

**Herger-Feinstein Quincy Library Group
Forest Recovery Act:**

Fiscal Year 1999 Status Report

Executive Summary

The Fiscal Year 1999 Status Report fulfills one requirement of the *Herger-Feinstein Quincy Library Group Forest Recovery Act* (Act), signed by President Clinton on October 21, 1998. The Act requires implementation of a pilot project, after completion of an environmental impact statement (EIS) and Record of Decision (ROD) within 300 days. The purpose of the pilot project is "to implement and demonstrate the effectiveness of the resource management activities described (in the Act), as recommended in the *Quincy Library Group - Community Stability Proposal*."

The program of work in fiscal year 1999 (FY99) centered on completion of the EIS. The ROD for the EIS was signed August 20, 1999. Alternative 2 was selected, with mitigation to defer vegetation manipulation in suitable California spotted owl habitat until a new owl habitat management strategy for the Sierra Nevada is released. 15 individuals or groups appealed the decision and 12 of these appeals were considered timely. A decision on the appeals is expected by the end of March 2000.

This status report, required under subsection (j) of the Act, reports pilot project status in seven areas:

- Accounting for funding through life of pilot project.
- Accounting for funding for previous fiscal year: FY99 was the first fiscal year for the Act. \$8 million was earmarked by Congress, of which approximately \$2 million was expended developing the required EIS. Approximately \$6 million was carried over into FY00 for accomplishing resource management activities.
- Description of total acres treated: No acres attributable to the pilot project were treated in FY99, although vegetation management and riparian restoration activities totaling 8,236 acres were accomplished in the pilot project area, utilizing FY99 non-HFQLG funding.
- Description of economic benefits to local communities: The Center for Economic Development, Chico, CA was contracted to analyze the economic impact of FY99 spending for the Act. \$1.94 million was spent, of which \$1.63 million was spent in the Core Region of Lassen, Plumas, and Sierra Counties. Adding indirect spending within the Core Region (over \$661,000) yields an estimated increase of \$2.29 million in economic output in the Core Region, due to the first year of implementation of the Act.
- Comparison of revenues generated and costs incurred in resource management activities implemented versus timber management activities in FY92 - FY97: No pilot project resource management activities occurred in FY99, but data from FY92 - FY97 is displayed for future comparisons.

- Proposed schedule of resource management activities to be undertaken in the next year (FY00): Current funding for FY00 is \$6.2 million of appropriated funding, and \$6.0 million of FY99 carryover. The EIS projected costs of \$31 million per year for full implementation of Alternative 2. With the \$12.2 million budget, the FY00 program of work includes 19,320 acres of defensible fuel profile zones, 524 acres of group selection, and 2,414 acres of individual tree selection. Additionally, 25,500 acres of proposed FY01 projects will be planned in FY00.

The FY00 riparian management program includes three improvement projects and nine planning efforts for future implementation.

- Description of adverse environmental impacts from the pilot project: There were no pilot project resource management activities in FY99, and there were no adverse effects. In FY00, a monitoring plan is being finalized for reporting results of implementation and effectiveness monitoring of the pilot project activities.

Table of Contents

Introduction

Status of Implementation of the HFQLG Pilot Project

Expenditures

Management Activities

Local Economic Benefits

Revenues and Costs of Timber Management Activities

Proposed Resource Management Activities

Environmental Impacts

Appendices

Appendix A - Regional Economic Impacts of the Herger-Feinstein Quincy
Library Group Forest Recovery Act

Appendix B - Revenues, Costs, and Outputs of Timber Management
Activities on the HFQLG Pilot Project Area Fiscal Year 1992 – Fiscal Year
1997

Appendix C - Proposed Plan of Work for Fiscal Year 2000

Fiscal Year 2000 Program of Work – Current Funding
Fiscal Year 2000 Out Year Planning
Fiscal Year 2000 Projects Mapped

1.0 Introduction

The *Herger-Feinstein Quincy Library Group Forest Recovery Act of October 21, 1998* (Act)¹, was enacted to develop a resource management program promoting ecological health on certain Federal lands and economic health for communities in the Sierra Nevada of northern California. The Act requires the Secretary of Agriculture (Secretary) to conduct a pilot project on lands managed by the Forest Service for a period of up to 5 years from initiation of the pilot project. The Act also requires the Secretary to annually submit a report to Congress, during the term of the pilot project, on the status of the pilot project.² This is the first annual report. It covers the period from just prior to signing of the Act, or October 1, 1998, to September 30, 1999, the end of fiscal year 1999 (FY99).

The Act required completion of an environmental impact statement within the first 300 days of enactment. The EIS is complete. The Record of Decision (ROD) was signed August 20, 1999. The EIS documents the results of environmental analysis of alternative management strategies to demonstrate and test the effectiveness of resource management activities described in the Act to meet ecologic, economic, and fuel reduction objectives. The ROD amended the *Land and Resource Management Plans* on the Lassen, Plumas, and Sierraville Ranger District of the Tahoe National Forests.

When the appeal period ended on October 18, 1999, 15 persons and/or groups had appealed the ROD. Three of the appeals were considered not timely and were dismissed. The 12 appeals are in the appeal review process. The Regional Forester's decisions on the appeals will be issued no later than March 31, 2000.

1.1 Status of Implementation of the HFQLG Pilot Project

The Act necessitates the following elements to be included in the annual status report. These are individually reported as follows:

(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 previous fiscal years, including a schedule of the amounts drawn from each account used to perform resource management activities described in subsection (d).

(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

¹ The italicized sections in this report are excerpts from the Act to which this report is responding.

²Title IV, Section 401 (j)

yield increases, and other natural resource-related benefits achieved by the implementation of the resource management activities described in subsection (d).

(D) A description of the economic benefits to local communities achieved by the implementation of the pilot project.

(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.

(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.

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

For this report, the elements are grouped into expenditures, accomplishments, community benefits, outputs and projections related to activities authorized by the ROD.

1.1.1 Expenditures

The Act requires:

(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 previous fiscal years, including a schedule of the amounts drawn from each account used to perform resource management activities described in subsection (d).

This is the first status report since the signing of the Act in October 1998. For this report, Title IV, Section 401 (j)(1)(B) is not applicable.

Congress earmarked funds totaling \$8 million in the FY99 budget to implement the Act. The \$8 million includes \$5 million from National Forest Timber Management (NFTM) and \$3 million from Wild Fire Hazardous Fuels Reduction (WFHF). Approximately \$2.0 million was spent in FY99 from the NFTM fund completing the FEIS and developing the draft-monitoring plan.

The fiscal year 2000 (FY00) budget includes \$6 million of carry over funds from the Congressionally earmarked FY99 (approximately \$3.0 million from NFTM and \$3

million from WFHF) and \$6.2 million in FY00 base funding appropriations totaling \$12.2 million. These funds are available for implementation of the Act.

Table 1.1 HFQLG Fiscal Year 1999 Funding
(Thousands \$)

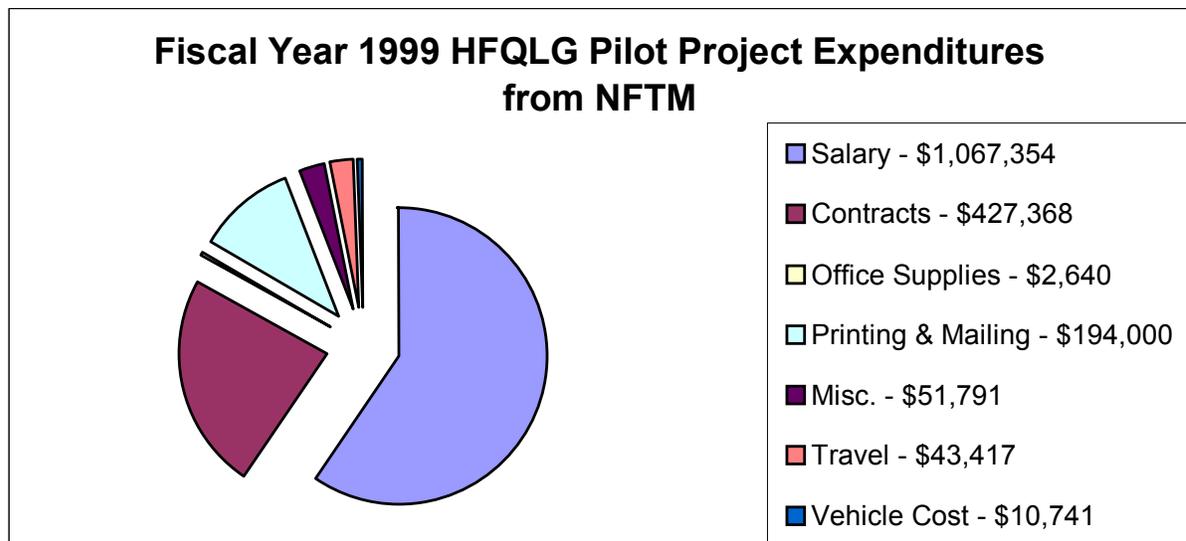
FY99 Actual	FY99 Expenditures	FY99 Carryover
\$8,000	\$2,000	\$6,000

Table 1.2 HFQLG Fiscal Year 2000 Funding
(Thousands \$)

FY99 Carryover	FY00 Enacted	FY00 Available for Project
\$6,000	\$6,200	\$12,200

Figure 1.1 displays expenditures totaling \$1,943,918 from the signing of the Act through FY99, ending on September 30, 1999³.

Figure 1.1 Fiscal Year 1999 Direct Costs for Development of the EIS



³ In FY99, the 12% indirect costs (overhead) was not assessed against funds allocated for development of the EIS.

Planning and site specific environmental analysis of projects began immediately following the ROD. Projects implementing the Act will begin on the ground this year.

1.1.2 Management Activities

The Act requires, (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 increases, and other natural resource-related benefits achieved by the implementation of the resource management activities described in subsection (d).*

The resource management activities described in Title IV, Section 401 (d) include: fuelbreak construction, group selection and individual tree selection, and riparian management. Before any of the described types of projects can begin, site-specific analysis in accordance with the National Environmental Protection Act (NEPA) and project planning must be completed. As of September 30, 1999, the end of the first status reporting period, no on the ground activities have been implemented.

Activities similar to those described in the Act did occur in the pilot project area during FY99. These were not “pilot project activities”, since they were not funded through the Act. Table 1.3 summarizes the type of activities, volumes, and acres accomplished.

Table 1.3 Fiscal Year 1999 Accomplishments Within the Pilot Project Area Using “Base” Funding

Timber Sales Volume - CCF		Timber Stand Improvement Volume - CCF		Riparian Improvement Projects Acres	Silviculture Harvest Method	Timber Sales Acres		Timber Stand Improvement Acres		Total Program Costs Thousands
Offered	Awarded	Offered	Awarded			Offered	Awarded*	Offered	Awarded	
154,743	202,985*	18,251	18,251	551	DFPZ	100	100			\$11,681
					Group Selection	97	97			
					Thinning	10,574	13,010*	3,479	4,209*	
					Sanitation/Salvage	3,336	3,476*			

* Volume and acres offered in FY98 and awarded in FY99 are included in these figures.

1.1.3 Local Economic Benefits

The Act requires, (D) *A description of the economic benefits to local communities achieved by the implementation of the pilot project.*

The Center for Economic Development, Chico, CA, was contracted to analyze the economic impact of FY99 spending for the Act on the local economy. The findings noted that spending for the pilot project did not actually begin until December 1998. Very little was spent before January 1999. Therefore, this study actually covers the impact of spending for nine months of the year. The report in its entirety is attached as Appendix A. A summary of the report follows:

Approximately \$1.94 million was spent from funds allocated for implementation of the Act in FY99. Approximately \$1.63 million was spent in Lassen, Plumas, and Sierra Counties, the Core Region of the pilot project area. This money was spent in the form of payroll, travel reimbursements, purchases from local vendors, and payments to consultants for purchases or services provided for the Act EIS and monitoring plan. The remaining \$310,000 was spent on travel reimbursements, purchases from businesses, and payments of consultants located outside of the Core Region.

It is estimated some of the approximate \$1.63 million spent in the Core Region was re-spent in the Core Region and a portion of that re-spent again. Indirect spending in the Core Region totaled over \$661,000. The result totals approximately \$2.29 million in economic activity output due to the first fiscal year of implementation of the Act.

In addition, the Act directly supported 35 jobs in the local economy in FY99. Estimated economic impacts in the Core Region led to an estimated additional eleven jobs either created or preserved for a total employment impact of 46 jobs that were either created or preserved in the local economy.

Therefore, of the federal government's original \$1.94 million invested in Lassen, Plumas, and Sierra Counties, to implement the Act in FY99, this Core Region experienced an estimated \$2.29 million in increased economic output.

1.1.4 Revenues and Costs of Timber Management Activities

The 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.

Figure 1.2 displays a summary of data from total revenues and costs for implementation of timber management activities in the pilot project area from FY92-FY97. Table 1.4 represents a summary of total revenues, costs and the outputs of acres and volume for the timber management activities during the same period of FY92-FY97. A further display of this same information divided by each Forest in the pilot project area is located in Appendix B.

It is premature to review revenues and costs associated with on the ground implementation of pilot project activities for FY99 because no implementation of vegetation management pilot project activities could occur prior to completion of the FEIS and ROD, and the completion of site-specific NEPA analysis of these projects.

Figure 1.2 Total Revenues and Costs of Timber Management Activities in the Pilot Project Area During FY92-FY97

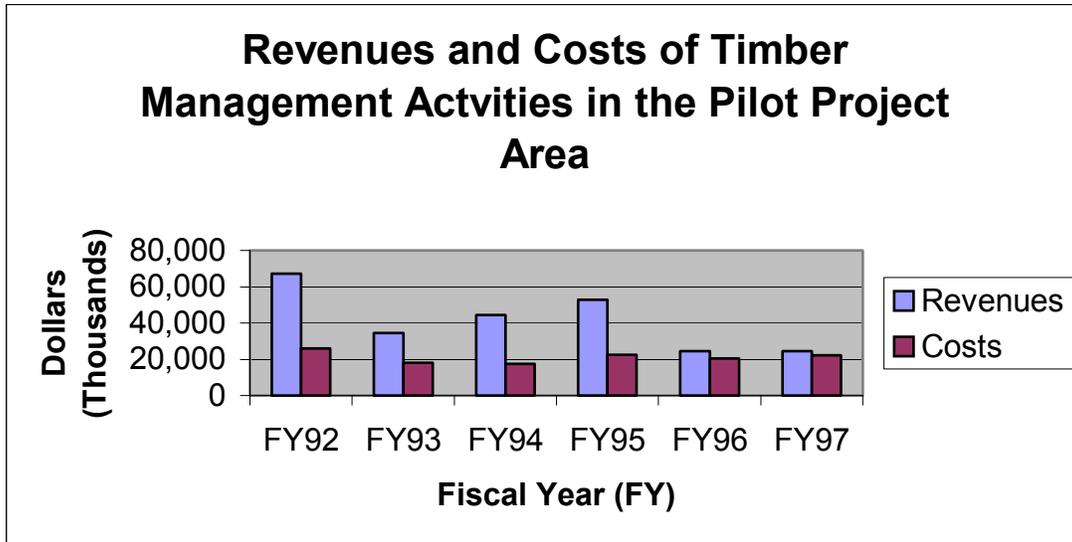


Table 1.4 Comparison of Revenues and Costs of Timber Management Activities from FY92-FY97 on Pilot Project Area Lands

	FY92	FY93	FY94	FY95	FY96	FY97
Revenues (Thousand \$)	67,187	34,408	44,501	52,873	24,590	24,465
Expenses (Thousand \$)	25,856	18,194	17,376	22,596	20,490	22,207
ACTIVITIES:						
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
Volume Offered - CCF ⁴	426,000	424,000	375,000	555,200	374,200	383,000
(MBF)	(213,400)	(212,000)	(187,500)	(277,600)	(187,100)	(191,500)
Volume Sold & Awarded - CCF	329,400	535,200	332,600	316,400	242,600	353,400
(MBF)	(164,700)	(267,600)	(166,300)	(158,200)	(121,300)	(176,700)
Total Area Harvested (Acres)	55,689	70,885	57,922	47,317	38,917	32,223

1.1.5 Proposed Resource Management Activities

The 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.

⁴ The conversion factor used for this report: 1 MBF = 2 CCF

The program of work developed for FY00 includes planning and implementation of the resource management activities of the Act at a level commensurate with available funds. The current program of work for FY00 is limited by available funding. The EIS projected a budget of approximately \$31 million per year for full implementation of the selected alternative (Alternative 2). Currently, the available funds for FY00 are \$12.2 million for the pilot project (\$6.2 million appropriated funds for FY00 and carryover funds of \$6.0 million from FY99). Planning and implementation are focused on the requirements to (1) work within the budget, and (2) design and implement defensible fuel profile zones (DFPZ), group selection (GS) harvest areas, and individual tree selection (ITS) harvest areas that are not suitable California spotted owl nesting and foraging habitat, until a new spotted owl habitat management strategy for the Sierra Nevada is released.⁵

Most pilot project activities, for FY00, are being planned on the eastern portion of the pilot project area. The mitigation measures in the ROD result in approximately 30% of the area available for DFPZ and group selection activities being deferred until the new owl habitat management strategy is released. This 30% is located in the western portion of the pilot project area that supports larger and denser stands of trees that are associated with high economic values and owl habitat.

The program of work for FY00 includes planning and implementation of current year projects and project planning for fiscal year 2001 (FY01). There are two parts to the program of work: (1) vegetation management activities, including DFPZ, GS, and ITS, and (2) riparian restoration projects and watershed studies for future restoration projects. In addition to the Act, the Forests' programs of work include timber salvage activities within the pilot project boundaries. The salvage is included in Table 1.10 below.

Vegetation Management Activities

Table 1.5 summarizes the vegetation management proposed work plan for implementation in FY00. It displays estimated acres and estimated volume totals in both hundred cubic feet (CCF) and thousand board feet (MBF) for both sawlogs and Miscellaneous Convertible Products (MCP). Additionally, Table 1.6 displays projects in planning during FY00 for implementation in FY01. A map and proposed plan of work for FY00 are located in Appendix C.

⁵ ROD – pg. 6

Table 1.5 Fiscal Year 2000 Program of Work at Current Funding

Forest	Volume Estimates		Project Type/ Acres		
	Sawlogs CCF (MBF)	MCP* CCF (MBF)	DFPZ	GS	ITS
Tahoe – Sierraville RD	21,500 (10,750)	18,400 (9,200)	2,360	194	1,304
Plumas	10,700 (5,350)	4,500 (2,250)	6,000	300	0
Lassen	23,176 (11,588)	54,311 (27,156)	10,960	30	1,110
Grand Totals	55,376 (27,688)	77,211 (38,606)	19,320	524	2,414

* Miscellaneous Convertible Products

Table 1.6 Fiscal Year 2000 Planning for Fiscal Year 2001 Vegetation Management Activities

Forest	Proposed Treatment Acres	Project Type
Tahoe - Sierraville	5,289	DFPZ/GS/ITS
Plumas	7,100	DFPZ/GS
Lassen	14,606	DFPZ/GS
Totals:	25,506	

Riparian Restoration and Watershed Studies

Several riparian restoration projects are planned for implementation during FY00 throughout the pilot project area. Table 1.7 displays projects to be implemented at the current funding level and Table 1.8 displays watersheds to be studied in FY00, for future riparian restoration implemented in FY01 and beyond.

In addition, other riparian restoration projects are planned for implementation in the pilot project area with funding provided from other sources and agencies. Other sources include funding from the State of California obtained through Proposition 204 and carryover flood damage funds received by the Forest Service in FY97. Table 1.9 displays these projects.

Table 1.7 Fiscal Year 2000 Riparian Restoration Projects at Current Funding

Forest – Ranger District	Projects Ready For Implementation in FY2000	Estimated Cost
Lassen NF – Eagle Lake	Pine Creek	\$10,000
Plumas NF – Feather River	Grizzly Creek	\$10,000
Tahoe NF - Sierraville	Carmen Creek	\$35,000
Totals:		\$55,000

Table 1.8 Fiscal Year 2000 Study Watersheds at Current Funding

Forest – Ranger District	Projects In Planning in FY 2000	Estimated Cost
Lassen NF – Eagle Lake	Susan River	\$16,600
Almanor	Butte Creek	\$16,600
Hat Creek	Horse Creek Watershed – Jack Creek Tributary	\$16,600
Plumas NF – Feather River	Cold Water Creek	\$16,600
Beckwourth	Last Chance Creek	\$5,000
Beckwourth	Red Clover Creek	\$16,600
Mt Hough	Boulder Creek	\$16,600
Tahoe NF - Sierraville	Little Truckee River	\$16,600
Totals:		\$121,200

Table 1.9 Additional Fiscal Year 2000 Riparian Restoration Projects Funded Through Other Sources

Funding Source	Project Name
California Proposition 204	Clarks Creek
California Proposition 204 plus Forest Service Flood Damage Funds	Wolf Creek

Salvage

Salvage activities are planned for implementation during FY00 in the pilot project area. The salvage includes a combination of trees that present safety hazards and trees killed by fire. The proposed volumes for each Forest are displayed below in Table 1.10.

Table 1.10 Fiscal Year 2000 Hazard, Fire and Miscellaneous Salvage Activities.

Forest	Volume Estimates	
	CCF	(MBF)
Tahoe - Sierraville RD - Miscellaneous	5,600	2,800
Plumas - Fire	22,205	11,102
Lassen - Miscellaneous	20,000	10,000
- Fire	2,783	1,392
Totals:	50,588	25,294

1.1.6 Environmental Impacts

The Act requires, (G) *A description of any adverse environmental impacts from the pilot project.*

During the period of this report, no pilot project ground disturbing activities were implemented and no adverse environmental impacts occurred.

In FY00, a monitoring plan is being finalized for reporting results of implementation and effectiveness monitoring of the pilot project activities.

Part (k)(1) of the Act requires an independent scientific panel to convene to review and report on whether, and to what extent, implementation of the pilot project has achieved the goals stated in the Quincy Library Group Community Stability Proposal. That panel will not convene prior to February 20, 2001.

Appendices

Appendix A

Regional Economic Impacts of the Herger-Feinstein Quincy Library Group Forest Recovery Act

Fiscal Year 1999, October 1998 through September 1999

Center for Economic Development
California State University, Chico
Chico, CA 95929-0765
530-898-4598

Dan Ripke	Director
Warren Kyle Jensen	Project Manager
Loren Parks, Ph.D.	Technical Advisor

Summary of Results

Nearly \$2.3 million were introduced into the economy of Lassen, Plumas, and Sierra Counties as a result of work related to the Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG Act) in fiscal year 1999.

Of the over \$1.94 million spent during fiscal year 1999 (funding from December 1998 through September 1999), over \$1.63 million was spent directly in Lassen, Plumas, and Sierra Counties, referred to as the Core Region subject to the HFQLG Act. This direct money was spent in the form of payroll, travel reimbursements, purchases from local vendors, payments to consultants, and reimbursements to other Forest Service budgets for purchases or services related to the HFQLG Act.

Some of the over \$1.63 million spent in the Core Region was respent in the Core Region anywhere from once to several times over. This resulted in an indirect economic impact of over \$661,000 in the Core Region. Total overall impact from fiscal year 1999 spending related to the HFQLG Act is estimated to be over \$2.29 million.

In addition, the HFQLG Act directly supported 35 jobs in the local economy in fiscal year 1999. Estimated economic impacts in the Core Region led to an estimated additional eleven jobs either created or preserved for a total employment impact of 46 jobs that were either created or preserved in the local economy.

Purpose

President Bill Clinton signed the HFQLG Act on October 21, 1998. The Act was a mandate to the U. S. Forest Service to set up a pilot project in the Lassen National Forest, the Plumas National Forest, and the Sierraville Ranger District in the Tahoe National Forest. The intent of the pilot project was to implement resource management activities described in the Act, including construction of up to 300,000 acres of Defensible Fuel Profile Zones, which would require greatly increased removal of biomass.⁶

There is a general disagreement as to the consequences of increased removal of biomass. Among the disagreements are two claims regarding how this project will affect the local economy. To summarize briefly, the first claim is that removal of biomass will allow the forest to grow quicker, healthier, be more resistant to disease and catastrophic wildfire, and provide an economic gain for the local area due to increased timber sales. The second claim is that increased biomass removal will result in a sparse forest that will be less attractive to recreational visitors, decrease water quality through erosion, and result in an economic loss in the area due to decreased tourism.

⁶ Biomass includes timber and underbrush.

Therefore, the Forest Service is required under the HFQLG Act to provide status reports to Congress. Section (j) (1) (D) of the HFQLG Act states that "...status reports shall include at least the following..."

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

The analysis and conclusions contained in this report in no way support either of the two claims regarding economic impact of the pilot project, above. This report only covers the study of money spent during the construction of the EIS.

The Center for Economic Development at California State University, Chico (the center) was contracted to analyze the economic impact of fiscal year 1999 funding for the HFQLG Act on the local economy. The economic impact study was limited to Lassen, Plumas, and Sierra Counties,⁷ or the Core Region as defined in the summary of impacts above. Therefore, the total estimated economic impacts of the HFQLG Act in fiscal year 1999 to these three counties are considered as the "mandated description of the economic benefits to local communities" stated above. There are also impacts to outlying areas that are not mandated to be monitored, and therefore are not a part of this study.

Before implementation of the project is to begin in 2000, an Environmental Impact Statement (EIS) was to be constructed during fiscal year 1999. All of the pilot project's expenses during fiscal year 1999 went toward the construction of the EIS and, therefore, all of the estimated economic impacts are due to the construction of the EIS.

Methodology

The Forest Service provided financial information to the center that included spending levels for various categories including payroll, travel, purchases, and service contracts. The center worked with the Forest Service to determine the amount of money in each category that was spent directly in the Core Region.

The agreement between the center and the Forest Service stated that it was necessary to contact contractors for information regarding their spending habits in the Core Region. However, the Forest Service provided information as to whether or not the contractor was located in the Core Region. The Forest Service also separated travel disbursements to both local and non-local contractors travelling in the Core Area. One contractor was known by the center to have subcontracted half the work to a non-local subcontractor, and the Forest Service assured the center that there were no other subcontracts. This eliminated the need to contact individual contractors. All funds that were disbursed to contractors, except travel reimbursements, were treated as payroll because, like payroll, it is payment for services performed.

⁷ Lassen, Plumas, and Sierra Counties form a region that closely coincides with the area subject to the HFQLG Act.

The Economic Model: A regional economic model was built for the Core Region using the IMPLAN economic impact analysis system. IMPLAN models the economy through pre-input matrices measuring dollar flows from industry to industry, from industries to households, and from households to industries. This is called an input-output economic model and can be used to measure how changes in spending by households or an industry produce changes in spending by all households and all industries. The input-output economic model charts the flows from one industry or household to another through a "matrix." A matrix is a mathematical equation that is capable of solving for multiple variables all in the same matrix or equation. The theory behind this type of economic impact analysis is best provided in an example.

Assume the Forest Service spends \$100.00, hypothetically, directly at a local retail store. Part of that original \$100.00 is respent as payroll for the store's employees, some is respent to the wholesaler or manufacturer, some may go to a property manager for rent, some may go to the government for taxes, and so on. If the employee, wholesaler or manufacturer, or property manager are located in the Core Region, that money is considered to be respent within the Core Region, and is added to the direct impact as indirect impact. If money that is respent again in the region, that spending is also added as indirect impact.

A model based on the social accounting matrix (type SAM model) was used to determine the effects of the HFQLG Act 's fiscal year 1999. IMPLAN's type SAM model is the most widely used model as of the date of this study. It is used by a majority of economic analysis consulting firms who work with local governments and economic development organizations to analyze the impact of changes to the local business structure.

Advantages: There are many advantages to using the type SAM model, two of which are important enough to mention in this report. The first advantage of using IMPLAN's type SAM model is that it is capable of tracing monetary flows through debits and credits, which have become increasingly prevalent in today's economy (Minnesota IMPLAN Group, 1998). Since a majority of the money flows out of the Forest Service in the form of salary to households, the type SAM model more accurately reflects the likely spending patterns of households in the Core Region.

Second, the type SAM model considers impacts that are induced from increased household income, and therefore increased household spending, in addition to the indirect effect of increased industry spending (Minnesota IMPLAN Group, 1998). This further adds to the accuracy of household expenditures to industries.

These factors combine to help make the type SAM model from IMPLAN the most precise tool for estimating the economic impacts of the HFQLG Act fiscal year 1999 in the Core Region.

Limitations: There are two common limitations to IMPLAN's type SAM model that may affect its results. The center has worked to minimize these limitations in order to obtain a more accurate estimate from the model. One limitation is the possibility of resources spent by the Forest Service outside the Core Region that are, in turn, respent within the region. This occurs most often in travel expenses, particularly of persons working on the project who live outside of the region, yet travel to the region for the project and spend

money. However, the Forest Service was able to recognize and note most payments to persons outside the region for travel inside the region, which reduces the error caused by this limitation.

The second limitation results from a characteristic of all IMPLAN models, including type SAM, that the proportion of an industry's spending to households and other industries is fixed. In other words, the distribution of spending before the event in which you are measuring the impact is the same as the distribution of spending after the impact. For example, if 10 percent of old Forest Service spending is to wheat farms, hypothetically, then 10 percent of all new spending is estimated to go to wheat farms. This assumption ignores the possibility that there may be no time for local farmers to increase acres planted to meet the increased demand, even if there is land available to do so. In other words, if additional output is demanded by an industry, all of the industries inputs increase proportionally, and there is no supply constraints or substitutions (Minnesota IMPLAN Group, 1998). Manually entering the Forest Service's components of spending from fiscal year 1999 of the HFQLG Act (payroll, travel, and purchases by industry) helps reduce this limitation considerably. This is because the distribution of Forest Service spending before the HFQLG Act has no bearing on, and can be completely separated from, the distribution of spending from the HFQLG Act's fiscal year 1999. While this does nothing to effect the same assumption in indirect spending estimates (distribution of indirect spending must be estimated), this limitation is eliminated from the direct spending.

The center performed two separate economic analyses for this report. One analysis was made on direct payroll expenses from the HFQLG Act fiscal year 1999 budget. A second analysis was made on all other local expenditures, including reimbursement transfers to other Forest Service budgets for work performed and other spending in the Core Region related to the HFQLG Act fiscal year 1999.

The separation was necessary for two reasons. First, the ratio between salary and other purchases in the model was not consistent with the ratio between salary and other purchases from the HFQLG Act fiscal year 1999 reports. Separation of the two allows the impacts to be correctly assessed, without giving too much weight to purchases, as the model would do normally.

Second, personal income distribution of Forest Service employees in the model was not consistent with personal income distribution in the HFQLG Act fiscal year 1999 reports. Total income (or the annual equivalent, since most people worked on this project on a temporary basis) could be determined from the information provided by the Forest Service. Based on this information, it was observed that an excessive ratio of persons with higher income (\$70,000 per year and over) and lower income (\$30,000 per year or less) were assumed in the model. Personal income by annual salary range, entered independently, will determine a more accurate impact from personal income.

Common Terms

There are a number of terms used in this report that are common to economic impact analysis. Following are definitions for a list of the terms used in this report:

Direct impacts: Forest Service funds that went directly to payroll and purchases to local businesses within Lassen, Plumas, and Sierra Counties.

Indirect impacts: All payroll and purchases that were respent inside the Core Region as a result of spending defined in direct impacts.

Personal income: The total amount of income received by individuals within the region. It includes all income received from all sources, including wages and salaries, dividends, and transfer payments such as income supplements and retirement benefits. Personal income impacts are the estimated direct and indirect change in personal income.

Employment: The total number of full- and part-time jobs in a region. Employment impacts are the estimated direct and indirect change in total employment due to Forest Service Spending. Increases in personal income are used to estimate total employment impacts, using average wage rates by industry as a baseline.

Total spending (output): Direct impacts in this category are equal to total spending from the Forest Service on payroll, travel, purchases, and contracts as a direct result of the HFQLG Act. Indirect impacts are the total increase in economic output of all other industries in the Core Region as a result of Forest Service spending. This spending is considered to be increased output from the Forest Service, and therefore can be added to the indirect effect on output, resulting in a measure of total economic output.

Analysis of Impacts

Before commencing with the analysis, a consideration regarding the beginning and ending of fiscal year 1999 must be taken into account. Fiscal year 1999 began in October 1998 and ended in September 1999. However, funding for the pilot project did not begin until December 1998. In addition, very little was spent by the Forest Service until January 1999. Therefore, this study actually covers the impact of spending for nine months of the year. If spending for an additional three months had been considered, the economic impacts would have been greater than those in this study. The underlying theory is that economic impacts are not sudden. Impacts occur gradually and new markets open (or close, as is sometimes the case) over the course of a year. When the impact of nine months of spending is studied, the economic growth over nine months is the result.

Economic impact analysis often uses a "multiplier" when summarizing economic impacts. The multiplier is the ratio between the direct effect and estimated total effect on the economy:

$$\text{economic output multiplier} = \frac{\text{estimated total economic impact}}{\text{direct economic impact}}$$

The estimated total economic impact is \$2.29 million and the direct economic impact is \$1.63 million. Dividing \$2.29 million by \$1.63 million equals 1.40. Therefore, the economic output multiplier for fiscal year 1999 of the HFQLG Act is 1.40.

A multiplier that has been used more often in the past, yet is still useful today, is the employment multiplier.⁸ The employment multiplier works the same way as the economic output multiplier in that it is total impact divided by direct impact:

$$\text{employment multiplier} = \frac{\text{estimated total employment impact}}{\text{direct employment impact}}$$

A total of 46 jobs were supported as a result of fiscal year 1999 spending from the HFQLG Act and the HFQLG Act directly supported 35 jobs within the Forest Service. Forty-six divided by 35 equals 1.31. Therefore, the employment multiplier for fiscal year 1999 spending from the HFQLG Act is 1.31. Therefore, every job created by fiscal year 1999 spending from the HFQLG Act supports and additional 0.31 jobs for a total of 1.31 jobs in the local economy.

The fact that the economic output multiplier exceeds the employment multiplier leads to the conclusion that the jobs created by the Forest Service earned a much higher salary on average than the Core Region as a whole. In this case, the employment multiplier tends to understate the true economic impact to the area.

Payroll impacts: The Forest Service paid over \$1.15 million in salary to its employees from the HFQLG Act fiscal year 1999 budget. This income was respent in the Core Region resulting in a substantial total impact of \$1.62 million. Indirectly, payroll disbursements supported eight additional jobs in the local economy and an estimated increase in personal income of over \$168,000. Over \$307,000 in local industry purchases also resulted indirectly from Forest Service payroll.

⁸ The employment multiplier was used more often than the output multiplier until 1997. Until 1985, employment in economic impact analysis was measured as full-time equivalent employment (Lindall & Olson, 1996). This meant that one job could be measured as one full-time job or two half-time jobs. Since then, employment has been measured as full- and part-time employment. Critics of economic impact analysis argued that employment impacts were ambiguous, meaning that the analyzer could not determine whether or not these were full-time jobs. Furthermore, it could not be determined whether or not these were low-paying jobs. Therefore, economic impact analysis focuses more upon effect on total output rather than employment. Employment is usually included, though, because it is still important as a human impact indicator.

Table 1 - Payroll Impacts of the HFQLG Act in fiscal year 1999

Type of Impact	Direct Impacts	Indirect Impacts	Total Impacts
Employment	25	8	33
Personal Income	\$ 1,150,151	\$ 168,207	\$ 1,318,358
Other Spending	\$ 0	\$ 307,029	\$ 307,029
Total Spending (Output)	\$ 1,150,151	\$ 475,236	\$ 1,625,387

Spending impacts: The Forest Service spent nearly \$500,000 in the Core Region on expenses related to the HFQLG Act in fiscal year 1999. Most of this spending was actually transfers to other forest service budgets in the Lassen, Plumas, and Tahoe National Forests to cover expenses paid out of those budgets for products and services related to the HFQLG Act. These transferred funds were entered into the economic model as general Forest Service spending, using the default assumptions regarding the distribution of the funding between payroll and local purchases by industry (see *Limitations in Methodology*, above). All of the direct impacts on personal income in the table below are out of the disbursement to the National Forests. Of the remaining spending impacts, reimbursements for travel in the Core Region accounted for \$24,866 and purchases in the Core Region totaled \$14,206.

Table 2 - Spending Impacts of the HFQLG Act in fiscal year 1999

Type of Impact	Direct Impacts	Indirect Impacts	Total Impacts
Employment	10	3	13
Personal Income	\$ 428,300	\$ 65,654	\$ 493,954
Other Spending	\$ 54,715	\$ 120,495	\$ 175,210
Total Spending (Output)	\$ 483,015	\$ 186,149	\$ 669,164

Total impacts: The total impacts of fiscal year 1999 of the HFQLG Act are the payroll impacts plus the spending impacts.

Payroll impacts + spending impacts = total impacts

It is estimated that the total economic impact of the HFQLG Act in fiscal year 1999 is 46 jobs, over \$1.81 million in personal income, and over \$2.29 million in total economic output in Lassen, Plumas, and Sierra Counties.

The multipliers for total HFQLG Act fiscal year 1999 spending is 1.31 for employment and 1.40 for total output. This means that every 1.0 job created by the direct spending impacts of the HFQLG Act added an additional 0.31 jobs in 1999, and every \$1.00 spent increased output by an additional \$0.40.

Table 3 - Total Impacts of the HFQLG Act in fiscal year 1999

Type of Impact	Direct Impacts	Indirect Impacts	Total Impacts
Employment	35	11	46
Personal Income	\$ 1,578,451	\$ 233,861	\$ 1,812,312
Other Spending	\$ 3,211,617	\$ 307,029	\$ 3,518,646
Total Spending (Output)	\$ 1,633,166	\$ 661,385	\$ 2,294,551

Over \$1.94 million was spent from the HFQLG Act budget in fiscal year 1999. Over \$1.63 million of that money was spent in Lassen, Plumas, and Sierra Counties, the Core Region of the HFQLG project. This money was spent in the form of payroll, travel reimbursements, purchases from local vendors, payments to consultants, and reimbursements to other Forest Service budgets for purchases or services provided for the HFQLG Act EIS. The remaining \$310,000 was spent on travel reimbursements, purchases from businesses, and payments of consultants located outside of the Core Region.

Some of the over \$1.63 million spent in the Core Region was estimated to have been respent in the region and a portion of that respent again. Respending of these monies is the indirect effects resulting from HFQLG Act spending in fiscal year 1999 (please see *The Economic Model in Methodology* on page 2 for an explanation). Indirect spending in the Core Region totaled over \$661,000, resulting in a grand total of over \$2.29 million in increased economic output due to the first fiscal year of implementation of the HFQLG Act.

Therefore, out of the federal government's original \$1.94 million invested in Lassen, Plumas, and Sierra Counties to implement the HFQLG Act in fiscal year 1999, this region experienced an estimated \$2.29 million in increased economic output.

References

Lindall, Scott A. and Olson, Doug S. 1996. *The IMPLAN Input-Output System*. Stillwater, MN: MIG, Inc.

Minnesota IMPLAN Group. 1998. *Elements of the Social Accounting Matrix*. Stillwater, MN: MIG, Inc. 1999. *IMPLAN Professional Version 2.0: Social Accounting & Impact Analysis Software*. Stillwater, MN: MIG, Inc.

Silberberg, Eugene. 1990. *The Structure of Economics: a Mathematical Analysis*. New York: McGraw-Hill Publishing Company.

Appendix B

Revenues, Costs, and Outputs of Timber Management Activities in the HFQLG Pilot Project Area FY92 – FY97

Appendix B

Tabulation of Revenues, Costs, Acres, and Volume of Timber Management Activities from FY92-FY97 For Each Forest Within the Pilot Project Area

FORESTS:	FY92	FY93	FY94	FY95	FY96	FY97
PLUMAS						
Revenues (Thousand \$)	\$33,929	\$15,304	\$15,133	\$24,787	\$11,592	\$6,786
Expenses (Thousand \$)	\$16,962	\$11,887	\$9,951	\$11,071	\$8,158	\$9,082
ACTIVITIES:						
Regeneration (Acres)	4,724	4,289	4,338	3,508	2,858	2,583
Site Preparation (Acres)	2,724	2,218	1,785	1,813	1,010	1,552
Timber Stand Improvement (Acres)	5,289	2,585	2,030	4,502	2,354	4,008
Volume Offered – CCF	223,600	208,400	115,000	81,800	130,000	137,640
(MBF)	(111,800)	(104,200)	(57,500)	(40,900)	(65,000)	(68,820)
Volume Sold & Awarded –CCF	215,800	169,200	103,400	52,800	89,000	100,240
(MBF)	(107,900)	(84,600)	(51,700)	(26,400)	(44,500)	(50,120)
Total Area Harvested (Acres)	43,106	14,992	10,067	22,705	4,209	8,922
LASSEN						
Revenues (thousand \$) (2)	\$31,718	\$17,066	\$25,483	\$26,988	\$11,762	\$15,195
Expenses (thousand \$) (2)	\$7,915	\$5,796	\$7,103	\$8,740	\$10,592	\$9,980
ACTIVITIES:						
Regeneration (Acres)	3,715	3,041	3,493	2,583	1,817	2,358
Site Preparation (Acres)	2,786	2,281	2,620	1,937	1,363	1,769
Timber Stand Improvement (Acres)	4,464	7,737	6,339	8,011	10,676	14,095
Volume Offered - CCF	159,440	204,040	225,600	208,000	184,480	179,520
(MBF)	(79,720)	(102,020)	(112,800)	(104,000)	(92,240)	(89,760)
Volume Sold & Awarded - CCF	75,660	354,440	194,880	96,800	149,540	234,120
(MBF)	(37,830)	(177,220)	(97,440)	(48,400)	(74,770)	(117,060)
Total Area Harvested (Acres)	9,392	53,242	45,775	20,407	24,986	19,005
TAHOE – SIERRAVILLE RD						
Revenues (Thousand \$)	\$1,540	\$2,038	\$3,885	\$1,098	\$1,216	\$2,484
Expenses (Thousand \$)	\$979	\$511	\$322	\$2,785	\$1,740	\$3,145
ACTIVITIES:						
Regeneration (Acres)	195	523	375	1,440	4,388	10,650
Site Preparation (Acres)	666	765	262	426	948	0
Timber Stand Improvement (Acres)	292	278	371	1,353	2,032	4,543
Volume Offered - CCF	43,710	11,500	34,352	265,346	59,680	65,742
(MBF)	(21,855)	(5,750)	(17,176)	(132,673)	(29,840)	(32,871)
Volume Sold & Awarded - CCF	37,930	11,500	34,352	166,758	4,020	19,078
(MBF)	(18,965)	(5,750)	(17,176)	(83,379)	(2,010)	(9,539)
Total Area Harvested (Acres)	3,221	2651	2,080	4,205	9,722	4,296

"(1) Revenues, Expenses, Regeneration [plant & site prep], Timber Stand Improvement (pre-commercial thinning & release), Volume Offered, Volume Sold & Awarded and Total Acres Harvested comes from the annual TSPIRS report. Site Preparation comes from the annual Silvicultural Accomplishment report.

(2) Based on percentage of volume offered within the Pilot Project Area.

Appendix C

Proposed Plan of Work for Fiscal Year 2000

Appendix C

Herger-Feinstein Quincy Library Group Forest Recovery Act
FY 2000 Program of Work -
Current Funding

Unit/Project Name	CCF		DFPZ	Project Type/Acres		Contract Type	NEPA Decision	Implementation (Bid Opening)	Direct Cost M\$
	Volume Sawlog CCF	Estimates MCP* CCF		GS**	ITS***				
TAHOE NF									
Sierraville RD									
Marmalade	0	0	640		172	TS	Complete	Complete	256
Leftover	12,800	8,800	786	128	769	TS	5/00	9/00	195
Lahontan	6,800	4,800	219	66	363	TS	5/00	8/00	27
Skippy	1200	3800	528			SC	Complete	4/00	211
Jelly	700	900	137			SC	Complete	5/00	55
Camp 21	0	100	50			Force Acct.	Complete		16
SUBTOTALS	21,500	18,400	2,360	194	1,304				800
PLUMAS NF									
Beckwourth RD									
Horton 2	1900	1000	400			TS	4/00	6/00	160
Red Clover-Squaw	3300	1700	1000			TS	6/00	9/00	400
	0	0	500			SC	6/00	8/00	200
	2000	0		300		TS	6/00	9/00	120
Dotta	0	0	200			SC	6/00	9/00	80
Spike/Buck Under.	0	0	800			SC	3/00	9/00	320
Mt. Hough RD									
Antelope-Border	3500	1800	2100			SC	6/00	8/00	880
Feather River RD									
Red Mt.-Arkansas Rav.	0	0	1000			SC	7/00	9/00	400
SUBTOTALS	10,700	4500	6,000	300	0				2,560
LASSEN NF									
Almanor RD									
Prattville For. Rec.		4000	1100			SC	6/00	9/00	440
Cherry Hill	1400	7000	1990	30		SC	6/00	9/00	808
Eagle Lake RD									
Bridge Thin	8423	4129	650		475	TS	Complete	9/00	260
Signal Small Log	5589	13041	1067		329	TS	Complete	7/00	427
Summit Small Log	4059	16236	1634		170	TS	Complete	7/00	654
Cant Thin	1505	1505	165		136	TS	Complete	9/00	66
Hat Creek RD									
Pittville	2200	4400		235		TS	6/00	9/00	942
Pittville North	0	2000	1000			SC	6/00	9/00	400
Pittville South	0	2000	1000			SC	6/00	9/00	400
SUBTOTALS	23,176	54,311	8,606	265	1,110				4,397
GRAND TOTALS (DIRECT COSTS ONLY)	55,376	77,211	16,966	759	2,414				\$7,757

*Miscellaneous Convertible Products
**Group Selection
***Individual Tree Selection
Estimated conversion factor:
1 MBF = 2CCF

Indirect costs (capped at 12% per the Act)	1,500
Annual report to the congress (as per the Act)	100
Program Management	400
Monitoring	500
EIS Appeals	20
Riparian Management Program	200
Outyear Planning	1,723
FY 2000, Total Program of Work	\$12,200

Appendix C

HF-QLG Forest Recovery Program FY 2000 Outyear Planning

Unit/Project Name	Acres	Project Type	Contract Type	Cost Planning Only
TAHOE NF				
Sierraville RD				
Beak	2782	DFPZ/GS/ITS	TS/SC	200
Claw	2507	DFPZ/GS	TS/SC	180
SUBTOTALS	5289			380
LASSEN NF				
Almanor RD				
Scott-Jonesville	450	DFPZ	TS	22.5
	100	GS	TS	5
Brown Rav (Lakes)	650	DFPZ	TS	32.5
	150	GS	TS	7.5
West Dusty	669	DFPZ	SC	33.5
Philbrook (Lakes)	910	DFPZ	SC	45.5
	10	GS	SC	1
Shanghai-Fanani	105	DFPZ	SC	5.5
East Dusty	220	DFPZ	SC	11
Hat Creek RD				
Blacks Ridge	2000	DFPZ	TS	100
	600	GS	TS	30
Blacks Ridge 1	1000	DFPZ	SC	50
Blacks Ridge 2	1000	DFPZ	SC	50
Eagle Lake RD				
Pegleg - A21	3667	DFPZ	TS	183.5
	630	GS	TS	31.5
Pegleg - A21	2445	DFPZ	SC	122.5
SUBTOTALS	14,606			731
PLUMAS NF				
Beckwourth RD				
Last Chance	2200	DFPZ	TS/SC	220
	600	GS	TS	60
Davis	600	GS	TS	60
Stony Ridge	400	GS	TS	40
Crystal-Adams	900	GS	TS	90
Mt. Hough RD				
Rush-Kingsbury	1600	DFPZ	SC	160
Waters	800	DFPZ	SC	80
SUBTOTALS	7100			710
GRAND TOTALS	25,506			1,821

