FOREST PLAN MONITORING PROGRAM TRANSITION

Summary of how the Lolo and Bitterroot National Forests have modified their Forest Plan's monitoring programs to transition to the requirements of the 2012 Planning Rule (36 CFR 219.12) and address public comments concerning this transition.

LOLO NATIONAL FOREST
BITTERROOT NATIONAL FOREST

August, 2016

Contents

INTRODUCTION

This document summarizes how the Lolo and Bitterroot National Forests have modified their Forest Plan's monitoring programs to transition to the requirements of the 2012 Planning Rule (the Rule) (36 CFR 219.12). The Rule requires that an existing plan's monitoring program be made to conform to the requirements of the Rule within 4 years of the Rule's May 9, 2012 effective date or as soon as practicable.

To conform to the Rule, monitoring items currently found in both Forest Plans have been reviewed and changed to address information that is critical for informed management of resources in the plan areas and within the financial and technical capabilities of the two Forests.

These adjustments should not be interpreted as a change to other parts of the existing plans. Both the Lolo (1986) and Bitterroot (1987) Forest Plans will remain in effect until revised.

The Lolo and Bitterroot National Forests are proposing to revise their forest plans simultaneously given that the two forests share a common boundary and can use a joint team of specialists to complete both plans at the same time. Depending on the availability of funding, an Assessment is proposed to be completed in 2018. After finalizing the Assessment, the revision process will begin in 2019. Revised plans are expected to be prepared by 2022. Monitoring programs for both Forests will be reviewed again as part of plan revision.

CHANGES BETWEEN DRAFT AND FINAL – BASED ON PUBLIC COMMENT

Public comment on the draft document entitled *Forest Plan Monitoring Item Transition, May 2016* reflecting potential changes to both the Lolo and Bitterroot National Forest's monitoring programs was released for a 30 day comment period on May 11, 2016. Four comment were received on the Lolo monitoring program. One public comment was received on the Bitterroot monitoring program. These comments have been considered and where appropriate, changes have been made to each Forest's final plan monitoring program (see Appendix C as incorporated in this August, 2016 document).

Because a plan monitoring program is not a plan component,[1] it may be modified by an administrative change (see 36 CFR 219.7 (f) and 219.13 (c)). Therefore, this transition will not result in a decision and is not subject to NEPA. Public comment was solicited because an administrative change to modify a plan monitoring program may be made only after public notice and an opportunity for public comment is provided (36 CFR 219.13 (c)).

[1] Plan components include: desired conditions, objectives, standards, guidelines, suitability of lands (36 CFR 219.7(e)). Plans may also include "goals" as an optional plan component. (36 CFR 219.7(e)).

As described above, public comments received on the proposed modifications were used to further adjust the monitoring programs. Information received from the public will also be used to inform future revision of the Lolo and Bitterroot National Forest plans. Public comments help to: 1) develop a common understanding of and support for the new monitoring questions and associated indicators, 2) provide opportunities to design and carry out multi-party monitoring, 3) learn of other monitoring information available, and 4) improve the plan monitoring program.

OBJECTIVES OF PLAN MONITORING

Monitoring and evaluation comprise the management control system for both the Lolo and Bitterroot National Forest Plans (USDA 1986, 1987). This management control system helps to provide the Forest Service and public with information on progress towards, and outcomes of, implementing the plans. Monitoring and evaluation include comparing actual results of land management to outcomes forecasted. When management activities cannot be conducted in accordance with the Plans, or results do not meet the desired conditions, then activities are redesigned, rescheduled or dropped. Forest Plan amendments or revisions may also be made to address the findings of monitoring.

At the project scale, monitoring is a valuable means of understanding the effects of project activities on forest resources. Project monitoring can provide useful information to adjust future project plans and improve resource protection. Project monitoring may be used to gather information for the plan monitoring program. Likewise, plan monitoring may inform the development of specific projects and activities.

Objectives of Forest Plan monitoring include:

1) enable the Forest Service to determine if a change in plan components or other plan content applicable to the plan area may be needed,
2) inform the management of resources on the plan area, through means such as testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plans' desired conditions or objectives,
3) focus monitoring on priority management questions and related core information,
4) improve the integration and scalability of monitoring information, 5) provide the information essential for achieving the Agency's mission and business needs that fulfills information quality guidelines for objectivity, utility, and integrity,
5) support an adaptive land management planning process that includes social, economic, and ecological evaluations,
6) ensure monitoring information is relevant scientific information,
7) ensure quality and consistency of information, and
8) ensure information is timely and accessible.

Monitoring is continuous and provides feedback by testing relevant assumptions, tracking relevant conditions over time, and measuring management effectiveness (36 CFR 219.12). Monitoring also provides feedback to prioritize and improve the plan monitoring program and broader-scale monitoring strategy. As required by the 2012 Planning Rule, biennial (every 2-year) monitoring evaluation reports will be used to help determine if and when changes are needed to plan components, other plan content, and project activities. (36 CFR 219.5). The next publication of monitoring evaluation reports for the Lolo and Bitterroot

National Forests is scheduled for 2018 based on this 2016 change to the Forests' monitoring programs.

REQUIRED 2012 PLANNING RULE MONITORING ITEMS

Each Forest has discretion to set the scope, scale, and priorities for plan monitoring within their financial and technical capabilities. As part of their plan monitoring program they are required to include one or more monitoring question(s) and associated indicator(s) for eight items set out in the Planning Rule at 36 CFR 219.12(a)(5) as follows:

1. *The status of select watershed conditions.*
2. *The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.*
3. *The status of focal species to assess the ecological conditions required under 36 CFR 219.9.*
4. *The status of a select set of the ecological conditions required under 36 CFR 219.9 to contribute to the recovery of federally listed threated and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.*
5. *The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.*
6. *Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.*
7. *Progress toward meeting the desired conditions and objectives in the plan, including providing for multiple use opportunities.*
8. *The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g) (3) (C)). (36 CFR 219.12(a).*

Social, economic, and cultural sustainability must also be addressed in the monitoring program. (FSH 1909.12 Section 32.13f).

The following two tables (tables 1 and 2) summarize how the monitoring questions for the Lolo and Bitterroot National Forests address the items of the 2012 planning rule.

Table 1. Lolo NF monitoring items that fulfill 2012 Planning Rule.

2012 Planning Rule Requirements (36 CFR 219.12 (a)(5) and FSH 1909.12.30	**1986 Lolo NF Monitoring Program – Transitioned Monitoring Items**
i. The status of select watershed conditions.	MON-STRM-01,MON-STRM-02, MON-STRM-03, MON-FISH-01, MON-RNG-01, MON-RDS-01, MON-RDS-02, MON-MIN-01, MON-FIRE-03, MON-SOC-01, MON-PROC-01
ii. The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.	MON-WLF-01, MON-WLF-02, MON-WLF-03, MON-WLF-04, MON-STRM-01, MON-STRM-02, MON-STRM-03, MON-FISH-01, MON-VEG-01, MON-VEG-04, MON-SOIL-01, MON-REC-03, MON-RNG-01, MON-RNG-02,

2012 Planning Rule Requirements (36 CFR 219.12 (a)(5) and FSH 1909.12.30	1986 Lolo NF Monitoring Program – Transitioned Monitoring Items
	MON-RNG-03, MON-RDS-01, MON-RDS-02, MON-MIN-01, MON-VIS-01, MON-FIRE-02, MON-FIRE-03, MON-SOC-01, MON-PROC-01
iii. The status of focal species to assess the ecological conditions required under 36 CFR 219.9.	MON-WLF-01, MON-FISH-01, MON-PROC-01
iv. The status of a select set of the ecological conditions required under 36 CFR 219.9 to contribute to the recovery of federally listed threated and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.	MON-WLF-04, MON-STRM-01, MON-STRM-02, MON-STRM-03, MON-FISH-01, MON-PROC-01
v. The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.	MON-WLF-01, MON-REC-01, MON-REC-02, MON-REC-03, MON-RDS-01, MON-RDS-02, MON-MIN-01, MON-VIS-01, MON-FIRE-01, MON-FIRE-03, MON-SOC-01, MON-PROC-01
vi. Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.	MON-WLF-02, MON-WLF-03, MON-WLF-04, MON-STRM-01, MON-STRM-02, MON-FISH-01, MON-SOIL-01, MON-REC-01, MON-REC-03, MON-RNG-01, MON-RNG-02, MON-RNG-03, MON-RDS-01, MON-RDS-02, MON-MIN-01, MON-FIRE-01, MON-FIRE-02, MON-FIRE-03, MON-PROC-01
vii. Progress toward meeting the desired conditions and objectives in the plan, including providing for multiple use opportunities.	MON-WLF-01, MON-WLF-02, MON-WLF-03, MON-WLF-04, MON-STRM-01, MON-STRM-02, MON-STRM-03, MON-FISH-01, MON-VEG-01, MON-VEG-02, MON-VEG-03, MON-VEG-04, MON-SOIL-01, MON-REC-01, MON-REC-02, MON-REC-03, MON-RNG-01, MON-RNG-02, MON-RNG-03, MON-RNG-04, MON-RDS-01, MON-RDS-02, MON-MIN-01, MON-VIS-01, MON-FIRE-01, MON-FIRE-02, MON-FIRE-03, MON-SOC-01, MON-SOC-02, MON-LAND-01, MON-LAND-02, MON-PROC-01, MON-PROC-02
viii. The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g) (3) (C)). (36 CFR 219.12(a).	MON-VEG-04, MON-SOIL-01, MON-REC-01, MON-RNG-01, MON-RNG-02, MON-RNG-03, MON-RNG-04, MON-MIN-01, MON-FIRE-03, MON-PROC-01
FSH 1909.12 (32.1) Social, economic, and cultural sustainability	MON-VEG-03, MON-REC-02, MON-RNG-01, MON-RDS-01, MONR-RDS-02, MON-MIN-01, MON-VIS-01, MON-SOC-01, MON-SOC-02, MON-PROC-01

Table 2. Bitterroot NF monitoring items that fulfill 2012 Planning Rule.

2012 Planning Rule Requirements (36 CFR 219.12 (a)(5) and FSH 1909.12.30	1987 Bitterroot NF Monitoring Program – Transitioned Monitoring Items
(i) The status of select watersheds	MON-AQT-01, MON-WTR-01

(ii)	The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.	MON-WLF-01, MON-AQT-02, MON-VEG-01, MON-VEG-03, MON-INV-01, MON-WTR-01, MON-RDLS-01, MON-FIRE-01
(iii)	The status of focal species to assess ecological conditions	MON-AQT-02
(iv)	The status of a select set of the ecological conditions that contribute to the recovery of federally listed threatened and endangered proposed and candidate species and maintain a viable population of each species of conservation concern.	MON-AQT-01, MON-AQT-02
(v)	The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives	MON-REC-02
(vi)	Measurable changes on the plan area related to climate changes and other stressors that may be affecting the plan area	MON-AQT-01, MON-AQT-02, MON-VEG-03, MON-FIRE-01, MON-FIRE-03
(vii)	Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities	MON-WLF-02, MON-WLF-03, MON-WLF-04, MON-AQT-01, MON-VEG-01, MON-VEG-02, MON-REC-01, MON-REC-02, MON-RNG-01, MON-RDS-01, MON-MIN-01, MON-VIS-01, MON-SOC-01
(viii)	The effects of each management system to determine that they do no substantially and permanently impair the productivity of the land	MON-SOILS_01, MON-RNG-01, MON-RDS-01, MON-FIRE-02
FSH 1909.12 (32.1) Social, economic, and cultural sustainability		MON-ECON-01, MON-VIS-01, MON-SOC-01, MON-PROC-01

MONITORING ITEM CHANGES

As part of this transition, the two National Forests have reviewed the monitoring items of the 1986 Lolo, and 1987 Bitterroot National Forest Plans to determine whether the above items have been considered. Tables were then prepared for each resource to display the modifications made to each monitoring item (see tables below under each resource heading).

For both National Forests, Bull Trout has been designated as a Focal Species.[2] Additional changes to focal species may be conducted during plan revision. In addition, the Lolo National Forest will continue to monitor pileated woodpecker, goshawk, elk, threatened and endangered species including grizzly bear and Canada lynx, and invertebrates (Lolo Forest Plan, page VI-

[2] *Focal Species.* A small subset of species whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan in maintaining or restoring the ecological conditions to maintain the diversity of plant and animal communities in the plan area. (36 CFR 219.19).

17). The Bitterroot National Forest will continue to monitor pileated woodpecker, pine marten, cutthroat trout, and elk.

1986 LOLO FOREST PLAN MONITORING ITEMS - CHANGES

INTRODUCTION

To meet the requirements of the 2012 Planning Rule, monitoring items in the 1986 Lolo Forest Plan have been changed to read as a question. In some cases, monitoring items have been modified, added, combined or dropped where they were determined to be: 1) ineffective for addressing plan components, 2) duplicative in nature, 3) economically infeasible, 4) needed to address a plan component, or 5) new science or technology supported monitoring with a different tool or scale. The information displayed below compares the differences between the 1986 monitoring elements and the revised elements that are compatible with the 2012 Planning Rule.

For reference, Table V.1 is included in Appendix A of this document. Table V.1, (Chapter V, Implementation) of the 1986 Lolo Forest Plan displays the current Forest Plan Monitoring Items. Components of the 1986 Lolo Forest Plan may be viewed online at: http://www.fs.usda.gov/lolo (on left side of screen click on **Land and Resources Management**, click on **Planning,** then click on **Lolo Forest Plan** in the center of the screen to open the Forest Plan).

Changes are summarized in the following tables in the same order as the monitoring items are displayed in the 1986 Forest Plan. A narrative is provided for each resource to explain rationale for change. Changes to each monitoring item are displayed in red as follows:

- **RETAIN –** monitoring item is kept. Minor changes may be made to indicators and sources.
- **MODIFY** – monitoring item changed to better assess plan components, remove or add indicators and data sources, or include other monitoring items.
- **COMBINE** – monitoring item combined with another monitoring item to eliminate duplication or better assess plan components.
- **REMOVE** – monitoring item dropped because it is no longer needed or does not adequately address plan components.
- **NEW** – monitoring item added to address plan components or assess resource considerations removed from other monitoring items.

Monitoring item reference numbers have been updated to provide consistency with other Forest Plans recently revised in Region 1 under the 2012 planning rule as following:

MON-RESOURCE-NUMBER

For example, MON-WLF-01, would indicate monitoring item 1 for the wildlife resource.

WILDLIFE – Lolo NF

Several Lolo Forest Plan components address wildlife habitat and recovery of Threatened and Endangered species and protection of sensitive species. The goals of the Plan state; *"provide habitat for viable populations of all indigenous wildlife species and for increasing populations of big-game animals."* (p. II-1). Elk is identified as a Management Indicator Species (MIS) for big game (p. VI-17). *"For threatened and endangered species occurring on the Forest, including the grizzly bear, gray wolf, peregrine falcon, and bald eagle, manage to contribute to the recovery of each species to non-threatened status."* (p. II-1). Since 1986, gray wolf, peregrine falcon and bald eagle have been delisted and are now managed as sensitive species. Lynx and bull trout have been listed as threatened. *"The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest, with special attention given to species dependent on snags, old growth areas, and riparian areas."* (p. II-2). Pileated woodpecker and goshawk are identified as MIS for managed and natural old growth. (p. VI-17). Other MIS are listed on page VI-17 of the Forest Plan.

To determine attainment of plan components, six wildlife monitoring items are included in the 1986 Lolo Forest Plan. Three monitoring items are designed to address big game habitat (elk productivity and winter range). One monitoring item is designed to address threatened and endangered species habitat. Two monitoring items are designed to address old growth habitat and snags.

As displayed below, Monitoring Item 1-1 has been retained. Additional data sources have been provided for this monitoring item. The Forest will continue to rely on the Montana Department of Fish Wildlife and Parks for assessing elk numbers. Monitoring Items 1-2 and 1-6 have been combined with Wildlife Item 1-1 and Vegetation Item 3-8. These monitoring items are considered duplicative. Treated acres of winter range is already tracked as part of vegetation treatment accomplishments in the Forest Service Activity Tracking System (FACTS) database. Cover-forage ratio, as required by the Forest Plan, has been retained by past vegetation management treatments. Monitoring items 1-3 and 1-4 have been modified slightly to utilize data collected by the Forest Inventory and Assessment program (FIA). This program provides a more statistically valid estimate of old growth and snags at the Forest scale and can better determine success in achieving the Forest Plan components. Monitoring Item 1-5 has been retained. Improvements to Threatened and Endangered Species habitat, including compliance with the *Draft Northern Continental Divide Grizzly Bear Conservation Strategy*, *Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones*, the *Northern Rockies Lynx Management Direction*, and the *R1 Bull Trout Conservation Strategy* will be summarized and reported annually or as required by these documents.

The following table displays changes to the 1986 Forest Plan wildlife monitoring items:

WILDLIFE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide habitat for viable populations of all indigenous wildlife species and for increasing population of big-game animals." (p. II-1). **Objectives** – "This Forest Plan improves the environmental quality of the Forest…that emphasizes…enhancement of wildlife and fish habitats…" (p. II-2). "Management is designed to increase the Forest's nationally significant big-game populations, particularly elk." (p. II-2). **Desired Future Condition (DFC)** – "As a result of elk habitat improvements such as burning to increase forage and the coordination of timber sale programs, elk winter range will have been improved…" (p. II-6). "Effects on big-game summer range will have been minor as a result of meeting specific management objectives (i.e., road closures) on key areas…" (p. II-6). **Standards 21, 22, 23, 26, 27** – "Wildlife features…will be protected…" (p. II-13). "The Forest wildlife biologist will examine and recommend vegetative objectives for managing and protecting all winter range…" (p. II-13). "The document "Coordinating Elk and Timber Management"…will be used as a basic tool for assessing the effects of timber harvest upon elk habitat, and for making decision that effect the overall big-game resource." (p. II-13). "Provide a variety of hunting recreation opportunities…to assist the Montana Department of Fish, Wildlife, and Parks in meeting their goal of maintaining long hunting seasons with minimum restrictions." (p. II-14). "Habitat for management indicator species, which include the elk….will be monitored. (p. II-14). "Elk population data, collected by the Department of Fish, Wildlife, and Parks will be compared against habitat data to test elk/habitat relationships." (p. II-14). **Management Areas (MA)** – See MAs 22, 23, 24, 25, and 26 (p. III-107 to III-140).	1-1	Elk productivity – total time of human disturbance created by timber management activities.	**(RETAIN)** **MON-WLF-01** What is the current population status of elk on National Forest System Lands?	• Reduction in Miles of Open Road • Bull Elk Harvest Rates • Hunting Season Length • Elk Numbers • Acres of foraging habitat improved (FS action)	2 Years • INFRA, Forest Roads Atlas • MT FWP Bull Elk Harvest Data (http://fwp.mt.gov/fishAndWildlife/management/elk/) • MT FWP Hunting Regulations (http://fwp.mt.gov/hunting/regulations/) • MT FWP Statewide Elk Management Population and Distribution (http://fwp.mt.gov/fishandwildlife/management/elk/) • WIT (terrestrial acres improved)	ii, iii, v, vii

WILDLIFE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
See MON-WDL-01 and MON-VEG-08	1-2	Elk productivity – cover/forage ratios.	**(COMBINE)** See MON-WDL-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08
Objectives – "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest, with special attention given to species dependent on snags, old growth areas, and riparian zones." (p. II-2). **Desired Future Condition (DFC)** – "There will be sufficient old-growth habitat available to meet the needs of old-growth dependent wildlife. (p. II-6). **Standard 27** – "…habitat parameters include old-growth acres and condition…will be monitored as an indicator of population trend." (p. II-14). **Management Areas (MA)** – See MA 21 (p. III-104 to 106).	1-3	Monitor effectiveness of old-growth habitat areas that are harvested.	**(MODIFY)** **MON-WLF-02** What is the quantity of old growth on the Forest?	• Acres of old growth that meet Region 1, Old Growth Definition *(Green et al 2004 as amended)*	5 Years • Forest Inventory and Analysis (FIA) National Program (FIA) Database – R1 Old Growth	ii, vi, vii,
Objectives – "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest, with special attention given to species dependent on snags, old growth areas, and riparian zones." (p. II-2). **Standard 25** – "In the portion of the Forest more than 200 feet from all system roads, sufficient snags and dead material will be provided to maintain 80 percent of the population of snag-using species normally found in an unmanaged forest. (See Appendix N, Procedures to Implement the Forest Snag Standard)." (p. II-14). **Standard 27** – "…snag densities will be monitored as an indicator of population trend." (p. II-14).	1-4	Post sale snag densities.	**(MODIFY)** **MON–WLF-03** What is the quantity of large snags on the Forest?	• Number of large snags that are 10, 15, or 20 inches in diameter at breast height equal to or greater than 40 feet tall.	5 Years • Forest Inventory and Analysis (FIA) National Program Database – R1 Snag Analysis Groups	ii, vi, vii
Goals – "For threatened and endangered species occurring on the Forest….manage to contribute to the recovery of each species to non-threatened status." (p. II-1). **Objectives** – "The Plan provides for the recovery of threatened species on the Forest." "The Plan supports expansions in populations of the endangered peregrine falcon, bald eagle, and	1-5	Acres of threatened and endangered habitat improvement.	**(RETAIN)** **MON-WLF-04** What progress has been made towards habitat improvement for Threatened and Endangered Species recovery through forest management activities?	• Actions completed to improve TE species habitat. • Acres treated to improve TE species habitat. • Miles treated to improve TE species habitat. (Examples include: food storage orders enacted, road miles decommissioned or stored, culverts	1 Year (Annually) • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Timber Information Manager (TIM) • INFRA Database	ii, iv, vi, vii

WILDLIFE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**

gray wolf through Forest goals and standards." (p. II-2).
 	
Desired Future Condition (DFC) – "Habitat to support threatened and endangered species will have been protected consistent with recovery goals." (p. II-7). "Sufficient habitat will exist for threatened and endangered species to meet the objectives of the recovery plans. Factors limiting recovery will have been eliminated where possible." (p. II-7).
 	
Standard 24 – "All threatened and endangered species occurring on the Lolo…will be managed for recovery to non-threatened status." (p. II-13).
 	
Standard 27 – "Management practices in essential habitat of threatened and endangered species must be compatible with habitat needs of the species…consistent with the goal of recovery to non-threatened status." (p. II-14).
				removed, stream miles restored, habitat condition acres restored)
				
				• **Indicators as Reported for the Following Species:**
				  • **Grizzly Bear** – see Cabinet Yaak Ecosystem Grizzly Bear Management Plan, and Northern Continental Divide Ecosystem Draft Grizzly Bear Conservation Strategy
				  • **Lynx** – see Northern Rockies Lynx Management Direction objectives, standards and guidelines
				  • **Bull Trout** – see Region 1 Bull Trout Conservation Strategy
					• Watershed Improvements Tracking (WIT)	

See MON-WDL-01 and MON-VEG-08	1-6	Treated acres of big-game winter range.	**(COMBINE)** See MON-WLF-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08	See MON-WDL-01 and MON-VEG-08

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Lolo NF

Several plan components address the aquatic environment and fisheries habitat. The goals of the Plan state; *"provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1). *"The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest…"* (p. II-2). *"Fisheries on the Forest will have improved slightly…"* (p. II-7). Invertebrates (sediment sensitive) are identified as Management Indicator Species (MIS) for the aquatic environment and fisheries habitat. *"Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress."* (p. II-14).

To determine attainment of plan components, three monitoring items are included in the 1986 Lolo Forest Plan for the aquatic environment and fisheries habitat. One monitoring item is designed to track improvements to fish habitat (accomplishment of improvement projects). Another monitoring item is designed to validate assumptions used to predict effects of management activities. A third monitoring item is used to assess the effects of riparian activities on riparian dependent resources (aquatic habitat and fish populations).

As part of this transition, the monitoring items have been re-labeled to better display whether they measure physical habitat (STRM), or biological fish population (FISH) conditions. Although physical and biological components interrelate, the Forest felt it was important to clearly separate habitat condition monitoring from population monitoring because the Forest Service primarily manages habitat. Management of fish populations is the responsibility of Montana Fish Wildlife and Parks (MTFWP). Therefore, most fish population monitoring is conducted by MTFWP. The Forest Service partners with MTFWP and other agencies/organizations to conduct population monitoring at the project scale. Monitoring is also piloted by the Forest Service on a smaller scale to estimate local fish species and numbers for project effects analysis purposes.

Monitoring Item 2-1 has been retained. More specific habitat indicators have been added to this item to better identify and track improvements to stream habitat. Monitoring Item 2-2 has been modified slightly. Fish population monitoring has been removed from this item and placed in new monitoring Item 2-4. Indicators in monitoring item 2-2 have also been adjusted to use the stream and fish habitat metrics established by the Pacfish-Infish Biological Opinion (PIBO) Monitoring Program. Use of PIBO metrics will provide a more consistent approach to data collection and allow the Forest to compare its habitat conditions with other Forests in the Columbia River Basin in Regions 1, 5 and 6. Monitoring Item 2-3 has been retained. This item uses indicators that are specific to managing Riparian Habitat Conservation Areas (RHCAs). Monitoring item 2-4 has been added to specifically monitor fish populations. Although some fish population data is collected by the Forest Service for project analysis, the Forest will continue to rely on Montana Fish Wildlife and Parks data for assessing fish populations. Recent advances in science using DNA (eDNA), now allow the Forest Service and its partners to determine presence or absence of aquatic species from water and sediment samples. Therefore,

eDNA sampling has been identified as one of the methods the Forest will use to monitor the distribution of aquatic species across the Forest.

Bull trout will be designated as a focal species to monitor (36 CFR 219.12 (a) (5) iii and FSH 1909.12 Ch. 30). Bull trout were selected as the focal species for aquatic resources because their habitat needs incorporate the highest water quality conditions. Specifically, bull trout need cold and clean water with low amounts of sediment, complex habitat with abundant large wood and pools, and connected habitat so that different life history stages can move freely throughout the watershed at different times of the year. Collectively, the habitat requirements of bull trout are commonly referred to as "the four C's" (cold, clean, complex, and connected).

The following table displays changes to the 1986 Forest Plan aquatic environment and fisheries habitat monitoring items:

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Lolo NF

Selected 1986 Plan Components	1986 Forest Plan Monitoring Item	1986 Forest Plan Monitoring Item Wording	Modified Monitoring Item Wording *(Changes made to meet 2012 Planning Rule)*	Modified Indicators *(Means to Measure)*	Modified Data Collection Interval and Source(s)	2012 Planning Element(s) Addressed
Objectives – "This Forest Plan improves the environmental quality of the Forest…that emphasizes…enhancement of wildlife and fish habitats…" (p. II-2). "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest…" (p. II-2). **Desired Future Condition (DFC)** – "Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 28** – "Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress." (p. II-14). "Project level assessments will address the potential impacts of management activities on off-Forest aquatic resources by considering and evaluating downstream data wherever available." (p. II-14). **Management Areas (MA)** – See MA 13 (p. III-56 to III-63). **Forest Plan Amendment 21A - Inland Native Fish Strategy (INFISH)** – "The goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Since the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the waters, [t]he strategy identifies several goals for watershed, riparian, and stream channel conditions." (see Riparian Goals 1-8). (INFISH p. A-1 to A-2). Also see INFISH Objectives, Standards and Guidelines, and Monitoring. (INFISH p. A-2 to A-15).	2-1	Improvement of fish habitat.	**(RETAIN)** **MON-STRM-01** What activities have been conducted to improve or maintain riparian habitat conservation areas (RHCAs), and aquatic habitat?	Activities that improve condition of riparian habitat conservation areas (RHCAs) and habitat for aquatic species including but not limited to native fish and amphibians: • Miles of stream habitat enhanced. • Acres of wetland improved. • Acres of streamside planted. • Acres of floodplain restored. • Number of stream crossings or barriers removed. • Number of stream crossings (road or trail) improved. • Number of stream diversions (irrigation) improved. • Acres instream water rights applied for and/or secured. • Miles of road decommissioned within 150/300 feet of streams. • Number of Best Management Practices (BMPs) implemented. • Stream restoration activities accomplished (by 6th HUC or TMDL Watershed). • Number of watersheds with condition class improved. • Number of beavers re-introduced or analogues installed. • Project RHCA variances approved. • Miles of riparian fencing constructed or maintained.	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates, bank angle, wood frequency, percent fines, residual pool depth, percent pools, median substrate size (D50), overall habitat indicators) improved. • Project RHCA condition surveys.	i, ii, iv, vi, vii

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Lolo NF

Selected 1986 Plan Components	1986 Forest Plan Monitoring Item	1986 Forest Plan Monitoring Item Wording	Modified Monitoring Item Wording *(Changes made to meet 2012 Planning Rule)*	Modified Indicators *(Means to Measure)*	Modified Data Collection Interval and Source(s)	2012 Planning Element(s) Addressed
Objectives – "This Forest Plan improves the environmental quality of the Forest…that emphasizes…enhancement of wildlife and fish habitats…" (p. II-2). "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest…" (p. II-2). **Desired Future Condition (DFC)** – "Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 28** – "Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress." (p. II-14). "Project level assessments will address the potential impacts of management activities on off-Forest aquatic resources by considering and evaluating downstream data wherever available." (p. II-14). **Management Areas (MA)** – See MA 13 (p. III-56 to III-63). **Forest Plan Amendment 21A - Inland Native Fish Strategy (INFISH)** – "The goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Since the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the waters, [t]he strategy identifies several goals for watershed, riparian, and stream channel conditions." (see Riparian Goals 1-8). (INFISH p. A-1 to A-2). Also see INFISH Objectives, Standards and Guidelines, and Monitoring. (INFISH p. A-2 to A-15).	2-2	Validation of aquatic habitat quality and fish population assumptions used to predict effects of management activities and an evaluation of actual effects.	**(MODIFY)** **MON-STRM-02** What is the condition of instream native fish habitat?	Pacfish Infish Biological Opinion (PIBO) Metrics • Macroinvertebrates • Bank Angle • Wood Frequency • Percent Fines • Residual Pool Depth • Percent Pools • Median Substrate Size (D50) • Overall Habitat Indicators Improved	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates). • Biological Opinion Stream Function Rating Matrix (FUR to FAR to FA trend data) • Project-level stream condition surveys. • Project RHCA Condition Surveys	i, ii, iv, vi, vii

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Objectives – "This Forest Plan improves the environmental quality of the Forest…that emphasizes…enhancement of wildlife and fish habitats…" (p. II-2). "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest…" (p. II-2). **Desired Future Condition (DFC)** – "Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 28** – "Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress." (p. II-14). "Project level assessments will address the potential impacts of management activities on off-Forest aquatic resources by considering and evaluating downstream data wherever available." (p. II-14). **Management Areas (MA)** – See MA 13 (p. III-56 to III-63). **Forest Plan Amendment 21A - Inland Native Fish Strategy (INFISH)** – "The goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Since the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the waters, [t]he strategy identifies several goals for watershed, riparian, and stream channel conditions." (see Riparian Goals 1-8). (INFISH p. A-1 to A-2). Also see INFISH Objectives, Standards and Guidelines, and Monitoring. (INFISH p. A-2 to A-15).	2-3	Assessment of riparian activities on riparian dependent resources.	**(RETAIN)** **MON-STRM-03** What is the <u>condition</u> of riparian habitat conservation areas including wetlands?	• Acres of Riparian Habitat Conservation Areas (150/300 feet from stream or wetland) with intact native plant species and seral climax species assemblages. • Miles of road within 150/300 feet of stream (in RHCAs). • Miles of trail within 150/300 feet of stream (in RHCAs). • Miles of open / restricted (travel mgmt.) within 150/300 feet of stream (in RHCAs). • Miles of open / restricted (travel mgmt.) within 150/300 feet of stream (in RHCAs).	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates, bank angle, wood frequency, percent fines, residual pool depth, percent pools, median substrate size (D50), overall habitat indicators) improved. • Project RHCA condition surveys. • VMAP vegetation mapping.	i, ii, iv, vii

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Lolo NF

Selected 1986 Plan Components	1986 Forest Plan Monitoring Item	1986 Forest Plan Monitoring Item Wording	Modified Monitoring Item Wording *(Changes made to meet 2012 Planning Rule)*	Modified Indicators *(Means to Measure)*	Modified Data Collection Interval and Source(s)	2012 Planning Element(s) Addressed
Objectives – "This Forest Plan improves the environmental quality of the Forest…that emphasizes…enhancement of wildlife and fish habitats…" (p. II-2). "The Forest Plan provides habitat for viable populations of the diverse wildlife and fish species on the Forest…" (p. II-2). **Desired Future Condition (DFC)** – "Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 28** – "Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress." (p. II-14). "Project level assessments will address the potential impacts of management activities on off-Forest aquatic resources by considering and evaluating downstream data wherever available." (p. II-14). **Management Areas (MA)** – See MA 13 (p. III-56 to III-63). **Forest Plan Amendment 21A - Inland Native Fish Strategy (INFISH)** – "The goals establish an expectation of the characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. Since the quality of water and fish habitat in aquatic systems is inseparably related to the integrity of upland and riparian areas within the waters, [t]he strategy identifies several goals for watershed, riparian, and stream channel conditions." (see Riparian Goals 1-8). (INFISH p. A-1 to A-2). Also see INFISH Objectives, Standards and Guidelines, and Monitoring. (INFISH p. A-2 to A-15).	NA	NA	**(NEW)** **MON-FISH-01** What is the status of native fish including, but not limited to west slope cutthroat trout and bull trout?	Presence/Absence, Distribution, Abundance, Trend, and/or Genetic Status of: • Westslope Cutthroat Trout • Bull Trout • Pearlshell Mussel • Native Amphibians • Macroinvertebrates • Other fish and aquatic species	1 Year – (Annually or by Project) • eDNA samples • Electro-Shocking Surveys • Snorkel Surveys • Redd Counts • Watershed Improvements Tracking (WIT) • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates). • Montana FWP, Montana Fisheries Information System (MFISH) (http://fwp.mt.gov/fishing/mFish/) • Montana FWP, Angling Pressure Surveys (http://fwp.mt.gov/fishing/anglingData/anglingPressureSurveys/default.html) • Montana FWP, Fish Stocking Plans and Reports (http://fwp.mt.gov/fishing/planAFishingTrip/fishStocking/default.html)	i, ii, iii, iv, vi, vii

TIMBER – Lolo NF

Several plan components address timber and vegetation and the interrelationship of vegetation management with other resource objectives. The goals of the Plan state; *"provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1). Timber and other products are generated to support the economy; *"Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs."* (p. II-1). The Plan's objectives also state that forest products and services are provided in a sustained flow; *"The timber program approximates the annual average volume offered for the past ten years; it is designed to accommodate fluctuations in the market and meet the needs of local mills within the decade's allowable sale quantity."* (p. II-1). And that vegetation management practices are responsive to other resource needs; *"Overall, the Forest Plan provides for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to insure ecological integrity."* (p. II-2). Following timber harvest and fire the forest is replanted; *"Reforestation will have been accomplished on 88,460 acres…"* (p. II-6). And, that forest management practices will result in a change of forest conditions; "*There will have been a change in the Forest-wide distribution of mature age classes…"* (p. II-7).

Fifteen monitoring items were included in the 1986 Lolo Forest Plan for timber. One monitoring item was designed to ensure that temporary roads constructed for timber harvest are regenerated. Another monitoring item was designed to confirm that sale volume sold did not exceed the allowable sale quantity. One item was provided to ensure that harvested stands are regenerated in 5 years. And, one monitoring items was designed to assess whether suitable lands were validated as suitable for timber production. Eleven monitoring items were designed to determine whether silviculture and forest management practices were appropriately developed and practiced to achieve forest resource management objectives and avoid promotion of insect and diseases.

Monitoring item 3-1 has been modified to address forest restoration and resiliency[3]. Six accomplishment categories will be used for item 3-1 to consider forest composition, size, density, and natural patterns of diversity and resiliency to stress and disturbances including acres of: regeneration harvest, artificial and natural regeneration, intermediate harvest, stand improvement, mechanical fuels treatment, prescribed burning, wildfire, native grass and shrub conditions, and restoration patterns (e.g., patch size). Monitoring items that are intended to ensure compliance with the National Forest Management Act (16 USC 1600 et seq.) have been removed. Monitoring items 3-3 through 3-9, and 3-12 through 3-14 have been removed. The

[3] A resilient forest ecosystem is a forest that contains the diversity of composition, size, density and pattern that enable it to cope with changing disturbance processes. This forest ecosystem is capable of providing various ecosystem services such as wildlife and aquatic habitat for a variety of species, clean water, recreation, and carbon sequestration in the short and long term.

determination of whether silvicultural prescriptions and vegetation / harvest management comply with the NFMA and are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation. Monitoring item 3-2 has been retained. This monitoring will continue to be used to assess whether temporary roads are decommissioned and regenerated following use. Monitoring item 3-10 has also been retained to determine whether timber volume sold is within the allowable sale quantity identified by the Forest Plan. Monitoring item 3-11 has also been retained to assure that harvested and burned stands in the suitable timber base are adequately stocked in 5 years. Regeneration of stands is also a requirement of the National Forest Management Act. Monitoring item 3-16 has been combined with item 14-2, now MON-PROC-02 to eliminate duplication. Confirmation of the suitability of lands is assessed along with Management Area allocations and thus is more appropriately tracked as part of process monitoring.

The following table displays changes to the 1986 Forest Plan timber monitoring items:

TIMBER – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs." (p. II-1). **Objectives** – The timber program approximates the annual average volume offered for the past ten years; it is designed to accommodate fluctuations in the market and meet the needs of local mills within the decade's allowable sale quantity." (p. II-1). "Overall, the Forest Plan provides for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to insure ecological integrity." (p. II-2). **Desired Future Condition (DFC)** – "Timber harvests may have taken place on 171,000 acres at an average annual level of 107 million board feet of regulated harvest …." (p. II-6). Reforestation will have been accomplished on 88,460 acres…" (p. II-6). There will have been a change in the Forest-wide distribution of mature age classes…" (p. II-7). **Standards 10-13** – "Regional standards will be followed for tree utilization, management intensity, measurement…" (p. II-11). "The guideline in Appendix G will be used for selecting timber harvest systems…" (p. II-11). "Increase the use of the available wood fiber consistent with management objectives and economic principles." (p. II-11). **Management Areas (MAs)** – see timber practices under each MA allocation to determine timber practices for other resource objectives. (p. III-1 to III-149).	3-1	Insure management practices minimize hazards from flood, wind, wildfire, erosion, and other natural physical forces.	**(MODIFY)** **MON-VEG-01** What vegetation management activities have been conducted to maintain or restore forest resiliency?	Treatment acres of activities that affect forest resiliency: • Acres regeneration and removal harvests. • Acres artificial and natural regeneration from prior regeneration harvests. • Acres intermediate harvest to reduce forest density. • Acres stand improvement activities. • Acres mechanical fuels treatments not related to timber harvest. • Acres of prescribed burning. • Acres of artificial and natural regeneration following wildfire. • Acres treated to decrease conifer encroachments or improve native grassland/shrubland communities (through weed treatments or prescribed fire). • Acres treated to restore forest pattern (harvest and prescribed burn larger than 40 acres, natural fire, and group selection harvest where patches emulate natural patch size). See: *Restoration and Resiliency Treatment Accomplishments Leading to a More Resilient Forest and Grassland Condition*. (Version 2.2 6/24/2013) http://fsweb.r1.fs.fed.us/forest/silv/index.html	2 Years • Natural Resource Information System (NRIS) • Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Unit Silviculture Prescriptions • Unit Marking Guides • Unit Burn Plans • Project level analysis and NEPA documentation. • Timber Sale Unit maps and contracts.	ii, vii
Objectives – "Roads will be kept to the minimum number and size needed to support resource management; most roads will be closed when projects are completed to protect resource values. (p. II-2)	3-2	Insure establishment of vegetation on temporary roads within 10 years.	**(RETAIN)** **MON-VEG-02** Is vegetation established on temporary roads within 10 years of closure?	• Miles of temporary road constructed to contract standard; cleared and grubbed with retention of top soil, grasses and forbs (inoculates), coarse woody debris, and other materials set aside so they may be placed back on road surface when closed. • Miles of temporary road surface decommissioned; prepared for vegetation establishment with	2 Years • Timber sale contracts. • Timber sale inspection reports. • Soil monitoring surveys.	vii

TIMBER – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Standards 48, 49, and 52 – "Motorized vehicles will be limited to system roads and trails which are designated open in the Lolo Forest Travel Plan" (p. II-17). "Lolo National Forest roads will be the minimum number and meet the minimum design standards possible while still meeting safety, user, and resource needs." (p. II-17). "Manage Forest roads to provide for resource protection, wildlife needs, commodity removal, and a wide range of recreation opportunities. In most areas on the Forest, this will involve leaving some roads open, closing some roads seasonally, and closing other road on a permanent basis." (p. II-18). **Management Areas (MA)** – see specific road practices by MA. (p. III-2 to III-149).				scarification, ripping, recontouring or other closure technique, coarse woody debris placement, and seeded with forest vegetation including native forbs and grasses, or brush or trees.	• Road surveys. • Weed surveys.	
	3-3	Assure silvicultural prescriptions meet multiple use goals.	**(REMOVE)** Compliance with the NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
	3-4	Assure silvicultural prescriptions are not primarily chosen on basis of greatest dollar return or greatest timber output.	**(REMOVE)** Compliance with the NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			

TIMBER – Lolo NF						
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	3-5	Assure silvicultural prescriptions consider residual trees and adjacent stands.	**(REMOVE)** Compliance with NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
	3-6	Assure silvicultural prescriptions are practical.	**(REMOVE)** Compliance with the NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
	3-7	Assure silvicultural prescriptions meet legal size limits.	**(REMOVE)** Compliance with the NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
	3-8	Assure selected sale alternative provides for plant/animal	**(REMOVE)** Compliance with the NFMA and the determination of			

TIMBER – Lolo NF						
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		community diversity.	whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
	3-9	Assure harvest on unsuitable lands will meet other resource needs.	**(REMOVE)** Compliance with the NFMA and the determination of whether silvicultural prescriptions and vegetation / harvest management are appropriately designed and implemented to achieve all resource objectives including those for forest health and timber production is conducted at the project level through NEPA analysis and documentation.			
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs." (p. II-1). **Objectives** – The timber program approximates the annual average volume offered for the past ten years; it is designed to accommodate fluctuations in the market and meet the needs of local mills within the decade's allowable sale quantity." (p. II-1). "Overall, the Forest Plan provides for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to insure ecological integrity." (p. II-2). **Desired Future Condition (DFC)** – "Timber harvests may have taken place on 171,000 acres at an average annual level of 107 million board feet of regulated harvest …." (p. II-6). Reforestation will have been accomplished on	3-10	Assure timber sold does not exceed allowable sale quantity for 10-year period.	**(RETAIN)** **MON-VEG-03** Is the volume of timber sold within the 10-year allowable sale quantity?	• Timber Volume Sold • Firewood Volume Sold	2 Years • Timber Information Management (TIM) Reports	vii, social, economic, and cultural sustainability

TIMBER – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
88,460 acres…" (p. II-6). There will have been a change in the Forest-wide distribution of mature age classes…" (p. II-7). **Standards 10-13** – "Regional standards will be followed for tree utilization, management intensity, measurement…" (p. II-11). "The guideline in Appendix G will be used for selecting timber harvest systems…" (p. II-11). "Increase the use of the available wood fiber consistent with management objectives and economic principles." (p. II-11).						
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs." (p. II-1). **Objectives** – The timber program approximates the annual average volume offered for the past ten years; it is designed to accommodate fluctuations in the market and meet the needs of local mills within the decade's allowable sale quantity." (p. II-1). "Overall, the Forest Plan provides for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to insure ecological integrity." (p. II-2). **Desired Future Condition (DFC)** – "Timber harvests may have taken place on 171,000 acres at an average annual level of 107 million board feet of regulated harvest …." (p. II-6). Reforestation will have been accomplished on 88,460 acres…" (p. II-6). There will have been a change in the Forest-wide distribution of mature age classes…" (p. II-7). **Standards 10-13** – "Regional standards will be followed for tree utilization, management intensity, measurement…" (p. II-11). "The guideline in Appendix G will be used for selecting timber harvest systems…" (p. II-11). "Increase the use of the available wood fiber consistent with management objectives and economic principles." (p. II-11).	3-11	Assure restocking within 5 years.	**(RETAIN)** **MON-VEG-04** Are harvested / burned stands in the suitable base restocked within 5 years?	• Acres planted. • Acres naturally regenerated. • Acres certified regenerated.	• Timber Sale Contracts and Maps (harvest units). • FIRESTAT • Wildfire Burned Area Emergency Response (BAER) Maps • Regeneration surveys. • Regeneration certifications. • Natural Resource Information System (NRIS) • Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Silvicultural Prescriptions	ii, vii, viii

TIMBER – Lolo NF						
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Management Areas (MAs) – see timber practices under each MA allocation to determine timber practices for other resource objectives. (p. III-1 to III-149).						
see MON-VEG-01	3-12	Assure silvicultural treatments (harvest, thinning, etc.) are planned and accomplished as projected in Forest Plan.	**(COMBINE)** see MON-VEG-01	see MON-VEG-01	see MON-VEG-01	see MON-VEG-01
see MON-VEG-01	3-13	Insure harvest by even-age management is compatible with other resource values.	**(COMBINE)** see MON-VEG-01	see MON-VEG-01	see MON-VEG-01	see MON-VEG-01
see MON-VEG-01	3-14	Assure harvest will not promote disease and insect increases.	**(COMBINE)** see MON-VEG-01	see MON-VEG-01	see MON-VEG-01	see MON-VEG-01
	3-15	*(No item identified in Forest Plan)*				
see MON-PROC-02	3-16	Review timber suitability of lands classified as unsuitable.	**(COMBINE)** see MON-PROC-02	see MON-PROC-02	see MON-PROC-02	see MON-PROC-02

WATER AND SOIL – Lolo NF

In addition to the aquatic environment and fisheries habitat components described above, several plan components specifically address water and soil. The goals of the Plan state; *"Provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1). *"Meet or exceed State water quality standards."* (p. II-1). The objectives of the Plan emphasis both water and soils; *"This Forest Plan improves the environmental quality of the Forest…that emphasizes protection of water quality and soils…"* (p. II-2). A desired condition is that; *"Forest soil productivity will have been maintained."* (p. II-7). Standards emphasis soil protection and maintenance of land productivity and protection of aquatic ecosystems; *"All management practices will be designed or modified as necessary to maintain land productivity."* (p. II-12). *"Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress."* (p. II-14).

Three monitoring items are included in the 1986 Lolo Forest Plan for water and soils. One monitoring item is designed to validate the R1/R4 WATSED model. This model was originally designed to assess sediment delivery from forest management practices in the more erosive soils of the Idaho Batholith. Validation was needed to ensure that sediment predictions of the model were appropriate for the more stable soils (belt rock) found on the Lolo. Another monitoring item is designed to track compliance with State and Federal water quality laws. A third monitoring item is used to assess the effects of forest management on soils and land productivity.

As part of this transition, monitoring item 4-1 has been removed. Validation of the R1/R4 WATSED model has been completed. Other models including WEPP and GRAIP are currently being used to estimate sediment delivery from roads and other forest management practices. These models are considered Best Available Scientific Information (BASI) and have undergone peer review and validation. Monitoring Item 4-2 has been removed. To date, the Forest has complied with all Federal and State water quality laws. Compliance monitoring will be addressed through project specific NEPA analysis and documentation. Monitoring Item 4-3 has been retained to assess detrimental soil conditions that could impair land productivity.

The following table displays changes to the 1986 Forest Plan water and soils monitoring items:

WATER AND SOIL – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
	4-1	Validation of sediment and water yield assumptions used in plan. (For "R-1/R-4" or current sediment yield model).	**(REMOVE)** R1/R4 Model has been validated by various research entities. Other models including GRAIP and WEPP, PIBO are now used to estimate sediment delivery and project impacts. Other models used have been peer reviewed and are considered Best Available Science.			
	4-2	Monitor for compliance with existing State and Federal water quality statutes	**(REMOVE)** The Forest is required to comply with all State and Federal Laws and regulations. The Forest has requested, received and complied with all permits since 1986. Compliance monitoring will be conducted through site specific project level NEPA analysis and documentation.			
Objectives – "This Forest Plan improves the environmental quality of the Forest…that emphasizes protection of water quality and soils…" (p. II-2). **DFCs –** "Forest soil productivity will have been maintained." (p. II-7). **Standards 16 and 18 –** "Developmental projects in areas with steep slopes, granitic soils, wet glacial tills, and lake sediments will not be scheduled until they have been analyzed for environmental effect and economic feasibility." (p. II-12). "All management practices will be designed or modified as necessary to maintain land productivity." (p. II-12).	4-3	Monitor the effect of soil disturbance / displacement on land productivity.	**(RETAIN)** **MON-SOIL-01** Are forest management activities maintaining soil productivity?	• Percent Detrimental Soil Disturbance (DSD) (measured in activity units as determined by Region 1 Soil Criteria). • Percent linear foot stream-bank compaction and/or hoof shear. Percent compaction as measured across grazing allotment and high use areas. • Percent ground surface occupied by noxious weeds/native plant species.	2 Years • Project Activity Area DSD Surveys • Project Level Soils Analysis and NEPA Documentation • Soil, Water and Fisheries Monitoring Report • Lolo National Forest Land Systems Inventory (LSI) • Forest Soils Inventory Database • NRCS Web Soil Survey • Pacfish Infish Biological Opinion (PIBO) Metrics (Greenline Methodologies).	ii, vi, vii, viii

RECREATION – Lolo NF

Several plan components address recreation. The goals of the Plan state; *"Provide for a broad spectrum of dispersed recreation involving sufficient acreage to maintain a low user density compatible with public expectations."* (p. II-1). One of the objectives of the Plan is; *"The rich variety of recreation experiences available on the Forest will continue."* (p. II-2). The future condition of the Forest is; *"Recreation will have been provided that allowed for all types in the Recreation Opportunity Spectrum. The demand for developed recreation will have reached the capacity of the developed sites."* (p. II-7) *"Capacity for dispersed recreation will exceed the projected use for primitive/semiprimitive recreation and roaded natural recreation."* (p. II-7).

Three monitoring items are included in the 1986 Lolo Forest Plan for recreation. One monitoring item is designed to track effects of off road motorized vehicle use. Another monitoring item is designed to confirm that a variety of recreation opportunities are being provided. A third monitoring item tracks changes in the roadless character of the Forest.

Monitoring Item 5-1 has been retained. In addition to field surveys of gate / barrier effectiveness and off road vehicle use and damage, law enforcement warning and citations will be used to monitor trends in off road vehicle use. Item 5-2 has also been retained. National Visitor Use Monitoring (NVUM) surveys will replace Recreation Information Management (RIM) Use Records as the primary tool for assessing recreational use. NVUM provides statistically accurate data on recreation use and allows the Forest to compare its recreational use with other Forests throughout the Nation. The Motorized Vehicle Use Map (MVUM) will also be used to monitor roads open for recreational use. Monitoring Item 5-3 has been modified to reflect changes to management of Inventoried Roadless Areas under the *2001 Special Areas; Roadless Area Conservation; Final Rule* (36 CFR 294). This item will monitor activities within roadless areas as described under the provisions of the 2001 Roadless Rule. It will also track activities in roadless areas that could alter their character.

The following table displays changes to the 1986 Forest Plan recreation monitoring items:

RECREATION – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Standards 48 and 52o – "Motorized vehicles will be limited to system roads and trails which are designated open in the Lolo Forest Travel Plan." (p. II-17). "Off-road vehicle use will be limited to those areas designated in the Forest Travel Plan." (p. II-20).	5-1	Limit off-road vehicle damage.	**(RETAIN)** **MON-REC-01** Are motorized vehicle travel restrictions effective in limiting off-road vehicle damage?	• Number of 36 CFR 261.15(h), Motorized Vehicle Violation Notice / Citations. • Incident Report • Warnings • Number of Closure Orders (36 CFR 261, Subpart B) issued to address resource damaged caused by off-road motorized vehicle use.	2 Year – (Biennial) • Off Road Vehicle Incident Report • Law Enforcement Warnings • Law Enforcement Investigations Management and Attainment Report System (LEIMARS) • 36 CFR 261.15(h) Citations • 36 CFR 261 Subpart B Closure Orders • Field observations of Resource Damage (if collected for project planning and analysis) • Field observations of gate/barrier damage and effectiveness (if collected for project planning and analysis)	v, vi, vii, and viii
Goals – "Provide for a broad spectrum of dispersed recreation involving sufficient acreage to maintain a low user density compatible with public expectations." (p. II-1). **Objectives** – "The rich variety of recreation experiences available on the Forest will continue." (p. II-2). **DFCs** – "Recreation will have been provided that allowed for all types in the Recreation Opportunity Spectrum. The demand for developed recreation will have reached the capacity of the developed sites." (p. II-7) "Capacity for dispersed recreation will exceed the projected use for primitive/semiprimitive recreation and roaded natural recreation." (p. II-7). **Standards 6, 7, 8, and 9** – "The Lolo National Forest will provide for a wide spectrum of Forest-related dispersed recreation activities and range of skill levels available to Forest visitors including elderly and handicapped. The program will provide for use of	5-2	Provide opportunities for a wide spectrum of recreation activities.	**(RETAIN)** **MON-REC-02** Is a wide spectrum of recreation opportunities provided?	• Miles of trail maintained. • Miles of road maintained. • Number of campgrounds maintained. • Number of ski areas permitted. • Number of developed recreation sites maintained. • User survey responses. • Number of guide permits issues and service days. • Challenge cost share agreements and partnership agreements. • Number of recreation user events. • Number of cabin rental agreements issued. .	2 Year – (Biennial) • Forest Transportation Atlas (INFRA Database) • Special Use Data System (SUDS Database) • National Visitor Use Monitoring Surveys (NVUM) • Trailhead and Recreation Site Registration (where available) • NRIS – National Recreation Information System Occupancy and Revenue Reports • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Wilderness and National Recreation Area Limits of Acceptable Change (LAC) • Montana Fish Wildlife and Parks Hunter User Information (http://fwp.mt.gov/doingBusiness/reference/surveys/hunterHarvest.html) • Motorized Vehicle Use Map (MVUM) • Recreation Opportunity Spectrum (ROS)	v, vii, social, economic, and cultural sustainability

RECREATION – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
the Forest on a year-round basis in areas that will minimize conflicts between user groups and other Forest resources." (p. II-9). The Forest Service will not significantly expand the capacity of developed recreation sites on the Lolo National Forest during the next 10-year period." (p. II-10). **Management Areas (MAs)** – see MAs 7, 8, 9, 10, 11 and 12. (p. III-21 to III-55).						
Objectives – "Approximately 25 percent of the Forest will remain in a roadless condition, managed as designated Wilderness or for its roadless values" (p. II-1). "At the present time, approximately 80 percent of the Forest has a relatively natural appearance." (p. II-2). **DFCs** – "At the end of the first decade, there will have been minimal change in the overall appearance of the Forest." (p. II-6). "Approximately 223,600 acres of the roadless resource will have been proposed for wilderness, with an additional 181, 000 acres to remain roadless." (p. II-7). "By the end of the fifth decade, many changes will be apparent in the overall condition of the Forest." (p. II-7). "Essentially all of the 371,590 acres of the roadless area available for development will have been developed; the roadless areas remaining will be the 363,308 acres of wilderness and the 181,000 acres managed for roadless." (p. II-8). **Management Areas (MA)** – See MAs 10, 11 and 12 (p. III-30 to III-55). **36 CFR Part 294 – Special Areas: Roadless Area Conservation; Final Rule** – The final rule established prohibitions on road construction and	5-3	Compare changes in acres and distribution of Roadless lands with plan projections.	**(MODIFY)** **MON-REC-03** What activities are occurring in roadless lands and what amount and distribution of roadless lands remain on the Forest?	• Activities in Inventoried Roadless Areas as provided for in 36 CFR 294.12 and 294.13 • Acres of Wilderness • Acres of proposed wilderness • Acres of Inventoried Roadless Areas • Acres of Inventoried Roadless Areas substantially altered (36 CFR 294.13(b) (4)). • Acres of Inventoried Roadless Area not substantially altered. • Miles of National Forest System Road (NFSR) within Inventoried Roadless Areas. • Miles of Unauthorized (non-system) road within Inventoried Roadless Areas. • Miles of Temporary road constructed within Inventoried Roadless Areas.	1 Year – (Annually or by Project) • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Enterprise Data Center (EDC) Forest GIS Layer • Forest Transportation Atlas (INFRA Database) • Watershed Improvements Tracking (WIT) Database • Timber Sale Contracts • Timber Sale Inspect Reports	ii, v, vi, vii

RECREATION – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
road reconstruction in inventoried roadless areas except in certain circumstances. Road maintenance of classified roads is permitted. (36 CFR 294.12). The final rule also established prohibitions on timber cutting, sale, or removal in inventoried roadless areas except in certain circumstances. (36 CFR 294.13).						

RANGE – Lolo NF

Domestic livestock grazing and range management remain a relatively small component of permitted uses on the Lolo National Forest. The goals of the Plan state; ***"****[p]rovide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs."* (p. II-1). The desired future condition of the forest indicates that; *"[t]he current grazing program will have been maintained and the opportunity to increase animal numbers provided as a result of increases in the transitory range created through timber harvest."* (p. II-7 and II-8). Where competing needs exist between wildlife and domestic livestock, wildlife needs are considered as a dominant use. *"Conflicts between livestock and big game will be resolved so big game are allocated the forage required to meet their needs. Domestic livestock will be allowed to utilize any forage surplus not conflicting with the planned expansion of big-game populations. Reduction in livestock numbers will be avoided if possible, but will be acceptable to meet management goals."* (p. II-9).

Two monitoring items are included in the 1986 Lolo Forest Plan for range. One monitoring item is designed to ensure that forage availability (Animal Unit Months – AUMs) remains within resource carrying capacity as determined by range analysis and utilization. The second monitoring item is designed to assure that range allotment management plans follow Forest Plan direction.

Monitoring Item 6-1 has been retained. Monitoring Item 6-2 has been combined with Item 6-1 because it is considered duplicative. Range Allotment Management Plans, Grazing Permits, and Annual Operating Instructions are designed in accordance with the Forest Plan. The five monitoring items for noxious weed management (Forest Plan Amendment 11) have been adjusted. Item 6-3 has been removed because proposed implementation schedules may be changed to reflect differences between proposed annual budgets and appropriated funds. Item 6-4 has been retained to monitor acres of mechanical, biological and chemical weed control used to prevent the establishment and spread of noxious weeds. Monitoring Item 6-5 has also been retained to monitor weed spread and establishment of new invasive species. Item 6-6 has been combined with 6-4 which tracks treatment of all invasive species, including the nine species originally listed in the 1991 Noxious Weed Management EIS (Forest Plan Amendment 11) and other species now listed as noxious weeds in Montana. Item 6-7 has been retained to assess whether noxious weed mitigation is considered during project planning and applied during project implementation.

The following table displays changes to the 1986 Forest Plan range monitoring items:

RANGE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs." (p. II-1). **DFCs** – "The current grazing program will have been maintained and the opportunity to increase animal numbers provided as a result of increases in the transitory range created through timber harvest." (p. II-7 and II-8). **Standards 4 and 5** – "Conflicts between livestock and big game will be resolved so big game are allocated the forage required to meet their needs. Domestic livestock will be allowed to utilize any forage surplus not conflicting with the planned expansion of big-game populations. Reduction in livestock numbers will be avoided if possible, but will be acceptable to meet management goals." (p. II-9). "Allotments with no AUM's shown for the Proposed Action in Appendix B will be phased out unless the permittee is willing to make necessary investments in livestock management and structural improvement to maintain range condition at an acceptable level." (p. II-9) **Management Areas (MA)** – See MAs 14 and 15 (p. III-64 to III-69).	6-1	Livestock forage available (AUM's).	**(RETAIN)** **MON-RNG-01** Is livestock use managed within the carrying capacity of grazing allotments?	• Adherence to Term Grazing Permits, Annual Operating Instructions and On - Off Dates • Range Conditions	1 Year – (Annually by Active Allotment) • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Range Condition Surveys • Range Allotment Management Plans • Grazing Permits • Annual Operating Instructions	i, ii, vi, vii, viii, social, economic, and cultural sustainability
see MON-RANGE-01	6-2	Assure range allotment management plans are compatible with Forest Plan direction.	**(COMBINE)** see MON-RNG-01	see MON-RANGE-01	see MON-RANGE-01	see MON-RANGE-01
	6-3	Compare projected to actual funding for indirect control (information, inventory and biological support)	**(REMOVE)** Proposed implementation schedules may be changed to reflect differences between proposed annual budgets and appropriated funds.			

RANGE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
	6-4	Compare projected to actual acres of direct treatments (mechanical, chemical and biological methods).	**(RETAIN)** **MON-RNG-02** Is the establishment and spread of invasive aquatic and terrestrial plant weed species being controlled (prevented or reduced) through use of integrated weed treatment practices?	• Acres of invasive plant species treated (mechanically). • Acres of invasive plant species treated (biologically). • Acres of invasive plant species treated (chemically). • Acres of other prevention and control methods. • Acres of new invasive plant species treated. • Terrestrial Invasive Plant Treatment Efficacy Rating	2 Years • Natural Resource Information System (NRIS) • Natural Resource Management (NRM) • TESP-IS Invasive Plant Control Code • Forest Service Activity Tracking System (FACTS) • Project noxious weed inventories. • Project noxious weed analysis and NEPA documentation.	ii, vi, vii, viii
	6-5	Validate Weed EIS assumptions for weed acres and rates of spread.	**(RETAIN)** **MON-RNG-03** Is weed spread increasing/decreasing and are new invasive plant species occurring?	• Acres of invasive plants inventoried. • New invasive plant species found.	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Project noxious weed inventories. • Project noxious weed analysis and NEPA documentation.	ii, vi, vii, viii
see MON-RNG-02	6-6	Monitor the attainment of control objectives for each of the nine species listed in the Weed EIS.	**(COMBINE)** see MON-RNG-02	see MON-RNG-02	see MON-RNG-02	see MON-RNG-02
	6-7	Random review of projects, field reviews & contracts to assure that: 1) weed prevention control is addressed during planning and implementation, and 2) that treatments are effective.	**(RETAIN)** **MON-RNG-04** Are weed prevention being applied during project implementation?	• Presence of weed prevention and mitigation measures (e.g., equipment washing, disturbed area seeding or revegetation) in NEPA documents. • Presence of weed prevention and mitigation measures in contracts (e.g., timber sale contract provisions, and service contract specifications). • Observed implementation of weed prevention and mitigation measures.	1 Year – (Annually or By Project) • Project noxious weed analysis and NEPA documentation (design criteria and mitigation measures). • Timber Sale Contracts • Timber Sale Inspection Reports • Forest Plan Monitoring Project Field Review	vii, viii

ROADS – Lolo NF

Several plan components address roads and the transportation system. The objectives of the Plan state that; *"Roads will be kept to the minimum number and size needed to support resource management; most roads will be closed when projects are completed to protect resource values."* (p. II-2) Several standards address where motorized vehicles may travel and how the road system will be managed to protect other resources; *"Motorized vehicles will be limited to system roads and trails which are designated open in the Lolo Forest Travel Plan"* (p. II-17). *"Lolo National Forest roads will be the minimum number and meet the minimum design standards possible while still meeting safety, user, and resource needs."* (p. II-17). *"Manage Forest roads to provide for resource protection, wildlife needs, commodity removal, and a wide range of recreation opportunities. In most areas on the Forest, this will involve leaving some roads open, closing some roads seasonally, and closing other road on a permanent basis."* (p. II-18). Several standards address design and construction practices.

Four monitoring items are included in the 1986 Lolo Forest Plan to assess roads. Two monitoring items are designed to assure that road densities remain consistent with the Plan. Two monitoring items assure that road design and construction are reviewed and do not result in resource damage.

Monitoring Items 7-1 and 7-4 have been combined because they were duplicative. Monitoring item 7-1 has also been modified to better reflect Forest Service directives (FSM 7700) and regulations (36 CFR 212). An evaluation of road density is part of the indicators. The Forest Transportation Analysis and project level analyses will serve as the primary tools to assess and manage for the minimum transportation system. Monitoring Items 7-2 and 7-3 have been combined because they are considered duplicative. Road design, construction, and Best Management Practice reviews will assess for compliance with design standards and monitor whether resource protections are appropriately provided.

The following table displays changes to the 1986 Forest Plan roads monitoring items:

ROADS – Lolo NF

Selected 1986 Plan Components	1986 Forest Plan Monitoring Item	1986 Forest Plan Monitoring Item Wording	**Modified** Monitoring Item Wording *(Changes made to meet 2012 Planning Rule)*	**Modified** Indicators *(Means to Measure)*	**Modified** Data Collection Interval and Source(s)	2012 Planning Element(s) Addressed
Objectives – "Roads will be kept to the minimum number and size needed to support resource management; most roads will be closed when projects are completed to protect resource values." (p. II-2) **Standards 48, 49, and 52** – "Motorized vehicles will be limited to system roads and trails which are designated open in the Lolo Forest Travel Plan" (p. II-17). "Lolo National Forest roads will be the minimum number and meet the minimum design standards possible while still meeting safety, user, and resource needs." (p. II-17). "Manage Forest roads to provide for resource protection, wildlife needs, commodity removal, and a wide range of recreation opportunities. In most areas on the Forest, this will involve leaving some roads open, closing some roads seasonally, and closing other road on a permanent basis." (p. II-18). **Management Areas (MA)** – see specific road practices by MA. (p. III-2 to III-149).	7-1	Assure open road densities are in accordance with Forest Plan direction.	**(MODIFY)** **MON-RDS-01** Do the number of roads meet resource and other management needs and objectives, reflect long-term funding, and minimize environmental impacts?	Forest Plan Management Area direction, number of roads, road density, road location, and motorized vehicle use travel management designation as determined by the Transportation Analysis Process. • Number of transportation analyses completed. • Miles road maintained. • Miles road constructed (permanent, temporary). • Miles road reconstructed. • Total Road Miles, • Open Road Miles, • Stored Road Miles, • Decommissioned Road Miles, • Road Miles Open to Motorized Travel, • Road Miles Restricted to Year Long Motorized Travel, • Road Miles Restricted to Seasonal Motorized Travel, • Road Miles Maintained (by Maintenance Level), • Total Motorized Route Density, • Open Motorized Route Density For indicators to minimize environmental impacts see MON-WLF-01, MON-WLF-04, MON-STRM-01, MON-STRM-03, MON-REC-01, MON-REC-03, MON-VIS-01,	1 Year – (by Project) 2 Year – (Grizzly Bear Biennial) • Forest transportation analysis. • Project and/or representative (sample) project analysis and NEPA documentation. • OMRD and TMRD Biennial (Grizzly bear monitoring reporting) • Transportation Analysis Process, • Travel Management Atlas, • Forest Transportation Atlas (INFRA Database), • WIT, culvert inventory • Motorized Vehicle Use Map (MVUM)	i, ii, v, vi, vii, social, economic, and cultural sustainability
Objectives – "Roads will be kept to the minimum number and size needed to support resource management; most roads will be closed when projects are completed to protect resource values. (p. II-2) **Standards 49, 50, and 51** - "Lolo National Forest roads will be the minimum number and meet the minimum design standards possible while still meeting safety, user, and resource needs." (p. II-17). "All designs will be review for compliance with the Forest Plan, project plan, and transportation plan." (p. II-18). "Road building slash treatment will be the most cost	7-2	Review of road construction.	**(MODIFY)** **MON-RDS-02** Are roads designed and constructed to standard and meet State or Forest Best Management Practices (BMPs)?	• Number of road designs approved. • Miles of road constructed, reconstructed or maintained to standard - design vehicle, surface width, grade, turnout spacing, number of lanes, surface type, construction tolerance, location, maintenance level, service level, cut and fill ratio, clearing width, drainage size and spacing, travel management. • Number of road contracts administered and approved • Number of Montana BMP review violations received	2 Years • Road Design and Construction Contract, Contract Specifications, • ER/COR Inspection Daily Diary, • Final Engineering Inspection Report, • Timber Sale Inspection Report, • Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03),	i, ii, v, vi, vii, social, economic, and cultural sustainability

ROADS – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
effective that will meet the management prescription in the Forest Plan and project environmental analysis." (p. II-18).					• Lolo Forest Plan Appendix D - Best Management Practices, • Water Quality BMPS for Montana Forests, • Montana State BMP Reviews and National BMP Audits.	
see MON-RDS-02	7-3	Review of road design and construction standards.	**(COMBINE)** see MON-RDS-02	see MON-RDS-02	see MON-RDS-02	see MON-RDS-02
see MON-RDS-01	7-4	Monitor road density deviations from those projected in plan.	**(COMBINE)** see MON-RDS-01	see MON-RDS-01	see MON-RDS-01	see MON-RDS-01

MINERALS – Lolo NF

Plan components for minerals are primarily address under the Plan's standards. The Plan states that; *"Areas currently withdrawn from mineral entry will be evaluated…"* (p. II-15). The Plan examines areas withdrawn from mineral entry; *"Congressionally designated wilderness areas on the Lolo National Forest are withdrawn from mineral entry and leasing."* (p. II-15). It also examines the right to responsibly conduct mineral activities on National Forest System Lands; *"The right to prospect, develop, and mine on National Forest System lands open to entry and location will be recognized."* (p. II-16). *"Where warranted, the Forest Service will work with the claimant/operator to develop a workable operating plan that protects surface resources, e.g., water quality and riparian values."* (p. II-16). And, provides for protection of mineral developments; *"The Lolo National Forest will preserve corners and legitimate improvements on mining claims during timber harvests or other management activities."* (p. II-16).

Three monitoring items were included in the 1986 Lolo Forest Plan for the aquatic environment and fisheries habitat. One monitoring item was designed to track improvement of fish habitat (accomplishment of improvement projects). Another monitoring item was designed to validate assumptions used to predict effects of management activities. A third monitoring item was used to assess the effects of riparian activities on riparian dependent resources (aquatic habitat and fish populations).

Monitoring Item 8-1 has been retained. Project level analysis will continue to be used to assess whether mineral activities have been affected by other forest management activities, and whether mineral activities are affecting forest resources.

The following table displays changes to the 1986 Forest Plan mineral monitoring items:

MINERALS – Lolo NF

Selected 1986 Plan Components	1986 Forest Plan Monitoring Item	1986 Forest Plan Monitoring Item Wording	**Modified** Monitoring Item Wording *(Changes made to meet 2012 Planning Rule)*	**Modified** Indicators *(Means to Measure)*	**Modified** Data Collection Interval and Source(s)	2012 Planning Element(s) Addressed
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs." (p. II-1). **Standards 33 - 42** – "Areas currently withdrawn from mineral entry will be evaluated…" (p. II-15). "Congressionally designated wilderness areas on the Lolo National Forest are withdrawn from mineral entry and leasing." (p. II-15). "The right to prospect, develop, and mine on National Forest System lands open to entry and location will be recognized." (p. II-16). "Where warranted, the Forest Service will work with the claimant/operator to develop a workable operating plan that protects surface resources, e.g., water quality and riparian values." (p. II-16). "The Lolo National Forest will preserve corners and legitimate improvements on mining claims during timber harvests or other management activities." (p. II-16). "Common variety mineral extractions may only be authorized where compatible with the goals of the management area." (p. II-16). "Requests for geophysical exploration permits will be evaluated and the environmental effects…identified…prior to issuance." (p. II-16). Before oil and gas lease stipulation recommendations are made, site specific analysis of environmental effects will be made." (p. II-16). **Management Areas (MA)** – See MA 4 (p. III-12 to III-13).	8-1	Review of Forest Service projects that may have an effect on minerals activities. Review of mining activities affecting surface land management.	**(RETAIN)** **MON-MIN-01** What effect are: forest management activities having on mineral activities / mineral activities having on forest management resources?	• Acres open and accessible for mineral development and leasing. • Number of reclamation plans approved and reclamation activities completed to standard.	2 Years • Project level transportation minerals analysis and NEPA documentation. • Mineral Permits and Plan of Operations • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • SUDS Database	i, and ii, v, vi, vii,, viii, social, economic, and cultural sustainability

ECONOMICS – Lolo NF

Several plan components address economics. The goals of the Forest Plan state; *"Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for regional and national needs."* (p. II-1).

The objectives of the plan state; *"…management under this Forest Plan does not create abrupt changes or sudden shifts from current direction."* (p. II-1). Some changes are anticipated in the appearance of the Forest based on the services that are provided; *"At the end of the first decade, there will have been minimal change in the overall appearance of the Forest."* (p. II-6). *"By the end of the fifth decade, many changes will be apparent in the overall condition of the Forest."* (p. II-7).

One monitoring item is included in the 1986 Lolo Forest Plan for economics. This monitoring item is designed to verify predicted costs that were used in the FORPLAN model to determine resource supply potentials.

Monitoring item 9-1 will be combined with Monitoring Item 12-1 to create MON-SOC-01. FORPLAN is no longer supported and current fixed and variable costs are used in PNV and project feasibility economic analyses. Therefore combining these items will avoid duplication of economic analysis monitoring.

The following table displays changes to the 1986 Forest Plan economics monitoring item:

ECONOMICS – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
See MON-SOC-01	9-1	Verification of unit costs in FORPLAN.	**(COMBINE)** See MON-SOC-01	See MON-SOC-01	See MON-SOC-01	See MON-SOC-01

VISUAL QUALITY – Lolo NF

Several plan components address visual quality and the scenic value of the Forest. The goals of the Plan state; *"provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1*). "This Forest Plan improves the environmental quality of the Forest over current direction through strong Forest goals…and the integration of visual quality objectives."* (p. II-2). *"Resource management activities are significantly constrained by visual quality objectives in areas adjacent to or readily visible from major highways, roads, trails, campgrounds, and other recreational developments. Other parts of the Forest where visual quality objectives constrain resource management activities are identified; the Forest Plan continues management that insures those natural-appearing landscapes."* (p. II-2). Specific management area allocations (see MAs 22, 23, 24 and 25) are assigned to portions of the Forest where visual quality is of concern for preservation, retention or partial retention of the naturally appearing landscape. In addition the plan provides for visual enhancement of areas previously degraded by past land management activities. *"Visual rehabilitation of past management activities will be evaluated where needed during preparation and implementation of the timber sale program."* (p. II-20).

One monitoring item is included in the 1986 Lolo Forest Plan for visual quality. This monitoring item is designed to ensure that Visual Quality Objectives (VQOs) are met for all activities.

Monitoring Item 10-1 has been retained. Various sources have been provided to display direction and analysis processes for visual quality.

The following table displays changes to the 1986 Forest Plan visual quality monitoring item:

VISUAL QUALITY – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide a pleasing and healthy environment..." (p. II-1) **Objectives** – "This Forest Plan improves the environmental quality of the Forest over current direction through strong Forest goals…and the integration of visual quality objectives." (p. II-2). "Resource management activities are significantly constrained by visual quality objectives in areas adjacent to or readily visible from major highways, roads, trails, campgrounds, and other recreational developments. Other parts of the Forest where visual quality objectives constrain resource management activities are identified; the Forest Plan continues management that insures those natural-appearing landscapes." (p. II-2). **Standard 53** – "Visual rehabilitation of past management activities will be evaluated where needed during preparation and implementation of the timber sale program." (p. II-20). **Management Areas (MA)** – See visual quality practices for MAs 22, 23, 24, and 25 (p. III-107 to III-134).	10-1	Monitor project and activity compliance with visual quality objectives.	**(RETAIN)** **MON-VIS-01** Do projects and activities comply with visual quality objectives?	Visual Quality Objectives as determined by Visual Resource Analysis or Scenery Specialist Report • Preservation • Retention • Partial Retention • Modification • Maximum Modification • Enhancement	1 Year – (by Project) • Visual Resource Analysis or Scenery Specialist Report • Lolo Forest Scene Area Analysis • Visual Management System (USDA Forest Service, 1974) • Scenery Management System (USDA Forest Service, 1995) • Forest Service Manual 2380 • USDA Agricultural Handbooks 462, 483, 559, and 608 available at http://fsweb.r1.fs.fed.us/rmlhw/scenery_mgmt/scenery.htm	ii, v, vii, social, economic, and cultural sustainability

FIRE – Lolo NF

Several plan components address fire. The goals of the Plan state; *"provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1). Under Forest Plan objectives, Table II.1 displays projected outputs and activities by time period including fuels management for timber management site preparation (target item T44) and fuels management for forest protection (target item T23). Several standards address fire management and air quality; *"A fire management plan complete with prescriptions for unplanned ignition prescribed fires, as appropriate, will be maintained to accomplish management direction and allocation contained in the Forest Plan."* (p. II-17). *"Air quality will be maintained at a level that is adequate for the protection and use of National Forest System Lands and that meets or exceeds Federal and State standards. Prescribed fire objectives for smoke management will be met within the constraints established by Montana State Airshed Group's Memorandum of Understanding."* (p. II-17).

Three monitoring items are included in the 1986 Lolo Forest Plan for fire. One monitoring item is designed to assure air quality is maintained. A second monitoring item is designed to assure accomplishment of prescribed burning targets. A third monitoring item is used to assess whether wildfire is changing the Forest's ability to meet other management area targets.

Monitoring Item 11-1 has been retained. Air quality will continue to be monitored by the Montana Department of Environment Quality (DEQ) to meet National Ambient Air Quality Standards. Monitoring Item 11-2 has also been retained. Approximately 70 percent of the Forest's prescribed burn targets are allocated to the Wildland Urban Interface (WUI). Thirty percent of the Forest's targets are allocated to areas outside of WUI. Monitoring Item 11-3 has been modified to evaluate whether unplanned ignitions are being managed for resource benefits when appropriate. The Wildland Fire Decision Support System (WFDSS) will be used to assess and manage wildfires to protect or provide for resource benefits. Potential loss of resources to other objectives is considered in the WFDSS evaluation process.

The following table displays changes to the 1986 Forest Plan fire monitoring items:

FIRE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems." (p. II-1). **Standard 43** – "Air quality will be maintained at a level that is adequate for the protection and use of National Forest System Lands and that meets or exceeds Federal and State standards. Prescribed fire objectives for smoke management will be met within the constraints established by Montana State Airshed Group's Memorandum of Understanding." (p. II-17).	11-1	Assure prescribed fire meets air quality guidelines and standards.	**(RETAIN)** **MON-FIRE-01** Is air quality maintained during prescribed fire implementation?	• Number of Notice of Violations received from DEQ. • Number of days smoke monitors within the area of the National Forest activities exceed National Ambient Air Quality Standards (NAAQS) during prescribed fire activities. • Number of public complaints received and documented regarding smoke during prescribed fire activity. • Number of burn permits from all regulatory agencies updated annually and adhered too. (All burn plans have current applicable burn permits during implementation.)	1 Year – (Annually or by Project) • Annually • During project implementation • During project implementation • Annually. Information Sources: • DEQ letters received by Agency • Thompson falls, Frenchtown, Missoula & Seeley Lake 2.5 PM monitors maintained by DEQ. • County Health Departments. • Approved Burn Plans.	v, vi, vii
Objectives – Table II.1 displays projected outputs and activities by time period including fuels management for timber management site preparation (target item T44) and fuels management for forest protection (target item T23). **Standard 47** – "A balanced Fire Management Action Plan will be implemented annually that is cost effective and commensurate with threats to life and property, public safety, values, risks, and specific resource management goals and objectives. The average annual acreage burned at the most efficient fire management program level is expected to be 2,907 acres for wildfires and 9,280 acres for prescribed fire."	11-2	Assure accomplishment of fuel treatment targets.	**(RETAIN)** **MON-FIRE-02** Have fuel treatment targets been accomplished?	• Acres treated in the Wildland Urban Interface (WUI). *(Final mitigated fuels entries should equal approximately 70%).* • Acres treated in Non-WUI. *(Final mitigated fuels entries should equal approximately 30%).*	1 Year – (Annually or by Project) Information Sources: • Forest Service Activity Tracking System (FACTS)	ii, vi, vii
Standards 44, 45, and 47 – "A fire management plan complete with prescriptions for unplanned ignition prescribed fires, as appropriate, will be maintained to accomplish management direction and allocation contained in the Forest Plan." (p. II-17). "An Escaped Fire Situation Analysis will be made for all escaped fires to determine appropriate control measures." All unplanned fire ignitions will be evaluated to determine appropriate response measures, based on values at risk, cost effectiveness, and existence of site	11-3	Evaluate impact of wildfire losses on management area targets.	**(MODIFY)** **MON-FIRE-03** Are unplanned ignitions (wildfire) being managed for resource benefits when appropriate?	• Number of wildland fires that have all or portions of the perimeter managed for resources benefit as determined by number of wildfires and Wildland Fire Decision Support System (WFDSS) decisions.	1 Year – (Annually or by Project) • Wildland Fire Decision Support System (WFDSS) • FIRESTAT	i, ii, v, vi, vii, viii

FIRE – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
specific fire management prescriptions." (p. II-17). "A balanced Fire Management Action Plan will be implemented annually that is cost effective and commensurate with threats to life and property, public safety, values, hazards, risks, and specific resource management goals and objectives." (p. II-17).						

ADJACENT LANDS, RESOURCES AND COMMUNITIES – Lolo NF

Several plan components address adjacent lands, resources and communities. The goals of the Plan state; *"Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for reginal and national needs." (p. II-1). "Provide for a broad spectrum of dispersed recreation…"* (p. II-1). *"Provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems."* (p. II-1). Management of the forest considers a sustained flow of goods and services without abrupt changes; *"…management under this Forest Plan does not create abrupt changes or sudden shifts from current direction."* (p. II-1). Economic analysis is conducted for forest management activities.

Two monitoring items are included in the 1986 Lolo Forest Plan for consideration of adjacent lands, resources and communities. One monitoring item is designed to assess the overall impacts of forest management activities on local economies and the general setting of the Forest. This monitoring item relies upon a summary of other resource monitoring items. The second monitoring item is designed to assess the impacts of activities on other adjacent lands on the ability for the Forest to achieve its Forest Plan goals and objectives.

Both monitoring item 12-1 and 12-2 have been retained. Additional sources have been provided for each monitoring item. For monitoring item 12-1, in addition to other sources, project level analysis will be used to assess the economic effect of forest management on communities. Review of subdivision requests (as submitted by Counties and local governments), and activities on adjacent private, State and Federal lands will be assessed for their impact on the Forest.

The following table displays changes to the 1986 Forest Plan adjacent lands, resources and communities monitoring items:

ADJACENT LANDS, RESOURCES AND COMMUNITIES – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for reginal and national needs." (p. II-1). "Provide for a broad spectrum of dispersed recreation…" (p. II-1). "Provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems." (p. II-1). **Objectives** – "…management under this Forest Plan does not create abrupt changes or sudden shifts from current direction." (p. II-1). "Resource management activities are significantly constrained by visual quality objectives in areas adjacent to or readily visible from major highways…" (p. II-2). **DFCs** – "At the end of the first decade, there will have been minimal change in the overall appearance of the Forest." (p. II-6). "By the end of the fifth decade, many changes will be apparent in the overall condition of the Forest." (p. II-7). Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 11** – "An economic analysis will be completed for a) timber sales larger than 1 mmbf….The project will be analyzed…considering the net public benefit and/or probable marketability…." (p. II-11).	12-1	Effects of forest management on local economy, recreation opportunities, downstream water uses, visual quality, local air quality.	**(RETAIN)** **MON-SOC-01** What effects do forest management activities have on the local economy, recreation opportunities, downstream water uses, visual quality, and local air quality?	For effects on local economy consider: • Project Present Net Values (PNVs). • Project derived employment. • Federal payments received. • Revenue sharing with State & Local Governments received. • Local forest products processing capacities and needs. For recreation, downstream water uses, visual quality and local air quality see indicators provided under monitoring items: MON-REC-02, MON-STRM-01 (instream water rights), MON-VIS-01, and MON-MON-FIRE-01	2 Year – (Biennial or by Project) • Project level economic analysis (if prepared). • Project level employment analysis (if prepared). • Project recreation analysis (if prepared). • Project water quality analysis (if prepared) • Project visual quality analysis (if prepared). • Project air quality analysis (if prepared). • US Census http://www.census.gov/quickfacts/ • Montana Department of Commerce (http://ceic.mt.gov/) • UM Bureau of Business and Economic Research – Forest Industry Research Program (http://www.bber.umt.edu/FIR/default.asp) • Timber Information Management (TIM) Reports • Headwater Economics Tools (http://headwaterseconomics.org/tools/economic-profile-system/about) – (*data compiled and evaluated every two years by Regional Office at region by forest/grassland scales*) Also see data sources for resource monitoring items MON-REC-02, MON-STRM-01 (instream water rights), MON-VIS-01, and MON-MON-FIRE-01	i, ii, v, vii, social, economic, and cultural sustainability
Goals – "Provide a sustained yield of timber and other outputs at a level that will help support the economic structure of local communities and provide for reginal and national needs." (p. II-1). "Provide for a broad spectrum of dispersed recreation…" (p. II-1). "Provide a pleasing and healthy environment, including clear air, clean water, and diverse ecosystems." (p. II-1).	12-2	Impact of activities on adjacent lands on Forest goals and objectives.	**(RETAIN)** **MON-SOC-02** What effects do adjacent land uses and activities have on management of the Forest?	• Number of subdivisions approved on adjacent private ownership. • Road and highway construction and reconstruction on adjacent State, Federal and private ownership. • Forest management activities on adjacent State, Federal and Private ownership (e.g., timber harvest, road construction).	2 Year – (Biennial or by Project) • Subdivision requests reviewed and commented on. • Highway projects reviewed and commented on. • BLM and Montana DNRC forest management activities reviewed and commented on. • Partnership and cooperative agreements (e.g., AVISTA, CFC, RMEF). • National Conservation Easement Database (NCED)	vii, social, economic, and cultural sustainability

ADJACENT LANDS, RESOURCES AND COMMUNITIES – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Objectives – "…management under this Forest Plan does not create abrupt changes or sudden shifts from current direction." (p. II-1). "Resource management activities are significantly constrained by visual quality objectives in areas adjacent to or readily visible from major highways…" (p. II-2). **DFCs** – "At the end of the first decade, there will have been minimal change in the overall appearance of the Forest." (p. II-6). "By the end of the fifth decade, many changes will be apparent in the overall condition of the Forest." (p. II-7). Fisheries on the Forest will have improved slightly…" (p. II-7). "Fisheries on the Forest will have improved. Fish habitat improvements accomplished during the first decade will have had a maintenance program that protected the improvements." (p. II-8). **Standard 11** – "An economic analysis will be completed for a) timber sales larger than 1 mmbf….The project will be analyzed…considering the net public benefit and/or probable marketability…." (p. II-11).				• Conservation Easements and other deed restrictions. • Resource improvements implemented on State, Federal and private ownership (e.g. fish ladder, removal of dams, weed treatments, closure of roads). • Recreation development on adjacent State, Federal and private ownerships (e.g. ski areas, motorized use).	• County and local government cooperative information meetings.	

LANDS – Lolo NF

Forest Plan components for lands are primarily addressed in Appendix I and J of the Forest Plan. Appendix I provides general guidelines for landownership adjustments, acquisition and disposal of Forest land. (p. I-1 to I-2). Appendix J provides guidelines for issuance and administration of special use permits. (p. J-1 to J-3).

Three monitoring items are included in the 1986 Lolo Forest Plan for lands. One monitoring item is designed to evaluate progress in land adjustments (acquisitions and conveyances). Two monitoring items assess whether right-of-way grants, utilities and transportation systems are developed within allocated corridors.

Monitoring Item 13-1 has been retained. Land adjustments will continue to be evaluated and recorded in the Forest's GIS layer and INFRA database. Monitoring Items 13-2 and 13-3 have been combined to eliminate redundancy. Siting of utilities and other transportation systems will continue to be assessed for their compliance with Management Area and other Forest Plan direction.

The following table displays changes to the 1986 Forest Plan lands monitoring items:

LANDS – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Standard 31 – "Guidelines for development of a Forest land ownership adjustment program and the proposed program are in Appendix I. In addition, the Forest may accept donations of fee or partial interests in land within or adjacent to its boundaries when proposed donation will complement National Forest management." (p. II-15). **Appendix I** – provides general guidelines for landownership adjustments, acquisition and disposal of Forest land. (p. I-1 to I-2).	13-1	Evaluate progress of landownership adjustment program.	**(RETAIN)** **MON-LAND-01** What adjustments have been made to land ownership within the Forest boundary?	• Acres of land acquired. • Acres of land exchanged. • Acres of land conveyed.	2 Year – (Biennially) • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • INFRA Database Enterprise Data Center (EDC) Forest GIS Land Ownership Layer and Metadata	vii
Standard 32 – "Power line and pipe line corridor locations will be responsive to socially defined resource values such as visual quality, recreation, economics, land uses, and the traditional impact of the landscape. Except as they cannot be mitigated, biological and physical impacts will be subordinate to consideration of social factors. The consideration of a corridor's influence on the maintenance of outputs will be subordinate to the above considerations. Locations will be in existing transportation and/or utility corridors when feasible." (p. II-15) **Management Areas (MA)** – See MA 5 (p. III-14 to III-15). **Appendix J** – provides guidelines for issuance and administration of special use permits. (p. J-1 to J-3).	13-2	Insure major utility and transportation systems are developed within identified corridors.	**(MODIFY)** **MON-LAND-02** Have major utility and transportation systems and right-of-way grants been developed within identified corridors.	• Mapped location of major utility and transportation systems as compared to mapped location of Management Area 5 – Utility Right-of-Ways	1 Year – (by Project) • Special Uses Administration project level analysis and NEPA documentation. • Natural Resource Information System (NRIS) • Natural Resource Management (NRM) • INFRA Database and Transportation Atlas • Enterprise Data Center (EDC) Forest GIS Utilities Layer • Enterprise Data Center (EDC) Forest GIS Management Area Layer	vii
See MON-LANDS-02	13-3	Assure proposed right-of-way grants are in identified corridors.	**(COMBINE)** See MON-LAND-02	See MON-LANDS-02	See MON-LANDS-02	See MON-LANDS-02

PROCESS – Lolo NF

Several plan components address process including tracking and responding to social issues and adjustment of land allocations. The project level public involvement process implemented under the National Environmental Policy Act also ensures that public interests are considered and represented. The goals of the Plan state; *"Encourage a "Good Host" concept when dealing with the public."* (p. II-1). Objectives of the Plan also ensure the; *"Lolo National Forest management under this Forest Plan does not create abrupt changes or sudden shifts from current direction."* (p. II-1). As part of Plan implementation; *"Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals is validated by the project analysis. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land allocation."* (p. V-2). *"The Forest Supervisor may amend the Forest Plan."* (p. V-5). *"The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly."* (p. V-5).

Two monitoring items were included in the 1986 Lolo Forest Plan to address process. One monitoring item is designed to track emerging issues and changing social values. A second monitoring item addresses changes to land allocations including Management Area allocations and land ownership.

Both monitoring items 14-1 and 14-2 have been retained. Several indicators and new sources including social media (Facebook) have been added to monitoring item 14-1. For item 14-1, the Forest will continue to assess and respond to public comment through general communication and project level NEPA scoping, comment, and administrative review. For item 14-2, the Forest will continue to track land allocation changes. Item 3-16 has been combined with item 14-2 to assess changes in suitability along with Management Area allocation. Project level analysis will determine the effects of these changes on Forest Plan goals and objectives.

The following table displays changes to the 1986 Forest Plan process monitoring items:

PROCESS – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals – "Encourage a "Good Host" concept when dealing with the public." (p. II-1). **Objectives** – "Lolo National Forest management under this Forest Plan does not create abrupt changes or sudden shifts from current direction." (p. II-1). **Standard 6** – "The program will provide for use of the Forest on a year-round basis in areas that will minimize conflicts between user groups and other Forest resources." (p. II-9). **Standard 55** – "The Forest will coordinate, on a yearly schedule, with representatives from the Confederated Salish and Kootenai Tribes to discuss the types and location of proposed Forest undertakings. Coordination with other Native American groups could occur if there was reason to believe traditional or contemporary religious areas, important to these groups, were present on the Forest" (p. II-20). **Implementation and Monitoring** – "Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals is validated by the project analysis. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land allocation." (p. V-2). "The Forest Supervisor may amend the Forest Plan." (p. V-5). "The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly." (p. V-5).	14-1	Track emerging issues or changing social values.	**(RETAIN)** **MON-PROC-01** Are emerging issues or changing social values being tracked?	• General public comments received. • Collaborative group comments received. • General public meetings. • Project scoping period comments received. • Project comment period comments received. • Project appeals and objections received. • Project litigation claims received • Consultation responses from other Federal, State, local and tribal governments.	1 Year – (Annually or by Project) • Line Officer and staff public contact records. • Public Information Officer public contact records. • Meeting notes. • Project planning (NEPA) public response to scoping, comment, and objection periods (administrative review process). • Social Media Platforms (internet blogs, twitter, and Facebook). https://twitter.com/LoloNF and at https://www.facebook.com/Lolo-National-Forest-409424909216306/?ref=hl • Public newspaper articles and editorials.	i, ii, iii, iv, v, vi, vii, viii, social, economic, and cultural sustainability

PROCESS – Lolo NF						
Selected 1986 Plan Components	**1986 Forest Plan Monitoring Item**	**1986 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Objectives – "Lolo National Forest management under this Forest Plan does not create abrupt changes or sudden shifts from current direction." (p. II-1). "This Forest Plan improves the environmental quality of the Forest over current direction through strong Forest goals, Forest-wide standards, Management Area standards and direction…" (p. II-2). **Management Area Direction** – "The National Forest land within the Lolo National Forest has been divided into 28 management areas, with different management goals, resource potentials and limitations." (p. III-1). "The boundaries represent transitions from one set of opportunities and constraints to another with management direction established for each." (p. III-1) **Implementation and Monitoring** - "Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals is validated by the project analysis. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land allocation." (p. V-2).	14-2	Correct errors in original land allocations and evaluate effect of all changes on plan.	**(RETAIN)** **MON-PROC-02** Have errors in original land allocations been evaluated and corrected?	• Number of land management allocation changes made. • Acres of land management allocation changes made. • Type of land management allocation changes made. • Changes in land suitability made. • Land allocations made to newly acquired lands.	1 Year – (Annually or by Project) • Project specific Management Area allocation changes. • Project level evaluation and NEPA documentation and decisions with Forest Plan Amendments that change Management Area allocations. • Enterprise Data Center (EDC) Forest GIS Management Area Layer and Metadata	vii

1987 BITTERROOT FOREST PLAN MONITORING ITEMS – CHANGES

INTRODUCTION

To meet the requirements of the 2012 Planning Rule, monitoring items in the 1987 Bitterroot Forest Plan have been changed to read as a question. In some cases, monitoring items have been modified, added, combined or dropped where they were determined to be: 1) ineffective for addressing plan components, 2) duplicative in nature, 3) economically infeasible, 4) needed to address a plan component, or 5) new science or technology supported monitoring with a different tool or scale. Table 2, below, compares the differences between the 1987 monitoring elements and the revised elements that would be compatible with the 2012 Planning Rule.

For additional reference, Table IV-1, (Chapter IV, Implementation) of the 1987 Bitterroot Forest Plan fully displays the 1987 Plan Monitoring Requirements. Table IV is included in Appendix B of this document. Components of the 1987 Bitterroot Forest Plan may be viewed online at: http://www.fs.usda.gov/bitterroot (on left side of screen click on **Land and Resources Management**, click on **Planning,** then click on **Bitterroot Forest Plan** in the center of the screen to download the Forest Plan).

Changes are summarized in the following tables in the same order as the resource monitoring items are displayed in the 1987 Forest Plan. A narrative is provided for each resource to explain rationale for change. Changes to each monitoring item are displayed in red as follows:

- **RETAIN –** monitoring item is kept. Minor changes may be made to indicators and sources.
- **MODIFY** – monitoring item changed to better assess plan components, remove or add indicators and data sources, or include other monitoring items.
- **COMBINE** – monitoring item combined with another monitoring item to eliminate duplication or better assess plan components.
- **REMOVE** – monitoring item dropped because it is no longer needed or does not adequately address plan components.
- **NEW** – monitoring item added to address plan components or assess resource considerations removed from other monitoring items.

Monitoring item reference numbers have been updated to provide consistency with other Forest Plans recently revised in Region 1 under the 2012 planning rule as following:

MON-RESOURCE-NUMBER

For example, MON-WLF-01, would indicate monitoring item 1 for the wildlife resource.

WILDLIFE – Bitterroot NF

Several Bitterroot Forest Plan components address wildlife habitat and recovery of Threatened and Endangered species and protection of sensitive species. The goals of the Plan state; *"Provide habitat to support viable populations of native and desirable non-native wildlife and fish. Maintain habitat for the possible recovery of threatened and endangered species. Maintain riparian flora, fauna, water quality and recreation activities* (p. II-3). Pileated woodpecker and pine marten are identified as "indicator species" for old growth on FP II-19 under Forest-wide Management Standards/Resource Standards/Wildlife and Fish (1). Under the same section, subsection (7) on FP II-20, cutthroat trout populations are identified as an "indicator" of fisheries habitat changes. And finally, under the same section, subsection (11) on FP II-20, elk are identified as an "indicator" of commonly hunted ungulate species and the status of their habitat. None of these designations actually uses the term "Management indicator species" (MIS), but the Bitterroot National Forest has been addressing these species in a manner similar to MIS (p. II-19). *"For threatened and endangered species occurring on the Forest, including the gray wolf, peregrine falcon, and bald eagle, manage to contribute to the recovery of each species to non-threatened status.* In the 1987 Forest Plan, no formal recovery plan was approved for threatened and endangered species on the Bitterroot National Forest (II-21). Since then, bull trout, grey wolf, and lynx have been listed and are managed according to the recovery plans identified by the endangered species act. Peregrine falcon and bald eagle have been delisted and are now *managed as sensitive species. The Forest Plan goal to"Provide habitat to support viable populations of native and desirable non-native wildlife and fish and to "Maintain habitat for the possible recovery of threatened and endangered species. (p. II-3).*

To determine attainment of plan components, eight wildlife monitoring items are included in the 1987 Bitterroot Forest Plan. Two monitoring items are designed to address big game habitat, one evaluates old growth, two look at elk hunter success, one is concerned with habitat diversity, and two evaluate population trends of MIS associated with old growth habitat. The Forest will continue to rely on Montana Fish Wildlife and Parks data for assessing elk numbers and hunter effectiveness.

The following table displays changes to the 1987 Forest Plan wildlife monitoring items:

WILDLIFE – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: "Seek out opportunities for biologically appropriate management, maintain habitat to support viable populations." (p. II-3). **Objectives:** "Maintain habitat to support viable populations, maintain vegetative diversity." (p. II-5). **Standards:** "Amount and distribution of old growth used to ensure sufficient habitat for viable populations including pine marten and pileated, stand condition in old growth will vary by HT and landform. All snags that are not a safety risk will be retained. Old growth characteristics will be retained." (p. II-19).	6	Acres of Old growth by habitat type, land class and management area	**(RETAIN)** **MON-WLF-01** What is the quantity of old growth?	Acres of old growth that meet Region 1, Old Growth Definition *(Green et al 2004 as amended)*	5 Years Forest Inventory and Analysis (FIA) National Program Database (Old Growth)	ii
Goals: Provide habitat to support viable populations. (p. II-3). **Objectives**: Provide optimal habitat on elk winter range, maintain habitat to support viable populations. (p. II-5). **Standards:** Manage roads to attain or maintain 50% EHE in 3rd order drainages. (p. II-21).	7, 38	Elk habitat effectiveness Elk Population in relation to habitat changes	**(MODIFY/COMBINE)** **MON-WLF-02** Is habitat for elk providing the ecological needs to ensure elk populations remain in desired ranges?	• **Elk numbers/hunting district -** Review of FWP elk trend count data and comparison to population objectives in the Montana Elk Management Plan (FWP 2004).	2 Years Montana Fish Wildlife Parks elk trend count data Project analysis results	vii
Goals: Provide habitat to support viable populations of native and desirable non-native wildlife and fish. (p. II-3). **Objectives:** Maintain habitat to support viable populations of wildlife species. Cooperate with States to maintain current level of big-game hunting opportunities. (p. II-5).	8, 9	Hunter trends and season. Bull elk harvest in first week of season	**(REMOVE)** Question answered by MON-WLF-02 above and Montana FWP collects and retains these records.		Drop, elk harvest the first week of big game rifle season no longer tracked by FWP. FWP tracks trends and reports annually. They are responsible for hunting regulation changes in response to big game trends.	
Goals: Seek out opportunities for biologically appropriate management, maintain habitat to support viable populations, seek out opportunities for biologically appropriate and cost-effective uneven-aged management. (p. II-3). **Objectives:** Maintain habitat to support viable populations, maintain vegetative diversity, provide a mix of species offered that is similar to standing. (p. II-5).	5	Diversity, failure to meet wildlife objectives	**(REMOVE)** This question answered by MON-VEG-02 that asks "Are Forest Stands moving towards Desired Future Condition?" and is concerned with structure and composition of vegetation.			

WILDLIFE – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Standards: Amount and distribution of old growth used to ensure sufficient habitat for viable populations including pine marten and pileated, stand condition in old growth will vary by HT and landform. All snags that are not a safety risk will be retained. Old growth characteristics will be retained, prevent creation of monocultures, implement scientifically based methods of seed collection. (p. II-19).						
Goals: Provide habitat to support a viable population of native and desirable non-native wildlife and fish (p. II-3). **Objectives:** Maintain habitat to support viable populations of wildlife species. Participate and cooperate in T and E species ID, recover and protection. (p. II-5). **Standards:** Amount and distribution of old growth will be used to ensure sufficient habitat for maintenance of viable populations of .., including pine marten and pileated woodpecker indicator species. (p. II-19).	39	Pine martin population in relation to habitat changes.	**(RETAIN)** **MON-WLF-03** Is habitat for pine marten providing for ecological needs to ensure these populations remain in desired ranges?	• Population trend monitoring using established transects	2 Years Population trends using transects or other methodologies Number of detections per mile of transect run, with the acceptable variability of 5% +/- the latest 5 year average.	vii
Goals: Provide habitat to support a viable population of native and desirable non-native wildlife and fish (p. II-3). **Objectives:** Maintain habitat to support viable populations of wildlife species. Participate and cooperate in T and E species ID, recover and protection. (p. II-5). **Standards:** Amount and distribution of old growth will be used to ensure sufficient habitat for maintenance of viable populations of .., including pine marten and pileated woodpecker indicator species. (p. II-19).	40	Pileated woodpecker populations in relation to habitat changes.	**(RETAIN)** **MON-WLF-04** Is habitat for pileated woodpecker providing for ecological needs to ensure these populations remain in desired ranges?	• Population trend monitoring using established transects	2 Years Population trends using transects or other methodologies Number of detections per mile of transect run, with the acceptable variability of 5% +/- the latest 5 year average.	vii

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Bitterroot NF

Several plan components address the aquatic environment and fisheries habitat. The goals of the Plan state; *"Provide habitat to support viable populations of native and desirable non-native wildlife and fish. Maintain habitat for possible recovery…Maintain riparian flora, fauna, water quality* (p. II-3). *"Maintain or enhance fish habitat by maintaining riparian habitat" (p. II-5). "Fisheries on the Forest will have improved slightly…"* (p. II-7). Standards state that *"Cutthroat trout populations will be used as an indicator of fisheries habitat changes.* (II-20) *"Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress."* (p. II-14).

INFISH, Inland Native Fish Strategy amended the Forest Plan in 1995. It defines RHCA's or Riparian Habitat Conservation Areas where several management standards and guidelines apply and are used in project planning to protect and maintain fisheries habitat.

Three monitoring items are included in the 1987 Bitterroot Forest Plan for the aquatic environment and fisheries habitat. Two have been reported together; "*Provide habitat to support viable populations of native and desirable non-native wildlife and fish. Maintain habitat for possible recovery…Maintain riparian flora, fauna, water quality (*p. II-3*),* with the objective of *Maintain habitat to support current populations of catchable trout. Maintain or enhance fish habitat by maintaining riparian habitat.* (p. II-5). The other monitoring item is designed to track improvements to fish habitat (accomplishment of improvement projects). *Maintain riparian flora, fauna, water quality and recreation activities* (p. II-3) and *"Manage riparian areas to prevent adverse effects on channel stability and fish habitat."* (p. II-6). These monitoring items have been retained.

Bull trout were selected as the focal species for fisheries because their habitat needs incorporate the highest water quality conditions that occur in the Bitterroot River basin. Specifically, bull trout need cold and clean water with low amounts of sediment, complex habitat with abundant large wood and pools, and connected habitat so that different life history stages can move freely throughout the watershed at different times of the year. Collectively, the habitat requirements of bull trout are commonly referred to as "the four C's" (cold, clean, complex, and connected).

Physical and biological components interrelate, the Bitterroot National Forest felt it was not necessary to separate habitat condition monitoring from population monitoring as the Lolo National Forest did because the Forest and Montana Fish Wildlife and Parks (MTFWP) work closely together to collect and calculate estimates of fish population. While much fish population monitoring is conducted by MTFWP, especially on the larger rivers and streams of the valley, the Forest partners with MTFWP to conduct population monitoring at the project scale and for project effects analysis purpose throughout the valley.

The following table displays changes to the 1987 Forest Plan aquatic environment and fisheries habitat monitoring items:

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Provide habitat to support viable populations of native and desirable non-native wildlife and fish. Maintain habitat for possible recovery…Maintain riparian flora, fauna, water quality… (p. II-3). **Objectives:** Maintain habitat to support current populations of catchable trout. Maintain or enhance fish habitat by maintaining riparian habitat… Cooperate with state agencies… (p. II-5). **Standards:** Numbers 7, 8, 10, 16. (p. II-19 through 21). INFISH amended the Forest Plan in 1995	21, 41,	Validation of aquatic habitat quality and fish populations' assumptions used to predict effects of activities. Cutthroat trout population in relation to habitat changes.	**(RETAIN)** **MON-AQT-01** What is the status and trend of stream habitat?	Pacfish Infish Biological Opinion (PIBO) Metrics • Macroinvertebrates • Bank Angle • Wood Frequency • Percent Fines • Residual Pool Depth • Percent Pools • Median Substrate Size (D50) • Overall Habitat Indicators Improved Stream temperatures Aquatic organism passage at road crossings	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates) • Biological Opinion Stream Function Rating Matrix (FUR to FAR to FA trend data) • Project-level stream condition surveys • AOP structure surveys	iv, vi
Goals: Provide habitat to support viable populations of native and desirable non-native wildlife and fish. Maintain habitat for possible recovery…Maintain riparian flora, fauna, water quality… (p. II-3). **Objectives:** Maintain habitat to support current populations of catchable trout. Maintain or enhance fish habitat by maintaining riparian habitat… Cooperate with state agencies… (p. II-5). **Standards:** Numbers 7, 8, 10, 16. (p. II-19 through 21). INFISH amended the Forest Plan in 1995	21, 41,	Validation of aquatic habitat quality and fish populations' assumptions used to predict effects of activities. Cutthroat trout population in relation to habitat changes.	**(RETAIN)** **MON-AQT-02** What is the status and trend of native aquatic species?	Presence/Absence, Distribution, Abundance, Trend, and/or Genetic Status of: • Westslope Cutthroat Trout • Bull Trout • Western Pearlshell Mussel • Native Amphibians • Macroinvertebrates • Other fish and aquatic species	2 Years • eDNA samples • Electro-Shocking Surveys • Snorkel Surveys • Redd Counts • Pacfish Infish Biological Opinion (PIBO) Metrics (macroinvertebrates). • Montana FWP, Montana Fisheries Information System (MFISH) (http://fwp.mt.gov/fishing/mFish/) • Montana FWP, Angling Pressure Surveys (http://fwp.mt.gov/fishing/anglingData/anglingPressureSurveys/default.html) • Montana FWP, Fish Stocking Plans and Reports (http://fwp.mt.gov/fishing/planAFishingTrip/fishStocking/default.html)	ii, iii, iv, vi Bull trout were selected as the focal species for fisheries because their habitat needs incorporate the highest water quality conditions that occur in the Bitterroot River basin. The habitat requirements of bull trout are commonly referred to as "the four C's" (cold, clean, complex, and connected).
Goals: Maintain riparian flora, fauna, water quality and recreation activities. (p. II-3). **Objectives:** Manage riparian areas to prevent adverse effects on channel stability and fish habitat. (p. II-6). **Standards, Roads in Riparian:** Long list of items related to road construction and maintenance and riparian health. (BRT II-20 #8 and II-5) (p. II-32 and 33).	22	Riparian area condition	**(RETAIN)** **MON-AQT-03** What is the condition of riparian areas following management activities?	Activities that improve habitat for aquatic species including but not limited to native fish and amphibians: • Miles of stream habitat enhanced. • Acres of wetland improved. • Acres of streamside planted. • Acres of floodplain restored. • Number of stream crossings or barriers removed. • Number of stream crossings (road or trail) improved.	2 Years Stream and riparian monitoring as identified in project analysis (implementation and effects monitoring) Watershed Improvement Tracking (WIT) INFRA Database	i, vii

AQUATIC ENVIRONMENT AND FISHERIES HABITAT – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
INFISH				• Number of stream diversions (irrigation) improved. • Acres instream water rights applied for and/or secured. • Miles of road decommissioned within 150/300 feet of streams. • Number of Best Management Practices (BMPs) implemented. • Stream restoration activities accomplished (by 6th HUC or TMDL Watershed). • Number of watersheds with condition class improved.		

TIMBER – Bitterroot NF

Several plan components address timber and vegetation and the interrelationship of vegetation management with other resource objectives. The goals of the Plan state; *"Seek out opportunities for biologically appropriate and cost-efficient uneven-aged management Convert high-risk insect or disease infested stands to young, healthy stands.* (p. II-3). *"Provide wood products to sustain a viable local economy.* (p. II-3). *Strive for economically efficient management. (p. II-4).* The Plan's objectives also state that forest products and services are provided in a sustained flow; and insure a mix of species on the landscape *"Offer affordable sales, Maintain sale preparation at a level to provide flexibility in offering sale that are responsive to market conditions and economic efficiency. Achieve a species mix of offered volume that is nearly proportional to standing inventory. Convert high-risk or insect and disease infested stands to young, healthy stands. (p. II-6).*

Thirteen items are included in the 1987 Bitterroot Forest Plan for timber. These are related to volume harvested, disease or tree mortality, suitable lands, reforestation and appropriate silvicultural prescriptions. Another is concerned with economic feasibility of projects offered.

Twelve of these monitoring items can provide duplicative information and have been combined and modified to determine if vegetation management activities are implemented according to standards found on pages II-21 through II-23 of the Forest Plan. One has been retained to address economic sustainability.

The following table displays changes to the 1987 Forest Plan timber monitoring items:

TIMBER – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Seek out opportunities for biologically appropriate and cost-efficient un-even aged management. Provide sawtimber and other wood products to help sustain a local economy (p. II-3). **Objectives:** Achieve a species mix of offered volume that is nearly proportional to standing inventory. Implement Regional Guide utilization standards by the middle of Plan Period (p. II-6). S**tandards**: Items 3, 5, 8, 9, 10, 12 on pages II-22-23 of the Forest Plan.	11, 12, 13, 14, 15, 16, 25, 34, 35	Volume and area offered, sold, and harvested by management area. Lodgepole and ponderosa pine volume offered Volume offered by logging systems. Silvicultural prescriptions Timber mortality Timber yields/acre Lands adequately restocked. Examine unsuitable timberlands for suitability. Evaluate maximum size limit for harvest areas	**(MODIFY)** **MON-VEG-01** Are silvicultural prescriptions being implemented as planned?	• Review of timber sale inspection reports and silvicultural prescriptions for consistency with environmental analysis	2 Years Review of prescriptions Review of Timber Sale Inspection reports Forest Plan Monitoring Efforts Environmental analysis FACTS	ii, vii
Goals: Seek out opportunities for biologically appropriate and cost-efficient un-even aged management. Provide sawtimber and other wood products to help sustain a local economy (p. II-3). **Objectives:** Achieve a species mix of offered volume that is nearly proportional to standing inventory. Implement Regional Guide utilization standards by the middle of Plan Period. Convert high-risk or insect and disease infested stands to young, healthy stands (p. II-6). **Standards:** Items 3, 4, 5, 6, 8, 9, 10, 12 on pages II-22-23 of the Forest Plan.	14, 33	Silvicultural prescriptions Lands adequately restocked.	**(MODIFY)** **MON-VEG-02** Are forest stands moving towards desired future conditions?	Information gathered from FIA data: • Conifer Tree species distribution Treatment acres of activities that affect forest resiliency: • Acres regeneration and removal harvests. • Acres artificial and natural regeneration from prior regeneration harvests. • Acres intermediate harvest to reduce forest density. • Acres stand improvement activities. • Acres mechanical fuels treatments not related to timber harvest. • Acres of prescribed burning.	2 Years where available • FIA data (ten year availability cycle) VMap as updated and available Sales offered and sold (available annually)	vii

TIMBER – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
				• Acres of artificial and natural regeneration following wildfire. • Acres treated to decrease conifer encroachments or improve native grassland/shrubland communities (through weed treatments or prescribed fire). • Acres treated to restore forest pattern (harvest and prescribed burn larger than 40 acres, natural fire, and group selection harvest where patches emulate natural patch size). See: *Restoration and Resiliency Treatment Accomplishments Leading to a More Resilient Forest and Grassland Condition*. (Version 2.2 6/24/2013) http://fsweb.r1.fs.fed.us/forest/silv/index.html		
Goals: Seek out opportunities for biologically appropriate and cost-efficient un-even aged management. **Objectives:** Convert high risk or insect and disease infested stands to young, healthy stands. **Standards:** Items 3, 8 on pages II-22-23 of the Forest Plan.	36, 37	Mountain pine beetle infestations. Insect and disease organism status as a result of activities	**(MODIFY)** **MON-VEG-03** What is the status and change of vegetation disturbance?	Acres of burned areas Acres if bark beetle hazard Acres of Defoliators hazard Root disease hazard	2 Years FIA when available FHP Aerial Detection Flight data (available annually) Ravage (for large scale fire) FACTS	ii, vi

WATER AND SOIL – Bitterroot NF

In addition to the aquatic environment and fisheries habitat components described above, several plan components specifically address water and soil. The goals of the Plan state; *"Maintain soil productivity, water quality, and quantity." And "control noxious weeds to protect resource values and minimize adverse effects on adjacent land."* (p. II-3). The objectives of the Plan emphasis both water and soils; *"Maintain sufficient instream flows to support quality fish habitat, and manage riparian areas to prevent adverse effects on channel stability and fish habitat." (p. II-6).* A desired condition is that; *"management activities are designed to maintain soil productivity* (p. II-7). Standards on pages II-25-II-25 emphasize soil protection and maintenance of land productivity and protection of aquatic ecosystems.

Five monitoring items are included in the 1987 Bitterroot Forest Plan for water and soils. Two were concerned with hydrologic recovery and changes in peak and low flows from management activities. These two items are recommended to be removed as these topics are more appropriately covered at the research level. Two 1987 Forest Plan items are concerned with cumulative watershed effects and sediment changes after project implementation. These have been modified to look at application and effectiveness of Soil and Water Conservation Practices rather than attempting to measure changes in sediment in the water column. Soil productivity is discussed in another item while invasive plant species inventories are recoded in another.

The monitoring item for invasive plants was included in this section because weeds affect land productivity. Forest Plan Goals state "*Control noxious weeds to protect resource values and minimize adverse effect on adjacent private land.*" (p. II-3). The objectives to *"Complete an evaluation of the risk of spread of noxious weeds in vegetative communities and implement control strategies. Emphasize the use of biological control to gain the upper hand in the control of spotted knapweed and leafy spurge."* (p. II-56.). One item for invasive plants was included in the 1987 Forest Plan, it has been modified and included in this transition.

The following table displays changes to the 1986 Forest Plan water and soils monitoring items:

WATER AND SOIL – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: control noxious weeds to protect resource values and minimize adverse effects on adjacent land. (p. II-3). **Objectives:** Complete evaluation of risk of spread and implement control strategies, emphasize use of biological control for knapweed and leafy spurge. (p. II-6). **Standards:** Primary means of preventing, containing or controlling will be through vegetative management practices such as biological control, herbicides may be used to provide short term protection on specific sites after analysis. (p. II-29).	10	Inventory of infestations of leafy spurge, dalmation toadflax, goatweed and spotted knapweed.	**(MODIFY)** **MON-INV-01** What is the change in terrestrial invasive plant species area?	Net infested areas Gross acres inventoried Acres reduced by treatments in sampled areas	2 years Field inventories, local monitoring efforts Forest Employee identification of sites TESP-IS / FACTS	ii
Goals: Maintain soil productivity, water quality, and quantity. (p. II-3). **Objectives:** Manage sufficient instream flows to support quality fish habitat. Manage municipal watersheds to assure…high quality water. Manage riparian areas to prevent adverse effects on channel stability… (p. II-6). **Standards:** Utilize equivalent road area or similar to evaluate CE. As part of project planning, site specific water quality effects will be evaluated and control measured designed to ensure project will meet WQ standards, SWCP will be part of project design. (p. II-23, 24 and 25).	17, 19	Water and sediment yields; flow and sediment sampling before and after project activities Cumulative offsite watershed effects	**(MODIFY)** **MON-WTR-01** Is management improving or maintaining watershed conditions that support desired riparian and stream characteristics?	303d streams *(miles of impaired streams removed from list)* Watershed Condition Class (WCF) (number of watersheds moved from one Class to a higher functioning Class; e.g. 3 to 2 or 2 to 1) Watershed conditions/improvement projects (acres, miles) designed to meet TMDL direction (crossings, road segments parallel to streams, contributing area) and effectiveness. Best Management Practices -BMP reviews conducted on forest and findings.	2 Years Monitoring as identified in project analysis Effects monitoring following implementation Change in WCF condition Change in 303(d) listing National and State BMPs: implementation and effectiveness reports. Accomplishment reporting Stream channel inventories Watershed Improvement Tracking	i, ii
Goals: Maintain soil productivity, water quality, and quantity. (p. II-3). **Objectives:** Manage sufficient instream flows to support quality fish habitat. Manage municipal watersheds to assure…high quality water. Manage riparian areas to prevent adverse effects on channel stability… (p. II-6). **Standards:** Utilize equivalent road area or similar to evaluate CE. As part of project planning, site specific water quality effects will be evaluated and control measured designed to ensure project will meet WQ standards, SWCP	18, 20	Hydrologic recovery in sensitive drainages by land class and habitat type Peak flow and low flow effects	**(REMOVE)** Refer to rational found in Forest Plan Monitoring Report 2004, Items 18 and 20.		Monitoring found that visual and hydrologic recovery occur at different rates. Visual monitoring is now focused in Item 4 and all the hydrologic monitoring has been combined into one monitoring item because of the apparent overlap of Items 18 and 20. This item will be dropped because we do not have capacity to validate hydrologic recovery without conducting research level studies. Literature review related to stream flow modeling and hydrologic recovery found that there is sufficient literature to address the issue of timber harvest on late season flows. Changes in stream flow are mostly due to precipitation with a smaller influence from vegetation management.	

WATER AND SOIL – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
will be part of project design. (p. II-23, 24 and 25).					More complete information is found in the 2004 Bitterroot National Forest Plan Monitoring Report.	
Goals: Maintain soil productivity. (p. II-3). **Objectives:** Design management activities to maintain soil productivity. (p. II-6). **Standards:** Including soil survey and interpretations will be provided…, Plan and conduct land management activities so that reduction in soil productivity caused by detrimental compaction…are minimized. (p. II-23-26).	31	Timber sale effects including soil compaction, displacement, and puddling and severe burns	**(RETAIN)** **MON-SOILS-01** Are management activities impairing soil productivity?	• Detrimental soil disturbance • Field inventories and surveys • Environmental analysis	2 Years R1 Soil Monitoring Protocol	viii

RECREATION – Bitterroot NF

Several plan components address recreation. The goals of the Plan state; "Provide a broad spectrum of recreation opportunities, "*Provide for mix of dispersed recreation. Evaluate need for developed recreation, reconstruct trails as needed, rec. residences*. (p. II-2). One of the objectives of the Plan is; ""*Provide for mix of dispersed recreation. Evaluate need for developed recreation, reconstruct trails as needed, evaluate recreation residence permits* (II-4 and 5). "*Emphasize motorized and nonmotorized semiprimitive recreation activities*" (II-37). The future condition of the Forest is; *"A variety of high quality recreation areas will have been available to meet the anticipated 6 percent increase in demand for quality experiences"* (p. II-13)

Five monitoring items are included in the 1987 Bitterroot Forest Plan for recreation. One monitoring item is designed to track effects of off road motorized vehicle use. Another monitoring item is designed to confirm that a variety of recreation opportunities are being provided. A third monitoring item tracks changes in the roadless character of the Forest.

Monitoring Items 1 and 2 have been combined. Campground use numbers, field observations and National Visitors Use Monitoring surveys (NVUM) will be used to assess conditions and will replace RIM Use Records and the Recreation Opportunity Guide as the primary tool for assessing recreational use. Monitoring Item 3 will monitor activities within roadless areas as described under the provisions of the 2001 Roadless Rule. It will also track activities in roadless areas that could alter their character. Items 28 and 29 have been combined to consolidate evaluation of effects management activities on roads and trails and has also been retained. National Visitor Use Monitoring (NVUM) surveys provide more statistically accurate data on recreation use and allows the Forest to compare its recreational use with other Forests throughout the Nation. The Motorized Vehicle Use Map (MVUM) and Over Snow Vehicle Use Map (OSVUM) will be used to monitor roads open for recreational use.

The following table displays changes to the 1987 Forest Plan recreation monitoring items:

RECREATION – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Provide a broad spectrum of recreation opportunities. (p. II-4). Provide for mix of dispersed recreation. Evaluate need for developed recreation, reconstruct trails as needed, rec. residences. (p. II-2). **Standards:** Review travel plan annually, build trailheads to provide access to trail systems, information and education used to meet visitor needs. (p. II-18).	1 and 2	Compare Actual to projected use and capacity by Recreation Opportunity Spectrum (ROS) Condition of Developed Sites.	**(MODIFY)** **MON-REC-01** What actions have been taken to change ground conditions to attain ROS objectives? What actions have impacted ROS objectives?	• Miles of trail maintained. • Miles of road maintained. • Number of campgrounds maintained. • Number of ski areas permitted. • Number of developed recreation sites maintained. • User survey responses. • Number of guide permits issues and service days. • Challenge cost share agreements and partnership agreements. • Number of recreation user events. • Number of cabin, lookout, and campsite reservations issued.	2 Years • Forest Transportation Atlas (INFRA Database) • Special Use Data System (SUDS Database) • National Visitor Use Monitoring Surveys (NVUM) • Trailhead and Recreation Site Registration (where available) • NRIS – National Recreation Information System Occupancy and Revenue Reports • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • National Recreation Reservation System (NRRS) • Wilderness and National Recreation Area Limits of Acceptable Change (LAC) • Montana Fish Wildlife and Parks Hunter User Information (http://fwp.mt.gov/doingBusiness/reference/surveys/hunterHarvest.html) • Motorized Vehicle Use Map (MVUM) • Over Snow Vehicle Use Map (OSVUM) • Recreation Opportunity Spectrum (ROS)	v, vii
Goals: Emphasize motorized and nonmotorized semiprimitive recreation activities. (p. II-37). **Standards:** 1) Manage for recreation activities associated with roadless areas… 2) Travel plan will identify areas...open for use and types of vehicles permitted. 3) ROS is semiprimitive motorized and nonmotorized. 4) Facilities and trails will be compatible with semiprimitive setting. 5) … (several) roads will be managed to provide recreation access. 6) Pending resolution by Congress… will be administered according to goals and standards established for MA (management area) 6. (p. III-37).	3	Unroaded Areas	**(MODIFY)** **MON-RDLS-01** What is the change in the roadless base? What activities have occurred in roadless areas to change their roadless character?	• Activities in Inventoried Roadless Areas as provided for in 36 CFR 294.12 and 294.13 • Acres of Wilderness • Acres of proposed wilderness • Acres of Inventoried Roadless Areas • Acres of Inventoried Roadless Areas substantially altered (36 CFR 294.13(b) (4)). • Acres of Inventoried Roadless Area not substantially altered. • Miles of National Forest System Road (NFSR) within Inventoried Roadless Areas • Miles of Unauthorized (non-system) road within Inventoried Roadless Areas	2 Years • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • Enterprise Data Center (EDC) Forest GIS Layer • Forest Transportation Atlas (INFRA Database)	ii
Goals: Provide a safe trail system that protects soil and water resources. (p. II-2).	28, 29	ORV effects on land	**(MODIFY)** **MON-REC-02** Are management activities effective in reducing	• Number citations NVUM/OSVUM, and Resource violations • Number of closure orders due to resource concerns	2 Years LEIMARS (LEO database) Type of changes to MVUM and OSVUM NVUM, INFRA, Condition Site Surveys	v, vii,

RECREATION – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Objectives: Evaluate the need for increasing or decreasing developed recreation facilities. Restore or reconstruct trails. (p. II-4 and 5). **Standards:** Review travel plan annually. ORV use will be controlled to prevent soil degradation. Priority for trail reconstruction and relocation will be based upon safety, resource damage and type of use. (p. II-18).		Recreation and trail use effects on land	resources concerns related to off-road vehicle use, other trail use or recreation site use?	Number of developed recreation facilities	INFRA, TRACS	

RANGE – Bitterroot NF

Domestic livestock grazing and range management remain a relatively small component of permitted uses on the Bitterroot National Forest. The goals of the Plan state; ***"****Manage to provide livestock forage where environmental quality can be protected and mgt. is efficient. Objective p. II-6: Provide forage for current actual use about 10,000 aum/year. (animal unit months)"* (p. II-3). The desired future condition of the forest indicates that; *"Livestock use will have been at or below the present level and will have occurred in currently existing range allotments. (p. II-14). "Allotments may be closed if permittee stops cattle operation, if transitory range is eliminated, not cost effective, or environmental quality can't be protected."* (p. II-29)

One monitoring item is included in the 1987 Bitterroot Forest Plan for range and included review of forage production, and range condition. This item has been modified. Although it uses similar indicators it relates them to the carrying capacity of the allotment.

The following table displays changes to the 1987 Forest Plan range monitoring items:

RANGE – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Manage to provide livestock forage where environmental quality can be protected and mgt. is efficient. Objective p. II-6: Provide forage for current actual use about 10,000 aum/year. (p. II-3). **Standards:** Allotments may be closed if permittee stops cattle operation, if transitory range is eliminated, not cost effective, or environmental quality can't be protected. (p. II-29).	30	Livestock effects on land	**(MODIFY)** **MON-RNG-01** Are livestock managed for the carrying capacity of the land?	Utilization, bank trampling, riparian condition, as it relates to livestock use. Streambank trampling measurements	2 Years As directed in environmental documents or operating plans Allotment inventories collected by Range and other Forest Specialists associated with monitoring range condition. Information stored in allotment management folders.	vii, viii

ROADS – Bitterroot NF

Several plan components address roads and the transportation system and are scattered through pages II-3 through II-33 of the Plan. The goals of the Plan state that; *"Design transportation system and road management programs that are responsive to public concerns and protect resource goals."* (p. II-3). Several standards address where motorized vehicles may travel and how the road system will be managed to protect other resources; "Minimize extent of road system needed for resource mgt. and need for capital investment funds, minimize effects on water quality and fish habitat during construction and maintenance. (p. II-7) *"Roads will be maintained to design standards* (p. II-27). Road construction standards on pages II-29 through II-33 discuss resource protection, revegetation and maintenance.

One monitoring item is included in the 1987 Bitterroot Forest Plan to assess roads. This has been retained.

The following table displays changes to the 1987 Forest Plan transportation or roads monitoring items:

ROADS – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Design transportation system and road management programs that are responsive to public concerns and protect resource goals. (p. II-3). **Objectives:** Minimize extent of road system needed for resource mgt. and need for capital investment funds, minimize effects on water quality and fish habitat during construction and maintenance. (p. II-7). **Standards:** Roads will be maintained to design standards, roads will be closed to public use if adequate road maintenance funds are not available, all roads will be designed to facilitate…vegetative recovery… water bar spacing guide. (p. II-27 and 29-33).	24	Road construction, mitigation and maintenance standards including BMP's.	**(RETAIN)** **MON-RDS-01** Do roads meet construction standards and BMPs?	Road related issues identified in Timber Sale Inspection Reports Road maintenance needs complied by Engineering Staff BMP violations related to road/stream interaction	2 Years Timber Sale Inspection reports DNRC BMP Audits where applicable Construction and Maintenance Contracts • ER/COR Reports • Timber Sale Inspection Report Sediment source and road condition inventories conducted during project planning. Road Analysis (USDA FS, 1999)	vii, viii

MINERALS – Bitterroot NF

Plan components for minerals are addressed under the Plan's standards. The Plan states that; *"Provide for the development of mineral and energy resources* (p. II-3). It has as an Objective *"Provide for reasonable access for the exploration and development of mineral resources. Review existing mineral withdrawals and need for continuance.* (p. II-6).

Only one monitoring item was included in the 1987 Bitterroot Forest Plan for the minerals. It was modified slightly to include the need to comply with the NEPA analysis when developing the plan of operations.

The following table displays changes to the 1987 Forest Plan mineral monitoring items:

MINERALS – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Provide for the development of mineral and energy resources. (p. II-3). **Objectives:** Provide reasonable access for the exploration and development of mineral resources. Review existing mineral withdrawals and need for continuance… (p. II-6). **Standards:** Cases by case surface management restrictions will be developed…six items listed including: identify common variety mineral sites, use NEPA, consider outstanding and reserved mineral rights. (p. II-26).	23	Mineral activities	**(MODIFY)** **MON-MIN-01** What effect are: forest management activities having on mineral activities / mineral activities having on forest management resources?	• Acres open and accessible for mineral development and leasing. • Number of reclamation plans approved and reclamation activities completed to standard.	2 Years • Project level transportation minerals analysis and NEPA documentation. • Mineral Permits and Plan of Operations • Natural Resource Information System (NRIS) Natural Resource Management (NRM) • Forest Service Activity Tracking System (FACTS) • INFRA Database • Watershed Improvements Tracking (WIT) • SUDS Database	i, and ii, v, vi, vii,, viii, social, economic, and cultural sustainability

ECONOMICS – Bitterroot NF

Two plan components address economics. The goals of the Forest Plan state; "Provide wood products to sustain a viable local economy. Provide an economically efficient sale program". (p. II-3). *"Provide sawtimber and other wood products to help sustain a viable local economy. Provide an economically efficient sale program."* (II-3). The objectives of the plan state; "*Offer affordable sales, Maintain advance sale prep at a level to provide flexibility in offering sales that are responsive to market conditions and economic efficiency."* (p. II-6)

Two monitoring items are included in the 1987 Lolo Forest Plan for economics. One, titled "Benefit Values for Outputs" has reported mill delivered log values. This item will be modified to include evaluation of sales offered and sold. The other monitoring item included in the 1987 Forest Plan was designed to verify predicted costs that were used in the FORPLAN model. This model is no longer supported will be dropped.

The following table displays changes to the 1986 Forest Plan economics monitoring item:

ECONOMICS – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Provide wood products to sustain a viable local economy. Provide an economically efficient sale program. (p. II-3). Strive for economically efficient management. (p. II-4). **Objectives:** Offer affordable sales, Maintain advance sale prep at a level to provide flexibility in offering sales that are responsive to market conditions and economic efficiency. (p. II-6). **Standards:** Timber sales will be designed as well as possible to be affordable to purchasers…An economic analysis will be completed… (p. II-21 and 23).	26	Benefit values for outputs	**(MODIFY)** **MON-ECON-01** Are projects marketable and being purchased when offered?	Contract or stewardship projects purchased	2 Years Project economic analysis Economic reports in Environmental analysis	Economic sustainability
Goals: Strive for economically efficient management. (p. II-4). **Objectives:** Offer affordable sales, Maintain advance sale prep at a level to provide flexibility in offering sales that are responsive to market conditions and economic efficiency. (p. II-6). **Standards:** Timber sales will be designed as well as possible to be affordable to purchasers…An economic analysis will be completed… (p. II-21 and 23).	32	Document costs associated with carrying out the planned management prescriptions and compared with estimated costs in the Plan	**(REMOVE)** FORPLAN program no longer in use. Evaluated in Item 26, above.			

VISUAL QUALITY – Bitterroot NF

Several plan components address visual quality and the scenic value of the Forest. The goals of the Plan state; "Maintain high level of visual quality on landscapes seen from population centers, major travel routes, fishing stream (p. II-2). Desired future condition was concerned with views from the Bitterroot Valley, "On the Bitterroot Mountain face over-looking the Valley, new road construction and timber harvest will not be readily visible. Visual recover will have occurred on 23,000 acres of old cutting units. (p. II-13). A visual quality allocations, ranging from various levels of retention and modification, to preservation were assigned to each management area (see discussion for each Management area.

One monitoring item is included in the 1987 Bitterroot Forest Plan for visual quality. This monitoring item is designed to ensure that Visual Quality Objectives (VQOs) are met for all activities.

Monitoring Item 4 has been retained. Various sources have been provided to display direction and analysis processes for visual quality.

The following table displays changes to the 1987 Forest Plan visual quality monitoring item:

VISUAL QUALITY – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Maintain high level of visual quality on landscapes seen from population centers, major travel routes, fishing streams. (p. II-2). **Standards:** Discussion on recovery times, openings created by harvest should blend with existing openings, consider other resources when designing openings. (p. II-19).	4	Visual Quality	**(MODIFY)** **MON-VIS-01** Is visual quality being met after project implementation?	Visual Quality Objectives by project area analysis as determined by Visual Resource Analysis or Scenery Specialist Report • Preservation • Retention • Partial Retention • Modification • Maximum Modification • Enhancement	2 Years • Visual Resource Analysis or Scenery Specialist Report • Forest Scene Area Analysis • Visual Management System (USDA Forest Service, 1974) • Scenery Management System (USDA Forest Service, 1995) • Forest Service Manual 2380 • USDA Agricultural Handbooks 462, 483, 559, and 608 available at http://fsweb.r1.fs.fed.us/rmlhw/scenery_mgmt/scenery.htm	vii, cultural sustainability

FIRE – Bitterroot NF

The goals of the Plan state; *"Design fires management programs that are consistent with other resource goals (Appendices K and M)." (p. II-4)* and no monitoring items were included in the Implementation section of the 1987 Forest Plan. However information related to fire has been reported in Forest Plan monitoring Reports since 1993.

In Appendix M in the 1987 Bitterroot Forest Plan is discussion on fire. As a result wildfire acres, hazardous fuels accomplishments have been reported since 1993. This item will be modified to include fire retardant application in avoidance areas. A second monitoring item will be added that will evaluate effectiveness of fuels treatments.

Air quality was addressed under Objectives on page II-6*"Cooperate with State Air Quality Bureaus to prevent significant deterioration in air quality" (II-6) and in the Standards section on page, II-25 "The Forest will cooperate with the Montana and Idaho Air Quality Bureaus in the Stat Implementation Plans…" No monitoring items for air quality were included in the 1987 Bitterroot Forest Plan, none are proposed for this effort but will be evaluated during Forest Plan Revision.*

The following table displays changes to the 1987 Forest Plan fire monitoring items:

FIRE – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Design fire management programs that are consistent with other resource goals (Appendices K and M) and eliminate backlog fuels. (p. II-4 and II-5).	App M-2: Fire/Fuels	Fire will be permitted in wilderness to the extent possible within prescription	**(MODIFY)** **MON-FIRE-01** What is the number of fires managed in approved areas?	• Acres Treated for Resource Objective	2 Year – FACTS (Rx Fire and Wildfire Reporting) WFSU for Resource Objectives met. WFDSS Wildland Fire Chemical Misapplication Reporting Database	ii, vi
Goals: Design fire management programs that are consistent with other resource goals (Appendices K and M) and eliminate backlog fuels. (p. II-4 and II-5).	NA	NA	**(NEW)** **MON-FIRE-02** Are fuel reduction treatments effective at reducing the potential of uncharacteristically intense fire and increasing capabilities to protect life and property when a wildfire occurs within an area with previous fuel treatments?	• Did the treatment contribute to the control of the fire? • Did the fire behavior change as a result of the treatment?	2 year FACTS- Hazardous Fuels Treatment accomplishment reporting database with treatment type, acres accomplished, completion date and spatial distribution. Updated Annually Fuel Treatment Effectiveness Monitoring (FTEM) http:www.fireportal.usda.gov • Required when wildfire intersects with a hazardous Fuels Treatment area completed within the past 10 years. Report to be submitted within 90 days of control date of the wildfire that occurs.	ii, vi
Goals: Design fire management programs that are consistent with other resource goals (Appendices K and M) and eliminate backlog fuels. (p. II-4 and II-5).	NA	NA	**(NEW)** **MON-FIRE-03** Are fuels treatments effective when a wildfire occurs in the area??	• Prescribed Fire and Fuels Treatment Effectiveness (PFETM) • Completed when wildfire intersects with a hazardous Fuels Treatment area if: • Fuels Treatment is 10 years or less • Report to be submitted within 90 days of control date of the wildfire that occurs	2 year FACTS http:www.fireportal.usda.gov WFSU for Resource Objectives met.	vi, Cultural

ADJACENT LANDS, RESOURCES AND COMMUNITIES – Bitterroot NF

Several plan components address adjacent lands, resources and communities. The goals of the Plan state; *"Provide a broad spectrum of recreation opportunities". "Provide a wild and scenic, recreational river system." "Provide an economically efficient sale program." "Provide firewood for personal and commercial use." "Coordinate management activities with the land management objectives of adjacent landowners, Indian tribes and other government agencies." (p. II-2-3).*

Two monitoring items are included in the 1987 Bitterroot Forest Plan for consideration of adjacent lands, resources and communities and are concerned with how forest management effects local communities. One item displays cooperation with local organizations and agencies, the other how these groups might influence our management activity. These items have been modified to be answered with one question.

The following table displays changes to the 1987 Forest Plan adjacent lands, resources and communities monitoring items:

ADJACENT LANDS, RESOURCES AND COMMUNITIES – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Coordinate land management activities with management activities of adjacent landowners, tribes, and other agencies. p. II-3 **Objectives:** Pursue land adjustments that help resolve planning issues, obtain necessary rights of way… prevent further encroachment by posting the forest boundary. p. II-7	42, 43	Effects of National Forest management on adjacent land and communities Effects of other government agency activities on the National Forest	**(MODIFY/COMBINE)** **MON-SOC-01** How do Bitterroot National Forest activities affect adjacent land owners and communities?	• Public comment and involvement during project planning. • Recreation opportunities maintained/improved. • Effects on downstream water quality • Effects on visual quality • Effects on air quality • Project derived employment	2 Years Public comment and issues raised during project analysis Headwater Economics Tools: (http://headwaterseconomics.org/tools/economic-profile-system/about) – (*data compiled and evaluated every two years by Reginal Office at region by forest/grassland scales*)	*vii* and social, cultural (FSH 1909.12 Section 32.13f

PROCESS – Bitterroot NF

Several plan components address process including tracking and responding to social issues (including the Adjacent Lands discussion on the previous page) and adjustment of land allocations. The project level public involvement process implemented under the National Environmental Policy Act also ensures that public interests are considered and represented. The goals of the Plan state; *"Involve interested and affected individuals, organizations and agencies to: Increase understanding of resource management activities and issues; Obtain public input for resource management decisions; Prevent resource and facility damage; Reduce need for use restrictions, regulations and law enforcement; Promote a cooperative relationship between Forest managers and the public."* (p. II-4) Establish the "*need for additional, research level information to improve forest land management lead to designation of "Research Natural Areas to represent local vegetative and ecological types."* (p.II-2). The Bitterroot National Forest has had numerous forest research and/or university level research projects completed on forest lands providing information to better understand forest processes.

One monitoring item in the 1987 Bitterroot Forest Plan involved attention to emerging issues. Public involvement as required by the National Environmental Protection Act provides this information to forest planners. A second monitoring item, specific to research needs was also included.

Since the 1987 Forest Plan was signed, the results of other monitoring efforts have been included in the annual report, including sensitive plants, threatened and endangered wildlife species, Neotropical birds, sensitive wildlife species and law enforcement. These do have some reference in the forest plan but no monitoring items were associated with them. Instead of adding to the forest plan monitoring program at this time, these items will be reported in a "white paper" as new information is gathered posted on the forest website at http://www.fs.usda.gov/bitterroot/ as updated. Consideration for inclusion of these items in future monitoring reports will be evaluated during forest plan revision.

The following table displays changes to the 1987 Forest Plan process monitoring items:

PROCESS – Bitterroot NF						
Selected 1987 Plan Components	**1987 Forest Plan Monitoring Item**	**1987 Forest Plan Monitoring Item Wording**	**<u>Modified</u> Monitoring Item Wording** *(Changes made to meet 2012 Planning Rule)*	**<u>Modified</u> Indicators** *(Means to Measure)*	**<u>Modified</u> Data Collection Interval and Source(s)**	**2012 Planning Element(s) Addressed**
Goals: Involve interested and affected individuals, organizations and agencies to: 1) increase understanding of resource management activities and issues. 2) obtain public input for resource management decisions. 3) prevent resource and facility damage. 4) Reduce need for use restrictions, regulations and law enforcement. 5) Promote a cooperative relationship between Forest managers and the public. (p. II-4).	27	Emerging issues and changing social values toward Forest activities	**(RETAIN)** **MON-PROC-01** During project analysis and public outreach, emerging issues and social values are highlighted and addressed in project design, mitigation	Public comment received Collaborative group comments received General public meetings Project scoping comments Official project comment period comments received Project objections received Project litigation claims received Consultation responses from other Federal, State, local and tribal governments.	By project, reported biannually Line officer and staff public comment records Public Information Office public contact records Meeting notes Project planning (NEPA) public response to scoping, comment, and objection periods Social Media Public newspaper articles and editorials	vii, Social sustainability
Goals: Establish RNA's to represent local vegetative and ecological types. p. II-2 **Data Requirements:** Identified 7 research needs based upon '87 plan development and will be evaluated by RF for inclusion in R-1 research program. (p. II-9-11).	44	Research needs	**(REMOVE)** Ongoing research continues on the forest depending up university interest and current conditions. Rocky Mountain and Intermountain Research Centers conduct research studies as needed or requested by forest officials. Results cited research publications.		Project analysis and identification of need `	
Additional Items not included in 1987 Forest Plan Monitoring requirements but reported in the Monitoring Report: Sensitive Plants, T and E Wildlife Species, Neotropical Birds, Sensitive Wildlife Species, Law Enforcement	Not assigned	These items not included in 1987 Forest Plan but discussed in various Forest Plan monitoring reports since 1993.	**(REMOVE)** Remove from monitoring schedule but include as White Paper and publish on www as needed and/or update when new information is available.		As needed Sensitive Species (Wildlife, Sensitive Plants) –project inventories and monitoring Law enforcement records	

APPENDIX A – 1986 Lolo National Forest Plan Implementation and Monitoring Chapter

V. Implementation

A. Introduction

Implementation of the Lolo National Forest Plan requires moving from an existing management program, with a budget and "targets" for accomplishment, to a new management program with a budget, goals, and objectives that provide a different way of addressing the issues and concerns people have voiced about Forest management. This Forest Plan establishes the direction for the Lolo National Forest for the next 10 to 15 years, when used in conjunction with Forest Service Manuals and Handbooks and the Northern Regional Guide.

This chapter explains how management of the Lolo National Forest moves from the Current Direction and Existing Situation to the Proposed Action. The following sections describe aspects of implementation that are influenced by previous management activities and objectives, the relationship between project planning and this Forest Plan, the goals of and requirements for monitoring and evaluation, and the circumstances which could require the Plan to be amended or revised.

B. Influence of Past Management on Future Options

Chapter III defines management direction for specific areas of the Forest. In some instances, this direction represents a change from current management direction. Where no previous management activities have occurred, the allocations of this Forest Plan can be put into effect from a neutral point. However, in areas where management activities have occurred to meet objectives other than those now specified, a transition period may be required to bring management fully into line with this Plan.

In addition to specifying management direction for areas of the Forest, this Plan schedules management activities. In some situations, previous management activities influence the scheduling of future activities. On the Lolo for example, several areas within the Forest boundary actually have an intermingled landownership pattern (alternate sections owned by the Federal Government and private corporations or the State). Within these areas the combined effect of overall past management activities on such resources as wildlife and water may require modifying or delaying future Forest Service projects to allow sufficient vegetative recovery to provide necessary habitat and runoff conditions.

C. Project Planning

The Forest Plan serves as the single land management plan for the Lolo National Forest. All other land management plans are replaced by the direction in this Forest Plan.

Similarly, this Forest Plan directs the management of all resources on the Lolo National Forest. All previous resource management plans are replaced by this document. Resource management objectives are displayed in Chapter II, and schedules of resource management practices for each management area are displayed in Chapter III.

Several documents designed to give further guidance to management activities have been or will be developed under the umbrella of this Forest Plan. These documents which are available on request, are:

Forest Travel Plan
Range Allotment Management Plans
Area Transportation Plans
Ashley Creek Municipal Watershed Management Plan
Fire Management Action Plans
Wilderness Management Plans
Research Natural Area and Botanical Area Management Plans

The management direction provided by this Forest Plan comprises the sideboards within which project planning and activities take place. It defines management area goals and management standards that guide project activities toward achieving a desired future condition for the management area and, collectively, for the Forest. It specifies a schedule for project activities (management practices). It provides guidance concerning land and habitat type constraints including assumptions about the appropriate vegetation management practices. On-the-ground project analysis validates or invalidates the appropriateness of those assumptions.

Within this guidance, the projects are developed to most efficiently and effectively accomplish the management goals and objectives. All NEPA requirements will be complied with in all projects.

Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals is validated by the project analyses. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land allocation. All of the information included in the environmental analyses is used in the monitoring process to determine when changes should be made to the Forest Plan.

As part of project planning, site specific water quality effects will be evaluated and control measures designed to insure that the project will meet Forest water quality goals; projects that will not meet State water quality standards will be redesigned, rescheduled, or dropped.

D. Monitoring and Evaluation

Monitoring and evaluation comprise the management control system for the Forest Plan. This management control system will provide the decisionmaker and the public with information on the progress and results of implementing the Forest Plan.

Monitoring and evaluation entail comparing the end results being achieved to those projected in the Plan. Costs, outputs, and environmental effects, both experienced and projected, will be considered.

To do this a comparison will be made, on a sample basis, of overall progress in implementing the Plan as well as whether the overall relationships on which the Plan is based have been changed over time. When changes occur, they will be evaluated as to their significance, and appropriate amendments or revisions made.

If monitoring can not be accomplished in accordance with the Plan, management activities will be redesigned, rescheduled, or dropped and an amendment to the Plan will be issued. If any event causes a significant change in expected output, a revision will be completed.

The goals for monitoring and evaluating this Forest Plan are to determine:

- How well the Forest is meeting its planned goals and objectives;

- If existing and emerging public issues and management concerns are being adequately addressed;

- How closely the Forest Plan's management standards are being followed;

- If outputs and services are being provided as projected;

- If the effects of implementing the Forest Plan are occurring as predicted, including significant changes in the productivity of the land;

- If the dollar and manpower costs of implementing the Forest Plan are as predicted;

- If implementing the Forest Plan is affecting the land, resources, and communities adjacent to or near the Forest;

- If activities on nearby lands managed by private owners, other Federal or State Governmental agencies, or under the jurisdiction of local governments, are affecting management of the Forest;

- If research is needed to support the management of the Forest, beyond that identified in Chapter II of the Forest Plan; and

- If there is a need to amend or revise the Forest Plan.

The monitoring requirements for this Forest Plan are outlined in Table V.1, Forest Plan Monitoring Requirements. These requirements address the items to be monitored, data sources, cost, expected precision and reliability, frequency of measurements (schedule and sample size), reporting period, and acceptable variability. Most of the monitoring items are applicable to specific management areas; a listing of applicable monitoring items is included in the direction for each management area (Chapter III). The estimated cost of meeting the Forest Plan Monitoring Requirements is displayed in Table V.2. The costs displayed are those needed to perform the specific action required by the monitoring item. The costs do not include the cost of data collection, data maintenance, or systems operation and maintenance unless specifically required by the monitoring plan. Costs will vary from year to year depending on the level of activity on the Forest. The total cost displayed in the table is included in the budget to implement

the Forest Plan. Monitoring of the general Forest insect and Disease condition will be accomplished through annual aerial surveys conducted by Cooperative Forestry and Pest Management in the Regioinal Office. The cost of these surveys is also covered by this staff group and is not included in Table V.2.

Other monitoring items are more applicable to broad areas, are Forest-wide in nature, and will be evaluated from such sources as the data base, Forest attainment reports, public involvement processes, and non-Forest Service sources such as communities, downstream users, the Confederated Salish and Kootenai Tribes, and other agencies. These monitoring items include 1-5, 1-6, 2-1, 3-11, 5-2, 6-1, 7-1, 9-1, 11-1, 11-2, 12-1, 12-2, 13-1, 14-1, and 14-2. More specific processes will be developed by functional specialists and be laterally integrated to improve understanding of the total effects of Forest management.

Evaluation of data gathered during monitoring will be guided by the Decision Flow Diagram detailed in Figure V.1. As indicated in the diagram, the results of this evaluation lead to decisions on further action of the following types:

- Continuing the management practice;

- Referring the problem to appropriate line officer for improvement of the application of the management practice;

- Modifying the management practice as a Plan amendment;

- Modifying the land management prescription as a Plan amendment;

- Revising the schedule of outputs;

- Revising the cost unit/output; or

- Initiating revision of the Plan.

The document resulting from the use of the Decision Flow Diagram constitutes the evaluation report. As applicable, the following will be included in each evaluation report:

- A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan;

- Documentation of measured effects, including any change in productivity of the land;

- Unit costs associated with carrying out the planned activities as compared with unit costs estimated during Forest Plan development;

- Recommendations for changes;

- A list of needs for continuing evaluation of management systems and for alternative methods of management;

- A list of additional research needed to support the management of the Forest; and

- Identification of additional monitoring needs to facilitate achievement of the monitoring goals.

E. Amendment and Revision

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, standards, and other contents of the Forest Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the Plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a Forest Plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

A Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

Table V.1

TABLE OF FOREST MONITORING REQUIREMENTS

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
1-1	WILDLIFE	Elk productivity—total time of human disturbance created by timber management activities.	Timber sale & postsale inspection reports. Miles of open road. The following Montana Dept. of Fish, Wildlife, & Parks information: bull elk harvest rates; hunting season length; & elk populations.	Mod.	Mod.	30% of sales >2 MMBF Annually	5 years	On roads with yearlong closures, timber management disturbance occurring more than 4 years out of 10 years.
1-2		Elk productivity—cover/forage ratios.	Stand exams, aerial photos, reforestation surveys, EA, project files, miles of open road, bull elk harvest rates, hunting season length, & elk populations.	High	Mod.	100% of sales >2 MMBF Annually.	5 years	Any cover/forage ratio below 40/60 in a minimum analysis area of 4,000 acres.
1-3		Monitor effectiveness of old-growth habitat areas that are harvested.	Stand exams and aerial photos.	High	High	100% of timber sales sold	5 years	20% degradation in short run and 10% degradation in long run.
1-4		Postsale snag densities.	Field transects.	High	Low	10% of timber sales sold	5 years	30% or more of transects fail to meet Forest snag prescriptions.
1-5		Acres of threatened and endangered habitat improvement.	Management Attainment Report.	Mod.	High	100% of sales >2 MMBF Annually	5 years	Forest must accomplish 75% of habitat improvements programmed for a 5-year period with at least 50% accomplishment every year.

1/ "Expected Precision" is the exactness or accuracy with which the data will be collected.
2/ "Expected Reliability" is the degree the monitoring accurately reflects the total Forest situation.
3/ "Frequency of Measurements" is the schedule of sampling frequency.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
1-6	WILDLIFE (con't)	Treated acres of big-game winter range.	Management Attainment Report.	Mod.	Mod.	100% of sales >2 MMBF Annually	5 years	Forest must accomplish 75% of habitat improvements programmed for a 5-year period with at least 50% accomplishment every year.
2-1	AQUATIC ENVIRONMENT AND FISHERIES HABITAT	Improvement of fish habitat.	Management Attainment Report.	Mod.	High	100% sampling Annually	5 years	Forest must accomplish 75% of habitat improvements programmed for a 5-year period with at least 50% accomplishment every year.
2-2		Validation of aquatic habitat quality and fish population assumptions used to predict effects of management activities and an evaluation of actual effects.	Evaluation of the following indicators: aquatic insect density or diversity; fish populations; intergravel sediment accumulations; channel structure changes; and streambank vegetation changes.	High	Mod.	20% sampling Annually	Annual	A decline in aquatic habitat/ fish population for more than 1 year.
2-3		Assessment of riparian activities on riparian dependent resources.	Field review of riparian activities and evaluation of stream and lake surveys.	Mod.	Mod.	20% sampling Annually	Annual	Visible or measurable decline in aquatic habitat/fish population for more than 1 year.
3-1	TIMBER	Insure management practices minimize hazards from flood, wind, wildfire, erosion, and other natural physical forces.	EA, project file and field reviews.	Mod.	Mod.	100% project sampling Annually	Annual	Anticipated problem identified in interdisciplinary team review of timber sale.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
3-2		Insure establishment of vegetation on temporary roads within 10 years.	EA, project file, timber sale contract, and field reviews.	High	High	1 project/ District Annually	Annual	Departure from management standard to scarify and seed all temporary roads.
3-3		Assure silvicultural prescriptions meet multiple use goals.	EA, project file and field reviews.	High	High	1 project/ District Annually	Annual	Departure from management direction.
3-4		Assure silvicultural prescriptions are not primarily chosen on basis of greatest dollar return or greatest timber output.	EA, project file.	Low	Low	1 project/ District Annually	2 years	Departure from management direction.
3-5		Assure silvicultural prescriptions consider residual trees and adjacent stands.	EA, project file and field reviews.	Low	Low	1 project/ District Annually	Annual	Departure from management direction.
3-6		Assure silvicultural prescriptions are practical.	EA, project file and field reviews.	Mod.	Mod.	1 project/ District Annually	Annual	Departure from management direction.
3-7		Assure silvicultural prescriptions meet legal size limits.	EA, project file and field reviews.	Mod.	Mod.	100% project sampling Annually	Annual	Departure from management standard restricting clearcuts to less than 40 acres.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
3-8	TIMBER (con't)	Assure selected sale alternative provides for plant/animal community diversity.	EA, project file, stand exams, regeneration surveys, and field reviews.	High	High	1 project/ District Annually	5 years	Departure from management direction.
3-9		Assure harvest on unsuitable lands will meet other resource needs.	EA, project file and field reviews.	High	High	1 project/ District Annually	Annual	Departure from management direction.
3-10		Assure timber sold does not exceed allowable sale quantity for 10-yr. period.	Timber Sale Accomplishment Report	High	High	100% sampling Annually	Annual	Departure from 10-year allowable sale quantity.
3-11		Assure restocking within 5 years.	Reforestation accomplishments reported in Timber Stand Data Base.	High	High	100 Percent Sample Annually	Annual	Development of regeneration backlog.
3-12		Assure silvicultural treatments (harvest, thinning, etc.) are planned and accomplished as projected in Forest Plan.	Silvicultural prescriptions, Timber Stand Data Base.	High	High	100 Percent Sample Annually	Annual	Departure from 10 year output schedule.
3-13		Insure harvest by even-age management is compatible with other resource values.	EA, project file and field reviews.	Mod.	Mod.	1 project/ District Annually	Annual	Departure from management direction.
3-14		Assure harvest will not promote disease and insect increases.	EA, project files and stand files.	Mod.	High	1 project/ District Annually	Annual	Increases in insect/disease problems following logging.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
3-16	TIMBER (con't)	Review timber suitability of lands classified as unsuitable.	Forest Plan Data Base	High	High	100% project Sampling Annually, 100% Forestwide in 10-year period	10 years	Classification of lands as suitable.
4-1	WATER AND SOIL	Validation of sediment and water yield assumptions used in plan. (For "R-1/R-4" or current sediment yield model)	Flow measurements and sediment sampling of streams representative of Forest Plan land classes.	Low	Mod.-Low	12-16x/year 100% sampling of hydrol types types Annually	Annual	30% variability from sediment yields used in the model.
4-2		Monitor for compliance with existing State and Federal water quality statutes.	Flow measurements and water quality sampling in streams representative of Forest Plan land classes.	Low	Mod.	12-16x/year 100% sampling of hydrol types Annually	Annual	Activities not meeting State and Federal water quality standards, or leading to long-term degradation of aquatic environment.
4-3		Monitor the effect of soil disturbance/displacement on land productivity.	Measurements of soil compaction, soil displacement, and biomass left on site.	Mod.	Mod.	1 sale/ District Annually	Annual	Movement or compaction of soils reducing productivity more than 20%.
5-1	RECREATION	Limit off-road vehicle damage.	Field observaton of identified areas.	Mod.-Low	Mod.-Low	Ongoing	2 years	When use conflicts with management goals of area.
5-2		Provide opportunities for a wide spectrum of recreation activities.	RIM Use Records, Recreation Opportunity Guide, MDFWP Hunter Information, Travel Plan Trail Assessment, and Limits of Acceptable Change.	Mod.-Low	Mod.-Low	100% sampling	Annual	± 25% of target projected in Recreation Opportunity Inventory.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
5-3	RECREATION (con't)	Compare changes in acres and distribution of Roadless lands with plan projections.	Forest Data Base, 5-Year Sale Program, Timber Stand Data Base, Management Attainment Reports, RARE II, Updated Roadless Inventory.	High	High	100% sampling Annually	5 years	Changes different from what was projected.
6-1	RANGE	Livestock forage available (AUM's).	Range analyses and allotment mgt. plans.	High	High	100% sampling Annually	Annual	± 10%
6-2		Assure range allotment management plans are compatible with Forest Plan direction.	Range Analysis and Utilization Reports.	High	High	1 plan/ District Annually	Annual	Departure from management direction.
7-1	ROADS	Assure open road densities are in accordance with Forest Plan direction.	Forest Travel Plan, Transportation System.	High	High	100% sampling Annually	2 years	Greater than 20% annually or 10% on a 5-year average.
7-2		Review of road construction.	Construction contracts and constructed roads.	Mod.	Mod.	1 project/ District per year.	Annual	Road construction resulted in unacceptable resource damage or beyond construction tolerances.
7-3		Review of road design and construction standards.	Road design packages and timber sale reviews.	High	High	1 sale per District per year.	Annual	Designs beyond the limits of the standards.
7-4		Monitor road density deviations from those projected in plan.	EA, project files, Transportation Inventory System, Project Transportation Plans.	Mod.	Mod.	100% sampling Annually	Annual	Departure from management direction.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (±) WHICH WOULD INITIATE FURTHER EVALUATION
8-1	MINERALS	Review of Forest Service projects that may have an effect on minerals activities. Review of mining activities affecting surface land management.	Monthly mineral progress report, operating plans, leases, and permits.	High	High	100% sampling Annually	Annual	Any adverse effect of Forest Service project on mineral activities, or any departure from approved operating plans, leases, and permits.
9-1	ECONOMICS	Verification of unit costs used in FORPLAN.	Timber sale appraisals and contracts, and the accounting system.	High	High	100% sampling Annually	Annual	In general, ±25% variation would trigger need to rerun FORPLAN.
10-1	VISUAL QUALITY	Monitor project and activity compliance with visual quality objectives.	Special use, EA project files, and field reviews.	High	High-Mod.	2 sales/ District Annually	Annual	Failure to meet intended VQO.
11-1	FIRE	Assure prescribed fire meets air quality guidelines and standards.	Burning treatment plans and local air quality offices.	High	High	100% sampling Annually	Annual	Burning without required permit.
11-2		Assure accomplishment of fuel treatment targets.	Management Attainment Reports.	High	High	100% sampling Annually	Annual	Less than 75% of Forest Plan Projections.
11-3		Evaluate impact of wildfire losses on management area targets.	Incident Fire Reports.	High	High	100% sampling Annually	10 year	Wildfire losses 100% above PARS prediction by MA for decade.

TABLE OF FOREST MONITORING REQUIREMENTS (continued)

MONITORING ITEM	SUBJECT	ACTIVITY, PRACTICE, OR EFFECT TO BE MEASURED	DATA SOURCE	1/ EXPECTED PRECISION	2/ EXPECTED RELIABILITY	3/ FREQUENCY OF MEASUREMENTS	REPORTING PERIOD	VARIABILITY (+) WHICH WOULD INITIATE FURTHER EVALUATION
12-1	ADJACENT LANDS, RESOURCES, & COMMUNITIES	Effects of Forest management on local economy, recreation opportunities, downstream water uses, visual quality, local air quality.	Reports from appropriate monitoring items listed above; new public issues and management concerns.	Mod.	Mod.	100% sampling every 5 years	5 years	Unacceptable results of an ID Team review.
12-2		Impact of activities on adjacent lands on Forest goals and objectives.	Reports from appropriate monitoring items above; review of other agency plans; new public issues; management concerns.	Mod.	Mod.	100% sampling every 5 years	5 years	Unacceptable results of an ID Team review.
13-1	LANDS	Evaluate progress of landownership adjustment program.	Management Attainment Report, Land Exchange File	High	High	100% sampling Annually	Annual	N/A
13-2		Insure major utility and transportation systems are developed within identified corridors.	EA, project file.	High	High	100% sampling Annually	During project const.	Deviation from identified corridors.
13-3		Assure proposed R/W grants are in identified corridors.	Project review and ROW grants.	High	High	100% sampling Annually	Annual	Any project outside identified corridor.
14-1	PROCESS	Track emerging issues or changing social values.	Information and Involvement Plan.	N/A	N/A	Ongoing	Ongoing	If issues fall within scope of interest levels 1 and 2 of Information and Involvement Plan.
14-2		Correct errors in original land allocations and evaluate effect of all changes on plan.	Data Base Change Request forms and Data Base Update	High	High	100% sampling annually	Annual	Changes impacting projected targets.

Table V.2. Monitoring Plan Cost (1978 dollars)

Items	Subject	Change in Annual Costs1/	Current Annual Costs2/
1-1 thru 1-6	Wildlife	$ 3,500	$ 11,900
2-1 thru 2-3	Aquatic Environment and Fisheries Habitat	11,800	10,500
3-1 thru 3-15	Timber	-0-	57,800
4-1 thru 4-3	Water and Soil	34,800	12,500
5-1 thru 5-3	Recreation	700	32,300
6-1 thru 6-2	Range	-0-	500
7-1 thru 7-3	Roads	-0-	12,100
8-1	Minerals	-0-	4,800
9-1	Economics	-0-	8,000
10-1	Visual Quality	-0-	7,500
11-1 thru 11-4	Fire	-0-	11,500
12-1		-0-	2,000
13-1 thru 13-2	Lands	-0-	5,500
14-1 thru 14-2	Process	-0-	12,000
	TOTAL	$ 50,800	$ 188,900

1/ Increase in cost above current annual.

2/ Cost before implementation of Forest Plan.

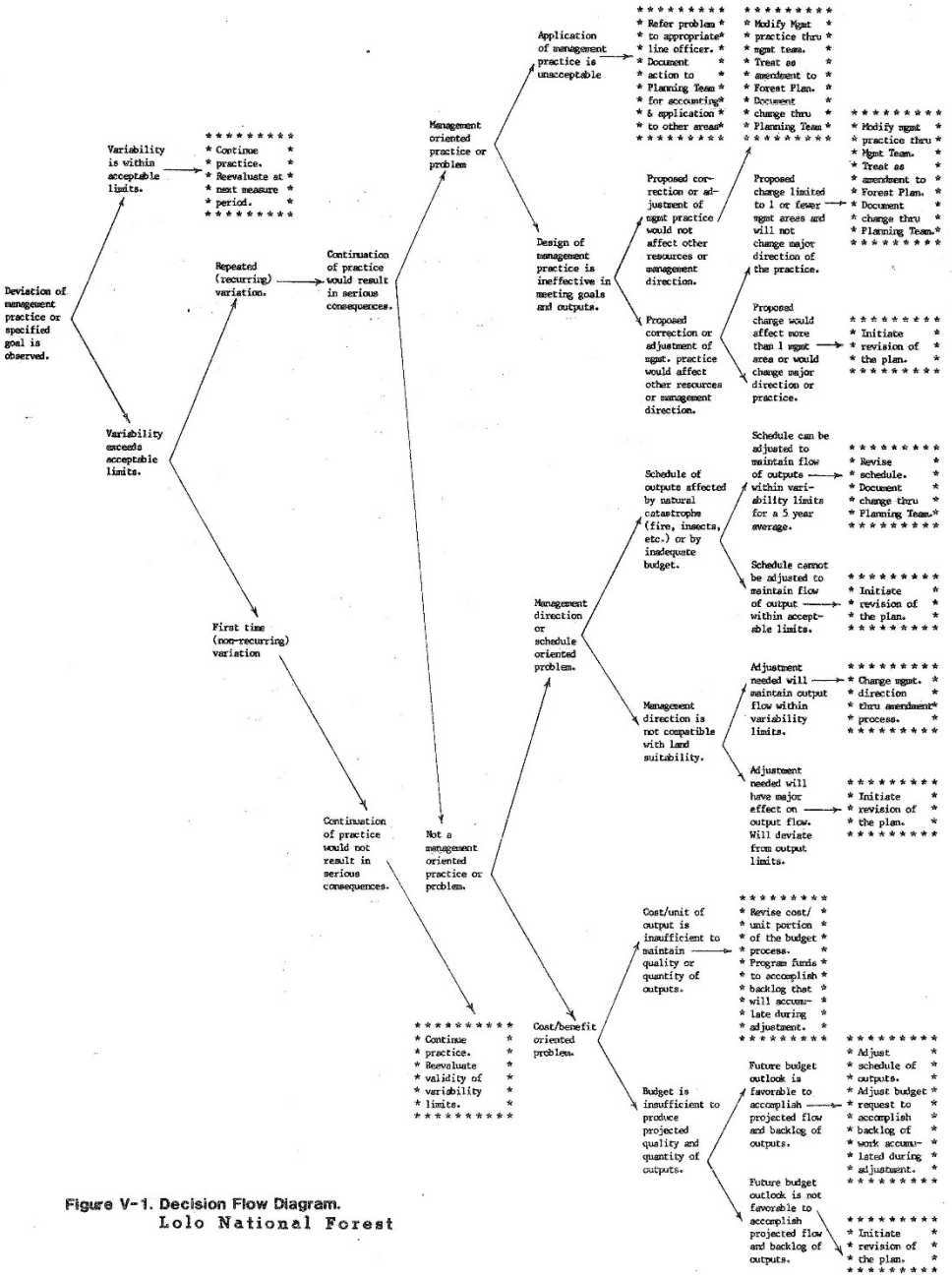


Figure V-1. Decision Flow Diagram.
Lolo National Forest

Table C-1: Proposed Additons to FOREST MONITORING REQUIREMENTS (Forest Plan Table V.1)

MONI-TORING ITEM	SUBJECT	ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED	DATA SOURCE	EXPECTED PRECISION[1]	EXPECTED RELIABILITY[2]	FREQUENCY OF MEASUREMENTS[3]	REPORTING PERIOD	VARIABILITY ± WHICH WOULD INITIATE FURTHER EVALUATION
6-3	RANGE	Compare projected to actual funding for indirect control (information, inventory and biological support).	Project plans, NEPA documents, contracts.	High	High	Annual	Annual	15%
6-4	RANGE	Compare projected to actual acres of direct treatment (mechanical, chemical and biological methods).	Project EA's and contracts, FS-2100-1 Pesticide Use, and similar reporting for biological and physical weed control.	High	High	Annual	Annual	25% of acres projected to be treated in Weed EIS.
6-5	RANGE	Validate Weed EIS assumptions for weed acres and rates of spread.	Weed inventory and mapping program.	Moderate	Moderate	Annual	5 years	Unacceptable results of an ID team review.
6-6	RANGE	Monitor the attainment of control objectives for each of the nine species listed in the Weed EIS.	Weed inventory and mapping program. Project monitoring.	Moderate	Moderate	Weed monitoring and mapping program - Annual. Project monitoring schedule developed by ID team.	5 years	Unacceptable results of an ID team review.
6-7	RANGE	Random review of projects, field reviews, & contracts to assure that: 1) weed prevention and control is addressed during planning and implementation, and 2) that treatments are effective.	EA's, project files, contracts, agreements and field reviews.	Moderate	Moderate	One project/ District annually.	Annual	Departure from management direction OR Ineffective treatment practices.

[1] "Expected Precision" is the exactness or accuracy with which the data will be collected.
[2] "Expected Reliability is the degree the monitoring accurately reflects the total Forest situation.
[3] "Frequency of Measurements" is the schedule of sampling frequency.

APPENDIX B – 1987 Bitterroot National Forest Plan Implementation and Monitoring Chapter IV

IV. IMPLEMENTATION

A. Introduction

Implementation of the Forest Plan requires moving from the existing unit plan management program, with budget and targets for accomplishment, to a new management program with a budget, goals, and objectives that provide a different way of addressing the issues and concerns people have voiced about Forest management. This Forest Plan establishes the direction for the Bitterroot National Forest for the next 10 to 15 years, when used in conjunction with Forest Service Manuals and Handbooks and the Northern Regional Guide.

The remainder of this chapter explains how management of the Bitterroot Forest moves from the Current Direction and Existing Situation to the Preferred Alternative, all described in the EIS. The following sections describe aspects of implementation that are influenced by previous management activities and objectives; the relationship between project planning and this Forest Plan; the goals of and requirements for monitoring and evaluation; and the circumstances which could require the plan to be amended or revised.

B. Influence of Past Management on Future Options

Chapter III defines management direction for specific areas of the Forest. In some instances, this direction changes from current management direction. Where no previous management activities have occurred, the allocations of this Forest Plan can be put into effect from a neutral point. However, in areas where management activities have occurred to meet objectives other than those now specified, a transition period may be required to bring management fully into line with this Plan.

In addition to specifying management direction for areas of the Forest, this Plan schedules management activities. In some situations, previous management activities influence the scheduling of future activities.

Examples of Forest Plan changes from current direction are as follows:

Old timber sale activities on portions of the Bitterroot Face exceed Forest Plan visual management direction. They will be visible for some time so new activities will be limited to allow visual recovery.

Existing cutover in some drainages such as Took Creek exceed Forest Plan hydrologic recovery standards. It will take time to reach full hydrologic recovery.

In some areas elk cover has been reduced further than provided for in the Forest Plan management area direction. Recovery periods to meet plan direction will reduce activity levels for a period of time.

C. Project Planning

The Forest Plan serves as the single land management plan for the Bitterroot Forest. All other land management plans are replaced by the direction in this Forest Plan.

Similarly, this Forest Plan directs the management of all resources on the Bitterroot Forest. All previous resource management plans are replaced by this document. Resource management objectives are displayed in Chapter II, and schedules of resource management practices for each management area are displayed in Chapter III.

Documents designed to give further guidance to management activities have been or will be developed under the umbrella of this Forest Plan. They include those shown in Appendix K and the following:

Forest Travel Plan
Range Allotment Management Plans
Area Transportation Plans
Fire Management Action Plan
Environmental Analysis Reports
Activity Schedules

The management direction provided by this Forest Plan comprises the sideboards within which project planning and activities take place. It defines management area goals and management standards that guide project activities toward achieving a desired future condition for the management area and, collectively, for the Forest. It specifies schedules for project activities or management practices. It provides guidance concerning potential landtype and habitat type constraints, including assumptions about the appropriate vegetative management practices for timber sale projects. On-the-ground project analysis validates the appropriateness of those assumptions.

Within this guidance, the projects are developed to most efficiently and effectivey accomplish the management goals and objectives. All NEPA requirements will be complied with in all projects.

Project environmental analyses provide essential sources of information for Forest Plan monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the management area goals are validated by project analyses. Third, the site specific data collected for project environmental analyses serve as a check on the correctness of the land assignments. All of the information included in the project environmental analyses is used in the monitoring process to determine when changes should be made in the Forest Plan.

The assignment of land to some Forest Plan management areas is based on cost and yield data that was averaged for a number of conditions such as age class of existing timber and existing road densities. Correspondence between the assumed average conditions and what is actually encountered on the ground when a timber sale is designed must be monitored. It is expected that this monitoring will identify some portion of lands that in reality should be excluded from the suitable timber base as well as some lands currently designated unsuitable that should be added to the base. The process developed to determine suitability is detailed in Forest Plan Note Number 214.

As part of project planning, site specific water quality effects will be evaluated and control measures designed to ensure that the project will meet Forest water quality goals; projects that will not meet State water quality standards will be redesigned, rescheduled, or dropped.

Public involvement will be a part of the project planning.

Environmental analyses will be performed by interdisciplinary teams. Assignment to the teams will be made by the Forest Supervisor or District Ranger based upon the type and complexity of project, the affected resources, and potential for public concern.

D. Monitoring and Evaluation

Monitoring and evaluation comprise the management control system for the Forest Plan. They will provide the decision maker and the public information on the progress and results of implementing the Forest Plan.

Monitoring and evaluation entails comparing results being achieved to those projected in the Plan. Costs, outputs, and environmental effects, both experienced and projected, will be considered.

The comparison will be made, on a sample basis, of overall progress in implementing the Plan as well as whether the overall relationships on which the Plan is based have changed over time. When changes occur, they will be evaluated as to their significance, and appropriate amendments or revisions made.

The goals for monitoring and evaluating this Forest Plan are to determine:

- how well the Forest is meeting its planned goals and objectives;
- if existing and emerging public issues and management concerns are being adequately addressed;
- how closely the Forest Plan management standards are being followed;
- if outputs and services are being provided as projected;
- if the effects of implementing the Forest Plan are occurring as predicted, including significant changes in productivity of the land;
- If the dollar and manpower costs of implementing the Forest Plan are as predicted;
- if implementing the Forest Plan is affecting the land, resources, and communities adjacent to or near the Forest;
- if activities on nearby lands managed by other Federal or other government agencies, or under the jurisdiction of local governments, is affecting management of the Forest;
- if research is needed to support the management of the Forest, beyond that identified in Chapter II of the Forest Plan; and
- if there is a need to amend or revise the Forest Plan.

Monitoring requirements for this Forest Plan are outlined in Table IV-1, Forest Plan Monitoring Requirements. These requirements address the items to be monitored, data sources, expected precision and reliability, frequency of measurement, reporting period and acceptable variability. Most monitoring items apply to specific management areas as identified or each management area in Chapter III.

Other monitoring items are more applicable to broad areas or are Forest-wide in nature, and will be evaluated from such sources as the data base, Forest attainment reports, public involvement processes, and non-Forest Service sources.

Evaluation of data gathered during monitoring will be guided by the Decision Flow Diagram detailed in Figure IV-1. As indicated in the diagram, the results of this evaluation lead to decisions on further action of the following types:

- continuing the management practice;
- referring the problem to the appropriate line officer for improvement of the application of the management practice;
- modifying the management practice through a Plan amendment;
- modifying the land management prescription through a Plan amendment;
- revising the schedule of outputs;
- revising the cost per unit output; or
- initiating revision of the Plan.

The document resulting from the use of the Decision Flow Diagram constitutes the evaluation report. As applicable, the following will be included in each evaluation report:

- A quantitative estimate of performance comparing outputs and services with those projected by the Forest Plan;
- Documentation of measured effects, including any change in productivity of the land;
- Unit costs associated with carrying out the planned activities as compared with unit costs estimated during Forest Plan development;
- Recommendations for changes;
- A list of needs for continuing evaluation of management systems and for alternative methods of management;
- A list of additional research needed to support the management of the Forest; and
- Identification of additional monitoring needs to facilitate achievement of monitoring goals.

The monitoring planned in Table IV-1 is required to evaluate the level of outputs and activities identified in Table II-1. However, output levels and monitoring requirements will be balanced to assure that Forest Plan goals, objectives, and standards are being met at the least cost. If outputs and activities are reduced, the monitoring program may also be reduced if Forest Plan goals, objectives, and standards can be met. Outputs and activities will also be reduced, when necessary, to assure that programmed monitoring will properly evaluate the effects of activities. All changes from the Forest Plan output, budget, and monitoring requirements will be considered deviations which will be guided by the decision flow diagram, Figure IV-1, and will require an evaluation report.

E. Amendment and Revision

If, during Forest Plan implementation, it is determined that the best way to achieve the prescription for a management area does not totally conform to a management prescription standard, the Forest Supervisor may amend that standard for a specific project. Such site specific amendments (CFR 219.10(f)) and the rationale for the changes must conform to NEPA requirements.

There will be no deviation from standards established for threatened and endangered species conservation and protection unless a biological evaluation concludes that such deviation would have no adverse effect on the recovery of the species and there has been consultation with the Fish and Wildlife Service.

A Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

Table IV-1
Monitoring and Evaluation Requirements

#	NFMA Requirement 36 CFR 219 12(K)(4a) Effects To Be Measured	Data Source	36 CFR 219 12(K)(4b) Expected Precision 1/	36 CFR 219 12(K)(4b) Expected Reliability 2/	Frequency of Measurement 3/	36 CFR 219 12(K)(4c) Reporting Period	Variability Which Would Initiate Further Evaluation
36 CFR 219.12(K)(1) - Quantitative estimate of performance comparing outputs and services with those projected by the Plan. Monitoring will include the following:							
1	Compare actual to projected use and capacity by Recreation Opportunity Spectrum (ROS)	Recreation Information Management system (RIM)	Low	Low	100% annually	5 years	±20% by ROS category
2	Condition of developed sites	RIM Information system	High	High	100% annually	5 years	Failure to eliminate replace or repair 50 % of MC2 & 5, & 25% of 3 & 4 facilities
3	Unroaded area	Roadless inventory	High	High	Annually	5 years	Change in roadless base different than projected in App C Environmental Impact Statement (EIS)
4	Visual quality	ID team review of altered landscapes	Low	Moderate	1 project per District per year	Annually	Failure to meet visual quality objective
5	Diversity	ID team review of altered habitats	Low	Moderate	1 project per District annually	Annually	Failure to meet wildlife objectives
6	Acres of old growth by habitat type, land class, and management area	Timber Stand Management Record System (TSMRS)	High	High	100% every 3 years	5 years	±20% over 3 years
7	Elk habitat effectiveness	Travel plan, TSMRS	Moderate	High	Annually	Annually	Any deviation from Forest-wide objectives
8	Hunter trends and season	MTDFWP hunter survey	High	Moderate	Annually	Annually	Any change in season length, ±10% change in hunting population
9	Bull elk harvest in first week of season	MTDFWP hunter survey	High	Moderate	Annually	Annually	≥ 40% of bull elk harvest in first week of season in each hunting district
10	Leafy spurge, dalmation toadflax, goatweed and knapweed	Inventory of infestations	Moderate	Low	100% every 3 years	Every 3 years	Increase in area infestation
11	Volume and area offered, sold, and harvested by mgt area	TMIS	High	High	100% annually	Annually	±20 percent annually or ±10 percent over a 5-year period
12	Lodgepole and ponderosa pine volume offered	Timber TSMRS	High	High	100% annually	Annually	±25 percent over a 5-year period
13	Volume offered by logging system	Timber Sale Reports	High	Moderate	100%	Every 3 years	Logging system, ±20%
14	Silvicultural prescriptions	ID team review, pre and post sale	Moderate	High	1 sale per District/yr	Annually	Depart from mgt practice

Table IV-1 (continued)
Monitoring and Evaluation Requirements

#	NFMA Requirement Effects To Be Measured	Data Source	Expected Precision 1/	Expected Reliability 2/	Frequency of Measurement 3/	Reporting Period	Variability which Would Initiate Further Evaluation
15	Timber mortality	Timber inventory	High	Moderate	5 years	5 years	±20 percent over 5-year period
16	Timber yields/ acre	Growth study plots, timber inventory	High	High	5 years	5 years	±5 percent over 5-year period
17	Water and sediment yields (validate sediment model and water yield) (compliance with State and Federal water quality standards, BMP's)	Flow and sediment sampling before and after project activities	Moderate	Low to Moderate	6 streams representing major geologic types	Annually	20% variation from predicted sediment increases and changes in water quantity
18	Hydrologic recovery in sensitive drainages by land class and habitat type	ID team project review	Moderate	Moderate	1 project per District per year	Annually	Deviation from soil and water objectives
19	Cumulative off-site watershed effects	Equivalent road area evaluation of watersheds with recent activities. Use R-5 or similar method, landtype inventory, existing & planned roads & cutover areas	High	Moderate	One timber sale/District/ year that involves additional road construction	Annually	Exceeding geomorphic threshold of concern
20	Peak flow and Low flow effects	Flow sampling before & after projects	Moderate	Moderate	Ice-free, Apr-Oct, annually	Annually	10% variation
21	Validation of aquatic habitat quality and fish population assumptions used to predict effects of activities	Evaluate aquatic insect density/diversity, fish populations intergravel sediment, channel structure and streambank vegetation changes	High	Moderate	6 streams representing major geologic types	Annually	A decline in aquatic habitat and/or fish population for more than 1 year
22	Riparian area condition	ID team review of altered riparian areas	Low	Moderate	1 project per District per year	Annually	Deviation from riparian area and fisheries objectives
23	Mineral activities	Compare activities with Plan of Operation, Notice of Intent, & operating plan for oil and gas	Low	Moderate	100% of current activity annually	Annually	Adverse effect upon surface resources or departure from condition of the approved plan
24	Road construction, mitigation and maintenance standards including BMP's	Road construction and timber sale contracts and post sale ID team review	High	Moderate	One sale per District per Year	Annually	Deviation from standards
25	Harvest of moderate to high risk mountain pine beetle stands	TSMRS and timber sale review	High	Moderate	100% annually	Annually	Less than 50% of LP offered from high and moderate risk stands

Table IV-1 (continued)
Monitoring and Evaluation Requirements

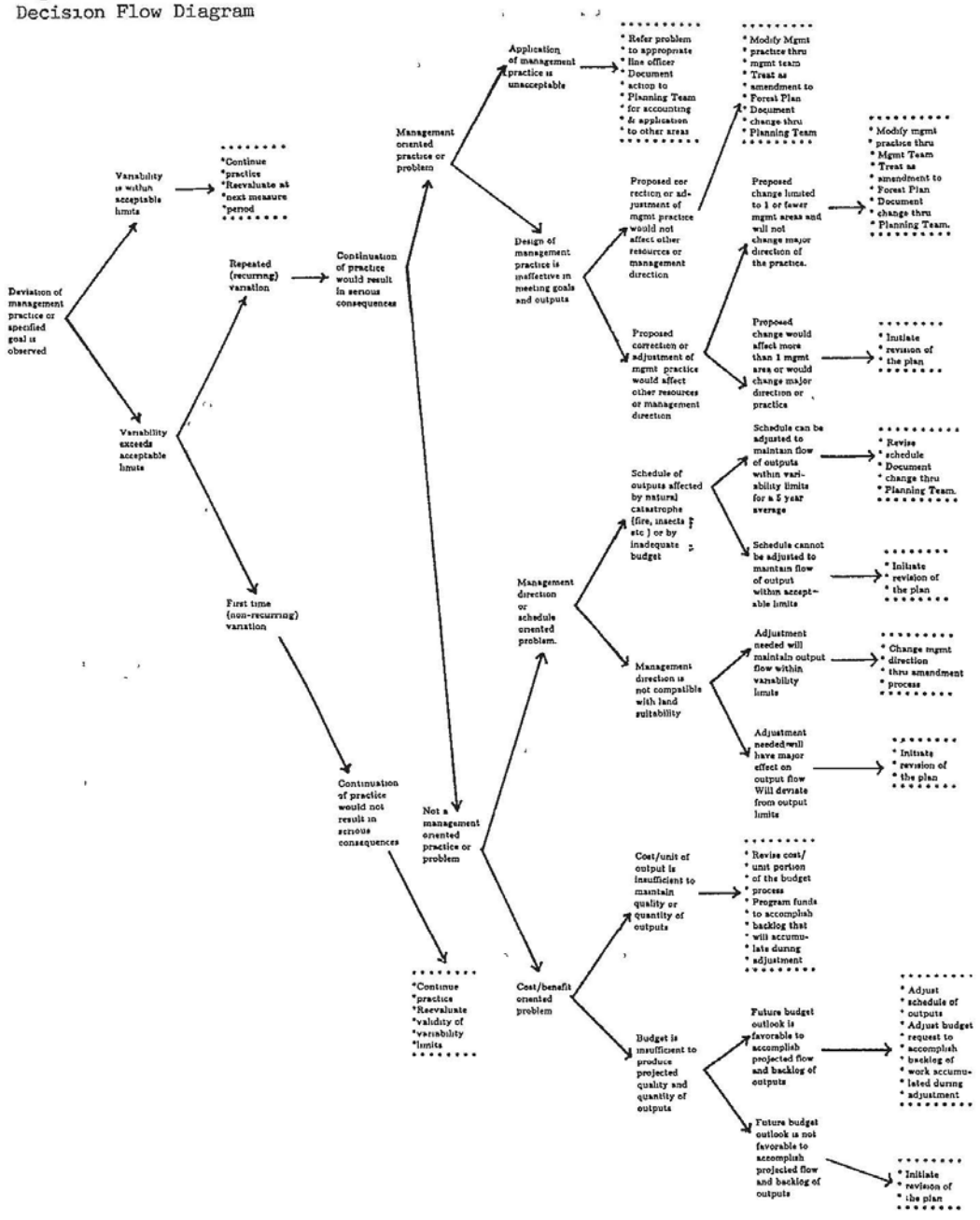
#	NFMA Requirement Effects To Be Measured	Data Source	Expected Precision 1/	Expected Reliability 2/	Frequency of Measurement 3/	Reporting Period	Variability Which Would Initiate Further Evaluation
26	Benefit values for outputs	Contracts, RPA reports, receipts	High	Moderate	Annually	Annually	±10% projected values
27	Emerging issues and changing social values toward Forest activities	Letters, meetings and other public comments	High	Moderate	100% annual	Annual	Any change in the major planning issues
	36 CFR 219 12(K)(2) - Document those prescriptions and effects, including any significant changes in productivity on the land that are measured. Monitoring will include the following:						
28	ORV effects on land	Site inspection and ID Team review	Moderate	Moderate	25% of high use areas and trails annually	Annually	Irreversible ecosystem damage, user conflicts, displacement of wildlife, and public safety
29	Recreation site and trail use effects on land	Site & trail inspection and interdisciplinary (ID) team review	Moderate	Moderate	25% of high use areas and trails annually	Annually	Irreversible ecosystem damage
30	Livestock effects on land	Technical review of condition and trends, forage production, and transitory range	Moderate	Moderate	10% of allotments annually	Annually	±10% change in the carrying capacity
31	Timber sale effects including soil compaction, displacement, and puddling, and severe burns	Soil inventory and site inspection prior to and after activity on susceptible soils - Measured transects	Moderate	Moderate	25% of projects per year	Annually	More than 20% of the activity area detrimentally affected (total accumulation of detrimental compaction, displacement, puddling and/or severely burned)
	36 CFR 219 12(K)(3)						
32	Document costs associated with carrying out the planned management prescriptions as compared with estimated costs in the Plan	Project report contracts PAMARS	High	High	Annually	Annually	±10% projected costs
	36 CFR 219.12(K)(5a)						
33	Lands adequately restocked	Survival exams and TSMRS	High	High	100% annually	5 years	±5 percent over 5-year period
	36 CFR 219.12(K)(5b)						
34	Examine unsuitable timberlands for suitability	Stand exams, land typing and timber sale reports	Moderate	Moderate	Ongoing	5 years	±5 percent over 5 year period
	36 CFR 219.12(K)(5c)						
35	Evaluate maximum size limit for harvest areas	TSMRS	High	High	100% annually	Annually	Any deviation from regulations

Table IV-1 (continued)
Monitoring and Evaluation Requirements

#	NFMA Requirement Effects To Be Measured	Data Source	Expected Precision 1/	Expected Reliability 2/	Frequency of Measurement 3/	Reporting Period	Variability Which Would Initiate Further Evaluation
36 CFR 219.12(K)(5d)							
36	Mountain pine beetle infestation	FPM aerial observation by RO Entomologists	Moderate	Moderate	100% annually	Annually	Epidemic conditions approaching the suitable timber base
37	Insect and disease organism status as a result of activities	FPM aerial observation by RO Entomologists	Moderate	Moderate	100%	Annually	Epidemic conditions following management activities
36 CFR 219.19(6)							
38	Elk population in relation to habitat changes	Montana Dept Fish, Wildlife & Parks (MTDFWP)	High	Moderate	100% annually	Annually	±5% of most recent 5-year average
39	Pine marten population in relation to habitat changes	Census	Low	Low	3 transects annually	Annually after 5-yr average is established	±5% of most recent 5-year average
40	Pileated woodpecker population in relation to habitat changes	Census	Low	Low	3 transects annually	Annually after 5-yr average is established	±5% of most recent 5-year average
41	Cutthroat trout population in relation to habitat changes	Stream inventory and census	Moderate	Moderate	6 transects annually	Annually after 5 yr	10% from projected yield
36 CFR 219.7(f)							
42	Effects of National Forest management on adjacent land and communities	ID team review of management activities	Moderate	High	Annually	Annually	Eliminating effect would change National Forest outputs by 5% or change access
43	Effects of other Government agencies activities on the National Forest	ID team review of other agency activities	Moderate	Moderate	Annually	Annually	Effects cause a ±5% change in National Forest outputs or services
36 CFR 219.28							
44	Research Needs	ID and management team review of management activities	High	High	2 years	2 years	Inability to accomplish Plan goals and objectives with existing research

1/ Expected precision is the exactness of accuracy with which the data will be collected
2/ Expected reliability to the degree of monitoring accurately reflects the total Forest situation.
3/ Frequency of measurement is the schedule of sampling frequency
HT Habitat Type
LC Land Class
MA Management Area

Figure IV-1
Decision Flow Diagram



APPENDIX C - Response to Public Comments Received on *Forest Plan Monitoring Transition*

August 02, 2016

Lolo National Forest

Name	Date	Comment	Forest Service Response
James D. Arney, Ph.D	05/20/2016	The "Lolo Forest Monitoring Program Transition" is suggesting modifying and/or removing any goal to harvest at sustainable levels (pages 19-22).	The administrative change to the Lolo National Forest monitoring program does not modify or remove Forest Plan Goal 1 (LNF FP, p II-1) to harvest at sustainable levels. As stated on page 1 of the transition document; "These adjustments should not be interpreted as a change to other parts of the existing plans. Both the Lolo (1986) and Bitterroot (1987) Forest Plans will remain in effect until revised." **MON-VEG-03** considers whether timber harvest is conducted at sustainable levels as follows; "Is the volume of timber sold within the 10-year allowable sale quantity?" Both timber volume sold, and firewood volume sold will be assessed under this monitoring item to determine progress toward achieving Forest Plan goals and desired future conditions for timber harvest. No additional changes were made to the monitoring program to address this public comment.
Carol Young, Trustee, St. Regis Schools	05/25/2016	The forest plan in effect since February 1986 says… provide a sustained yield of timber…FAILED….provide habitat for viable populations of all indigenous wildlife…FAILED…provide for a broad spectrum of disperse recreation…FAILED…provide a pleasing and healthy environment…FAILED…emphasize conservation	The monitoring items address timber volume sold, wildlife, recreation, and general environmental attributes. **MON-SOC-01** considers "[w}hat effects do forest management activities have on the local economy, recreation opportunities, downstream water uses, visual quality, and local air quality?" This monitoring item, along with others also considers the effects of Forest

Name	Date	Comment	Forest Service Response
		of energy…FAILED…encourage a good host concept when dealing with the public…FAILED…. And why? Because of every word Dr. Arney says below. I would also like to point out that the largest property holder (FEDS) in our county doesn't pay their fair share of the property tax needed to sustain our schools and county services, this has created an economic catastrophe for our kids and taxpayers. Local control, including our local USFS staff, would turn all this around so any action that doesn't start with local control will fail too.	Activities on timber yield, wildlife habitat, recreation, and the socio-economic and environmental setting. No additional changes were made to the monitoring program to address this public comment.
Mike Lilly	06/09/2016	After studying all the forest plan goals and associated monitoring items, there [is] one clear monitoring items that is missing and truly needs to be considered as a new item. The questions needs to be asked; "is the forest providing a sustained yield of timber and other outputs that is concurrent with local processing capacities and needs?"	**MON-VEG-03** considers whether timber harvest is conducted at sustainable levels as follows; "Is the volume of timber sold within the 10-year allowable sale quantity?" In addition, **MON-SOC-01** considers; "[w}hat effects do forest management activities have on the local economy, recreation opportunities, downstream water uses, visual quality, and local air quality?" Indicators and sources identified for **MON-SOC-01** were intended to consider information regarding local processing facilities. However, this monitoring item did not clearly state that local processing capacities and needs would be evaluated. Local processing capacities and needs were added to the modified indicators for **MON-SOC-01** to address this public comment. Data from the Montana Department of Commerce, UM Bureau of Business and Economic Research – Forest Industry Research Program, and Headwater Economics Tools will be used to determine local processing capacities and needs.

Name	Date	Comment	Forest Service Response
Kali Becher, Missoula County Parks, Trails, and Open Lands	06/07/2016	Using monitoring indicators that help identify areas of success or improvement due to management action, separate from or in addition to tracking management actions completed, would help track results. For example, for MON-RNG-02 the current indicators track treatments, but may not provide sufficient information to answer the questions of whether or not the weed species are being controlled.	Best available science is used to determine the appropriate treatment and potential for efficacy prior to treatment selection. Treatment efficacy monitoring is then conducted at the project scale. **MON-RNG-02** considers the establishment and spread of invasive aquatic and terrestrial plant weed species being controlled (prevented or reduced) through use of integrated weed treatment practices. The indicators for this monitoring item include consideration of treatment efficacy as tracked in the Natural Resource Information System (NRIS). No additional changes were made to the monitoring program to address this public comment.
Kali Becher, Missoula County Parks, Trails, and Open Lands	06/07/2016	In addition, an indicator for land use change beyond subdivision or construction activity on adjacent land would be tracking conservation easements as well.	**MON-SOC-02** considers what effects adjacent land uses and activities have on management of the Forest. The indicators for this monitoring item where intended to track other land uses. However, this monitoring item did not clearly state that conservation easements would be considered. Conservation easements were added to the indicators for **MON-SOC-02** to address this public comment. Data from the National Conservation Easement Database (NCED) will be used identify conservation easements that potentially effect Forest Service land management activities.

Bitterroot National Forest

Name	Date	Comment	Forest Service Response
Tricon Timber, LLC	No Date	Tricon Timber LLC, would like to see monitoring occur that insures wood product are being supplied both locally and to adjacent mills. Additionally, the wood products being supplied are affordable, maximum volumes are being harvested, and the work[ing] being done on the ground makes sense for the applications chosen. We cannot stress the importance on an adequate timber supply being available. Monitoring this and having accountability to ensure supply levels exist are of upmost importance.	**MON-ECON-01** considers project feasibility, marketability and whether sales are purchased when offered. Data collected for this monitoring item include project feasibility and economic analysis. This information is displayed in environmental analysis documentation. No additional changes were made to the monitoring program to address this public comment.
Tricon Timber, LLC	No Date	Similarly, we would like to see monitoring occur which would confirm that wood products are being supplied to support a viable economy, timber sales have the opportunity to be affordable, and represent and conform to timber market conditions when they are advertised for bid. Having a timber supply is important [and] but also having an economically viable sale to bid on is too.	**MON-ECON-01** considers project feasibility, marketability and whether sales are purchased when offered. Data collected for this monitoring item include project feasibility and economic analysis. This information is displayed in environmental analysis documentation. No additional changes were made to the monitoring program to address this public comment.