



**National Park Service  
U.S. Department of the Interior**

**Social Science Program**

OMB Control Number 1024-0224  
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**Programmatic Approval for NPS-Sponsored Public Surveys**

**Submission Date: 1/31/2013**

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1. **Project Title:** Silver Salmon Creek and Crescent Lake Creel Survey

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2. **Abstract:** Lake Clark National Park and Preserve (LACL) will conduct creel surveys of anglers at Silver Salmon Creek and Crescent Lake to quantify and evaluate the salmon sport fisheries at each location. The study will be conducted in 2013 and 2014 and the sampling period will last from July 1<sup>st</sup> through September 15<sup>th</sup> each year. The goal of this project is to describe fishing effort and harvest and provide clear guidance to management to prevent unacceptable impacts to park resources. Interviews will be conducted by fisheries staff as anglers are departing the fishery. This study will provide park managers with information to evaluate and manage for current and future fisheries sustainability at the park's most heavily fished locations.

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(not to exceed 150 words)

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3. **Principal Investigator Contact Information**

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**Title:** Fisheries Biologist  
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4. **Park or Program Liaison Contact Information**

**First Name:** Dan **Last Name:** Young  
**Title:** Fisheries Biologist  
**Park:** Lake Clark National Park and Preserve  
**Street Address:** 1 Park Place  
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**Project Information**

5. **Park(s) For Which Research is to be Conducted:** Lake Clark National Park and Preserve

6. **Survey Dates:** 7/1/2013 TO 9/15/2013  
7/1/2014 TO 9/15/2014

7. **Type of Information Collection Instrument (Check ALL that Apply)**

Mail-Back Questionnaire Other (explain)	<input checked="" type="checkbox"/> On-Site Questionnaire	<input checked="" type="checkbox"/> Face-to-Face Interview	Telephone Survey	Focus Groups
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8. **Survey Justification:** *Social science research in support of park planning and management is mandated in the NPS Management Policies 2006 (Section 8.11.1, "Social Science Studies"). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning, development.*

Lake Clark National Park and Preserve (LACL) was established in 1980 by the Alaska National Interest Lands Conservation Act (ANILCA) to "protect the watershed necessary for perpetuation of the red salmon fishery in Bristol Bay," "to maintain unimpaired the scenic beauty and quality of... wild rivers and lakes... in their natural state," and "to protect habitat for and populations of fish and wildlife" (Section 201 (7)(a)). ANILCA also mandates that the NPS conserve "natural and healthy populations of fish and wildlife" (Section 815). Central to meeting these mandates is the preservation of the watersheds and associated water resources that characterize LACL.

Investigation of the Silver Salmon Creek and Crescent Lake fisheries also address the following LACL goals.

- Achieve a level of scientific understanding that provides the basis for sound management of park resources.
- Meet public and legal expectations for conservation, enjoyment and safety.
- Develop and maintain effective and productive relationships with others to meet park and agency objectives.

Both Silver Salmon Creek and Crescent Lake have seen increased visitor use and angler activity in recent years. Concern over fishing pressure at Silver Salmon Creek prompted several user groups to submit proposals to the Alaska Board of Fish suggesting bag limit reductions and gear restrictions. The Board of Fish opposed these proposals because no quantitative data were available to assess the situation. Similar concerns have been expressed at Crescent Lake. The park currently has no data to assess the impact of these fisheries on these

populations of concern.

The goal of this project is to provide information on the trends in fishing effort and catch at two heavily fished areas within LACL. This information will be used to identify possible regulatory issues that may be necessary to protect LACL fishery resources. The objectives of this survey are to 1) quantify the extent, seasonality, and magnitude of recreational fishing effort and catch at Silver Salmon Creek and Crescent Lake and 2) characterize angler demographics and preferences.

To make appropriate fisheries management decisions, we need to understand trends in angling effort, catch, and angler demographics. An evaluation of fishing pressure, effort, and catch is the first step in successful management of the park's fishery resources

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9. **Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)**

**(a) Respondent Universe:**

All recreational anglers 18 years or older fishing at Silver Salmon Creek and Crescent Lake.

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**(b) Sampling Plan/Procedures:**

We will use a roving-access creel survey as described by Pollock et al. (1994), Malvestuto (1996) and Bernard et al. (1998) to collect information during two seasons (July 1 through September 15, 2013 and 2014). In this design, fishing effort is estimated by roving counts of anglers and catch/harvest is estimated by interviewing a subset of anglers as they exit the fishery. The average harvest among this subset of anglers is then expanded to those anglers and times not sampled (Pollock et al 1994, Bernard et al. 1998). This design has the advantage that the estimates are generally more precise and less subject to bias than from roving-roving surveys (Bernard et al. (1998).

Survey dates will be randomly selected with replacement from the population of weekday and weekend days as well as morning (AM blocks) and afternoon (PM blocks). Morning and afternoon survey times will be subdivided at the midpoint of total daylight hours (approximately 1:00 pm throughout the survey). Stratum duration will be the total time between legal sunup or sundown and mid-day. Surveys will only be conducted with willing participants. For a given fishing party, each angler will be interviewed.

Each census day will be divided into two tasks: 1) conduct counts of the number of anglers at the specific fishing location, and 2) interview anglers. Two counts will be conducted each day and the average of these counts will be used to estimate effort for the day. Surveyors will interview anglers to determine: approximate age, knowledge of LACL, state/country of residence, use of guide or no guide, duration of trip, hours fished, gear type used, species targeted, species caught, species harvested, and species released.

**(c) Instrument Administration:**

The survey will be administered as a face-to-face interview with willing participants. Park fisheries staff will conduct angler surveys along the river and lake. Anglers will be informed that the survey is voluntary. The interviewer will ask the questions and fill out the form.

**Interview Protocol:**

The interviewer will make a brief introduction to approach anglers and invite them to participate in an interview. Individuals who agree to participate will be informed about the survey and its subject matter. Participants will be informed that their names will not be recorded, so anonymity will be assured. Interviewers will note the location, date, and the time of contact directly on each survey instrument. The number of people in the group, and any refusals to participate will be documented in the interviewer's log sheet.

Each interviewer will use the following text as a guide to conduct the onsite interviews.

**Initial Contact and Interview Script:**

*Hello, my name is ( \_\_\_\_\_ ). I am an employee (or volunteer) at Lake Clark National Park and Preserve. We are conducting a survey of people fishing at Silver Salmon Creek/Crescent Lake, asking visitors questions about their fishing experiences. Have you been asked to participate in this study today?*

*If YES - Thank you for your time. Have a good day.*

*If NO - continue*

*Are you done fishing for the day?*

*If YES - continue*

*If NO - Ask them - Would you be willing to participate in the survey when you are finished fishing?*

*If YES - Thank them for their time and contact them when they are finished fishing.*

*If NO - END CONTACT. Thank you for your time. Have a good day.*

*Would you be willing to participate in our National Park Service recreational fishing survey? This study will help park managers monitor sockeye/coho salmon catch, harvest and effort at Silver Salmon Creek/Crescent Lake. This information will be used to ensure long term sustainability of these fisheries. This survey is completely voluntary and your responses will remain anonymous. The survey will take approximately five minutes to complete. The information you provide us and your opinion is very important. Would be willing to help us today?*

**If YES**   *Begin with question #1.*

If **NO**   Would you be willing to answer three quick questions?

If **YES**   Go to **non-respondent** survey questions.

If **NO**   END CONTACT. *Thank you for your time. Have a good day.*

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**(d) Expected Response Rate/Confidence Levels:**

The total number of anglers to be contacted is estimated to be 600 per year (n=300 per location). Visitor use statistics collected by LACL staff at each location indicates approximately 500 anglers per year at Silver Salmon Creek (range 380-730) and 350 anglers per year at Crescent Lake (only one year of data available). Our expected response rate is 95% based on similar surveys by NPS at other park units and by response rates encountered by LACL staff stationed at these particular locations.

Total Number of Initial Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
600	95%	570	10%

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**(e) Strategies for dealing with potential non-response bias:**

During the initial contact, the interviewer will ask each visitor 3 questions taken from the survey. These questions will be used in a non-response bias analysis.

- a) *How many hours did you fish today?*
- b) *How many sockeye / coho did you harvest today?*
- c) *Where is your primary residence?*

Responses will be recorded on a log for every survey contact. Visitors may decline to give this basic information as well. If so, this information will be recorded on the log sheet. The results of the non-response bias check will be described in a report and any implications for park planning and management will be discussed.

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**(f) Description of any pre-testing and peer review of the methods and/or instrument (recommended):**

This survey will follow standard methods for roving-access creel surveys as outlined by Pollock et al. (1994), Malvestuto (1996), and Bernard et al. (1998). These methods are peer-reviewed, widely accepted, statistically rigorous, and proven survey methods for collecting angler data.

10 **Burden Estimates:** We plan to approach at least 600 individuals per year (n= 300 at Silver Salmon Creek, n=300 at Crescent Lake). With an anticipated response rate of 95%, we expect to receive 540 annual responses for this collection.

We expect that the initial contact time will be at least one minute per person (600 x 1 minute = 10 hours). We expect that 5% (n=30) visitors will refuse to participate during the initial on-site contact. For those individuals we will record their reason for refusal and ask them to answer the three questions that will be used for the non-response check. This is estimated to take no more than 2 minutes (30 x 2 = 1 hour) per response.

For those who agree to participate (n= 570) we expect that they will complete the entire survey. We estimate an additional 5 minutes will be required to complete the survey (annual burden: 570 responses x 5 minutes = 48 hours). The total annual burden for this collection is estimated to be 59 hours.

Estimated Number of Contacts		Estimation of Time		Estimation of Respondent Burden	
Total Number of Initial Contacts	600	Estimated Time (mins.) to Complete Initial Contact	1	Estimated Burden Hours	10
Estimated number of on-site refusals	30	On-site Refusal/nonresponse	2	Estimated Burden Hours	1
Total Number of Responses	570	Time to complete and return surveys	5	Estimated Burden Hours	48
				<b>Total Burden</b>	<b>59</b>

11. **Reporting Plan:** LACL fisheries staff will write a final technical report that will be published by the National Park Service. A copy of the report will be submitted to the NPS Social Science Division as required by the NPS Programmatic Approval Process.

**References Cited:**

Bernard, D.R., A.E. Bingham, and M. Alexandersdottir. 1998. The mechanics of onsite creel surveys in Alaska. Alaska Department of Fish and Game, Special Publication No. 98-1, Anchorage.

Pollock, K.H., C.M. Jones and T.L. Brown. 1994. Angler survey methods and their applications in fisheries management. American Fisheries Society, Special Publication 25, Bethesda, Maryland.

Malvestuto, S. P. 1996. Sampling the recreational fishery. Pages 591-623 in B.R. Murphy and D.W. Wills, editors. Fisheries Techniques, Second Edition, American Fisheries Society, Bethesda, Maryland.