

Sockeye Salmon Stocking at Solf Lake

Project number: 02256b

Restoration Category: General Restoration

Proposer: USFS

Lead Trustee Agency: USFS

Cooperating Agencies: none

Alaska Sea Life Center: No

Duration: 7th year, 7-year project

Cost FY 2002: \$15,500

Cost FY 2003:

Geographic Area: Prince William Sound

Injured Resource: Subsistence/Sockeye Salmon

ABSTRACT

This project is designed to benefit subsistence users of Western Prince William Sound. Solf Lake has been recognized for many years as a site to establish a self-sustaining sockeye salmon run. Habitat improvements were made in 1978, 1980 and 1981 to provide access to the lake for anadromous fish proved unsuccessful. The lake was never stocked and subsequent investigations suggested that it was fishless. There are two phases to this project: Phase 1, which began in FY96, has verified the ability of Solf Lake to support a sustainable population of sockeye salmon. Phase 2, included stocking the lake with approximately 100,000 sockeye salmon fry, then ensuring access to Solf Lake for returning adult salmon. The stocking program began in 1997 and outlet flow control structures were completed in 1997 and 1998. The reconstruction of the fishway in the eastern channel was completed in the summer of 2000 and returning adult salmon to Solf Lake will be monitored starting in 2001 to evaluate the improvements.

INTRODUCTION

Subsistence use of resources in the oil spill area declined following the spill. Although restoration studies have shown that harvest levels have since returned to pre-spill levels in most oil spill communities, Chenega Bay and Tatitlek are exceptions (Seitz and Fall, 1995; Seitz and Miraglia, 1995). These communities showed reduced harvest levels in 1993/94 and an increased reliance on salmon harvests (Seitz and Fall, 1995; Seitz and Miraglia, 1995). Solf Lake provides an opportunity to establish a large replacement fishery that is easily accessible, approximately 40 miles from Chenega Bay.

This proposal is a request for continued support from the Trustee Council to fund the final year of a seven-year project to restore sockeye salmon (*Oncorhynchus, nerka*) runs to Solf Lake. Construction on control structures at the two outlets of Solf Lake are completed and the stocking and rearing of sockeye salmon fry is continuing. Reconstruction of the fishway was completed in the summer of 2000 and monitoring of returning adults will be conducted in 2001.

The funding request in this proposal is for an additional year of monitoring the adult returns to Solf Lake to evaluate the performance of the structural improvements and stocking success. Approval of this proposal will also provide funding for completion of a final report on the Solf Lake Project. The first returns from the first stocking in 1998 are expected in May and June of 2001; at that time the fishway will be evaluated for fish passage effectiveness and spawning habitat utilization by returning fish. An additional year of observations will strengthen the results on the success of the project.

Solf Lake has long been recognized as an opportunity to reestablish a sockeye salmon run in Prince William Sound. According to Nickerson (1978), "This system had historic runs of sockeye salmon. An earthquake in the 1930's caused blockages of the natural outlet resulting in water flowing over an impassable fall." Starting in the early 1970's, various attempts have been made to reestablish sockeye salmon in Solf Lake. For two years in this same period, ADF&G personnel transported adult sockeye salmon from Eshamy River to Solf Lake. Unfortunately, necessary stream improvements had not been completed when the offspring from the transplanted fish returned. In 1978, 1980 and 1981, the USFS implemented improvements to the outlet streams. The work consisted of improving the eastern outlet and partially damming the western outlet. The diversion weir was designed to raise the level of the lake to provide adequate water flow for fish passage at the eastern outlet. The improved eastern outlet channel is less than 100 m in length, with an average gradient of 23 percent (Figure 2). Stocking of the lake never occurred after the improvements due to higher priority projects for both the USFS and ADF&G.

ADF&G surveyed Solf Lake in 1985/1986 as part of a lake investigation study. The results of this survey, which included attempts to capture fish, suggest that the lake may be fishless (Pellissier and Somerville, 1987). However 1996 minnow trapping by USFS crews indicated a larger population of Dolly Varden than has been previously observed, but still not significant. These results are also supported by the composition and biomass of the zooplankton populations, which were sampled in 1986. The Pellissier and Somerville (1987) survey also documented that water was flowing through the western outlet due to an incomplete seal by the diversion weir. Three minor barriers to fish passage were identified in the eastern channel.

ADF&G recommends stocking based on their zooplankton studies and added that the instability of the macrozooplankton community in barren lakes when faced with predation necessitates stocking programs based on a conservative approach. Close evaluation and experimenting with stocking strategies will ameliorate significant impacts to the macrozooplankton community. Major reasons for the disparity of response to stocking barren lakes include; inherent low productivity of these lakes; macro zooplankton abundance, composition, and ability to adapt to predation; stocking density; lake morphology and variability in the indirect effects of predation in individual lakes. Based on limnological information the stocking levels at Solf Lake could be as high as 400,000 fry. While Solf Lake is most likely capable of supporting stocking at this level, it was decided to take a more conservative approach to stocking.

Solf Lake is a clear water lake with a mean depth of 42.5 m and a surface area of approximately 0.61 km² (Barto and Nelson, 1982). Based on historical limnological data from the 1980's, stream survey data collected in 1996, and analysis of current limnological data it is reasonable to expect that the lake is capable of supporting a sustainable sockeye population. Based on the available spawning area, it is estimated that Solf Lake could sustain a run of approximately 10,000 sockeye salmon. An escapement goal of approximately 4,500 fish would be required to fully seed the system without depleting the zooplankton populations, leaving 5,500 sockeye available for harvest. Consequently, we are recommending stocking at the 100,000 fry level to meet the objective of the stated return and the assumption that there will be a high fry to adult survival.

With the exception of 1986 prior to stocking activity, *Diaptomus* have accounted for more than 50% of the total biomass followed by *Cyclops*, which generally comprises about 30 % of the total. The remainder of the total macrozooplankton (TMZ) consisted primarily of the cladoceran form *Bosmina* and very small numbers of *Daphnia*. The 2000 stocking level of 116,500, 0.42g., sockeye fry did not appear to have a significant influence on (TMZ) and the abundance as indicated by an increase in *Diaptomus* density by 22% and a 4.5% increase in biomass. Results indicate *Bosmina* decline in density by 39% and in biomass by 45% from pre-stocking means. Similarly a decline in *Cyclops* by 57% and 63% respectively were also observed. All of the observations in 2000 fall within the range of pre-stocking observations and are therefore not considered to be significant see Figures 3 and 4.

Fishless lakes are susceptible to overgrazing by large numbers of obligate planktivores, i.e. sockeye fry, resulting in steep declines in macrozooplankton numbers and biomass. Diet selectivity studies for rearing sockeye fry have shown that fry presented with a wide choice of food items tend to select for cladoceran and large calanoid forms. Although sockeye fry do graze on *Cyclops*, it is not actively selected. Thus, in Solf Lake, we would expect the large, red pigmented, and therefore, highly visible *Diaptomus*, to be an indicator species of excessive grazing pressure and a guide to gauge stocking levels. There was no observed significant difference between macrozooplankton biomass and density from pre-stocking and post-stocking means. In April the Project Investigator reviewed the macrozooplankton results from 2000 and determined that current stocking levels are still supported at Solf Lake.

Personnel from the Main Bay Hatchery successfully collected 121,000 green eggs from Coghill brood stock and reared them at their Main Bay facility. Overall, survival of green eggs to released fry was 96.3%. This resulted in the release of 116,500, 0.42 g fry into Solf Lake on June 15, 2000. Of the total number of fry released into Solf Lake all were marked with a thermal otolith mark sequence of 1:1.3,2.2. The expected return from the release of the BY99 Coghill stock sockeye to Solf Lake is expected to be 4,400. Approximately 60% of these should return as four-year-olds in 2003. The remaining 40% may return as five-year-old in 2004.

On June 16 personnel from ADF&G conducted a hydroacoustic survey of Solf Lake; surveying several transects perpendicular to the longitudinal axis of the lake. There were essentially no targets (fish) recorded during the entire survey. In September Forest Service crewmembers fished a floating fyke net overnight near the inlet streams of the lake and captured 27 Dolly Varden but no sockeye.

The reason for the lack of fish targets during the hydroacoustic survey and no sockeye being captured during fyke net sampling remains unknown. The hydroacoustic survey was conducted within a few days of stocking, during this time a barrier net was in place at the diversion weir to prevent any outmigration, and the eastern outlet was closed for construction purposes. Both ADF&G and Forest Service Crews observe several small groups of fry, usually numbering less than 50 swimming around the margins of the lake, however no large groups, at least not enough to account for 116,500 fry were seen exiting the lake or as mortalities. It is possible, that no fry were observed during the hydroacoustic survey due to the gregarious nature of recently stocked fry and the survey being conducted so shortly after the time of stocking. The survey may have missed a few large groups of fish not yet dispersed throughout the lake or fry aggregating very near the shoreline. Additionally fyke netting in the fall may not have captured any sockeye fry, if they emigrated as age-0 smolt, as has been proposed in previous reports. Starting in 2001 stocking procedures will include retention of sockeye fry in temporary holding pens near the lakes inlet streams for two weeks to allow time for fry to acclimate and for observation of possible mortalities.

Cook Inlet Aquaculture Association (CIAA) has documented age-0 sockeye salmon smolts emigrating from their lake stocking programs; from 1990-1995, estimates of age-0 smolt emigrating Chelatna Lake (Susitna River basin) have ranged from less than 1% to 62% of the total outmigration (Fandrei 1995), and in Bear Lake (Seward) age-0 smolt estimates for 1990-1994 have ranged from less than 1%, up to 98% in one year (Hetrick and Prochazka 1998). At this time it is uncertain what the effects of this early emigration will have on ocean survival and consequently the number of returning adults to Solf Lake.

This early outmigration is expected to discontinue as the available zooplankton is reduced and fry growth rates decrease and stabilize, however given the results from the macrozooplankton sampling this situation has not yet occurred. Increasing future stocking levels to decrease growth rates will have to be discussed with ADF&G and the RPT if returning adult in 2001 indicate low ocean survival rates.

The Regional Forest Service Engineer and the Trustee Council approved the final design for the fishway to be installed in 2000 in the spring of the same year. The constructed fishway varied

only slightly from the approved design in location and orientation of the Steep Passes and concrete headwalls. Construction specifications detailed in the final design were adhered to the greatest extent possible. Excavation of the 60-foot trench through bedrock went extremely well, primarily due to the expertise of the Forest Service Blasters and construction crew. Because the integrity of the bedrock was maintained during trench construction and a watertight seal created, a concrete liner was not required. Time did not allow for an as-built survey but will be planned for in 2001 and should be available for inclusion in the final report.

Both the diversion weir at the western outlet and the control structure on the eastern outlet has been successfully completed and are working properly. During the 2000 field season both structures were inspected for serviceability. After a full 3 years of exposure to the rigorous weather of Prince William Sound the structures remain operational showing little sign of wear.

NEED FOR THE PROJECT

A. Statement of Problem

Subsistence use of resources in the oil spill area declined following the spill. Although restoration studies have shown that harvest levels have since returned to pre-spill levels in most oil spill communities, Chenega Bay and Tatitlek are exceptions (Seitz and Fall, 1995; Seitz and Miraglia, 1995). These communities showed reduced harvest levels in 1993/94 and an increased reliance on salmon harvests (Seitz and Fall, 1995; Seitz and Miraglia, 1995). Solf Lake provides an opportunity to establish a large replacement fishery that is easily accessible for subsistence users from Chenega Bay. Projects available for the restoration or replacement of lost subsistence services are limited; this proposal would use one of the few opportunities available.

This project has determined the feasibility of stocking Solf Lake with sockeye salmon and proposes the steps required to establish a replacement fishery for subsistence use. Based on historical limnological data from the 1980's and current observations, along with stream survey data collected in 1996 it is reasonable to expect that the lake is capable of supporting a sustainable sockeye population with an adult return of approximately 10,000 fish.

B. Rationale/Link to Restoration

The *Exxon Valdez* Restoration Office's Invitation to submit proposals for FY97 stated that subsistence users are traveling greater distances and must invest more time in subsistence harvesting than they did before the spill. Unlike many other oil spill communities, Chenega Bay still shows reduced subsistence harvest levels and a greater reliance on subsistence harvest of salmon (Seitz and Fall, 1995; Seitz and Miraglia, 1995). Solf Lake is located approximately 40 miles from Chenega Bay and provides an opportunity to establish a replacement fishery that is accessible to subsistence users. The lake is a clear water lake with a mean depth of 42.5 m and a surface area of approximately 0.61 km² (Barto and Nelson, 1982). Analyses of current data suggest that the lake may support a self-sustaining population of 10,000 sockeye with roughly half being available for harvest. Establishing this fishery would provide food for the tables of subsistence users in Western Prince William Sound.

Cost benefit calculation for subsistence resources are difficult to place a monetary value on, given that the nature of these resources are more intrinsic and cultural. This project will provide a subsistence resource to local communities in perpetuity.

If this project were to be evaluated as a commercial enhancement activity the resultant harvest would be approximately 4,500 fish/yr. This would result in an annual harvest of 27,000 lb. of sockeye salmon. Assuming an ex-vessel price of \$1.75/lb. and a 2.5 multiplier to adjust for retail value providing an \$118,125 /yr. cash benefit. This information is provided purely to demonstrate a cash benefit to substance users, however does not capture the intrinsic and cultural values this project will provide.

C. Location

Solf Lake is located off Herring Bay on Knight Island. The lake is approximately 40 miles by boat from Chenega Bay and 46 miles from Whittier. The lake is unnamed on USGS maps; however, Nickerson (1978), PWSRPT (1983), Barto and Nelson (1982) all refer to the lake as Solf Lake (ADF&G Stream 690). The lake is described in the Anadromous Waters Catalog as number 226-10-16900-0010 (ADF&G, 1992), see figure 1.

COMMUNITY INVOLVEMENT AND TRADITIONAL ECOLOGICAL KNOWLEDGE

This project is designed specifically to benefit subsistence users of PWS; therefore, community involvement is an important component for the success of the project. The feasibility phase of this project (FY96) has determined the ability of Solf Lake to support a self-sustaining population of sockeye salmon. Contacts with the Chenega Bay community liaison will be maintained throughout the feasibility and implementation phases of this project to discuss what the potential production might be for the lake, and project schedules. Opportunities will be identified to include residents of Chenega Bay in habitat improvement work or in the post-stocking monitoring program.

PROJECT DESIGN

A. Objectives

Phase 1. Feasibility phase. The four components to this objective are:

1. Determine if Solf Lake can sustain a population of sockeye salmon (completed).

2. Determine appropriate stocking levels (completed).
3. Coordinate with PWSAC and Main Bay Hatchery to establish an appropriate brood stock and the necessary logistics to begin a stocking program (completed).
4. Evaluate existing habitat improvement structures to ensure adequate conditions for adult migration (completed).

Phase 2. Implementation phase. There are three objectives to this phase:

1. Design and construct necessary improvements to the outlet channel and dam to ensure adequate passage for adult salmon migration (completed).
2. Stock Solf Lake with sockeye salmon to produce a self-sustaining population that can provide an adequate subsistence harvest (ongoing).
3. Monitor zooplankton and smolt out-migration to ensure appropriate stocking levels (discontinued).

B. Methods

Project 96256 included one season of data collection to determine presence of resident fish and the potential carrying capacity of Solf Lake. Information collected in 2001 will continue to evaluate the success of the stocking program and improvements made at Solf Lake. In FY00 the Trustees elected not to continue funding ADF&G's involvement in the Solf Lake project, consequently subsequent stocking levels will have to be based on previously collected data and adult returns. Their methodologies are presented here to provide background to the information they previously collected in support of the project.

Part 1. This section outlines the methods to implement a stocking program at Solf Lake.

Interagency Coordination: Close coordination between the USFS, ADF&G, PWSAC and the PWS/CR RPT is mandatory for the success of this project. Prince William Sound is a complex ecosystem and the potential stocking of Solf Lake needs to be considered in perspective with the overall management of the Sound. Interagency coordination started in 1996 and continues through 2001 to identify appropriate brood stocks, determine appropriate stocking levels, meet hatchery-related requirements, and to address mixed-stock fisheries issues.

Stocking Program (1998 to 2002): Appropriate stocking levels and strategies have been determined in coordination with ADF&G and PWSAC using all available data. Fry are currently being short-term reared at the Main Bay Hatchery and transported to the lake for release. The Eyak and Coghill stocks are identified in the PWS/CR Phase 3 Comprehensive Salmon Plan as potential stocks for Solf Lake. At least four years of fry transplants would be required to establish a sockeye salmon run. Recent discussions with PWSAC indicate that there will be no brood stock available in 2001 for Coghill fish. This is a result of the loss of the BY98 Coghill fish at the Main Bay Hatchery facility and therefore no stocking will occur at Solf Lake in 2002.

On the recommendation of the RPT, Eyak fish were selected as the brood stock for the Solf Lake project. At that time, there was concern that the incubation temperatures were too high in Solf Lake for early run Eyak fish. However, an early run stock was chosen to minimize management

conflicts. Since that time, PWSAC has updated their Area Management Plan, which includes discontinuing the rearing of all sockeye stocks except Coghill fish at their Main Bay facility. On February 18th, 1999 a letter was sent to the RPT indicating that the Forest Service had no objection to switching the stock to Coghill fish, since these fish are also identified in the PWS/CR Phase 3 Comprehensive Salmon Plan as a suitable stock for Solf Lake. The mid run timing of the Coghill fish may additionally provide a more favorable incubation period than the Eyak stock, increasing the likelihood of a successful project. Discussions with the State Geneticist and the RPT have indicated that since the return at Solf is expected to be small and isolated from other stocks the stock and that the switch presents no concerns.

Monitoring (1998 and beyond): Limnological data was collected to evaluate the affect of the stocking program on the plankton population. This monitoring included a summer and fall sampling period for water chemistry analysis and monthly zooplankton sampling from May through September. These procedures are described in detail in Koenings et. al. (1987).

The success of the stocking program would also be monitored through sampling the fish population during the smolt out-migration and during adult escapement. Smolt will be collected by weir to estimate the total out-migration. Fish will be sampled to determine age, length and weight characteristics that can be used to evaluate the health of the population. Coded wire tags and thermal otolith marking will be used to monitor the adult population. Hydroacoustic and tow-net surveys were conducted by ADF&G on Solf Lake at approximately 12 transects perpendicular to the longitudinal axis of the lake to enumerate fry abundance. Returning adults will be enumerated at a weir on the outlet stream and if possible with aerial surveys. Scales will also be collected and the age structure of the returning fish will be analyzed.

Part 2. This section recognizes the work that has been needed to provide access to the lake for returning adults. Construction of the fishway at the eastern channel in 2000 is complete however returning fish should be monitored closely to determine the success of the improvements.

Outlet Flow Control Structures (1997 – 1998): The existing improvement structures at the two outlets of the lake were evaluated. It was determined that the old structure, which diverts flow at the impassable western outlet, required extensive reconstruction to provide adequate flow for fish passage at the lakes eastern outlet, this work was completed in 1998. The eastern outlet, that would provide fish access to the lake also required reconstruction of the “irrigation type” control weir, this work was completed in 1997.

Channel Modifications (2000): Solf Lake was visited by ADF&G personnel as part of a PWS lake investigation project in 1985 (Pellissier and Somerville, 1987). Three minor barriers to fish migration were identified in the outlet channel. These barriers were height and velocity barriers that ranged in size from 1.5 to 2.5 meters. The fishway in the eastern outlet was completed in the summer of 2000 and was designed to provide sockeye salmon passage into Solf Lake. The design called for two Alaska Steep Passes one 30 feet, another 40 feet in length, installed at a 22% slope. Each Steep Pass required a concrete head wall and support piers. The upper pass spills into an excavated section of bedrock forming a watertight trench. Additionally, step pools were created by the installation of intermittent notched concrete weirs, to further facilitate fish passage.

C. Cooperating Agencies, Contracts, and Other Agency Assistance

Personnel from the ADF&G Limnology Lab in Soldotna previously conducted the limnological data collection. ADF&G also completed the water chemistry and plankton analysis work. USFS will conduct the habitat surveys, evaluations of the habitat improvement structures, determine available spawning and rearing habitats, evaluate fish populations and construct improvements. Coordination will occur with PWSAC to make any necessary adjustments at the Main Bay Hatchery to accommodate additional incubation and short-term rearing. Coordination will also occur with PWSAC to perform any necessary fish culture work and transport the fry to the lake. Interagency coordination is essential to establish a successful population at Solf Lake. The PWS/CR RPT will be involved in assessing opportunities and for developing strategies for the stocking program. ADF&G, Residents of Chenega and the USFS will coordinate and develop a harvest strategy prior to sockeye returning to Solf Lake to prevent possible over escapements.

SCHEDULE

A. Measurable Project Tasks for FY02

January: Attend Annual Restoration Workshop.
Jan - April: USFS. Prepare for field season, hire crew.
Jan - April: USFS. Prepare and submit Annual Report.
April - July: USFS. Evaluate fishway and monitor returning adult salmon.
October: USFS. Prepare final report.

B. Project Milestones and Endpoints

Phase 1. The overall objective of this stage of the project was to determine the feasibility of stocking Solf Lake with sockeye salmon. This objective has been completed and mixed-stock fisheries and genetic risk issues are resolved.

Phase 2. This is the actual stocking phase of the project. With the completion of Phase 1 and a favorable recommendation from the RPT stocking began in FY98 through 2001 however for reasons previously stated no stocking will occur in 2002.

Tentative schedule and measurable end points for phase 2:

Oct - Dec. FY01:	Determine appropriate brood stock and potential stocking levels. Coordinate with PWSAC and the PWS RPT for production planning.
FY98 - FY02:	Submit annual reports
FY01 - FY02:	Enumerate adult returns and evaluate fishway.
FY02:	Prepare and submit final report.

C. Completion Date

The project completion date for fieldwork will be at the end of FY2002. This will be the final year of monitoring. The final report will be prepared and submitted by December 15th 2002.

PUBLICATIONS AND REPORTS

Annual reports and an updated DPD will be submitted during each year of the project. A final report will be submitted in FY02.

PROFESSIONAL CONFERENCES

At this time, there are no plans to present this project at professional conferences.

NORMAL AGENCY MANAGEMENT

Given current agency priorities the opportunity to conduct this project under normal agency management either now or in the near future is unlikely. However, some aspects of the long-term maintenance and monitoring of the project, may fall under the normal agency management. Shared cost proposals for this project will be presented in the future project work plans for the Forest Service but given budget fluctuations, secure funding is not a certainty.

COORDINATION AND INTEGRATION OF RESTORATION EFFORT

Initial coordination with ADF&G biologists in Cordova, with the Regional Planning Team, and with PWSAC will continue throughout the project to address the mixed-stock fisheries and genetic risk issues that will influence the feasibility of this project. USFS Personnel attend the 1996 summer Regional Planning Team meeting to initialize the necessary coordination. The

results from FY96 were presented to the RPT outlining, potential size of the stocking program and brood stocks. The information was used to assess the potential effects of this project on local wild stocks and on the commercial fisheries in the area.

EXPLANATION OF CHANGES IN CONTINUING PROJECTS

This proposal covers only one of the two locations described in the original proposal 96256. The proposal for the other site, Columbia Lake, was resubmitted as 97256a. The feasibility study of Columbia Lake determined that it would not be a good candidate for stocking at this time and has since been dropped from further study.

PROPOSED PRINCIPAL INVESTIGATOR

Dan Gillikin
Glacier Ranger District
P.O. Box 129
Girdwood, AK. 99587
(907) 783-3242

PRINCIPAL INVESTIGATOR

The principal investigator of this project will be Daniel Gillikin, Fisheries Biological Technician; Glacier Ranger District. Dan is the logistics and construction specialist for the fisheries department at Glacier and will coordinate this project for the USFS. Currently Dan holds the position of Fisheries Technician on the Glacier District. Dan has twelve years of experience as a fisheries technician with Private and Federal Agencies in Washington and Alaska. He would work with the project manager and conduct project implementation, environmental compliance, agency coordination, budget management and reporting.

OTHER KEY PERSONNEL

Cliff Fox, U.S. Forest Service Glacier Ranger District Chugach National Forest. Currently holds the position of Resource Staff Officer on the Glacier District. Cliff has 20 years experience in natural resource management with State and Federal Agencies in California, Idaho and Alaska.

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- Todd, G. L. 1994. A lightweight, inclined-plane trap for sampling salmon smolts in rivers. Alaska Fishery Research Bulletin 1(2):168-175.

Figure # 1. Solf Lake Location Map.

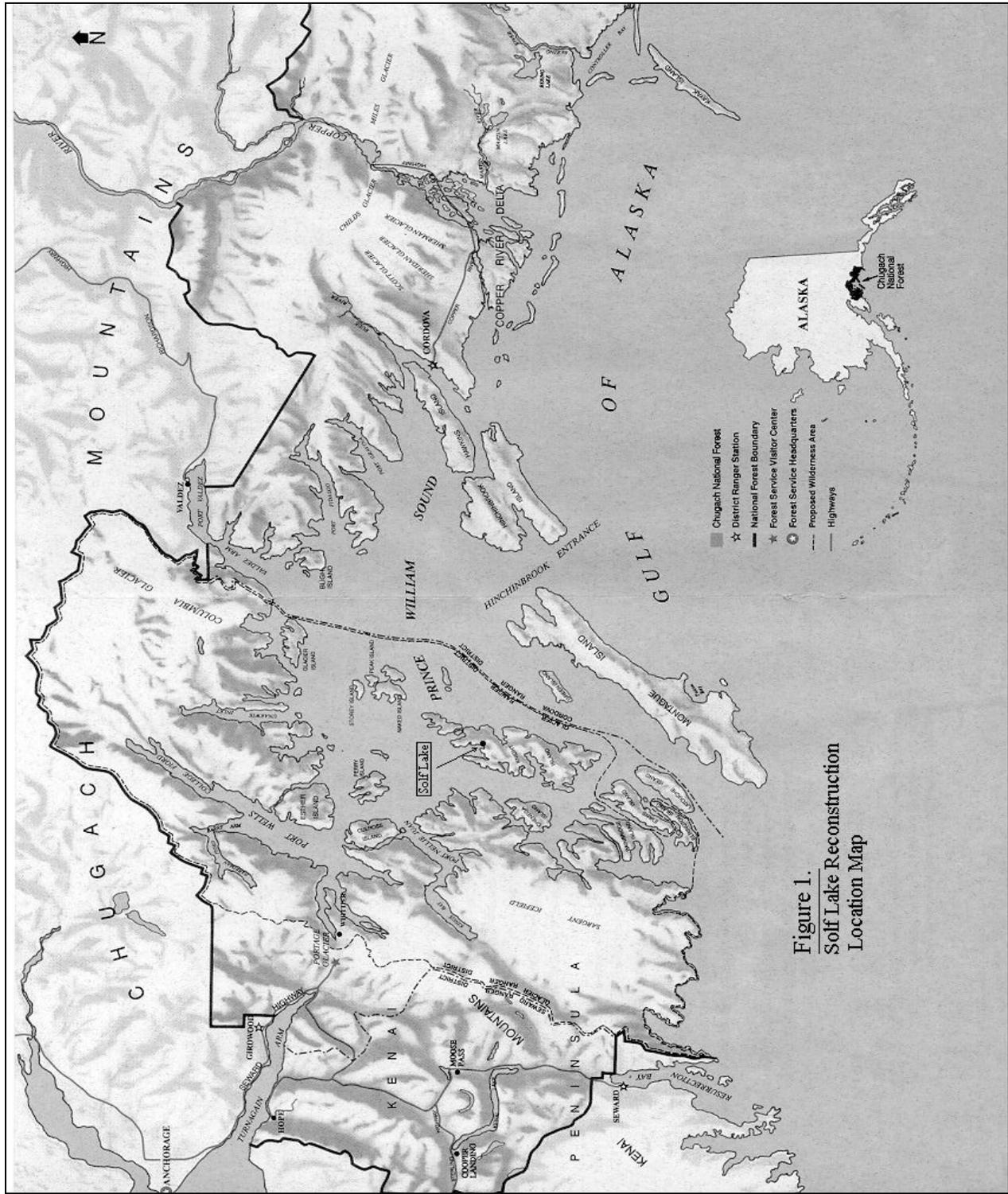


Figure 1.
Sol Lake Reconstruction
Location Map

Figure # 2. Sol Lake Site Plan

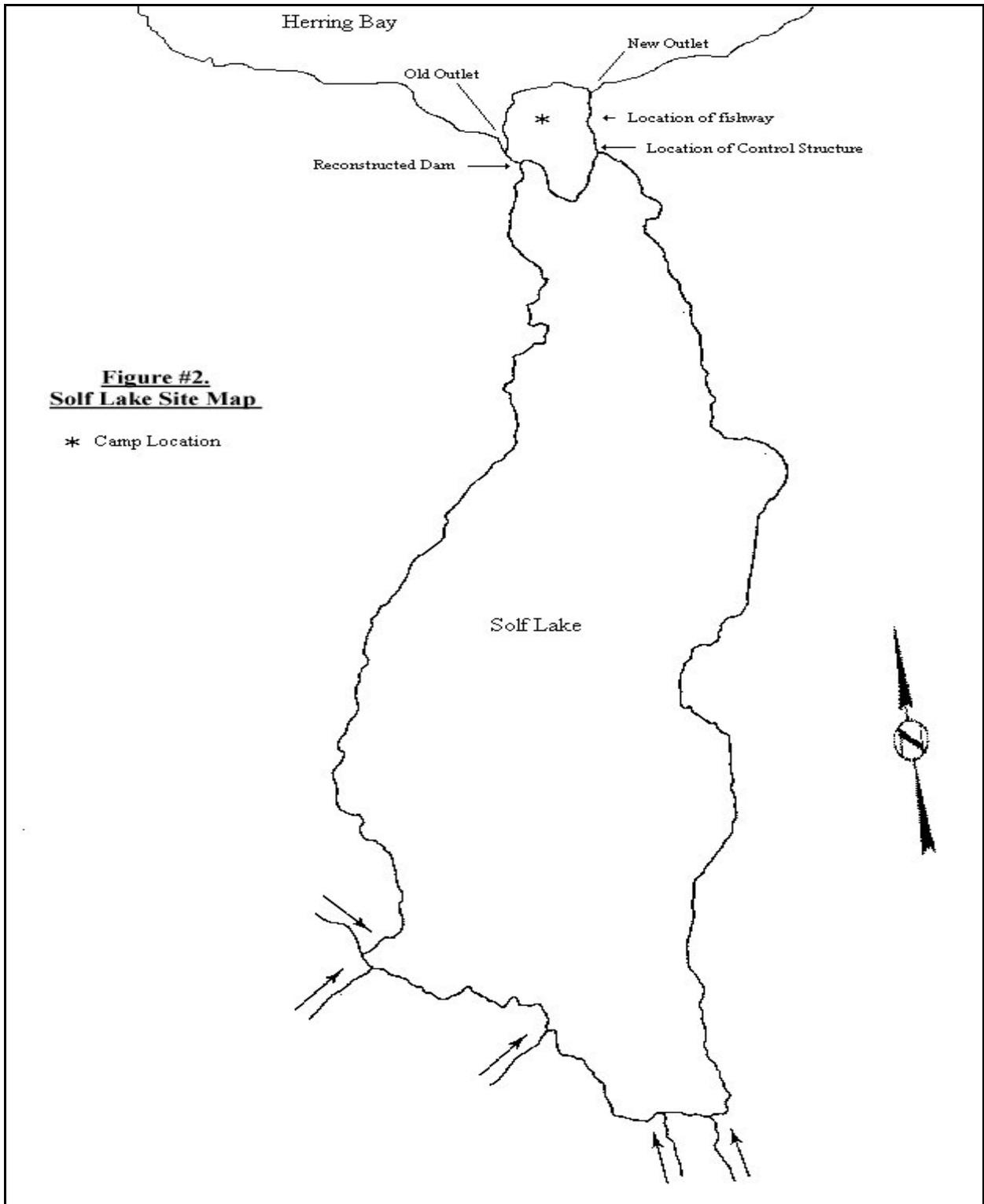


Figure # 3. Macrozooplankton Composition by Density.

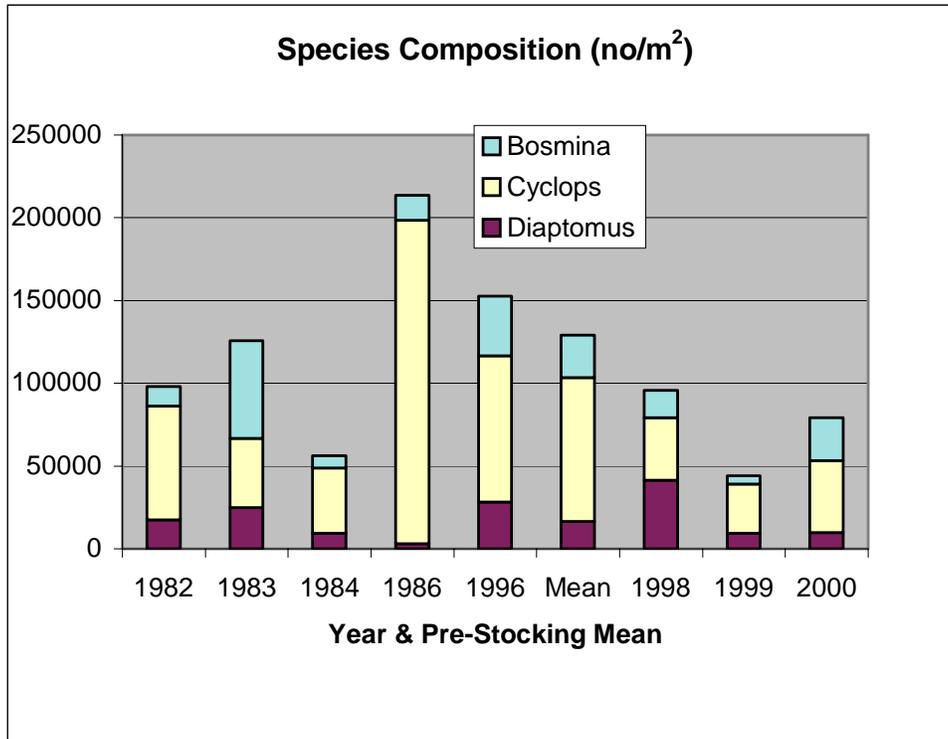
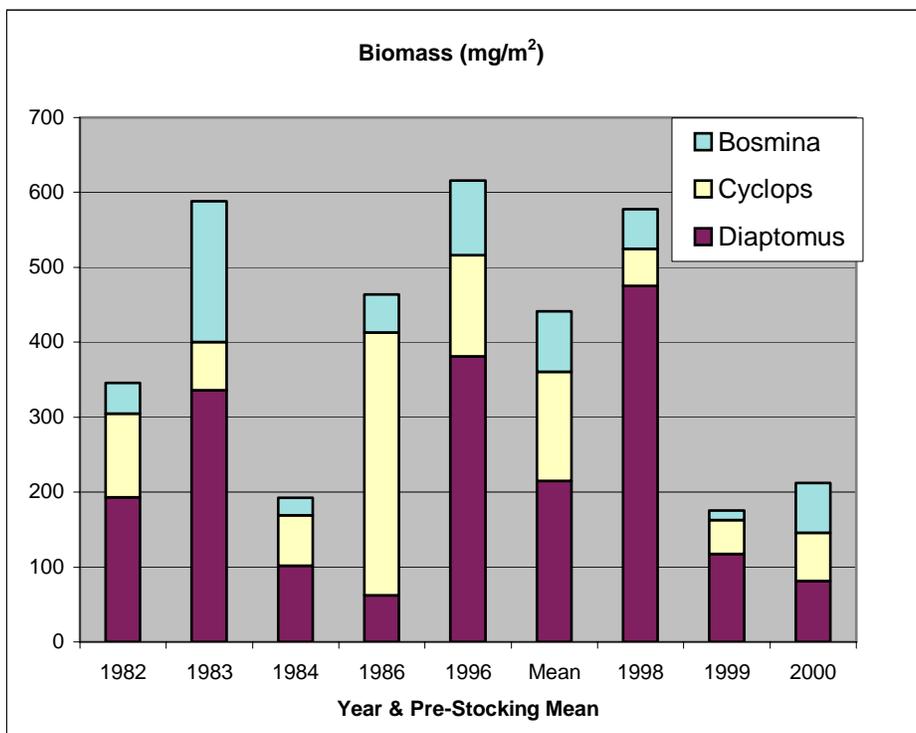


Figure # 4. Macrozooplankton Biomass (mg/m²).



2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

Budget Category:	Authorized FY 2001	Proposed FY 2002	PROPOSED FY 2002 TRUSTEE AGENCIES TOTALS				
			ADEC	ADF&G	ADNR	USFS	DOI
						\$15.5	
Personnel	\$14.5	\$11.1					
Travel	\$0.4	\$2.7					
Contractual	\$6.6	\$0.0					
Commodities	\$0.3	\$0.0					
Equipment	\$0.0	\$0.0					
			LONG RANGE FUNDING REQUIREMENTS				
Subtotal	\$21.8	\$13.8				Estimated FY 2002	
General Administration	\$2.6	\$1.7				FY2003	
Project Total	\$24.4	\$15.5					
Full-time Equivalentents (FTE)	0.0	0.3					
			Dollar amounts are shown in thousands of dollars.				
Other Resources	\$0.0	\$0.0				\$0.0	
Comments: This is a continuation of project 01256B.							

FY02

Prepared: 4/11/01, keh

Project Number: 02256b
 Project Title: Sockeye salmon stocking: Solf Lfake
 Lead Agency: USFS

Budget Category:	Authorized FY 2001	Proposed FY 2002	
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2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

Personnel	\$5.3	\$0.0					
Travel	\$0.4	\$0.0					
Contractual	\$0.0	\$0.0					
Commodities	\$0.0	\$0.0					
Equipment	\$0.0	\$0.0					
Subtotal	\$5.7	\$0.0	LONG RANGE FUNDING REQUIREMENTS				
General Administration	\$0.8	\$0.0				Estimated FY 2002	
Project Total	\$6.5	\$0.0					
Full-time Equivalent (FTE)		0.0					
Dollar amounts are shown in thousands of dollars.							
Other Resources							

FY02

Project Number: 02256b
 Project Title: Sockeye salmom stocking: Solf Lake
 Agency: ADF&G

Prepared:

Personnel Costs:		GS/Range/ Step	Months Budgeted	Monthly Costs	Overtime	2 of 9
Name	Position Description					

2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

Subtotal		0.0	0.0	0.0	
Personnel Total					
Travel Costs:		Ticket	Round	Total	Daily
Description		Price	Trips	Days	Per Diem
Travel Total					

FY02

Project Number: 02256b
Project Title: Sockeye salmon stocking: Solf Lake
Agency: ADF&G

Prepared:

Contractual Costs:	
Description	
	3 of 9

2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

Project Total	\$17.9	\$15.5					\$4.5	
Full-time Equivalents (FTE)		0.3						
Dollar amounts are shown in thousands of dollars.								
Other Resources								
Comments: This covers administrative cost for report preparation and monitoring of adult salmon returns and fishpass effectiveness.								

FY02

Project Number: 02256b
 Project Title: Sockeye salmon stocking: Solf Lake
 Agency: USFS

Prepared:

Personnel Costs:		GS/Range/Step	Months Budgeted	Monthly Costs	Overtime	
Name	Position Description					
Project Investigator	Fish Biologist	GS-9	0.5	4.2		
Field Crew Supervisor	Fish Technician	GS-9	1.5	4.2		
Seasonal	Fish Technician	GS-5	1.5	1.8		
Seasonal						

2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

					Subtotal		3.5	10.2	0.0
					Personnel Total				
Travel Costs:									
Description					Ticket Price	Round Trips	Total Days	Daily Per Diem	
Charter Flights					0.6	4			
Camp Food							15	0.02	
									Travel Total

FY02

Project Number: 02256b
 Project Title: Sockeye salmon stocking: Solf Lake
 Agency: USFS

Prepared:

Contractual Costs:	
Description	
Egg Take, Incubation, Marking and Release. PWSAC Contract at Main Bay	

2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

When a non-trustee organization is used, the form 4A is required.		Contractual Total
Commodities Costs:		
Description		
		Commodities Total

FY02

Project Number: 02256b
 Project Title: Sockeye salmon stocking: Solf Lake
 Agency: USFS

Prepared:

New Equipment Purchases:		Number of Units	Unit Price
Description			
		New Equipment Total	

Those purchases associated with replacement equipment should be indicated by placement of an R.

2002 EXXON VALDEZ TRUSTEE COUNCIL PROJECT BUDGET

October 1, 2001 - September 30, 2002

Existing Equipment Usage:		Number of Units	
Description			
Forest Service Landing Craft		1	

FY02

Project Number: 02256b
Project Title: Sockeye salmon stocking: Solf Lake
Agency: USFS

Prepared: