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Status Report to Congress Fiscal Year 2005

Herger-Feinstein Quincy Library Group Forest Recovery Act Pilot Project

Report Preparation

This document was prepared by the Herger-Feinstein Quincy Library Group Pilot Project Implementation Team for the Lassen, Plumas and Tahoe National Forests. The Team is based at 159 Lawrence Street, Quincy, CA 95971. For more information, please call (530) 283-2050 or visit www.fs.fed.us/r5/hfqlg.

This report will be made available online following finalization. Printed copies or CDs of the document will be available upon request by contacting the Team.

Cover Photos

(Clockwise from top center): A "doodle" (a bunched pile of small, cut trees) is ready for removal as part of a thinning project on the Hat Creek Ranger District of the Lassen National Forest; Tahoe National Forest Sierraville District Ranger Sam Wilbanks listens to feedback during a monitoring tour of the Phoenix Project; A completed Defensible Fuel Profile Zone (DFPZ) on the Almanor Ranger District of the Lassen National Forest; An underburn is conducted on the Brush Creek Project on the Feather River Ranger District of the Plumas National Forest; A treated timber stand on the Beckwourth Ranger District of the Plumas National Forest; Forest Service employees and members of the public discuss the Meadow Valley Project during a monitoring tour on the Mount Hough Ranger District of the Plumas National Forest; An aspen restoration project with successful sprouts spreads into newly opened areas on the Eagle Lake Ranger District of the Lassen National Forest.

Civil Rights Statement

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Introduction

The Fiscal Year 2005 (FY05) Herger-Feinstein Quincy Library Group (HFQLG) Pilot Project Status Report to Congress is the seventh annual status report required by the Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG Act).

This report describes how, and to what extent, the specific mandates of the Act were accomplished from October 1, 2004 to September 30, 2005. This annual report discloses the status of Pilot Project implementation and accomplishment during FY05, as required by Sections 401(j)(1)(A-G) of the HFQLG Act. A copy of the Act, as well as a brief history of the Pilot Project, can be found in the Appendices.

Originally approved in October 1998 with the passage of the Act, the Pilot Project was extended in 2003 and is now scheduled to conclude September 30, 2009. Pilot Project implementation has been subject to a variety of challenges, including restrictions from land and resource management documents being used at the time. While there was some accomplishment in the early years of the project constructing the Defensible Fuel Profile Zones (DFPZs), the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement and Record of Decision (SNFPA SEIS and ROD) signed in January 2004 provides a stronger framework for full implementation of the Act.

Currently, the Lassen and Plumas National Forests and the Sierraville Ranger District of the Tahoe National Forest are accomplishing a variety of projects that fulfill the objectives of the Act. This includes establishing an all-aged, multi-storied, fire-resilient forest that will provide a continuous supply of forest products and promote community stability. Silvicultural tools utilized to accomplish this include DFPZs, Group Selection (GS), and Individual Tree Selection (ITS). The project planning and contractual tools currently available are being used to provide efficient and streamlined project implementation to help sustain local economic stability.

This report shows improvements in the number of acres accomplished across all treatment types described in the Act. Implementation is expected to progress at a similarly increasing rate, provided that budget allocations are sustained. Vegetation and riparian restoration treatments are continuing to improve on-the-ground conditions and overall forest health. Project implementation in the area continues to contribute to economic stability for rural communities. However, results have not realized their full potential due to appeals, lawsuits and recent court decisions delaying on-the-ground implementation. As a result of these challenges, the Forest Service has shifted from the use of environmental assessments to more detailed environmental impact statements. The combination of these factors have extended time lines for project implementation.

Pilot Project Summary

Since the HFQLG Final Environmental Impact Statement Record of Decision (FEIS ROD) was signed in August 1999, the Pilot Project has accomplished 198 projects consisting of approximately 147,853 acres of DFPZs; 6,824 acres of GS; and 4,318 acres of ITS. Additionally, the Pilot Project has accomplished 66 riparian restoration projects consisting of 3,840 acres. See Table 2 on page 3.

Use of Funds

This section describes total expenditures, as required by Section 401 (j)(1)(A) and (B) of the HFQLG Act:

> (A) A complete accounting of the use of funds made available under subsection (f)(1)(A) until such funds are fully expended.
>
> (B) A complete accounting of the use of funds and accounts made available under subsection (f)(1) for the previous fiscal year, including a schedule of the amounts drawn from each account used to perform resource management activities described in subsection (d).

Fiscal Year 2005

Table 1 displays funding allocated for implementation of the Pilot Project in FY05. Fund codes identify the primary purpose of appropriated funds. The Pilot Project in FY05 used three fund codes: National Forest Timber Management (NFTM) for planning, preparing and administering timber sales; Wildland Fire Hazardous Fuels (WFHF) for planning, preparing, implementing, monitoring and administering fuels reduction projects (including DFPZs); and National Forest Vegetation and Watershed (NFVW) to fund planning, preparing and implementing forest health improvements, as well as watershed and riparian restoration projects.

Table 1. FY05 Funding for Pilot Project Implementation.

Fund Code	Available Funding
NFTM	$ 9.1
WFHF	$18.3
NFVW	$ 3.6
Total to Project	**$31.0**

Funds presented in millions of dollars. Numbers have been rounded.

Table 3 shows the expenditure of funds distributed across the Pilot Project forests. FY05 project expenditures include: 1) administering and monitoring projects from prior years; 2) implementing projects planned in prior fiscal years; 3) planning and implementing FY05 projects; 4) planning for projects for FY06 and beyond; 5) responding to appeals; 6) responding to litigation. A detailed accounting for project specific expenditures is in Appendix C.

Table 2. Summary of Allocation, Expenditures and Accomplishments, FY99 to FY05.

Fiscal Year	Available Funding (Millions $)	Expenditures (Millions $)	Year End Balance (Millions $)	Resource Management Activities Accomplished (Acres)				
				DFPZs	GS	ITS	Riparian Restoration	Total Acres
1999	8.0	2.0	6.0	640	0	172	0	812
2000	12.2	7.2	5.0	7,215	200	772	81	8,268
2001	31.2	28.2	3.0	41,197	1,836	528	945	44,506
2002	26.2	21.5	4.7	16,651	1,258	395	838	19,142
2003	29.6	23.1	6.5	24,442	0	44	537	25,023
2004	30.8	30.1	.7	36,635	1,738	80	603	39,056
2005	31.0	29.2	1.8	21,073	1,792	2,327	836	26,028
Totals	**169.0**	**141.3**	**27.7**	**147,853**	**6,824**	**4,318**	**3,840**	**162,835**

DFPZ=Defensible Fuel Profile Zone; GS=Group Selection; ITS=Individual Tree Selection

Table 3. Summary of Pilot Project Expenditure of FY05 Funds by National Forest.

Forest/Unit	WFHF	NFTM	NFVW	Total
Lassen	$5.7	$1.6	$1.5	$8.8
Plumas	$ 7.8	$5.6	$0.3	$13.7
Tahoe	$ 1.5	$0.2	$0.7	$ 2.4
HFQLG Implementation Team	$ 1.2	$0.0	$0.0	$ 1.2
TOTAL EXPENDITURE	**$16.2**	**$7.4**	**$2.5**	**$26.1**
12% Indirect Cost	**-**	**-**	**-**	**$ 3.1**
Remaining Balance	**-**	**-**	**-**	**$ 1.8**
TOTAL FY05 Budget				**$31.0**

Funds presented in millions of dollars. Numbers have been rounded.

Indirect costs are expenses for general administration support, office space, rental agreements, communications and other expenses. The HFQLG Act requires that indirect costs not exceed 12 percent of the HFQLG annual budget. In FY05 the 12 percent indirect cost was $3.1 million from the current year $26.2 million earmark. An additional $4.8 million was provided to the Pilot Project for a total of $31 million.

Figure 1 displays the FY05 $31 million budget and expenditures. Expense categories include:

1. Personnel expenses: salaries, benefits, unemployment compensation and other related costs to government.
2. Travel/ TOS expenses: mileage, per diem, training, long-term detail costs and Transfer-of-Station.
3. Contract/Materials/Obligations expenses: contractual services to develop and implement resource management activities; supplies and other miscellaneous expenses; legally binding documents (such as contracts and agreements) and transaction liability that commit funds for purchases or services not yet received.
4. Fleet expenses: vehicles, capitalized equipment, contracts for equipment, etc.
5. Indirect cost: expenses for general administration support, office space, rental agreements, communications and other expenses.
6. Remaining Balance: funds not obligated before the end of the fiscal year.

Previous Fiscal Years

Table 4 displays the funding and expenditures for the Pilot Project from FY99 thru FY05. In FY99 the Forest Service completed the HFQLG EIS and the Forest Supervisors signed the ROD in August as required by the HFQLG Act. The FY99 implementation cost (primarily the cost of the EIS) was approximately $2 million. The $6 million balance was returned to the Pilot Project in FY00.

All funds were not expended in FY00, and a $5 million balance was realized. This $5 million was retained by the Washington Office to assist in the offset of a nation-wide deficit in fire suppression.

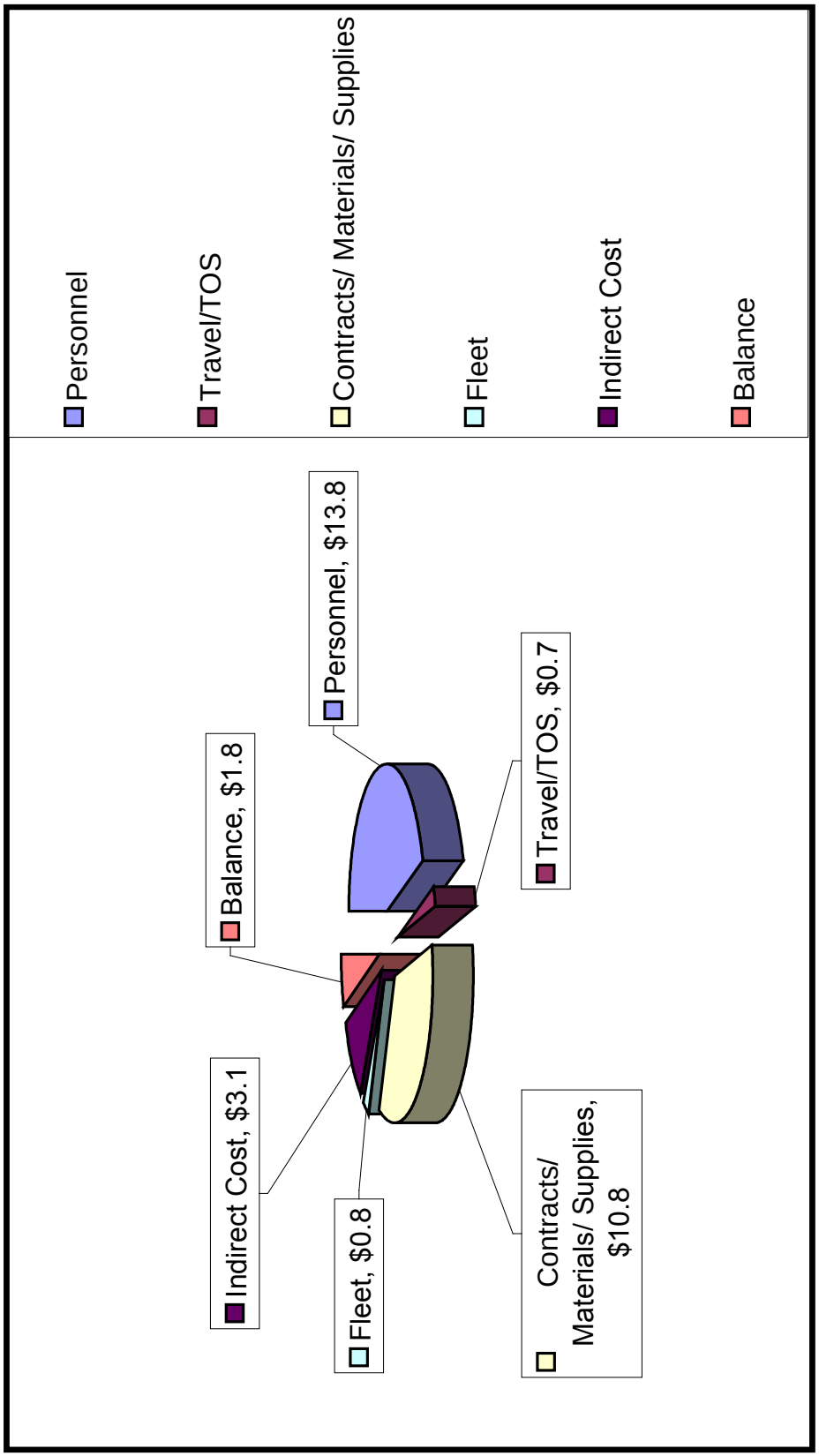


Figure 1. Distribution of the FY05 $31 Million Budget.

Table 4. Funding and Expenditures for Pilot Project, FY99 thru FY05.

Year	Base Level Funding	Carry Over Funds	Additional Funds	Total Available for Pilot Project	Indirect Cost	Funding to Projects	Total	Remaining Balance	Redirected by W.O.
1999	$ 8.0	0	0	$ 8.0	0	$ 2.0	$ 2.0	$ 6.0	0
2000	$ 6.2	$ 6.0	0	$ 12.2	$ .8	$ 6.4	$ 7.2	$ 5.0	$ 5.0
2001	$ 26.2	0	$5.0	$ 31.2	$ 3.1	$ 25.1	$ 28.2	$ 3.0	$ 3.0
2002	$ 26.2	0	0	$ 26.2	$ 3.1	$ 18.4	$ 21.5	$ 4.7	$ 1.3
2003	$ 26.2	$ 3.4	0	$ 29.6	$ 3.1	$ 20.0	$ 23.1	$ 6.5	$ 1.9
2004	$ 26.2	$ 4.6	0	$ 30.8	$ 3.1	$ 27.0	$ 30.1	$ .7	$ .7
2005	$ 26.2	0	$4.8	$ 31.0	$ 3.1	$ 26.1	$ 29.2	$ 1.8	TBD
Total	$145.2	$14.0	$9.8	$169.0	$16.3	$125.0	$141.3	$27.7	$11.9

Funds presented in millions of dollars. Numbers have been rounded. TBD = To Be Determined in FY06.

At the end of FY01, the Regional Office approved an additional $5 million in Title IV funds to cover hazardous fuels reduction contracts ready to award, which in turn allowed for implementation of the Pilot Project to the fullest possible extent. However, there was a $3 million balance in the NFTM and NFVW fund codes. This $3 million was retained by the Washington Office to assist in the offset of a nationwide deficit in fire suppression.

At the end of FY02 the Pilot Project carried a balance of $4.7 million. Of the $4.7 million, $3.4 million was returned to the Pilot Project. The remaining $1.3 million was retained by the Washington Office to assist in the offset of a nationwide deficit in fire suppression.

In FY03, the Washington Office transferred HFQLG funds to assist the nationwide fire suppression efforts. The Pacific Southwest Region (Region 5) redistributed funds to National Forests in Southern California to address conditions brought on by severe drought and insect infestation that resulted in a high tree mortality rate. At the end of FY03, a balance of $6.5 million remained.

During FY04, a $4.6 million carryover was returned to the Pilot Project. The Washington Office redirected $1.9 million at the national program level.

In FY05, in addition to the $26.2 million earmark Region 5 provided, the HFQLG Pilot Project received an additional $4.8 million in National Forest Timber Management funding.

FY05 Accomplishments

The Act states:

> (C) A description of total acres treated for each of the resource management activities required under subsection (d), forest health improvements, fire risk reductions, water yield increase, and other natural resource-related benefits achieved by the implementation of the resource management activities described in subsection (d).

Acres Accomplished

In FY05, the Pilot Project accomplished 37 projects consisting of approximately 21,073 acres of DFPZs; 2,327 acres of ITS; and 1,792 acres of GS treatments. There were 11 riparian restoration projects, which included restoring 836 acres, eliminating one mile of roads and two road crossings, and restoring five road crossings. Table 5 is a summary of these accomplishments.

Table 5. Summary of FY05 Accomplishments.

DFPZ Acres	GS Acres	ITS Acres	Sawlog Volume (ccf)	Biomass Volume (CCF)	Riparian Restoration Acres
21,073	1,792	2,327	143,373	129,814	836

The Pilot Project reports accomplishment when a timber sale is advertised, a service contract is awarded, or a force account crew completes work on the ground. There are three types of contracts: a Timber Sale (TS), which is an agreement where a purchaser pays the Forest Service for sawlogs and biomass; a Service Contract (SC), which is an agreement where the Forest Service pays a contractor to perform activities, such as cutting and piling brush or small diameter trees with hand tools or mechanical equipment; and a Service Contract with Embedded Timber

Sale (STS). A project can also be accomplished with a Force Account (FA) crew, which is a group hired as Forest Service employees that complete work on the ground.

In FY05, the Pilot Project advertised 16 TS, awarded three STS, and awarded seven SCs. Force Account crews accomplished ten projects. Table 6 displays the cumulative FY99 through FY05 accomplishments by project type. A detailed list of FY05 projects can be found in Appendix D, the HFQLG Pilot Project Program of Work.

Sawlog volume is measured in hundred cubic feet (CCF) and thousand board feet (MBF). In FY05, the Pilot Project offered 143,373 CCF, approximately equal to 71,687 MBF or 72 million board feet (MMBF). In general, a standard log truck hauls approximately 4 MBF, or 10 CCF, per load. Approximately 17,922 log truck loads represent 72 MMBF.

Biomass is measured in CCF and Green Tons (GT). In FY05, the Pilot Project offered 129,814 CCF of biomass, approximately equal to 311,554 GT. In general, a chip truck hauls approximately 25 GT, or 10 CCF, per load. Approximately 311,554 GT represents 12,463 chip truck loads. Table 6 summarizes all DFPZ, GS and ITS HFQLG projects (FY99 through FY05) reported as accomplished.

Map 1 in Appendix E shows the accomplished FY05 DFPZ network.

Riparian Restoration Projects

Eleven projects to improve forest health through riparian restoration were accomplished on 836 acres in FY05. Additionally, one mile of road and two road crossings were eliminated and five road crossings were restored. Riparian or watershed restoration projects are considered accomplished when an SC is awarded or an FA crew completes the work on the ground. The FY05 riparian restoration activities included meadow restoration and enhancement, stream channel improvement, road relocation, road closure, slope stabilization and aspen enhancement. Map 3 in Appendix E shows the locations of these riparian restoration projects.

On-the-Ground Treatments

Through FY05, the Pilot Project accomplished 198 projects for 147,853 acres of DFPZs; 6,824 acres of GS; and 4,318 acres of ITS. The Pilot Project has accomplished 66 riparian restoration projects on 3,840 acres. Most projects, though reported as accomplished, have contracts that extend for several years. Actual project work may not begin until the next operating season. Thus, the number of acres treated on the ground each year through the activities of harvest, prescribed fire and riparian restoration work varies and is not the same as the acres reported as accomplished each year. Out of the 198 DFPZ and GS projects reported as accomplished (or under contract), on-the-ground treatments have begun on 163 projects. Table 7 summarizes on-the-ground treatments that have taken place between FY00 and FY05.

A detailed list of projects can be found in Appendix D, the HFQLG Pilot Project Program of Work.

Table 6. Summary of Accomplishments by Project Type, FY99 through FY05.

Project Type	Number of Projects	DFPZ Acres	GS Acres	ITS Acres	Sawlog Volume CCF	Biomass Volume CCF
FY99: Timber Sale	1	640	0	172	4,785	4,278
FY99 TOTAL:	**1**	**640**	**0**	**172**	**4,785**	**4,278**
FY00: Timber Sale	5	5,476	200	772	41,874	48,562
SC with embedded TS	2	665	0	0	2,548	15,955
Service Contract	2	1,024	0	0	0	0
Force Account Crew	1	50	0	0	0	0
FY00 TOTAL:	**10**	**7,215**	**200**	**772**	**44,422**	**64,517**
FY01: Timber Sale	10	10,817	1,836	528	74,841	103,436
SC with embedded TS	10	20,035	0	0	13,961	39,681
Service Contract	11	9,289	0	0	0	0
Force Account Crew	3	1,056	0	0	0	0
FY01 TOTAL:	**34**	**41,197**	**1,836**	**528**	**88,802**	**143,117**
FY02: Timber Sale	19	5,813	1,125	395	32,609	15,845
SC with embedded TS	9	9,259	133	0	4,559	15,509
Service Contract	0	0	0	0	0	0
Force Account Crew	5	1,579	0	0	0	0
FY02 TOTAL:	**33**	**16,651**	**1,258**	**395**	**37,168**	**31,354**
FY03: Timber Sale	6	6,148	0	0	35,103	30,732
SC with embedded TS	9	12,426	0	44	6,315	13,670
Service Contract	9	3,702	0	0	0	0
Force Account Crew	4	2,166	0	0	0	0
FY03 TOTAL:	**28**	**24,442**	**0**	**44**	**41,418**	**44,402**
FY04: Timber Sale	24	18,695	1,738	0	196,858	183,011
SC with embedded TS	6	8,001	0	80	6,154	15,193
Service Contract	13	5,180	0	0	0	0
Force Account Crew	12	4,759	0	0	0	0
FY04 TOTAL:	**55**	**36,635**	**1,738**	**80**	**203,012**	**198,204**
FY05: Timber Sale	16	8937	1792	2327	139,406	95,862
SC with embedded TS	4	2516	0	0	3,967	33,952
Service Contract	7	5354	0	0	0	0
Force Account Crew	10	4266	0	0	0	0
FY05 TOTAL:	**37**	**21,073**	**1792**	**2,327**	**143,373**	**129,814**
PILOT PROJECT TOTAL	**198**	**147,853**	**6,824**	**4,318**	**558,195**	**615,686**

Source: HFQLG Oracle Database.

Table 7. Summary of Accomplished versus Treated Acres by Ranger District, FY00 to FY05.

District	Accomplished DFPZ Acres	Treated DFPZ Acres (mechanical)	Treated DFPZ Acres (fire)	Accomplished GS Acres	Treated GS Acres	Accomplished ITS Acres	Treated ITS Acres
ALRD	11,872	5,265	944	509	44	0	0
ELRD	30,821	9,089	6,012	1,946	1,946	1,289	635
HCRD	26,112	9,278	4,686	1,630	34	0	0
BRD	30,647	9,906	8,006	1,159	145	322	322
FRRD	15,286	2,906	1754	676	0	240	0
MHRD	23,423	13,370	6,611	717	71	875	0
SVRD	9,692	5,073	1,321	187	187	1,592	1,592
Total	**147,853**	**54,887**	**29,334**	**6,824**	**2,427**	**4,318**	**2,549**

The Almanor (ALRD), Eagle Lake (ELRD) and Hat Creek (HCRD) Ranger Districts are on the Lassen National Forest. The Beckwourth (BRD), Feather River (FRRD) and Mount Hough (MHRD) Ranger Districts are on the Plumas National Forest. The Sierraville Ranger District (SVRD) is on the Tahoe National Forest.

Socioeconomic Monitoring

Section (j)(1)(D) of the HFQLG Act requires the USDA Forest Service to provide status reports to Congress that will include:

> 401(j)(1)(D): A description of the economic benefits to local communities achieved by the implementation of the pilot project.

The Act requires that the socioeconomic benefits to local communities be monitored annually during the course of the Pilot Project. This is further discussed in Appendix F.

Jack Faucett Associates (JFA) was contracted to conduct the socioeconomic monitoring with the HFQLG Pilot Project Implementation Team. The Pilot Project Area is divided into nine monitored community areas defined by ZIP code areas. With the assistance of Forest Service staff, members of the Quincy Library Group (QLG) and Warren Jensen, Manager of Applied Research at Chico State University's Center for Economic Development (CED), ten socioeconomic indicators were selected with data available at the community level to reasonably determine the extent these communities have been affected by the HFQLG Act. Timber sale activity and the value of service contracts awarded by Pilot Project forests were also included as indicators. These indicators were selected to measure the impact of the project between 1999 and 2009, with peak activity occurring within that time frame. In addition to these 12 indicators, JFA included a trend analysis of retail business activity using sales tax data in the FY05 report. Sales tax trends serve as an indicator of personal and business consumption within the Pilot Project Area. Because spending expands and contracts in relation to economic cycles, tracking spending patterns provides another indicator of local economic health.

For each of these indicators, JFA collected community-level data and analyzed its utility for measuring the socioeconomic effects of the HFQLG Act. To ensure consistency in reporting and analysis, JFA employed the same methodology, community and industry definitions, and data sources of previous monitoring reports. This report clearly defines each indicator, data limitations, and time frames for which the data is available. Historical data back to 1993 is compared with the most recent data. Graphic illustrations of each socioeconomic indicator includes a vertical black line marking the beginning of the HFQLG Act implementation and providing a breakpoint for analysis.

Monitored Communities

As described in the "Quincy Library Group Community Stability Proposal" (QLG, November 1993), the Pilot Project is intended to benefit the social and economic environment of rural forest communities. Accordingly, JFA monitored socioeconomic change in nine communities within the Pilot Project Area. The "Community Stability Proposal" specifically lists Bieber, Susanville, Chester, Greenville, Quincy and Loyalton as communities that are "highly dependent" on the forest products industry. To enable the study of a congruent area, this study also includes the communities of Burney, Westwood and Portola. The following sections include a detailed description of each of these communities and a profile of recent economic trends. For each community, an analysis of recent economic events regarding sawmills, cogeneration plants and tourism is provided.

Each of the nine communities examined in this report was defined using a set of ZIP code boundaries. Community boundaries were established in previous monitoring reports through close communication with QLG members and Forest Service staff. Data for each ZIP code was combined and included as part of the community analyzed. In most cases, ZIP code-level data was collected for the community area-level analysis. However, where Zip code data was unavailable, county or city data is presented. A map is provided following the descriptions of monitored community areas.

- **Bieber** includes the Big Valley communities of Bieber and Nubieber in Lassen County and Adin and Lookout in Modoc County. Population (2000): 1,774.
  The smallest community in the Pilot Project Area, Bieber suffered from decline in the livestock and timber industries in the 1990s. This community has been hit hard by the closure of all of its lumber mills between 1996 and 2001. Thirty jobs were lost with the closure in 1996; the 2001 closures resulted in a loss of 145 jobs[1]. In addition, Bieber lost its one cogeneration plant in 2001, which operated with the Big Valley Lumber mill.
- **Burney** covers most of eastern Shasta County and includes the Hat Creek and Fall River Valley communities of Burney, Cassel, Fall River Mills, Hat Creek, McArthur, and Old Station. Population (2000): 8,863.
  Burney has been successful in attracting small employers outside of the forest products industry, which is fortunate because the forest products industry here has been in decline since the mid-1990s. Despite this, overall economic growth has been positive in Burney since 1998. Burney has two lumber mills, Sierra Pacific and Shasta Green. Three cogeneration plants are also located in this community area.
- **Susanville** includes the Honey Lake Valley communities of Janesville, Litchfield, Milford, Standish, Susanville and Wendel and the Eagle Lake area, all in Lassen County. Population (2000): 19,055 (not including incarcerated persons).
  The economic impact of the High Desert State Prison exceeded its threshold in the late 1990s, meaning that the influx of new businesses into the community was greater than local market demand. Available jobs have declined steadily since 1998. Tourism is attempting to compensate, although newer businesses in this industry have had difficulties and have had to layoff employees. In 2004, a Sierra Pacific mill was closed in Susanville, leaving 150 workers without jobs[2]. The cogeneration plant at the Sierra Pacific mill closed soon after, although one additional plant remains near Wendel. In 2005, a federal prison opened in Herlong, just outside of the Pilot Project Area.
- **Westwood** includes Westwood in Lassen County and the peninsula plus the east shore of Lake Almanor in Plumas County. Population (2000): 4,251.
  In 2001, business investors started to gear up for the anticipated development of the Dyer Mountain Ski Resort in Westwood as more tourism and other service businesses moved into the area. Currently, the developers of Dyer Mountain are working with Lassen County to acquire approvals and permits. There are no mills in this community, although

1 http://www.fseee.org/index.html?page=http%3A//www.fseee.org/forestmag/0203quincy.shtml

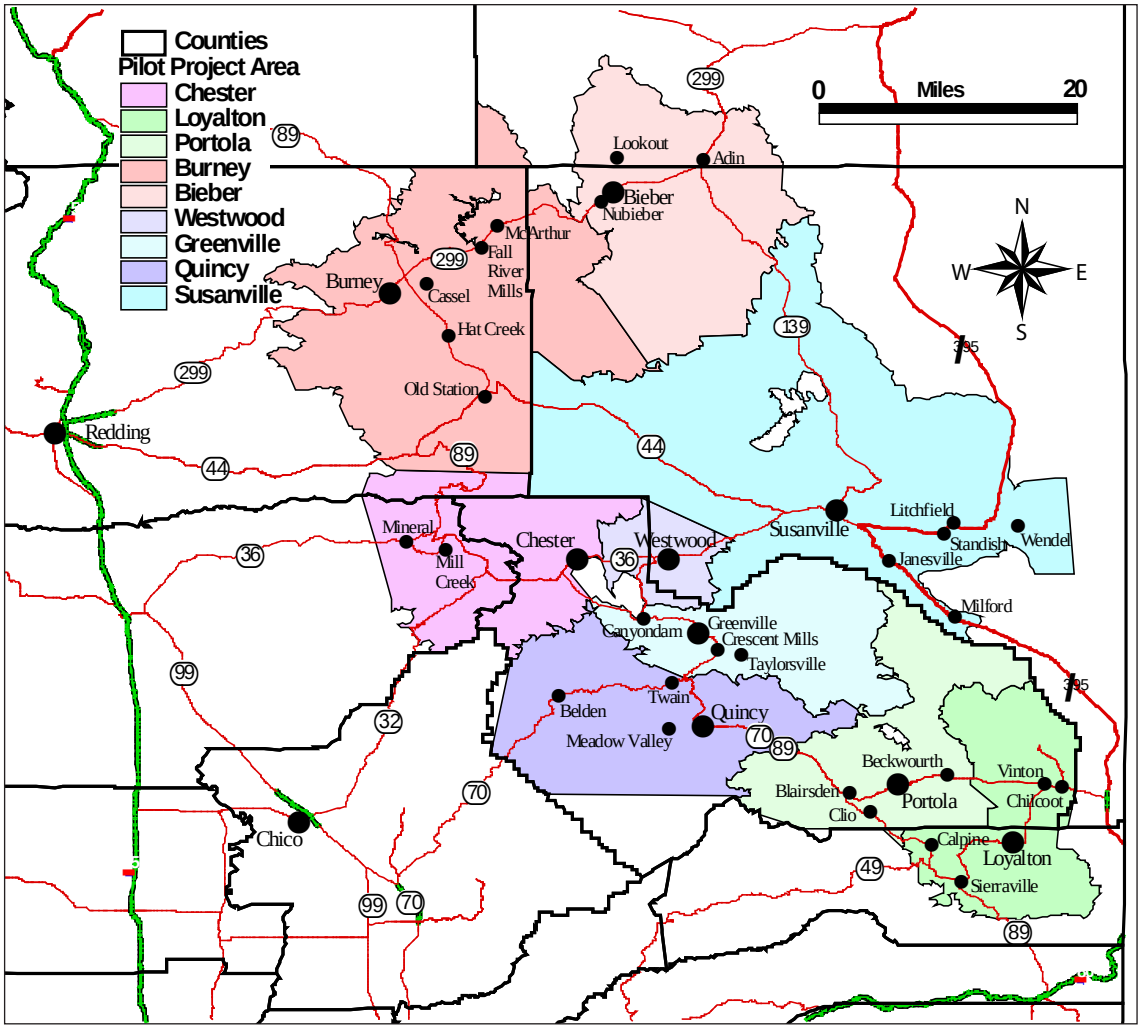
2 http://www.reddingemployment.com/newsarchive/20031217toplo037.shtml

one cogeneration plant is operational in the Westwood area. Most of the economic activity in this community area occurs in the Lake Almanor area.

- **Chester** includes Chester in Plumas County and Mill Creek and Mineral in northeastern Tehama County. Population (2000): 2,747.
  Chester's economy continues to grow slowly, despite gradual decline in the forest products industry since 1996. A sawmill and cogeneration power plant are located in Chester. Tourism and related industries have been expanding gradually. The Lassen Volcanic National Park headquarters and southwest entrance are located in this community area.
- **Greenville** includes the Indian Valley communities of Crescent Mills, Greenville and Taylorsville, and also includes Canyon Dam on Lake Almanor, all in Plumas County. Population (2000): 2,831.
  Greenville was one of the first communities hit by a mill closure in the late 1980s. The community has recovered somewhat since then, evidenced by small increases in tourism and other industries, leading to an increase in overall jobs between 1995 and 1999. One sawmill remains in Crescent Mills, although it is not currently operating. There are no cogeneration plants in Indian Valley.
- **Quincy** includes the Plumas County communities of Belden, Meadow Valley, Quincy and Twain. Population (2000): 6,475.
  Quincy has been experiencing a slow, but steady, decline in the forest products industry since 1996, and in all available jobs since 1998. It has been one of the hardest-hit communities that has retained their lumber mill since 1999. Tourism businesses are looking for their markets, evidenced by sporadic gains and losses in the industry. Quincy contains one Sierra Pacific lumber mill that houses a cogeneration facility.
- **Portola** includes the Upper Middle-Fork Feather River communities of Beckwourth, Blairsden, Clio, Graeagle, and Portola, all in Plumas County. Population (2000): 6,277.
  Portola has seen the most economic success in the Pilot Project Area since 1998. The tourism industry has been gaining steadily here with the opening of new golf courses and resorts. Graeagle was responsible for many of the local gains in tourism. Portola is providing retail and personal services to commuters traveling to the Truckee and Reno areas. The Portola area has seen an increase in its forest products industry jobs, despite having no mill or cogeneration plant.
- **Loyalton** includes the Sierra Valley communities of Chilcoot and Vinton in Plumas County and Calpine, Loyalton and Sierraville in Sierra County. Population (2000): 2,828.
  Loyalton is in a transition phase after a Sierra Pacific mill closed in 2001, resulting in 180 lost jobs[3]. The area has become attractive to commuters to Truckee and Reno because of lower home prices. Tourism, or any other industry, has yet to replace forest product jobs here. The Sierra Pacific cogeneration plant continues to operate here despite the mill closure.

3 http://www.fseee.org/index.html?page=http%3A//www.fseee.org/forestmag/0203quincy.shtml

HFQLG Pilot Project Area and Monitored Community Boundaries



Monitored Indicators

The purpose of this annual report is to track year-to-year socioeconomic change in the Pilot Project Area since the implementation of the Act in 1999. It contains information on 13 indicators monitored for FY05. Each indicator's trend is illustrated graphically and is accompanied by a table containing the raw data. Raw data is provided to encourage and enable trend analysis. Where applicable, data tables include a column highlighting the percent change from the previous to the most recent year. Due to the small size of these communities, year-to-year percent changes may fluctuate significantly. These socioeconomic indicators continue to be tested for their ability to measure the impact of HFQLG Act implementation.

Payroll Jobs: Forest Products and Tourism

JFA used statistics published by the U.S. Census Bureau called "ZIP Code Business Patterns" to estimate the number jobs by industry at the community level. "ZIP Code Business Patterns" provides information on the total number of establishments, employment and payroll for more than 40,000 five-digit ZIP code areas nationwide. Most ZIP codes are derived from the physical location address reported in U.S. Census Bureau programs. The Internal Revenue Service

provides supplemental information. Although "ZIP Code Business Patterns" are published annually, there is a two-year lag time from when statistics are collected and when they are officially released to the public. The most recent data series is 2003. This data does not include self-employment statistics because they are not payroll jobs.

Business activities are published by industry type as defined by the North American Industry Classification System (NAICS). NAICS was developed by the United States, Canada and Mexico to enable a comparison of business activity across North America. Each business is classified by its primary activity and assigned an NAICS code. Data is reported between two- and six-digit NAICS code levels, where the two-digit level represents the aggregate of all sub-sectors within an industry group and the six-digit level provides information on more specific businesses. For example, NAICS Code 32 includes information on all businesses involved in manufacturing; NAICS Code 321 provides specific information on wood products manufacturing firms; and NAICS Code 321113, a six-digit code, offers micro-level detail on businesses only engaged in sawing dimension lumber, boards, beams, timbers, poles, ties, shingles, shakes, siding and wood chips from logs or bolts[4]. All available economic data reported by the U.S. Census Bureau for communities within the Pilot Project Area were compiled and analyzed for this report.

This section examines three categories of payrolls jobs:

1. All private sector businesses (All NAICS Codes)
2. The forest products industry (all businesses in NAICS Code 113 and 321)
3. The tourism industry (NAICS Codes 71 and 72)

Forest product industrial activity includes timber tract management, logging, forestry support activities, wood products, paper and allied products, furniture and related products. Also included is specialized truck transportation (NAICS Codes 484110 and 484220). The tourism sector businesses consist of arts and entertainment, amusement, recreation, accommodation, eating and drinking places, and sightseeing tours. The casino in Susanville is not included because its employment is classified as tribal government.

Why is it important?

This information is used to empirically test the impact of the HFQLG Act's planning and implementation activities on the local economy. In particular, breakdowns of the forest product and tourism industries show the relative effects planning and implementation of the Act has on each sector.

How are Pilot Project communities doing?

Total Payroll Jobs: As seen in Table 8, between 1995 and 1999, before implementation of the Pilot Project, four of the nine communities showed an upward trend in total payroll jobs (Burney, Westwood, Greenville and Portola), and only the community that lost a lumber mill during that period, Bieber, showed a downward trend. After implementation began, job growth continued to contract through 2001. However 2002 to 2003 data shows that growth picked up in all communities, except Chester, which showed a total loss of 12 jobs in the private sector.

4 Definitions for all NAICS Codes can be accessed at http://www.census.gov/epcd/www/naics.html

Table 8. Total Payroll Jobs in the Private Sector (Estimated).

Community	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Percent Change from 2002 to 2003
Burney	3,313	3,319	3,433	3,352	3,441	3,361	3,294	3,270	3,356	3,664	**9.2%**
Chester	2,123	2,257	2,130	2,182	2,189	2,180	2,142	2,094	2,108	2,096	**-0.6%**
Loyalton	1,666	1,429	1,708	1,716	1,629	1,625	1,744	1,749	1,475	1,691	**14.6%**
Quincy	915	937	995	960	927	889	938	940	730	808	**10.7%**
Susanville	735	735	686	878	819	833	963	1,038	980	1,155	**17.9%**
Bieber	489	539	415	396	384	384	294	265	177	188	**6.2%**
Greenville	418	425	433	497	426	432	459	359	267	275	**3.0%**
Portola	303	292	332	548	552	509	473	529	573	732	**27.7%**
Westwood	281	252	305	351	386	415	394	398	342	393	**15%**

Source: US Census Bureau, ZIP Code Business Patterns

Forest Product Industry Jobs: Throughout the study period, the number of forest product jobs in most communities rises and falls from year to year. Mill expansions, downtime and closures produce significant shifts in community employment. Those communities with a higher percentage of forest product jobs tend to be more vulnerable to shifts in total jobs. For example, Bieber's mill closures in 1996 and 2001, and Loyalton's mill closure in 2001, produced sharp declines in forest product jobs in these communities. A 1996 mill expansion in Quincy added over 150 forest product jobs to the community that year.

Exhibit 1 shows that all communities within the study area experienced a decline in forest product jobs after implementation of the Pilot Project. However, data shows that a slight rebound occurred from 2002 to 2003 in Susanville and in the three communities with historically few forest products jobs: Westwood, Greenville and Portola. Note that this data does not capture the impact of the 2004 mill closure in Susanville because 2004 Census data has not been released. When this data becomes available in 2006, it will be collected and analyzed in future HFQLG socioeconomic monitoring reports.

The dramatic drop in employment in Chester between 2001 and 2002 can be attributed to a temporary mill closure. According to the forestry manager at the Collins Pine mill, the mill closed for renovations in late November 2002 and restarted operations in September 2003.

The representative noted that when the mill closed, the company offered all employees the option to return to work after reconstruction was complete. While most employees could not wait for the reopening, some did find work with the firms contracted for the reconstruction. The Collins Pine representative estimates that 85 percent of the mill's workforce returned to work when the mill reopened. As seen in Table 9, the 2003 reopening of the mill restored forest product employment in that community to near its 2001 level.

Tourism Industry Jobs: The number of tourism industry jobs has generally grown throughout the project area since 2000, with the exception of the Greenville and Westwood communities. Tourism has produced a more stable source of jobs, although five of the nine communities (Bieber, Burney, Chester, Quincy and Loyalton) historically have depended more on the forest product industry for economic stability than the tourism sector. In small timber communities, large increases or decreases (shifts of 50 jobs or more) in forest product jobs usually produce sizable changes in the total number of jobs in the community. Larger communities, like Susanville, where there is a greater diversity of industries, are better able to withstand such an event.

Despite its relative stability, tourism industry jobs continue to show a greater degree of variability between communities. Bieber has little or no tourism business activity, while Susanville has more than twice the tourism jobs of any other community in the Pilot Project Area. Since implementation of the Pilot Project, four communities had a significant increase in tourism jobs through 2003 (Burney, Quincy, Susanville and Portola). Tourism jobs in Loyalton have fluctuated over time, but rebounded to pre-implementation levels in 2003. Growth spurts in Susanville and Portola are attributed to new restaurants and resorts.

Exhibit 1. Total Forest Products Industry Jobs (Estimated).

Source: US Census Bureau, Zip Code Business Patterns

Table 9. Total Forest Products Industry Jobs (Estimated).

Community	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Percent Change from 2002 to 2003
Burney	435	437	425	409	361	376	360	361	300	266	**-11.3%**
Chester	195	212	277	197	209	185	166	169	43	146	**239.5%**
Loyalton	239	222	224	216	210	195	216	105	42	41	**-2.4%**
Quincy	262	304	434	426	382	373	329	347	324	296	**-8.6%**
Susanville	302	305	342	267	262	269	260	245	240	257	**7.1%**
Bieber	232	268	160	126	182	251	158	158	45	34	**-24.4%**
Greenville	32	20	27	50	37	46	48	19	6	16	**166.7%**
Portola	31	25	23	36	13	20	40	54	7	16	**128.6%**
Westwood	17	23	20	54	36	26	24	27	31	49	**58.1%**
Pilot Project Area	**1,745**	**1,816**	**1,932**	**1,781**	**1,692**	**1,741**	**1,601**	**1,485**	**1,038**	**1,121**	**8.0%**

Source: US Census Bureau, ZIP Code Business Patterns

Table 10. Tourism Industry Jobs (Estimated).

Community	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	% Change from 2002 to 2003
Burney	245	197	216	261	199	241	241	264	208	263	**26%**
Chester	126	110	99	148	142	135	147	142	127	102	**-20%**
Loyalton	16	14	28	30	20	35	26	16	32	36	**13%**
Quincy	217	232	226	262	267	276	224	261	268	281	**5%**
Susanville	602	560	562	549	613	579	627	526	680	818	**20%**
Bieber	7	13	5	7	2	2	2	2	0	0	**0%**
Greenville	34	39	47	37	46	45	38	59	40	35	**-13%**
Portola	120	104	112	121	134	133	154	157	161	306	**90%**
Westwood	60	54	68	205	215	213	194	207	217	211	**-3%**

Source: US Census Bureau, ZIP Code Business Patterns

Nonemployers in the Forest Product Industry

Nonemployers are small businesses and private contractors that have no payroll. The U.S. Census Bureau defines a nonemployer business as one that has no paid employees, has annual business receipts of $1,000 or more ($1 or more in the construction industries), and is subject to federal income taxes. Nonemployer statistics are collected by the U.S. Census Bureau, and are based on information from self-employment income tax returns submitted to the Internal Revenue Service.

Exhibit 2 presents 1) the total number of nonemployer establishments and 2) the number of forest product nonemployer establishments. Data was aggregated for Lassen, Plumas and Sierra counties. County-level data was used because ZIP code-level nonemployer data is not available. The U.S. Census Bureau indicates that ZIP code-level data may be available in the future. It is unlikely that detailed information will be released for the Pilot Project Area communities because the U.S. Census Bureau often withholds micro-level data to avoid disclosing proprietary information on individual businesses competing in small markets. The data is presented using an index, a numeric scale used to compare variables with one another or with a reference number. In this case, the data shows a change in the number of nonemployer establishments relative to 1997.

Why is it important?

This indicator provides secondary data upon which to compare the results of the Forest Products Industry Roster survey. Historically many timber fallers and log haulers have been nonemployers. Data from the Forest Products Industry Roster indicates that there are fewer nonemployers operating in Pilot Project Area forests, which indicates an impact on local businesses. In fact, JFA's 2005 survey of forest product industry businesses in the Project Area found that at least three small or family-owned contractors have closed their businesses.

How are Pilot Project communities doing?

The number of all nonemployers and nonemployers operating in the forest products industry has increased in the Pilot Project Area since 1999. While the number of forest products nonemployers fell between 1999 and 2001, that group rebounded in 2002 and 2003. Data is not yet available for 2004. When the U.S. Census Bureau releases 2004 data, it will be collected and analyzed in future HFQLG socioeconomic monitoring reports.

Table 11. Index of Nonemployers in the Project Area (Base Year = 1997).

Index	1997	1998	1999	2000	2001	2002	2003
All Nonemployers	100.0	98.3	100.9	101.3	105.0	112.5	118.6
Forest Product Sectors	100.0	104.1	105.2	100.0	100.0	114.1	121.7

Source: Index Developed Using US Census, Nonemployer Statistics

Forest Products Industry Roster Survey

Since 2001, the CED, with the assistance of Susie Kocher from the University of California Cooperative Extension, has developed and updated a list of businesses located in the Pilot Project Area that operate in the forest products industry. This list is created using a combination of the Dun & Bradstreet Business Database, the contractors list for HFQLG contracts and timber sales,

and other businesses known by CED and Kocher to exist. For this 2005 report, JFA continued the previous study's methodology to ensure consistency.

Telephone interviews were attempted with all businesses on the 2001, 2003 and 2004 rosters. Due to time constraints and a high level of survey non-response, a full update of the 2004 data was not possible. JFA focused on contacting businesses identified as located within the Project Area. Interviews were completed with over 25 community business owners and representatives, who provided invaluable information on newly opened and closed businesses, general employment and market trends, and their perspective on the HFQLG Pilot Project's impact in 2005. This information was used to supplement narratives throughout this report and to update the Industry Roster found in Appendix F.

In FY04, 292 forest product industry establishments operating in the Pilot Project Area, plus the remainder of eight California counties (Butte, Lassen, Nevada, Plumas, Shasta, Sierra, Tehama and Yuba), were contacted. Interviewed establishments determined not to be involved in the forest products industry were removed, leaving 263 establishments in the 2004 Forest Products Industry Roster.

There are four forest product industry job variables presented in this indicator: full-time year-round jobs, full-time seasonal jobs, total jobs (including part-time) and jobs with fringe benefits.

Why is it important?

The survey of forest products industry establishments is the best way to measure direct change in the forest products industry when events such as the implementation of the HFQLG Act take place. Data provided by the U.S. Department of Commerce is subject to a three-year lag, making recent changes in implementation difficult to measure.

Full-time year-round jobs show the number of permanent, stable jobs available, seasonal jobs show the degree of fluctuation in annual employment; jobs with benefits measures a critical component of an economy's jobs; and total jobs provides a comparison with the job totals measured in Indicator 1.

How are Pilot Project communities doing?

From the perspective of most survey respondents, the level of economic activity generated by the National Forests in the Pilot Project Area either slightly decreased, or remained the same, in 2005. This is an improvement from the 2004 survey, where most respondents indicated a general decline. Most businesses interviewed expressed frustration with the contracting process and a lack of confidence in the ability of the Pilot Project Area forests to provide commercial products or to complete on-the-ground fuels treatments. Contractors indicated that they have continued to shift their activities away from National Forests towards private lands. Many stated that several of the small, family-owned and single-person logging operations have closed down.

From the business perspective, the volume contracts for professional services such as environmental analysis, inventory, sale layout and marking that were offered by National Forests in the Pilot Project Area appeared to be the same or slightly below previous year levels. However, contracts for log or chip harvesting and service contracts for fuels and silvicultural treatments continued to decline according to the interviews. The decline in contracts, primarily

timber sales, was singled out by a majority of contractors as their primary concern. While most businesses surveyed said the situation had either worsened or stayed the same, it is important to note that several respondents stated that they appreciated the QLG's effort and that the contracts awarded under the Pilot Project were the only contracts that kept them in business this year.

Most harvesting and service work contractors said they continue to face a shortage of contracts to keep them fully employed. Contractors also expressed concern that they continue to lose qualified workers to other fields with more economic promise. Several operations noted that the lack of new work has limited their ability to invest in new equipment, repairs and maintenance.

No businesses contacted reported any ability or plans to expand based on HFQLG contracts. Consistent with the FY04 survey, the majority of firms interviewed in FY05 said they do not expect to have any job openings or to hire additional permanent or full-time workers. There were two exceptions: 1) a small logging operation in Westwood stated that they expected to hire two truck drivers and two equipment operators and 2) a logging operation in Portola planed to hire one Caterpillar operator and one truck driver.

Tables 12 through 15 show the overall results of information collected during FY04 interviews. Data shows that job totals in the forest products industry are in decline. This includes stable jobs, seasonal jobs in most communities, and jobs with fringe benefits. Surveyed job totals for 2001 are a close match to those estimated by JFA and CED using U.S. Department of Commerce data from the same year (Indicator 1). This validates the interview methodology employed in the forest product industry survey.

Table 12. Forest Products Industry Full-Time Year-Round Jobs.

	Nov. 2001	Nov. 2003	Nov. 2004
Bieber	99	5	20
Burney	299	131	167
Chester	218	194	180
Greenville	3	5	4
Loyalton	6	26	25
Portola	8	7	6
Quincy	362	313	323
Susanville	249	189	53
Westwood	34	32	22

Source: CED 2004 Survey of Area Businesses

Table 13. Forest Products Industry Full-Time Seasonal Jobs.			
	Nov. 2001	Nov. 2003	Nov. 2004
Bieber	32	6	31
Burney	104	169	124
Chester	56	62	9
Greenville	10	4	9
Loyalton	64	79	31
Portola	34	7	5
Quincy	45	20	15
Susanville	34	2	29
Westwood	58	55	21

Source: CED 2004 Survey of Area Businesses

Table 14. Forest Products Industry Total Jobs (Including Part-Time).			
	Nov. 2001	Nov. 2003	Nov. 2004
Bieber	131	11	51
Burney	405	306	292
Chester	280	276	192
Greenville	14	10	13
Loyalton	71	105	56
Portola	43	14	11
Quincy	408	334	339
Susanville	285	191	82
Westwood	96	90	43

Source: CED 2004 Survey of Area Businesses

Table 15. Forest Products Industry Jobs with Fringe Benefits.			
	Nov. 2001	Nov. 2003	Nov. 2004
Bieber	78	0	40
Burney	284	204	243
Chester	71	77	0
Greenville	1	6	1
Loyalton	76	47	2
Portola	39	14	10
Quincy	405	328	326
Susanville	259	191	58
Westwood	18	35	22

Source: CED 2004 Survey of Area Businesses

Jobs in Locally-Owned Businesses

Locally-owned businesses are more likely to exhibit the economic impacts from an event or project, such as the HFQLG Pilot Project. Locally-owned businesses help keep dollars circulating within the community since business owners are residents and residents tend to spend locally. Examining the mix of business ownership and shares of employment between locally- and non-locally-owned businesses provides a good indicator of the economic health of the Pilot Project Area communities.

Exhibits 16 and 17 detail business establishment data collected and maintained by a private company called Dun & Bradstreet (D&B). D&B compiles a database of all businesses that have had a credit check. The database provides information on the location of a business and whether the business is a single operation, a headquarters or a branch location. Data used for this study was published for the fourth quarter of 2005.

For this indicator, a locally-owned business is defined as a single location or a headquarters operating within the Pilot Project Area. Establishment data was compiled for the manufacturing sector and for the retail/service sector. Upon consultation with Forest Service staff, this study categorized Sierra Pacific Industries as locally-owned because much of the management of individual plants is based locally and a majority of their sales dollars are spent in the communities in which their sawmills are located.

Why is it important?

In most cases, the revenue from branch locations is often transferred to a business' headquarters before being spent, producing little benefit to the local economy. Data for the manufacturing sector represents the potential impact of increased forest product industry activity. In the Pilot Project Area, most forest product jobs are in manufacturing, and most manufacturing jobs are in the forest product sector. The retail/service sector represents the potential impact of increased

tourism. With forest products business dominating manufacturing activities, growth in this sector has more potential to impact the local economy than the retail and service sector, which is comprised of tourism-related businesses.

How are Pilot Project communities doing?

As seen in the tables below, from 1998 to 2005, the percentage of workers employed by locally-owned businesses in the manufacturing sector increased in all communities except Susanville. This decline is attributed to a mill closure in 2004. In the retail and services business sector, five communities display an increasing share of locally-owned business employment: Bieber, Burney, Susanville, Portola and Loyalton. The remaining communities, Westwood, Chester, Greenville and Quincy showed a shift in jobs to businesses with ownership outside the Project Area. This shift in jobs from locally-owned businesses to those owned by outside firms implies that the economic growth in the tourism sector is less likely being captured by the local economy.

Table 16. Percent of Manufacturing Workers Employed by Locally-Owned Businesses.

	1998	2005
Bieber	96.8%	100%
Burney	100%	100%
Susanville	92.6%	89.4%
Westwood	91.1%	100%
Chester	95.5%	98.8%
Greenville	92.9%	94.2%
Quincy	96.4%	99.3%
Portola	82.5%	83.3%
Loyalton	96.4%	100%

Source: Dun and Bradstreet (4th Qtr. 2005)

Table 17. Percent of Retail and Service Workers Employed by Locally-Owned Businesses.		
	1998	2005
Bieber	91.5%	98.9%
Burney	67.2%	75.2%
Susanville	71.5%	73.3%
Westwood	84.5%	72.1%
Chester	77.8%	75.2%
Greenville	89.1%	72.8%
Quincy	80.5%	77.5%
Portola	80.8%	86.8%
Loyalton	82.7%	88.9%

Source: Dun and Bradstreet (4th Qtr. 2005)

Establishments by Years in Business

The following data was collected from the D&B database. This database includes information on the year during which an establishment began operating and how long it has been in business. D&B categorizes business by age in the following three categories: 1) less than five years old, 2) five to 15 years old and 3) more than 15 years old.

Why is it important?

Business age statistics for establishments located within the project area were collected and are illustrated in the tables below. Two important points can be made with this data. First, increasing numbers of new businesses indicate a growing economy with positive activity in business investment. Second, for an economically isolated region such as the Pilot Project Area, decreasing numbers of established businesses can signify a loss of local support for existing businesses or increased competition from new businesses.

How are Pilot Project communities doing?

Data in Table 18 indicates that young establishments (five years old or less) have declined in number from 1998 to 2005. Business closures indicate that the demand in these communities may not have been large enough to sustain the new businesses.

The drop in the number of young establishments (0-5 years) cannot be fully explained by assuming businesses graduated into the higher age bracket. Data in Table 18 shows only a one percent growth in establishments six to 15 years of age. However, the percentage drop in the communities of Greenville and Portola in the six to 15 year age bracket may, in part, be explained by businesses entering the higher age bracket. Corresponding data for businesses operating 16 years or more shows that Greenville and Portola experienced 43 and 49 percent increase.

While the one percent growth in six- to 15-year-old establishments does not indicate a boom in new growth, it is a sign of economic stability in the Pilot Project Area. The 28 percent growth

Table 18. Number of Pilot Project Area Establishments by Age Bracket.

Establishments open for 0-5 Years				Establishments open for 6-15 Years				Establishments open for 16 or More Years			
	1998	2005	% Change		1998	2005	% Change		1998	2005	% Change
Bieber	5	7	40%	Bieber	19	19	0%	Bieber	33	44	33%
Burney	63	48	-24%	Burney	84	93	11%	Burney	135	169	25%
Susanville	102	67	-34%	Susanville	180	178	-1%	Susanville	187	248	33%
Westwood	24	20	-17%	Westwood	43	50	16%	Westwood	53	60	13%
Chester	38	25	-34%	Chester	60	69	15%	Chester	61	79	30%
Greenville	16	9	-44%	Greenville	37	28	-24%	Greenville	40	57	43%
Quincy	64	49	-23%	Quincy	104	106	2%	Quincy	148	164	11%
Portola	73	52	-29%	Portola	115	106	-8%	Portola	85	127	49%
Loyalton	12	11	-8%	Loyalton	23	25	9%	Loyalton	35	43	23%
TOTAL	**397**	**288**	**-27%**	**TOTAL**	**665**	**674**	**1%**	**TOTAL**	**777**	**991**	**28%**

Source: Dun and Bradstreet

in the number of businesses 16 or more years old from 1998 to 2005 indicates that existing businesses have not been negatively affected by competition from new firms and that they have continued to control enough market share to sustain operations.

Lodging Revenue

Lodging revenue is a measure of the degree to which tourism is increasing or decreasing in a region. Lodging is purchased for a number of reasons, including business and family visits, temporary work and recreation. Lodging for family visits usually changes little from year to year. Lodging for temporary work increases when a large, short-term source of employment exists, such as a major construction project.

Most California jurisdictions impose a transient occupancy tax (TOT) on lodging for up to 30 days. Within the Pilot Project Area, the TOT rate varies from zero to ten percent of lodging value (the City of Loyalton presently does not have a TOT). The scope of the TOT, commonly known as the "bed tax," differs across jurisdictions. Some jurisdictions impose the TOT only on hotel/motel rooms (e.g., Tehama County), while others also levy the TOT on vacation homes, lodges, cabins, resorts and ranches, campgrounds, and recreational vehicle spaces (e.g., Plumas County). The TOT is not collected at campgrounds operated directly by the Forest Service.

JFA compiled localized TOT revenue data from tax collector offices in Modoc, Lassen, Plumas, Shasta, Sierra and Tehama counties and in the cities of Susanville and Portola. Data is for fiscal years (July through June) for all jurisdictions except for Plumas County, which only reports localized TOT data on a calendar year basis. JFA used this data and the relevant TOT rates to estimate lodging revenue in the nine Pilot Project communities. JFA deflated the estimates to 2005 dollars with the U.S. Bureau of Labor Statistics, Consumer Price Index (All Urban Consumers).

Why is it important?

Increasing revenue from lodging, if temporary work and family visits can be discounted, is a direct result of increasing tourism. Tourism that utilizes lodging is important because, unlike day trips, overnight stays often involve additional purchases, such as meals and entertainment.

How are Pilot Project communities doing?

Adjusted for inflation, lodging revenue has been rising almost every year in most communities in the Pilot Project Area. Therefore, tourism in the region is increasing. However, as illustrated in Table 19, TOT revenues declined in many communities in FY04-05. According to the Plumas Corporation's "Partnerships" newsletter, this temporary phenomenon may be attributed to cooler temperatures in California during the summer of 2004 that caused fewer visitors to travel to the mountains to escape hot weather. Other speculation is that as post-September 11, 2001 fears of aviation travel diminished, tourists are opting to fly to other destinations instead of driving to the Pilot Project Area. High gasoline prices also may have depressed tourism.

Three communities show a clear upward trend since the start of the Pilot Project in 1999: Westwood, Chester and Portola. Susanville experienced a downward trend in FY03 through FY05 after completion of a hospital construction project.

Table 19. Lodging Revenue Subject to Transient Occupancy Tax (Millions of 2005 Dollars).

	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	Percent Change 03/04 to 04/05
Bieber	$0.13	$0.08	$0.10	$0.08	$0.08	$0.06	$0.08	$0.09	$0.11	$0.09	$0.08	$0.10	**26.4%**
Burney	N/A	N/A	N/A	N/A	N/A	N/A	$2.38	$2.59	$2.74	$2.69	$2.63	$2.86	**8.7%**
Susanville	$4.50	$4.94	$4.62	$4.15	$4.09	$4.27	$4.59	$4.78	$4.96	$5.22	$4.99	$4.83	**-3.2%**
Westwood	$2.12	$2.37	$2.46	$2.42	$2.48	$2.48	$2.68	$2.81	$2.71	$3.06	$3.22	$3.09	**-3.8%**
Chester	$1.32	$1.35	$1.25	$1.34	$1.54	$1.40	$1.56	$1.54	$1.84	$1.81	$1.93	$1.98	**2.6%**
Greenville	$0.26	$0.25	$0.23	$0.14	$0.26	$0.23	$0.24	$0.25	$0.23	$0.25	$0.29	$0.28	**-3.3%**
Quincy	$1.99	$1.99	$1.94	$2.04	$2.07	$2.06	$1.99	$1.85	$2.11	$2.48	$2.08	$2.01	**-3.4%**
Portola	$3.75	$3.71	$3.83	$3.68	$3.80	$4.01	$3.92	$4.38	$5.02	$5.13	$5.33	$5.01	**-6.0%**
Loyalton	$0.40	$0.31	$0.49	$0.49	$0.46	$0.52	$0.62	$0.66	$0.68	$0.66	$0.69	$0.50	**-28.2%**

Source: Data compiled by JFA Staff from County and City Tax Collector Offices

The Bieber area has maintained its small lodging industry after closure of its last sawmill in 2001. Business varies considerably from year-to-year with construction and road building projects. Lodging by vacationers is relatively small; hunting season attracts visitors. The Burlington Northern Santa Fe/Union Pacific railroad connection in Nubieber generates overnight stays from railroad crews. Lodging by logging and hay baling crews is sporadic.

The Burney area's accommodation industry continues to grow. McArthur Burney Falls, Lassen Volcanic National Park and Lassen National Forest are major attractions.

The mainstays of Susanville's lodging industry are travelers on U.S. Highway 395 and visitors to inmates at two local prisons (one state and one federal). Peaks in lodging revenue are attributable to housing of non-local construction workers on major projects: High Desert State Prison was completed in August 1995 and expanded in the early 2000s, Banner Lassen Medical Center opened in May 2003, and the federal prison in Herlong opened in early 2005. According to a local motel owner, the rise of Indian gaming in communities throughout the western United States has decreased lodging in Susanville. Before the existence of Indian casinos, many tourists from the Pacific Northwest en route to Reno on U.S. Highway 395 stayed overnight in Susanville.

Lodging revenues in Westwood and Chester have expanded significantly as Lake Almanor has become an increasingly popular vacation destination. Plumas County's first "chain" hotel will open in Chester in early 2006. The lodging industry in Westwood proper is minimal; most of the lodging activity associated with that community occurs at vacation rental homes and resorts/ ranches in the Lake Almanor area.

Since implementation of the Pilot Project, lodging revenues in Greenville and Quincy have remained stable. The lodging industry in the Portola area has boomed since implementation of the Pilot Project. New resorts, golf courses, and other major tourist- and vacationer-oriented projects have been completed in recent years, especially in the Graeagle/Lakes Basin section of the Portola area.

Lodging in the Loyalton/Sierra Valley area consists of hotels/motels in Sierra County and trailer/mobile home parks in Plumas County, especially at Frenchman Lake. Data from the City of Loyalton is not included in the table because that jurisdiction does not levy a TOT. The apparent decline in FY04-05 is an anomaly due to late reporting by establishments in Sierra County. This statistic will be corrected in the FY06 "HFQLG Socioeconomic Monitoring Report."

More than three-quarters of Plumas County is National Forest land. The 2002 U.S. Economic Census found that Plumas County has one of the greatest concentrations of recreational and vacation camps in the state. This industry (NAICS 721214) comprises establishments primarily engaged in operating overnight recreational camps, such as children's camps, family vacation camps, hunting and fishing camps, and outdoor adventure retreats that offer trail riding, white-water rafting, hiking and similar activities.

In 2002, Plumas County's seven recreational/vacation camps accounted for 3.5 percent of California's sales ($4.6 million) and 5.1 percent of California's annual payroll ($2 million) in that industry. For comparison, Plumas County contains just 0.07 percent of California's population.

This was a significant increase from the previous census in 1997 when Plumas County's recreational/vacation camps accounted for 1.8 percent of California's sales ($1.8 million) and 2.4 percent ($0.7 million) of California's annual payroll in that industry.

Electricity Generated From Biomass

Biomass cogeneration plants combust sawmill woodwaste and in-forest residues to generate heat and power for sawmill operations and/or to produce electricity for sale to utilities. Eight biomass power plants currently operate in six Pilot Project Area communities. Two others have closed since 2001. No active plants are located in Bieber, Greenville and Portola. Ranging in size from 11 to 35 megawatts (small in comparison to fossil fuel-burning power plants), all biomass plants in the Pilot Project Area went on-line in the 1980s. No new biomass cogeneration plants have been built or announced in the Pilot Project Area in the past decade.

The California Energy Commission (CEC) collects data on the amount of electricity generated from biomass. A state program subsidizes qualified power providers when the wholesale price of electricity is below a certain level. Since plants are not required to report all of their generation to the CEC, these statistics may understate actual power generation. During parts of 2001, wholesale electricity prices exceeded the threshold price and, therefore, most power plants did not submit their electricity generation statistics to the CEC. This resulted in an artificial drop in reported biomass power generation for 2001.

Why is it important?

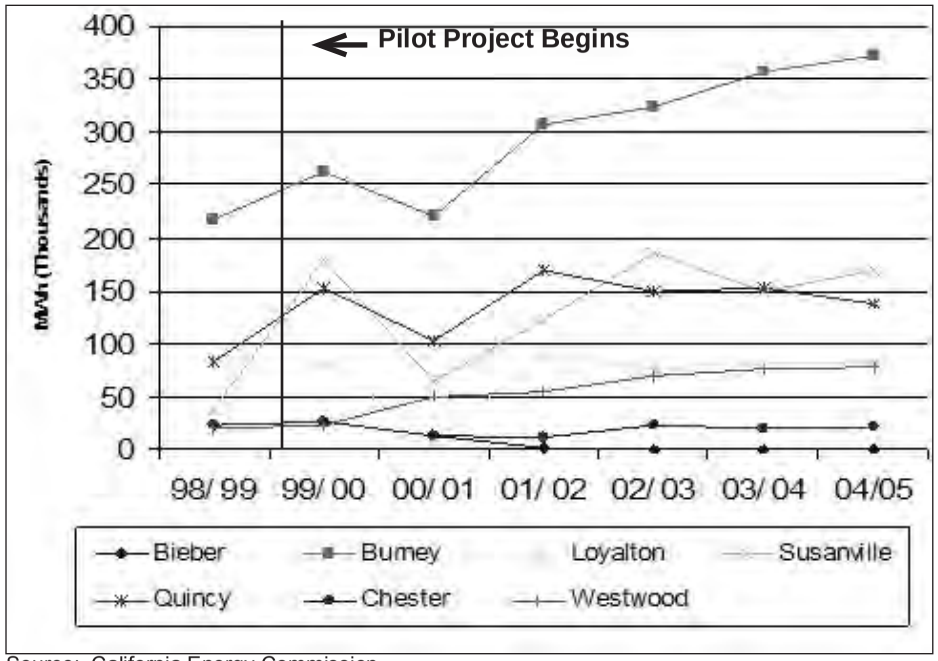
The Pilot Project is anticipated to increase woodwaste and in-forest residues available for generation of electricity. The Pilot Project's architects assumed that most woodwaste would be combusted in electricity generation rather than in other uses, such as production of fiberboard. Therefore, electricity generated from biomass is an indicator of the degree to which implementation of the Pilot Project has increased the amount of woodwaste available for industrial use.

How are Pilot Project communities doing?

In Burney and Westwood, electricity generated from biomass has increased dramatically since the Pilot Project began in FY99-00. Generation in Burney expanded partially because a boiler was retrofitted with a natural gas co-fire unit in 2000. Growth in Westwood generation is due mostly to the fact that the plant now operates year-round, including through the winter months when it typically idled. Chester has seen little change from its 1999 level, although its cogeneration facility may have already been operating near capacity. Output from the Quincy plant varies considerably from year to year.

The closure of two Pilot Project Area sawmills in the early 2000s also shuttered their associated cogeneration plants. The Big Valley Lumber Company facility in Bieber closed in 2001. The Sierra Pacific Industries-Susanville plant closed near the end of FY03-04, causing a 24 percent drop in biomass electricity generation in that community in FY04-05. Even though the Loyalton sawmill closed in 2001 and has been dismantled, its cogeneration plant remains in operation, supplying the Nevada-based Sierra Pacific Power Company.

Exhibit 2. Electricity Generated from Biomass (Thousands of MWh).



Source: California Energy Commission

Table 20. Electricity Generated from Biomass (Thousands of MWh).

Community	98/99	99/00	00/01	01/02	02/03	03/04	04/05	Percent Change 03/04 to 04/05
Bieber	23	26	13	2	0	0	0	0%
Burney	217	262	220	307	324	357	372	4.2%
Susanville	176	195	172	171	243	221	169	-23.7%
Westwood	19	24	50	55	70	77	78	1.8%
Chester	23	26	12	12	23	20	22	10.6%
Quincy	82	153	103	169	149	152	138	-9.6%
Loyalton	85	82	9	90	77	82	81	-0.4%
PILOT PROJECT AREA TOTAL						**908**	**859**	**-5.39%**

Source: California Energy Commission

According to an analyst at the CEC, biomass facilities tend to be most active in summer months because electric utilities offer "capacity payments" to assist with peak load from customers on hot days when air conditioning stresses the power grid. High diesel fuel prices in late 2005 negatively affected biomass electric power generation by increasing the cost of harvesting, processing and transporting feedstock for the power plants.

Youth Education

Youth education is measured in this report using high school dropout rates, which are calculated by dividing the number of dropouts by total enrollment in grades nine through 12. Statistics on high school dropouts are published annually by the California Department of Education. Due to the small size of the communities, a few student dropouts have the potential to skew year-to-year percent changes. Therefore, a three-year average was calculated to more accurately portray youth education trends in the study area. Three-year averages were calculated by averaging the percentage dropout rate for the selected school year, the year before and the year after.

Why is it important?

High school students who drop out have fewer opportunities for employment and social advancement. Higher dropout rates indicate a young population that is less prepared to enter the workforce and a community that is less prepared to capture local economic impact (because of fewer local educated workers qualified to accept new jobs).

How are Pilot Project communities doing?

Since the Pilot Project began, five communities have had increasing dropout rates (Bieber, Susanville, Westwood, Greenville and Quincy) and three communities have had decreasing dropout rates (Burney, Chester and Portola). Loyalton's dropout rate has remained small and stable.

The average dropout rate in Westwood surged from 3.4 percent in the 2001-02 school year to 9.7 percent in the 2002-03 school year. To explain this fluctuation, study staff interviewed the principal of Westwood High School, who attributed the change to the small size of the student population, which averages 120 students, and the fact that several "transient" families moved from the area mid-school year. According to the principal, transient families are those who move frequently for different reasons, including job seasonality or the need to evade social services enforcement, immigration agents or other law enforcement.

Family Poverty

Family poverty is measured in this report using enrollment in free and reduced-price breakfast and lunch programs. Enrollment figures for these programs are available for all public schools in the Pilot Project Area from the California Department of Education. To participate, families must claim income eligibility. Eligibility guidelines are established by the USDA Food and Nutrition Service in accordance with the National School Lunch Act and the Child Nutrition Act of 1966. These guidelines, which vary by household size, are set using poverty standards developed by the U.S. Census Bureau and are adjusted annually. The table below provides a snapshot of eligibility guidelines in effect for the 2003-04 school year.

Table 21. High School Dropout Rates (Three-Year Moving Average).

Community	93-94	94-95	95- 96	96-97	97- 98	98-99	99-00	00-01	01-02	02-03
Bieber	1.2%	1.4%	1.1%	0.9%	0.6%	0.6%	0.6%	1.1%	1.7%	2.3%
Burney	3.3%	3.2%	2.6%	2.6%	2.1%	2.9%	2.5%	2.1%	1.2%	1.6%
Susanville	2.1%	2.4%	3.0%	3.1%	3.0%	2.0%	1.8%	2.3%	2.5%	2.5%
Westwood	3.4%	1.1%	0.9%	1.1%	1.1%	1.3%	2.0%	1.8%	3.4%	9.7%
Chester	2.7%	1.1%	0.5%	0.5%	0.8%	1.1%	0.9%	0.5%	0.3%	0.5%
Greenville	0.8%	0.2%	0.2%	0.4%	0.2%	0.7%	0.5%	0.5%	0.5%	1.0%
Quincy	0.8%	0.0%	0.1%	0.1%	0.1%	0.1%	0.5%	0.9%	1.5%	1.4%
Portola	3.9%	5.5%	4.5%	4.0%	4.0%	4.2%	4.3%	3.3%	2.9%	2.2%
Loyalton	0.7%	0.6%	0.6%	0.2%	0.0%	0.0%	0.0%	0.6%	0.6%	0.6%

Source: California Department of Education, California Basic Educational Data System

Table 22. USDA Free & Reduced Lunch Eligibility Guidelines (2003-2004).

Household Size	Income Ceiling	
	Reduced Lunch	Free Lunch
1	$16,613	$11,674
2	$22,422	$15,756
3	$28,321	$19,838
4	$34,040	$28,002

Source: USDA National School Lunch Program

Study staff collected California Department of Education data on total enrollment and free and reduced lunch program participation for schools located in the Pilot Project Area communities. Percentages in Table 23 were calculated by dividing the number of free/reduced program participants by the total number of enrolled students.

Why is it important?

Families with income levels that are low enough to be accepted into free and reduced-price school meal programs can be considered low-income families. Higher participation levels indicate higher family poverty levels. Measuring the number of low-income families is a way to gauge local economic performance.

How are Pilot Project communities doing?

Because school lunch enrollment in most of the Pilot Project Area's communities follow regional economic performance trends, regional performance may play a large role in the performance of the local economy.

As a whole, free and reduced lunch program participation in Pilot Project Area communities has hovered between 26 and 28 percent since 1999. This is an improvement from pre-project levels of 35 to 37 percent. Increasing school lunch program enrollment stabilized or decreased after 1999 in four communities: Bieber, Susanville, Westwood and Greenville. An improving trend reversed or stabilized in three communities: Chester, Portola and Loyalton. Program participation in Burney and Quincy fluctuated after 1999, but 2005 data shows program participation has returned near pre-project implementation levels.

Population Age Structure

Age distribution of the population is provided by the U.S. Census. The decennial census is the only base data on population collected by age at the community level. Three age groups are given below: children (age 0-17), working-age adults (age 18-64), and senior citizens (age 65+).

Why is it important?

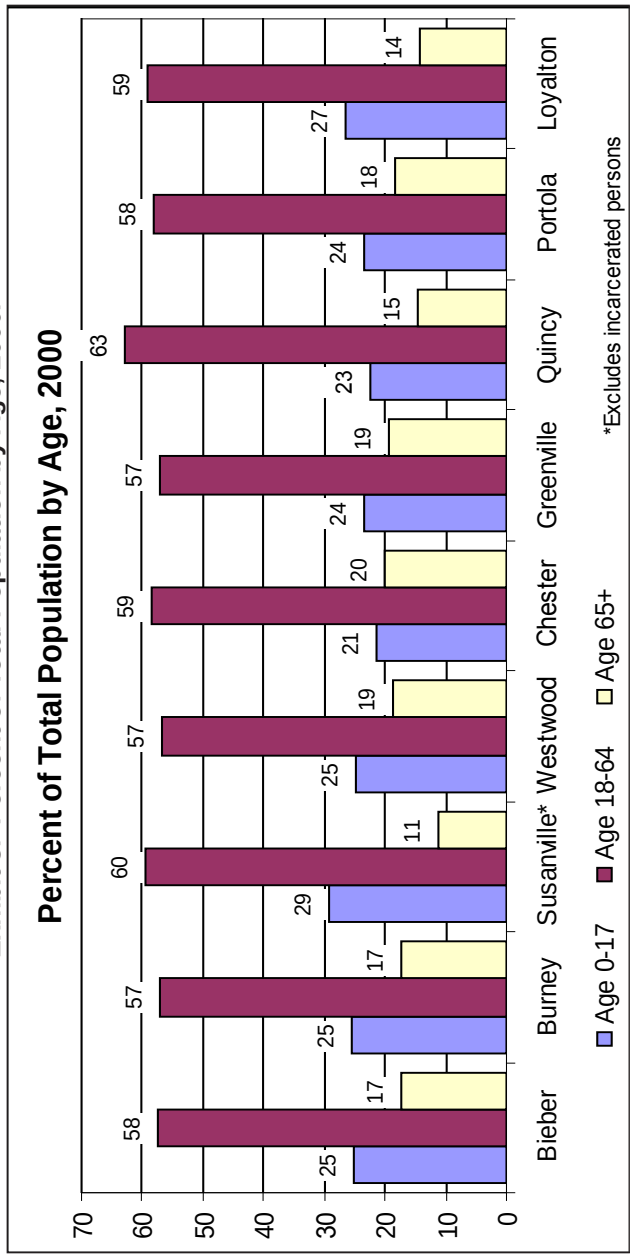
Age structure indicates the degree to which communities have a higher concentration of families, non-family workers or retired citizens. Higher percentages of children indicate a concentration of families; higher percentages of working-age adults (without the high percentage of children) indicate a concentration of non-family workers; and a high percentage of senior citizens indicate a concentration of retired persons. Increasing employment is more likely to benefit communities

Table 23. Percentage of Enrolled Students Participating in Free & Reduced Lunch Programs.

Community	School Year										
	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04
Bieber	30 %	46 %	44 %	46 %	49 %	47 %	45 %	40 %	46 %	41 %	39 %
Burney	42 %	27 %	41 %	39 %	41 %	33 %	33 %	34 %	31 %	37 %	36 %
Susanville	29 %	32 %	31 %	31 %	31 %	24 %	21 %	22 %	22 %	21 %	27 %
Westwood	30 %	47 %	42 %	42 %	50 %	38 %	36 %	36 %	34 %	64 %	33 %
Chester	24 %	30 %	36 %	36 %	32 %	26 %	20 %	24 %	24 %	26 %	26 %
Greenville	53 %	60 %	41 %	51 %	48 %	41 %	39 %	32 %	35 %	32 %	35 %
Quincy	30 %	31 %	36 %	31 %	31 %	25 %	24 %	21 %	22 %	23 %	26 %
Portola	32 %	36 %	31 %	38 %	46 %	26 %	22 %	22 %	19 %	25 %	22 %
Loyalton	31 %	35 %	32 %	35%	36 %	13 %	18 %	17 %	N/A	22 %	23 %
Pilot Project Area Total	**32%**	**34%**	**35%**	**36%**	**37%**	**27%**	**26%**	**26%**	**26%**	**28%**	**29%**

Source: California Department of Education, California Basic Educational Data System.

Exhibit 3. Percent of Total Population by Age, 2000.



with families and non-family workers and less likely to benefit communities with higher concentrations of retirees.

How are Pilot Project communities doing?

The highest concentration of families is in Susanville and Loyalton, two communities that have lost a mill since the Pilot Project began. Non-family workers are more concentrated in communities where lumber mills dominate employment (Chester and Quincy). Retired citizens are more concentrated in communities around Lake Almanor (Chester, Westwood and Greenville).

Timber Sale and Removal Activity

Timber includes sawlogs and biomass. The Forest Service offers timber sales contracts under the Pilot Project to companies to remove marketable timber from the Lassen and Plumas National Forests and the Sierraville Ranger District of the Tahoe National Forest. The following data is from these contracts and from quarterly timber sale accounting reports. Timber sold is not necessarily removed in the year of sale; it is typically removed within three years after sale. As a result, the volume of sale and volume of removal may not correspond in any given year.

Why is it important?

The Pilot Project seeks not only to improve forest health by restoring fire-adaptive ecosystems, but also to maintain local economic stability by removing marketable timber from designated areas. The volume and value of timber sold and removed indicates the extent to which the project is being implemented as planned, as well as the extent to which implementation produces marketable timber. Removal of sawlogs and biomass benefits local communities through logging, milling, biomass electricity generation, and provision of other forest-related services.

How are Pilot Project communities doing?

Data for this indicator cannot be disaggregated to the community-level because some establishments, such as Sierra Pacific Industries, operate multiple establishments in the Pilot Project Area. Disaggregating data also creates a risk of disclosing proprietary information due to the small size and the limited number of establishments in these communities.

Pilot Project implementation began in FY00. As illustrated in Exhibit 9, timber sales declined precipitously in FY03, prior to approval of the Final Supplemental Environmental Impact Statement and Record of Decision for the Sierra Nevada Forest Plan Amendment (SNFPA) in January 2004. The 2004 SNFPA Record of Decision permitted removal of trees with larger diameters than allowed under the 2001 SNFPA Record of Decision. Consequently, sawlog value sold recovered in FY04 and surged in FY05, reaching new peaks for volume and value for both sawlogs and biomass since implementation of the Pilot Project. The value of sawlogs sold in FY05 was approximately 500 percent larger than the value sold in FY04. The volume of sawlogs sold in FY05 was approximately 200 percent larger than FY04 sales. Biomass volume sold in FY05 was nearly double the previous year.

Removal activity also expanded dramatically in FY05. The volume of sawlogs removed more than doubled from FY04 to FY05. The volume of biomass removed increased over 400 percent from FY04.

Exhibit 4. Value of Sawlogs & Biomass Sold.

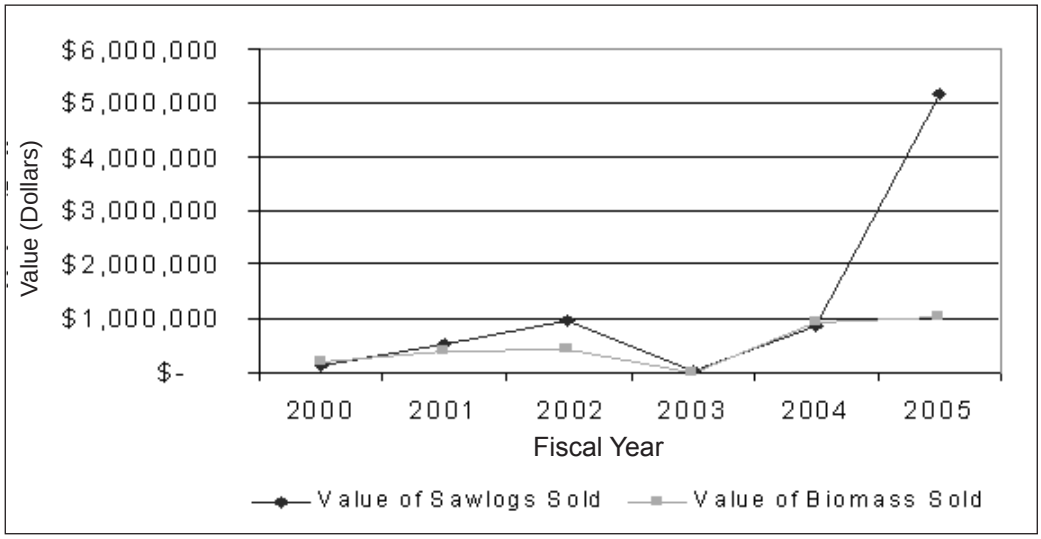
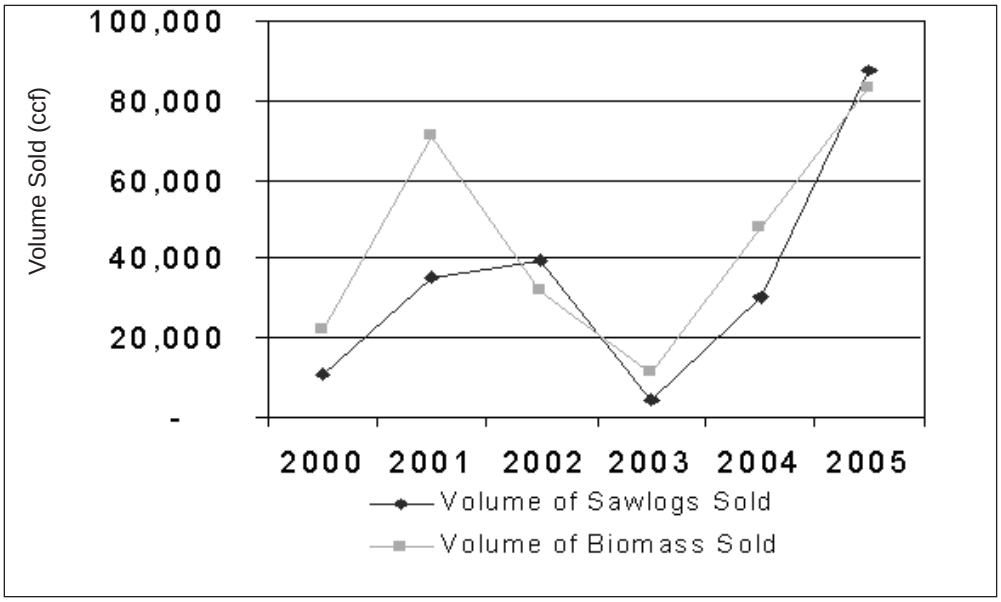
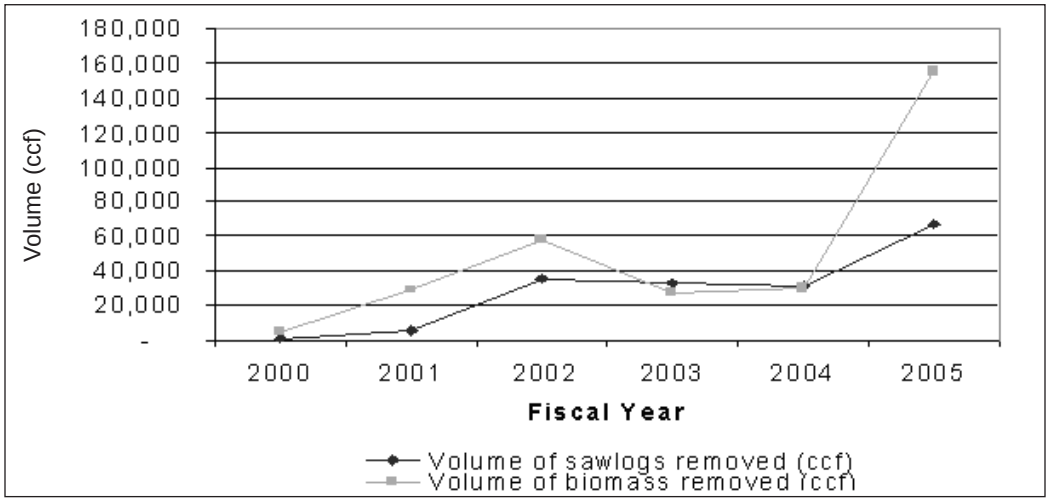


Exhibit 5. Volume of Sawlogs & Biomass Sold (ccf).



Source: USDA Forest Service, Timber Sales Activity Statements

Exhibit 6. Volume of Sawlogs & Biomass Removed (ccf).



Source: USDA Forest Service, HFQLG FY 2005 Timber Sales Activity Statements

Value of Service Contracts

Service contracts are awarded by the Pilot Project forests to do planning work (including environmental studies and surveys) and implementation work (including prescribed burns and removal of underbrush). These contracts are awarded to qualified firms located throughout the western United States. This socioeconomic indicator measures service contract awards by location.

JFA classified service contract awardees into three location categories:

1. "Pilot Project Area," defined as firms located within the Pilot Project Area ZIP Codes or within the Pilot Project forest areas.
2. "Remainder of Sierra Cascade Province," defined as firms located outside of the Pilot Project Area, but within California east of Interstate Highway 5 and north of Interstate Highway 80 (firms in communities that straddle Interstates 5 or 80).
3. "Other/Non-Local," defined as firms that are not located within the Sierra Cascade Province.

Why is it important?

The dollar value of contracts awarded to firms located in the Pilot Project Area has a greater local economic impact than the value of contracts awarded to firms located elsewhere. Although outside firms may spend money locally on hotels, restaurants and hired labor, local firms spend much more in payroll, business and living expenses. Fewer dollars awarded to Pilot Project Area firms will be exported. Distant firms may spend more locally than those located near the Pilot Project Area because of the need to stay overnight near a project site. In addition, the Forest Service considers a local contractor as one located in the Sierra Cascade Province, and therefore, this indicator also measures the degree to which the Forest Service is successful in meeting its goal of awarding 80 percent of contract value to local contractors.

How are Pilot Project communities doing?

From FY04 to FY05, there was an increase in the percentage of contracts awarded to Pilot Project Area contractors. In FY05, the percentage value of contracts awarded to Pilot Project Area

contractors totaled 29 percent; a considerable increase from 16 percent in FY04, but below the peak of 44 percent in FY03. From FY03 to FY04 there was a shift in the total value of service contracts from the Pilot Project Area to the remainder of the Sierra Cascade Province. A Plumas County firm won many fuels reduction contracts in FY03 while Redding- and Chico-area firms became major fuels reductions contractors in FY04. However, contracts were awarded to Pilot Project Area contractors involving forest fieldwork services such as chipping and construction. Overall (FY 2000 through FY 2005), approximately 22 percent of the number of contracts and 25 percent of the contract value has been awarded to Pilot Project Area contractors.

Thus far, 65 percent of service contract value (awards FY00 through FY05) has been awarded to local companies as defined by the Forest Service. The figure for FY05 was 67 percent. The statistic for the peak year, FY02, was 72 percent. These are short of the Forest Service's 80 percent goal.

Exhibit 7. Sawlog Removal by Forest.

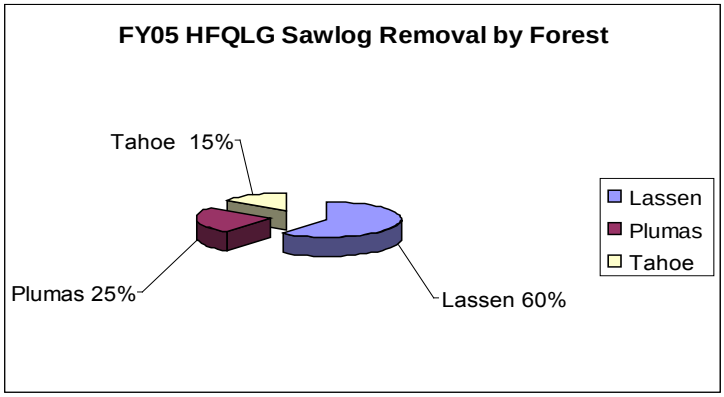


Exhibit 8. Biomass Removal by Forest.

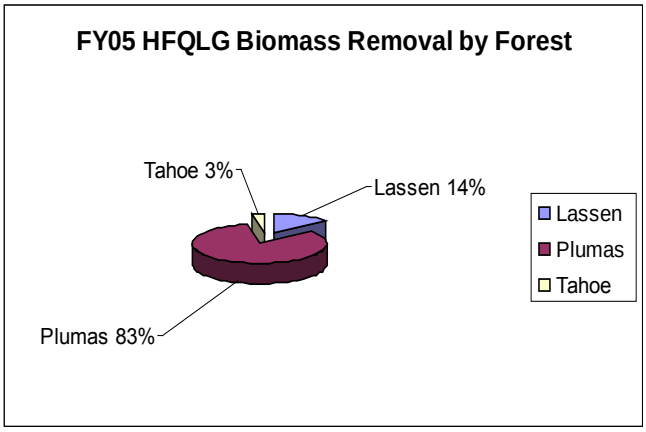


Table 24. HFQLG Timber Sale Activity – Volume & Value by Type.

Item	2000	2001	2002	2003	2004	2005	Percent Change FY 04 - FY 05
Volume of Sawlogs Sold (ccf)	10,935	35,527	39,938	4,495	30,521	87,983	188%
Volume of Biomass Sold (ccf)	21,867	71,213	31,993	11,198	47,902	83,359	74%
Value of Sawlogs Sold($) ==>	$129,781	$515,455	$967,256	$16,927	$870,752	$5,179,734	495%
Value of Biomass Sold($) ==>	$182,353	$378,756	$407,393	$2,630	$927,564	$1,030,664	11%
Volume of Sawlogs Removed (ccf)	1,410	5,524	35,288	32,811	31,769	67,310	112%
Volume of Biomass Removed (ccf)	4,343	28,876	57,592	26,801	30,023	155,460	418%

Source: USDA Forest Service, Timber Sales Activity Statements

Table 25A. Service Contracts, Amount Awarded by Location of Awardees (Thousands of Dollars, Rounded).

	FY '00	FY '01	FY '02	FY '03	FY '04	FY '05	Cumulative FY 00-05	% Share FY 00-05
Pilot Project Area	$287	$2,680	$1,457	$3,883	$1,502	$1,793	$11,602	**25%**
Remainder of Sierra Cascade Province	$293	$7,005	$3,678	$1,195	$4,334	$2,272	$18,776	**40%**
Other/Non-local	$471	$4,576	$1,987	$3,800	$3,523	$2,045	$16,402	**35%**
TOTAL	$1,051	$14,261	$7,122	$8,878	$9,359	$6,109	$46,780	**100%**

Source: USDA Forest Service, Contractor List

The table below provides information on the number of service contracts awarded to contractors by location. Data shows that cumulatively from FY00 to FY05, Pilot Project Area contractors were awarded approximately 22.2 percent of all service contracts.

Table 25B. Number of Service Contracts by Location of Awardees.

	FY '00	FY '01	FY '02	FY '03	FY '04	FY '05	Cumulative FY 00-05	% Share FY 00-05
Pilot Project Area	2	16	19	33	30	23	123	**22.2%**
Remainder of Sierra Cascade Province	9	65	46	32	50	27	229	**41.3%**
Other/Non-local	13	52	39	32	37	29	202	**36.5%**
TOTAL	24	133	104	97	117	79	554	**100%**

Retail Business Activity

Sales tax is imposed on most retail sales transactions in California. It is levied on the gross receipts of retailers from the sale of tangible personal property. The tax applies to some rental transactions and many occasional and nonrecurring sales by persons who otherwise would not be regarded as "retailers." Food products (e.g., unprepared food purchased at grocery stores) and lodging, among other items, are exempt. (However, as discussed previously, lodging is subject to the transient occupancy tax in most jurisdictions.) The State Board of Equalization (SBE) publishes taxable sales data at the county and city levels. Data in the table is adjusted to 2005 dollars with the SBE's Taxable Sales Deflator Index.

Why is it important?

Taxable transactions are an indicator of personal and business consumption in a given jurisdiction. As economic activity in an area increases, residents and businesses increase their purchases of tangible personal property that is subject to sales tax. As the economy contracts, taxable transactions decrease or expand more slowly. However, taxable transactions are an imperfect measure of consumption in the Pilot Project Area because residents and business agents tend to travel to retail outlets in the Sacramento Valley and Reno area to purchase "big ticket" items (e.g., motor vehicles) and for shopping excursions.

How are Pilot Project communities doing?

The Pilot Project Area weathered the recession in the early 2000s better than the rest of California. Since implementation of the Pilot Project (1999-2004), taxable transactions have grown faster in Lassen, Plumas and Sierra counties than the state, but have grown slower than statewide in the cities of Susanville, Portola and Loyalton. However, this may be due more to the severity of the recession elsewhere in California (especially the San Francisco Bay Area) rather than favorable conditions in the Pilot Project Area. The City of Susanville has grown slower than other areas in the state throughout implementation, except in 2002. The minor decline in Sierra County in 2003 was likely caused by a data anomaly.

Socioeconomic Conclusion

Data analyzed in this report indicates that implementation of the HFQLG Act has been insufficient to offset the decline in the forest products industry in the Pilot Project Area. Mills have continued to shut down (Bieber and Loyalton in 2001; Susanville in 2004) and small businesses have had to search for work in other areas or close. The Pilot Project Area experienced a 36 percent loss of forest products industry payroll jobs from 1999 to 2003. However, data for 2004 and 2005, when sawlog and biomass sale and removal soared to record levels since implementation of the Pilot Project, is not yet available. The positive economic impacts of these activities will become apparent in future socioeconomic monitoring reports.

Despite the loss of forest products jobs, communities are slowly rebounding and local economies are stabilizing. For example, the forest products industry sector in Chester, Susanville, Greenville, Portola and Westwood showed positive job growth from 2002 to 2003. Non-employers in forest products and non-forest products industries both suffered losses after the Pilot Project's implementation in 1999, but show steady growth from 2001 to 2003. Finally, while there is a very low survival rate for young businesses (0-5 years old), data indicates a stable market for those businesses that have operated six years or more.

Pilot Project Area contractors and the Forest Service disagree regarding the management of the Pilot Project contracting process. Local perceptions are important because they may affect what local companies report in the Forest Product Industry Roster Survey. Business representatives may underreport economic activity if they feel frustrated with the current situation. Pilot Project Area contractors have claimed that the Forest Service has not contracted sufficient work locally, including both timber sales and service contracts.

Table 26. Taxable Sales in the Study Area (Thousands of 2005 Dollars)*.

Area	1997	1998	1999	2000	2001	2002	2003	2004	% Change 1999 to 2004
Lassen County	$186.37	$192.61	$213.00	$221.61	$227.19	$244.89	$252.76	$257.12	20.7%
Susanville City	$105.89	$105.81	$114.49	$123.25	$121.52	$126.98	$129.42	$129.63	13.2%
Plumas County	$159.09	$159.97	$171.79	$187.82	$193.62	$204.29	$204.96	$223.07	29.9%
Portola City	$12.16	$12.27	$13.20	$14.92	$14.43	$14.38	$15.40	$16.65	26.1%
Sierra County	$15.68	$18.07	$20.43	$20.06	$20.60	$24.95	$21.12	$22.93	12.2%
Loyalton City	$4.30	$4.71	$5.15	$5.95	$6.01	$6.58	$5.22	$6.30	22.3%
California	$344,972	$368,863	$403,294	$442,844	$443,037	$447,338	$467,026	$500,077	7.08%

Source: California State Board of Equalization

*Tax data was adjusted to 2005 dollars using SBE's Taxable Sales Deflator Index

There is disagreement as to how the contributions of local contractors should factor into the awards process. Pilot Project Area contractors and the Forest Service have different views about defining "local." To a Pilot Project Area contractor, "local" is defined as the Pilot Project Area. The Forest Service defines "local" as the Sierra Cascade Province, which extends to the Oregon and Nevada borders, Interstate Highway 80 and Interstate Highway 5.

Contracts awarded and timber sales sold to companies located outside of the Pilot Project Area create fewer economic benefits in the Pilot Project Area. While non-local forest workers are likely to lodge in the Pilot Project Area for the duration of a contract, much of their income will go home with them, as will much of the profits.

Implementation of the Pilot Project has not negatively affected the tourism industry. Tourism jobs through 2003 had increased since the beginning of the Pilot Project and lodging revenue experienced a substantial increase between FY99-00 and FY04-05. Lodging revenue decreased slightly in FY04-05, due to weather conditions and gasoline prices rather than implementation of the Pilot Project.

There is little statistical connection between implementation of the Pilot Project and change in the two social indicators (Youth Education and Family Poverty). The percentages of high school dropouts and enrollment in the free/reduced lunch programs have remained relatively stable. While social indicators are improving slightly in some Pilot Project communities, they are worsening in others.

The most noteworthy trend in the social indicators is that Portola, the Pilot Project Area community least dependent upon the forest products industry, has shown improvement in both social indicators. According to interviews with business owners and local tax collectors, resort and housing development has created additional employment opportunities. In addition, the rising cost of living in Truckee and Reno (the Interstate 80 corridor) has pushed commuters to settle in the Portola and Loyalton areas. This indicates that the Pilot Project may not be the only means for improving social conditions in the Pilot Project Area.

Revenues and Expenses

Section (j)(1)(E) of the HFQLG Act requires:

> (E) A comparison of the revenues generated by, and the costs incurred in, the implementation of the resource management activities described in subsection (d) on the Federal lands included in the pilot project area with revenues and costs during each of the fiscal years 1992 through 1997 for timber management of such lands before their inclusion in the pilot project.

Table 27A displays FY92 to FY97 revenues and expenses associated with timber management activities prior to the HFQLG Act. Table 27B displays FY99 to FY05 revenues and expenses associated with the HFQLG Act. The summary for FY05 expenditures is located in Table 3 on page 5.

Tables 27A and B. FY92 to FY97 Revenues and Expenses Associated with Timber Management Activities (A), and FY99 to FY04 Revenues and Expenses Associated with HFQLG Activities (B)

Table 27A. Lassen, Plumas and Sierraville District of the Tahoe National Forests Resource Management Activities of Timber Harvest, Timber Stand Improvement, Site Preparation, and Tree Planting.

Fiscal Year	Revenue (Thousands $)	Expenditures (Thousands $)
1992	67,187	25,856
1993	34,408	18,194
1994	44,501	17,376
1995	52,873	22,596
1996	24,590	20,490
1997	24,465	22,207

Table 27B. HFQLG Pilot Project Resource Management Activities of DFPZ Construction, Group Selection, and Individual Tree Selection.		
Fiscal Year	**Revenue (Thousands $)**	**Expenditures (Thousands $)**
1999	0	1,943
2000	20	7,182
2001	140	28,267
2002	989	21,557
2003	960	23,100
2004	1,958	30,100
2005	2,914	29,200

Sawlog and Biomass Volume

Table 28 displays the activities that generated revenue between FY92 and FY97.

Table 28. FY92 to FY97 Acres Harvested and Volume Offered and Sold Associated with Timber Management Activities.

TIMBER MANAGEMENT ACTIVITIES on the Lassen, Plumas and Sierraville Districts of the Tahoe National forests PRIOR to the HFQLG Act (FY92 to FY97)						
	FY92	**FY93**	**FY94**	**FY95**	**FY96**	**FY97**
Regeneration (Acres)	8,634	7,853	8,206	7,531	9,063	15,591
Site Preparation (Acres)	6,176	5,264	4,667	2,363	3,321	3,321
Timber Stand Improvement (Acres)	10,045	10,600	8,740	13,866	15,062	22,646
Sawlog Volume Offered (CCF)	426,000	424,000	375,000	555,200	374,200	383,000
Sawlog Volume Sold and Awarded (CCF)	329,400	535,200	332,600	316,400	242,600	353,400
Total Area Harvested (Acres)	55,689	70,885	57,922	47,317	38,917	32,223

Note: The Act required a comparison of FY92-FY97; therefore, no figures for FY98 are displayed.

During FY05, Pilot Project timber sales generated $2,914,376 in revenues. Revenues were realized from harvest activities on 16 timber sales, and 7 service contracts with nested timber sales that were active in FY05. Sawlog and Biomass volumes have been combined and the Timber Sale Accounting (TSA) system reflects that 222,770 CCF removed generated the $2,914,376 in revenues for FY05. Table 29 displays the resource management activities (acres) and associated volume (CCF) from FY99 through FY05. This table also displays the cumulative FY99 to FY05 volume offered and volume removed (or harvested) associated with the HFQLG Pilot Project resource management activities.

Table 29. FY99 to FY05 Acres Accomplished and Volume Offered and Removed Associated with HFQLG Pilot Project Resource Management Activities.

HFQLG Pilot Project Resource Management Activities Described in Subsection (d) of the HFQLG Act, Volume and Acres: FY99 to FY05								
	FY99	**FY00**	**FY01**	**FY02**	**FY03**	**FY04**	**FY05**	**Total FY99-FY05**
DFPZ Acres Accomplished	640	7,215	41,197	16,651	24,442	36,635	21,073	**147,853**
Group Selection Acres Accomplished	0	200	1,836	1,258	0	1,738	1,792	**6,824**
Individual Tree Selection Acres Accomplished	172	772	528	395	44	80	2,327	**4,318**
Riparian Restoration Acres Accomplished	0	81	945	838	537	603	836	**3,840**
Sawlog Volume Offered (CCF)	4,785	44,422	88,802	37,168	41,418	203,012	143,373	**556,993**
Biomass Volume Offered (CCF)	4,278	64,517	143,117	31,354	44,402	198,204	129,814	**608,798**
Sawlog and Biomass Volume Removed (CCF)	0	5,754	33,151	99,163	61,810	61,792	222,770	**484,440**

Fiscal Year 2006 Resource Management Activities

Section (j)(1)(F) of the HFQLG Act requires:

> (F) A proposed schedule for the resource management activities to be undertaken in the pilot project area during the 1-year period beginning on the date of submittal of the report.

Table 30 is a summary of the Proposed FY06 HFQLG Program by Project Type:

Table 30. Proposed FY06 Program of Work by Project Type.

Project Type	Number of Projects	DFPZ Acres	GS Acres	ITS Acres	Sawlog Volume CCF	Biomass Volume CCF
Timber Sale	20	13,839	2,101	2,528	116,775	120,072
Service Contract with embedded timber sale	5	10,218	416	948	54,200	37,766
Service Contract	3	2,090	0	0	0	500
Force Account Crew	10	2,785	0	0	0	0
TOTALS FOR FY05	**38**	**28,932**	**2,517**	**3,476**	**170,975**	**158,338**

A detailed description of the FY06 program can be found in Appendix D.

The FY06 program of work also includes: 1) Administering current contracts; 2) Implementation of vegetation projects planned in previous years; 3) Implementation of FY06 riparian management projects; 4) Environmental analysis for proposed projects; 5) Out-year data collection and planning; and 6) Development of a work plan and schedule for the Plan Amendment/Revision required by Section 401(i) of the HFQLG Act. All work will be conducted at a level commensurate with the $26.2 million FY06 projected available funding.

Four riparian restoration projects are planned for accomplishment in FY05, with an expected 460 acres of restoration. These projects will include meadow restoration and enhancement, stream channel improvement, road relocation, road closure and slope stabilization.

Fiscal Year 2008 will be the start of a two-year schedule for the Plan Amendment/Revision according to Region 5 budget direction.

Environmental Monitoring and Effects

Other natural resource-related benefits associated with the Pilot Project are confirmed by monitoring the activities required by the HFQLG Act. Additionally, Pilot Project monitoring will facilitate the Final Report as required the Act (Sec. 401(k)(1)).

The HFQLG Pilot Project Monitoring Plan was initiated in FY00 and provides a structure, in the form of questions, to gain information about 1) habitat concerns; 2) effects of implementing Pilot Project activities; 3) effectiveness of those activities, and 4) economic well-being. The Monitoring Plan, which includes a full description of these questions and their monitoring protocols, is available at the Pilot Project office listed in the cover of this report.

The Habitat Concerns section includes methods to assess habitat connectivity, old forest habitat and aquatic/riparian dependent species monitoring. This section meets the requirement in the 1999 HFQLG ROD that states, "over the course of the Pilot Project, suitable habitat for old

forest-dependent species and aquatic/riparian-dependent species (including amphibians) shall not be reduced by more than ten percent below 1999 levels."

The Implementation Monitoring section has three levels of assessment: project evaluations, interagency project reviews, and topic-specific questions. This section provides information about the degree to which treatments are implemented according to standards and guidelines set forth in the HFQLG EIS, each forest's land management plan, and site-specific direction. There are ten topic specific questions concerning forest structure, best management practices, soil quality, sensitive plants, noxious weeds and air quality. These questions include information on objectives, scale, monitoring protocol and estimated cost.

In the Effectiveness Monitoring section, the 21 topic specific questions address: 1) old forest values and old forest-dependent species; 2) soil and water effects; 3) wildfire protection and fuels reduction; 4) threatened, endangered and sensitive plants; and 5) noxious weeds. These questions assess the degree to which implemented treatments meet resource objectives. All the topic specific questions also include information on objectives, scale, monitoring protocol and estimated cost.

Environmental Findings

The following section contains summaries of FY05 monitoring activities and results.

Habitat Concerns: The HFQLG ROD requires that habitat connectivity be maintained to allow movement of old forest or aquatic/riparian-dependent species between areas of suitable habitat. It further requires that suitable habitat for old forest-dependent species and aquatic/riparian-dependent species shall not reduced by more than 10 percent below 1999 levels. California Wildlife Habitat Relationship (CWHR) labels 5M, 5D and 6 are used to represent habitat required by old forest-dependent species.

Each project planned in FY05 was evaluated to determine the reduction, if any, in the vegetation strata in CWHR labels 5D, 5M and 6. The vegetation strata CWHR size class 5 represents a single-story, predominantly large tree (greater than 24-inch Diameter at Breast Height (DBH)) stand. Density class D has a 60-100 percent canopy cover and density class M has a 40-59 percent cover. CWHR size class 6 represents a multi-layered stand where CWHR size class 5 is over a distinct layer of size class 4 (11-24 inch DBH) or size class 3 (6-11 inch DBH) and where total tree canopy is 60 percent or greater canopy closure.

Reductions are documented and a cumulative total is tracked to make sure no greater than a 10 percent reduction occurs over the life of the Pilot Project. Vegetation strata analysis and mapping has calculated there are 186,394 acres with these strata labels in the Pilot Project. To date 3,282 acres have, or will have, a reduction based on projects with a signed Record of Decision. This is approximately 1.7 percent of the acres with these strata in the Pilot Project.

Implementation and Effectiveness Monitoring: In FY05, project evaluations were combined with interagency reviews as each district conducted at least one on-site evaluation of at least one of the projects implemented within the last year. These included vegetation management or riparian/watershed improvement projects. The reviews took place at the project site and specialists from other agencies, as well as the public, were invited to participate. The

primary purpose of these reviews is for district rangers to interact with the interdisciplinary team to make an on-site assessment of the outcomes from the various treatments. In FY05, eight project evaluation/interagency reviews took place. These reviews are to be documented and signed by the district ranger and kept in the monitoring project file.

Topic Specific Questions:

Forest Service and contracted personnel collected the pre-treatment data for both the implementation and effectiveness monitoring questions. The information gathered includes:

Stand structure attributes

Question 1: Do Silviculture and fuel treatments meet CASPO, fuels and other stand objectives?

Question 2: Are the desired abundance and distribution of snags and logs achieved in DFPZs and Group Selections (GS)?

Question 3: Does the implementation of silvicultural prescriptions produce or retain desired stand elements such as logs, canopy cover, large trees and early seral stage?

Question 4: Do silvicultural treatments meet California spotted owl interim direction, and fuel and stand objectives over time?

Information regarding tree size, canopy cover, surface fuels, ladder fuels and understory structure and composition is collected from units randomly selected across the Pilot Project. This serves as baseline data from which post harvest conditions are compared. Most of the implementation projects consist of a mechanical or hand treatment followed by prescribed burning.

DFPZ Treatment Units: This brings the total number of units that have received one year post treatment monitoring to 11 of the initial set of 70 units. Four years after the installation of the first pre-treatment plots, only 16 percent have completed the mechanical work and underburning. The percentage of units completed except for underburning equals 56 percent.

GS Treatment Units: After the Sierra Nevada Framework Supplemental Record of Decision in 2004, a decision was made to establish a second set of 70 plots specifically focused on GS. None of the GS units were ready for one-year post treatment monitoring in 2005.

Current Status: The amount of post treatment data still is sparse with only 16 percent of the monitored DFPZ units being completed and none of the monitored GS units completed. The results to date show that large trees are being retained, fuel ladders are being significantly reduced, down woody fuels are being reduced to acceptable levels, and canopy cover is being reduced. The ability to answer monitoring questions 1 through 4 remains limited as the vast majority of monitored units is outside of the range of CASPO.

The decision to expand the monitoring of treated stand structure will provide additional information as more projects are being approved within the range of CASPO. The integration of Common Stand Exams (CSE) and FSVEG will require review to see how it can accommodate treated stand structure monitoring data gathering, storage and analysis. Wider use of these databases with Geographic Information System (GIS) links will provide better tracking of accomplishments and more efficient post-treatment monitoring.

Best Management Practice (BMP) Implementation and Effectiveness During Project Activities

Question 5: Are BMPs implemented during project activities?

Question 21: Are BMPs applied during project activities effective in meeting on site objectives?

This summarizes results of monitoring conducted to assess implementation and effectiveness of BMPs employed to protect water quality on projects associated with HFQLG projects. Best Management Practices were monitored using the Pacific Southwest Region protocols (BMPEP). This approach requires activity sites to have undergone at least one winter prior to evaluation. Therefore, all sites monitored were implemented in 2004 or earlier.

Results from both implementation and effectiveness are summarized to yield a result of "implemented or not implemented" and "effective or not effective." These results are generated by weighting the various evaluation criteria (those deemed most important receive higher weights) and comparing the resulting composite score against a pre-determined value that distinguishes scores as implemented or not implemented, and effective and not effective. Generally, higher values indicate greater departures from the planned action (implementation), and greater risk of water quality impacts (effectiveness). In this report, results for individual criteria are discussed in addition to the composite scores.

Sample Selection: Sites were randomly selected. Levels of targeted activities (harvesting, decommissioning and burning) vary yearly on each of the districts and, correspondingly, the number of sites that can be included fluctuates between districts. Therefore, in any given year it may not appear there is a balanced district sampling across the Pilot Project. This reflects that sample size is based on the Pilotwide Area and is the basis for the monitoring sample size.

For evaluation of streamside management, skid trails and landings, a pool of HFQLG units with Riparian Habitat Conservation Areas (RHCAs) were identified, and served as the sample population. This was done to co-allocate the three evaluations. Evaluations for roads (stream crossings, drainage and decommissioning) and prescribed burn sites had separate pools developed. These separate pools of sites were randomly sorted with a random number generator, and the first 30 from each pool were selected.

Evaluations: Resource specialists from each district usually conduct BMP evaluations. Evaluations included assessments of practices associated with stream course protection (evaluation T01), skid trails (T02), landings (T04), road drainage (E08) and stream crossings (E09), prescribed fire (F25) and road decommissioning (E10). The number of evaluations and their distribution among the HFQLG administrative units are presented in Table 31.

Table 31. Number of Evaluations Collected by Administrative Unit in 2005.

Evaluation	Total	Alm RD	EL RD	HC RD	Beck RD	FR RD	MtH RD	Sville RD
T01- Streamcourses	10	0	0	0	4	0	0	6
T02- Skidtrails	11	0	0	0	3	0	0	8
T04- Landings	18	0	5	2	3	0	0	8
E08- Road drainage	20	0	1	0	8	0	0	11
E09- Stream Crossings	20	0	1	0	8	0	0	11
E10- Road Deccommissioning	16	0	0	0	0	14	2	0
F25- Prescribed Fire	22	0	0	0	13	2	6	1
Total	117	0	6	2	39	16	8	45

Results Summary: Table 32 summarizes results from the BMPEP evaluations, based on the composite scores for implementation and effectiveness.

Table 32. Summary results of BMP Implementation and Effectiveness by Activity Type

Evaluation	# Evaluations	% Implemented	% Effective
T01- Stream courses	10	60	80
T02- Skid trails	11	82	64
T04- Landings	18	83	95
E08- Road Drainage	20	85	85
E09- Stream Crossings	20	85	80
E10- Road Decommissioning	16	62	62
F25- Prescribed Fire	22	95	91
Total	117	79	70

Implementation ranged from 60 percent (stream courses) to 95 percent (prescribed fire). Effectiveness results ranged from 62 percent (road decommissioning) to 91 percent (prescribed fire). Overall, 79 percent of evaluations were rated as "implemented" and 80 percent as "effective".

Effectiveness evaluations are based on objective review of activity areas that focus on indicators of processes of concern. In most cases, they represent a risk of water quality degradation, rather than actual degradation. In cases where effectiveness scores are low, observers are asked to comment on potential impacts to water quality, in terms of degree, duration and extent. A key effectiveness criterion relative to water quality is evidence of sediment transport to a channel. Of the 117 evaluations that included this criterion, sediment to an RHCA was found at 11 sites (9 percent); sediment to a channel was found at 11 sites (9 percent). While there is localized evidence of minor sediment transport to channels, the information indicates that overall water quality has not been impacted across the Pilot Project Area.

Table 33. Evaluations with evidence of sediment delivery to RHCAs and channels.

Evaluation	# Evaluations	# With deposition in RHCA	# With sediment in channel
T01- Stream courses	10	2	0
T02- Skid trails	11	1	0
T04- Landings	18	3	1
E08- Road drainage	20	3	4
E09- Stream Crossings	20	0	2
E10- Road Decommissioning	16	0	3
F25- Prescribed Fire	22	2	1
Total	117	11	11

Recommendations: A Watershed Task Group will be formed to evaluate BMP implementation, effectiveness and monitoring to review the results of past performance, recommend corrective actions and training. The task group will be formed by April 2006. Any subsequent training need identified will occur by July 2006. Task group findings shall be incorporated into project planning, layout and implementation to insure that BMP implementation and effectiveness meets or exceeds 90 percent by July 2006.

Soil Quality Standards

Question 6: Do activities meet Soil Quality Standards?

A Soils Task Group has been formed and will address soils recommendations by dates identified in recommendations below.

Standards for soil quality are defined for soil compaction, soil cover and large woody material. These attributes of the Region 5 Soil Quality Standards (SQS) were monitored to assess effects of management activities on the soil resource. To date 169 units have been monitored pre-treatment. Post-treatment sampling is now occurring. In 2005, post-treatment monitoring occurred on 31 units, including 20 thinning units and 11 GS units.

Soil Compaction: Detrimental compaction is generally considered to occur when soil porosity is reduced more than 10 percent compared to an undisturbed condition. The threshold for exceeding Forest Plan standards is generally when 15 percent or more of an activity area has detrimental compaction.

Comparison of pre-treatment and post-treatment conditions provides data on the effects of treatments. Pre-treatment sampling on 169 harvest units showed 33 percent of the units exceeded the threshold prior to the Pilot Project. Of 31 units sampled post-treatment in 2005, 15 units (48 percent) exceeded the standard prior to implementation, and 21 units (68 percent) after treatment. Of 20 thinning units, 12 units (60 percent) were over threshold pre-treatment and 15 units (75 percent) were over threshold after treatment. Of 11 GS units, 3 units (27 percent) were over threshold before treatment and 6 units (55 percent) were over after treatment.

The data shows high levels of legacy compaction on many units prior to treatment. Additional mechanical entries may add to compaction, resulting in cumulative soil compaction. Given pre-existing conditions and the degree of legacy compaction, additional entries will have varying degrees of effects on soil productivity depending on soil texture, soil moisture, and degree of compaction. These conditions may or may not affect soil productivity.

The extent of compaction on any site can be affected by several variables, including soil moisture, soil texture, organic matter, duff and litter layer thickness, and coarse fragment content. The most important of these is soil moisture content. Soil compaction can potentially be mitigated by subsoiling, using an implement that loosens the subsoil without turning the soil over. Subsoiling is limited to areas where soils are not too rocky or shallow, and where slopes are not too steep. The effectiveness of this operation also depends on equipment design, soil moisture and texture.

Recommendations:

1. Coordinate with Regional Office to review current soil standards by May 2006.
2. Compaction risk to soil types will be evaluated by a soil scientist during any National Environmental Policy Act analysis and prior to new treatments to avoid undue cumulative effects on soil resources. This will occur immediately.
3. A compaction risk assessment of current soil conditions will occur prior to initiating equipment operations. This will occur immediately.
4. Develop a soil-type risk guide to reduce potential soil compaction by September 2006.
5. Review Subsoiling operations and develop recommendations and a risk guide for subsoiling prior to August 2006

Effective Soil Cover: The threshold standard is for fine organic matter to cover over 50 percent of an area. Fine organic matter includes plant litter, duff and woody material less than 3 inches in diameter.

All units had adequate soil cover pre-treatment. Post-treatment, 19 of 20 thinning units met the threshold standard. Four of 11 GS units met the threshold standard after treatment, three almost met the threshold standard with 48 percent cover, and four units had from 24 to 38 percent cover.

Due to delays in the underburning portion of the program, the soil cover data is for post harvest conditions only. When underburning is accomplished, the soil cover attribute will be resampled.

Recommendations:

1. Ensure that specifications for retention of fine organic matter ground cover in thinning units are conveyed to forest implementation personnel by June 2006.
2. Ensure that specifications for retention of fine organic matter ground cover in GS units are conveyed to forest implementation personnel by June 2006. Site preparation practices should be reviewed and modified to establish retention of fine organic matter on the soils surface by July 2006.

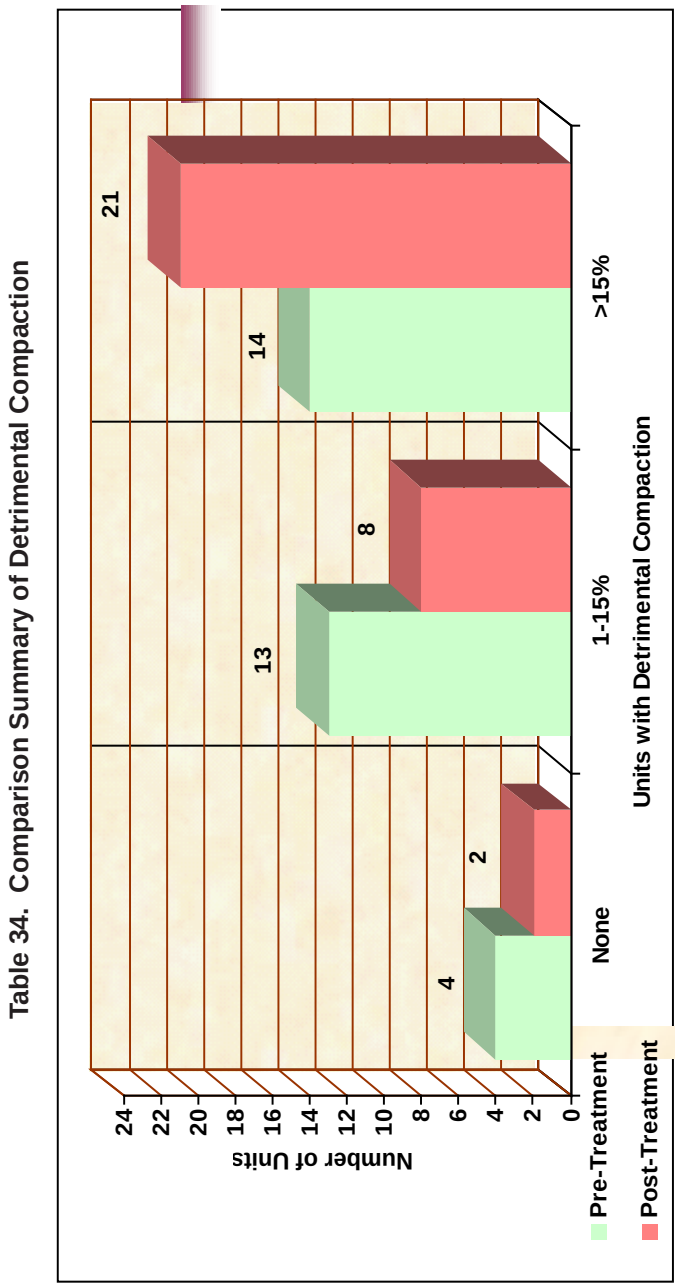


Table 34. Comparison Summary of Detrimental Compaction
Number of Units
0
2
4
6
8
10
12
14
16
18
20
22
24
4
2
13
8
14
21
None
1-15%
>15%
Units with Detrimental Compaction
Pre-Treatment
Post-Treatment

Large Woody Material: The default standard is for five logs per acre, at least 20 inches in diameter and 10 feet long representing the range of decomposition classes 1-5. However, the Sierra Nevada Supplemental EIS ROD amended the standards so that the retention of large, down wood is determined on an individual project basis.

Projects sampled were analyzed under the old standard.

Thinning units - Initially 11 units met the standard; post-treatment 7 units met the standard.

GS units - initially 4 units met the standard; post-treatment none met the standard.

Recommendations:

1. Ensure that specifications for retention of large woody material in thinning units are conveyed to forest implementation personnel by June 2006.
2. Ensure that specifications for retention of large woody material in GS units are conveyed to forest implementation personnel by June 2006. Site preparation practices should be reviewed and modified to establish retention of fine organic matter on the soils surface by July 2006.

Mechanical Footprint Evaluation: A component of the HFQLG soil monitoring has been to use global positioning satellite (GPS) technology to measure the aerial extent of skid trails, landings, and nonsystem roads contained within the boundary of harvest units. This is characterized as disturbance, or the footprint of where equipment operated during harvest operations. This data was downloaded to GIS for data analysis. The Monitoring Plan identified a need to evaluate the size of the mechanical footprint and the amount of detrimental compaction. An analysis of the footprint of the unit provides information about the extent of ground disturbance for forest planning and implementation personnel to use in assessing the efficiency of logging systems and where the potential for compaction occurs. This information will assist in minimizing the mechanical footprint and associated compaction in the future.

Fifty four units have been GPSd. These included 22 GS units and 32 DFPZ units. Only the skid trials used for this entry were measured. The average skid trails density for all units was 12 percent. The average skid trail density for the GS units was 16 percent. The average skid trail density for the DFPZ units was 10 percent. The average footprint density for all units was 17 percent. As a group the DFPZs had an average footprint of 13 percent. When the GS units were considered separately, they had 22 percent average footprint.

GS units have, on average, generated 73 percent more footprint per unit volume than DFPZ thinning activities. GS units can be further subdivided into those with embedded landings and those without. When the landing was embedded, GS units averaged 28 percent footprint. GS units without embedded landings averaged 18 percent footprint. The average length of skid trails per acre was 708 feet/acre for the GS units and 425 feet/acre for the DFPZ thinning units.

The average landing size was .24 acres. DFPZ landings averaged .33 acres and GS landings averaged .22 acres. Given that GS averaged 1.75 acres in size, the landings typically represented 13 percent of the footprint resulting from harvest.

Recommendations: Interdisciplinary Teams (ID Teams) will review transportation and logging system needs for the project area as a whole during NEPA analysis. Needs for new landings and skid trails will be anticipated and evaluated during the NEPA process to minimize the mechanical footprint and associated detrimental soil compaction. ID Teams and implementation personnel will review post project needs for transportation and logging systems to address post project footprint reduction. These actions have begun and will be ongoing.

Threatened and Endangered Species (TES) Plants and Noxious Weeds

Question 7: Were TES plants surveyed and protected?

Out of the 31 TES protection/control areas monitored, 24 (77 percent) were protected as planned. This is not an acceptable level of successful implementation (the expectation from the HFQLG monitoring plan is "that all of the TES plant occurrences are protected and recommendations were implemented"). Three of the protected areas were not flagged for protection, but were inadvertently not impacted because they fell outside of the unit boundary. Two of the seven sites impacted were mapped as a control area, but no flagging or control area was established on the ground. The other five sites impacted had established control areas and were flagged on the ground, but the control areas were violated.

Future effectiveness monitoring on these units will address whether the protection measures were effective. Effectiveness monitoring will also show any potential impacts to the species.

Recommendations: Information on surveyed areas containing TES plants should be distributed to forest planning and implementation personnel to increase efforts to protect these species during project implementation. This information should also be communicated to the operator prior to beginning operations.

Question 8: Were noxious weed introductions prevented and existing infestations suppressed?

Noxious weeds are being treated in, and adjacent to, HFQLG units for the majority of units. With the exception of one weed site on private land adjacent to a project unit, 100 percent of the weed sites were either partially or completely treated. Out of the weed sites on National Forest lands, 15 sites (88 percent) were treated completely, while only two sites (12 percent) were not. The sites not completely treated were Klamath weed occurrence #29 on the Lassen National Forest and Musk Thistle CANU5-005D on the Tahoe National Forest, where weeds were treated one year, but not in subsequent years. Consequently, weeds were still present in these units in 2005. The Plumas National Forest had one scheduled noxious weed unit to monitor on the Beckwourth Ranger District, but monitoring was not completed in 2005.

Recommendations: Continue to take aggressive action prior to, and through, project implementation has been successful in eradicating small populations of noxious weeds, as well as preventing new occurrences. These efforts appear to be limiting noxious weed spread on the Lassen and Tahoe National Forests. Little treatment occurred in HFQLG monitoring units on the Plumas National Forest.

Smoke Management

Question 9: Were provisions of the Smoke Management Plan (SMP) implemented?

The objective is to see if burns meet the provisions of SMPs as defined by California State and Federal air quality regulations. The monitoring protocol is to assess adherence to SMP provisions by conducting post-burn evaluations for all burns. In 2005 there was a violation of one SMP when more acres were ignited for increased efficiency in one day than the plan allowed for. No Class I Airsheds were impacted; however there were seven days that Smoke Sensitive Areas (communities) were impacted by smoke from adjacent burns. The Forest Service received 16 smoke complaints; three of the complaints were based on health-related issues.

Aquatic Habitats

Question 10: Are springs, seeps, and other small aquatic habitats protected during project activities?

Both presence/absence and disturbance evaluations were conducted on randomly selected units for springs, seeps or other small aquatic habitats. Disturbance evaluations were conducted by reviewing project maps and developing a pool of 30 randomized units with aquatic features. The units were assessed in the field to determine if identified features were protected. All identified features were protected.

California Spotted Owl

Subsequent to the development of the HFQLG monitoring Plan, the Plumas-Lassen Study was formulated to address the effects of HFQLG implementation on select resources, including effects on California spotted owls and their habitat. The Plumas-Lassen Study is addressing six specific questions related to the effects of HFQLG Project implementation on California spotted owls. Given the broader scope and intensity of the Plumas-Lassen Study questions and associated research effort, these six questions supplant questions 12-14 identified in the original HFQLG Monitoring Plan.

Knowledge regarding the effects of fuels and vegetation management on California spotted owls (*Strix occidentalis occidentalis*; CSOs) and their habitat is a primary information need for addressing conservation and management objectives in Sierra Nevada forests. The specific research objectives of the California spotted owl module as identified and described in the Plumas-Lassen Study (PLS) Plan are:

1. What are the associations among landscape fuels treatments and CSO density, distribution, population trends and habitat suitability at the landscape-scale?
2. What are the associations among landscape fuels treatments and CSO reproduction, survival, and habitat fitness potential at the core area/home range scales?
3. What are the associations among landscape fuels treatments and CSO habitat use and home range configuration at the core area/home range scale?
4. What is the population trend of CSO in the northern Sierra Nevada and which factors account for variation in population trend?

5. Are barred owls increasing in the northern Sierra Nevada, what factors are associated with their distribution and abundance, and are they associated with reduced CSO territory occupancy?

6. Does West Nile Virus affect the survival, distribution and abundance of California spotted owls in the study area?

Current information on the distribution and density of CSOs across the HFQLG study area is required to provide the data necessary to build predictive habitat models and provide baseline population information to assess post-treatment changes in CSO populations and habitat. The focus in 2005 was to complete collection of CSO surveys and continue banding to provide the required baseline information to meet the objectives of Research Questions 1-4 identified above. Complete landscape inventory surveys were conducted across 11 survey areas in 2005. Details on survey methods are described in the study plan. Efforts were made to monitor the pair and reproductive status of each owl, and to capture, uniquely color-mark, and collect blood samples from each individual owl. Capture and color-marking is necessary to estimate survival and population trend, and to assess exposure to West Nile Virus (WNV)(Research Question #6). All barred and hybrid barred-spotted owls encountered in the study area were recorded and synthesized into existing barred owl records for the northern Sierra Nevada to address Research Question #5.

CSO Numbers, Reproductive Success, and Density: A total of 103 territorial CSO sites were documented in 2005 across the study area. This total consisted of 76 confirmed pairs, 17 unconfirmed pairs (i.e., one member of pair confirmed as territorial single plus single detection of opposite sex bird), and ten territorial single CSOs (single owl detected multiple times with no pair-mate detected). Seventeen pairs successfully reproduced in 2005 (22 percent of confirmed pairs). A total of 26 fledged young were documented (1.53 young per successful nest).

The crude density of CSOs was estimated based on the number of territorial owls detected in each of the 11 survey areas during 2005 surveys at the Treatment Unit and Cal-Planning Watershed spatial scales. The estimated crude density across the study area was 0.068 territorial owls/km^2. Estimated mean crude density across 60 CAL-Planning Watersheds that were completely surveyed was 0.070 territorial owls/km^2.

Vegetation Sampling – Nest Plots: Vegetation plots were measured at 80 CSO nest territories in 2005. Vegetation plots were centered on CSO nest trees and were measured using the national Forest and Inventory Assessment (FIA) protocol. The FIA protocol is used nationally by the USDA Forest Service for inventorying and monitoring vegetation. Use of the FIA sampling protocol will facilitate monitoring of vegetation and development of CSO habitat models that can be used as adaptive management planning tools. Habitat models are currently being evaluated that can be used to assess projected changes in CSO nesting habitat suitability under varying fuels and vegetation treatment scenarios.

Banding, Blood Sampling, West Nile Virus (WNV) Monitoring: Eighty-three owls were captured and banded in 2005. This included 50 new CSOs (i.e., owls banded for the first time)

and 33 recaptures. Blood samples were collected from 76 individuals and screened at the University of California, Davis, for WNV antibodies. None of the 76 individuals tested positive for WNV antibodies in 2005.

Barred and Sparred (spotted/barred hybrid) Distributional Records: The presence of one barred owl and three sparred owls was detected during 2005 surveys within the overall study area. Synthesis and update of barred-sparred owl records through 2005 based on Forest Service and California Department of Fish and Game databases indicates that there are a minimum of 33 individual site records across the northern Sierra Nevada. The first barred owl in the region was reported in 1989. Twenty-one of the 33 site-records were recorded and known occupied between 2002 and 2005. The pattern of records suggests that barred/sparred owls have been increasing in the northern Sierra Nevada between 1989 and 2005.

California Spotted Owl Diet: A single survey plot was established at a CSO nest or roost location at each CSO territory on the Plumas National Forest in 2003-2005. Systematic searches for pellets and prey remains were conducted in each plot during each year. A total of 2,256 pellets have been collected over the three years (606 in 2003; 812 in 2004; 838 in 2005). To date, 1,418 pellets have been sorted and all prey items identified to species or taxonomic group when species identification could not be ascertained. Mammals comprised the dominant taxonomic group identified in the diet. The three most frequently detected species were the dusky-footed wood rat (detected in 43 percent of pellets), northern flying squirrel (detected in 39 percent of pellets), and *Peromyscus* species (detected in 27 percent of pellets).

Current Research: In addition to continuing field surveys in 2006 designed to address our six research questions, emphasis will broaden to focus on the development of predictive habitat relationship models as described in the module study plan. Baseline information collected in 2002-2005 forms the foundation for this phase of the research. These models should be completed in Winter 2005-2006. The scope of the study is being expanded to fully collaborate and integrate our work with the ongoing Lassen Demographic study. This collaboration and integration will broaden the base of CSO distributional and demographic information that can be used to develop predictive habitat models for our use in an adaptive management framework and to directly monitor implementation of the HFQLG project.

Forest Carnivores

Question 15: Is there a change in forest carnivore habitat or forest carnivore abundance and distribution?

The monitoring plan states that monitoring will be completed to review project effects on marten distribution and abundance. An initial investigation in 2001 provided limited data on the location and abundance of marten within the Project Area. Further, local data strongly suggests that marten abundance is highly variable across the Project Area and further more is much more abundant on the Lassen than the Plumas National Forest.

The monitoring proposal was based on the presumption that marten were fairly evenly distributed throughout the HFQLG Project Area and that monitoring selected sites would provide a reasonable prediction of changes in distribution and abundance across the Project Area.

However, since there is a high degree of variability in marten abundance between project areas, there is no reasonable method of ascertaining the impacts to distribution and abundance through the monitoring program as proposed. Predictions of effects are better left to the project level analysis.

Additionally, marten are being monitored throughout the Sierra Nevada bioregion and that data may be useful in detecting changes at the province level. This question is being removed from the monitoring plan.

Landbird Surveys

Question 16: How do selected vertebrate species respond to resource management activities?

Migratory birds and deer were selected for monitoring to address this question. Monitoring of migratory birds is being completed for a number of vegetation types that may be affected by projects completed as part of the Pilot Project. Deer monitoring will be completed at the project level.

Resource management activities, in general, are not expected to have measurable impacts on deer. Use of a given area is likely to be highly variable and a number of factors, such as predation, available forage, and disturbance can influence use. It would be impossible to separate out the effects of resource management activities from other cumulative effects such as natural population dynamics or changes in migratory patterns.

Avian Monitoring: This monitoring assesses the impacts that HFQLG projects may have on avian species; particularly those commonly described as migratory landbirds. The monitoring program was begun in the summer of 2000 and consists of pre- and post- project monitoring in three broad vegetation types: meadow/riparian, shrub fields and conifer communities. These vegetation communities were selected as they represent the communities most likely to be affected by project activities, including DFPZ construction, GS, thinnings or watershed restoration. The program is being accomplished through a Challenge Cost Share (CCS) with PRBO Conservation Science (formerly Point Reyes Bird Observatory). This a summary of the findings provided in the year-end reports completed as part of the CCS.

All monitoring related to the Plan has occurred within the Lassen National Forest. The majority of the monitoring has taken place on Almanor Ranger District (ALRD). As of 2003, the data collected within the proposed DFPZ network is also being utilized as part of the Plumas Lassen Administrative Study (PLAS), being conducted primarily on the Plumas National Forest. In 2004, monitoring of an aspen enhancement project began on the Eagle Lake Ranger District (ELRD). The ELRD data is not part of the monitoring covered under the Plan, but is provided here as the data is relevant to work being completed across the HFQLG Project Area.

The monitoring program utilizes several methods to assess overall impacts, including banding (to assess survivorship and species diversity) and point counts (to measure species richness and abundance). To date, the data collected is derived from pre-treatment monitoring. Only one project (aspen enhancement) has been implemented and the data collected to date is preliminary. This summary will review the findings to date for each vegetation type being sampled.

The following discussion refers to abundance, richness, and diversity. These terms are defined as follows:

- Abundance: The mean (indexed) number of individuals detected per station per visit. The number is obtained by dividing the total number of detections within 50 meters of the census point (station) by the number of stations and number of visits.
- Richness: The mean number of species detected within 50 meters of each point averaged across visits.
- Diversity: The mean number of species detected within 50 meters (richness) weighted by the mean number of individuals of each species. A high diversity score indicates high species diversity.

Areas may naturally have high abundance and richness but low diversity or high diversity and low abundance. An important site will have comparatively higher averages in all three areas. Managers must consider the habitat and interpret the desired condition as well as the realistic potential for each site.

Meadow/Riparian Communities: Riparian and meadow communities have long been noted as having a high avian species diversity and richness due to the vegetative complexity associated with these communities. Monitoring has been completed on 45 (untreated) sites within the Almanor Ranger District, including point counts and mist netting, and 20 sites (both treated and untreated sites) on the ELRD.

The data collected from ELRD is both pre- and immediate post-treatment. Deducing effects is slightly premature, as data collection closely followed treatment and activities associated with implementation may have some affects that have not been realized. Future monitoring (2005 and beyond) should provide a more accurate assessment of project effects.

Shrub Lands: Productivity within shrubs has been monitored for three years (2002-2004). These habitats include typical shrub fields, as well as very open conifer stands that have a well-developed shrub component. While some species may not nest in the shrubs exclusively, such as the dusky flycatcher, shrubs provide valuable forage areas.

Conifer Communities: Monitoring within conifer communities was begun in Treatment Unit 1 (ALRD) as outlined in the initial phase of the PLAS. As of 2004, 73 points have been established within the Creeks project area (currently being planned for implementation in 2006). The monitoring includes sampling vegetation, as well as determining species diversity, richness and abundance.

Summary: Not surprisingly, meadow/riparian areas have the highest species diversity and richness. Abundance and richness within shrub-dominated areas are comparable to forest environs however the most common species are generally different.

Post-treatment monitoring in all habitat types are expected to commence in 2006.

Watershed Condition

Question 17: What is the effect of activities on indicators of watershed condition?

This relies on the Equivalent Roaded Acre (ERA) methodology of Region 5. The ERA model applies coefficients to land disturbing activities as surrogates to represent the hydrologic effect

of a road. Typically values of 12-15 percent are considered a level of disturbance that represents a threshold of concern and alerts managers to increased risk of cumulative watershed effects. This question focuses on the number and location of roads within watersheds. Near-stream roads generate more effects and are tracked as a separate category.

Some level of activity has been documented in 48 projects. The data supplied by the districts for tracking of this question is incomplete and cannot fully characterize the situation.

Road miles within a watershed, road miles within proximity of stream channels, and number of stream crossings were inventoried and compared pre- and post-project. Roads have the most direct and greatest magnitude of effect on water quality. They can generate sediment that is often times transported directly to streams. That is why the proximity of roads near drainages, and the number of times roads cross streams, can provide some perspective on the likelihood that sedimentation will occur.

Table 35. Summary of Change in Watershed Indicators

	Miles of road in Watersheds	Miles of road in RHCA	Number of stream crossings
Increase over pre-treatment condition	43.8	3.4	75
Decrease over pre-treatment	-71.2	-9.3	-118
Net Change over Pilot Project	-27.4	-5.9	-43

Current data indicates the Pilot Project is reducing the likelihood the roads will have a direct effect on water quality. Approximately 43.8 miles of road was added to the system and 71.2 miles were either decommissioned or are scheduled to be. Twice as many roads occupying a near stream location have been removed as have been added. About 57 percent more stream crossings have been removed than added. This may have a short-term flush of sediment as the removal occurs, but lowers the risk of future impacts when storm effects occur.

Trends in Channel Conditions, Riparian Attributes and Macroinvertebrates in Sub-watersheds with High Concentrations of HFQLG Activities

Question 18: How do stream attributes (channel, riparian, macroinvertebrates) change over time?

Question 19: What is the trend in channel and riparian attributes and macroinvertebrates in sub-watersheds with the highest concentration of HFQLG activities?

In 2005, data was collected from 22 streams. Data collected are discussed in this summary. The report reviews year-to-year variation in reference streams, pre-and post project comparisons from four projects, and sample variation from one reach where measurements were collected on two occasions.

Methods: Stream reach data is collected, including channel morphology, fish habitat and water quality. Stream reaches are of two types. The first are reference reaches to assess a range in variation of the attributes over time due to natural events. The second are meant to compare

conditions before and after implementation of HFQLG project activities. These reaches are selected by watershed and aquatic resource specialists on each unit, with a focus on selecting reaches in watersheds with higher concentrations of HFQLG activities.

Macroinvertebrate Samples: Macroinvertebrate sample data is not yet available from the Aquatic Ecosystems Laboratory. The absence of this data precludes a complete evaluation of results, especially in regards to impacts of activities on water quality. This information will be added to the overall monitoring report when it becomes available.

Reference Streams: A task group reviewed reference stream data and rated the amount of change, and the relative "condition" of each watershed, relative to comparable watersheds. The larger group reviewed these ratings, and provided additional information on the amount of disturbance in the subject watersheds. Based on this evaluation, the list of reference streams was revised. A total of 31 streams were considered references in 2004 (some streams had already been dropped as reference from the original HFQLG Monitoring Plan, due to ownership, access problems and fires). From this list, 16 were retained. An additional ten sites were identified and added to the list, resulting in a revised list of 26 reference streams. Streams were added to the list to provide for comparison of underrepresented stream types: notably, low gradient streams on the east side of the project area. The lack of streams of this type also explains why some streams that are the site of treatments remain as references.

New references were sampled at a high rate in 2005, so that a repeat sample can be obtained from each stream before completion of the HFQLG Project.

Pre-Post Project Comparisons: Comparison of evaluations made prior to, and after, implementation of HFQLG projects is consistent in that no major changes are evident in any of the projects monitored.

Recommendations: Review and share monitoring results across Pilot Project forests to assess effects of future implementation.

Water Yield and Soil Moisture Characteristics

Question 20: What is the effect of the proposed treatments on A) modeled water yield and B) soil moisture characteristics?

The Pilot Project has contracted for the development of a water yield model. It is expected to finalized in the spring of 2006. It will use a GIS platform for analysis that will be comprised of data supplied by the various Forests in the Project Area. This data set consists of a layer describing vegetation (species composition, basal area), as well as other land types. Also included is a topographic layer that allows determination of the aspect, elevation and slope of every vegetation polygon. These layers will be intersected with the climate map to obtain a precipitation estimate entering each vegetation polygon. From this a simulated baseline stream flow for the project area will be developed. Watershed boundary layers will partition baseline watershed response by watershed. A data layer will identify the treatment areas, past (1999-2005) and future (2005-2009). These polygons will be intersected with the baseline layers to estimate flow change. The current database is much improved. Given this data, the WRENSS Hydrologic

Model (Troendle and Leaf, 1980) will be used to simulate baseline stream flow conditions for the entire Project Area, as well as treatment effects, both past and future, on water yield. An analysis similar to that done by Troendle et al. (2003) will be performed in assessing the effects of National Forest System forest management activities on water yield from the North Platte River (available at http://fsfc1.sc.egov.usda.gov/IMI_WWW/IMI/Watershed_Projects.asp).

Soil moisture has been sampled at treatment units within selected subwatersheds. Samples were collected both pre-treatment and post-treatment, within and outside of units. Values within and outside of treatment units have shown no difference in the amount of available water. At both the Poison/Last Chance site and the Prattville site, the average available water was the same regardless of whether the site was within a thinned unit or from a corresponding control. The absolute values were higher in the post-treatment sampling, +3-4 percent for the Poison/ Last Chance site and +8-9 percent for the Prattville site. This indicates a higher level of soil moisture across the board for the sampling year, without a difference between treatment versus no treatment.

Amphibian Persistence

Question 22: Do amphibians persist at currently occupied sites?

Survey methods are described in the California Academy of Sciences (CAS) summary project report. Surveys were conducted by the field crew (consisting of one to two individuals) slowly walking along the edges of watercourses or through meadows and woodlands searching all suitable habitats for amphibians of any life stage. Surveys were conducted primarily during the day. Data was recorded for all sites visited.

Survey Results: At 15 of the 33 monitoring sites inventoried in 2005, at least one of the three Forest Sensitive frog species was found. Sites occupied by sensitive frog species included 12 streams, two lakes, and one river. Of the 15 monitoring sites with positive frog sightings, eight were comprised of foothill yellow-legged populations, four were mountain yellow-legged populations, and three were Cascades frogs.

Recommendations: Findings from the 2005 monitoring served as basis for recommending survey locations for future monitoring. These recommendations are based on the presence/ absence of Forest Sensitive frog species and availability of suitable habitat.

Fire Trends, Severity and Effects Status and Suggestions

Question 23: What is the trend in large fire frequency?

There is not sufficient information at this time to determine a trend. All fires greater than 10 acres are documented on a GIS layer that is updated annually.

Question 24: What is the trend in severity of large fires on acres burned?

During the implementation of the Act there haven't been enough large fires to measure a trend in severity on acres burned. During 2005, no large fires occurred within the Pilot Project area for monitoring.

Question 25: What is the effect of treatments on fire behavior and suppression?

Within the Pilot Project area, there are three fires that fire behavior analysts evaluated for the effect of fuels treatments on fire behavior. Even though these fires burned in projects that were designed prior to Pilot Project implementation, the design of the DFPZs are similar to those designed under the Act. These have been studied and information from them has been incorporated in previous Annual Status Reports to Congress. This data indicates that these treatments can be effective in reducing fire behavior intensity and supporting suppression activity.

Question 26: Do prescribed fire activities meet air quality standards?

The objective is to meet provisions of the SMP and air quality standards. The monitoring protocol is to assess adherence to SMP provisions for all burns and utilize data from Air Quality Management District (AQMD) recorders and/or portable recorders to assess impacts to air quality at receptor sites. In October of 2005 the stationary AQMD monitor in Quincy exceeded the State PM10 24 hour standard one day by 1 point. An AQMD monitor in Susanville may have exceeded the standard, however 24-hour readings were unavailable to confirm this.

Question 27: Do prescribed fires create a nuisance in terms of air quality?

The objective of this monitoring question is to limit or reduce the number of prescribed burns discontinued due to complaints. The monitoring protocol is to log the number of complaints (date, time, telephone number, address and type of impact) and track the number of projects discontinued due to complaints about air quality resulting from prescribed burns.

Approximately 14,300 acres in HFQLG projects were burned in 2005 and 16 complaints were filed. The six ranger districts that conducted burning in HFQLG projects, reported a total of 210 days of burning. This number of burn days however is overstated, because it was reported as number of days per project, and it is common to be burning on a number of different projects on one day.

In 2005 there was a significant increase in the number of days smoke impacted communities and the number of complaints received from previous years of implementing the HFQLG Pilot Project. There was also a 25 percent increase in the number of acres burned and number of days that burning took place. Approximately half of the smoke complaints received this year were during a two to three day period in the fall when conditions were ideal for prescribed burning.

Efforts are being made to minimize future smoke impacts.

TES Plant Species and Noxious Weeds

Question 28: How do TES plant species respond to resource management activities?

Only the Mt. Hough and Beckwourth Ranger Districts had units that had TES species and had been treated through 2002 and were available to answer the question, “How do TES plant species respond to resource management activities?” Several responses by various sensitive and special interest plant species were recorded.

A separate pool of 30 units was established to answer the question, “Did new occurrences of TES plant species occur during or following project implementation?” Nineteen of the 30 units

planned for monitoring were completed. Some units shown as harvested in 2002 were harvested during the summer of 2005 on the Lassen National Forest, and others could not be located or were not yet harvested. No TES species were found, but one special interest species was located in two units on the Lassen National Forest that were unknown prior to treatment.

Recommendations: Pre-treatment plot data or population data is necessary before effectiveness monitoring is useful. It was not possible to determine effects of the project on TES species where pre-treatment population information and plot data was lacking. Several species monitored are not listed below because monitoring results were inconclusive. Notice that the term "appears" is commonly used in the short summaries below, to indicate that our best professional interpretation of the scant available data was conducted, but where good plot data was not available. A strategy for better effectiveness monitoring needs to be established.

The following short summaries were taken from more extensive field form notes.

Arabis constancei does not appear to be impacted by hand thinning. There is some evidence that spring burning may be beneficial to this species (Spanish Camp Unit PL1), except directly under burn piles where burning piles clearly eliminated the species.

Astragalus lentiformis does not appear to be negatively impacted by hand thinning.

Astragalus pulsiferae var. *suksdorfii* appears to decline after tractor yarding and tree harvest. Hand thinning and pile burning on scabland habitats has little impact because there is little actual treatment on this habitat type. Flag and avoidance appears to be an effective short-term management strategy for this species.

Cypripedium fasciculatum and *Cypripedium montanum* both showed immediate declines after a light spring burn, but have since recovered to near pre-treatment levels (Spanish Camp unit S1). Without better control data, this response may not be showing a response to the fire, but to some other variable, as both species are known to vary in above ground emergence between years.

Erigeron petrophilus variety *sierrensis* appears robust and healthy after hand thinning and burning piles.

Monardella follettii does not appear to be impacted by hand thinning.

Penstemon personatus shows a beneficial response to hand thinning and pile burning (Waters Unit 29/29d), although the plot data was limited.

Trifolium lemmonii appears to be capable of withstanding the effects of prescribed fire during spring burning conditions. It also appears capable of surviving through tractor harvest activities.

Question 29: Were existing infestations of noxious weeds eliminated or contained?

Question 30: Were all new infestations of noxious weeds eliminated or did some become established?

It appears that essentially all noxious weed occurrences were eliminated or contained. However, new Musk Thistle occurred in Skippy unit 71.

Recommendation: Continue aggressive treatment in musk thistle and Dalmatian toadflax populations to limit the spread.

Question 31: Did new infestations of noxious weeds occur during or following project activities?

Although 30 units were planned for monitoring, only 19 units were reviewed in the field. Some units could not be located, and some sites were not harvested until August of 2005. District workloads prevented other unit monitoring accomplishment. There were new weed occurrences that entered into the units after treatment. Out of 13 GS units that were surveyed on the Lassen National Forest, nine were found to have seedlings and mature plants of bull thistle (*Cirsium vulgare*), a C-rated weed in California. This weed commonly moves into forest areas where the soil has been disturbed and the canopy thinned or removed. In addition to bull thistle, some units had other non-listed weeds, such as bindweed (*Convolvulus arvensis*), mullein (*Verbascum thapsus*), and false salsify (*Tragopogon dubius*). Because the surrounding forest was devoid of these weeds, it was assumed that these species moved into the forest clearings after treatment.

Where Timber Stand Structure Monitoring plot data was evaluated, no plots within DFPZ treatment units had any listed noxious weeds.

Recommendation: Continue monitoring for bull thistle invation in GS forest openings. Continue monitoring DFPZ treatments, landing areas and areas of greater soil disturbance for noxious weeds. Continue equipment cleaning to prevent new noxious weed occurrences.

Monitoring Report Availability

The entire Pilot Project Monitoring Report addressing the topic-specific questions will be made available online at www.fs.fed.us/r5/hfqlg following finalization of this report to Congress. Printed copies or CDs of these documents will be available upon request by contacting the Team at (530) 283-2050.

Environmental Impacts

The HFQLG Pilot Project seeks to improve environmental health with prescribed silviculture treatments and riparian restoration projects. The HFQLG Monitoring Plan provides guidance for identifying and monitoring any adverse environmental impacts caused by HFQLG projects. Section (j)(1)(G) of the HFQLG Act requires:

(G) A Description of any adverse environmental impacts from the pilot project.

Adverse Environmental Impacts

There were items that need to be addressed and evaluated for adaptive management strategies.

1) Do prescribed fires create a nuisance in terms of air quality?

In 2005 there were was an increase in the number of days smoke impacted communities and the number of complaints received from previous years of implementing the HFQLG Pilot Project. There was also a 25 percent increase in the number of acres burned and number of days that burning took place. Approximately half of the smoke complaints received this year were during a two to three day period in the fall when conditions were ideal for prescribed burning. A strategy for interagency coordination for prescribed burning has been developed to avoid smoke incursions in target areas by coordinating with surrounding airsheds and agencies.

2) Do activities meet soil quality standards?

Preliminary data indicates that soil compaction is exceeding the current threshold levels in several treatment areas. Legacy compaction is also a factor on HFQLG area forests.

Cumulatively, 27 of 40 units sampled post-treatment exceed the threshold for detrimental compaction. Three additional units were nearing threshold with 13 or 14 percent detrimental compaction.

The Pilot Project forests, along with a Soils Task Group, will be reviewing soil quality standards, monitoring and operational parameters to take actions to ensure that soil quality standards are met.

3) Are BMPs implemented during project activities and are they effective in meeting site objectives?

BMPs are implemented during project activities. However, monitoring results are mixed and will be reviewed by a Watershed Task Group for consistency and accuracy. Based on results from that review, protocols and training will be developed to ensure adequate implementation and effectiveness of BMPs.