

# Forest Plan Monitoring Report FISCAL YEARS 1993 & 1994

October 1995

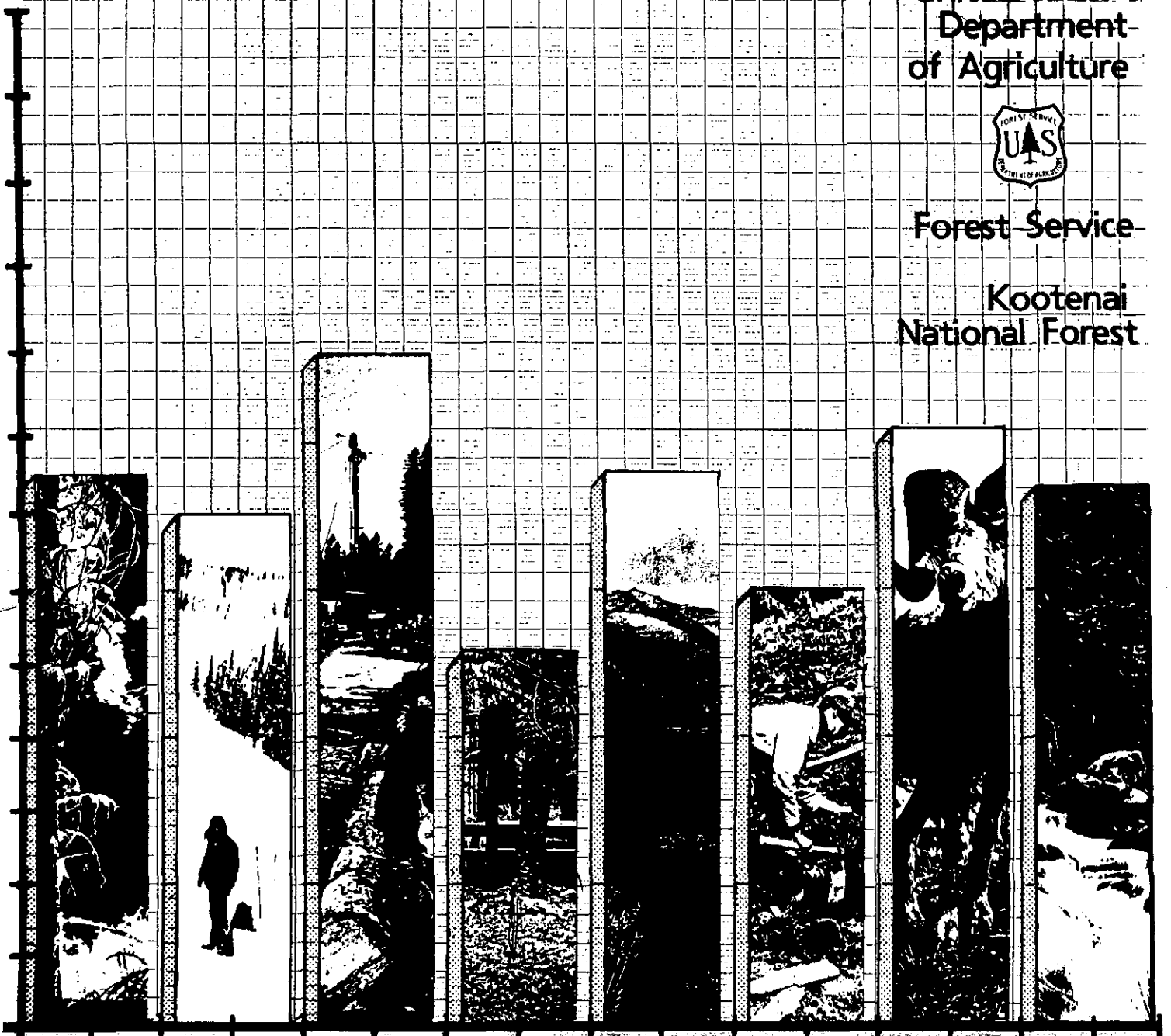
# Kootenai National Forest Plan

United States  
Department  
of Agriculture



Forest Service

Kootenai  
National Forest



# Forest Plan Monitoring Report for Fiscal Years 1993/1994

## Kootenai National Forest October, 1995

### TABLE OF CONTENTS

|   | page       |
|---|------------|
| Introduction .....  | 1          |
| <br><b>Results of Monitoring and Evaluation</b>                       |            |
| Old-Growth Habitat (Item C-5) .....                                   | 4          |
| Threatened and Endangered (T & E) Species Habitat (Item C-7) .....    | 8          |
| Fish Habitat and Populations (Item C-10) .....                        | 13         |
| <br><b>Range: (Monitoring Category D)</b>                             |            |
| Range Use (Item D-1) .....  | 14         |
| Noxious Weed Infestations (Item D-2) .....                            | 15         |
| <br><b>Timber: (Monitoring Category E)</b>                            |            |
| Allowable Sale Quantity (ASQ) (Item E-1) .....                        | 16         |
| Acres Sold for Timber Harvest (Item E-2) .....                        | 19         |
| Suitable Timber Management Area Changes (Item E-3) .....              | 21         |
| Timber Harvest Deferrals (Item E-7) .....                             | 24         |
| Harvest Unit Size (Item E-8) .....                                    | 27         |
| Clearcut Acres Sold Item E-9) .....                                   | 30         |
| <br><b>Soil and Water: (Monitoring Category F)</b>                    |            |
| Soil and Water Conservation Practices (Item F-1) .....                | 31         |
| Water Yield Increases (Item F-3) .....                                | 35         |
| <br><b>Human and Community Development: (Monitoring Category H)</b>   |            |
| Emerging Issues (Item H-2) .....                                      | 39         |
| Forest Plan Costs (Item H-3) .....                                    | 40         |
| Forest Plan Budget Levels (Item H-4) .....                            | 42         |
| <br><b>Protection: (Monitoring Category P)</b>                        |            |
| Insect and Disease Status as a Result of Activities (Item P-1) .....  | 46         |
| <br><b>Appendices</b>   |            |
| Appendix A - Planned Outputs or Activities, and Accomplishments ..... | A-1        |
| Appendix B-1 - Timber Sell Volume: Additional Data .....              | B-1        |
| Appendix B-2 - Harvest Area Size: Additional Data .....               | B-2        |
| Appendix B-3 - Forest Plan Exceptions .....                           | B-3        |
| Appendix B-4 - Forest Plan Amendments .....                           | B-4        |
| Appendix D-1 - Projected and Actual Budget .....                      | D-1        |
| <br><b>Sources for Information</b>                                    |            |
| Location of Kootenai National Forest Offices .....                    | Back Cover |

# FOREST PLAN ANNUAL MONITORING REPORT FOR FISCAL YEARS 1993 AND 1994

## Kootenai National Forest

### INTRODUCTION

We have recently completed the monitoring of Forest Plan implementation for fiscal years 1993 and 1994. Our monitoring and evaluation process is shown in Chapter IV of the 1987 **Kootenai National Forest Land and Resource Management Plan** (Forest Plan). In FY 1993 and 1994 we monitored 17 items (13 are items to be reported yearly, five are items to be reported every two years). The FY 1993-1994 report identifies similar trends as those items reported in the five year monitoring report. Following this summary is a more in-depth review of those items.

In this summary, there is a section explaining the Forest Plan itself, the monitoring methods, and evaluation of seven years of monitoring practices, standards, and outputs under the Forest Plan.

### FOREST PLAN DECISIONS

The Forest Plan is a set of decisions that guide management of the forest. Taken broadly, it contains three types of decisions:

- **Goals, Objectives, and Desired Conditions** (pages II-1 through II-17 of the Plan) provide general direction regarding where we should be headed as we put the Plan into practice.
- **Standards** (Pages II-20 through II-33, Chapter III of the Plan, and Forest Plan amendments) tell us **how** to put the plan into practice, or give us conditions we must meet while we implement the plan.
- **Land Allocation** - Management areas (MAs), as described in the Forest Plan Chapter III and displayed on the Forest Plan Map, are those areas of the Forest which are allocated for different types of land management and resource production.

### MONITORING METHODS

Chapter IV of the Forest Plan contains a detailed process that was designed to monitor implementation of the decisions discussed above. Are we doing what the Plan envisioned? Are we seeing the effects and outputs predicted in the Plan? Are the standards working, do we need to adjust practices to meet the standards? Does the monitoring process need adjusting?

### SUMMARY OF MONITORING RESULTS

**Old Growth (C-5):** We are continuing our validation efforts for old growth. Over 120,000 acres were surveyed in FY 1993 and 1994 to determine if the areas were old growth habitat. Of this approximately 16,000 acres were validated and maintained as old growth habitat. Forestwide, over 939,000 acres have now been surveyed and 107,707 acres are validated as old growth habitat (11.4%). The fires of 1994 affected some of these areas. These areas are being revalidated to determine if they still meet old growth criteria. If the areas can no longer function as old growth, then other old growth or "replacement" old growth is being identified.

**Threatened and Endangered Species (C-7):** We're monitoring the quantity and quality of habitat for the recovery of peregrine falcons, gray wolves, bald eagles and grizzly bears. We're also cooperating with other agencies to obtain population estimates or trends.

*Peregrine falcon:* a single peregrine falcon was observed on the Cabinet District in 1993 and 1994. The presence was likely the result of a hacking site located just west of the area on the Idaho Panhandle National Forest.

*Gray wolf:* reports of wolf sightings increased in 1993 and 1994. Many of these sightings were of the Murphy Lake pack, but areas on the Cabinet District appear to also have wolves on a transient basis.

*Bald eagle:* surveys indicate increase in the total number of bald eagles during 1993 and 1994. On August 11, 1995 the bald eagle was reclassified from endangered to threatened in all of the lower 48 states.

*Grizzly bear:* Grizzly bear habitat continues to improve. Grizzly bear habitat effectiveness is above the Plan's standard on a Forestwide average.

**Fisheries (C-10):** Monitoring data from FY 1993/1994 has been gathered from five representative watersheds but the results are inconclusive. During FY 1993 and 1994, over 45 small watersheds were surveyed for presence of sensitive fish species. To date, 65 watersheds have been identified that contain sensitive fish populations.

**Range Use (D-1):** During the last seven years, grazing use has averaged 91% of the projected level. In FY 1993 use was 96% and 1994 92%.

**Noxious Weeds (D-2):** Baseline information is still not complete in all parts of the Forest. Efforts were made in 1993 and 1994 to inventory areas and treat identified sites. Treatment included hand pulling plants, spraying and using biological control (insects that eat the plants).

**Allowable Sale Quantity (ASQ) (E-1):** The sell volumes for FY 1993 and 1994 are the lowest in the last seven years and represent approximately 36% and 24% respectively, of the estimated ASQ. This continues the downward trend for this item. The total timber sell program is 59% of the Forest Plan projected ASQ.

**Acres of Timber Sold for Timber Harvest (E-2):** The acres of timber sold for regeneration harvest also continues on a downward trend. Total acres sold is 47% of the Forest Plan projection.

**Suitable Timber Management Area Changes (E-3):** The Forest Plan allows for minor corrections in the boundaries of management areas based upon site-specific analysis and interdisciplinary team review. In 1993 approximately 11,000 acres were removed from the suitable base. In 1994, the suitable base increased by 82 acres. This was the first such increase over the last seven years. A total of 39,640 acres have been removed from the suitable base and placed into unsuitable timber land categories. The largest change has occurred in MA 11, big game winter range, timber (-11,615 acres) and MA 15, timber management (-17,592) acres.

**Timber Harvest Deferrals (E-7):** In FY 1993 and 1994 the amount of timber harvest deferred beyond the life of the plan dropped considerably. 150 acres were deferred in 1993 and 1,137 acres deferred in 1994 compared to 7,200 acres in FY 1992. Approximately 25,000 acres have been deferred over the last seven years.

**Harvest Area Size (E-8, Appendix B-2):** The Forest is continuing to monitor harvest area size. As in prior years, some harvest areas have been approved by the Forest Supervisor to exceed size guidelines. The National Forest Management Act states that the 40 acre size limit does not apply to areas harvested as a result of natural catastrophic conditions such as wildfire, windstorm, or insect attacks.

**Clearcut Acres Sold (E-9):** The Forest has met the congressionally mandated reduction in clearcutting prior to the FY 1995 objective. Additional reduction in clearcutting was expected as a result of guidelines released

by the Chief of the Forest Service in 1992. The implementation of these guidelines and other factors have resulted in a 77% decline in clearcutting since 1989.

**Soil and Water Conservation Practices (F-1):** Best management practices were evaluated by Kootenai forest personnel in FY 1993 and 1994, and by a State team in 1994. In FY 1993 and 1994, Kootenai personnel evaluated over 6,000 BMP's on 230 projects. These reviews indicated that the Forest was improving in implementation and effectiveness from previous years. In 1994, the state evaluated 158 BMP's, on four projects. Their findings indicated that the Forest did not improve over the 1992 findings. The Forest is taking several actions to improve the BMP program: additional field training sessions for all personnel, from District Rangers to sale inspectors; an improved BMP Identification and Tracking system; more oversight at the District level for implementation of BMP's; and closer coordination with the Supervisor's Office to complete the BMP feedback loop for better management.

**Water Yield Increases (F-3):** The Forest water yield model is used to analyze the potential effect of disturbance in a watershed as a part of opportunity analysis for timber sales and other activities. If the analysis shows that water yields approach or exceed guidelines, then no projects are proposed or further studies are made which enable our hydrologists to make professional interpretations. Due to past activities (prior to issuance of the Plan), activities on privately owned land, and effects of wildfire, 28% of the portion of the Forest analyzed has water yields exceeding the Forest Plan standard. In these areas, projects have not been undertaken or have been modified so that water quality, beneficial uses, and stream channel integrity are maintained.

**Emerging Issues (H-2):** This item identifies those issues that appear to be developing since the Plan was initiated, and also monitors the original Forest Plan issues that appear to still be of concern. Emerging issues include: ecosystem management, including management of sensitive plants and animals, biodiversity, and old growth; elk vulnerability; and the increased awareness of fuel buildups as it pertains to the wildland/urban interface. Forest Plan issues that still exist are: grizzly bear management, state water quality management, timber supply (local economic impact), road management, public access, potential mineral development, visual (scenic) quality, and community stability.

**Forest Plan Costs (H-3):** Timber sale costs are about four times greater than the Forest Plan projected. This is continuing the upward trend that began in FY 1990. The increase is due to the increasing complexity in timber sale preparation along with the concurrent decrease in the amount of volume being sold.

**Forest Plan Budget Levels (H-4):** As in prior years, there is a great deal of variation in the level of funding for various program areas in comparison to the projected amounts. Notable areas where funding has increased beyond expected are fire suppression, fuels management, law enforcement, tree improvement, and salvage sales. Most other program areas are remaining at budget levels below those projected.

**Insect and Disease Status (P-1):** Stand exams, permanent plots and benchmark exams indicate stands that have been regeneration harvested and those treated with some form of intermediate treatment are healthy with only minor amounts of insect and disease problems.

**Forest Plan Exceptions (Appendix B-3):** Exceptions are short term changes to a standard. The Forest Plan states "If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for the project." Approximately 124 project decisions were issued in FY 1993/1994. Ten exceptions were approved in FY 1993/1994 to allow higher open road densities during activities in Management Areas 12 (Big Game Summer Range) and Management Area 15 (Timber). One exception was approved in FY 1993 which allowed harvest to occur adjacent to existing units prior to providing cover for big game.

**Forest Plan Amendments (Appendix B-4):** The Forest Plan provides a process for amending the plan. Amendments are effective until the plan is revised, or changed. Three Forest Plan amendments were approved in FY 1993. The amendments modified the MA 12 open road density standard for the Detgen-Cowell Creek area on Libby District, and Stevens Ridge area on the Cabinet District; and created Management Area 31 for the Montanore Project. No amendments were approved in FY 1994.

## FACTORS AFFECTING THE KOOTENAI FOREST PLAN 1995 AND BEYOND

The following actions occurred in Fiscal Year 1995. The effect of these events will be included in next years monitoring report.

**Rescission Bill:** On July 27, 1995, President Clinton signed the Rescission Act (Public Law 104-19) which contains provisions for an emergency salvage timber sale program. The legislation directs the preparation, advertisement, offer and award of contracts for salvage timber sales using expedited procedures. Sales offered under this amendment are not subject to administrative appeals, and deadlines for judicial review are set.

**Amended Biological Opinion on the Kootenai Forest Plan:** On July 27, 1995, the US Fish and Wildlife Service amended their 1985 Biological Opinion on the Kootenai Forest Plan. The purpose of the amended opinion is to include an incidental take statement, pursuant to 50 CFR 402.14(i). The amendment provides reasonable and prudent measures to minimize the incidental take. The measures are non-discretionary and must be implemented by the Kootenai Forest (BO, page 9).

**Inland Native Fish Amendment (INFISH):** The Decision Notice and Finding of No Significant Impact was signed on July 28, and became effective August 30, 1995. This decision amended the Kootenai National Forest Plan and is intended to provide interim direction to protect habitat and populations of resident native fish. This interim direction is in the form of riparian management objectives, standards and guidelines, and monitoring requirements.

### OTHER HAPPENINGS

**Social Assessment:** This assessment describes what and how people feel about management of the Kootenai Forest. It was completed under contract and is both informative and honest. While comments are not all positive, they are useful and will be incorporated into improvements in public involvement and public services programs. The Forest is developing a long term public involvement action plan to respond to identified areas of concern.

## WILDLIFE AND FISHERIES

### Old Growth Habitat: Monitoring Item C-5

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Maintain habitat capable of supporting viable populations of old growth dependent species (10% old growth in each drainage).  |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | Reduction below 10% in a drainage which was previously over minimum; or any reduction in a drainage previously under minimum. |

**Purpose:** This monitoring item was established to help ensure that an adequate amount of old growth habitat is designated on the Forest. The Plan requires that this item be reported every two years. The expected accuracy and reliability of the information is moderate to high.

**Background:** The Forest Plan specifies that 10% of the Forest land below 5,500 feet elevation would be protected as old growth habitat for dependent wildlife species. This commitment amounts to a minimum of 186,500 acres and ideally would be equally distributed in all drainages on the Forest.

The current policy of old growth habitat validation was implemented in a Kootenai Forest Manual Supplement (2400) issued in January, 1991. This supplement clarifies standards for old growth habitat validation on the Forest before any timber sales containing mixed conifer can be sold. One of the requirements established is that old growth habitat be validated and protected at the 10% level in each 3rd-order drainage or compartment. This validation process will provide for the protection of the best possible distribution of old growth habitat. It also gives direction where 3rd-order drainages are found to have less than 10% old growth habitat. In this case, part of the 10% acreage requirement can be provided with surplus (>10%) old growth in an adjacent compartment to reach an average of 10% for both compartments. Another method to provide for a deficiency of old growth, if adjacent surplus old growth is not available, is to protect stands of mature timber that are not currently providing all the desirable attributes for high quality old growth habitat. These protected, mature stands are known as old growth replacement stands because they are replacing a current deficiency of high quality old growth habitat, and will provide for old growth habitat in the future as they age and gain the desirable attributes. The important point is that the best possible distribution of old growth habitat is to be provided wherever possible, and the highest quality old growth should always be protected. These criteria could result in additional acreage being protected to achieve the desired distribution pattern. (See the Forest Plan Glossary and Appendix 17 of the Forest Plan for more detail on the description of old growth attributes including desired distribution patterns.)

**Results:** Table C-5-1 displays the results of the old growth acreage validation surveys for FY 1993 and 1994, including the totals for the last 5-year period (1988-92). Over 72,000 acres were surveyed in FY 1993 with 10,393 acres validated and protected as old growth habitat. Over 49,000 acres were surveyed in FY 1994 with 5,474 acres validated and protected as old growth habitat. Forestwide, over 939,000 acres have now been surveyed and 107,707 acres are validated as protected old growth habitat (11.2%).

**Evaluation:** For the total acres currently validated, 11.4% are now protected which is above the 10% level required in the Plan. The reason for this higher level is the result of providing for an adequate distribution of biologically-effective old growth habitat. The Forestwide results indicate that 84% of the validated old growth habitat contains all the desirable old growth attributes which means it is currently in a fully effective condition (see Figure C-5-1). This also means that the remaining 16% are replacement stands because they don't contain all the desirable old growth attributes at this time.

After seven years of old growth habitat validation work, the Forest has completed 50% of the total acreage to be surveyed. Because of discrepancies found in the original Forest Plan old growth mapping, and to meet the old growth distribution requirements stated above, additional stands were identified to meet the standard for 10% old growth. These additional stands have been added to the old growth management areas (see Monitoring Item E-3).

**Finding:** Based on the information stated above, the monitoring item is on-track with the Forest Plan.

**Table C-5-1 Old growth Habitat and Condition Survey Results by Fiscal Year**

| Fiscal Years        | Acres Surveyed       | Acres Validated as Protected Old Growth Habitat | Percent Validated as Protected Old Growth Habitat | Old Growth Habitat Acres Judged Fully Effective | Percent of Old Growth Habitat Judged Fully Effective |
|---------------------|----------------------|---|---|---|--|
| 1988-89             | 94,210               | 12,730  | 13.5  | 8,450   | 66   |
| 1990                | 176,560              | 18,770  | 10.6  | 17,030  | 91   |
| 1991 <sup>3</sup>   | 334,300              | 39,410  | 11.8  | 36,520  | 93   |
| 1992                | 212,380              | 20,930  | 9.9   | 15,500  | 74   |
| 1993                | 72,253               | 10,393  | 14.0  | 8,455   | 81   |
| 1994                | 49,381               | 5,474   | 11.0  | 4,312   | 79   |
| Totals <sup>1</sup> | 939,084 <sup>2</sup> | 107,707   | avg. 11.4   | 90,267  | avg. 84  |

<sup>1</sup> Totals may not be exact because of rounding.

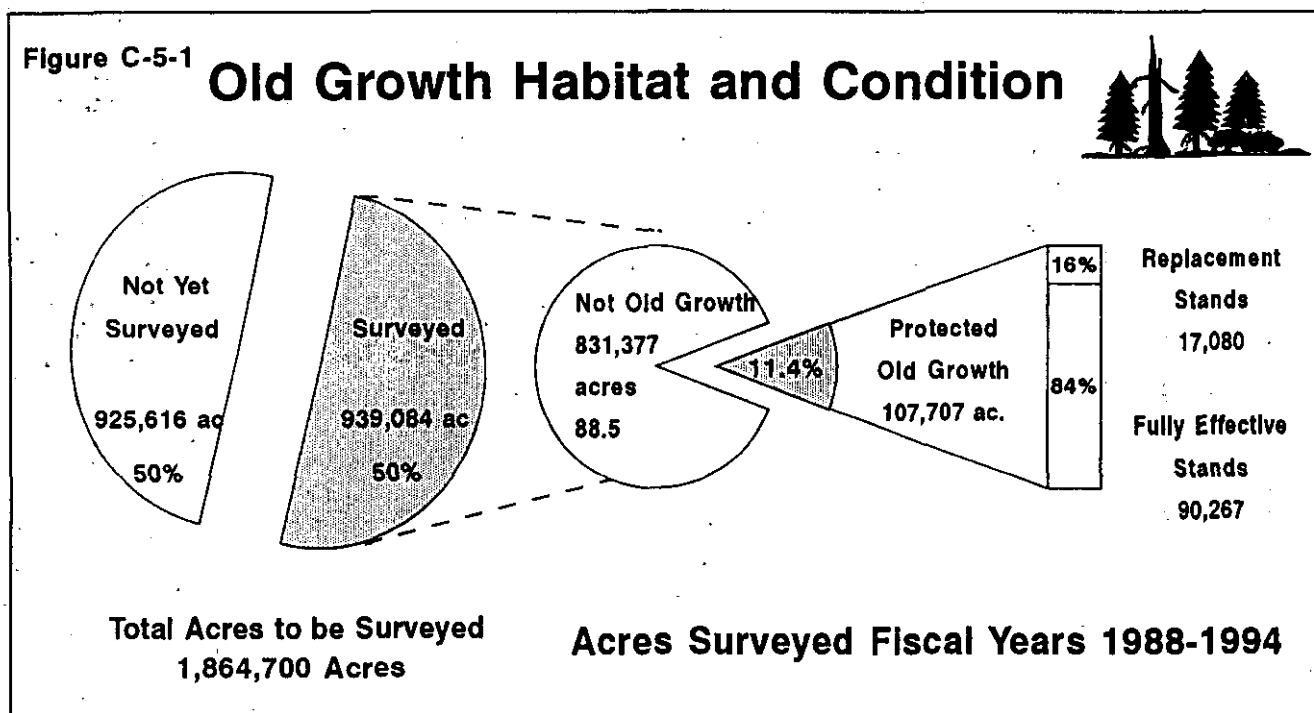
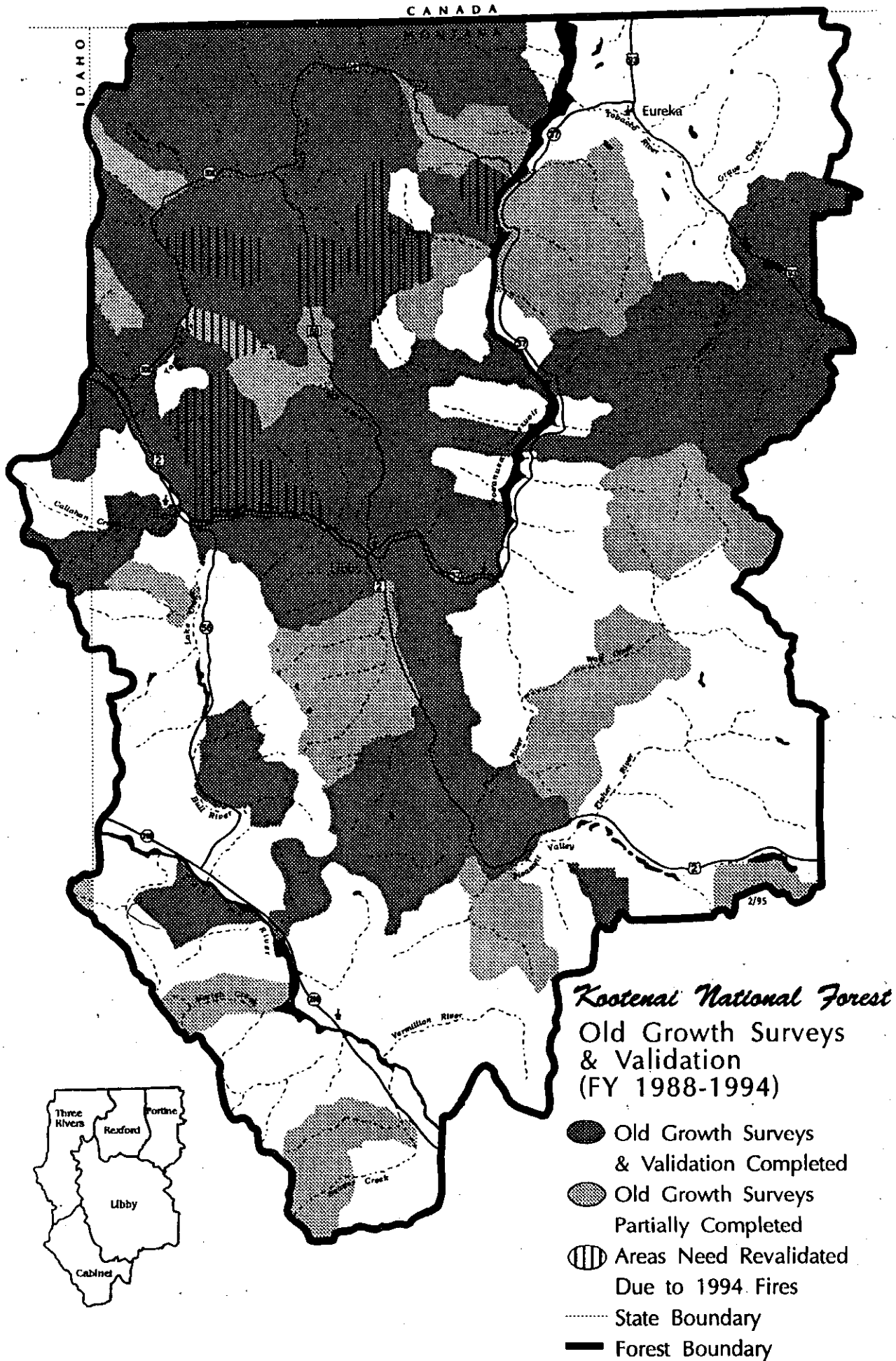




Figure C-5-2



## WILDLIFE AND FISHERIES

### T & E Species Habitat: Monitoring Item C-7

|  |  |
|--|--|
| ACTION OR EFFECT TO BE MEASURED:                     | Ensure adequate habitat is provided for recovery of Threatened & Endangered (T & E) Species including: Peregrine Falcon, Gray Wolf, Bald Eagle and Grizzly Bear. |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | Any downward population trend. Any forestwide decrease in habitat quantity or quality. Failure to meet recovery plan goals for the Kootenai N.F.                 |

**Purpose:** This monitoring item was established to help ensure that the Kootenai Forest contributes to the recovery of the listed T & E species. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate to high.

**Results and Evaluation:** by species.

**Peregrine Falcon** -- There are no specific recovery goals for the Forest, but the goal for Montana is 20 nesting pairs (USFWS, 1984). A single peregrine falcon was observed on the Cabinet District in 1993. A bird was confirmed at the same location in 1994. Nesting activity was not found. The presence of the peregrine on the Kootenai was likely the result of a hacking site, located just east of the area on the Idaho Panhandle National Forest.

**Gray Wolf** -- Guidance for the recovery of the gray wolf is derived from the Wolf Recovery Plan (USFWS, 1987), and there's one recovery area within or adjacent to the Kootenai Forest (the Northwest Montana Recovery Area). A small portion of this recovery area (about 10%) is located in the northeast corner of the Forest, east of U.S. Highway 93.

Reports of wolf sightings continued to increase over the course of 1993 and 1994. Many of these were sightings of the Murphy Lake pack, but new areas on the Cabinet District appear to also have wolves. The Murphy Lake pack is estimated to contain 6-10 animals. This pack suffered two mortalities in 1993 and one in 1994. At the end 1994 there were no radio collared wolves in the Murphy Lake pack due to the mortalities and the dispersal of a collared male and female which went to other packs.

**Bald Eagle** -- Guidance for bald eagle recovery comes from the Montana Bald Eagle Management Plan (MBEWG, 1986) and the Pacific States Bald Eagle Recovery Plan (USFWS, 1986). These plans call for the establishment of 52 nesting pairs within Recovery Zone 7, which is the Montana section of the upper Columbia River Basin. This recovery zone includes all public and private land west of the continental divide in Montana, and the Kootenai Forest area is about 15% of the zone.

Table C-7-1 shows the results of mid-winter bald eagle surveys on the Forest which occur mostly along major watercourses. The surveys indicate increases in the total number of bald eagles during 1993 and 1994 and similar results regarding active nests and fledglings as previous years.

**Grizzly Bear** -- Recovery goals are based on the Grizzly Bear Recovery Plan (USFWS, 1982). The Kootenai Forest contains portions of two grizzly bear recovery zones; the Cabinet-Yaak Ecosystem (CYE) and the Northern Continental Divide Ecosystem (NCDE). About 72% of the CYE is located on the western portion of the Forest, and about 10% of the NCDE is located in the extreme northeast corner (see Figure C-7-3). Each of these ecosystems are further subdivided into smaller areas for analysis and monitoring, known as

grizzly bear management units (GBMU's). The Forest's primary effort in grizzly bear recovery is in habitat management, co-operating in grizzly bear studies within the Yaak River area, and assisting with bear augmentation tests in the Cabinet Mountains. Augmentation efforts resulted in the release of two young female grizzly bears into the Cabinet Mountains Wilderness, one each year. Monitoring of their movements also occurred.

Table C-7-2 shows habitat effectiveness values for each of the GBMU's evaluated during fiscal years 1988-94. Effectiveness is based on the percent of habitat available to bears, and the desired level is 70% or greater. Thirteen GBMU's were at, or above, the 70% level in FY 1993 and 1994, which is an improvement over previous years. Five GBMU's remain below the 70% level.

Unduplicated sightings of females with young are considered to be important indicators of potential population growth. In FY 1994, there were three confirmed, unduplicated sightings of female grizzly bears with young in the CYE. No sightings were reported in FY 1993. There were two confirmed unduplicated sightings of female grizzlies with young in the NCDE in 1993 and none in 1994.

Mortality rates are another key indicator of potential population trends. In 1993, there were two known mortalities in the CYE, and none in the NCDE. No mortalities were reported in FY 1994.

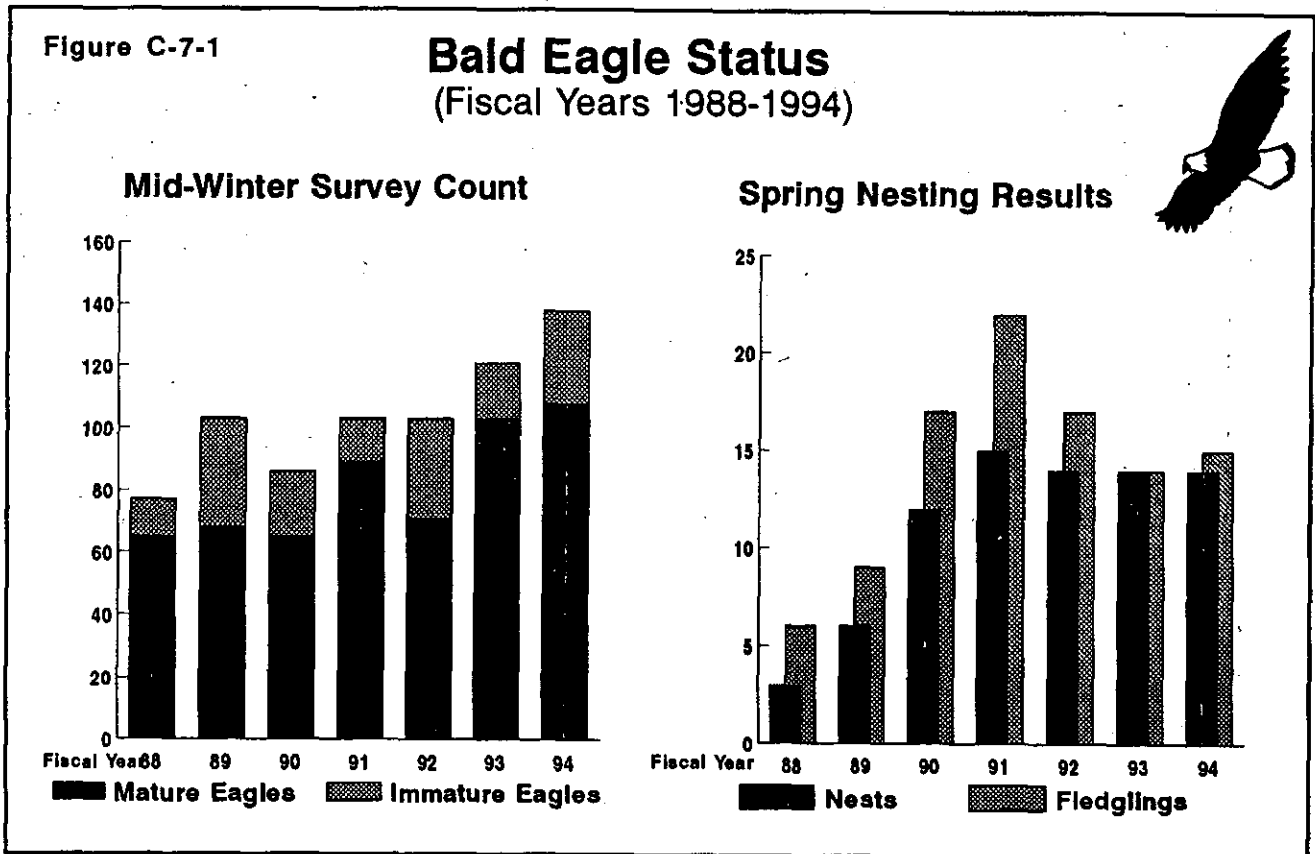
**Summary:** The wolf, bald eagle and grizzly bear have had increased sightings during the last seven years. All of the threatened and endangered habitats being monitored appear to be improving or at least maintaining. The information shows that the Kootenai Forest is progressing toward providing adequate habitat for threatened and endangered species recovery.

**Finding:** Based on the information stated above, the Kootenai Forest is contributing to the recovery goals of threatened and endangered species.

**Table C-7-1 Mid-Winter Bald Eagle Survey Count and Spring Nesting Results by Fiscal Year**

| Fiscal Year | Mature Eagles | Immature Eagles | Total Eagles | Active Nests    | Fledglings |
|-------------|---------------|-----------------|--------------|-----------------|------------|
| 1988        | 65            | 12              | 77           | 3               | 6          |
| 1989        | 68            | 35              | 103          | 6               | 9          |
| 1990        | 65            | 21              | 86           | 12              | 17         |
| 1991        | 89            | 14              | 103          | 15 <sup>1</sup> | 22         |
| 1992        | 71            | 32              | 103          | 14              | 17         |
| 1993        | 103           | 18              | 122          | 14              | 14         |
| 1994        | 113           | 30              | 143          | 15              | 15         |
| Average*    | 82            | 23              | 104          | 11              | 14         |

\* Averages are rounded off. <sup>1</sup> Correction in FY 1992.



**Table C-7-2 Grizzly Bear Habitat Effectiveness (%) by Fiscal Year (FY)**

| Grizzly Bear Management Unit | FY 1988   | FY 1989   | FY 1990   | FY 1991         | FY 1992         | FY 1993         | FY 1994   |
|------------------------------|-----------|-----------|-----------|-----------------|-----------------|-----------------|-----------|
| <b>Above 70 percent:</b>     |           |           |           |                 |                 |                 |           |
| NC Murphy Lake <sup>1</sup>  | 78        | 79        | 78        | 78              | 78              | 78              | 78        |
| #1 Cedar                     | 81        | 81        | 81        | 82              | 79              | 79              | 86        |
| #2 Snowshoe                  | 82        | 82        | 82        | 81              | 82              | 82              | 84        |
| #3 Spar                      | 70        | 71        | 70        | 70              | 79              | 78              | 77        |
| #5 Saint Paul                | 73        | 77        | 79        | 80              | 78              | 81              | 75        |
| #6 Wanless                   | 74        | 74        | 72        | 74              | 76              | 76              | 71        |
| #7 Silver Butte-Fisher       | 87        | 87        | 87        | 87              | 87              | 82              | 82        |
| #8 Vermillion                | 79        | 80        | 80        | 73 <sup>2</sup> | 73              | 71              | 71        |
| #9 Callahan                  | 64        | 55        | 62        | 67              | 70              | 74              | 74        |
| #11 Roderick                 | 60        | 59        | 66        | 68              | 66 <sup>3</sup> | 70              | 70        |
| #13 Keno                     | 68        | 68        | 72        | 72              | 69 <sup>3</sup> | 70              | 72        |
| #14 Northwest Pk             | 61        | 61        | 68        | 68              | 68              | 72              | 74        |
| #17 Big Creek                | 51        | 58        | 58        | 63              | 64              | 68              | 70        |
| <b>Below 70 percent:</b>     |           |           |           |                 |                 |                 |           |
| #4 Bull                      | 80        | 78        | 80        | 80              | 80              | 92 <sup>4</sup> | 64        |
| #10 Pulpit                   | 43        | 47        | 50        | 56              | 59              | 62              | 62        |
| #12 Newton                   | 42        | 42        | 43        | 53              | 53              | 49              | 49        |
| #15 Garver                   | 50        | 47        | 62        | 62              | 54 <sup>3</sup> | 65              | 65        |
| #16 East Fork Yaak           | 47        | 46        | 59        | 61              | 62              | 64              | 64        |
| <b>Forestwide Average</b>    | <b>66</b> | <b>66</b> | <b>69</b> | <b>71</b>       | <b>71</b>       | <b>71</b>       | <b>72</b> |

<sup>1</sup> GBMU #1 - Murphy Lake, is located in the North Continental Divide Ecosystem. All other GBMU's are in the Cabinet Yaak Ecosystem.

<sup>2</sup> GBMU #8 - Vermillion, was recalculated and found to have a lower rating, even though nothing changed on the ground.

<sup>3</sup> GBMU's #11, 13 & 15 boundaries were changed and found to have a smaller total acreage which resulted in a lower rating.

<sup>4</sup> Change from 1993 is due to reporting error found in methodology used.

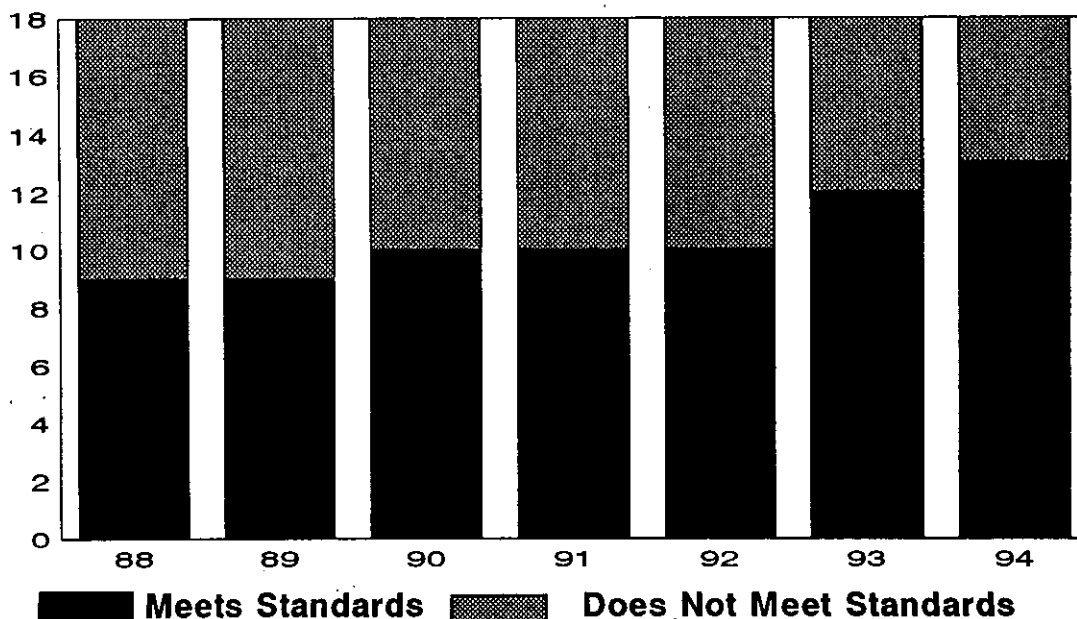
(+) Upward Trend, ( ) Stable Trend, (-) Downward Trend

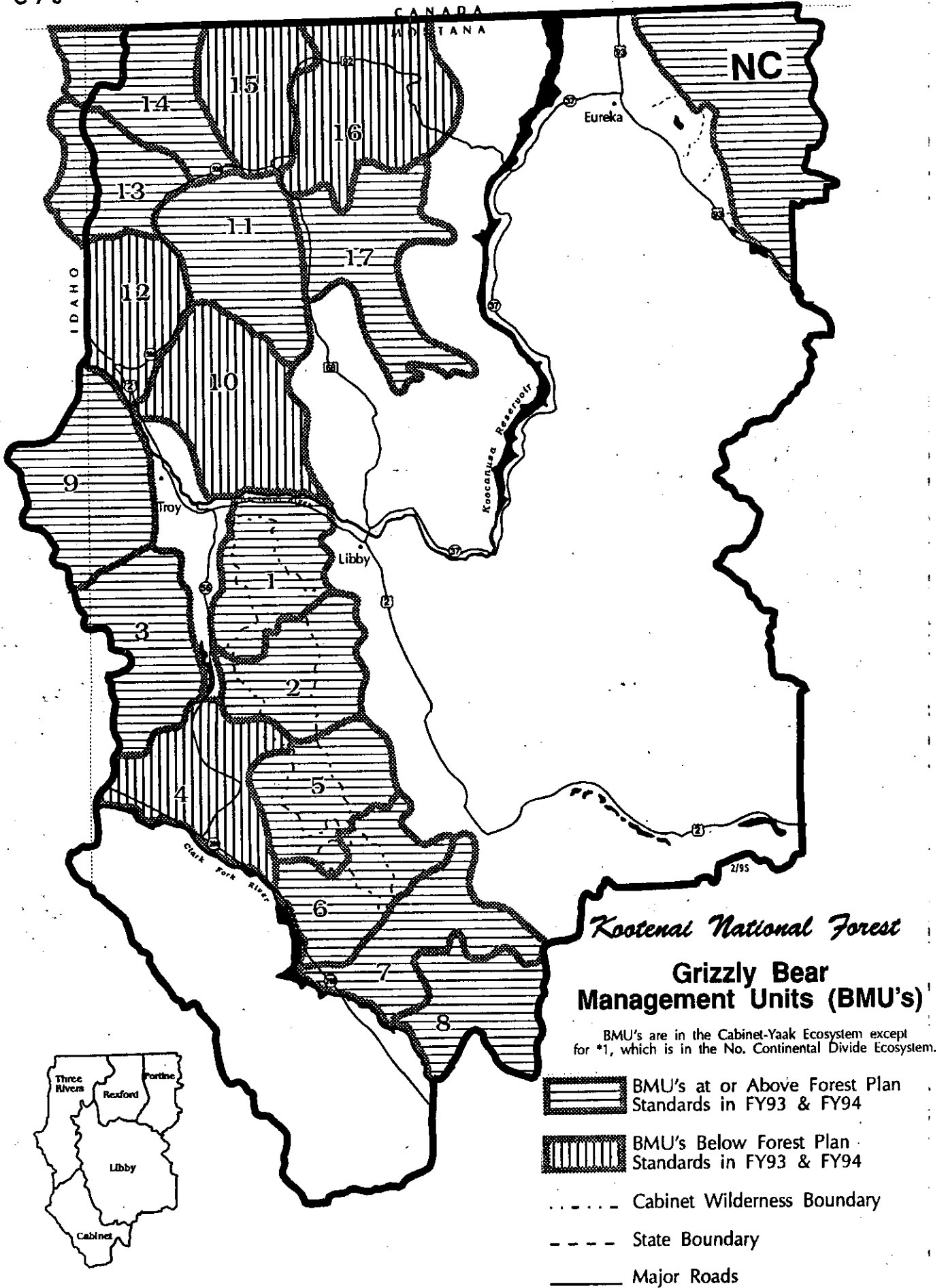
**Figure C-7-2**

## Grizzly Bear Habitat Effectiveness (Fiscal Years 1988-1994)



Number of BMU'S That Meet FP Standards





## WILDLIFE AND FISHERIES

### Fisheries Habitat: Monitoring Item C-10

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Determine changes in fish habitat and populations.  |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | +/- 10% change in Redd's,<br>+/- 2 degrees change in stream temperature,<br>+/- 10% change in sediment,<br>+/- 10% change in embeddedness,<br>+/- 20% change in debris accumulations. |

**Purpose:** This monitoring item was established to help ensure that changes in fish habitat and populations do not exceed certain levels. The Plan requires that this item be reported every two years. The expected accuracy and reliability of the information is moderate to high.

**Background:** Fish habitat and population concerns overlap with the Kootenai's responsibility for protecting downstream beneficial uses as required by State of Montana and Federal laws and regulations. The Forest Plan committed to aggressive water quality protection measures and special streamside management provisions in riparian areas as the means for protecting fish habitat (see Forest Plan - Chapter II, and Appendices 25 and 26). The Plan also scheduled fish habitat improvement projects as mitigation for negative cumulative effects on the fisheries resource as a result of management activities that pre-dated the Plan.

Six tasks (on seven representative watersheds) were designated for this monitoring item (surveys, streambed cores, temperature, woody debris analysis, redd counts, and embeddedness sampling) to assess the effects on fish and fish habitat

The Forest has directed its available expertise at consultation for site-specific projects such as timber sales, and the survey and evaluation of sensitive fish species (the bull, interior redband and westslope cutthroat trout, and the torrent sculpin). The other sensitive species, burbot, is being surveyed and evaluated by the Montana Department of Fish, Wildlife and Parks, the Bonneville Power Administration and the State of Idaho.

#### **Results and Evaluation:**

Monitoring data from 1993-94 has been gathered from five representative watersheds but the results are inconclusive. The project-specific monitoring data available from three additional watersheds will be evaluated at a later date. Fish habitat improvement is being completed at a rate that meets the Forest Plan projection (see Appendix A at the end of this report).

During FY 1993 and 94, over 45 small watersheds were surveyed for presence of sensitive fish species mentioned above excluding the white sturgeon. To date, 65 watersheds have been identified that contain sensitive fish populations. Based on this survey evidence, about 850 miles of fish streams are projected to contain sensitive fish. This would result in about 25% of the total occupied fish habitat on the Forest containing sensitive fish.

**Finding:** Based on the information stated above, the monitoring item is inconclusive. Because of high natural variability in streams and the limitations of the monitoring design from the Forest Plan, the monitoring data available appears to be of moderate accuracy and low reliability.

# RANGE

## Range Use: Monitoring Item D-1

**ACTION OR EFFECT TO BE MEASURED:** Determine if the grazing use measured in Animal Unit Months (AUM's) meets Plan projections.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** +/- 20% of anticipated AUM's.

**Purpose:** This monitoring item was established to track grazing use on the Forest. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The projected amount of forage for livestock grazing is 12,600 AUM's. This activity occurs mostly in the northeastern portion of the Forest on the Rexford and Fortine Ranger Districts.

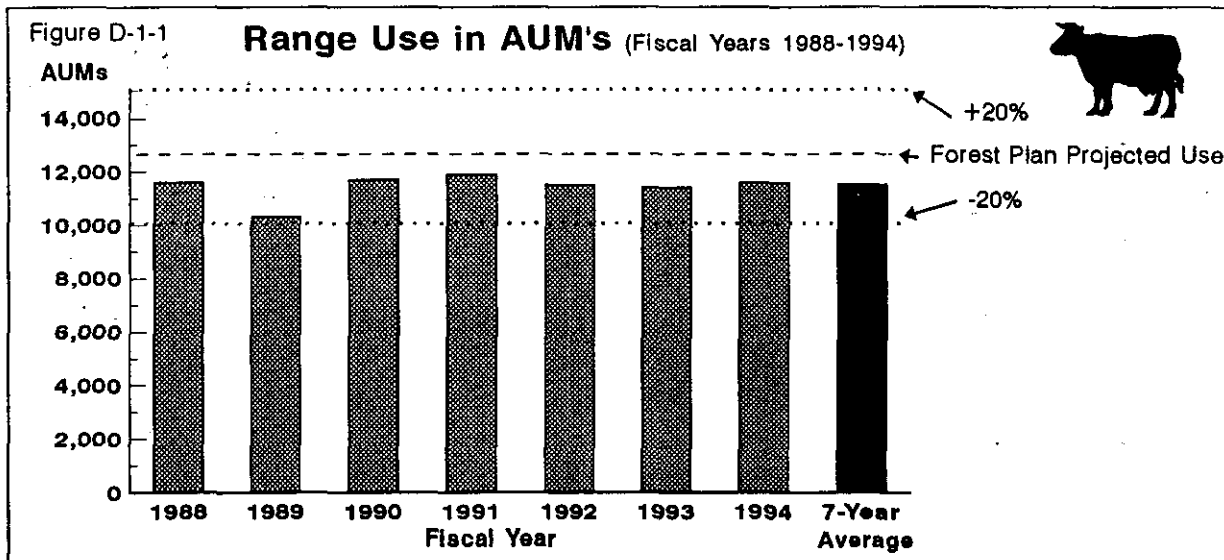
**Results:** The FY 1993 level of grazing use was 12,130 AUM's or 96% of the projected level. The FY 1994 level of grazing use was 11,586 AUM's or 92% of the projected level. The lower level of use in 1994 was due to requests from permittees for non-use.

**Evaluation:** During the last seven years, grazing use has averaged 91% of projected use which is within the range anticipated in the Plan. This lower level results from permittee requests for non-use and from Forest requests to defer grazing to prevent streambank deterioration and overgrazing.

**Finding:** This monitoring item is on-track with the Plan.

**Table D-1-1 Range Use by Fiscal Year (FY)**

| Item    | Forest Plan Projected Use | 5-Year Average 88-92 | FY 1993 | FY 1994 | 7-Year Average 88-94 |
|---------|---------------------------|----------------------|---------|---------|----------------------|
| AUM's   | 12,600                    | 11,400               | 12,130  | 11,586  | 11,830               |
| Percent | 100                       | 90                   | 96      | 92      | 91                   |





## RANGE

### Noxious Weed Infestations: Monitoring Item D-2

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Determine acreage infested with noxious weeds.  |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | 10% increase in number of acres infested, density of existing infestations and a change in the diversity of noxious weed species. |

**Purpose:** This monitoring item was established to track the status of noxious weeds on the Forest. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate to high.

**Background:** Forest Plan requirements state that noxious weed infestations will be monitored for increases in total acreage, increases in weed density and the introduction of new weed species on the Forest. Spotted knapweed is the primary noxious weed species found on the Forest, and it occurs primarily along roadsides and powerline rights-of-way. It has also been noticed on trails on the east side of the Forest at the lower elevations, particularly in cutover areas. Another significant factor is the discovery of rush skeltonweed and dalmation toadflax in 1992 and several additional sites in 1993 and 1994.

#### Results and Evaluation:

During Fiscal Years 1993 and 1994 forest actions focused on inventory and treatment. The following is a summary of actions:

- The Eureka District discovered leafy spurge on several sites in 1993. These sites were sprayed in 1993 and 1994.
- The Fortine District utilized a YCC crew to map locations of noxious weeds on the district. In addition, this crew hand-pulled any infestations they found. In most areas the concentrations were scattered, with only a few roads having a dense group of plants.
- The Three Rivers District focused efforts to treat rush skeltonweed which had the first reported occurrence in 1992. Two areas were either sprayed or hand-pulled.
- The Libby District sprayed six sites of rush skeltonweed in FY 94.
- All of Fisher River Ranger District roads were inventoried for infestations of noxious weeds. This was accomplished through use of volunteers and the East Zone engineers. The inventory found areas with no weeds to areas with 100% coverage. Predominate species were spotted knapweed, with a few areas of dalmation toadflax. The district will monitor these areas every five years.
- The Cabinet District inventoried most of the District. Most of the spotted knapweed found occurred on road cut and fills and adjacent to roads. They have seeded disturbed areas with grasses. Dalmation toadflax occurs in isolated infestations. Rush skeltonweed was found on the Bull River highway right-of-way but no populations have been located on National Forest land. Eight small areas were treated by Sanders County.
- In cooperation with the Forest Service, the Lincoln County Weed and Rodent Board sprayed approximately 50 areas of spotted knapweed in FY 93/94.
- In 1993 and 1994, in coordination with the Forestry Sciences Lab, in Corvallis, OR, approximately 2000 insects were released on eight sites on the Forest.

**Finding:** Baseline information is still not complete in all parts of the Forest. However, on-going efforts to locate and deal with noxious weeds are continuing as funding becomes available.

## TIMBER

### Allowable Sale Quantity (ASQ): Monitoring Item E-1

|   |   |
|---|---|
| <b>ACTION OR EFFECT TO BE MEASURED:</b>                     | Determine if the ASQ volume meets the projections of the Forest Plan, including other permissible sale volumes. |
| <b>VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:</b> | +/- 5% deviation for the ASQ volume, and +/- 10% deviation for the other permissible volumes.                   |

**Purpose:** This monitoring item was established to help ensure that the ASQ stated in the Plan is not exceeded, and if not attained, why. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The ASQ is a projected maximum or ceiling and not a target to be reached at the expense of all other considerations. The Forest's projected total maximum timber sell volume for the decade from suitable management areas is 2,270 million board feet (MMBF) which is an average of 227 MMBF per year (see Forest Plan, Appendix 11). This volume is known as the allowable sale quantity (ASQ). In addition, 60 MMBF is estimated to be sold from unsuitable management areas, averaging 6 MMBF per year. These two components of suitable and unsuitable sell volumes comprise the total potential timber sale program of 2,330 MMBF for the decade which is an average of 233 MMBF per year.

**Results:** The sell volume for FY 1993 and 1994 are the lowest in the last seven years and represent approximately 36% and 24% respectively, of the estimated ASQ volume (see Table E-1-1). The reason for this lower than average sell is due to the reasons stated in the FY 1992 monitoring report (effects from wildlife snag management, wildlife hiding cover needs, old growth needs, grizzly bear needs and increased harvest rate on private lands). Other factors that affected the sell program in FY 1993-94 include additional time needed to examine the environmental effects of our proposed actions, the proposed Montana Wilderness Act of 1994 (HR 2473) (activities in the areas were put on hold pending passage of this act), litigation, appeals and because personnel were involved in fire suppression efforts.

**Total Suitable Lands** - Total timber volume sold for the last seven years is 930 MMBF. This is 659 MMBF (or 41%) less than the estimated ASQ volume (see Table E-1-1).

**Evaluation:** Table E-1-1 indicates that the average annual sell volume from total suitable lands is at 59% of the ASQ and continues to be outside the 95% level prescribed in the Plan. The FY 1992 monitoring report summarizes a variety of factors that have affected the timber sell program. Because of these factors the forest financed sell level has been steadily decreasing. The following incorporates that information, and summarizes the factors that affected the timber sell program in FY 1993 and 1994.

Public controversy, scrutiny, scheduling requirements necessary to meet mitigation measures, and consultation requirements have increased. Because of appeals, litigation, and greater concerns for effects on other resources, it is taking more time and effort to examine the environmental effects of our proposals.

**FY 1993**

In FY 1993 the Forest financed sell volume was 120 MMBF. The Forest sold 83 MMBF or 69% of the financed sell volume. Reasons for this shortfall include:

- Approximately 11 MMBF of the Upper Sunday EIS was scheduled to be sold in FY 1993. However the public comments received on the Draft EIS led to additional analysis work which delayed the sale.
- Appeals delayed approximately 17 MMBF of timber sale volume beyond the fiscal year.
- Approximately 13 MMBF was delayed because of the need for additional resource analysis work required for consultation regarding threatened and endangered species, and additional analysis regarding sensitive species.
- Approximately 5 MMBF was withdrawn in order to provide adequate displacement for the grizzly bear.

**FY 1994**

In FY 1994 the Forest financed sell volume was 124 MMBF. The Forest sold 56 MMBF or 45% of the financed sell volume. Reasons for this shortfall include:

- Approximately 2 MMBF was deferred due to new information regarding cumulative water yields. New analysis showed water yields to be higher.
- Approximately 22 MMBF did not get advertised because most personnel were involved in fire suppression and rehab activities for most of the last two months of the fiscal year.
- Approximately 27 MMBF was deferred due to the proposed Montana Wilderness Act of 1994 (HR 2473). Sales were deferred pending passage of the act.
- Approximately 11 MMBF of the Upper Sunday sale was sold but not awarded due to litigation.
- Approximately 6 MMBF was advertised, but not sold.

**Finding:** This monitoring item continues to be off-track with the Forest Plan projection

Table E-1-1

Timber Sell Volumes (MMBF) by Category by Fiscal Year (FY)\*

|                           | FIVE YEAR TOTALS              |                                  |                             | CURRENT TOTALS |         | SEVEN YEAR TOTALS                |                             |                                   | Difference from Forest Plan Projection |
|---------------------------|-------------------------------|----------------------------------|-----------------------------|----------------|---------|----------------------------------|-----------------------------|-----------------------------------|--|
|                           | Annual Forest Plan Projection | Total 5-Year Timber Sell 1988-92 | Average Timber Sell 1988-92 | FY 1993        | FY 1994 | Total 7-Year Timber Sell 1988-94 | Average Timber Sell 1988-94 | 7-Year Forest Plan Projected sell |  |
| Suitable Lands            | 227                           | 793                              | 159                         | 82             | 56      | 930                              | 133                         | 1589                              | - 659 (59%)                            |
| Unsuitable Lands          | 6                             | 11                               | 2                           | 1              | 0       | 12                               | 2                           | 42                                | - 30 (58%)                             |
| Total Timber Sell Program | 233                           | 805                              | 161                         | 83             | 56      | 942                              | 135                         | 1631                              | - 689 (58%)                            |
| Financed Sell Volume      | 233                           | 1034                             | 207                         | 120            | 124     | 1507                             | 215                         | 1631                              | - 124 (92%)                            |

Figure E-1-1 Total Timber Sell Program and Financed Sell Volume

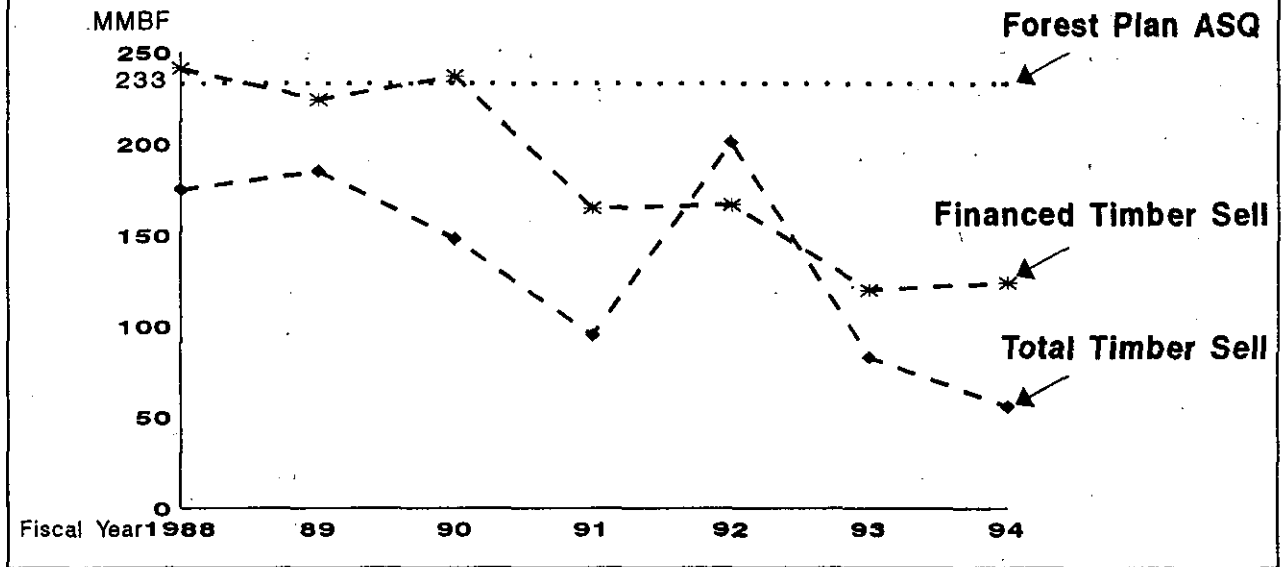
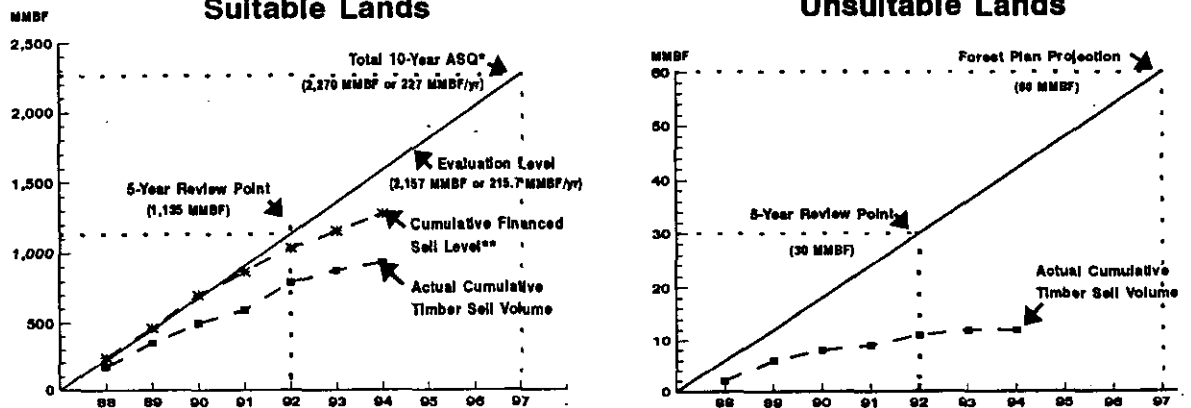


Figure E-1-1a Projected and Actual Cumulative Timber Volume by Land Category



\* ASQ is projected timber volume from suitable timberland & the maximum that can be sold in a decade

\*\* This is the amount of timber that is financed for sale offering

## TIMBER

### Acres of Timber Sold for Timber Harvest: Monitoring Item E-2

**ACTION OR EFFECT TO BE MEASURED:** Determine if the regeneration harvest acres meet Forest Plan projections by management area.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** +/- 10% by management area.

**Purpose:** This monitoring item was established to help ensure that the timber sale acreages and allowable sale quantity (ASQ) volumes sold are closely correlated. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The acres to be harvested to meet the ASQ are located in six different management areas (MA's). Since each MA has different objectives and management standards, the expected costs of timber harvest will vary. Any significant deviation from the expected harvest acreage for each MA could indicate possible changes in costs, benefits, budget requirements, or environmental effects. (For more information on the Forest Plan MA requirements, see Chapters II and III of the Forest Plan.)

The Forest Plan projects 15,740 acres of annual regeneration harvests to achieve the ASQ. Regeneration harvests include clearcut, seedtree, and shelterwood cutting methods.

**Results:** Table E-2-1 shows the acres sold for regeneration harvest by MA by fiscal year plus the 7-year average, and compares that average to the Forest Plan projection. FY 1993-94 continue the general downward trend. The average for MA-15 is 24% above the Plan's projected level while four other suitable timber MA's are significantly below in percentage accomplishment (MA's 12, 14, 16, 17). MA 12 has the largest average acreage deviation (a total of 5,255 acres, or 8,800 minus 3,545). These six MA's indicate productive forest lands, with considerations for other resources determining the difference among them. MA 15 lands are managed primarily for high timber yields, MA 11 and 12 are lands which can provide for timber and for big game habitat (11 for winter range and 12 for summer range), MA 14 areas are timberlands which have been identified as essential for recovery of the grizzly bear, MA 16 and 17 indicate areas where protection of the visual resource is important.

**Evaluation:** This monitoring item is similar to the findings found in E-1, Allowable Sale Quantity. As stated in that item, wildlife needs, watershed concerns, extensive legal requirements, and litigation and appeals have all affected the ability of meeting the Plan's projected regeneration harvest.

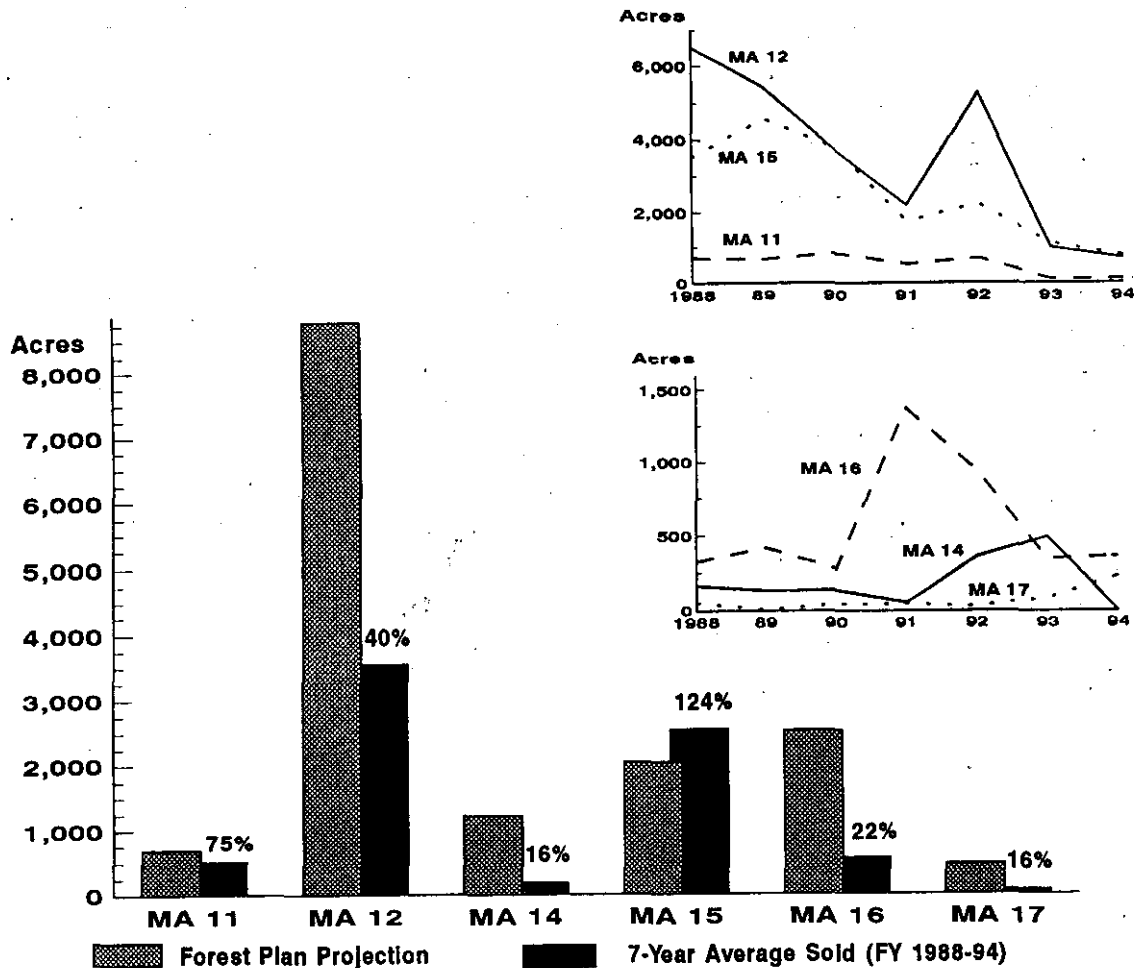
**Finding:** This monitoring item is outside the Plan's specified range (+/-10%).

Table E-2-1 Acres of Timber Sold for Harvest by Fiscal Year (FY)\*

| Management Areas (MA's) | Forest Plan Projected Acres | FY 1988 | FY 1989 | FY 1990 | FY 1991 <sup>1</sup> | FY 1992 <sup>1</sup> | FY 1993 | FY 1994 | Average Sold per Year | Percent of Forest Plan Projection |
|-------------------------|-----------------------------|---------|---------|---------|----------------------|----------------------|---------|---------|-----------------------|-----------------------------------|
| 11                      | 690                         | 696     | 665     | 831     | 521                  | 681                  | 105     | 118     | 517                   | 75                                |
| 12                      | 8,800                       | 6,518   | 5,431   | 3,729   | 2,182                | 5,265                | 1,003   | 685     | 3,545                 | 40                                |
| 14                      | 1,220                       | 170     | 139     | 142     | 56                   | 353                  | 491     | 0       | 193                   | 16                                |
| 15                      | 2,050                       | 3,513   | 4,574   | 3,790   | 1,752                | 2,217                | 1,146   | 770     | 2,537                 | 124                               |
| 16                      | 2,520                       | 325     | 416     | 277     | 1,371                | 935                  | 340     | 356     | 556                   | 22                                |
| 17                      | 460                         | 55      | 10      | 47      | 47                   | 31                   | 88      | 228     | 72                    | 16                                |
| Total                   | 15,740                      | 11,277  | 11,235  | 8,809   | 5,929                | 9,482                | 3,173   | 2,157   | 7,437                 | 47                                |

\* Regeneration Harvest Methods Only  
<sup>1</sup> Corrected from the 1992 Monitoring Report

Figure E-2-1  
**Average Annual Acres of Timber Sold for Harvest**  
 (Regeneration Harvest Methods Only - Fiscal Years 1988-94)



## TIMBER

### Suitable Timber Management Area Changes: Monitoring Item E-3

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Determine if significant cumulative changes are occurring in suitable timber base by tracking management area boundary changes. |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | +/- 5,000 acre cumulative total change in any suitable timber management area.  |

**Purpose:** This monitoring item was established to help ensure that the suitable timber base was being validated before any projects were authorized, and to determine what influence any significant changes have on the ASQ. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The allowable sale quantity (ASQ) calculated for the Plan is partially dependent on the amount of suitable timber acreage. This acreage is located within management areas (MA's) 11, 12, 14-17. These MA's are validated during site-specific project analysis. When inaccuracies are found, a MA boundary correction is made to keep the Forest Plan MA Map and acreage current. MA boundary changes can result in gains or losses in MA acreage, depending on the conditions found. The important items to track are the total changes by MA and the net gains or losses in suitable timber acreage.

The most common conditions that cause an MA map change are: mapping and drafting errors found on the original maps; non-productive forest land located within an MA that is mapped as productive (the reverse situation is also found); big-game winter range habitat non-existing where originally mapped (the reverse is also found); grizzly bear habitat existing where previously unmapped; the absence of old growth timber habitat and the need to designate additional acreage to meet the 10% minimum old growth standard.

**Results:** Table E-3-1 displays the net MA acreage changes in suitable timberland for the last seven years (FY 1988-94) and the net change in suitable timberland. The largest change in FY 1993 was a net loss of 7,444 acres in MA 15. This is approximately 70% of the total FY 1993 change. Total net losses in the suitable timberland in FY 1993 were 10,727 acres which is a reduction over FY 1992. In 1994, relatively minor changes were made. Suitable acreage increased by 82 acres, the first such increase since 1987.

**Evaluation:** The most significant changes in FY 1993/94 were the result of validating old growth habitat, big-game summer and winter range, sensitive visual resource areas, and non-productive forest land. The cumulative acreage changes for the last seven years for all the remaining (unsuitable) MA's on the Forest are also displayed in Table E-3-2. The bulk of the acreage gains in these unsuitable MA's, which offset the suitable timber acreage losses, were in MA-13 (old growth), and MA-24 (non-productive land). Not shown in Table E-3-2 were gains of 1549 acres in MA 30 (water) and 980 acres in MA 31 (Mineral Development MA established for Montanore Mine).

Except for last year the pattern of change has been consistent in both magnitude and direction. The magnitude of the reduction of suitable timberland started at a low level (less than 1,000 acres in FY 1988) and steadily increased to over 16,000 acres in FY 1992. The total amount of changes made in all the MA's during the last seven years is approximately 78,000 acres. This includes map drafting errors found (incorrect MA number assigned or lines missing, etc.), errors identified on the ground (non-productive land identified as productive on the Forest Plan Map), and land exchanges completed (which required additions or subtractions of MA acreages).

As a result of the seven years of cumulative change in suitable timberland, MA-11 and MA-15 continue to be beyond the -5,000 acres total change level shown in the Plan.

**Finding:** This monitoring item is outside the prescribed range for MA's 11 and 15 (more than 5,000 acres of change). The remaining suitable timber MA's are still on-track (MA's 12, 14, 16, 17).

**Table E-3-1 Net Acreage Changes by Management Areas (MA) in Suitable Timberland**

| Fiscal Year                | MA 11          | MA 12         | MA 14       | MA 15          | MA 16         | MA 17         | Total Net Changes In Suitable Timberland |
|----------------------------|----------------|---------------|-------------|----------------|---------------|---------------|--|
| 1988                       | +330           | 0             | +1,070      | -1,760         | -510          | 0             | -870                                     |
| 1989                       | -1,142         | -345          | +386        | +253           | -22           | -48           | -918                                     |
| 1990                       | -164           | -420          | -130        | -4,273         | +916          | -661          | -4,732                                   |
| 1991                       | +78            | -442          | -1,050      | -3,181         | -1,414        | -281          | -6,290                                   |
| 1992                       | -9,279         | -3,178        | -196        | -1,711         | -1,498        | -323          | -16,185                                  |
| 1993                       | -1,329         | +1,000        | -705        | -7,444         | -2,271        | +22           | -10,727                                  |
| 1994                       | -109           | -402          | +106        | +524           | +111          | -148          | +82                                      |
| <b>Total Net MA Change</b> | <b>-11,615</b> | <b>-3,787</b> | <b>-519</b> | <b>-17,592</b> | <b>-4,688</b> | <b>-1,439</b> | <b>-39,640</b>                           |

\*Suitable\* MA's indicate productive forest lands, with considerations for other resources determining the difference among them. MA 15 lands are managed primarily for high timber yields, MA 11 and 12 are lands which can provide for timber and for big game habitat (11 for winter range and 12 for summer range), MA 14 areas are timberlands which have been identified as essential for recovery of the grizzly bear, MA 16 and 17 indicate areas where protection of the visual resource is important.

**Table E-3-2 Net Acreage Changes by Management Areas (MA) in Unsuitable Timberland**

| Fiscal Year                | MA 2          | MA 10         | MA 13          | MA 18         | MA 19         | MA 24         | Total Net Changes In Unsuitable Timberland |
|----------------------------|---------------|---------------|----------------|---------------|---------------|---------------|--|
| 1988                       | +240          | +1,670        | -500           | +190          | -280          | +480          | +1,800                                     |
| 1989                       | +842          | 0             | -149           | +32           | +135          | +100          | +960                                       |
| 1990                       | +150          | +1,080        | +1,877         | +381          | -950          | +2,564        | +5,102                                     |
| 1991                       | +1,009        | +574          | +4,135         | -140          | -231          | +1,724        | +7,071                                     |
| 1992                       | +196          | +3,211        | +7,980         | +2,656        | +231          | +823          | +15,097                                    |
| 1993                       | -338          | +374          | +7,931         | -595          | +2,115        | +2,618        | +7,875                                     |
| 1994                       | -173          | -69           | +914           | -437          | -294          | +177          | +118                                       |
| <b>Total Net MA Change</b> | <b>+1,926</b> | <b>+6,840</b> | <b>+22,188</b> | <b>+2,087</b> | <b>-3,504</b> | <b>+8,486</b> | <b>+38,023</b>                             |

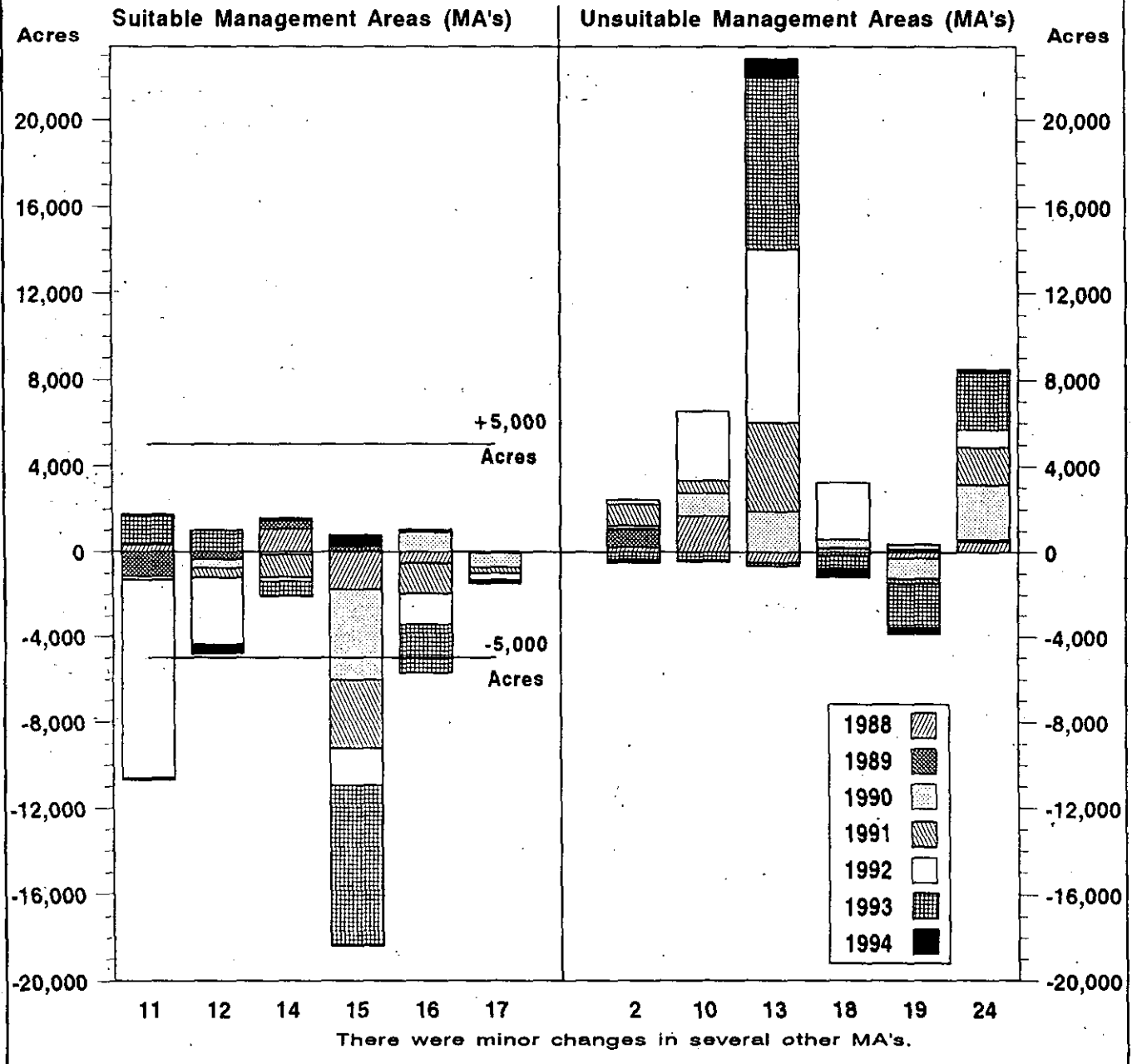
\*Unsuitable\* MA's are used for areas where timber production is not a primary consideration: for example, MA 2 is used for Roadless Recreation; MA 10 for big game winter range not suited for timber production; MA 13 indicates protected Old Growth habitat; MA 18, 19 and 24 are used for lands with little timber value or lands difficult to regenerate (rocky areas, steep slopes). Other unsuitable MA's identify Wilderness, Special Interest Areas, Administrative Sites, etc.

**Note:** The differences displayed in the Fiscal Year totals and the Total MA Changes in the two Tables shown above are the result of eight additional unsuitable MA's which contain some minor acreage (usually less than 200 acres each), plus the lands that have been acquired and disposed of in the land exchanges completed during the last seven years (about 7,200 net additional acres).



Figure E-3-1

# MA Changes by Fiscal Year



## TIMBER

### Timber Harvest Deferrals: Monitoring Item E-7

|   |   |
|---|---|
| <b>ACTION OR EFFECT TO BE MEASURED:</b>                     | Determine the suitable timber acreage deferred from timber sales because of economics, resource conflicts, or other unforeseen reasons. |
| <b>VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:</b> | More than 10,000 acres cumulative change in any suitable management area (MA).  |

**Purpose:** This monitoring item was also established to help ensure that the allowable sale quantity (ASQ) is reasonable. Any significant changes in the acreage available for timber harvest could affect the ASQ because it was determined by estimating the maximum amount of available harvest acreage in the first decade while still meeting all the required Forest Plan standards. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate.

**Background:** To determine the effect of harvest deferrals on the timber sale program, monitoring is done in two different categories. **Category A** deferrals are those that result from our project-specific conclusions about resource or economic conflicts that were not adequately accounted for in the Forest Plan. Examples are: road construction that is too expensive; or a threatened, endangered, or sensitive species found which was unknown during Forest Planning. **Category B** deferrals are those that result from an externally-imposed situation. Examples include: appeals and court injunctions, or significant timber harvest on adjacent private land which could cause cumulative watershed damage if the Kootenai Forest timber is harvested before adequate watershed recovery occurs on the private land. Please note that suitable timber acres rescheduled from one year to a later year within the Forest Plan period (FY's 1988-1997) are not considered deferred.

**Results:** Table E-7-1 displays deferred harvest acres by category for each suitable timber management area on the Forest for FY's 1988-94. Harvest deferrals occurred in Categories A and B in FY 93, and in Category A in FY 94. FY 93 is the lowest level of deferrals in the last seven years.

**Evaluation:** In **Category A**, 106 acres were deferred during FY 1993, and 1,040 acres deferred in 1994. 1993 is the lowest level of the last seven years. 1994 is more consistent with previous years. Timber sale design changes to provide for sensitive plants, and caribou habitat accounted for the majority of the acreage in FY 93 and 94.

In **Category B**, 44 acres were deferred during FY 1993 due to pending Wilderness legislation. 97 acres were deferred in FY 1994 due to an appeal.

**Summary:** For FY's 1988-94, MA 12 had 16,110 acres deferred. FY's 1988-92 account for 99 percent of the deferrals. This is the largest amount of all the MA's, and is beyond the prescribed range of 10,000 acres. The grand total cumulative deferred MA acreage for both categories is now 25,574 acres. FY's 93-94 had a large drop in deferrals, as they only make up 5% of the total deferred acreage. As a note of interest, the total amount deferred for harvest during the last seven years as a result of appeals and litigation is 6,562 acres.

**Finding:** Based on the information stated above, the monitoring item is off-track for MA 12. The remaining suitable timber MA's are still on-track (MA's 11, 14-17).

**Table E-7-1 Harvest Acres Deferred in Suitable Timber Management Areas (MA's)**

| CATEGORY AND FISCAL YEAR          | MA 11        | MA 12         | MA 14        | MA 15        | MA 16      | MA 17      | Grand Totals  |
|-----------------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| <b>Category A</b>                 |              |               |              |              |            |            |               |
| 1988                              | 15           | 340           | 25           | 0            | 0          | 0          | 380           |
| 1989                              | 95           | 2,434         | 68           | 196          | 138        | 0          | 2,931         |
| 1990                              | 89           | 779           | 107          | 120          | 298        | 0          | 1,393         |
| 1991                              | 204          | 1,629         | 360          | 38           | 60         | 0          | 2,291         |
| 1992                              | 66           | 4,886         | 2,186        | 76           | 0          | 0          | 7,214         |
| 1993                              | 0            | 106           | 0            | 0            | 0          | 0          | 106           |
| 1994                              | 0            | 77            | 963          | 0            | 0          | 0          | 1,040         |
| <b>Subtotal Category A</b>        | <b>469</b>   | <b>10,251</b> | <b>3,709</b> | <b>430</b>   | <b>496</b> | <b>0</b>   | <b>15,355</b> |
| <b>Category B</b>                 |              |               |              |              |            |            |               |
| 1988                              | 0            | 2,580         | 274          | 314          | 0          | 0          | 3,168         |
| 1989                              | 198          | 2,274         | 301          | 766          | 30         | 8          | 3,577         |
| 1990                              | 403          | 912           | 62           | 1,164        | 168        | 80         | 2,789         |
| 1991                              | 7            | 60            | 0            | 427          | 50         | 0          | 544           |
| 1992                              | 0            | 0             | 0            | 0            | 0          | 0          | 0             |
| 1993                              | 0            | 33            | 0            | 0            | 11         | 0          | 44            |
| 1994                              | 0            | 0             | 0            | 0            | 0          | 97         | 97            |
| <b>Subtotal Category B</b>        | <b>608</b>   | <b>5,859</b>  | <b>637</b>   | <b>2,671</b> | <b>259</b> | <b>185</b> | <b>10,219</b> |
| <b>Totals for A and B</b>         |              |               |              |              |            |            |               |
| 1988                              | 15           | 2,920         | 299          | 314          | 0          | 0          | 3,548         |
| 1989                              | 293          | 4,708         | 369          | 962          | 168        | 8          | 6,508         |
| 1990                              | 492          | 1,691         | 169          | 1,284        | 466        | 80         | 4,182         |
| 1991                              | 211          | 1,689         | 360          | 465          | 110        | 0          | 2,835         |
| 1992                              | 66           | 4,886         | 2,186        | 76           | 0          | 0          | 7,214         |
| 1993                              | 0            | 139           | 0            | 0            | 11         | 0          | 150           |
| 1994                              | 0            | 77            | 963          | 0            | 0          | 97         | 1,137         |
| <b>MA Totals for FY's 1988-94</b> | <b>1,077</b> | <b>16,110</b> | <b>4,346</b> | <b>3,101</b> | <b>755</b> | <b>185</b> | <b>25,574</b> |

**Figure E-7-1 Harvest Acres Deferred in Suitable MA's by Category**

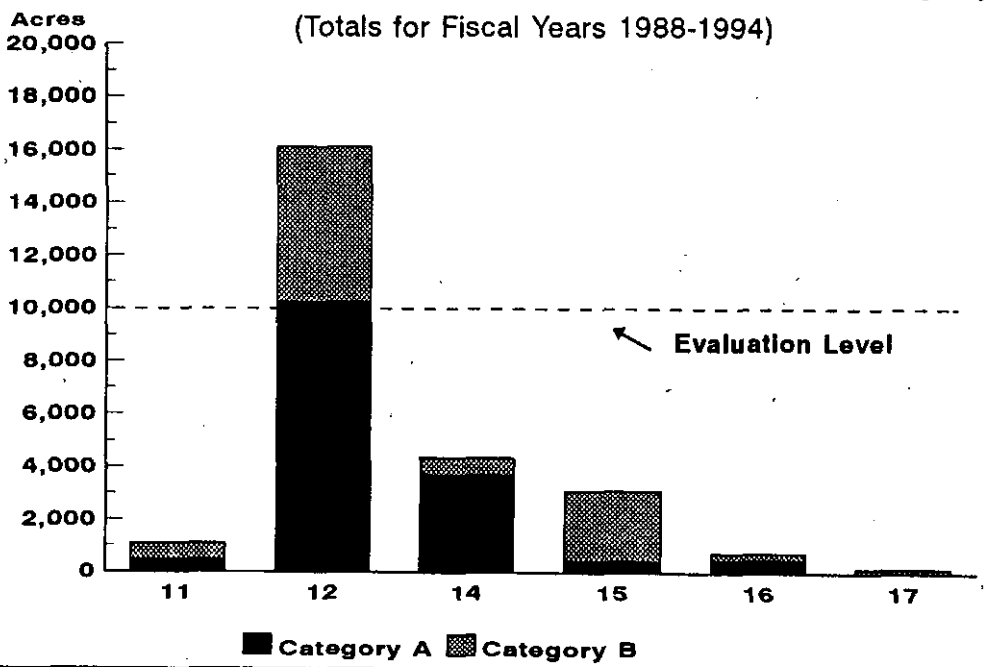
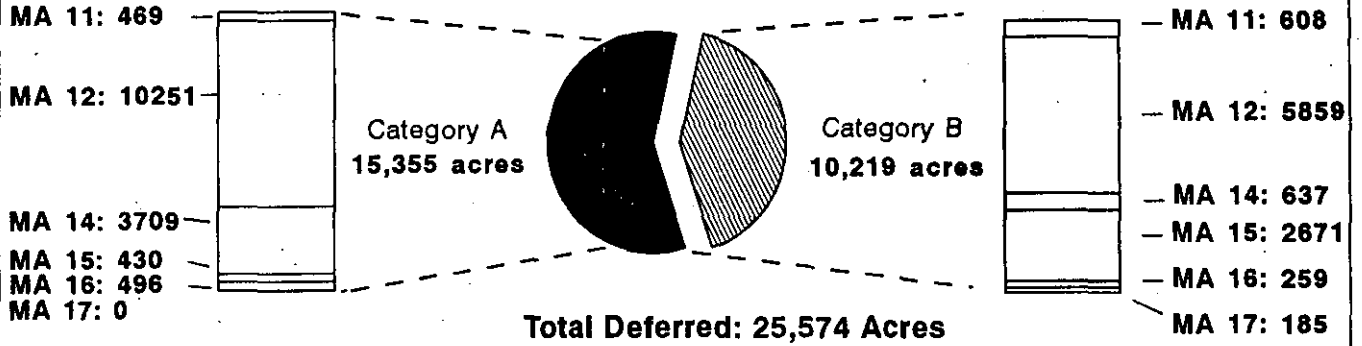


Figure E-7-1a

## Harvest Acres Deferred in Suitable Timber MAs

Total Acres for Fiscal Years 1988-1994



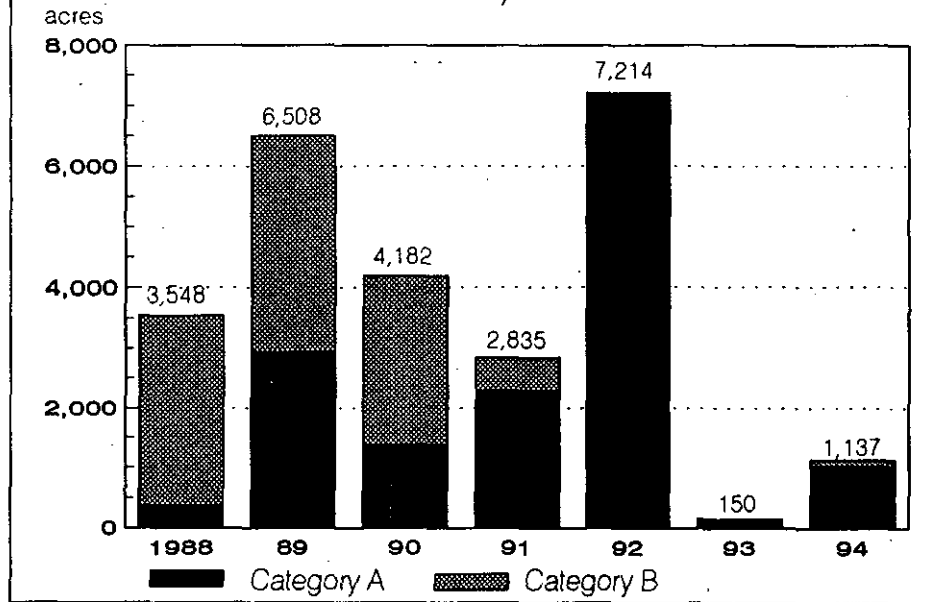
**Category A:** Harvest deferred due to project-specific conclusions regarding resource conflicts not adequately accounted for in Forest Plan.

**Category B:** Harvest deferred due to externally-imposed situations, such as court injunctions or timber harvest on adjacent private land.

Figure E-7-1a

## Harvest Acres Deferred in Suitable Timber MA's

Total Acres for Fiscal Years 1988-1994



## TIMBER

### Harvest Area Size: Monitoring Item E-8

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Cutting unit size by forest type, management area and District.                             |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | Variation in trends of other resources beyond the natural variation that can be determined. |

**Purpose:** This monitoring item was established to help ensure that the maximum regeneration harvest sizes permitted in the Plan are not exceeded without appropriate documentation. The permitted regeneration harvest sizes are 20 acres in Management Area (MA) 11 and 40 acres in MA's 12, 14-17. The Plan requires that this item be reported every two years. The expected accuracy and reliability of the information is high.

**Background:** The Forest Plan provides standards and guidelines for timber harvest area sizes for individual management areas (MA's). These harvest area limitations are primarily for regeneration harvest methods which are clearcutting, seedtree cutting and shelterwood cutting. The purpose is to provide a balance for all the major resources emphasized in each of the specific MA's. In MA 11, for example, regeneration harvest area size is specified to not exceed 20 acres to provide for moose and whitetail deer. In MA 12, the regeneration harvest area size is specified to not exceed 40 acres to provide for elk. In other MA's, no specific guides are given but regeneration harvest area sizes need to be consistent with other management objectives for the MA.

Exceptions to these guides can be considered during an environmental analyses in which location specific land attributes and issues are considered, and the harvest area size and resultant openings are planned to best meet the management objectives of the area. The Regional Forester needs to approve any non-catastrophic harvest area request to exceed 40 acres. The Forest Supervisor can approve an opening greater than 40 acres when catastrophic events such as fire, windstorms, insect attacks or disease damages a forest stand. Monitoring of these approved exceptions for timber harvest areas and resultant openings greater than 40 acres is done to track the amount of variation from the MA guidelines.

**Results:** Table E-8-1 displays the Forestwide average harvest area size in acres for each MA by harvest method. The time period shown is the last seven years, from 1988-94, including a seven year average. The harvest methods displayed are clearcutting, seedtree cutting, shelterwood cutting, and all other harvest methods. *Clearcutting* generally leaves a few scattered live and dead trees per acre for cavity-nester use; *seedtree* harvest leaves about 4-8 trees per acre for natural seeding; *shelterwood* cutting leaves about 9-15 trees per acre for natural seeding and environmental protection such as shading. The *other harvest methods* include overstory removal, salvage, sanitation, thinning, preparatory cuts, and other intermediate silvicultural treatments that do not significantly open the forest canopy. Because of their more limited impact compared to the regeneration harvest methods, these other harvest methods do not have any acreage restrictions for harvest area size.

Appendix B-2 lists the harvest areas resulting in larger than 40 acre openings approved during FY 1993 and 1994, as well as an estimate of how long it will take for the vegetation to regrow adequately to provide adequate big game hiding cover. There were eight resultant openings greater than 40 acres approved by the Forest Supervisor. All were in response to the catastrophic results of the October 1991 fire, windstorm or dead lodgepole pine. In most cases, the newly created openings were contiguous with an existing harvest unit.

**Evaluation:** Figure E-8-1 shows that the seven year average harvest area size by regeneration harvest method is less than 20 acres in MA 11 and less than 40 acres in MA's 12, 14-17.

**Finding:** Based on the information stated above, the monitoring item is in compliance.

**Table E-8-1 Average Harvest Area Size In Acres by Harvest Method and Management Area (MA)**

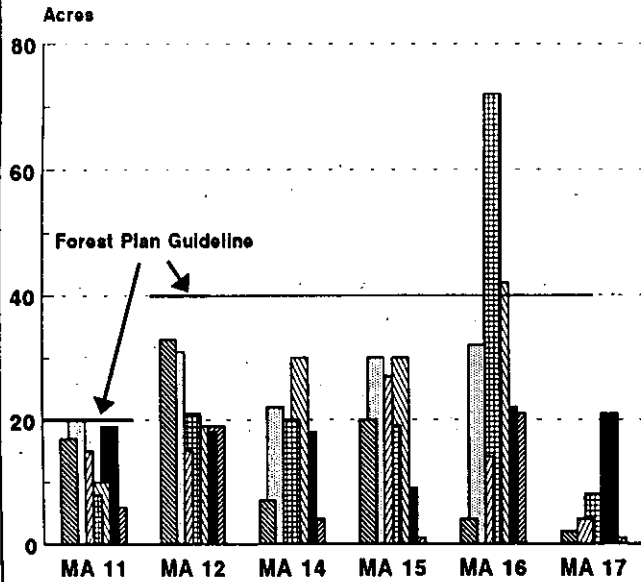
| Harvest Method and Fiscal Year | MA 11     | MA 12     | MA 14     | MA 15     | MA 16     | MA 17     |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Clearcutting</b>            |           |           |           |           |           |           |
| 1988                           | 17        | 33        | 7         | 20        | 4         | 2         |
| 1989                           | 20        | 31        | 22        | 30        | 32        | 0         |
| 1990                           | 15        | 15        | 0         | 27        | 14        | 4         |
| 1991                           | 8         | 21        | 20        | 19        | 72        | 8         |
| 1992                           | 10        | 19        | 30        | 30        | 42        | 0         |
| 1993                           | 19        | 18        | 18        | 9         | 22        | 21        |
| 1994                           | 6         | 19        | 4         | 1         | 21        | 1         |
| <b>7-Year Average</b>          | <b>14</b> | <b>23</b> | <b>14</b> | <b>19</b> | <b>30</b> | <b>8</b>  |
| <b>Seedtree Cutting</b>        |           |           |           |           |           |           |
| 1988                           | 15        | 39        | 12        | 37        | 15        | 13        |
| 1989                           | 8         | 30        | 16        | 30        | 34        | 0         |
| 1990                           | 33        | 20        | 24        | 35        | 16        | 20        |
| 1991                           | 23        | 22        | 17        | 32        | 20        | 18        |
| 1992                           | 14        | 18        | 32        | 31        | 1         | 0         |
| 1993                           | 4         | 10        | 3         | 22        | 0         | 23        |
| 1994                           | 8         | 26        | 4         | 22        | 19        | 1         |
| <b>7-Year Average</b>          | <b>12</b> | <b>24</b> | <b>15</b> | <b>30</b> | <b>15</b> | <b>12</b> |
| <b>Shelterwood Cutting</b>     |           |           |           |           |           |           |
| 1988                           | 32        | 10        | 12        | 27        | 0         | 0         |
| 1989                           | 15        | 15        | 14        | 25        | 8         | 0         |
| 1990                           | 15        | 27        | 0         | 17        | 20        | 0         |
| 1991                           | 13        | 25        | 10        | 28        | 29        | 0         |
| 1992                           | 24        | 31        | 25        | 0         | 14        | 15        |
| 1993                           | 3         | 1         | 31        | 1         | 26        | 0         |
| 1994                           | 8         | 15        | 0         | 35        | 1         | 0         |
| <b>7-Year Average</b>          | <b>16</b> | <b>18</b> | <b>13</b> | <b>19</b> | <b>14</b> | <b>2</b>  |
| <b>All Other Methods*</b>      |           |           |           |           |           |           |
| 1988                           | 32        | 32        | 58        | 31        | 18        | 28        |
| 1989                           | 31        | 98        | 54        | 40        | 113       | 28        |
| 1990                           | 29        | 22        | 35        | 27        | 26        | 8         |
| 1991                           | 43        | 36        | 45        | 40        | 38        | 58        |
| 1992                           | 28        | 48        | 20        | 38        | 35        | 45        |
| 1993                           | 20        | 30        | 23        | 22        | 23        | 35        |
| 1994                           | 43        | 22        | 19        | 20        | 9         | 9         |
| <b>7-Year Average</b>          | <b>32</b> | <b>41</b> | <b>36</b> | <b>31</b> | <b>37</b> | <b>30</b> |

\* The 40-acre harvest area limitation does not apply to these other harvest methods.

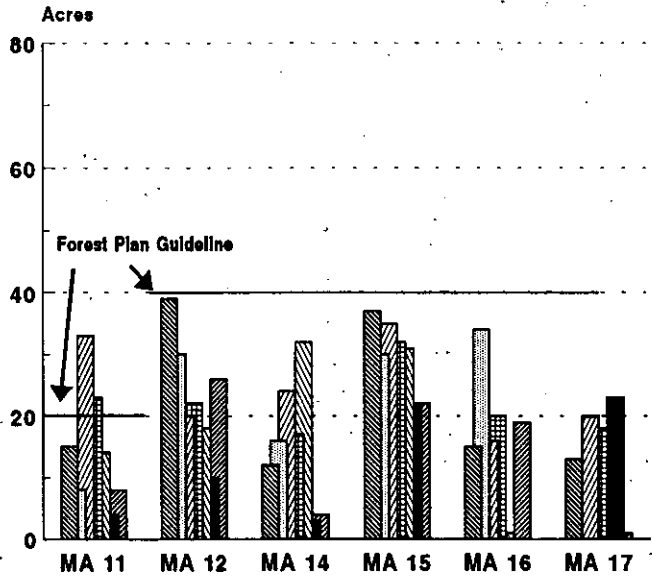
Figure E-8-1

# Average Harvest Area Size by Harvest Method (Fiscal Years 1988-1994)

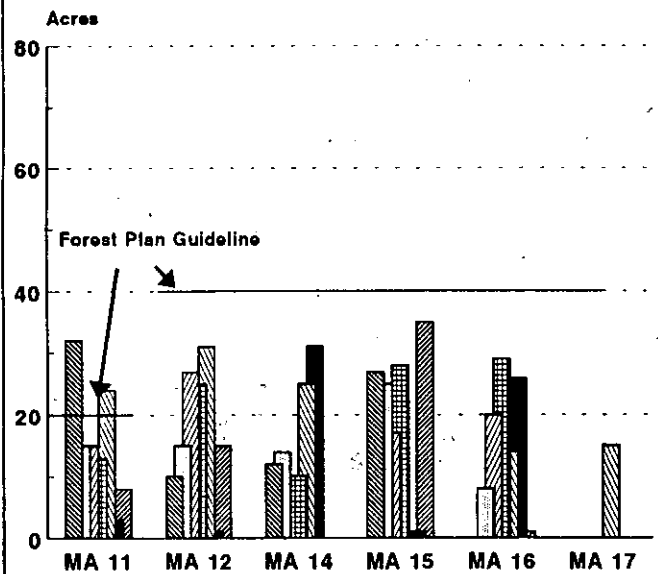
## Clearcut Harvest Units



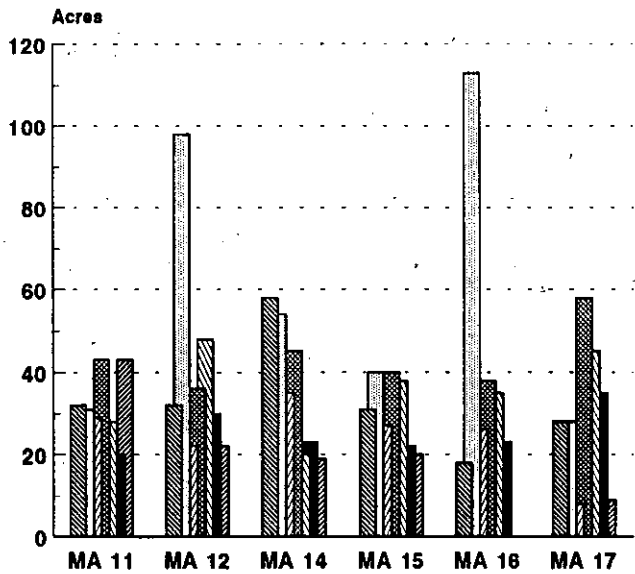
## Seedtree Harvest Units



## Shelterwood Harvest Units



## Other Harvest Units \*



▨ 1988 □ 1989 ▤ 1990 ▥ 1991 ■ 1992

\* The 40-acre harvest area limitation does not apply to these other harvest methods.

# TIMBER

## Clearcut Acres Sold: Monitoring Item E-9

**ACTION OR EFFECT TO BE MEASURED:** Acres of clearcut harvest sold.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** Not defined.

**Purpose:** This monitoring item was established to help ensure that the amount of future clearcut harvesting on the Forest is steadily reduced. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** Congress has directed the Forest Service to reduce the amount of clearcut harvesting by 25% by 1995. The baseline year for this comparison is FY 1989. In addition, in a memo dated June 4, 1992, the Chief of the Forest Service provided guidelines on when clearcutting would be appropriate. His expectation was that, when considered throughout the National Forest System, clearcutting would decline by as much as 70 percent from FY 1988 to FY 1997. The Kootenai is implementing the Chief's guideline policy and using alternative harvest techniques when appropriate.

**Results:** Table E-9-1 displays the results since FY 1988. As can be seen, the acres of clearcut harvest sold has been reduced in each of the last five years beginning with FY 1990.

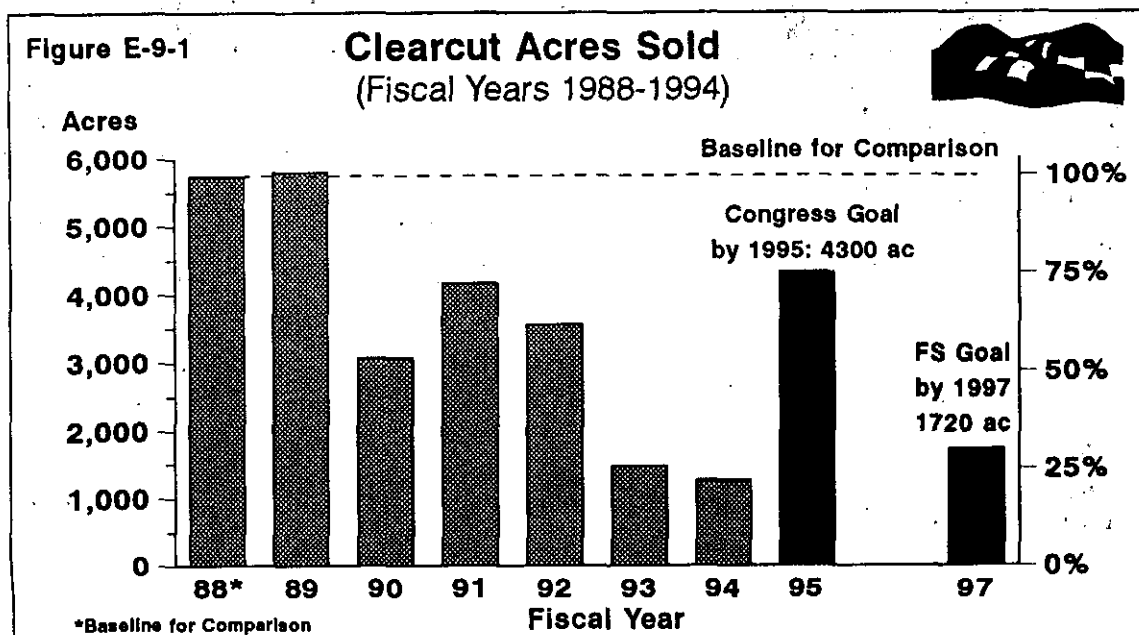
**Evaluation:** The Forest has reduced the amount of clearcut in the last five years and has met the Chief's goal for 1997.

**Finding:** Based on the information stated above, the monitoring item is on-track.

**Table E-9-1 Clearcut Acres Sold by Fiscal Year (FY)**

| Item                  | FY 88 <sup>1</sup> | FY 89 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 |
|-----------------------|--------------------|-------|-------|-------|-------|-------|-------|
| Clearcut Acres Sold   | 5,734              | 5,795 | 3,068 | 4,159 | 3,557 | 1,469 | 1,262 |
| % Reduction From 1988 | NA                 | None  | -46   | -27   | -38   | -69   | -77   |

<sup>1</sup> FY 1988 is the baseline year for comparison.





## SOIL AND WATER

### Soil and Water Conservation Practices: Monitoring Item F-1

**ACTION OR EFFECT TO BE MEASURED:** Determine if regional and project soil and water practices meet State Water Standards.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** Failure to meet State Standards.

**Purpose:** This monitoring item was established to help ensure that the State water quality standards are met. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The Forest has been monitoring the Soil and Water Conservation Best Management Practices (BMP's) since 1988. These BMP's are required forestwide to meet State water quality standards. The BMP's are various practices (such as erosion control) which are designed to reduce non-point sources of pollution such as sediment which is the primary source of non-point pollution on the Forest. BMP monitoring consists of two important parts: (1) determining whether the practice (BMP) was applied on-the-ground as called for, and (2) if applied correctly, did it reduce the chances for sediment to enter a streamcourse. The determination of proper BMP application is referred to as implementation monitoring. The determination of whether the BMP worked or not is effectiveness monitoring.

Projects that are evaluated for BMP implementation and effectiveness include timber sale road construction, timber harvest, mine site rehabilitation, and other activities that expose or disturb soil.

Fiscal Year 1994 BMP monitoring on the Forest involved two different efforts: BMP monitoring done by Kootenai Forest personnel during their normal work activities; and BMP monitoring coordinated by the Montana Department of State Lands (Forestry Division) as part of a larger Statewide BMP audit. In both of the efforts, BMP's were evaluated at particular sites on various projects across the Forest. The implementation evaluations and the effectiveness evaluations were both rated on the following scale:

**Table F-1-1 BMP Evaluation Rating Scale and Summary**

| RATING               | IMPLEMENTATION                         | EFFECTIVENESS   |
|----------------------|--|---|
| Acceptable or Better | Operation Meets Requirements           | Adequate or Improved Protection of Soil and Water Resources |
| Unacceptable         | Minor Departure From Intent            | Minor and Temporary Impact                                  |
| Very Unacceptable    | Major Departure From Intent            | Major and Temporary, or Minor and Prolonged Impact          |
| Grossly Unacceptable | Gross Neglect or No Application At All | Major and Prolonged Impact                                  |

**Results of BMP Monitoring Done by Kootenai Forest Personnel:** There were 128 separate projects audited in FY 1993, and 102 in FY 1994 by KNF personnel. In FY 1993 implementation evaluations were completed for 3,522 BMP's. In FY 1994 implementation evaluations were completed for 2,634 BMP's. Implementation evaluations met the requirement of acceptable 98% of the time in FY 1993, and 99% of the time in FY 94. Effectiveness evaluations were completed for 1,784 BMP's in FY 1993 and met the requirement of acceptable 96% of the time (see Table F-1-2). In FY 1994 effectiveness evaluations were completed for 1,067 BMP's and met the requirements of acceptable 99.7% of the time.

**Table F-1-2 BMP Monitoring Results by Kootenai Forest Personnel\***

| RATING               | IMPLEMENTATION (%) |       |       |       |       | EFFECTIVENESS (%) |       |       |       |       |
|----------------------|--------------------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|
|                      | FY 90              | FY 91 | FY 92 | FY 93 | FY 94 | FY 90             | FY 91 | FY 92 | FY 93 | FY 94 |
| Acceptable or Better | 96                 | 96    | 93    | 98    | 99    | 91                | 88    | 86    | 96    | 99    |
| Unacceptable         | 4                  | 3     | 6     | 2     | 1     | 8                 | 12    | 13    | 3     | 1     |
| Very Unacceptable    | 0.4                | 1     | 0     | .2    | .02   | 1                 | 0     | 2     | 1     | 0     |
| Grossly Unacceptable | 0                  | 0     | 0     | 0     | 0     | 0                 | 0     | 0     | 0     | 0     |

\* Totals are not exact because of rounding.

**Evaluation of BMP Monitoring by Kootenai Forest Personnel:** The results of the FY 1993-94 BMP monitoring can be compared to those made for the preceding fiscal years (see Table F-1-2). During FY 1993-94, ratings were similar but higher than the preceding years for both implementation and effectiveness evaluations.

In 1992 the most frequent violation involved a BMP regarding tractor operations in wet areas (BMP #13.03). This BMP was unacceptable on 14 occasions. In 1993-94 this BMP was not identified as a problem, indicating that the Forest is doing a better job in that area.

The Forest findings show an overall improvement over past years for both implementation and effectiveness, however this finding is not supported by the State BMP Audit Team (see results below).

**Results of BMP Monitoring Done by the State BMP Audit Team:** In FY 1994, four timber sales were monitored as part of the statewide Montana Forestry Best Management Practices Implementation Monitoring Program. These audits were conducted under the supervision of the Montana Department of State Lands by an interdisciplinary team comprised of a fisheries biologist, a forester, a hydrologist, a representative of a conservation group, a logging/road engineer, and a soil scientist. The last State BMP Audit done on the Kootenai Forest was in FY 1992. That audit evaluated four projects with 195 BMP's.

The FY 1994 State BMP Audit done on the Forest evaluated a total of 158 BMP's on four separate projects. Implementation evaluations met the requirements of acceptable or better 84% of the time and 16% were unacceptable or worse. Effectiveness evaluations met the requirements of acceptable or better 84% of the time and 16% were unacceptable or worse (see Table F-1-3). These two ratings were below the Statewide average of 91% acceptable or better for implementation and 93% acceptable or better for effectiveness. The results of these audits are displayed in Table F-1-3.

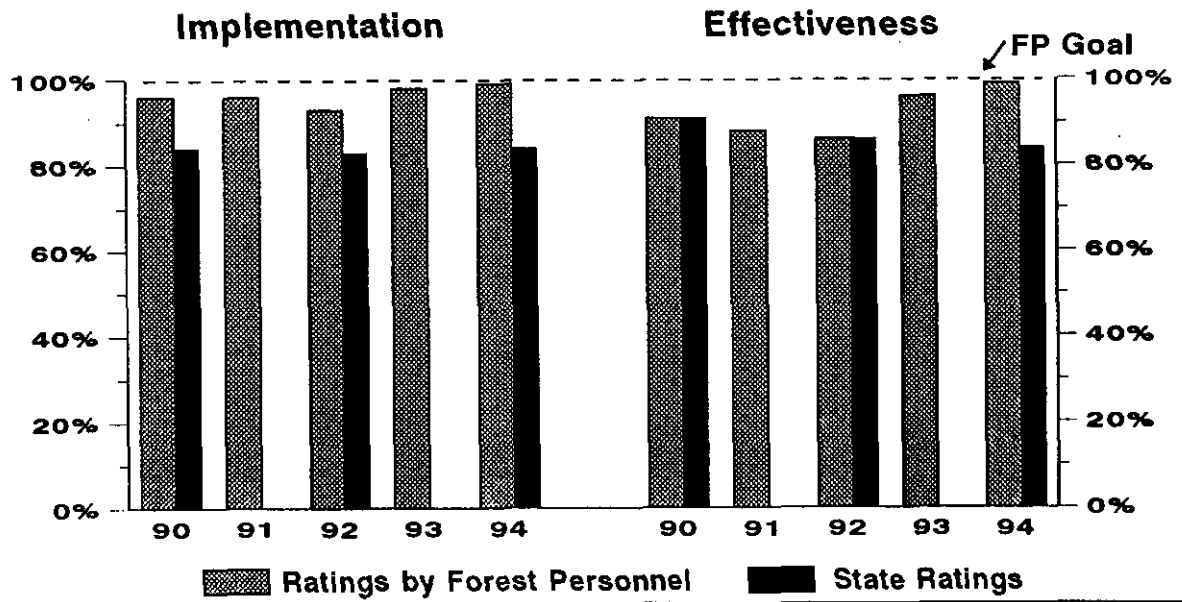
**Table F-1-3 BMP Monitoring Results by State BMP Audit Team\***

| RATING               | IMPLEMENTATION (%) |       |       | EFFECTIVENESS (%) |       |       |
|----------------------|--------------------|-------|-------|-------------------|-------|-------|
|                      | FY 90              | FY 92 | FY 94 | FY 90             | FY 92 | FY 94 |
| Acceptable or Better | 84                 | 83    | 84    | 91                | 86    | 84    |
| Unacceptable         | 13                 | 10    | 8     | 8                 | 7     | 7     |
| Very Unacceptable    | 3                  | 6     | 8     | 1                 | 6     | 7     |
| Grossly Unacceptable | 0                  | 1     | 1     | 0                 | 2     | 2     |

\* Totals are not exact because of rounding.

**Figure F-1-2/3**

**BMP Monitoring Results of Acceptable or Better**  
(Fiscal Years 1990-94)



The State BMP Audit Team also evaluated the sensitive or "high-risk" BMP's and how they compared to the statewide average. The "high-risk" BMP's are those that are considered to be the most important in protecting watersheds and water quality. In this sensitive BMP category, implementation results were 61% acceptable compared to the Statewide average of 79%. Effectiveness results were 67% acceptable compared to 83% for the Statewide average.

**Evaluation of the Statewide BMP Audit Team Results:** The FY 1994 BMP Audit results for the Kootenai Forest are lower than the Statewide results for the implementation and effectiveness categories. This continues the trend of a lower rating which was started in FY 1992. In FY 1990 the Kootenai Forest results were higher than the statewide average.

When comparing the "high risk" BMP's in FY 1994, the ratings for both the implementation and effectiveness categories were also lower than the Statewide average. This again continues the trend of a lower rating for "high risk" BMP's.

In FY 1995 the forest will be doing several actions to improve the BMP program. They include: 1) a field trip with the management team to look at sites reviewed by the state BMP team last summer; 2) development of a modified BMP tracking/documentation process; and 3) field training for the districts.

**Finding:** Based on the information stated above, this monitoring item is outside the prescribed range.

## SOIL AND WATER

### Water Yield Increases: Monitoring Item F-3

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Determine the cumulative level of water yield increases and the effects on stream channels. |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | 20% of watersheds exceed hydrologic guidelines.   |

**Purpose:** This monitoring item was established to help ensure that the State water quality standards are met. Water yield increase protection measures are designed to protect stream channels and fisheries habitat from the damaging effects of peak flow increases, and thus protect water quality and beneficial uses. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate to high.

**Background:** Water yield estimations for project planning utilize the Kootenai Forest water yield model which calculates the peak flow increase over natural conditions for a watershed or sub-watershed. The results are displayed on a percentage-increase basis and include past and proposed activities on both the public and private lands. If the calculated peak flows exceed acceptable limits, stream channel damage may occur. Monitoring of water yield estimates is done to identify the watersheds where Forest Plan standards will be exceeded. When this occurs, projects are modified or deferred to ensure that State Water Quality goals are met. This monitoring item evaluates whether *model-projected peak flows* exceed a value determined from analysis of the existing stream condition, modified where necessary for instream values. Channel damages have not necessarily occurred for the reported instances of exceedance of hydrologic guidelines.

**Results:** In FY 1993, the Kootenai water yield model was used to estimate the peak flow increase on 83,479 acres which included both National Forest and private land (see Table F-3-2). Of this total area analyzed, 20% of the acres exceeded the Forest water yield guidelines under present conditions. In FY 1994, the water yield model was used to estimate the peak flow increase on 132,142 acres including some private lands. Of this total area analyzed, 45% of the acres exceeded the Forest water yield guideline under present conditions.

**Evaluation:** The combined totals for FY's 1988-94 show that of the 1,706,829 acres analyzed for peak flow increases on both public and private land, 28% exceed the limits for water yield increase under present conditions. This is a two percent increase over the last five years (FY 1992 Monitoring Report indicated 26% of the watersheds exceeded the limits for water yield).

**Summary:** Most of the area analyzed in this monitoring item occurs on the Fisher River Ranger District (see Table F-3-1), which has also experienced the most acreage (including private lands) exceeding the water yield limits (54% of 610,622 acres). This Ranger District is located in the southeast corner of the Forest which is an area that contains large segments of intermingled private land. Significant amounts of timber harvest have recently occurred on the intermingled private land within the Forest. Water yield calculations were done for these areas as a part of project planning for potential Kootenai Forest timber sales, and the private land characteristics were included. Most of these areas were found to exceed allowable peak flow levels, even though there were few recent or previous activities on Kootenai Forest lands. As discussed in Monitoring Item E-7 (Harvest Deferrals), the Forest has deferred harvest for this reason during 1988-1994. These deferrals for watershed limits have significantly reduced timber sale opportunities on the Fisher River District (see Figure F-3-3).

As stated above, these intermingled private land areas are primarily located in the southeast corner of the Forest where the Montana Cumulative Watershed Effects Cooperative has agreed to evaluate future harvest schedules and methods to ensure that State Water Quality standards are met. This cooperative includes the Kootenai, Flathead and Lolo Forests, the State of Montana, and Plum Creek Timber Company.

**Finding:** Based on the information stated above, this monitoring item is currently outside the prescribed range of 20%.

**Table F-3-1 Watersheds Analyzed by Ranger District, FY's 1988-94 (includes private land)**

| Ranger District     | Total Acres of Watersheds Analyzed | Acres* of Watersheds Exceeding Water Yield Guidelines | Percent <sup>1</sup> of Acres Exceeding Guidelines |
|---------------------|------------------------------------|---|--|
| Rexford             | 193,795                            | 7,712   | 4  |
| Fortine             | 154,713                            | 20,362  | 13   |
| Three Rivers        | 458,345                            | 58,595  | 13   |
| Libby               | 188,442                            | 58,855  | 32   |
| Fisher River        | 610,622                            | 328,313   | 54   |
| Cabinet             | 100,912                            | 0   | 0  |
| Totals <sup>2</sup> | 1,706,829                          | 474,837   | ave. 28  |

<sup>1</sup> The Forest Plan Limit is 20%. <sup>2</sup> Totals are rounded.

\* Includes private lands within the areas analyzed.

See Figure F-3-3a for map of areas that have been analyzed.

**Table F-3-2 Watersheds Analyzed for all Ranger Districts by Fiscal Year (including private land)**

| Fiscal Year         | Total Acres of Watersheds Analyzed | Acres* of Watersheds Exceeding Water Yield Guidelines | Percent <sup>1</sup> of Acres Exceeding Guidelines |
|---------------------|------------------------------------|---|--|
| 1988-89             | 949,033                            | 319,267   | 34   |
| 1990                | 141,054                            | 14,564  | 11   |
| 1991                | 247,897                            | 13,020  | 5  |
| 1992                | 153,224                            | 51,735  | 34   |
| 1993                | 83,479                             | 16,654  | 20   |
| 1994                | 132,142                            | 59,597  | 45   |
| Totals <sup>2</sup> | 1,706,829                          | 474,837   | ave. 28  |

<sup>1</sup> The Forest Plan Limit is 20%. <sup>2</sup> Totals are rounded.

\* Includes private lands within the areas analyzed.

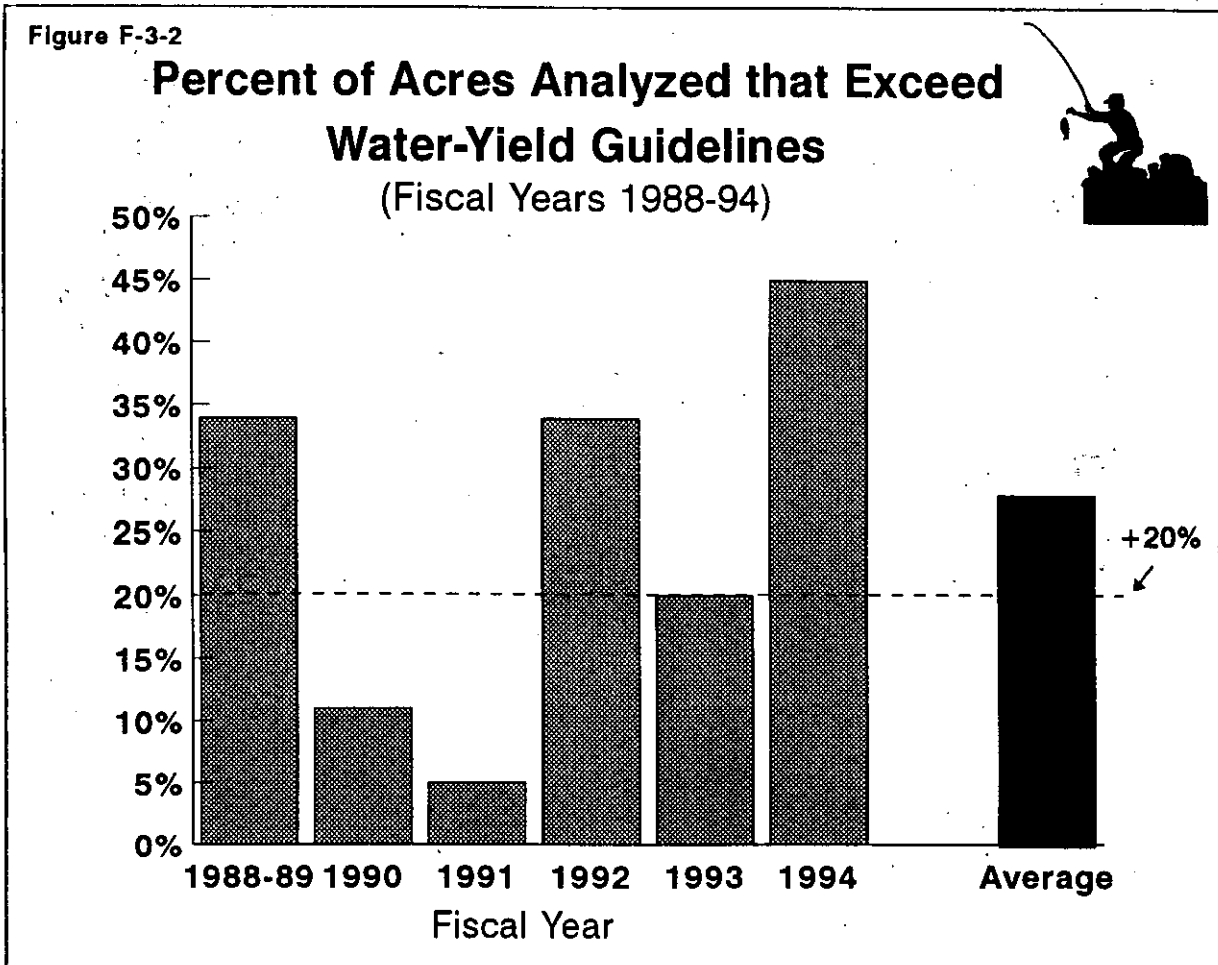
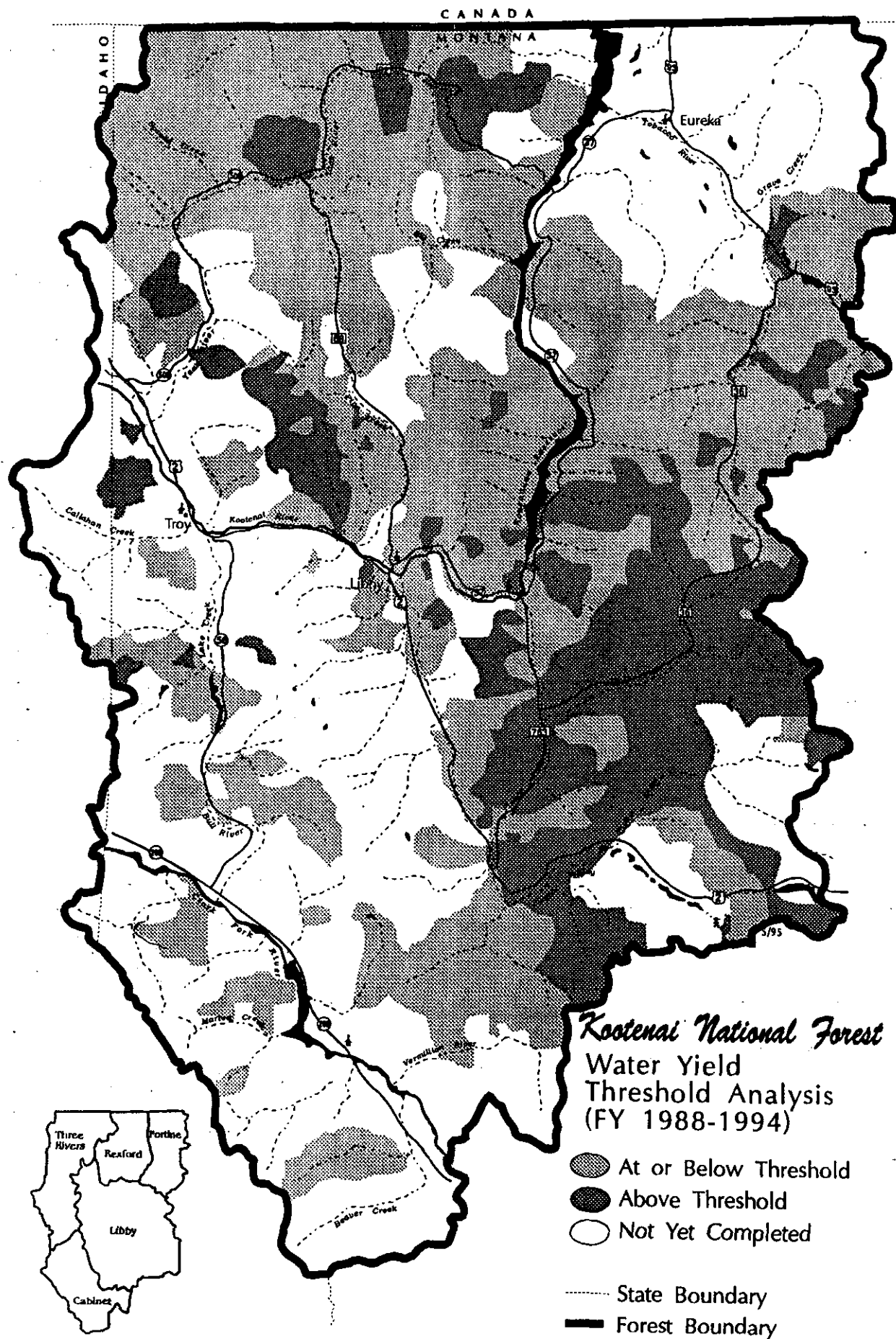


Figure F-3-3a





## HUMAN AND COMMUNITY DEVELOPMENT

### Emerging Issues: Monitoring Item H-2

|  |   |
|--|---|
| ACTION OR EFFECT TO BE MEASURED:                     | Emerging issues   |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | Issues surfaced that were not included in or analyzed for effect by the Plan. |

**Purpose:** This monitoring item was established to track the amount of resource management conflict that is occurring, especially those conflicts which were not foreseen during the preparation of the Forest Plan. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate.

**Background:** Newly emerging issues could affect the Forest's ability to implement the Plan as intended, so they're identified as part of monitoring.

#### Emerging or Potential Forest Issues Not Specifically Evaluated in the Forest Plan:

**Ecosystem Management** - Identified in the FY 92 monitoring report, this continues as an emerging issue.

**Biodiversity:** Biodiversity is a part of this overall management policy, and locally the concern appears to be surfacing in items such as riparian and wetland management, uneven-aged management, habitat fragmentation, and biological corridors. How these issues, concepts and values are dealt with will play a part in possible changes to the Plan (amendments, etc.).

**Sensitive Plants and Animals:** There is increasing concern for sensitive species management to ensure that sensitive plants, wildlife and fish will not become threatened or endangered. Questions continue to arise about how to best provide for their protection and what will be the overall effect on current goods and services such as timber and recreation.

**Old Growth and Snag Habitat Management:** The management of old growth habitat is still evolving and the potential impact of such allocations on other resource uses is still unknown. Concern over shortages of snag habitat are developing in many locations on the Forest. This is the result of previous timber harvest practices and firewood gathering. However, the fires that occurred in 1994 changed the landscape and created more snags for snag dependent species.

**Elk Vulnerability** - This is related to a concern that inadequate elk security is being provided in several areas on the Forest because of the lack of large (250 acres+), well-forested areas that are at least a half-mile from an open road. Elk seem to move to areas like this during hunting season to escape hunting pressure.

**Wildland/urban Interface** - Due to the fires in 1994 there is an increased awareness and concern regarding the wildland/urban interface and fuel buildups as it pertains to risk to human life and property.

#### Continuing Forest Issues that May Still Affect the Forest Plan:

The Forest Plan initially identified and addressed 13 public issues. As stated in the FY 1992 monitoring report of these original 13 issues, the following are still resisting resolution: grizzly bear management, state water quality management, timber supply (local economic impact), road management and public access, potential mineral development, visual (scenic) quality, and community stability (in the broader sense of using the natural resources of National Forest lands to provide jobs related to recreation, tourism, and forest products other than timber).

## HUMAN AND COMMUNITY DEVELOPMENT

### Forest Plan Costs: Monitoring Item H-3

**ACTION OR EFFECT TO BE MEASURED:** Determine if the costs of producing outputs that were used in the Plan continue to be valid.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** A deviation of more than 10% from the cost data used to calculate present net value in the Plan.

**Purpose:** This monitoring item was established to track the cost of major items contributing to the present net value of the Plan. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate to high.

**Background:** During the development of the Forest Plan, cost data were broken down into fixed, other, and variable costs. Fixed costs consisted of 45 categories of costs, and these items were the same for all alternatives considered. Other costs include 16 categories of cost items which were lumped but varied by alternative. Variable costs consisted of certain recreation costs, wildlife habitat improvement costs, range management and improvement costs, and all timber-related costs. These breakdowns were consistent with analytical techniques used for the Plan, but do not compare directly with accounting classifications (different breakdowns) now in use. As a result, only some of the variable costs can be readily used to determine changes in unit costs. However, the ones used are the variable cost items which influenced land allocation and activity scheduling in the Plan and indicate trends in unit cost change for monitoring purposes.

Cost analysis was undertaken for timber sale preparation and administration (site preparation, reforestation, precommercial thinning) and roads constructed primarily for timber harvest. The baseline unit cost figures (those used to calculate Present Net Value in the Plan) were extracted from the planning record, and inflated to FY 1994 dollars in order to provide comparability. The fiscal year unit cost values were obtained from Forest accounting reports and the Forest management attainment reports, and inflated to FY 1994 dollars. Timber sale preparation costs include all planning, sale preparation, and sale administration expenditures for the fiscal year. Timber output is based on the amount sold in the fiscal year. Timber road costs are based on purchaser credit established and associated engineering support costs. Reforestation costs include all reforestation-related costs including co-operative work required by timber sale contractors. All acres with reforestation work are represented in the output level. Table H-3-1 shows the baseline, the first 5 years, and FY's 1993-1994 unit cost data for these items.

#### **Results and Evaluation:**

**Timber Sales unit costs** for fiscal years 1993 and 1994 are displayed in Table H-3-1 and show an increase over the level projected in the Forest Plan. This is continuing the upward trend that began in FY 1990. Currently, costs are about 4 times greater than projected, which is well outside the +/-10% range prescribed in the Plan. This increase is due to the increasing complexity in timber sale preparation along with a concurrent decrease in the amount of timber volume being sold. For more detail on these aspects, please refer to Items E-1 thru E-3 and E-7.

**Timber Roads unit costs** were close to the level projected in the Forest Plan for the first five years of the Plan, but have increased in FY 93 and 94 (see Table H-3-1). This is largely a result of decreased volume sold, lowering cost efficiency.

**Reforestation unit costs** were also higher than projected in the Forest Plan in FY 1993 (see Table H-3-1). This continues the slight upward trend that began in FY 1990. Although there has been a wide variation in these costs (both above and below the projected level), the costs for 1993 and 1994 have changed minimally from the 5-year average of +11% above the projected unit cost.

**Pre-commercial thinning unit costs** continue to stay below projected costs, helping the Forest to minimize overall costs (see Table H-3-1). However, in terms of the total PNV of the Plan, pre-commercial thinning accounts for only 0.2% of the total contribution to PNV costs, so the overall economic efficiency is only slightly affected.

**Finding:** Based on the information presented above, this monitoring item is outside the range prescribed in the Plan.

**Table H-3-1 Forest Plan Unit Costs by Fiscal Year (FY)\***

| Cost Item           | Units   | Unit Costs Projected in Plan | Weighted Avg, FY 88-92 | FY 93 | FY94 | Weighted Avg, FY 93-94 |
|---------------------|---------|------------------------------|------------------------|-------|------|------------------------|
| Timber Sales        | \$/MBF  | 28                           | 39                     | 102   | 119  | 111                    |
| Timber Roads        | \$/MBF  | 25                           | 49                     | 26    | 52   | 51                     |
| Reforestation       | \$/Acre | 328                          | 346                    | 368   | 386  | 377                    |
| Precommer. Thinning | \$/Acre | 294                          | 208                    | 205   | 215  | 210                    |

\* All unit costs in this table have been updated to FY 94 dollars to account for inflation and to provide comparability.

## HUMAN AND COMMUNITY DEVELOPMENT

### Forest Plan Budget Levels: Monitoring Item H-4:

|  |  |
|--|--|
| ACTION OR EFFECT TO BE MEASURED:                     | Assess Forest budget levels and their effects on Forest Plan implementation. |
| VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION: | 10% deviation by funding item from the predicted levels in the Plan.         |

**Purpose:** This monitoring item was established to track the budget levels received. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is high.

**Background:** The budget process is directly related to the Forest Plan, but also influenced by other factors. Program targets vary from year to year to meet certain needs and such changes are reflected in the budget figures. As a result, budget levels for any single year should be interpreted with care. However, given major trends now seen since 1988, it is apparent that many programs and costs have changed substantially, and Forest Plan predictions are no longer fully valid. The analysis presented below will be helpful in budget analysis for Forest Plan revision.

**Results:** Table H-4-1 (next page) shows the percentage difference between the planned budget and actual expenditures for the first five years of the Plan, and FY's 1993-94. Significant increases have occurred in fire, fuels, law enforcement, timber salvage sales, and tree improvement. For more detailed information on the specific dollar amounts for each budget item by fiscal year, see Appendix D at the end of this report.

**Evaluation:** In order to evaluate this information with its wide variations, the major Forest programs were grouped for easier comparison. For each major Forest program (such as timber, wildlife, recreation, etc.), all applicable budget items were grouped and added together. Data for FY's 1993-94 are averaged to smooth out year-to-year variations. Output levels for each major resource area were obtained from Appendix A (at the end of this report) and are based on the Forest's Management Attainment Report for FY's 1988-92. For each major program area, all applicable outputs were added together. To some extent, some misrepresentation was introduced by this addition (for instance, developed recreation and dispersed recreation) but overall results do show the major trends. Table H-4-2, on a following page, shows the results of this analysis. Following that table, there is a brief listing of each program area, the outputs contributing to it, and an evaluation of the trend.

**Table H-4-1 Comparison of Actual Budgets Used to Implement the Forest Plan  
(in Percent\*)**

| Funding Item | Budget Activity                          | Average Percent for FY 88 - 92. | Actual Budget as a Percent of Planned Budget. |           |              |
|--------------|--|---------------------------------|---|-----------|--------------|
|              |  | FY 88-92                        | FY 1993                                       | FY 1994   | Avg FY 93-94 |
| 00           | General Administration (approp.)         | 75                              | 65  | 60        | 63           |
| 01           | Fire                                     | 76                              | 85  | 1252      | 675          |
| 02           | Fuels                                    | 39                              | 113   | 113       | 113          |
| 03-05        | Timber                                   | 69                              | 50  | 50        | 50           |
| 06-07        | Range                                    | 111                             | 84  | 54        | 97           |
| 08           | Minerals                                 | 57                              | 54  | 53        | 53           |
| 09           | Recreation                               | 68                              | 68  | 73        | 70           |
| 10           | Wildlife and Fish                        | 58                              | 60  | 59        | 60           |
| 11           | Soil, Air, Water                         | 77                              | 91  | 83        | 87           |
| 12           | Facility Maintnce.                       | 82                              | 107   | 93        | 100          |
| 13-15        | Lands/Land Management                    | 59                              | 94  | 75        | 84           |
| 42-43        | Lands-Status/Acquisition                 | 114                             | 51  | 51        | 38           |
| 16           | Landline Location                        | 77                              | 91  | 89        | 90           |
| 17           | Road Maintenance                         | 77                              | 52  | 59        | 55           |
| 18           | Trail Maintenance                        | 78                              | 87  | 75        | 81           |
| 19           | Co-op Law Enforcement                    | 25                              | 120   | 89        | 104          |
| 20           | Reforestation-Appropriated               | 69                              | 51  | 55        | 53           |
| 21           | TSI-Appropriated                         | 60                              | 62  | 55        | 58           |
| 23           | Tree Improvement                         | 106                             | 304   | 217       | 260          |
| 26-28        | KV (Trust Fund)                          | 132                             | 153   | 124       | 138          |
| 29           | CWFS-Other (Trust Fund)                  | 109                             | 107   | 95        | 101          |
| 30           | Timbr.Salv.Sales (Perm.Fund)             | 375                             | 1125  | 828       | 974          |
| 31           | Brush Disposal (Perm. Fund)              | 102                             | 86  | 58        | 72           |
| 32           | Range Improvement                        | 68                              | 40  | 39        | 39           |
| 33           | Recreation Construction                  | 79 ?                            | 48  | 132       | 91           |
| 34           | Facility Construction-FA&O               | 4                               | 4   | 8         | 6            |
| 35           | Engineering Constr.Support               | 59                              | 49  | 35        | 42           |
| 36           | Constr.-Capital Invest. Roads            | 16                              | 18  | 2         | 10           |
| 37           | Trail Construction/Reconstr.             | 87                              | 191   | 217       | 204          |
| 24,38        | Timber Rd.Constr.-PC/Elect. <sup>1</sup> | 52                              | 53  | 33        | 43           |
|              | <b>TOTALS</b>                            | <b>72</b>                       | <b>79</b>                                     | <b>98</b> | <b>89</b>    |

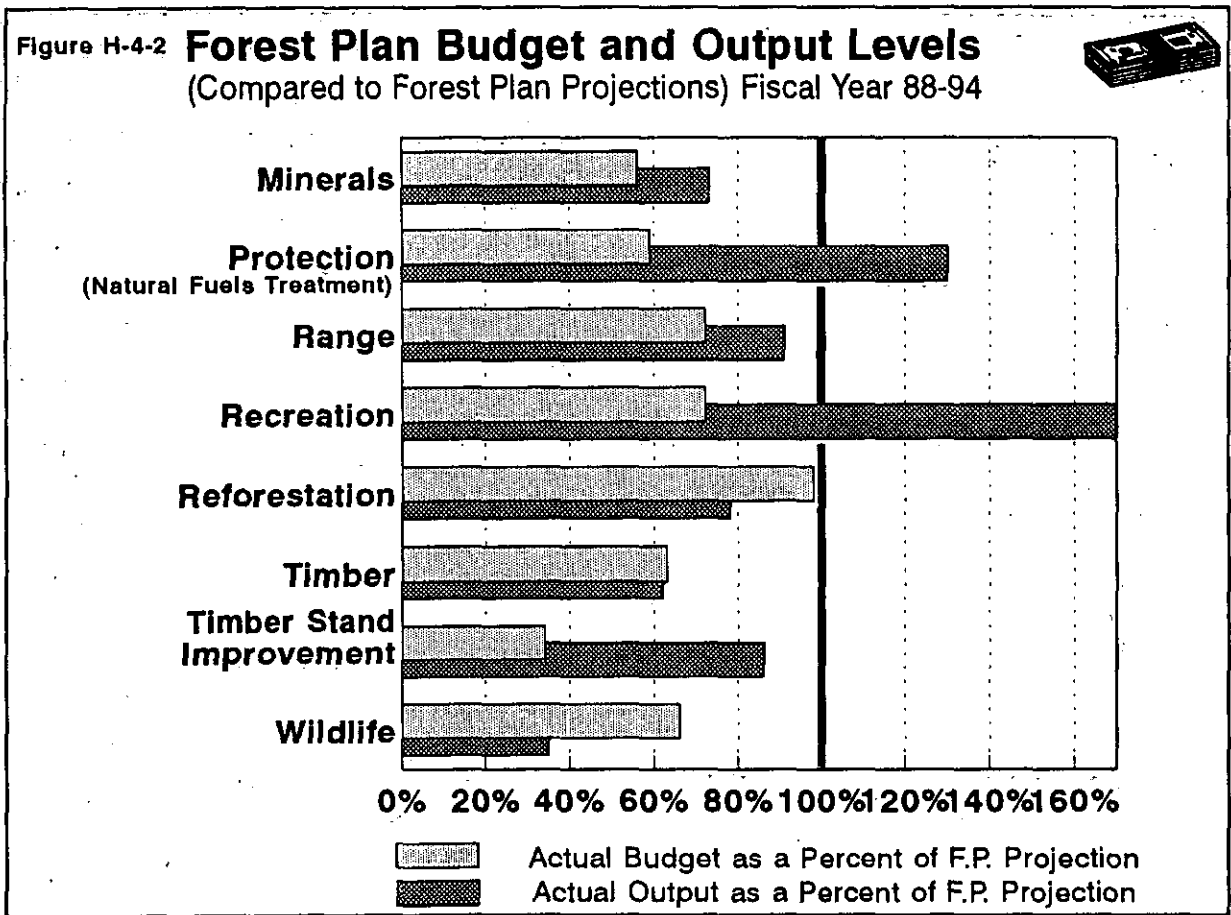
\* Each budget year is adjusted for inflation. <sup>1</sup> PC = Purchaser Credit established.

For more detail, please refer to Appendix D at the end of this report for the specific dollar amounts for each budget item by fiscal year.

**Table H-4-2 Forest Plan Budget & Output Levels for Fiscal Years 1988-94**

| Activity or Outputs                 | Actual Budget as a Percent of Forest Plan | Actual Output as a Percent of Forest Plan Projection <sup>1</sup> |
|-------------------------------------|---|---|
| Minerals                            | 56  | 73  |
| Protection, Natural Fuels Treatment | 59  | 130   |
| Range                               | 72  | 91  |
| Recreation                          | 72  | 170   |
| Reforestation                       | 98  | 78  |
| Timber                              | 63  | 62  |
| Timber Stand Improvement            | 34  | 86  |
| Wildlife                            | 66  | 35  |

<sup>1</sup> Factors contributing to the outputs are shown in the text.



**Minerals (number of cases handled):** The number of minerals cases arising is not a controllable item, because the Forest is required to respond to cases as they arise. Although a significant number of cases have been completed, many of them have been less complicated than the expected longer-term average. Also, the restrained budgets have decreased the quality of the case workload.

**Protection (natural fuels treatment, in acres):** In Fiscal Years 1992 and 1993, the acres of natural fuels treatments went up substantially over prior years (see Table H-4-1). This has resulted in achieving, for the entire Forest Plan time frame of FY 88 to FY 94, 130 percent of planned work.

**Range (permitted grazing use, in acres):** Both range budgets and production amounts are below that shown in the Plan, but relatively less so for production. See Item D-1 for more information.

**Recreation (Total of developed and dispersed use, in recreation visitor days):** Compared to the Plan, recreation budgets are lower and outputs are 37% higher. Continuing difficulty in obtaining full funding on a national basis affects this program area. Outputs, however, are steadily increasing as more people opt for recreational activities on National Forests. Currently, the assistance of volunteers and challenge grants helps reduce this gap between planned and realized funding. Recreation experience quality could diminish if the current co-operation diminishes and the budget gap continues. The low reliability and accuracy of the dispersed recreation use data (using traffic counts to calculate driving for pleasure and viewing values, for example) may also be a contributing factor to the large overrun of outputs.

**Reforestation (Acres reforested naturally and artificially, by Forest and cooperators):** Reforestation budget and achievement levels are close to those projected in the Plan. It appears that the actual cost of reforestation is about the same as projected.

**Timber (Total volume sold, MMBF):** Both timber budgets and outputs are less than planned. See Monitoring Item H-2 for a discussion of timber unit costs and Monitoring Item E-1 for timber sell volume information.

**Timber Stand Improvement (Acres precommercially thinned):** Actual costs for pre-commercial thinning for the first seven years of the Plan have been less than those anticipated. Acreage thinned has not fully reached planned levels due to normal variations in program activity, but may approach planned amounts in future years as more stands grow into overstocked conditions or more stands become accessible.

**Wildlife and Fish (Total acres of wildlife, fish, and T & E habitat improvement):** Budgets in this area have stabilized at around 60 percent of planned amounts. Accomplishment remains lower than expected.

**Finding:** Based on the information stated above, this monitoring item is outside the range prescribed in the Plan.

## PROTECTION

### **Insect & Disease Status as a Result of Activities: Monitoring Item P-1**

**ACTION OR EFFECT TO BE MEASURED:** Determine the level of insect and disease organisms following management activities to insure the health of residual and surrounding stands.

**VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION:** Insect and disease levels increase beyond normal levels.

**Purpose:** This monitoring item was established to ensure that insect and disease levels are not made worse by Forest management activities, particularly timber management. The Plan requires that this item be reported annually. The expected accuracy and reliability of the information is moderate.

**Background:** Mountain pine beetle populations, which were at epidemic levels on the Forest from 1972 to 1992, have dropped to endemic levels according to the FY 1994 insect and disease detection flight. With the exceptions of a few minor outbreaks, all other insects and diseases remained at endemic (low) levels. Fires in 1994 burned approximately 53,000 acres of National Forest land.

**Results:** Timber harvest in the past two years (1993 and 1994) have converted 30,000 acres to intolerant seedling stands basically free of major insect and disease problems. These acres, added to past harvest, are moving the Forest towards a healthy condition. Fires in 1994 killed 50 percent of the trees in burned over areas. Approximately 50 percent of the remaining live trees have been weakened.

**Evaluation:** Stand exams, permanent plots (growth plots) and benchmark exams indicate stands that have been regeneration harvested and those treated with some form of intermediate treatment are healthy with only minor amounts of insect and disease problems. The Forest is in the process of developing resource projects in the major burn areas (see Forest Assessment of 1994 Major Fires) that encourage a healthy forest and thus should keep insect populations at endemic levels.

There are three diseases that are presently at low levels in relation to the Forest, but are problems within a few stands and have the potential to increase in importance. (1) Some western larch (forest type) seedling/sapling stands are being infected by mistletoe spread by mature western larch. Most of these infection sources exist in the seedwalls. Districts are starting surveys to quantify this situation. (2) Monoculture lodgepole pine stands are being infected by gall rust. Suppression management direction is being developed to respond to this infestation. Root rot is infecting young Douglas-fir and grand fir stands primarily on the west side of the Forest. These areas are targeted for regeneration and reforestation with root rot resistant species.

**Finding:** Based on the information stated above, the monitoring item is on-track.



## APPENDIX A

### KOOTENAI NATIONAL FOREST PLANNED OUTPUTS or ACTIVITIES, and ACCOMPLISHMENTS by FISCAL YEAR (Reference Used: Table II-1, page II-13 in Forest Plan.)

| TARGET ITEM     | OUTPUT or ACTIVITY                   | UNIT of MEASURE | PLANNED UNITS           | ACTUAL UNITS ACCOMPLISHED BY FISCAL YEAR (FY) |       |                        |                          |
|-----------------|--------------------------------------|-----------------|-------------------------|---|-------|------------------------|--------------------------|
|                 |                                      |                 | PLANNED AMOUNT PER YEAR | FY 93   | FY 94 | Average Units Per Year | Percent of Planned Units |
| RECREATION      | Developed Use                        | M RVD           | 297                     | 319   | 325   | 322                    | 108                      |
|                 | Dispersed Use                        | M RVD           | 18                      | 23  | 23    | 23                     | 78                       |
|                 | Wilderness<br>Non-wilderness         | M RVD           | 559                     | 1223  | 1244  | 1233                   | 221                      |
| WILDLIFE & FISH | Wildlife Habitat Improvement         | M Acres         | 5.6                     | 4.4   | 1.9   | 3.1                    | 55                       |
|                 | T & E Habitat Improvement            | Acres           | 150                     | 52  | 319   | 186                    | 123                      |
|                 | Fish Habitat Improvement             | Acres           | 120                     | 146   | 97    | 122                    | 98                       |
| RANGE           | Permitted Grazing Use                | M AUM           | 12.6                    | 12.1  | 11.6  | 11.8                   | 94                       |
| SOIL            | Soil Inventory                       | M Acres         | 15.7                    | 0   | 11    | 6.5                    | 41                       |
| LANDS           | Land Exchange                        | Acres           | 1700                    | 100   | 80    | 90                     | 1.0                      |
| MINERALS        | Minerals Management                  | Cases           | 300                     | 191   | 154   | 173                    | 58                       |
| PROTECTION      | Fuels Treatment, Natural             | Acres           | 800                     | 1289  | 2561  | 1925                   | 240                      |
| TIMBER          | Total Volume Offered <sup>1</sup>    | MMBF            | 233                     | 75.5  | 73.6  | 74.5                   | 32                       |
|                 | Reforestation - Appropriated         | M Acres         | 3.0                     | 3.5   | 4.3   | 3.9                    | 130                      |
|                 | Reforestation - KV                   | M Acres         | 7.1                     | 10.1  | 7.8   | 9.0                    | 79                       |
|                 | Reforestation - Other (Co-op.)       | M Acres         | 4.0 <sup>2</sup>        | 2.9   | 2.5   | 2.7                    | 68                       |
|                 | Total Reforestation                  | M Acres         | 14.1                    | 16.5  | 14.6  | 15.6                   | 111                      |
|                 | Timber Stand Impr. - Approp.         | M Acres         | 4.0 <sup>3</sup>        | 4.7   | 3.7   | 4.2                    | 105                      |
|                 | Timber Stand Impr. - KV              | M Acres         | 1.0 <sup>3</sup>        | 1.1   | 0.8   | 1.0                    | 100                      |
|                 | Total Timber Stand Improve.          | M Acres         | 5.0                     | 5.8   | 4.5   | 5.2                    | 104                      |
|                 | Stand Examination                    | M Acres         | 139                     | 202   | 139   | 170                    | 122                      |
|                 | Fuel Treatment - BD/KV               | M Acres         | 11.7                    | 8.06  | 6.34  | 7.2                    | 89                       |
| FACILITIES      | Total Road Construction <sup>4</sup> | Miles           | 237                     | 80  | 36    | 58x                    | 25                       |
|                 | Trail Construction/Reconstr.         | Miles           | 7.5                     | 7.2   | 13.4  | 16.3                   | 137                      |

<sup>1</sup> Timber offered but not necessarily sold as of Oct 31 of the Fiscal Year. Planned amount includes 25 MMBF/year of non-interchangeable volume (primarily dead lodgepole pine) plus 202 MMBF of live green timber for an ASQ of 227 MMBF/year. In addition to the ASQ, 6 MMBF/year of unregulated volume is expected to be offered.

<sup>2</sup> Acres of site preparation for natural regeneration as part of the timber sale contract (purchasers requirement) and other contributed funds.

<sup>3</sup> Includes precommercial thinning and release.

<sup>4</sup> Includes arterial, collector, and local roads.

## APPENDIX B-1

|   |
|---|
| Timber Sell Volume: Monitoring Item E-1 |
|---|

The following Table shows actual accomplishments compared to Forest Plan projections:

| <b>SUITABLE LANDS</b>             |                                     |              |              |              |              |              |              |              |                           |                             |                              |                              |
|-----------------------------------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------------|-----------------------------|------------------------------|------------------------------|
| Unit of Measure ---->             | Forest<br>Plan <sup>1</sup><br>MMBF | FY88<br>MMBF | FY89<br>MMBF | FY90<br>MMBF | FY91<br>MMBF | FY92<br>MMBF | FY93<br>MMBF | FY94<br>MMBF | Total FY<br>88-94<br>MMBF | Average<br>Per Year<br>MMBF | 7-Year<br>Vol. Diff.<br>MMBF | Actual VS<br>Plan<br>PERCENT |
| <b>ASQ:</b>                       |                                     |              |              |              |              |              |              |              |                           |                             |                              |                              |
| Regulated                         | 202                                 | 152.4        | 152.8        | 115.4        | 74.5         | 150.4        | 58.0         | 35.3         | 738.8                     | 105.5                       | -675.2                       | 52.2%                        |
| Non-interchangeable               |                                     |              |              |              |              |              |              |              |                           |                             |                              |                              |
| Dead LPP                          | 20                                  | 19.2         | 25.9         | 26.4         | 14.7         | 26.2         | 11.4         | 6.7          | 130.5                     | 18.6                        | -9.5                         | 93.2%                        |
| Other Dead                        | 5                                   | 1.7          | 2.3          | 4.5          | 4.6          | 22.0         | 12.2         | 13.7         | 61.0                      | 8.7                         | 26.0                         | 174.3%                       |
| Total Non-inter<br>changeable     | 25                                  | 20.9         | 28.2         | 30.9         | 19.3         | 48.2         | 23.6         | 20.4         | 191.5                     | 27.4                        | 16.5                         | 109.4%                       |
| <b>Total ASQ</b>                  | <b>227</b>                          | <b>173.3</b> | <b>181.0</b> | <b>146.3</b> | <b>93.8</b>  | <b>198.6</b> | <b>81.6</b>  | <b>55.7</b>  | <b>930.3</b>              | <b>132.9</b>                | <b>-658.7</b>                | <b>58.5%</b>                 |
| <b>Non-chargeable<sup>2</sup></b> |                                     |              |              |              |              |              |              |              |                           |                             |                              |                              |
| Roundwood                         | 0                                   | 0.9          | 0.7          | 0.8          | 2.3          | 0.3          | 0.5          | 0.9          | 6.4                       | 0.9                         | N/A                          | N/A                          |
| Fuelwood                          | 0                                   | 2.4          | 3.2          | 2.1          | 2.4          | 2.1          | 2.3          | 2.6          | 17.1                      | 2.4                         | N/A                          | N/A                          |
| Total Non-chargeable              | 0                                   | 3.3          | 3.9          | 2.9          | 4.7          | 2.4          | 2.8          | 3.5          | 23.5                      | 3.4                         | N/A                          | N/A                          |
| <b>UNSUITABLE LANDS</b>           |                                     |              |              |              |              |              |              |              |                           |                             |                              |                              |
| All Unregulated                   | 6                                   | 2.4          | 3.4          | 2.2          | 1.4          | 2.4          | 0.5          | 0.2          | 12.5                      | 1.8                         | -29.5                        | 29.8%                        |

<sup>1</sup> Average Annual Outputs.

<sup>2</sup> Woody material that is sold, but not accounted for in Appendix 11 of the Forest Plan. Roundwood is small material not meeting Region 1 forest planning sawlog specifications and usually removed as post, pole, or rail products.

NOTE: Totals may not be exact because of rounding.

## APPENDIX B-2

### Harvest Area Size: Monitoring Item E-8

The National Forest Management Act (NFMA) provides direction for development and implementation of land and resource management plans. Secretary of Agriculture regulations of 36 CFR 219 provides guidance for implementing NFMA's provisions. Section 219.27 (d)(2)(iii) states the "...the established limit shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm."

Furthermore, the Northern Regional Guide, 36 CFR 219.8, states "Where natural catastrophic events such as fire, windstorm, or insect and disease attacks have occurred, 40 acres may be exceeded without 60-day public review and Regional Forester approval, provided that the public is notified in advance and the environmental analysis supports the decision." (Regional Guide, page 2-6). This same direction is repeated in the Regional Supplement to Forest Service Manual 2471.1.

The Kootenai Forest plan also provides direction regarding opening sizes and states "Maintaining a variety of unit sizes of generally 40 acres or less. Where catastrophic conditions exist such as insects, disease, or fire creates a condition whereby larger unit sizes will have no additional effect on wildlife habitat, larger cutting units may be used." (Forest Plan, pg 11-23). The intent of this statement is to ensure that any activity hastens recovery for wildlife and that there are no long-term detrimental effects through exceeding 40 acres.

The following projects were approved by the Forest Supervisor to exceed opening sizes and therefore are consistent with Forest Plan direction.

#### Timber Harvest Units Resulting in Openings of Greater Than 40 Acres

| Fiscal Year | Management Area | Timber Sale Name <sup>1</sup> | Harvest Unit Size in Acres                                     | Years Needed Until No Longer Considered to be an Opening |
|-------------|-----------------|-------------------------------|--|--|
| 1993        | 12              | Flat Black Salvage(2)         | 98 <sup>2</sup>  | 5-10   |
| 1993        | 12              | Turner Creek Fire Salvage(6)  | 140 <sup>2</sup><br>188 <sup>2</sup><br>138 <sup>2</sup><br>42 | 5-10<br>10-15<br>5-10<br>5                               |
| 1993        | 12              | Thomas Gulch/Rainy Blue(3)    | 61 <sup>2</sup>  | 15   |
| 1994        | 12              | Tepee Area Salvage(6)         | 46 <sup>2</sup><br>101 <sup>2</sup>                            | 5-10<br>5-10   |

<sup>1</sup> The number inside the bracket ( ) is the number of harvest units involved.

<sup>2</sup> The harvest unit acreage(s) shown are adjacent to existing opening(s) causing the combined opening size(s) to be greater than 40 acres.

## APPENDIX B-3

### Forest Plan Exceptions

The Kootenai Forest Plan identified overarching standards for all forest lands. One of those standards, (Forest Plan, page II-20) states "If it is determined during project design that the best way to meet the goals of the Forest Plan conflicts with a Forest Plan standard, the Forest Supervisor may approve an exception to that standard for the project."

The Kootenai Forest Supervisor determined that the following projects are designed to meet the goals of the Forest Plan, therefore approved the exceptions.

#### Exceptions to Exceed Open Road Density Standards FY 1993/1994

| District | Date Approved | Area   | MA    | ORD  | Time Frame | Completion Date |
|----------|---------------|--|-------|------|------------|-----------------|
| D1       | 7/23/93       | Comp 10<br>Dodge Cr  | 12    | 1.12 | 1 year     | 12/94           |
| D1       | 4/25/93       |  | 12    | 1.59 | 1 year     | 4/94            |
| D3       | 7/12/93       | Meadowview   | 12    | 1.0  | 1-2 years  | 12/95           |
| D4       | None          |  |       |      |            |                 |
| D5       | 12/13/93      | Purcell<br>Comp 503<br>Comp 504<br>Thomas<br>Gulch<br>Comp 516 | 15-18 | 3.50 | 1 year     | 9/94            |
|          | 6/14/93       |  | 12,14 | 3.44 | 1-2 years  | 9/95            |
|          |               |  | 12    | 3.3  | 2-3 years  | 9/96            |
| D6       | 7/2/93        | Weigel<br>Teepee 633<br>Teepee 643                             | 12    | 1.95 | 1-2 years  | 9/95            |
|          | 4/29/94       |  | 12    | 2.3  | 1-2 years  | 9/96            |
|          |               |  | 12    | 1.5  | 1-2 years  | 9/96            |
| D7       | 10/19/93      | Comp 28-29   | 12    | 1.85 | 5 years    | 12/97           |

Management Area 12 - Big Game Summer Range  
 Management Area 14 - Grizzly Habitat Management  
 Management Area 15 - Timber Production  
 Management Area 18 - Regeneration Problem Areas

#### "Other Exceptions"

| District | Date Approved | Area    | MA | Type of Exception   |
|----------|---------------|---------|----|---|
| D1       | 10/16/92      | Comp 26 | 12 | Wildlife Std #7; 10 units would not maintain two sight distances to cover<br>Timber Std #2; 11 units would be harvested adjacent to existing openings prior to reaching cover |

## APPENDIX B-4

### Forest Plan Amendments

1993-1994

The Forest Plan provides a process for amending the plan. Amendments are effective until Forest Plan revision or until they are changed. In addition to the amendments, the outfitter and guide policy was clarified and Appendix 26, Riparian Area guidelines was corrected to be consistent with the Montana Streamside Management Zone Act.

- No. 6          6/14/93      Modified the open-road-density (ORD) for MA-12 on 5,022 acres in the Detgen Cr.-Cowell Cr. area, located 11 miles south of Libby. The ORD is changed from 0.75 miles per square mile to 1.5 miles per square mile after harvest (it also allows for a temporary ORD of 2.1 miles per square mile during an actual harvest period).
  
- No. 7          8/3/93        Modified the open-road-density (ORD) for MA-12 on 12,613 acres in the Stevens Ridge area, located 2 miles south of Noxon. The ORD is changed from 0.75 miles per square mile to 1.5 miles per square mile after harvest (it also allows for a temporary ORD of 2.0 miles per square mile during an actual harvest period).
  
- 8/28/93      Created a new management area MA 31, (Mineral Development), and added acres to MA 23, (Electric Transmission Corridor) for the Montanore Project.
  
- 9/13/93      Clarified the outfitter and guide policy, Appendix 24.
  
- \*                5/10/94      Corrected Appendix 26, Riparian Guides to incorporate House Bill 731, Montana Streamside Management Act.

\* No number were assigned to these amendments, clarifications or corrections.

**Projected & Actual Budget Used to Implement the Forest Plan (in thousands of dollars)**

| Item   | Budget Activity                   | Planned Amount | FY88-92 % of Planned | FY 93 Planned Amount | FY 93 Actual Amount | FY 93 % of Planned Amount | FY 94 Planned Amount | FY 94 Actual Amount | FY 94 % of Planned Amount | Total Planned Amount | FY 93-94 total Amount | FY 93-94 % of plan |
|--------|-----------------------------------|----------------|----------------------|----------------------|---------------------|---------------------------|----------------------|---------------------|---------------------------|----------------------|-----------------------|--------------------|
| 00     | General Administration            | 1,465          | 75                   | 3,064                | 2,002               | 65                        | 3,141                | 1,900               | 60                        | 6,205                | 3,902                 | 63                 |
| 01     | Fire                              | 530            | 76                   | 1,109                | 939                 | 85                        | 1,136                | 14,225              | 1,252                     | 2,245                | 15,164                | 675                |
| 02     | Fuels                             | 59             | 39                   | 123                  | 140                 | 113                       | 126                  | 143                 | 113                       | 250                  | 283                   | 113                |
| 03-05  | Timber                            | 2,648          | 69                   | 5,539                | 2,789               | 50                        | 5,677                | 2,811               | 50                        | 11,216               | 5,600                 | 50                 |
| 06-07  | Range                             | 59             | 63                   | 123                  | 137                 | 111                       | 126                  | 106                 | 84                        | 250                  | 243                   | 97                 |
| 08     | Minerals                          | 287            | 57                   | 600                  | 323                 | 54                        | 615                  | 327                 | 53                        | 1,216                | 650                   | 53                 |
| 09     | Recreation                        | 561            | 68                   | 1,173                | 796                 | 68                        | 1,203                | 875                 | 73                        | 2,376                | 1,671                 | 70                 |
| 10     | Wildlife and Fish                 | 648            | 58                   | 1,355                | 812                 | 60                        | 1,389                | 822                 | 59                        | 2,745                | 1,634                 | 60                 |
| 11     | Soil, Air, Water                  | 269            | 77                   | 563                  | 511                 | 91                        | 577                  | 481                 | 83                        | 1,139                | 992                   | 87                 |
| 12     | Facility Maintenance              | 145            | 82                   | 303                  | 325                 | 107                       | 311                  | 290                 | 93                        | 614                  | 615                   | 100                |
| 13-15  | Lands/Land Management             | 156            | 59                   | 326                  | 307                 | 94                        | 334                  | 251                 | 75                        | 661                  | 558                   | 84                 |
| 42-43  | Lands-Status/Acquisition          | 96             | 114                  | 201                  | 102                 | 51                        | 206                  | 51                  | 25                        | 407                  | 153                   | 38                 |
| 16     | Landline Location                 | 285            | 77                   | 596                  | 543                 | 91                        | 611                  | 542                 | 89                        | 1,207                | 1,085                 | 90                 |
| 17     | Road Maintenance                  | 764            | 77                   | 1,598                | 828                 | 52                        | 1,638                | 959                 | 59                        | 3,236                | 1,787                 | 55                 |
| 18     | Trail Maintenance                 | 115            | 78                   | 241                  | 210                 | 87                        | 247                  | 186                 | 75                        | 487                  | 396                   | 81                 |
| 19     | Co-op Law Enforcement             | 12             | 200                  | 25                   | 30                  | 120                       | 26                   | 23                  | 89                        | 51                   | 53                    | 104                |
| 20     | Reforestation-Appropriated        | 871            | 69                   | 1,822                | 935                 | 51                        | 1,867                | 1,019               | 55                        | 3,689                | 1,954                 | 53                 |
| 21     | TSI-Appropriated                  | 562            | 60                   | 1,176                | 725                 | 62                        | 1,205                | 664                 | 55                        | 2,381                | 1,389                 | 58                 |
| 23     | Tree Improvement                  | 20             | 106                  | 42                   | 127                 | 304                       | 43                   | 93                  | 217                       | 85                   | 220                   | 260                |
| 26-28  | KV (Trust Fund)                   | 1,427          | 132                  | 2,985                | 4,560               | 153                       | 3,059                | 3,807               | 124                       | 6,044                | 8,367                 | 138                |
| 29     | CWFS-Other (Trust Fund)           | 348            | 109                  | 728                  | 778                 | 107                       | 746                  | 707                 | 95                        | 1,474                | 1,485                 | 101                |
| 30     | Timber Salv.Sales (Perm. Fund)    | 275            | 375                  | 575                  | 6,469               | 1,125                     | 590                  | 4,880               | 828                       | 1,165                | 11,349                | 974                |
| 31     | Brush Disposal (Perm. Fund)       | 694            | 102                  | 1,452                | 1,255               | 86                        | 1,488                | 865                 | 58                        | 2,940                | 2,120                 | 72                 |
| 32     | Range Improvement                 | 6              | 68                   | 13                   | 5                   | 40                        | 13                   | 5                   | 39                        | 25                   | 10                    | 39                 |
| 33     | Recreation Construction           | 99             | 74                   | 207                  | 99                  | 48                        | 212                  | 281                 | 132                       | 419                  | 380                   | 91                 |
| 34     | Facility Construction             | 111            | 4                    | 232                  | 10                  | 4                         | 238                  | 18                  | 8                         | 470                  | 28                    | 6                  |
| 35     | Engineering<br>Constr.Support     | 2,360          | 59                   | 4,937                | 2,402               | 49                        | 5,060                | 1,769               | 35                        | 9,996                | 4,171                 | 42                 |
| 36     | Constr.-Capital Invest.<br>Roads  | 1,801          | 16                   | 3,767                | 664                 | 18                        | 3,861                | 79                  | 2                         | 7,629                | 743                   | 10                 |
| 37     | Trail Construction/<br>Reconstr.  | 32             | 87                   | 67                   | 128                 | 91                        | 69                   | 149                 | 217                       | 136                  | 277                   | 204                |
| 24, 38 | Timber Rd.Constr.-PC or<br>Elect. | 2,399          | 52                   | 5,018                | 2,649               | 53                        | 5,143                | 1,717               | 33                        | 10,162               | 4,366                 | 43                 |
|        | <b>Total</b>                      | <b>19,104</b>  | <b>72</b>            | <b>39,962</b>        | <b>31,600</b>       | <b>79</b>                 | <b>40,959</b>        | <b>40,045</b>       | <b>98</b>                 | <b>80,921</b>        | <b>71,645</b>         | <b>89</b>          |

Planned Dollars are the costs original calculated for the budget activity, base year FY 78

FY88-92 Percent of Planned was brought forward from the 1991 Monitoring Report.

FY93 Planned Dollars are FY78 times 2.0918 to account for inflation.

FY94 Planned Dollars are FY78 times 2.1441 to account for inflation.

## SOURCES FOR INFORMATION

For information about the Forest Plan and this monitoring report, contact the following offices:

Kootenai National Forest  
**Supervisor's Office**  
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Libby, MT 59923  
406-293-6211

Kootenai National Forest  
**Rexford Ranger District**  
1299 Hwy 93 N  
Eureka, MT 59917  
406-296-2536

Kootenai National Forest  
**Fortine Ranger District**  
PO Box 116  
Fortine, MT 59918  
406-822-4451

Kootenai National Forest  
**Three Rivers Ranger District**  
1437 North Highway 2  
Troy, MT 59935  
406-295-4693

Kootenai National Forest  
**Libby Ranger District**  
1263 Highway 37  
Libby, MT 59923  
406-293-8861

Kootenai National Forest  
**Cabinet Ranger District**  
2693 Highway 200  
Trout Creek, MT 59874  
406-827-3533