Release		351	0	0	0	0	0	0	50
Thin		0	0	1340	145	613	659	203	423
Total TSI	950	1082	1282	1340	145	613	659	203	761

*Note: The reforestation goal in the Forest Plan was based on planting and site preparation for naturals. Certification of natural regeneration without site prep was not included.

Variability: Long term reforestation (exclusive of certification of natural regeneration without site prep) ranged from a high of 1,423 acres in 1988 to 0 acres in 2003. The 1997-2003 reforestation average is 326 acres. Timber stand improvement (TSI) was even more variable than reforestation, ranging from a low of 145 acres in 2000 to a high of 1,443 acres in 1995. The seven-year average for TSI is 761 acres.

Evaluation: Annual reforestation and timber stand improvement accomplishments are subject to many yearly variables. These include changing budgets, cutting levels, seedling availability, and even the type of fire season (in emergency situations, project crews are pulled away to battle forest fires). Long-term trends and yearly averages are more meaningful. It is significant that the seven-year average reforestation

accomplishment is significantly below Forest Plan goal (326 acres versus 1,870 acres). The average annual TSI program has been slightly below the Forest Plan's goal. Since 2000 the TSI program is showing a significant decline.

Appropriateness: Continue as a Forest Plan monitoring requirement.

Challis National Forest

	FP Annual Output	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**Avg.**
Planting		0	67	0	0	0	0	0	10
Site Prep Nat		175	193	263	44	25	6	0	101
Total Reforestation	653	175	260	263	44	25	6	0	110
* Cert. w/o S.P.		0	73	0	0	0	38	0	16
Release		0	0	130	0	0	0	0	19
Thin		17	141	194	0	485	33	0	124
Totals TSI	69	17	141	324	0	485	33	0	143

Variability: Long term reforestation (exclusive of certification of natural regeneration without site prep) has been highly variable and ranges from a low of zero acres in 1988 to 1,119 acres in 1994. From 1997 to 2003 reforestation average is 110 acres. Timber stand improvement has been equally variable, ranging from a low of zero acres in 2000 and 2003 to 677 acres in 1989. The seven-year TSI average is 143 acres.

Evaluation: Annual reforestation and timber stand improvement accomplishments are subject to many yearly variations; long-term trends and averages are more meaningful. On average, reforestation has dropped to only 17% of annual output estimated in the Forest Plan. On the other hand, timber stand improvement is progressing two and a half times faster than projected in the Forest Plan. Forest Standards and Guidelines are being met on these TSI projects. Increasing timber stand improvement work will have a positive impact on Forest Health and future timber yields.

Appropriateness: Continue as a Forest Plan monitoring requirement as a means to evaluate long-term trends of forest management.

TIMBER: Restocking

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-4	Adequate Restocking within 5 years	Annually 5 years after final removal	Suitable lands fail to be regenerated within 5 years

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Validation

Data Source: Reforestation and TSI Accomplishment Report, Table 22 – 1988-1996
Silva Report (Management Attainment Report) – 1997-2003

Unit of Measure: Percent acres adequately stocked

Findings:

Salmon National Forest

Year Logged	Final Cut Acres	Percent Adq Stocked	Percent Not Stocked	Retreat Acres	5-Year Period	Survival Transect Acres 1st Yr.	Survival Transect Acres 3rd Yr.
1992	513	100	0	0	1997	260	346
1993	485	100	0	0	1998	--	57
1994	495	100	0	0	1999	32	--
1995	617	100	0	0	2000	91	11
1996	682	100	0	0	2001	161	32
1997	238	100	0	0	2002	107	91
1998	66	100	0	0	2003	70	148

In 1995, a significant drop occurred in the number of acres of 5-year-old cutover stands certified as restocked. Silviculturists and foresters contacted concerning acres planted from 1992 to 1998 said that walk-throughs and survival transects show them to be adequately stocked. Due to reduced budgets not all acres have been put into data systems as have walk-throughs.

Variability: Restocking of 5-year old cutover stands was good in 1993 and 1994. The drop in stands that could be certified in 1995 and 1996 correlate to extremely dry growing seasons during 1990-1992, and again in 1994.

Evaluation: 1993 and 1995 were normal in terms of moisture. Regeneration associated with these good years resulted in certifying the stands as restocked.

Appropriateness: Continue as a Forest Plan monitoring requirement.

Challis National Forest

Year Logged	Final Cut Acres	Percent Adq Stocked	Percent Not Stocked	Retreat Acres	5-Year Period	Survival Transect Acres 1st Yr.	Survival Transect Acres 3rd Yr.
1992	0	100	0	0	1997	--	--
1993	164	100	0	0	1998	--	232
1994	0	100	0	0	1999	65	72
1995	235	100	0	0	2000	--	67
1996	80	100	0	0	2001	--	--
1997	0	100	0	0	2002	--	--
1998	67	100	0	0	2003	754	--

Variability: Restocking of five-year old cutover stands was excellent for the past 11 years.

Evaluation: Restocking requirements on five-year old stands have been met on all stands cut between 1988 and 1998.

Appropriateness: Continue as a Forest Plan monitoring requirement.

TIMBER: Openings

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-5	Maximum size of openings	Annually	Openings exceed maximum size

Monitoring Requirement: Salmon and Challis Forest Plans.

Monitoring Type: Implementation

Data Source: STARS and RMRIS data bases

Unit of Measure: Number of even age units greater than 40 acres

Findings: Maximum size limit for openings created in one logging operation by even-aged management is 40 acres. Exceptions are covered in the Regional Guide. The Regional Forester's approval is required for openings over 40 acres. Forest Plan Reference: Salmon Plan, Page IV-41; Challis Plan, Page IV-16.

Salmon National Forest

Year	Total Acres Sold	# of CC Units	Size of Clearcut Units over 40 acres
1997	739	0	
1998	369	0	
1999	1190	0	
2000	379	0	
2001	699	0	
2002	1002	0	
2003	103	0	

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Challis National Forest

Year	Total Acres Sold	# of CC Units	Size of Clearcut Units over 40 acres
1997	85	0	
1998	268	0	
1999	194	0	
2000	105	0	
2001	0	0	
2002	4	0	
2003	0	0	

NOTE: Mine and road clearing projects are included in total acres sold but do not meet the definition of even-aged management.

Variability: Between 1990 and 1992, eight units exceeded 40 acres in size on the Salmon. No units have exceeded 40 acres since. No clearcuts over 40 acres exist on the Challis National Forest.

Evaluation: The eight units that exceeded 40 acres in size on the Salmon averaged 46 acres, and were justified primarily because of dwarf mistletoe infestations and blowdown in Spruce-fir. Since 1992, neither Forest has exceeded a 40 acre clearcut size.

Appropriateness: Continue as a Forest Plan monitoring requirement. Determine if we meet objectives of logging areas (creating openings) over 40 acres. The number of acres over 40 is not the critical issue, but whether or not we are meeting our objectives of logging larger areas for other purposes (i.e., insect and disease control). "The conditions which initiate further evaluations" should be changed to reflect monitoring for effectiveness.

VISUAL RESOURCE: Compliance with Visual Quality Objectives.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Any management activity or project	Annually	Significant failure to meet assigned Visual Quality Objectives on a project basis.

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Field observation or photo documentation of completed projects.

Unit of Measure: A project.

Findings: All projects monitored and evaluated to date have generally met their assigned Visual Quality Objectives.

Variability: Not applicable

Evaluation: Not applicable

Appropriateness: Continue as a Forest Plan monitoring requirement pending implementation of the new and improved Scenery Management System.

WATER: Substrate Depth Fines

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Fish Habitat (Substrate Depth Fines)	Annually to Biannually	Failure to meet Forest Plan sediment standards of State fisheries goals; 20 percent change in habitat quality

Monitoring Requirement: Salmon (item #7) and Challis (item #2) Forest Plans

Monitoring Type: Baseline/Effectiveness

Data Source: Watershed files; Annual Watershed and Fisheries Monitoring Report

Unit of Measure: Percent substrate fines by depth (Relation to Forest Plan and State fisheries goals); Trend

Findings: Data shown from initiation through 2003 to derive long-term trend

Zone	Year	Stream Stations Surveyed	Stations Meeting Plan Standards or Goals 1/, 2/	Sites Displaying Downward Trend for Depth Fines 1992-2003	Sites Displaying Upward Trend for Depth Fines 1992-2003
Salmon	1992	4	0 (0%)		
	1993	92	47 (51%)		
	1994	88	44 (50%)	60 (54%)	49 (44%)
	1995	55	24 (43%)		
	1996	71	23 (32%)		
	1997	64	41 (64%)		
	1998	71	50 (70%)		
	1999	68	45 (66%)		
	2000	61	29 (48%)		
	2001	71	39 (55%)		
	2002	68	30 (44%)		
	2003	71	46 (65%)		
Challis	1995	43	31 (72%)		
	1996	27	20 (74%)		
	1997	39	29 (74%)	24 (42%)	32 (56%)
	1998	41	37 (90%)		
	1999	44	29 (66%)		
	2000	46	35 (76%)		
	2001	44	29 (66%)		
	2002	42	27 (64%)		
	2003	49	35 (71%)		

1/ Salmon National Forest Plan Goal: 20 percent fines by depth in anadromous habitats; 28.7 percent fines by depth in resident habitats.
2/ Challis National Forest Plan Standard: 30 percent fines by depth in all perennial habitats.

Variability: Analysis of the results of 10 years of core sampling operations on the Salmon/Challis N.F. streams has indicated a generally high level of both spatial and temporal variability of depth fine levels in forest streams. Besides land and resource management activities, factors known to exert significant influence on observed levels of substrate fines include basic geology and geomorphic factors such as parent geology, watershed aspect and channel type, and natural events such as drought, wildfire, excessive runoff flows, or isolated high intensity storm events. These factors must all be considered in any cause and effect analysis on stream substrate sediment levels.

Statistical analysis on subsets of the core sampling data from the Salmon/Challis N.F. suggests that, within the range of values observed, changes of less than five percent fines on an absolute basis, or 20 percent fines on a relative basis, do not indicate a statistically significant change in substrate conditions.

Evaluation: As identified in the accompanying table, 1992-2003 core sampling operations indicated that 54 percent of inventoried Salmon Zone streams, and 42 percent of inventoried Challis Zone streams have downward trends for depth fines in spawning habitat. For the monitoring period there were 280 out of 474 (59%) stations that meet Salmon Zone Forest Plan sediment goal and 272 out of 375 (73%) that meet the Challis Zone Forest Plan sediment standard. Differences in the percentage numbers between Salmon and Challis Zones are in part attributed to the more stringent goal identified for anadromous waters in the Salmon National Forest Plan. Sampling crews who surveyed both North and South zone waters found no readily observable differences in stream characteristics between the two areas.

Appropriateness: Continue as a Forest Plan monitoring requirement. Despite a relatively high level of variability due to the influence of natural events, levels of substrate depth fines in Forest streams are widely acknowledged as an indicator of the basic production capabilities of fish spawning and incubation habitats. Although relatively labor intensive, the McNeil core sampling methodology employed by the forest is among the most objective, repeatable, and biologically relevant of the various methods utilized to assess fish spawning habitat conditions of Forest streams. Ongoing consultations with the NOAA Fisheries additionally include identification of sediment trends in Chinook salmon spawning habitats as a principal term and condition of concurrence with Biological Assessments for Salmon/Challis N.F. watersheds.

WATER: Best Management Practices; Water Quality (Temperature)

Monitoring Item	Activity to be Measured	Monitoring Frequency	Condition Which Initiate Further Evaluations
FP-2	Water Quality (Water Temperature)	Annually	Exceedence of PACFISH, INFISH of State Water Temperature Standards or Guidelines

Monitoring Requirement: Salmon (item #1) and Challis (item #1) Forest Plans

Monitoring Type: Baseline/Effectiveness

Data Source: Watershed files; Annual Watershed and Fisheries Monitoring Report

Unit of Measure: Water Temperature (Seasonal Max/Min; Incidence of exceedence of PACFISH of INFISH Standards or State Water Quality Beneficial Use Criteria for coldwater biota and salmonid spawning)

Standards:

I. State of Idaho Beneficial Use Water Temperature Criteria

A. Coldwater Biota: Water temperatures of 22 degrees C (71.6 degrees F) or less with a maximum daily average of no greater than 19 degrees C (66.2 degrees F)

B. Salmonid Spawning: Water temperatures of 13 degrees C (55.4 degrees F) or less with a maximum daily average no greater than 9 degrees C (48.2 degrees F) (during identified spawning /incubation period)

II. PACFISH Water Temperature Criteria

A. Trend: No measurable increase in maximum water temperature (7 day moving average of daily maximum water temperature measured as the average of the maximum daily temperature of the warmest consecutive seven day period)

B. Migration/Rearing: Maximum water temperatures below 64 degrees F (17.8 degrees C) within migration and rearing habitats

C. Spawning: Maximum water temperatures below 60 degrees F (15.6 degrees C) within spawning habitats

III. INFISH Water Temperature Criteria

A. Trend: No measurable increase in maximum water temperature (7 day moving average of daily maximum water temperature measured as the average of the maximum daily temperature of the warmest consecutive seven day period).

B. Adult Holding: Maximum water temperatures below 59 degrees F (15 degrees C) within adult holding areas.

C. Spawning/Rearing: Maximum water temperatures below 48 degrees f (8.8 degrees C) within spawning and rearing habitats.

Findings: 1997-2003

Year	Stations Meeting Idaho Coldwater Biota Criteria?	Stations Meeting Idaho Salmonid Spawning Criteria?	Stations Meeting PACFISH Rearing Criteria?	Stations Meeting PACFISH Spawning Criteria?	Stations Meeting INFISH Rearing Criteria?	Stations Meeting INFISH Spawning Criteria?
1997	124/138 **90%**	Spring 49/138 **36%** Fall 84/138 **61%** Chinook 21/63 **33%**	91/97 **94%**	Spring 48/139 **35%** Fall 85/139 **61%** Chinook 21/63 **33%**	12/139 **9%**	20/138 **14%**
1998	98/104 **94%**	Spring 23/55 **42%** Fall 51/104 **49%** Chinook 16/58 **28%**	84/98 **86%**	Spring 38/53 **72%** Fall 86/104 **83%** Chinook 35/58 **60%**	6/100 **6%**	11/99 **11%**
1999	189/194 **97%**	Spring 66/192 **34%** Fall 151/189 **80%**	107/122 **88%**	Spring 92/121 **76%** Fall 112/118 **95%**	118/194 **61%**	64/189 **34%**

		Chinook 18/70 **26%**		Chinook 47/70 **67%**		
2000	142/150 **95%**	Spring 28/144 **19%**	120/145 **83%**	Spring 71/148 **48%**	79/149 **53%**	13/111 **12%**
		Fall 59/119 **50%**		Fall 105/120 **88%**		
		Chinook 7/69 **10%**		Chinook 10/69 **14%**		
2001	97/99 **98%**	Spring 31/99 **31%**	79/101 **78%**	Spring 64/100 **64%**	54/100 **54%**	86/101 **85%**
		Fall 94/101 **93%**		Fall 97/100 **97%**		
		Chinook 17/100 **17%**		Chinook 37/100 **37%**		
2003	106/110 **96%**	Spring 35/96 **36%**	91/110 **83%**	Spring 69/96 **72%**	56/106 **53%**	65/76 **86%**
		Fall 101/103 98%		Fall 104/106 **98%**		
		Chinook 10/38 **26%**		Chinook 26/38 **68%**		

Variability: Thermograph results have shown temperature regimes to be highly variable from year to year, particularly with the highly variable climactic patterns observed during the past decade. Yearly differences in absolute summer maxima spanning more than ten degrees have been observed in individual streams in recent years. Data to date suggests that absolute summer water temperature maxima may be as influenced by winter snow pack levels and consequent summer flow levels as they are by summer air temperature regimes.

Evaluation: Designated rearing temperature criteria varies significantly between the State's Beneficial Use Criteria and interim PACFISH and INFISH Riparian Management Objectives (RMOs). Prior to 1995, the only rearing temperature criteria guiding Forest direction was the State of Idaho Beneficial Use Criteria for coldwater biota, which identified 71.6 degrees as a recommended maximum for maintenance of aquatic life-forms. Adoption of PACFISH and INFISH in 1995, by way of Forest Plan Amendment, revised these criteria to a maximum of 64 degrees and 59 degrees within the PACFISH

(Salmon River Basin) and INFISH (Big and Little Lost River Basins) management areas, respectively. The Draft PACFISH EA originally identified a rearing temperature criteria of 68 degrees, which closely approached the State's value, but this was revised downward to its 64 degree value in the final document. The 59 degree INFISH value appears to reflect the lower temperature preferences of bull trout, but the selected INFISH EA alternative applies these criteria to all waters within the INFISH management area.

As with rearing temperature criteria, spawning temperature criteria varies significantly between Idaho state guidelines, and PACFISH and INFISH RMOs.

The Idaho Beneficial Use Criteria for salmonid spawning identifies a maximum daily temperature of 55 degrees and a mean daily temperature of 48 degrees or less. As written, the Idaho State criteria indicates that the specified standards pertain only within the period of spawning and incubation for the individual fish species present in the stream or stream reach. Generalized spawning and incubation timeframes for various salmonid species are included within the State of Idaho Criteria document, but more site-specific periodicities have been documented by both Salmon and Challis National Forest Fisheries Biologists, and these localized temporal envelopes were utilized for evaluation of seasonal temperature data. Identified to assist with instream flow fish habitat evaluations, these periodicities encompass both the earliest and latest dates of observed spawning activity on Forest streams. The actual initiation of spawning activity in individual streams may be weighted toward either the early or late portions of these identified periodicity ranges due to the influences of elevation, basin aspect, shading, and other factors upon water temperatures. This variability within the identified periodicity dates must be considered when evaluating suitability of observed spawning temperature regimes, particularly for chinook salmon and bull trout.

In contrast to the State standards, neither PACFISH nor INFISH specifically link spawning temperature criteria to the spawning periodicities of target species. Designated maxima also deviate from the State standard, with PACFISH identifying a 60 degree maxima (revised upward from the original 55 degree value identified in the Draft PACFISH EA), and INFISH identifying a 48 degree maxima. As with its adult holding criteria, the INFISH spawning/rearing criteria appears to reflect the spawning temperature requirements of bull trout, but is applied to all waters within the INFISH management area, regardless of species present.

Appropriateness: Continue to monitor as a Forest Plan requirement. Seasonal water temperature regimes are a driving factor shaping the metabolic activity and scope for growth of most aquatic organisms. Optimum spawning, incubation and rearing temperature ranges have been identified for most fish species. Temperature regimes substantially outside these identified ranges can produce deleterious effects upon egg development and survival, and reduce metabolic efficiency causing reduction or complete cessation of growth. Temperatures in the mid to high seventies can be directly lethal to cold water fish species, and persistent temperatures in the low sixties can limit bull trout distribution.

Water temperature monitoring operations are, therefore, considered among the most biologically relevant of the various methods utilized to assess fish habitat conditions of Forest Streams. Ongoing consultations with NOAA Fisheries additionally include identification of seasonal temperature regimes in Chinook salmon spawning and rearing streams as a principal term and condition of concurrence with Biological Assessments for the Salmon/Challis watersheds.

WATER: Changes in Channel Stability and Riparian Integrity

Monitoring Item	Activity to be Measured	Monitoring Frequency	Condition Which Initiate Further Evaluations
FP-3	Channel Stability; Channel Geometry	Annually to Five Years	Major observed changes in streambank stability of channel width-to-depth ratio

Monitoring Requirement: Salmon (item #6) and Challis (item #4) Forest Plans

Monitoring Type: Evaluation

Data Source: Watershed Files; Annual watershed and Fisheries Monitoring Report

Unit of Measure: Percent streambank stability

Findings: To assess the feasibility of achieving the Pacfish/Infish Riparian Management Objective of 80% stable streambanks a summary of the existing streambank stability monitoring data has been completed for 60 streams on the North Zone of the Forest. The data set includes bank stability data collected from 1993 through 2003 representing a wide range of stream flow, including drought and flood events. The existing monitoring stations have been stratified by Stream type (Rosgen, 1996) and livestock use to reduce data variability based on land use and stream channel morphology. The data has been grouped into grazed and non-grazed stream reaches for four stream type groups. Table 1 shows the mean bank stability for these various stream type groups. Figure 1 is a graphical presentation of the same data set.

Table 1. Bank Stability for Grazed and Non-grazed Stream Reaches

Stream Type Group (Rosgen, 1996)	**Mean Bank Stability Grazed Stream Reaches**	**Mean Bank Stability Non-grazed Stream Reaches**
Group 1 - A3, A4, B3a,B4a # Streams # Measurements **81.7% of measurements are greater than 80%**	**93 %** 2 streams 12 measurements	**89.7 %** 6 streams 48 measurements
Group 2- B3, B4, B4c # Streams # Measurements **87.7% of measurements are greater than 80%**	**88.2 %** 6 streams 51 measurements	**91 %** 12 streams 103 measurements
Group 3- C3, C4, C4b #Streams # Measurements **70.3% of measurements are greater than 80%**	**79.3 %** 11 streams 183 measurements	**86.2 %** 15 streams 144 measurements
Group 4- E4, E4b #Streams #Measurements **83.5% of measurements are greater than 80%**	**89 %** 10 streams 55 measurements	**92.8%** 4 streams 24 measurements
DATA SET Years # Streams # Stations	**North Zone Salmon-Challis National Forest** 1993-2003 60 Streams 83 Stations	

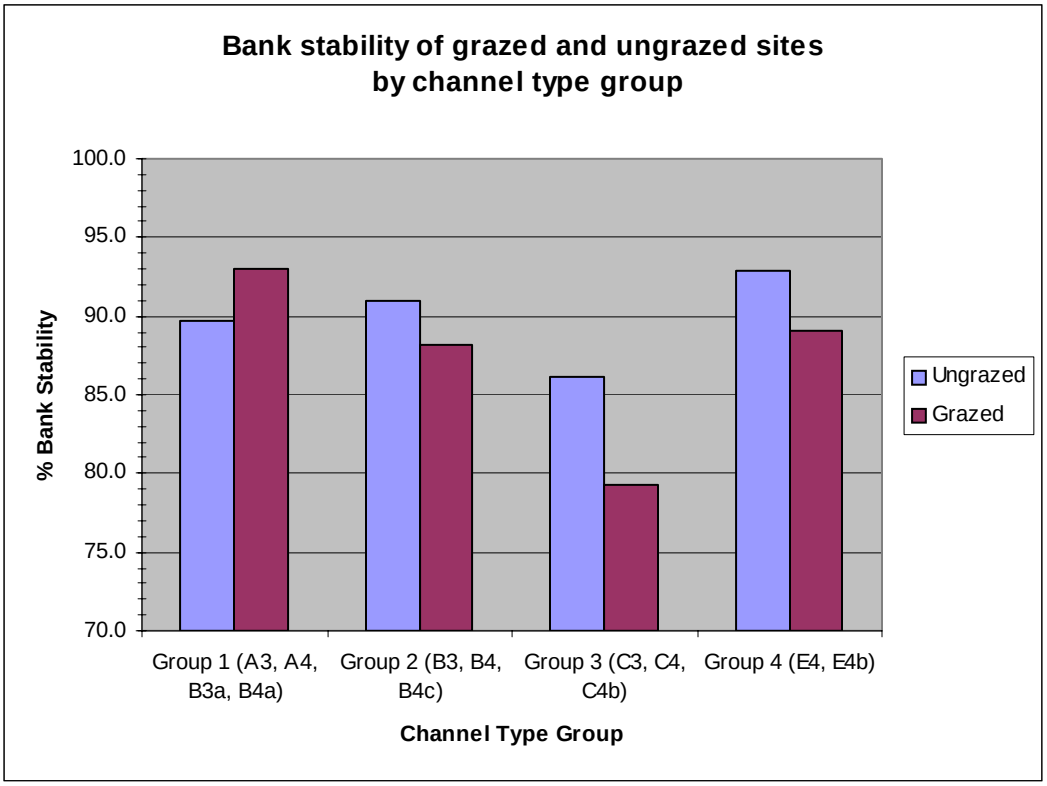

Figure 1. Mean Streambank stability for grazed and ungrazed stream reaches stratified by stream type groups.

Variability: While on the average the 80% objective is achievable, there is sufficient data collected on the Forest and by the Intermountain Research Station (Overton, et al, 1995) to show that natural systems are highly variable and at times unstable due to natural events, such as floods and wildfires. While 80% stable banks is a desirable objective the role of natural disturbances and natural variability in streambank stability must be considered in describing the desired condition for riparian areas.

Evaluation: The data summary shows that on the average the bank stability objective has been met for all stream type groups, except for the Grazed Stream Reaches in Stream type Group 3, the "C" stream types. While the data set for Group 4, the "E" stream types, shows that the 80% bank stability objective has been met this data set is based on a smaller number of measurements and probably is not an adequate representation of the "E" type channels that are very sensitive to physical streambank disturbance and changes in riparian vegetation composition. The summary for each stream type group shows the percentage of measurements that meet the 80% bank stability objective.

Appropriateness: Continue to monitor as a Forest Plan requirement. This data correlates fairly well with bank stability data collected by the Intermountain Research Station (Overton, et al 1995) for natural conditions in the Salmon River Basin, Idaho for "B" and "C" type channels. For the "C" and "E" type channels this data correlates well with the

data collected by the Pacfish/Infish Effectiveness Monitoring Group (PIBO) for reference stream reaches in Region 4 and Idaho Bureau of Land Management (BLM).

Channel stability and geometry have been identified as important parameters reflecting stream channel health. Data collection activities have been integrated into the combined Salmon and Challis National Forests' ongoing core sampling program, with establishment of semi-permanent core sampling study providing a mechanism for long-term site assessment of both channel stability and channel geometry trends.

Overton, Kerry C. and J.D. McIntyre, R. Armstrong, S.L. Whitwell, K.A. Duncan. 1995. User's Guide to Fish Habitat: Descriptions that Represent Natural Conditions in the Salmon River Basin, Idaho. Intermountain Research Station. General Technical Report INT-GTR-322, August 1995.

Rosgen, Dave. 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, Colorado.

WATER: Best Management Practices

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
FP-4	Soil and Water BMPs	Annually to Biannually	Failure to implement Forest Soil and Water Best Management Practices; Erosion rates exceeding predicted effect of project design

Monitoring Requirement: Salmon and Challis Forest Plans. This monitoring item is closely related to and tiers to monitoring item Soil FP-2.

Monitoring Type: Implementation/Effectiveness

Data Source: Watershed Files, annual Watershed and Fisheries Monitoring Report, Soil Qualitative Assessments

Unit of Measure: Field measurements, ocular assessment

Findings: Project level soil and water best management practices (BMPs) are developed through project design for a specific project to eliminate or minimize adverse effects. Although implementation of these BMPs is monitored, site specific monitoring and evaluation of the effectiveness of specific BMPs is not performed on a continuing basis.

From 1997 through 2002 representative potentially ground disturbing projects were sampled. Visual estimates and transects were performed monitoring the amount and effectiveness of ground cover, as being the foremost BMP protecting the soil and water resource. Beginning in 2003, the Soil Quality Assessment process was initiated which includes qualitative observations and quantitative sampling of erosion indicators, ground cover, and soil compaction (bulk density). A representative list of projects monitored is shown below, by year.

1997: State BMP audit- three timber sales—Lost River District
1998: Soil erosion monitoring—Sawmill Canyon area, Lost River District
Soil erosion monitoring—Firebox Meadows, Lost River District
1999: Range BMP monitoring—three grazing allotments, Lost River, Salmon-Cobalt, and Leadore districts
2000: Fire suppression rehabilitation monitoring—Clear Creek Fire, Salmon-Cobalt District
2001: Soil disturbance monitoring—Moccasin Aspen Restoration Project, Salmon-Cobalt District
Fire suppression monitoring—Deep Creek Ridge area, Clear Creek Fire, Salmon-Cobalt District

Fire suppression rehabilitation monitoring—Blackbird Jeep Trail area, Clear Creek Fire, Salmon-Cobalt District

2002: Fire suppression rehabilitation monitoring—Rooker Basin area, Clear Creek Fire, Salmon-Cobalt District
Fire suppression rehabilitation monitoring—Deep Creek Ridge area. Clear Creek Fire, Salmon-Cobalt District
Soil compaction (penetrometer) and ground cover monitoring—Silverbird Salvage Project, Salmon-Cobalt District
Long-term soil productivity coarse woody debris—Williams Post & Pole Project, Salmon-Cobalt District

2003: Bulk density sampling and Soil Quality Assessment—Lost River grazing allotments, Lost River District
Bulk density sampling and Soil Quality Assessment—Salmon-Moose Fuels Project, Salmon-Cobalt District
Bulk density sampling and Soil Quality Assessment—Upper Eddy Basin, Challis District
Bulk density sampling—Gibbonsville Project, North Fork District
Bulk density sampling—William Post & Pole Project, Salmon-Cobalt District
Soil Quality Assessment—Silverbird Post-Fire Salvage, Salmon-Cobalt District

Variability: Virtually all projects with potential to detrimentally affect soil productivity are being monitored and best management practices evaluated at some level appropriate for the project. The number and scope of specified project BMPs vary with the size, scope, nature, complexity and setting of proposed projects. Specified measures may be straightforward in design or may require additional onsite modification or refinement by the project administrator.

Evaluation: The general results of the monitoring and soil quality assessments indicated no unanticipated short-term or long-term alteration of water or soil productivity and that best management practices are effective at eliminating or minimizing adverse effects.

Appropriateness: Continue as a Forest Plan monitoring requirement. This type of resource monitoring is being implemented at the project level. There is a direct relationship with the goals, direction, standards, and guidelines of the Forest Plans. Multidisciplinary reviews of best management practices are an integral component of the Forest Planning Process feedback monitoring loop. These annual onsite reviews provide the primary mechanism for verification of BMP effectiveness and refinement of project planning processes.

WATER: Maintenance of Minimum Bypass Flows

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
FP-5	Instream Flow	As Issues Arise	Failure to meet specified minimum bypass flow levels

Monitoring Requirement: Challis Forest Plan

Monitoring Type: Effectiveness

Data Source: Forest Watershed Files

Unit of Measure: Instream flow (Cubic Feet/Second); Compliance assessment

Findings:

Unit	Diversion Sites Surveyed	Minimum Bypass Flow Maintained?
Salmon	No sites surveyed this period	Not Applicable
Challis	No sites surveyed this period	Not Applicable

No bypass flow issues were identified during the period. Consequently, no instream flow monitoring operations were specified or conducted.

Variability: Not Applicable

Evaluation: Not Applicable

Appropriateness: Continue as a Forest Plan monitoring requirement. Stream bypass flow monitoring has been identified as an important component of the Challis National Forest Watershed Monitoring Plan, and has been reaffirmed as an appropriate monitoring item within the combined Salmon and Challis National Forests Watershed Program. However, reporting will be dependent upon identification of site-specific flow issues.

WATER: Water Quality

Monitoring Item	Activity to be measured	Monitoring Frequency	Conditions Which Initiate Further Evaluation
FP-6	Bacteriological sample of potable water supplies	Bi-weekly	Failure to meet State water quality standards

Monitoring Requirement: This monitoring item was described in the Water section of the Salmon Forest Plan as item #2 and in the Challis Forest Plan under Facilities as item #5. It will be maintained in the Water section and omitted from the Facilities section in this monitoring report.

Monitoring Type: Effectiveness

Data Source: Forest Engineering Files

Unit of Measure: Total Coliform (presence/ absence)

Findings: Data is shown since 1989 to show results omitted in 1995-96 reports.

Year	# of Sites Monitored	% of Sites Monitored	Total # of samples analyzed
1989	3/80	4	15
1990	22/80	28	160
1991	25/80	31	192
1992	27/80	34	215
1993	27/80	34	228
1994	25/80	31	223
1995	52/80	65	383
1996	56/80	70	409
1997	64/80	80	428
1998	61/80	76	446
1999	58/80	73	319
2000	60/80	75	357
2001	57/80	71	367
2002	57/80	71	359
2003	55/80	69	351

Variability: Some sites may not be used every year or may only be used for a few months out of the year.

Evaluation: Bacteriological sampling for total coliform is required by state law and is effective in identifying the presence of coliform in potable water sources managed by the Forest.

Appropriateness: Continue as a Forest Plan monitoring requirement. Bacteriological sampling of potable water supplies on the Salmon/Challis NF should remain as a Forest requirement; however, the periodicity should be lowered from bi-weekly to monthly to be more feasible and align with the State requirements.

WATER: Peak flow crest gauging

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-7	Stream peak flow (cfs)	Annually as appropriate for specific timber harvest projects	Change in R1/R4 channel stability rating to poor.

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Evaluation

Data Source: Watershed Files

Unit of Measure: Cubic feet per second (cfs)

Findings:

Unit	Watersheds Measured	Baseline Flow	Post Harvest Flow
Salmon	No sites surveyed this period	Not Applicable	Not Applicable
Challis	No sites surveyed this period	Not Applicable	Not Applicable

Variability: Not Applicable

Evaluation: Not Applicable

Appropriateness: Continue as a Forest Plan monitoring requirement. Published literature provides guidance with regards to flow increases due to timber harvest; however, data is not specific to the Salmon-Challis National Forest. Peak or flood flows should be monitored and evaluated as needed to enhance forest databases and peak flow calculations.

WATER: Ocular evaluation of erosion related to roads and trails design

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-8	Ocular evidence of erosion	Whenever erosion is observed	Erosion rate exceeding predicted effect of project design

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Evaluation

Data Source: Watershed Files

Unit of Measure: Not Applicable

Findings: Successful management of erosion and sediment delivery can be achieved when best management practices (BMP) are properly applied.

Variability: Not Applicable

Evaluation: Not Applicable

Appropriateness: Continue as a Forest Plan monitoring requirement. Published literature and established BMPs are well tested and provide valuable guidance; however, site specific evaluation of their effectiveness is necessary. Evaluation of effectiveness given our landypes, climate and implementation methods are valuable in documenting what works and which of our forest practices need to be modified with regards to erosion and sediment transport.

WATER: Special Studies – Effectiveness of Buffer Zones with Herbicide Spraying

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-9	Water Quality	As Needed	Dependent upon specifics of study

Monitoring Requirement: Reporting on special studies occurring on the Forest is not identified as a Forest Plan monitoring requirement. Summarizing special studies in a monitoring report is an opportunity to share information.

Monitoring Type: Implementation/Evaluation

Data Source: Watershed Files; Special Study Reports

Unit of Measure: Not Applicable

Findings: Monitoring the extent of herbicide spray drift was performed in Spring Creek in 2002. Moisture sensitive spray cards were placed along transects perpendicular to and at varying distances from the stream. Water quality samples were taken prior to and after the herbicide applications of 2,4-D amine and Tordon 22K (Picloram). Both backpack spray and vehicle mounted boom spray applications were monitored and pre and post treatment water samples were obtained and analyzed.

Variability: Not Applicable

Evaluation: The spray cards showed no contamination within the buffer zones for the boom spray. Water chemistry analysis, however, revealed chemical contamination within the stream. This is believed to be the result of post spray contamination by sprayers and their equipment when crossing the stream to treat the other side.

Appropriateness: Special studies are not a required Forest Plan monitoring item. However, using this report to share this sort of information is valuable. Special studies such as this are important and will become even more important as herbicide treatments expand. Monitoring and evaluating the effectiveness of BMPs for herbicide treatments will be required. In order to be meaningful, a sound monitoring design needs to be developed and adhered to.

WATER: Salmon Wild & Scenic Rivers- Salmon River, Recreation segment- Water Quality

SWSR(rec)-4: Water quality within the river will be monitored twice annually at approximately the same water levels each year to develop baseline data.

Monitoring Item	**Activity to be Measured**	**Monitoring Frequency**	**Conditions Which Initiate Further Evaluations**
FP-10 SWSR(rec)-4	Water Quality	Biannually	Deviation from forest water quality of state water quality standards

Monitoring Requirement: Salmon and Challis Forest Plans: Salmon Wild & Scenic River Management Plan (Recreation segment) item #4. See also Fisheries FP-2.

Monitoring Type: Baseline

Data Source: Watershed files

Unit of Measure: Dependent on sample parameter

Findings: Water Quality samples analyzed in response to concerns with Magnesium Chloride and Lignin application on the Salmon River Road have shown negligible levels of applied chemicals in the Salmon River and its tributaries. Baseline studies were conducted between 1970 and 1983 and are located in the forest watershed files.

Variability: River flow is seasonally variable and will have an effect on potential loading from road surface treatments and other water quality influences.

Evaluation: Continue monitoring when concerns are raised rather than a mandatory biannual sample. Emphasis should be placed on small tributaries where dilution will have less of an influence and potential effects are greater.

Appropriateness: Continue as a Forest Plan monitoring requirement even though baseline data has been obtained. Monitoring should be maintained on an as needed basis rather than a specific schedule. Also, consider incorporating this monitoring item in with Fisheries FP-2 to avoid duplication of monitoring and reporting efforts.

WATER: Wild & Scenic Rivers- Salmon River, Recreation segment- Water Quality (Newland Bridge)

SWSR(rec)-5: A baseline station will be developed at the Newland Bridge to monitor upstream bacteriological quality.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-11 SWSR(rec)-5	Water Quality Bacteriological monitoring	Baseline development	Deviation from Forest water quality or State water quality standards

Monitoring Requirement: Salmon and Challis Forest Plans: Salmon Wild & Scenic River Management Plan (Recreation segment) item #5

Monitoring Type: Baseline

Data Source: Forest Watershed Files

Unit of Measure: Dependent on sample parameter

Findings: No samples analyzed this period. Baseline studies were conducted between 1970 and 1983 and are located in the forest watershed files.

Variability: Not applicable.

Evaluation: Not applicable.

Appropriateness: Discontinue as a Forest Plan monitoring requirement due to the removal of the outhouses along the Salmon River and the pack-it-in-pack-it-out requirement on the river.

WATER: Salmon Wild & Scenic Rivers- Salmon River, Wild Segment- Water Quality

SWSR(wild)-3: Salmon River water quality monitoring will be continued as identified in the "Water Quality Monitoring Plan" for the Salmon National Forest. Action will be taken to eliminate new pollution sources immediately.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-12 SWSR(wild)-3	Water Quality on the mainstem Salmon River	As identified in the Water Quality Monitoring Plan	Deviation from Forest water quality or State water quality standards

Monitoring Requirement: Salmon and Challis Forest Plans: Salmon Wild & Scenic River Management Plan (Wild segment) item #3

Monitoring Type: Evaluation

Data Source: Forest Watershed Files

Unit of Measure: Dependent on sample parameter

Findings: No samples analyzed this period. Baseline studies were conducted between 1970 and 1983 and are located in the forest watershed files.

Variability: Not applicable.

Evaluation: Not applicable.

Appropriateness: Continue as a Forest Plan monitoring requirement. This monitoring requirement should be maintained on an as needed basis rather than a specific schedule. As potential natural or man-caused threats to water quality arise, monitoring should be conducted to best evaluate, monitor, and plan to reestablish the desired water quality in the Salmon River.

WATER: Middle Fork of the Salmon Wild & Scenic River Management Plan: Water Quality

MFWSR-1: Continue water quality monitoring program on the Middle Fork River and expand to other streams and lakes to establish baseline data for existing and potential heavy use areas.

MFWSR-3: The approved Forest Water Quality Monitoring Plan describes the monitoring objectives for the Middle Fork of the Salmon River. To reiterate, water quality monitoring was originally established on the Middle Fork River to monitor general trends as a result of recreation use. Consistent with the objective found in the wilderness plan, the current program direction includes identifying potential problem areas and evaluating site-specific impacts, while still monitoring general trends in water quality.

Monitoring Item	**Activity to be Measured**	**Monitoring Frequency**	**Conditions Which Initiate Further Evaluations**
FP-13 MFWSR-1, 3	Water Quality	As identified in the Water Quality Monitoring Plan	Deviation from Forest water quality or State water quality standards

Monitoring Requirement: Salmon and Challis Forest Plans: Middle Fork of the Salmon Wild & Scenic River Management Plan items #1 and 3.

Monitoring Type: Baseline/Evaluation

Data Source: Forest Watershed Files

Unit of Measure: Dependent on sample parameter

Findings: No samples analyzed this period. Baseline studies were conducted between 1970 and 1983 and are located in the forest watershed files.

Variability: Not applicable.

Evaluation: Not applicable.

Appropriateness: Continue as a Forest Plan monitoring requirement even though baseline data has been obtained. Monitoring should be maintained on an as needed basis rather than a specific schedule. As potential natural or man-caused threats to water quality arise monitoring should be conducted to best evaluate, monitor, and plan to reestablish the desired water quality in the Middle Fork of the Salmon River and other streams and lakes.

WATER: Frank Church – River of No Return Wilderness Management Plan: Water Quality

FCWMP- 3: Continue the water quality monitoring program on the Salmon and Middle Fork Salmon Rivers and expand to other streams and lakes to establish baseline data for existing and potential heavy use areas.

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-14 FCWMP- 3	Water Quality	As identified in the Water Quality Monitoring Plan	Deviation from Forest water quality or State water quality standards

Monitoring Requirement: Salmon and Challis Forest Plans: Frank Church – River of No Return Wilderness Management Plan item #3

Monitoring Type: Baseline/Evaluation

Data Source: Forest Watershed Files

Unit of Measure: Dependent on sample parameter

Findings: No samples analyzed this period. Baseline studies were conducted between 1970 and 1983 and are located in the forest watershed files.

Variability: Not applicable.

Evaluation: Not applicable.

Appropriateness: Continue as a Forest Plan monitoring requirement even though baseline data has been obtained. Monitoring should be maintained on an as needed basis rather than a specific schedule. As potential natural or man caused threats to water quality arise monitoring should be conducted to best evaluate, monitor, and plan to reestablish the desired water quality in the Salmon and Middle Fork Salmon rivers and other streams and lakes in the Frank Church – River of No Return Wilderness.

WILDLIFE: Management Indicator Species (MIS) and Threatened and Endangered Species (T&E)

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-1	Habitat and Population Trends for MIS and TE	1 to 10 years (varies by species)	Decline in habitat and populations

Monitoring Requirement: Salmon and Challis Forest Plans – The following list shows the MIS and T & E species identified in the Land and Resource Management Plans for the Salmon and Challis National Forests. The Challis NF Plan directed monitoring only MIS species, while the Salmon NF Plan directed monitoring both T&E as well as MIS species.

Species	Salmon NF			Challis NF		
	T	E	MIS	T	E	MIS
Gray wolf 3/9/78 *Canis lupus*		X			X	
N. American Lynx 4/15/00 *Lynx Canadensis*	X			X		
Grizzly bear 3/11/97 *Ursus arctos horribilis*	X			X		
Bald eagle 7/12/95 *Haliaeetus leucocephalus*	X			X		
Great gray owl *Strix nebulosa*			X			
Northern goshawk *Accipiter gentiles*			X			
Rocky Mountain Elk *Cervus elaphus*			X			X
Mule deer *Odocoileus hemionus*			X			X
Bighorn sheep *Ovis Canadensis*			X			X
Mountain goat *Oreamnos americanus*			X			X
Red squirrel *Tamiasciurus hudsonicus*						X
Pine marten *Martes Americana*			X			
Pileated woodpecker *Dryocopus pileatus*			X			
Vesper sparrow *Pooecetes gramineus*			X			
Yellow warbler *Dendroica petechia*			X			
Ruby-crowned kinglet *Regulus calendula*			X			

Yellow-bellied sapsucker *Sphyrapicus varius*			**X**			
Pygmy nuthatch *Sitta pygmaea*			**X**			
Brown creeper *Certhia Americana*			**X**			
Mountain bluebird *Sialia currucoides*			**X**			

T = Threatened, E = Endangered, MIS = Management Indicator Species

Monitoring Type: Effectiveness

Data Source: Idaho Department of Fish and Game, Salmon-Challis National Forest District Surveys, and Salmon-Challis NF Weed Management FEIS, September 2003

Findings: Most populations are stable.

Between 1992 and 1996 the Salmon NF surveyed over 50,000 acres of potential goshawk nesting habitat per year, on average. During this time we located over 20 active nesting territories and monitored an average of six nesting territories per year. We learned that this species occurs across the entire Salmon and Challis Forests, is present in low numbers, and utilizes a broad spectrum of forest community types, including lodgepole pine, for nesting.

Each winter various District personnel participate in the Annual Interagency Bald and Golden Eagle counts. This is part of a nationwide eagle monitoring effort to assess long-term population trends. Bald eagle counts in the Salmon/Challis area have ranged from a low of seven in 1980 to a high of 114 in 2003 and the overall trend is definitely up over the past 15 years. Golden eagle numbers have ranged from a low of nine birds counted in 1980 to a high of 46 in 2003, but exhibit a relatively static trend when viewed over the entire period.

The Salmon-Challis NF participates in the annual nationwide Breeding Bird Survey, which is a long-term monitoring effort to assess population trends of many species of songbirds including neotropical migratory birds. Seven monitoring routes are surveyed each year, the oldest of which were established in 1974. This data reveals that an average of approximately 40 different species are detected per route. No local or Forest trend in the various species observed each year is apparent, but numbers of non-indigenous species such as cowbirds appear to be increasing. See Table 2 for Regional trends.

Baseline monitoring routes for small mammal winter track surveys have been established on most Ranger Districts. These routes enable the Forest to monitor for presence of species such as gray wolf, wolverine, marten, fisher, and lynx, over time. In addition, the Nez Perce Tribe and IDFG monitors known wolf packs in Idaho in order to help determine the annual productivity, movement patterns, den sites, and activities, including depredation. This Forest cooperates with this monitoring program.

Several existing browse utilization transects have been converted to shrub density/nested frequency plot sites. This was done to establish baseline monitoring sites to help assess gross habitat changes, for many wildlife species, through time. The change in monitoring technique was initiated because new information indicates that the once-popular browse transects do not provide all the habitat monitoring information necessary to detect habitat changes. Shrub density and nested frequency monitoring activities are coordinated with Range monitoring. Wildlife habitat parameters such as big game cover:forage ratios, average road density, security cover and old-growth are monitored on a project-by-project basis.

The Idaho Department of Fish and Game monitors big game population trends. These are monitored primarily through activities such as winter sightability flights. Salmon-Challis National Forest personnel cooperate in this effort, as needed. Results from this monitoring indicate that elk populations have probably met or exceeded population objectives stated in the Land and Resource Management Plans for most areas. Mule deer and bighorn sheep numbers are now below objectives in most areas of the Forests.

Table 1. Population status and trends for T&E and MIS Mammals on the S-C NF

Species	Population Status	Population Trend
Gray wolf	Introduced experimental, non-essential population	Stable to increasing
Grizzly bear*	Does not occur on the S-C NF	
Elk	Common	Stable to slight decrease
Mule deer	Relatively common	Stable to increasing
Bighorn sheep	Uncommon in suitable habitat	Stable but now low (subject to disease from domestic sheep)
Mountain goat	Uncommon in suitable habitat	Decreasing
American marten	Common	Stable
Red squirrel	Common	Stable

*The grizzly bear recovery plan does not include recovery efforts on the S-C NF, and none are present.

Table 2. Bird Population Relative Abundance and Trends from Partners in Flight Database for Bird Conservation Region 10 (Rocky Mountains) and Physiographic Area 68 (Northern Rockies) for S-C NF T&E and MIS birds

Species	Relative Abundance	Trend Interpretations Region 10 (Physiographic Area 68)
Pygmy Nuthatch	3	Stable
Northern Goshawk (summer)	5	Possible Decline
Northern Goshawk (winter)	5	Possible Decline
Pileated Woodpecker	4	Significant Increase
Brown Creeper	4	Significant Increase (Uncertain)
Ruby Crowned Kinglet	3	Stable (Moderate Decline)
Yellow-bellied Sapsucker	4	No data
Great Gray Owl	5	No data
Bald Eagle	4	Significant Increase
Yellow Warbler	3	Moderate Decline (Stable)
Mountain Bluebird	3	Possible Increase (Significant Increase)
Vesper Sparrow	2	Stable

Relative abundance is a measure of the component of vulnerability reflecting the abundance of breeding individuals of a species, within its range, relative to other species (premise that rare or uncommon are more vulnerable to decline or extinction than species that are more common) [avg # birds/BBS route].
1 Highest relative abundance
2 High
3 Moderate
4 Low
5 Lowest

Variability: Baseline monitoring is now established and variability may be addressed in the future.

Evaluation: Wildlife funding has declined in recent years, so activities such as monitoring have received low priority. However, we have made much progress in both monitoring and surveying, especially for listed and MIS species since the Forest Plans were completed.

Appropriateness: Continue as a Forest Plan monitoring requirement. Monitoring is essential to assess long-term trends in MIS and TES habitats and populations. Both the Salmon and the Challis Forest Plans were amended in February 2004 to modify the list of Management Indicator Species to only four: pileated woodpecker, Columbian spotted frog, greater sage-grouse, and bull trout. Monitoring protocols have been established and adopted by the Forest for each of these species that will provide trend data.

WILDLIFE: Habitat Improvement Accomplishments

Monitoring Item	Activity to be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-2	Habitat Improvement Accomplishments	Annual	N/A

Monitoring Requirement: Salmon and Challis Forest Plans

Monitoring Type: Implementation

Data Source: Annual Wildlife Report, Management Attainment Report

Unit of Measure: Number of improvement projects and acres

Findings: The table below compares improvements made since 1997 with comparisons with the Forest Plan predictions.

Wildlife Habitat Improvement Structures and Acres

Year	Structure	Acres
Forest Plan	28	1,395
1997	108	1,698
1998	45	838
1999	0	18,996
2000	0	12,077
2001	9	16,685
2002	0	29,250
2003	0	4191
Average	**23**	**11,962**

Variability: Habitat improvement projects fluctuate with budget changes.

Evaluation: The seven year average of structures is consistent with the Forest Plans' predictions but greatly exceeds the number of predicted acres. Monitoring of projects will occur at one to five year intervals.

Appropriateness: Continue as a Forest Plan monitoring requirement.

WILDLIFE: Standard and Guideline Performance

Monitoring Item	Activity to Be Measured	Monitoring Frequency	Conditions Which Initiate Further Evaluations
FP-3	Standard and Guideline Performance	Annually for two major projects per year	Significant deviation from prescribed parameters

Monitoring Requirement: Salmon Forest Plan

Monitoring Type: Implementation

Data Source: Ranger Districts

Unit of Measure: Number of projects significantly deviating from the wildlife standards and guidelines contained in the Salmon NF Land and Resource Management Plan.

Findings: No significant deviations to the wildlife standards and guidelines have been reported.

Appropriateness: Continue as a Forest Plan monitoring requirement as a means to sub-sample project level compliance to Forest Plan standards.