

KODIAK COMMERCIAL FISHERIES SALMON MANAGEMENT
FIELD CAMP AND WEIR
OPERATIONAL PLAN, 2004



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INTRODUCTION

The goal of this operational plan is to inform and instruct Alaska Department of Fish and Game (ADF&G) seasonal employees of their responsibilities for opening field camps and preparing, maintaining, installing, and operating weirs as well as effectively accomplishing required tasks, duties, and responsibilities. This document also defines standard operating procedures for weir camps in the Kodiak Management Area (KMA) and was prepared to help field crewmembers perform and understand their job and to answer commonly asked questions. All field employees are required to read this document prior to field deployment. In addition, all field employees will read the Standard Operating Procedures (SOP) pertinent to their position and be familiar with the current KMA commercial salmon fishery harvest strategy (Brennan et al 2004).

The KMA encompasses the entire Kodiak archipelago and that portion of the Alaska Peninsula with waters draining into Shelikof Strait from Cape Douglas to Kilokak Rocks (Figure 1). The Kodiak archipelago and Alaska Peninsula portions of the management area are each approximately 241 km in length while Shelikof Strait, separating the two, averages 48 km in width.

The KMA is composed of seven commercial salmon fishing districts and 52 sections, which encompass about 440 streams supporting commercially viable salmon populations. Emphasis of the commercial fishery management program is to achieve established escapement goals while ensuring local stock surplus production is harvested in an orderly fashion (Wadle 2004). Five species of salmon are harvested within the KMA, all of which have established escapement goals. The targeted escapement goals for KMA salmon area wide are 15,000 chinook, 1.7 million sockeye, 3 million (odd years) to 4.5 million (even years) pink, 150,000 coho, and 550,000 chum salmon (Wadle 2004). Directed commercial fisheries occur on sockeye, pink, chum, and coho salmon; chinook salmon are not targeted. To properly manage the fisheries inseason; managers analyze run timing, catch per unit effort (CPUE), and species composition of catch, while also considering regulatory management plans, estimates of salmon build-ups, escapement estimates from aerial surveys, daily weir counts, and the Alitak test fishery.

Weirs provide the primary method for enumerating most sockeye salmon escapements into major systems in the KMA. These systems include the Ayakulik, Dog Salmon, Karluk, and Upper Station Rivers (Figure 1). Weirs on minor systems include Litnik and Pauls Creeks (Figure 1). Aerial and foot surveys are also conducted on some area streams for indexing sockeye, pink, chum, and coho salmon escapements (Prokopowich 1998).

Annually, ADF&G personnel collect samples from sockeye salmon escapement from both major and minor spawning systems for biological characteristics (i.e., age, length, and sex (ALS)). These samples provide the foundation for preseason run forecasts, escapement goal evaluation, and accurate assignment of the run to the stock of origin (run reconstruction). As the demand on KMA salmon resource increases, so does the intrinsic value of these data. Therefore, it is imperative that all data collected are of the highest quality possible.

In 2004, the ADF&G salmon management crews at the Ayakulik, Dog Salmon, Karluk, Litnik, and Upper Station weirs will enumerate and sample fish from the escapement. Refer to the Weir Camps section for specific information pertaining to each individual project.

GOAL

The primary goal of KMA weirs is to achieve established salmon escapements while ensuring that commercial fishermen have an opportunity to harvest surplus salmon within the KMA.

OBJECTIVES

Long Term: To improve management of KMA salmon resources through run forecasting, development of stock-recruitment relationships to assess escapement requirements, and accurate assessment of stock composition. The overall objective of managing the KMA salmon fisheries is to provide an opportunity to orderly harvest salmon surplus to escapement requirements for each of the targeted species and systems.

Short Term: The primary duties of the KMA personnel stationed weir facilities are to:

1. Install, operate, and maintain weirs and field facilities.
2. Provide timely salmon escapement into the river system by enumerating salmon species through the weir.
3. Estimate concentrations of fish below the weir in lagoons, the river mouth, and offshore, including fish schooled in closed waters around each system.
4. Collect representative scale samples for ALS composition ratios and estimates from salmon escapements.
5. Collect and maintain accurate data records, and transmit reports on a timely basis.

Basic Policy for Weir Camps: Accomplish all essential daily fieldwork before pursuing personal interests (i.e. sport fishing, hiking). Safety and common sense should be your ultimate guides.

SUPERVISION AND TRAINING

Kevin Brennan, the Kodiak Fin Fish Area Management Biologist (AMB) is responsible for the conservation of the KMA salmon resource, management of the commercial fisheries and is the overall project supervisor. Kodiak Fin Fish Assistant Area management biologists Dennis Gretsche and Jeff Wadle are the weir camp project supervisors and Paul Kuriscak is the senior weir operations biologist and coordinator. They will provide oversight, supervision, logistical, and technical support for weir operations. Usually the employee with the most experience in the camp will be the crew leader. If it is unclear who has been designated crew leader in your camp, ask your project supervisor. The crew leader assigned to each weir is responsible for training new employees, scheduling, and prioritizing daily work assignments, assuring collected data adheres to ADF&G standards, and assuring safety will be a priority. A brief chronology of assignments is presented in Table 1 and important tasks to remember are presented in Table 2. The weir camp project supervisors are responsible for making sure that the crew read and understand the department's field safety policies and Standard Operating Procedures (SOP). Each weir camp employee will be required to sign the Employee Safety SOP Verification and Job Performance Expectation forms. The crew leader of each camp should make sure these documents are secured from the weir camp project supervisor prior to departing for the field. The crew leader is also responsible for the accuracy, completeness, and neatness of the collected data. Crew leaders at each camp will prioritize, establish work schedules, and supervise camp duties. More details on crew leader responsibilities are presented in a later section (see Crew Leader Responsibilities).

In addition to mandatory CPR and First Aid training, each crewmember will also complete two Management Training Courses: Field Safety Training and Adult Sampling Protocols.

PERSONNEL

ADF&G will operate KMA weirs from approximately 25 May through 15 September, with the exception of Karluk weir that may stay in beyond 30 September depending on weather and sockeye salmon run timing. Normally two crewmembers are assigned to each project; if necessary additional assistance will be provided during weir installation and removal, periods of immense salmon escapements, high water, and heavy debris loads.

Compatibility of Field Personnel

At all times state employees are expected to act in a professional manner. Fieldwork will likely require spending several months working in remote areas and living in a small cabin. Employees are expected to act in a respectful manner toward each other. Failure to act cooperatively may result in a transfer to another field camp or possible dismissal. If you are unable to get along with coworkers in your camp, notify the project leader in Kodiak and they will attempt to resolve the problem, which may involve rearranging personnel.

METHODS AND PROCEDURES

Opening Camp

Upon arrival at camp, the first days work should consist of opening the field camp facility, organizing, storing supplies and personal gear, setting up the single sideband (SSB) radio, and preparing the necessary gear and equipment for the following day which is weir installation (Table 1).

WEIR OPERATION AND ADULT SAMPLING

Objectives

1. Enumerate adult salmon escapement and estimate salmon build ups below the weir in the river, the river mouth, lagoons and off shore, including fish schooled in closed water around each system.
2. Monitor escapement quality, including the numbers of net-marked and “jack” (immature salmon ≤ 400 mm mid eye to tail fork) sockeye salmon.
3. Conduct escapement sampling.

Duties

1. Operate and maintain the weir continuously until a decision to remove the weir is made by the project biologist.
2. Count the daily escapement by species, noting the number of net-marked and jack sockeye salmon.
3. Sample 80 adult sockeye salmon three times per week (240 total per week) for age, length, and sex.
4. Beginning in mid-August, conduct surveys at specified streams to document salmon escapement, distribution, and spawning abundance.

Weir Installation, Operation, and Maintenance

Installation of the weir should commence the day following opening of camp. Specific instructions for weir installation, maintenance and operations are provided in Appendix A. It is a requirement to clean and inspect weirs daily for holes, insuring that they are fish tight. Keeping the weir clean of debris inhibits scouring, reduces force against the weir panels and framework,

and lessens the possibility of weir washout. All weir panels should be tightly secured with seine twine to the upper 4 x 4 stringers. All gaps between the weir panels greater than 76 mm (1.5 inches) should be filled with individual aluminum pipes; holes at the base of the weir should be blocked with sandbags or large rocks and gravel. This is extremely important since fish that escape through any holes will not be counted. To reduce erosion, the bottom of all weir panels should be entrenched into the riverbed and back-filled with gravel and rock. In addition to entrenching weir panels, on smaller weirs sandbags should be placed at the bottom of each weir panel on the upstream side. Line the entire base of the weir with sandbags to insure it is fish tight. This measure also inhibits erosion.

The frequency of the escapement counts will be scheduled to minimize migration delay. Specifically, counts will be made at least four times daily using polarized glasses to improve visual recognition, identification, and accuracy. Counting frequency will be increased during the peak of the escapement. Individual counts, by species, will be tallied manually using hand-held tally counters. Data must be recorded on the Weekly Salmon Weir Count Report Form (Figure 2). The escapement counting week (not the same as a statistical week) will extend from Sunday through Saturday.

Do not leave the camp if a large number of fish are behind the weir. Always count fish through as soon as possible. The weir should always be attended by at least one person with the following exception: at two person weir camps, both employees may leave to perform bay or stream surveys, commercial or sport fishery monitoring, or other duties as assigned. Whenever both employees leave, a note should be left at the cabin stating destination, purpose, and expected time of return. At three person stations, the remaining individual will be made aware of the above information.

Escapement Sampling

In most camps, sockeye salmon escapement ALS sampling should be conducted at a rate of 240 fish per statistical week (Monday through Sunday). The escapement sampling strategy will be similar to recent years; rather than attempting to collect all the samples during a single day of the statistical week; sampling effort will be distributed more evenly across the statistical week. In general, 80 samples will be collected every other day of the statistical week. Ideally, 80 samples will be collected each Monday, Wednesday, and Friday. If it is obvious to the crew leader that following this strategy will result in failure to obtain the desired 240-sample size per week, adjustments should be made. Before the field season begins the KMA salmon research staff will provide field crews a salmon escapement sampling operational plan. Refer to this plan for sampling guidelines and procedures and be sure to ask your weir camp project supervisor if you have any sampling questions.

Stream Escapement Surveys

Some field projects require foot stream surveys, especially on local minor systems. The primary objective is to document the distribution and abundance of the salmon escapement into minor systems. Foot surveys will be conducted beginning about 15 August. These surveys typically focus

on chum, pink, and coho salmon. Streams should be surveyed to the upper limits of spawner distribution, and the number of live and dead fish recorded on a Stream Survey Form (Figure 3). Stream mouth counts will be recorded separately from actual in-stream counts. Observers will survey on foot counting live and dead salmon species using polarized glasses and tally counters. Before conducting surveys inspect tally counters will be for proper functioning. While conducting foot surveys carry a shotgun or rifle in the 300 magnum or larger caliber, whistle and/or use an air horn as a noise deterrent for bears. The best strategy is for one person to count while the other guards against bears. Gun safety/training will be provided during the Field Safety course prior to entering the field.

CREW LEADER RESPONSIBILITIES

Daily Radio Schedule

The previous day's counts and cumulative salmon escapement information will be reported each morning at approximately 8:00 AM on single side band (SSB) frequency 3.230 MHz to the Kodiak ADF&G. Record this information on the Weekly Salmon Weir Count Report Form (Figure 2) and carefully edit the data prior to the morning radio schedule. In addition, the entire weekly escapement form must be completed; summarized and proofread each Saturday evening. A second radio schedule occurs at 4:30 PM. The evening schedule is implemented to check on field personnel, discuss salmon build ups and escapements, to pass along short lists of supply requests, and to receive the latest commercial fishery announcements. Radio schedules are very important, and must be taken seriously. Keep communications short and to the point, especially during the morning schedule. Failure to make two consecutive radio schedules will result in a flight to the camp to ensure the safety of the crew. Personal communications between camps should be conducted when there are no other ADF&G schedules, preferably after 9:30 PM.

Conversation during all radio schedules will be kept professional, since the federal communications commission (FCC), fishermen, and other department personnel are monitoring these schedules. Fines can and will be administered by the FCC for inappropriate language and/or communications.

Advise your supervisor if you plan to miss a radio schedule. Remember to keep your battery charged and have spare fuses available.

If necessary you may contact someone at the Kodiak ADF&G anytime during normal working hours on SSB frequency 3.230 MHz. SSB 4.125 MHz is also available in emergencies situations. The satellite dispatch phone can also be used for communicating with the office when SSB reception is poor. Refer to Appendix E for satellite phone instructions.

Air Charters

The ADF&G Kodiak staff will arrange all air charters. Essential information concerning charters will be relayed during daily radio contact. It is important to properly label all data, equipment, or other freight that will be “back hauled” to Kodiak, and advise office personnel about its arrival.

Time Sheets and Leave

Crew leaders are responsible for keeping an accurate record of employees work hours. Blank time sheets will be provided and a sample time sheet with the appropriate codes will be available as an example. Recorded time on the time sheets will be "actual hours" worked on the project. Obviously, there is a finite budget and a list of priorities. Complete tasks in their order of priority, without accruing excess overtime. Most projects can be finished within normal working hours; however there may be occasions when the normal working day (7.5 hours) is insufficient to complete the necessary tasks. If unusual circumstances arise that require additional overtime, the crew leader must notify the project leader immediately. Weir camps are budgeted for 20 overtime hours per month and additional overtime exceeding the 20 hours must be approved in advance.

During the field season, crewmembers will have scheduled days off, although not necessarily on weekends. The crew leader will determine normal days off for the crew. During these normal days off, crewmembers should realize that they are still ADF&G employees and their actions reflect on the department.

Extended leave is not allowed during the field season, although emergency leave may be authorized. Under no circumstance should an employee leave the job site without notification and authorization from the weir camp project leader.

Data Management

An important duty of the crew leader is to properly record and preserve all data. Prior to the field season the project and crew leaders will review the biological sampling procedures and the proper way to complete the data forms. In the field, the crew leader is responsible for ensuring that measurements are taken properly and accurately recorded. The crew leader is also responsible to ensure that the forms and samples are recorded completely, correctly, and neatly. Neatness and accuracy are important aspects of the crew leader's responsibilities. Collected ALS data is recorded on opscan data forms. A scanner electronically scans them and errant or missing marks contributes greatly to the time it takes to edit and double check the data for accuracy and precision. It is also the crew leader's responsibility to keep a daily log. The daily log should include a record of weather, water temperature and stream depth (recorded at 7:55 AM), water conditions, a record of work hours, work accomplished, daily escapement and cumulative counts, survey notes related to numbers of salmon schooled offshore, and any observed build up of salmon in the river or lagoons below the weir. Additional entries should include comments related to fishing activity, bear and people encounters, smolt migrations, weir problems, regulation violations, cabin maintenance and aircraft traffic (noting aircraft tail numbers). Logbook entries should be made throughout the day

and completed by the end of the workday. Clear and well-organized data reflects highly on the crew leader and the crew.

Ordering Food and Supplies

Field crews often need to purchase items prior to leaving Kodiak for their field camp and may also request items (e.g., groceries, supplies, and equipment) while in the field. While in town, crews will only purchase items authorized by the project leader. If the crew desires an item that they believe could be helpful for the project they should ask the project leader prior to purchasing.

Field crews often require additional items (e.g., groceries, fuel, and supplies) during the season. Grocery and supply flights are scheduled twice a month. Keep an inventory of food to last two and a half weeks, but do not overstock perishables such as fresh vegetables. Order enough food to eat healthy but be reasonable (i.e., steaks every night is extravagant). If your grocery orders become unreasonable, less expensive items will be substituted. Eat what you order. Grocery and supply orders must be in the Kodiak office at least one week prior to the scheduled flight.

Alcoholic beverages, personal grooming supplies, newspapers, magazines, and tobacco must be purchased with personal funds.

Try to anticipate shortages of supplies, especially fuel, and data forms. Order before you run out. Small lists may be read over the radio during evening radio schedule; however, these lists should be limited to just a few items. It should be remembered that radio time is limited and there are a number of other camps statewide that use the same frequency. Longer lists of materials will be sent to town on supply flights. Blank grocery lists will be sent to the field and the crew leader should send orders in advance to ensure the correct grocery order for the next supply flight. The budget allocates approximately \$15/day/person, and this allocation will not be exceeded. Crew leaders should track grocery expenses and limit the number of requested specialty items. Similar planning should be made for fuel. Fuel is a necessity for many camp operations including heating the facility. However, oil heaters should be turned off or down during the day while the crew is working outside. Oil heaters and wood stoves should be completely off prior to leaving the cabin for any extended time.

Photo Documentation

The crew leader will be responsible for photo documenting project activities. It is important to photograph specific aspects such as trap installation, adult sampling, weir operation, structural problems, and remedies to the weir and other detailed tasks. When possible ADF&G cameras and film will be used. However, if ADF&G cameras are not available, film will be provided for personal cameras (in this case, the use of personal cameras is suggested but not required).

Visitors / Public Interaction

Some weir sites get many visitors, from day-use sport fishing and bear viewing to extended use through local lodges and campers. Many of these visitors come by the camp because the weir concentrates bears for good bear viewing. Visitors also like to see the fish passing through the weir. Because of this public contact, keep the camp clean and be courteous and helpful to visitors, but also inform them of boundaries. The general public is not allowed to access the weir. Make sure keep off weir signs are posted at both ends of the weir. Remember your primary role is to operate and maintain the weir and the associated responsibilities of the project. It is not in your job description to give tours of the weir or act as bear viewing guides. If guides & outfitters request tours of the weirs do your best to be helpful by asking them to schedule an appointment to accommodate their request. If someone from the public asks for a tour accommodate them as your daily tasks allow. Under no circumstance should any state employee accept payment or gratuities for such tours or public contact.

Camp Inventory and Closing Camp

Each camp will be inventoried for all gear, supplies, and fuels that remain on site prior to camp close up. Winterizing the cabin should include (but is not limited to): covering windows, covering and insulating propane connections, closing and locking all doors, winterizing all motorized equipment, chaining and locking boats in a secure location. See Tables 3-5 for examples of a Camp closing check off list, Salmon weir camp equipment status, and Salmon weir camp closing and inventory lists.

Season Summary Report

The crew leader is responsible for writing a season summary report. This report should be started in the field; however, the report is usually completed in town. The summary report will be a brief synopsis of the field season and includes, but is not limited to: (1) a chronology of weir installation and operations, (2) personnel that worked on site throughout the season, (3) salmon escapement and timing, (4) a chronology of sampling events and data collection, (5) problems incurred during the season, including sampling, field camp operations, and violations observed, (6) suggestions for improvements/modifications to the enumeration and sampling programs as well as maintenance requirements for the camp buildings, (7) equipment/building supplies needed for the following field season, (8) an accurate log of fuel consumption for heating stoves and motorized equipment and (9) an inventory of equipment, tools and fuels stored on site. In addition, the crew leader is responsible for completing performance evaluation questionnaires of the field crew.

ADDITIONAL GUIDELINES AND PROCEDURES

This section provides additional information regarding guidelines, procedures, and policies to assist crew leaders and the crew in performing their job correctly and safely. General equipment, camp

maintenance, and policy is also covered and provided in Appendix B, weir removal procedures in Appendix C, solar system operational manual in Appendix D, Satellite telephone and dispatch instructions in Appendix E, GPS co-ordinates for Kodiak salmon management field camps in Appendix F, and equipment and supply list in Appendix G.

Questions on Procedures and Suggestions

If crew leaders have any questions about sampling procedures, policies, etc. they should ask their weir project leader. If crews have any suggestions, write them down and pass them along as well. Suggestions are appreciated and will be considered.

Data Recording and Labeling

All completed data forms and any written correspondence sent to town from field camps will have the name of the camp on it, including the name of individuals filling out forms and working at the weir.

A record of field work and activities including, numbers of fish counted and sampled, when weirs are installed/removed, holes in weirs, estimates of fish, tagging information, etc. will be recorded in a logbook. Rite-in-the-rain ledgers will be provided for logbook entries. As previously mentioned this information will also be recorded on a weekly weir report form (Figure 2), which are sent to town on each returning grocery flight.

Weir Inspection and Cleaning

Keeping the weir clean of debris and fish carcasses is essential maintenance. Weirs should be cleaned and inspected in the morning before radio schedule, throughout the day, and before retiring for the evening. If not kept clean, resistance against the weir increases rapidly. Replacing a washed out weir is an enormous amount of work. A garden rake, pew, potato rake, or pitchfork can make this job easier. Check the sandbagged bottom of weir at least once a day and more frequently during high water conditions, and frequent bear activity.

Passing Fish through the Weir

Do not hold up large numbers of fish behind the weir; if there is a school of fish attempting to get through the weir, your priority is to count them through. All weir-counting gates should be set up to regulate the amount of fish traveling through the gate. This can be done with a wooden wedge that is used to set the gate opening to a specific height. The gate opening should be set so that each crewmember can accurately identify fish passing through the gate. Do not open the gate to the degree that you cannot keep up with fish identification and accurate counts. For large volumes of fish a four to six inch opening is adequate to slow the flow. When low numbers of fish are present gates can be opened to a greater degree.

Firearms

All state employees must be able to safely use firearms. A state owned rifle or shotgun will be provided at each camp. Training pertinent to the safe handling and care of firearms as well as shooting practice will be conducted for all personnel. Personal firearms are allowed with prior approval from the project supervisor. Loaded guns (with a round in the chamber of the gun) are prohibited inside camp facilities. **Anyone handling a firearm should always treat it as if it is loaded.** Guns will be well maintained, cleaned, and oiled. Make certain that firearms are completely unloaded while doing so. Firearms will be stored on site in a location out of reach of the public. Any horseplay with, or misuse of, firearms will not be tolerated and may be cause for immediate dismissal. Always unload a firearm of all rounds/ammunition before entering a vessel or aircraft.

Bears

Weirs attract bears, and many weir camps have high concentrations of them. Do not antagonize bears and make every attempt to coexist with bears. Each bear is a potential danger. Do not encourage bears to come near camp by leaving food or unburned garbage around. Make sure you burn trash completely. Weir staff is advised not to eat outdoors or bring dead fish or animal carcasses around the camp. Make an extreme effort to maintain a clean camp.

Do not shoot at a bear unless, in your best judgement, it is endangering someone's life or severely damaging personal or state property. Whenever trying to frighten a bear away by shooting, do not fire toward it, shoot away from the bear because you may inadvertently wound it.

If you are having problems with a particular bear around camp, notify the Kodiak ADF&G, and personnel from Division of Wildlife Conservation will amend the situation.

Garbage

Burn all garbage to prevent bear problems and make sure to burn trash completely, (if not it attracts bears). **Do Not Burn When Windy or Dry.** The U.S. Fish and Wildlife Service prohibit garbage pits on the refuge. Never start fires with fuel. Be sure all burn barrels have proper grates or covers to arrest sparks; keep grass and brush trimmed at least fifteen feet in diameter around the burn barrel to prevent grass fires caused by sparks and embers. In addition to preventing grass fires it is usually best to burn trash early in the morning or late in the evening when the wind is minimal. Never leave a fire unattended, and always have adequate fire extinguishing materials available.

Cut out both ends of tin cans; flatten the cans, pull paper labels off, add the crushed can and paper label to your burnables. Burning cans with your other burnables eliminates residual food and odors that attract bears. Box up burnt cans and other non-burnable items and send this trash to town on the return leg of the supply flight if space is available. All garbage, trash, empty cans,

and bottles returning to town via airplane must be double bagged. Empty fuel containers should also be sent in as soon as possible on return grocery flights for immediate recycling. Maintain a slop bucket for biodegradable garbage (food scraps, etc.). Don't compost biodegradable food because it attracts bears.

Fire and First Aid Safety

The crew leader is responsible to ensure an adequate first aid kit and fully charged operable fire extinguishers are in camp, and that all personnel know their location and how to use them.

All field personnel are required to be current on CPR and first aid prior to going in the field. This is the employee's responsibility. All crewmembers need to be familiar with the camp's first aid kit and be sure items are replaced as needed or when beyond expiration dates.

Drinking Water

Stream and lake water are probably contaminated with bacteria or harmful parasites. Micron water filters are provided in all field camps. Filter all drinking water. If filter cartridges are damaged replace them immediately. If filters are not available or inoperable take time to avoid intestinal parasites carried by beaver, otter, etc. by boiling your drinking water at least 10 minutes, let it cool and then boil it again for another 5 minutes.

Boating and ATV's

Boats and all terrain vehicles (ATV's) are for official work related use; they are not to be used for personal use, pleasure, or recreational purposes. Boats and ATV's are to be accessed and operated only by trained personnel and will be secured when not in use. Only state employees will operate or be allowed in state boats and ATV's. Be safety conscious, use common sense, do not speed or drive recklessly.

Do not endanger your life or property by going out on a boat in dangerously rough water. If you are unfamiliar with marine safety, ask your supervisor for information or advice. All personnel must wear United States Coast Guard approved Personal Flotation Devices (life jacket, float coat, or mustang suit) at all times when operating boats. Use your head, if you suspect it may be dangerously rough, don't go out on the water.

A waterproof EPIRB, a tool kit that includes wrenches, pliers, screw drivers, spare spark plugs, spark plug wrench, extra propeller, shear and cotter pins (if applicable), and a flare kit must be in the boat or raft at all times. If you must travel at night carry a flashlight. Strobes are available for field use and should be in the boat when traveling. Know how to operate your EPIRB, check the battery power and expiration date.

Some camps are furnished with a 4-wheel ATV. The following safety precautions shall be observed at all times regarding department ATV's:

- Only employees of the state may use the vehicles.
- Only one employee may ride on the vehicle at a time.
- The safety helmet is provided and must always be worn during operation of an ATV.

Boats and ATV's have been provided to transport materials, supplies, and equipment between campsites and supply planes or vessels. In addition, they may be used for transportation to and from assigned duties in the field, such as surveys, monitoring a fishery, or collecting harvest information.

Unauthorized use of an ATV or boat will result in a notation on your evaluation, the loss of use of the ATV or boat at your field station, or your dismissal from work. Remember; an ATV or boat is to be used for conducting your work assignments.

Personal Gear and Pets

Generally 100 lbs. is the maximum amount for personal gear allowed. If you anticipate bringing more than 100 lbs. to a field camp, check with your supervisor first. Transportation charges for excess baggage will be the employee's responsibility.

Pets are not allowed in ADF&G field camps. Please find alternate arrangements for housing and care of your pet prior to reporting for duty.

Maintenance and Cleanliness of Cabins and Outbuildings

Cabin and facility maintenance is an important aspect of being able to accomplish camp objectives comfortably. After the camp is established make a list of projects and repairs that need to be accomplished. Send in a list of materials needed for these projects/repairs. Also, try to anticipate problems before they occur. Ordering replacement materials and parts before buildings or equipment actually break will prevent long delays in repair, due to the logistics involved.

Crews will be using these camp facilities for many years to come. It is important that repairs and maintenance be scheduled on days when fish migrations are slow to keep the buildings structurally sound and safe. Order supplies in advance, especially lumber, as it may take a specific plane or helicopter to bring in supplies. If you notice needed repairs that may prevent injury or accident in your camp, report these immediately along with a list of required materials for repair. Don't wait until the end of the season for this type of construction or repair.

Keep the cabin, surrounding area, and yourselves clean, organized, and safe. Appearance is important. The public perceives you as a representative of the Alaska Department of Fish and Game. Visitors' impressions are often based on your appearance, the appearance of your camp and how well it is maintained. You will not always be notified of the intended arrival of visitors, officials, supervisors, etc.

Compliance with ADF&G Regulations

All employees are responsible for complying with local subsistence, sport fishing, and hunting regulations. Copies of State and Federal regulations will be available to all field camps. Any violation will be recorded on your evaluation and may be cause for immediate dismissal.

Basic Procedures Regarding Violations

Most ADF&G field personnel are not enforcement officers, but we all have a responsibility for being aware of, and reporting any violations of state or federal law. The following is not intended as an all-inclusive procedure for handling violations of ADF&G regulations, but rather as a guideline for obtaining the appropriate information, and/or evidence to prove that a violation has been committed. The importance of being familiar with the commercial, subsistence, and sport fishing and hunting regulations cannot be overemphasized. If a violation is noted, all pertinent information pertaining to the violation should be recorded immediately, retained by the employee, and the project leader must be notified. Violation reporting procedures are printed on the back cover of the commercial fishing regulation book. A copy of each regulation book should be available in each camp. Request the regulations from your supervisor if necessary.

The use of the following five W's can simplify and aid in obtaining sufficient information pertaining to a violation.

1. What is the violation?
2. When did the violation take place (date and time, plus weather and tide condition, etc.)?
3. Where did the violation occur (place name, location, lat., long., be descriptive)?
4. Who is in violation and who are the witnesses (if names are not available, provide a complete description of the people involved and vessel names if applicable)?
5. Why was the violation committed?

It is important to interview all witnesses to a violation. Record all statements pertaining to the violation along with witnesses' names and addresses. If you have a camera, record as much as possible on film. Always carry your camera if you suspect you may encounter a violation. Do not attempt to arrest anyone for violation of ADF&G regulations. Simply collect as much information and evidence as possible and contact your supervisor or a State Trooper from the Department of Public Safety Alaska Bureau of Wildlife Enforcement as soon as possible.

Employees without enforcement authority are somewhat restricted as to how far they can go in obtaining information and evidence surrounding a known violation. If a person found in a violation refuses to cooperate with an employee without enforcement authority, no action should be taken, other than to relay all information and evidence collected to an officer (Bureau of Wildlife Enforcement) as soon as possible. Employees with enforcement authority will contact the individual(s) involved and at that time issue a citation if appropriate for simple fineable violations. For more complex violations turn all evidence over to a state trooper.

Emergencies

In the event of a medical emergency, administer first aid to stabilize the situation. Try to contact ADF&G on SSB radio frequency 3.230 MHz to state the nature of the emergency and what type of assistance you will require. If unable to reach anyone on 3.230 MHz, try 2.450 MHz or 4.125 MHz. and immediately call the US Coast Guard Coordination Center phone number 800-478-5555 (Appendix E) on the satellite phone. If your camp has a CB or handheld VHF radio, you may be able to contact nearby villages, air charter operators, lodges or fishermen. Channel 6 or 16 are generally monitored by most fishing vessels. If an injury is very serious or life threatening; immediately notify the U.S. Coast Guard directly on 4.125 MHz on you SSB field radio. The Kodiak Fish and Game number is 486-1830. Home phone numbers for project supervisors are Kevin Brennan 486-6475; Dennis Gretsich 487-4088; and Jeff Wadle 481-2974. Stay calm and in control.

If SSB radio contact is made with the U.S. Coast Guard, have the following information ready to pass along.

- Location of your field camp or specific location of the emergency (refer to Appendix F). This appendix provides latitude and longitude for weir camps.
- Name and phone number of supervisor.
- General nature of medical emergency.
- Specific information regarding the patient (name, age, primary complaint, and vital signs).
- Your assessment and treatment.
- Wind and weather conditions
- Other information pertinent to a possible medical evacuation.

WEIR CAMPS

The main objective of the all weir projects is to record the number of salmon escaping into the system. Large numbers of fish (> 200) should not be allowed to stage behind the weir. If large numbers of fish start to accumulate behind the weir, the gate should be opened and the fish counted through.

A sockeye salmon less than 16 inches (400 mm) in length (mid eye to tail fork) is considered a jack. Sockeye salmon jacks will be included with the total sockeye salmon enumeration, but will also be recorded separately. Use the escapement form provided to record the escapement data (Figure 2). Total daily counts and cumulative seasonal counts for each species will be relayed to Kodiak during the morning radio schedule at 0800 hour.

Karluk Weir

The Karluk weir is approximately 330' (101m) long, located about 1/8 mile upstream from the confluence of Karluk River and Karluk Lagoon on the southwest side of Kodiak Island (Figure 1). The weir was first constructed in 1921 at its current lagoon location and was used in this location annually until 1941 and again after 1976. The weir was moved from the lagoon location to the “portage” west of Larsen Bay from 1942-1945 and then to the outlet of Karluk Lake between 1946-1975. It is currently operated by two to four Division of Commercial Fisheries (CF) employees from mid May to late September along with one Division of Sport Fish (SF) employee from mid May to mid July (Kuriscak 2002).

Opening Camp

- Follow guidelines for opening the camp listed in Table 1. Make sure you have your toolbox.
- All equipment and tools for the Karluk weir are stored in the ADF&G warehouse. Make sure several 3/16" hex wrenches for rack master connector joints are in your toolbox!
- Weir personnel will need to be transported to Karluk Lodge by air charter to obtain the survey skiff and transport canoe. The air charter should then transport one crewmember to the upper lagoon to unload gear and supplies at the grocery/supply flight landing. All gear and supplies are then moved to the cabin and weir site with the canoe after securing the survey skiff at the upper lagoon skiff landing.
- SSB antenna placement is located between a post near the banya and a post located near the front of the cabin.
- Living quarters consist of a two level, 16' x 20', cabin with two propane connections for a refrigerator and propane lights.
- There is no water supply to the cabin. Water is obtained from the river and filtered.
- A twin, 12-volt battery bank hooked to and charged by a solar panel with photovoltaic regulator, powers SSB and VHF radios.
- Fuels needed for this camp include propane, #1 heating oil, gasoline and two-cycle oil for the survey boat, and 10W-30 motor oil for the generator.
- Banya and outhouse are located in close proximity to the cabin. Wood for heating the banya is obtained from the beach at the outlet of Karluk Lagoon.
- The stairway from the edge of the bluff to the riverbank needs to be repaired and installed each spring. The stairway is stored behind the cabin.

Weir Installation

- Follow the guidelines for weir installations outlined in Appendix A.
- The 2004 weir will be placed in the same location as in 2003, directly in front of the cabin. The Karluk weir is a hybrid weir combining the structural engineering of both rack master and conventional wooden tripod weirs. This weir also utilizes a section of floating weir panel that serves a dual purpose, as a raft gate that allows rafters to pass down river and to flush out mass amounts of spawned out salmon. Boardwalk for the weir is 2" x 12" x 14' and is staged between the cabin and banya. Toenail the boardwalk sections together with duplex nails, then secure to

the monopods with seine twine. All weir panels are staged adjacent to the cabin. Rack master pipe and connector joints in 2003 were divided; half of the materials were staged next to the cabin and the other half across the river, high above the riverbank. This weir utilizes 32 tripods. Twelve tripods are staged across the river and the remainder staged adjacent to the cabin.

- Weight tripods down with large rocks from the riverbed.
- Install at least eight to twelve counting gates accompanied by flash panels.
- Secure and tie off the upper portion of panels to the upper stringer with seine twine.
- Install adult sampling trap.
- Install steelhead outmigration trap.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning and evening and cleaned throughout the day as necessary.
- The debris load is usually heavy after medium to heavy rainfall, and may increase later in the season especially on predominant pink salmon years. Historically the pink salmon run in even-numbered years is very large. After spawning, large numbers of dead salmon wash down onto the weir. During even-numbered years the weir may need to be cleaned every two to four hours, around the clock. Large amounts of river grass also build up on the weir throughout the season during heavy rains and high winds.
- Consider pulling weir panels during high water when the water in the river begins to cloud up, when debris build-up increases significantly and when the water level covers the indicator rock located 10 yards upstream of the weir.

Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement from the project supervisor. Check the land lease and obtain prior approval from your weir camp project supervisor before moving any structures, making any additions to the cabin, or relocating the weir if necessary.
- Make repairs, and maintain buildings and grounds surrounding the cabin and banya. Trim the grass along the trail to the boat landing, and at seasons end, cut a trail and an area large enough to stage tripods behind the banya.
- Repair and or maintain survey boat and canoe. During the season the survey boat is moored at the head of the lagoon. At the end of the season the skiff and canoe are stored again at Karluk Lodge. The outboard motor is returned to the ADF&G warehouse in Kodiak. Make sure to winterize and fog the engine before storage.
- Conduct surveys of the lagoon and river daily.
- The grocery/supply flight arrives on the north shore of the lagoon approximately .3 miles below the upper lagoon boat landing.
- All tools, gear, and equipment are returned to Kodiak and stored in the warehouse.

- Remove all food from cabin at the end of the season.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- Remove all hex head set screws from the rackmaster joints after the weir is removed, and place them in a oil filled container.
- Clean and lime outhouse on a regular basis.

Ayakulik Weir

The Ayakulik weir is approximately 190' (58m) long and since 1970 has been located about 1/8 mile upstream from the confluence of the Ayakulik River and the Shelikof Strait on the southwest side of Kodiak Island (Figure 1). A weir was originally constructed on the Ayakulik River in 1929 at the outlet of Red Lake and operated at that location until 1969. The weir is currently operated by two to three CF employees, from late May to early September and one SF employee from late May through mid July (Kuriscak 2002).

Opening Camp

- Follow the guidelines for opening the camp listed in Table 1.
- Obtain the keys to the cabin from your weir camp project leader. In addition you will need a claw hammer and an adjustable wrench. The basement to the cabin is locked and nailed shut. The basement must be opened first to obtain a ladder to reach the window on the northeast corner of the cabin. This window board has two padlocks and two lag bolts that need to be removed. Once the window boards are removed plug the bolt holes with tissue paper to keep the mosquitoes out.
- Assorted tools and equipment for the Ayakulik camp are stored at the ADF&G warehouse in Kodiak. Make sure to bring along the cordless Makita drill, you will need it.
- Living quarters consist of a one level, 16' x 20', single room cabin with half basement and an attached woodshed. The cabin has four bunks, a small refrigerator, a propane cook stove, a gravity fed water system, a wood heating stove, propane lights and 12-volt lights.
- Two propane connections are located in the basement for propane lights, refrigerator and cook stove.
- The banya and outhouse are located adjacent to the cabin. Firewood for heating the cabin and banya is obtained from the beach.
- Water for the gravity fed water system is obtained from the river and hauled to a 55-gallon drum that supplies the kitchen sink. In addition there is a fish tote and a drum to catch rainwater off the roof.
- The cabin has a 12-volt battery bank, consisting of three batteries that are charged by a solar panel permanently attached to the roof. This 12-volt system powers the SSB radio and VHF base station.
- The SSB radio antenna coaxial connector is attached to a 2" x 4" on the roof with antenna poles at the southwest and northwest corners of the property. Each pole is equipped with a pulley system.

- Fuels required at this camp consist of gasoline, propane, and two-cycle oils.

Weir Installation

- Follow the guidelines for weir installations outlined in Appendix A.
- In 2004 the weir will be placed in approximately the same location as in 2003, directly behind the cabin. The riverbanks are staked which indicates the location of the weir. The Ayakulik weir is a hybrid weir; it's constructed with wooden tripods, and stringers with aluminum panels and a PVC boat gate. It utilizes 21 tripods. All boardwalk and 4" x 4" x 14' stringers are staged on a wood rack adjacent to the cabin. A 20' raft gate (modified floating weir panel) is stored on the far bank of the river, above high water mark on a natural bench. Half of the tripods, weir panels and full sandbags are staged on the far riverbank and the other half are staged between the banya and cabin.
- Weigh down each tripod with at least six to eight sandbags.
- Install four counting gates accompanied by flash panels and one fish trap gate.
- Secure the upper portion of weir panels to the upper stringers with seine twine.
- Install the six panel Scott sampling trap one third of the distance from the bank nearest the cabin and use the extra wide counting gate.
- Install the steelhead outmigration trap.
- Install the raft gate.
- Rafters can use the boat gate or portage around the far end of the weir.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning and evening, and cleaned throughout the day, as necessary.
- Debris load is usually heavy after medium to heavy rainfall.
- Consider pulling the weir panels when you see standing water in the yard and when water in the river begins to cloud up. An indicator rock is located 150 yards downstream from the weir. When the water level covers this rock you should reevaluate the situation and consider pulling panels.
- The furthest one-third section of the weir from the cabin tends to scour out; double sandbagging this section should alleviate the problem.

Miscellaneous

- Install "No Sport Fishing" regulatory markers 100 yards upstream and downstream from the weir.
- This camp has a fair number of bears that frequent the weir. Do not let them loiter around the camp and weir!
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement from the project supervisor. Check the land lease and obtain prior approval from your weir

camp project supervisor before moving any structures, making any additions to the cabin, or relocating the weir if necessary.

- Make repairs and maintain buildings and grounds surrounding the cabin and banya. Trim grass around buildings, the trail to weir, the boat landing at the lagoon, and clear an area at the far end of the weir for rafters portaging rafts, to see bears approaching the weir, and for ease of moving tripods when the weir is removed.
- Clean and lime the outhouse on a regular basis.
- Repair and maintain the survey boat. During the season the boat is anchored on the shore of the lagoon next to the trail.
- The survey/work boat is stored next to the cabin with four to six full sandbags on top. Conduct salmon surveys once or twice daily depending on tides.
- The salmon survey technique is to walk the beach side of the river from the mouth to the first lodge. The prime time to survey is three hours after low tide. Typically fish move in with the rising tide then arrive at the weir three to five hours after low tide.
- Conduct survey of lagoon and bay daily.
- Grocery and supply flights land in the lagoon near the lodge and sometimes on the beach.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- The twelve-volt battery bank remains connected to the solar panel at the end of the season.
- Window boards are attached with carriage bolts and the nuts are attached from the inside. You must exit the cabin through the window on the northeast corner. This window must be left open one half inch because it locks from the inside. The board covering this window is attached with two padlocks and two lag bolts.
- All tools, generator, ladder, the old outboard motor, and fuels are stored in the basement; make sure to winterize and fog the outboard engine before storage. The remaining equipment including power tools, new outboard motor (if on site), and chain saw are returned to Kodiak and stored in the warehouse. No food or paper items should be stored in the basement to avoid problems with animals.
- Remove all food from cabin at the end of the season.
- At the end of the season return the shotgun, SSB radio and antenna, spotting scope and tripod, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak. Dispose of all perishable food. Burn all trash and haul all non-burnable items back to town.

Upper Station Weir

The Upper Station weir is approximately 35' (11m) long, located near the outlet of Olga Creek at its confluence with Olga Bay, on the south end of Kodiak Island (Figure 1). The weir was first installed in 1929 just above its current location and was operated there until 1969. From 1969-1992 the weir was operated near the outlet of lower Olga Lake (Upper Station) then moved to its current location in 1993. Two CF employees operate the weir from late May to mid September (Kuriscak 2002).

Opening Camp

- Follow guidelines for opening the camp listed in Table 1.
- Obtain keys to the cabin and the combination to one lock from your weir camp project leader before departing for this camp. You will also need a cordless drill, and phillips and square-head bits to remove window board screws.
- The air charter will transport personnel to Olga Bay. Personnel will then need to cross the creek in chestwaders and install the footbridge across the creek to move gear and supplies to the cabin. The footbridge involves the placement of one tripod placed in the middle of the creek and installing a section of boardwalk (stored next to the tripods) from each bank of the river to the tripod.
- Living quarters consist of a one level, 14' x 24, cabin with two bedrooms, propane connections for a refrigerator, cook stove, and lights. The cabin is wired to operate 110 volt AC powered lights when connected to the generator. An oil stove heats the cabin. This cabin has an attached entryway with additional storage space for tools. There is also a small shed adjacent to the cabin to store fuel, the lawn mower, and weed trimmer during the season.
- The master buss bar fuse stored next to the fuse panel needs to be installed prior to operating the 12-volt solar system. You also must open the ball valve on the fuel drum located at the rear of the cabin that supplies fuel oil to the heating stove.
- When you arrive on site the generator, weed trimmer, hand-tools, and lawn mower are stored inside the cabin. The generator is stored in the attic.
- SSB antenna is strung running north to south on the eastside of cabin between two 4" x 4" posts. The VHF antenna is attached on the west peak of the cabin.
- SSB radio, VHF, and two 12-volt lights are powered by a bank of three 12-volt batteries located at the rear of the cabin, that are connected to a permanently mounted solar panel on the roof of the cabin.
- Two propane connections for the refrigerator, cook stove, and lights are located under the rear of the cabin.
- Rainwater from the roof collects in plastic garbage cans and feeds the gravity fed water system to the kitchen sink. There is also a filtration container on site for drinking water.
- Fuels needed for this camp include: propane, #1 heating oil, gasoline, and two-cycle oil for an outboard engine that is used at the end of the season to move tripods in the metal skiff.

Weir Installation

- Follow the guidelines for weir installations outlined in Appendix A.
- The 2004 weir will be placed in the same location as in 2003. The weir is located northwest of the cabin, and downstream approximately 225 yards. There is a boardwalk from the cabin leading to the weir.
- Tripods for the weir are staged adjacent to the cabin. The tripods are floated downstream to the weir site, and returned to the staging location at the end of the season by tilting them into a metal boat and motoring them back upstream for winter storage.
- The weir is a conventional wooden tripod and stringer style and utilizes three tripods, one counting gate, and one sampling trap gate. Tripods are spaced about 11 feet apart.

- Weir materials, other than the tripods, are staged on the bluff just above the weir site.
- The riverbank on the northwest end of the weir needs to be sandbagged from the weir approximately seven feet upstream and approximately five feet above the water line. This bank is unstable pea gravel and, if not sandbagged, will scour out around the weir.
- Install the Scott sampling trap on the bluff side of the creek, reasonably close to the creek bank.
- Secure the upper portion of weir panels to the upper stringers with seine twine.
- A raft gate is not necessary at this camp.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning and evening and cleaned throughout the day as necessary.
- Debris load can be heavy after medium to heavy rainfall, and after high easterly winds when large amounts of river and lake grass may build up on this weir.
- Consider pulling weir panels during high water, when the water in the river begins to cloud up, when debris build-up increases significantly, and when the water level covers the adult salmon trap.

Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- This camp does not have a banya but does have a shower stall with shower bag.
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement from the project supervisor. Check the land lease and obtain prior approval from your weir camp project supervisor before moving any structures, making any additions to the cabin, or relocating the weir if necessary.
- Make repairs; maintain buildings and grounds surrounding the cabin. Trim the grass around the buildings, along the trail to the weir and footbridge. At the end of the season cut an area between the outhouse and footbridge for ease of staging tripods.
- If the project leader sends out an inflatable raft make sure to maintain and repair it. Moore the raft behind the weir, tying it to the weir or keep it on the beach near the footbridge above high tide water. Do not use the raft for moving tripods! At the end of the season the raft and outboard motor must be returned to the Kodiak ADF&G warehouse. Make sure to winterize and fog the engine before storing it for the winter.
- Conduct a visual survey of the bay daily. It is normally adequate to survey from the shore with binoculars viewing east towards Stintz Bluff and west toward Hook Point. If the raft is used for a bay survey only take it out on good weather days!
- All tools and the generator are stored in the cabin at season’s end. Fuels are stored in the fuel shed, the remaining gear and equipment is returned to Kodiak and are stored in the warehouse.
- Dispose the contents of your slop bucket in the bay and burn trash in the burn barrel on the beach. Back-haul non-burnables to town on returning flights.

- Clean and lime the outhouse on a regular basis. The outhouse hole tends to fill with water at this site no matter where you dig a new hole.
- Remove all biodegradable food from the cabin at the end of the season.
- The aluminum workboat is stored next to the tripods after they are staged at the end of the season.
- Conduct salmon surveys several times per day. The best technique is to walk the beach side of the river from the mouth to the weir. The prime time to survey is 8:00 AM, 10:00 AM and 6:00 to 8:00 PM.
- Grocery and supply flights are normally unloaded on the beach near the footbridge, unless weather conditions force the plane to land at lower Olga Lake. Supplies are transported in a wheelbarrow to the camp.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp
- The 12-volt battery bank remains connected to solar panel at the end of the season.
- Window boards are attached with square head screws.
- At season's end return the shotgun, SSB antenna, spotting scope and tripod, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak. Dispose of all perishable food in the bay. Burn all trash and haul all non-burnables to town or on return flights.
- Winterize all motorized equipment stored on site at the end of the season.
- Clean the rain barrels and water filter at season's end.
- Turn the valve off on the oil barrel supplying the heating stove and remove the 12-volt system main fuse at end of season.

Dog Salmon Weir

The Dog Salmon weir consists of three weirs, their lengths being 125' (38m), 135' (41m) and 25' (8m) on three branches of the Dog Salmon River, that drain from Frazer Lake on the south end of Kodiak Island into Olga Bay (Figure 1). First constructed in 1983, the weirs are operated by two CF employees from early June to early September (Kuriscak 2002). This camp has a dense population of brown bears.

Opening Camp

- Follow guidelines for opening the camp listed in Table 1.
- Make sure, before departing for camp, to obtain keys for the cabin, shed, west river shed, lock securing the generator and the lock securing the Lund skiff, from your weir camp project leader.
- Try to arrange your arrival time during high tide in Olga Bay. The air charter can then taxi into the river, drop personnel and supplies on the bank of the east river branch upstream near the trailhead close to the signpost. If your arrival time is not at high tide, you have two other options. One is to be flown to the closest set net site (Bill Barker), or other option is to the beach in Talifson's Cove, just east of Dog Salmon. If you land at Barker's site they will transport you to the weir site, then you will have to launch the small skiff on site and shuttle

your gear from Barker's to the weir site. If a landing is made in Talifson's Cove, stage your gear above high tide line, hike to the weir site, launch the small skiff and begin shuttling gear.

- All tools and motorized equipment are normally stored on site. Living quarters consist of a 16' x 20' two bedroom cabin with a mudroom entry and a storage and equipment shed attached at the rear. There is also an outbuilding that serves as a bunkhouse and banya. The bunkroom has two bunks. A wood burning barrel stove heats the banya. Wood used for burning is obtained from dead trees on site or wood collected on the weir throughout the season. There is also a shed located at the west weir site that stores necessary equipment and tools associated with that particular weir. The main cabin has an oil stove fueled by #1 heating oil. The main cabin has propane lights as well as 12-volt lights, and is also wired for 110-volt service by connecting the three prong 110 plug located in generator shed to the generator. The generator shed is located behind the main cabin.
- The bunkhouse/banya building has a fair amount of gear stored in it that will need to be removed at the beginning of the season. The lawn mower and wheelbarrow are stored under the front of the main cabin during the season.
- The SSB antenna is usually left up at this site and runs parallel to the east side of the cabin.
- A 12-volt battery bank located on the east deck of the cabin, powers the SSB and VHF radios, the refrigerator igniter, and 12-volt lights. This battery bank is charged by three solar panels permanently mounted to the roof.
- Water supply to the cabin is a gravity fed system, with water pumped in or collected from the rain water into a storage tank that supplies the kitchen sink. There is also a water filtration system on site.
- Window shutters are attached with wing nuts screwed to hangar bolts; when removed store the shutters under the southwest corner of the cabin. There is a small wood box in the equipment shed used to store all wing nuts and screws until they are needed again when camp is closed. A cordless drill is needed to remove shutters, and is stored in the shed attached to the cabin.
- Steps for accessing the rear deck of the cabin and the banya need to be attached to hanger bolts already in place, and secured with wing nuts. Steps that access the front deck of the cabin need to be lowered to the ground.
- There are three propane connections with regulators located on the west side of the cabin. Each hookup is stored under the cabin on shelving, between floor joists. One hookup is for propane lights in the bedrooms, one is for propane lights in the main room, and the last hookup is for the refrigerator and cook stove.
- The 12-volt water pump stored in the equipment shed needs to be installed in the protective box inside the woodshed attached to the banya, as well as installing and connecting the waterline running from the river to the pump.
- Fuels needed for this camp include propane, #1 heating oil, gasoline, and two-cycle oil for the survey boat.

Weir Installation

- Follow guidelines for weir installations outlined in Appendix A.

- The 2004 weirs will be placed in the same locations as the 2003 weirs. The east weir is located adjacent to the cabin. The west and far west weirs are approximately one-quarter of a mile from the cabin, with trails leading to each weir.
- Pipes and deadmans are set in the riverbanks for running cables across the rivers to help install the weirs. The Dog Salmon weirs are the wooden tripod and stringer type, and utilize a total of 22 tripods. The east weir uses ten tripods spaced 11'6" apart; the west eleven tripods spaced 10' - 10' 5" apart and the far-west weir has only one tripod placed in the middle of the creek. All boardwalks and 4" x 4" stringers for the east and west weirs are staged on platforms adjacent to the respective weir sites. Half of the tripods, weir panels, and full sandbags are staged on either side of the river at the east and west weir sites. The far west weir materials are staged adjacent to its location. Weight each tripod with seven to eight full sandbags.
- Install four counting gates accompanied by flash panels at both the east and west weirs. Only one counting gate is installed at the far west weir.
- Secure the upper portion of weir panels to the upper stringers with seine twine.
- Install the steelhead out-migration trap on the west weir.
- Raft gates are not needed on these weirs.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning before radio schedule and throughout the day. This camp has a high number of bears that may damage the weirs; therefore the weirs must be inspected frequently for damage, scouring, and holes.
- Debris load can be heavy after medium to heavy rainfall, or high winds, when large amounts of sticks, branches, logs, and leaves may float downstream.
- Consider pulling weir panels during high water when the water in the river begins to cloud up, when debris build-up increases significantly, or when the water level rises two-thirds of the way up the indicator rock located just behind the west weir.
- The gravel and rock in the riverbed at the east weir tends to scour under panels, therefore make sure panels are entrenched well when this weir is installed.

Miscellaneous

- Duties at this camp include enumerating salmon, conducting daily salmon surveys, completing emergency transfer paper work for permit holders, assisting two other field camps in the district, and conducting stream surveys on seven local streams.
- Install "No Sport Fishing" regulatory markers 100 yards upstream and downstream from the weirs.
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement with the U.S. Fish and Wildlife Service from the project supervisor. Check the land lease and obtain prior approval from your weir camp project supervisor before moving any structures, making any additions to the cabin, or relocating the weir if necessary.
- Make repairs; maintain buildings and grounds surrounding the cabin and banya. Trim grass around buildings, along trails to weirs, to the upper and lower boat landings, around the burn pit, and across the east weir to allow you to see bears approaching.

- Maintain and make repairs on two boats. This camp is equipped with a 22-foot aluminum boat that usually arrives by a tender at the beginning of the season. It is used for surveys, district regulatory marker maintenance, and for transporting personnel and supplies to other field camps. This 22 foot boat is moored offshore at the edge of the Dog Salmon Flats or to the east of the camp in Iversons Cove. The second boat is a 16-foot Lund that is moored in the river either at the upper or lower skiff landings, depending on the river water level. At the end of the season, the large skiff is transported back to Kodiak, by tender, and the smaller skiff is stored on site where it is chained and locked to a cottonwood tree next to the east weir materials staging platform. The outboard motor for the smaller boat is stored in the equipment shed. Make sure to winterize and fog engine before storing for the winter.
- Fuel for boats, the generator, and motorized equipment as well as propane and #1 heating oil are purchased from the Ocean Beauty tender operating in Olga Bay.
- Conduct morning surveys of the river branches daily as well as the Dog Salmon Flats Section and also conduct surveys throughout the day as required. It is a standard operating procedure to conduct a survey of the lower east river before the evening radio schedule between 7:00-7:30 PM.
- There is an established schedule to check the west and far-west weirs. The times are 1:00 PM, 3:00 PM, 5:00 PM, 7:00 PM, 9:00 PM and at times as late as 10:00 or 11:00 PM depending on fish movements and day light.
- Survey the lower East River, and the Dog Salmon Flats Section with the small skiff. The West River is surveyed by viewing from the west weir, as well as walking the west riverbank. The prime time to survey is three hours after low tide. Typically, fish move into the river on low tide and tend to move up to the weir on high tide.
- Biodegradables from the slop bucket are dumped in the bay.
- Grocery and supply flights land in the bay on the Dog Salmon Flats. The smaller boat is used to meet the chartered flight and to transport groceries and supplies to the upper boat landing.
- All tools, the generator, the outboard motor for the smaller boat, ladders and fuels are stored on site; the remaining gear and equipment are returned to Kodiak and are stored in the warehouse.
- Remove all perishable food from cabin at the end of the season.
- The 12-volt battery bank remains connected to solar panel at the end of the season.
- Window boards are attached with wing nuts and washers to hanger bolts mounted at each window.
- At the end of the season return the shotgun, first aid kit, handheld VHF, and logbooks back to Kodiak. Remove all perishable food from the cabin and dispose of it in the bay. Burn all trash and haul all non-burnables back on return flights to town.
- This camp has a high number of bears that frequent the weir. Do not let them loiter around! Establish early in the season that you are in control.
- Clean and lime outhouse on a regular basis.
- Check and maintain 12-volt battery bank.
- Weir tours are by appointment only.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.

Litnik Weir

Litnik weir is approximately 88' (27m) long, located about one half mile above Afognak Bay on the south end of Afognak Island, and has operated at this location since 1986 (Figure 1). A weir was first operated in 1921 at a site located approximately one quarter of a mile below the outlet of Afognak Lake, where intermittent weir counts have occurred throughout the years. In 1978 a new weir and tree house were constructed upriver of the current site, and was operated annually there through 1985. Two CF employees operate Litnik weir from late May to mid September (Kuriscak 2002).

Opening Camp

- Follow guidelines for opening the camp listed in Table 1.
- Obtain the keys to the cabin from your weir camp project leader.
- The majority of equipment and tools for the Litnik camp are stored during the winter at the ADF&G Kodiak warehouse.
- The four wheel ATV and trailer are also stored at the warehouse.
- Equipment, supplies, and the ATV are transported to this camp via the state research vessel K-HI-C.
- Offload equipment, supplies, and the ATV from the R/V K-Hi-C to shore with a skiff at high tide. Then move all equipment, supplies, etc. to the cabin and weir site with the ATV and trailer.
- Some tools are stored in the small cabin attic. The small cabin is located behind the main cabin.
- SSB antenna is strung up between the small cabin and the clothesline post. Coax runs along the cabin and into the main cabin through a hole in the wall, to the radio table.
- There are two propane hookups for the main cabin. One is located beneath the front porch and the second under the cabin directly under the location of the fridge. The rear cabin has one propane hookup for propane lights located along the north side.
- Living quarters consist of a main cabin, 14' x 16', and a smaller one-room cabin located directly behind the main cabin. The main cabin has a refrigerator and cookstove. These cabins are not typically locked up at the end of the season. The Afognak Native Corporation and their employees may use this cabin after ADF&G crew departs in September.
- This weir site has a banya located in front of the main cabin near the riverbank.
- Drinking water is obtained from the river and filtered for drinking.
- The SSB radio is powered by a 12-volt battery and is charged by a solar panel. The solar panel needs to be brought from town at the beginning of the season.
- Fuels needed at this camp include propane, gasoline for the boat, and two-cycle oil for gas mix in outboard engines.

Weir Installation

- Follow the guidelines for weir installations outlined in Appendix A.

- The 2004 weir will be placed in the same location as in 2003, directly downstream and adjacent to the main cabin.
- The weir is a wooden tripod weir with the exception of 2" diameter aluminum pipes for upper and lower stringers.
- Tripods for the weir are staged next to the cabin.
- Remaining weir materials are stored and divided on both sides of the river.
- This weir uses 10 to 11 tripods. Each tripod should be weighted down with three to five large rocks from the river bottom.
- The Scott adult salmon trap is installed to sample fish. It is installed approximately 15 feet from the bank closest to the main cabin.
- Only one counting gate is installed on this weir.
- Secure the upper portion of weir panels to upper stringers with seine twine.
- No raft gate is installed on this weir.

Weir Maintenance

- Weir is cleaned and inspected for scouring and holes every morning and throughout the day, as necessary.
- Debris load tends to be light at this weir. Major debris may develop later in the season, and consists of pink salmon carcasses.
- Consider pulling weir panels when the water in the river begins to cloud up, when debris build-up increases significantly, and when the water level covers the adult salmon trap.

Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- The Afognak Native Corporation owns the land on which the cabin and weir site is located. For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement from the project supervisor. Check the land lease and obtain prior approval from your weir camp project supervisor before moving any structures, making any additions to the cabin, or relocating the weir if necessary.
- This weir resists scouring because the river substrate consists of large rocks. Personnel working this weir still need to inspect the weir daily for scouring and holes.
- Clean and lime the outhouse regularly.
- Routinely trim and cut grass around buildings and on the trail to the weir.
- Maintain and make repairs to the 21-foot aluminum boat and outboard motors used at this camp as necessary.
- At the end of the season store the dishes, tools, and miscellaneous equipment in the attics of the main cabin and smaller cabins.
- Biodegradables from the slop bucket are disposed of out in the bay.
- Burn trash and burnables in the burn barrel and backhaul non-burnables to town.

- The crew typically purchases groceries when they come into Kodiak every two weeks with the 21-foot aluminum boat. After returning from Kodiak, the supplies and groceries are transported to the cabin using the four wheel ATV and trailer.
- Fuel for the boat is obtained during each trip into town. A 55-gallon barrel of boat fuel is also stored on site at the cabin.
- Install the boat running line in the river at the trailhead to the cabin.
- Conduct daily salmon surveys of the lower river and bay.
- Weir tours are by appointment only.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- Typically when this weir is removed half of the materials are staged on either side of the river adjacent to the weir.

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Table 1. Chronology of opening camp, duties, and assignments.

Upon arrival and reporting for duty, report to your supervisor and the personnel assistant. You will need to complete and sign the Return To Duty and Job Performance Expectation forms. Begin organizing for an extended field season. Listed below is a recommended chronology of tasks to prepare yourself for field camp. Tasks 1-7 should be accomplished in approximately two and one half days.

1. Compile a list of necessary gear, supplies, materials and groceries needed for field camp (See example, Appendix G).
2. Obtain necessary gear from the warehouse, label gear with your camp name and stage it in one location at the warehouse. Do not block doors or work bays. Consult the warehouse manager or project supervisor as where to stage equipment.
3. Purchase gear, supplies, fuels, and materials not found at the warehouse with prior approval from the project supervisor, then label and stage at warehouse.
4. Purchase two weeks supply of groceries and return all receipts from purchases to Paul Kuriscak.
5. Obtain all necessary keys and or combinations for ATV's, boats, and cabin locks associated with your field project from your weir camp project supervisor.
6. Weigh all gear and supplies. Aircraft, depending on the charter service have limited payloads (i.e. Beaver 1200-1500 lbs., Cessna 206, 800 lbs., etc.). Therefore attempt to keep gear, supplies, groceries, and fuels in check if you are flying out to weir camp.
7. Transport gear, supplies, materials, and groceries to the air charter that will be flying you to field camp.
8. Fly out to field camp.
9. Arrive at field camp and haul gear, supplies, fuels, and groceries to field cabin.
10. Remove shutters/window boards covering windows, and stow in an appropriate place for the entire season.
11. Open the cabin door and outbuildings; then store supplies and personal gear.
12. String up the SSB radio antenna; hook up SSB radio to antenna and 12-volt battery.
13. Connect the 12-volt battery to the solar panel.
14. Sweep out the cabin, and fill oil stove with appropriate heating fuel.

-Continued-

Table 1. (page 2 of 2)

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15. Connect the propane tanks to the appropriate regulators, start the refrigerator and light the pilot lights on the cook stove and oven. Make sure the propane lights are operable and replace mantles as needed.
 16. Hook up the water supply tank and fill it with water.
 17. Mount the outboard motor on the boat and launch boat if applicable.
 18. Prepare for the following day's weir installation by gathering tools and equipment necessary to accomplish the job. Locate and organize all necessary reporting forms including weekly escapement and logbook.
 19. Begin your daily logbook, complete with a daily entry for weather, water temperature and stream depth (recorded at 7:55 AM), work accomplished for the day, observations regarding fish activity, estimates of fish. Be sure to include the daily and cumulative fish counts once you begin passing fish.
 20. Fill enough sandbags with gravel to place at least seven to eight sandbags on each weir tripod plus four sandbags for each flash panel.
 21. Install weir, ensuring it is fish tight, and install flash panels at each counting gate.
 22. Conduct surveys, operate and maintain the weir throughout the season, ensuring it is fish tight, and enumerate fish species making sure your tally counters are functioning properly on a daily basis.
 23. Conduct adult sampling of sockeye salmon.
 24. Complete data report forms, and transmit data on 8:00 AM SSB radio schedule.
 25. Maintain grounds around the camp as well as the buildings throughout the season.
 26. Conduct stream surveys if your camp is required to do so.
 27. At the end of the season, close up camp by removing the weir (Appendix C). Winterize all motorized equipment, oil all tools and equipment that will rust with LPS3, clean all living quarters and outbuildings, store tools and equipment that remain on site, disconnect propane tanks, replace window boards/shutters and clean up your burn barrel. Make sure your camp is clean and organized when you leave!
-

Table 2. Important tasks to remember.

-
1. Data on forms should be complete. Be familiar with the forms and know when and how to collect the data. All crewmembers should be familiar with the proper data collection methods.
 2. Data should be collected as consistently as possible. For example; water temperature, stream depth, and weather data should be collected at the same time and location daily (7:55 AM).
 3. Record use of all expendables, i.e. propane, stove oil, and gasoline; this is a necessary procedure for future planning, and is also a requirement for the crew leader summary report.
 4. Make scale drawings of the adult salmon trap, and photo document as many aspects of field and data collection as possible.
 5. A daily crew log is a valuable way to record observations that may not be apparent from the data sheets.
 6. Be familiar with the operational plan. The procedures used at each individual weir camp have varying details, and it is important to be familiar with them.
-

Table 3. Example of closing camp checklist.

CLOSING CHECK LIST FOR DOG SALMON CABIN and CAMP	
	Store food
	Clean stove & new alum foil
	Clean behind stove
	Clean out refrigerator - defrost, block door open, baking soda
	Tidy up cabin
	Mop floors - sweep first, also mop entry way
	Pull out shutters - shutters on cabin & sauna building
	Window blocks in windows
	Pick up metal at burn pit
	2X6's on shed door
	Disconnect propane lines & tape ends w/elec. tape & place on shelves
	Store fuel & propane tanks in shed
	Plug coax hole
	Plug vents for refrigerator
	Clean slop bucket
	Nail plywood on woodshed
	Clean ashes out of wood stove in sauna
	Cover stove chimneys - sauna & cabin
	Flip up front steps & tie down
	Remove rear deck steps & sauna steps
	Grease axle on garden cart
	Pull boat anchor
	Dispose of perishable food, or bring back to town
	Pull notes from clip boards
	Fog generator, store, chain and lock generator in west bedroom
	Oil shovels & rakes
	Store gas jugs in shed
	Oil drill bits in can
	Flip outhouse & cover hole
	Lock & chain skiffs (Lund & White skiff)
	Winterize & fog 35HP Evinrude engine & store in shed
	Cruise tanks in shed & tagged
	Oil stove plug & screw in
	Drain H ₂ O tank
	Full charge on batteries, store in room and hook up solar panel
	Moth balls in jars (lids off) in each room & put outside around cabin
	Lock west river shed
	Spray weir cables w/LPS-3 and cover w/sandbags
	Disconnect water lines & tape ends
	Store rakes, shovels & tools, LPS3 all tools
	Store weed trimmer

-Continued-

Table 3. (page 2 of 3)

Spray cowling under lawn mower w/lps3 and fog engine
Tape & secure coax cables
Lay down viewing platform
Fill produce cooler w/condiments in case they freeze & break
Put shutter on wood shed
Remove coax cables & plug holes
Store lawn mower, wheelbarrow, 55-gal drum and plastic garbage can.
Full charge on 12 volt batteries
Remove downspout on water tank, drain tank and attach 45 elbow
Stage Lund skiff, chain & lock
Burn trash
Pull notice on billboard, clipboards, subsistence permits, creel census & vendor supplies (license sales & harvest tickets)
Empty slop bucket & clean
Clean up burn pit

Sauna Storage

Gas Drum
Pallet
Chicken wire
Ladders
Metal stainless steel pot
Wheel barrow
Lawn mower

Items to Town

SSB radio, handheld VHF and charger
Rifle / Shotgun
Xerox box w/paperwork for Dog Salmon
Personal gear
First aid / Medical kit

Skiff Winterization

Fog motors
Power wash hull
Spray motors LPS-2

-Continued-

Table 3. (page 3 of 3)

	Change lower end lube
	Store cruise tanks in console

Pull

	VHF
	Epirb
	Depth finder
	Compass
	Fire extinguisher
	Totes
	Oars
	Buoys
	Anchors

Notes

	Need 100 LB propane for next season
	Need 40 LB propane for next season
	Tanks left almost empty - all
	Fix 35HP elec. solenoid bracket

Table 4. Salmon weir camp equipment status.

SALMON WEIR CAMP EQUIPMENT STATUS

WEIR CAMP Dog Salmon

REPORTED BY: Paul Kuriscak

DATE: 9/2004

Please log down your comments about the condition of the items listed below. Note if repairs or replacements need to be made and an estimate of materials to complete the job. If more writing space is needed, please use a separate sheet and staple to this form.

CABIN:

Foundation: Very Good

Roof: Very Good

Interior/Exterior: O.K. Very Good, but needs to be restained or painted.

Doors/Windows: All O.K.

OUTBUILDINGS:

Outhouse: Very good - All O.K.

Banya: Very good - All O.K.

WEIR:

Tripods: Starting to get old. One tripod needs to be replaced

Catwalk: Need four (4) 2" x 12" x 14'

Stringers: All O.K.

Panels: Adequate at this time Horse Marine is short 6 - 8 panels taken by.
research crews

Rack Master Parts: (connectors, legs, stringers:)

Sand bags: needed for next year 100 - (Large ones)

-Continued-

Table 4. (page 2 of 2)

<u>SKIFFS:</u>
21' aluminum skiff – need repair on rooftop and needs to be checked for leaks.
16' Lund – leaks also needs power trim and tilt.

Table 5. Salmon weir camp closing inventory.

SALMON WEIR CAMP CLOSING INVENTORY

Weir Camp: Dog Salmon Reported by: Paul Kuriscak Date 9/2004

Please list any items left at the close of the season. This will help whomever to prepare in opening the camp next year. Also, if any vandals, people or bears break into the cabin, this will give us an idea of what might be missing or destroyed.

<u>#</u>	<u>Item</u>	<u>Place Stored</u>
1	Homelite chain saw	Equipment shed
1	Royce CB	Storage bench in cabin
1	Skillsaw - worm drive	Equipment shed
1	Cooler	West bedroom
1	Ratchet set	In Dog Salmon cabin, lower drawer of file cabinet
1	Tool box with hand tools	Equipment shed
1	3/8" skill power drill	Equipment shed
1	16' Lund skiff	Under lock and key chained to a tree near to the Dog Salmon cabin
4	12 v batteries w/full charge	In storage bench on east deck of cabin
	10 gallons gasoline	Equipment shed
	10 gallons stove oil	Equipment shed
	5 gallons Blazo	Equipment shed
1	30 HP Honda four stroke	Equipment shed
1	Poulan weed cutter	Banya / Bunkroom
1	VHF Base	In Dog Salmon cabin
2	Coleman lanterns	Dog Salmon cabin
2	Flashlights	Storage bench
2	Head lamps	Storage bench
1	Rifle cleaning kit	Storage bench
1	Shotgun cleaning kit	Storage bench
1	First aid kit	Storage bench
1	Tool belt	Equipment shed
3	Extension cords	Equipment shed
1	Come along	Equipment shed
1	Hand saw	Equipment shed
2	Shovels	Equipment shed
1	Carpenter's level - 4'	Equipment shed
1	Carpenter's level - 2'	Equipment shed
3	Hammers	Equipment shed
4	Rakes	Equipment shed
2	Pews	Equipment shed
1	Pitchfork	Equipment shed
1	Tire pump and gauge	Equipment shed

-Continued-

Table 5. (page 2 of 2)

1	Garden cart	Front deck of cabin
1	Wood chopping ax	Equipment shed
2	100 lb. Propane tanks- one is full, the other empty.	Equipment shed
1	40 lb. propane tank-3/4 full	Equipment shed

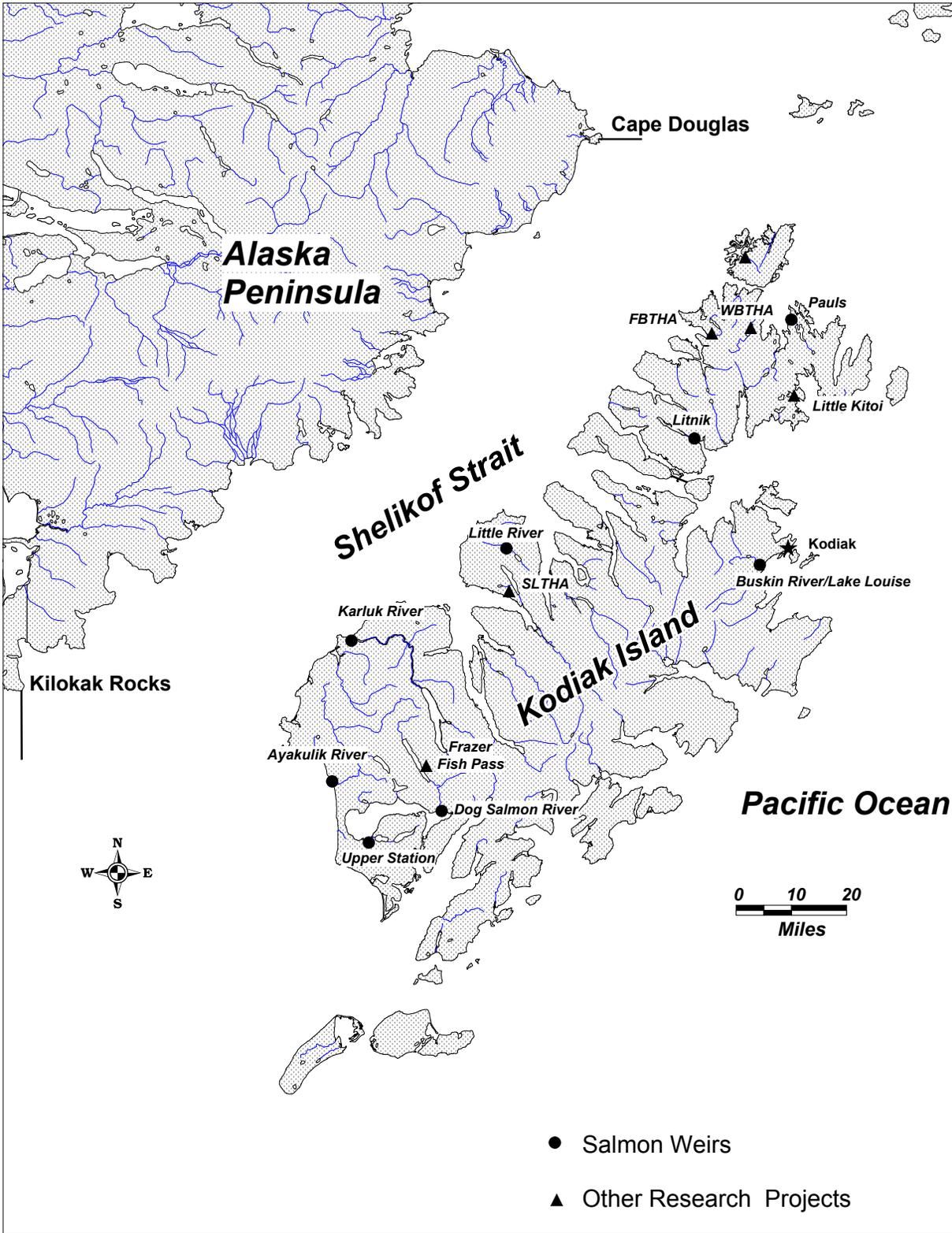


Figure 1. Salmon escapement weir and research project locations in the Kodiak Management Area, 2004.

WEIR CAMP

WEEKLY REPORT

LOCATION: Upper Station PERSONNEL: P. Kuriscak, Jon Becker NO. 8 FOR WEEK ENDING (SATURDAY) 7/20/2004

DATE	DAILY TOTAL SALMON ESCAPEMENT						DAILY TOTALS	JACK NO.	JACK % of SOCKEYE	STEELHEAD		DOLLYS UP	GILLNET MARKED		H ₂ O LEVEL		H ₂ O TEMP	WEATHER		
	SOCKEYE	L. SOCKEYE	CHINOOK	PINK	COHO	CHUM				DOWN	UP		SOCKEYE	OTHERS	UP	DOWN		CEIL.	VIS.	WIND DIR/SPD.
SUN D	217		0	1	0	0	218	37	17%	0		8	0		Stable @10"	5°	3500	unlim	NE@10-15	
C	36,411		4	17	0	7	36,439	7,268	20.00%	1		21	101				Scatt.			
MON D	391		0	14	0	0	405	43	11.00%	0		3	0		Stable@10	5°	Zero	Zero	SE@20-25	
C	36,802		4	31	0	7	36,844	7,311	20.00%	1		24	101							
TUE D		343	0	3	0	0	346	46	13.40%	0		26	0		1"@9"	5°	3000	7-10	SE@15	
C	37,145	343	4	34	0	7	37,190	7,357	20.00%	1		50	101				solid			
WED D		302	0	4	0	0	306	20	6.60%	0		34	0		Stable@9	6°	3500	25mi.	E@10-15	
C	37,447	645	4	38	0	7	37,496	7,377	19.70%	1		84	101				Scatt.			
THU D		416	0	24	0	0	440	52	12.50%	0		39	4		Stable@9	5°	3000	5-7	E.S.E.@10	
C	37,863	1,061	4	62	0	7	37,936	7,429	19.60%	1		123	105						and drizzle	
FRI D		657	0	15	0	0	672	64	9.70%	0		33	0		Stable@9	5°	4000	unlim	Wind Calm	
C	38,520	1,718	4	77	0	7	38,608	7,493	19.40%	1		156	105							
SAT D		178	0	10	0	0	188	14	8.00%	0		23	0		1"@10	6°	3000	7	N.E.@10	
C	38,698	1,896	4	87	0	7	38,796	7,507	19.30%	1		179	105						Drizzle/Rain	
TOTAL FOR WK	2,504	1,896	0	71	0	0	2,575	276	14.50%	0		166	4		COMMENTS:					
CUMM. THRU WK	38,698	1,896	4	87	0	7	38,796	7,507	19.30%	1		179	105		COMMENTS:					
WEIR MORTS FOR WK TOT															COMMENTS:					
CUMMULATIVE AWL SAMP FOR WK TOT	240													COMMENTS:						

ADDITIONAL COMMENTS: BEAR AND PEOPLE PROBLEMS; SMOLT MIGRATION; WEIR PROBLEMS; CABIN REPAIR; NOTE AIRCRAFT TRAFFIC.

- 7/14 Approximately 1,500 sockeye schooled at the mouth of the river.
- 7/15 No additional build up of sockeye at the mouth today.
- 7/16 Late run sockeye counts start today. Estimated 3,000 sockeye and 500 pink salmon at the mouth of the river and 300 sockeye in the creek.
- 7/17 Last evening bears broke two pieces of board walk and pushed out three weir panels. Will include an estimate of 75 sockeye in today's count.
- 7/17 Low flying aircraft (#UZ4567) flying over the tundra and weir 1300hr.. While over the tundra they were circling over a Brown bear.

- * **NOTE:**
- Daily Sockeye Jack counts must be included in the overall daily count.
 - Record water temperature and depth at 7:55 AM daily.
 - Late run sockeye counts begin on July 16.
 - After pulling the weir at the end of the season it is mandatory to make a notation in the log book and on the weekly escapement report the species and numbers of fish included as a post weir estimate!

Figure 2. Weekly salmon weir count report form.

ALASKA DEPARTMENT OF FISH AND GAME
STREAM SURVEYS

YEAR 2004

AREA ALITAK DISTRICT

STREAM No. 257-401

NAME OF STREAM: NARROWS CREEK

LOCATION: OLGA BAY

DATE OF SURVEY	DISTANCE SURVEYED (MILES)	NUMBER SALMON AT MOUTH	NUMBER OF SALMON IN STREAM					REMARKS	OBSERVER
			CHINOOK	SOCKEYE	COHO	PINK	CHUM		
7/31/2001	3/4 of a mile	5,000	0	0	0	3,000	250	H2O level low but adequate, many log jams	P. Kuriscak
						(150 dead)	(13 dead)	but fish still able to ascend. Of the 5,000 at	
								the mouth 1,500 are chum.	
8/5/2001	3/4 of a mile	2,000	0	0	0	4,500	1,750	All salmon at the mouthe are pinks. Chums	P. Kuriscak
						(175 dead)	(22 dead)	observed last week have moved into the	
								river.	

A=AERIAL SURVEY F=FOOT SURVEY T=COUNTED PAST A TOWER W=COUNTED PAST A WEIR

Figure 3. Stream survey form.

APPENDIX

Appendix A. Weir installation, maintenance, and operations procedures.

The following is a step by step explanation of how to install conventional and rackmaster weirs. In addition to installation procedures; the operation and maintenance procedures are covered. If you've never installed a weir and need clarification regarding any of the steps outlined below consult an experienced coworker or your weir camp project supervisor.

Weir Installation

CONVENTIONAL

- Move tripods from their staged location into the river and roughly space them spanning the river.
- Install a cable across the river and tighten it up with a "come along". Line up and square the tripods perpendicular to the river flow and cable attempting to keep front tripod leg one eighth of an inch from cable.
- Fine tune tripod spacing and leveling. Level out tripods by digging under the highest rear leg to level it out. Leveled tripods make it much easier to install and level your boardwalk.
- Install the entire boardwalk shiplap on the posterior portion of the tripod arms; nail it down only after it is all leveled. Start at one end of the weir laying a 2"x 12" x 14' across the first set of tripod arms ensuring it rests on the next consecutive tripod arm. Continue laying out the board walk in the same consecutive pattern attempting to keep it running straight across the river on the posterior portion of the tripod arms.
- Level boardwalk with spacers or leveling blocks nailed to the tripod arm, and fine tune straightness of the boardwalk. Toe nail the boardwalk to tripod arms and toe nail the boards that overlap one another together, with 16P duplex nails. Make sure the end of each individual board rests on a tripod arm.
- Install eight sandbags (filled with gravel) on each of the tripods. If you can utilize large rocks from the river bottom to weight down your tripods forego the sandbags.
- Install upper and lower 4"x 4" stringers in an alternating pattern across all tripods and extending to the riverbanks on both ends of the weir. The upper set of stringers rest on the upper set of spikes on the front leg of the tripod and the lower set of stringers are installed under the lower spikes with the water pressure keeping them secured in place.
- Place each counting gate frame into approximate locations on the weir framework. Determine your locations on steam depth and counting seat locations.

-Continued-

- Move all weir panels from their storage location and lean them on the back of the rear tripod legs. You can place approximately six weir panels on the back of each tripod. Placing panels in this location stages them for installation.
- Before installing weir panels, make sure the upper and lower 4" x 4" stringers that extend from the riverbank to the first tripod either bank are square to one another. If not square, the panels from the riverbank to the first tripod will not be on an equal plane with the remainder of the panel's inward from either end of the weir.
- Begin installing all weir panels. Lay the first panel flat against the stringers and as tight to the bank as possible, with the base of the panel up off the riverbed approximately 10 inches. Rake and dig a channel in the river bottom to set the panel into. Once a channel is dug, set the panel into the channel and make sure it is straight and level. Next, backfill the channel with gravel and rock to ensure it is fish tight.
- Continue setting weir panels as above, and work toward the first counting gate you encounter. When you get close to the first gate frame you will need to estimate whether or not you can use a full panel or partial panel to close the gap from your last panel installed to the gate frame. If a partial panel will not fit or is not available, move the gate frame to accommodate a partial panel or a full panel. Continue installing weir panels and gate frames until your weir is completely set with panels and gates. Tie off the upper portion of all weir panels to the upper 4" x 4" stringer with seine twine.
- Once weir panels and gate frames are installed proceed with installing boardwalks to each counting gate. This is accomplished by selecting shorter pieces of boardwalk and extending them across the main boardwalk to the upper 4" x 4" stringer just behind the gate framework. Toe nail the gate boardwalk to the main boardwalk and to the 4" x 4" stringer. Install weir gate panel. The weir should be fish tight.
- Install flash panels in front of and against each gate on the river bottom and weight down with large rocks or sandbags.
- Inspect and double-check your work. Walk along the front of the weir backfilling the base of panels where necessary to ensure the weir is fish tight.

RACKMASTER

Rackmaster weirs consist of a series of aluminum pipes, bipods, stringers and monopods that support the weir panels and boardwalk. All pipes are joined together with assorted couplings, T-joints, elbows, post sleeves, and other various connectors. Pipes are inserted into the connectors and are held in place with hex-head screws.

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- Aluminum bipod legs are set in 90° elbow/stringer connectors with the upper 10' stringer inserted into the stringer portion of this connector. The top stringer should sit approximately 48" above the riverbed.
- On the front leg of the bipod, a stringer/coupler connector is slipped up the front leg and set approximately 17" up from the bottom of the leg.
- Attach another 10' section of pipe to the stringer portion of the stringer/coupler on the front leg connector that was set at 17"; this will be your lower stringer.
- Slip a single ring open-end connector onto the upper stringer and set it in the middle of the ten-foot section of pipe. This will be for your bipod that supports the boardwalk.
- Attach another assembled bipod to the opposite end of the section you have just assembled and you now have a complete section.
- Level out the open-end ring connector placed on the upper stringer and set a 5' section of pipe into the open end and tighten the setscrew. At the end of this five-foot section attach a T-joint.
- Slip another five foot section of pipe through the "T" joint and firmly imbed it on the river bottom and hold it into position with the set screw. This bipod assembly will support the boardwalk.
- You have just completed a full section. Continue assembly until you have spanned the entire width of the river.
- Once you have spanned the river place your boardwalk on the monopod supports, toenail them together, and then secure sections of the boardwalk to the monopods with seine twine.
- Install weir panels, gates, and flash panels next (read the descriptive procedure for these steps in the previous section; Conventional Weir Installation.)
- Sandbag the base of all weir panels.
- Attach and secure the upper portion of the weir panels to the upper stringers with seine twine.

Weir Maintenance and Inspection

- The weir must be cleaned and inspected daily. Debris build up on the weir may cause poor water flow, leading to scouring at the base of weir panels and weir washout during periods of high water. During high water and when spawned salmon begin to expire, debris build up may increase, and the weir must be cleaned more frequently.

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- Clean and inspect weirs before the 8:00 AM radio schedule, throughout the day, and in the evening before you retire. The AM cleaning and inspection allows you to report any panels that may have been moved out of place by bear activity during the night and the possibility of fish that may have escaped up stream uncounted. If it appears that fish escaped during the night you will have to make an estimate. This includes an estimate of species composition. Be extremely observant throughout each day to monitor fish build-up in the river, lagoons, and offshore in the bay. For example, if you observe a build-up of 10,000 fish in a lower section of the river below the weir, and you pass 3,000 fish for the day; that leaves 7,000 fish remaining in the lower river, barring no other fish have moved into the system. If by chance the next morning you clean and inspect the weir and you find a panel popped out of place by bears or a scoured hole is found your 7,000 fish may be gone. Survey the river below the weir, lagoon, and bay to see if the 7,000 fish still remain either in the river, lagoon or bay. It is extremely important to clean and inspect the weir, monitor fish activity and conduct surveys regularly throughout the day to be aware of any changes that may have occurred. Document all problems with the weir, as well as any changes in the volume of fish you observe in your surveys.

- Cleaning the weir includes getting into the river to remove sticks, logs, leaves, grasses, gravel and spawned out fish that have expired. Throw all debris over the weir, allowing it to flow down river. While you clean, inspect the weir to ensure it is fish tight, look for scoured holes, panels out of place, gaps that are too large between panels, sandbags that have been pushed off of tripods by bears, and make sure flash panels are in place and secure. Also make sure the framework of the weir is sound and secure. If you find any of the boardwalks loose, any section or parts of the weir broken by bears or unsafe repair it immediately. In addition, when water level in the river drops, the lower 4” x 4” stringers may drop due a decrease in water pressure holding them in place. If this occurs it is necessary to lift them back into place and tie them to the upper stringer to keep them in place.

In many systems during the later portion of the season (typically mid August) chum and pink salmon spawn in front of the weir, causing gravel and rock build up on weir panels. It is extremely important to keep gravel and rocks from building up on the weir panels. If not kept in check and maintained water flow is restricted and a gravel dam may form. When gravel dams form, there is a gradient difference in the streambed in front of the weir compared to the downstream side of the weir. This produces a waterfall effect, causing fish to jump against the weir panels. Keep gravel and rock buildup at a minimum by raking rock down off weir panels with your boots, then pushing the gravel up stream. Pick out rocks that are wedged between individual weir pipes.

- If water levels increase considerably you may need to pull weir panels to avoid weir wash out. Monitor water levels daily, especially if it has been raining hard or for a considerable amount of time

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and the ground is saturated. If it begins to down pour there is a good chance you may need to pull weir panels. Monitoring weather forecasts on SSB frequency 4.125 MHz at 8:00 AM and 6:00PM will assist you in determining when to pull weir panels if necessary. Consult with project supervisor if possible.

Weir Operations

- Monitor weirs throughout the day to pass fish. Fish are not on a “9 to 5” work schedule; therefore you need to adjust your work schedule to monitor the weir throughout the day. Be poised and ready! Keep in mind that you also need to pass outmigrating steelhead. Early AM is a good time for passing steelhead down stream by opening a gate and tallying passage down stream. Steelhead are wary fish, it takes time and patience to pass them downstream. Some camps have steelhead traps installed to capture downstream migrants. Open the trap and release fish downstream as soon as possible.
- If you don’t have experience identifying fish, your crew leader will train you to visually recognize the different salmon species and swimming patterns. When fish have accumulated behind the weir take time to visually study them and note the difference as they pass through the weir. You should not be playing a guessing game when identifying and counting fish. Fishery opening and closures are dependent on the accuracy of your fish counts. Be professional and accurate.
- Walk slowly when fish are present under and behind the weir, they are easily frightened and will flee away. Wearing dark green rain gear is preferred while counting if it is raining; orange or yellow rain gear is bright and also frightens fish away.
- Open a gate and begin counting fish with handheld tally counters, one for each species. Regulate the gate opening by using a wedge to lock the gate into position. If you open the gate too far, fish will pass through so quickly that you will not be able to accurately count and identify them.
- If a counting gate will not open, it is likely that it is locked up by gravel or a rock wedged into the framework. Do not attempt to force the gate, or the entire framework may pull out of place along with the flash panel set up. Free up the gate by inspecting for wedged rock or gravel and removing it with your fingers or a fish pew.
- You may be required to pass fish for a lengthy period of time, and water flow through the weir can lull you to sleep. To avoid fatigue, alternate counting positions from the counting seat to a standing position on the boardwalk behind the gate.
- Be careful climbing onto and off of counting seats. Do not bounce or jump on the boardwalks.

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- When counting fish and conducting surveys always wear polarized glasses for greater visual recognition and eye protection from the sun's reflection off of the water.
 - Periodically check your tally counters to ensure they are working properly.
 - When you are done counting make sure the counting gate is closed completely.
 - When visitors stop by, attempt to keep the visit short. Don't forget to accomplish your duties. There may be times when you have to tell visitors you have to get back to work.
 - Take pride in your work, be self-motivated, consistent, reliable, and do your best.
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Equipment Maintenance

Equipment maintenance is another very important operations you will perform during the field season. Outboard motors and generators must be kept in good operating condition and require regular maintenance. At the end of each season all equipment should be tagged with a description of the equipment's condition on the tag. All equipment returning to Kodiak stored at the warehouse in the salmon management locker or the salmon management trailer van behind the warehouse.

It will be the crew leader's responsibility to assign the most knowledgeable member of the crew to the maintenance and servicing of the equipment. It will be this person's responsibility to see that all equipment is kept in operating condition.

Motor Care and Outboard Operation

Motors will perform longer and operate more reliably if these suggestions are followed:

1. The correct outboard motor fuel mixture for standard 2-stroke engines is 50:1. The newer Precision Blend outboards mix the two-cycle oil and gas automatically, but older engines will need to have their fuels pre-mixed. Always pour the oil into the tank first, then add 2 or 3 gallons of gas and mix thoroughly, then fill tank to capacity always using a large funnel and chamois filter.
2. Chainsaws have a fuel mixture 25:1. Chain saw gas should be mixed in a 2 ½ or 5 gallon can and clearly marked as chain saw fuel.
3. When mixing gasoline or filling the tanks of the generator, stove or lantern, keep the following in mind:
 - a. Fill camp stoves and lanterns outside away from any source of flame or spark, as the danger of fire is very real.
 - b. Always mix fuel tanks or equipment under cover to prevent water contamination and always use a funnel and filter.
 - c. A little extra effort toward cleanliness will pay in hours of trouble free operation.
4. Always place outboard motors in neutral when starting or shutting off the engine. Always make sure a safety line is attached to the boat and motor, in case the motor detaches from the transom.
5. Perform a check daily of the screw clamps that hold the outboard to the transom. Also routinely check the motor for loose screws and bolts, cracks, and breaks, especially in the area of the lower unit.
6. Never start or run an outboard in the fully upright position.

7. In the normal operation of an outboard, a "tell-tale" stream of water is discharged from a hole in the bottom rear edge of the cowling or from the back of the shaft. If this stream of water stops, the water pump is not working and the motor should be shut off. On propeller outboards, the side plate over the water intake can be removed for temporary relief as it may be plugged. If the pump continues to malfunction, the outboard should not be operated, and a report to base camp should be made. On jet units, a cover on the side of the cylinder head through which water circulates can be removed and cleaned, and the cover over the temperature sensor can also be cleaned to restore flow. Take along a piece of bailing wire to dislodge sand from the small water discharge tube under the cowling.
8. Check the gear oil in the lower unit of the outboard once a week and drain and replace the gear oil every 50 hours of operation. Jet units must be greased daily, this is crucial. Grease guns will be provided.
9. If the skeg or jet unit hits bottom, check the screws for tightness, and look for housing damage or oil leakage.
10. If your outboard will not start, check the following:
 - a. Make sure the on/off switch and safety "kill switch" clip is in the on position
 - b. Check to see if the fuel line is connected to the motor and the tank and not pinched or kinked, and that the air vent on the tank is open.
 - c. Check to see if there is water in the gasoline.
 - d. If the engine is flooded, wait five minutes for the plugs to dry before attempting to start again.
 - e. Check the spark plugs, they may be fouled or defective (replace if needed), also check for corroded, loose, or disconnected wires.
11. All outboards are to be tilted in the up position when moored to preclude silt accumulation in the jet unit or water pump, and skeg or housing damage.
12. At the end of the season, winterize all outboard motors by changing the lower unit oil, remove and clean or replace spark plugs, and fog the engine.

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Boats

1. Boats are to be kept clean and free of loose tools and debris. Only moor boats where they are not subject to damage from wave action or contact with the river bottom in rocky areas.
2. Each crew leader will be responsible for maintaining mooring stakes on the river bank sufficient for the boats assigned to his project plus one transient craft. Further responsibility includes maintaining a bowline on each assigned craft and ensuring that each boat is properly moored at the end of each workday to preclude possible loss or damage.
3. Check for leaks.

Generators

Portable generators may be supplied to field camps. Their maintenance follows the same line as for outboards. Generators have 4-cycle engines; mixed gas must not be used. The crankcase oil reservoir should be checked daily and maintained at the full level. After 25 hours of operation the oil should be changed. Spark plugs should be checked every season for fouling and gap.

Additional Camp Maintenance and end of Season Chores

Maintaining a clean and efficient campsite is required. A few of the things to check are:

1. Maintenance of living accommodations and other installations will be performed as necessary. All materials necessary will be provided.
2. Grounds will be kept free of litter. All garbage will be burned at least twice a week. Special precautions should be observed to ensure that garbage does not attract bears and other scavenger species.
3. Upon completion of the summer season, all camp equipment will be cleaned for winter storage.
4. All sampling nets, tents, and tarps must be dry before being stored.
5. The crew leader at the close of the field season will take a complete camp inventory.
6. All boats and ATV's will be chained and locked to a stationary object at the end of the season.

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Camp Policy

1. No alcoholic beverages are to be stored in areas open to public view. If alcohol is consumed at a camp an employee must be of legal age, off-duty, and under no circumstances shall he or she engage in the operation of any State equipment, including boats and motors, nor shall he or she return to duty status under the influence of alcohol. The abuse of alcoholic beverages will be grounds for immediate dismissal.
 2. All employees will be required to act in a professional manner at all times and be especially courteous to the public.
 3. It will be the responsibility of the crew leader to prevent any abuse to State equipment.
 4. Injuries, and loss or damage of state equipment must be reported to the project supervisor within 24 hours.
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Appendix C. Weir removal procedures.

Listed below are recommended procedures for removing weirs. Begin closing up camp well in advance. Perform some of the following tasks before the last few days of the field season. By doing so you can perform all necessary tasks of removing the weir and closing up camp on time. Also refer to Table 1.

Weir Removal

- Remove counting seats and keep off weir signs.
- Remove all sandbags from tripods and place half of them on one side of the river and the other half on the other side of the river.
- Cut and remove all seine twine attaching the weir panels to the upper 4" x 4" stringers.
- Remove all weir panels, counting gates, and flash panels, placing them on the rear of the tripods. Carry half of all weir panels, gates, and flash panels to staging locations on either side of the river.
- Remove all upper and lower stringers and store in appropriate staging location.
- Remove all duplex nails securing the boardwalk, then move all sections of the boardwalk and store in appropriate staging location.
- Remove half of all tripods and stage on one side of the river, then remove the other half and stage on the opposite side of the river.
- Make sure all poly sandbags are removed from the river.
- Make sure all weir materials are staged in an appropriate location to avoid damage from flooding, and ice movement during springs break-up.

To remove Rackmaster weirs reverse the procedures used to install them. Remove all hex-head setscrews from the connectors and place them in a sealed container of oil. Another option is to remove them, apply never seize and reinstall.

Each of our field camps utilize an independent power system, consisting of 12-volt photovoltaic solar panels (PV) and a PV charge controller that charge a 12-volt battery bank for powering needed electrical components. There are certain basic principles that apply to these systems. Discussed below is basic information that will help to keep the power system including the camp radios, satellite phones and other electronics working and operating properly.

Solar PV panels, when oriented towards the sun, will create direct current (DC) electricity. This DC electricity will effectively charge a bank of 12-volt batteries by providing a higher voltage than the battery voltage. In our common 12-volt systems, each solar PV panel will generate approximately 20 volts open circuit when directly oriented towards the sun. Any cloud cover or partial shading will reduce solar PV output considerably. When installing solar PV panels attempt to orient the panels with this in mind to obtain maximum input from the sun. In full sun a PV panel generates an output of 16 to 20 volts, energy then flows as amperage through a PV charge controller into the lower voltage batteries. Energy thus flows from a higher voltage to a lower voltage.

Most applications require more power than one solar PV panel can provide. In these cases solar PV panels are wired together in parallel to provide the necessary output; this is termed a solar PV array. Parallel wiring is positive to positive (red wires and or terminals to red), negative to negative (black wires and or terminals connected to black). Parallel wiring PV panels together will keep the output voltage the same, but increases the amount of electricity flowing to the batteries. This flow of energy is referred to as amperage. Both amperage and voltage numbers are displayed digitally on the PV charge controller. The PV charge controller regulates and limits the amount of electrical flow generated by the solar PV panels to the battery bank that is necessary to keep the 12-volt battery bank fully charged. Learn to understand what the amperage and voltage numbers represent and you will be in control of your power system.

Voltage is the most important reading you'll need to understand. A common misconception is that when a 12-volt battery meters 12.0 volts the battery is fully charged. The reality though is that at 12.0 volts the battery is in a very discharged state. Many electronics may not work properly at such a low voltage. A 12-volt battery isn't fully charged until it reads at least 12.7 volts. There are several other factors that will effect the actual voltage reading at any given time. The solar panels, batteries, and the loads (power being utilized or withdrawn from the system) in each system work in a dynamic equilibrium. The voltage rises and falls as power is deposited and withdrawn throughout the day and night. The actual reading that is important when assessing the state of charge of a battery is the "rest" voltage. This voltage is defined as the voltage reading when the batteries have been at "rest" for several hours. This means no loads on, and no solar power coming in. In practical terms this is the voltage early in the morning before any loads are on, and after the sun (solar energy) has been off the panels for a few hours. This is the voltage that will most accurately reflect your batteries state of charge. A state of charge based on voltage

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reference guide is provided later in this appendix.

The actual voltage readings will vary throughout the day. As the sun shines on the panels the voltage will rise to a regulated set point in the charge controller. In most of our systems this voltage will be 14.2 volts. On the other hand, with little or no sunshine and significant loads on the system, the voltage may fall to 12.2 volts or even a little lower. These are normal operating voltages. Pay attention to the ebb and flow of the voltage and reduce your loads if possible whenever the rest voltage goes below 12.4 for any significant period of time. In addition study the Battery State of Charge Reference Guide provided to better understand voltage readings.

If your solar array can't keep up with your essential loads then it will be necessary to add more solar PV panels, or run the gas generator to re-charge the batteries as needed. Most of the small gas generators in the field camps have 2 DC output lugs, one positive lug and one negative lug. These output lugs can be wired in parallel to the battery for recharging. Typically these chargers put out a maximum of 8.3 amps DC. In reality the output is a bit lower and 5.0 amps is a general average. For every hour that the generator runs, the charger will put about 5.0 amps into the batteries. A typical 12-volt battery in our electrical systems is rated at 100amp/hours. To recharge one of these batteries from a 50% state of discharge will take about 10 hours. Obviously gas generators used in this fashion are extremely inefficient for battery recharging. Try to reduce loads whenever possible and let the solar PV panels do the charging when solar energy from the sun returns.

It is important to mention the proper care, feeding, and maintenance of the battery bank. Batteries and connections are prone to corrosion in the marine environment. It is essential that battery terminals, all wiring and connections are clean and tight. This can't be over emphasized. A good cleaning with a wire brush and a check of all bolts and screws for proper tightness should be performed at the beginning and end of each field season. Most of the batteries that are now in use in our field camps are the sealed or gelled electrolyte type. These batteries don't require any maintenance other than cleaning. Some of the older electrolyte lead/acid batteries have removable plastic caps and require a periodic topping off with distilled water. Filtered rainwater can safely be used where no distilled water is available. Whenever the electrolyte level falls below the lead plates in the older style lead/acid batteries, it's time to add distilled water. Terminal and connections that are dressed with grease or LPS-3 will be far less prone to corrosion. Keep your batteries clean, well fed with proper voltage, and watered.

One problem inherent in the operation of these systems is that some of the charge controllers will create Radio Frequency (RF) noise or static on some radio frequencies when they are regulating voltages above 14.2-volts. In this case it may be necessary to throw the solar PV input switch to the off position temporarily while you use the radio or device that is experiencing the RF static. After you use the device just remember to put the input switch back in the on position to resume proper charging.

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Seasonal Shutdown Procedure

The seasonal shutdown procedure is relatively simple. In most cases the solar panels are left in their permanent position and the charge controller remains in the charging mode. The essential thing to remember is that all loads need to be disconnected by throwing the “main load” switch or breaker to the fuse panel to the off position. This disconnects any electrical current flowing to the fuse panel. Remove any other loads that may be directly attached to the battery such as radios, clocks, DC chargers etc. Leave the “PV input” switch or breaker in the on position.

One important point to remember is that batteries can freeze and burst if left in a discharged state in cold ambient temperatures. A fully charged battery will not freeze even at 60 degrees below zero. Make sure you don’t leave the battery bank in a discharged state. If necessary run the generator in order to bring the batteries to a full state of charge before departing camp.

Battery State of Charge Reference Guide

Battery near full charge while charging.....	13.8 to 14.2 volts
Battery near full discharge while charging.....	12.3 to 13.2 volts
Battery fully charged with light load.....	12.4 to 12.7 volts
Battery fully charged with heavy load.....	11.8 to 12.5 volts
Rest voltage 100% charged.....	12.7 volts
Rest voltage 80% charged.....	12.5 volts
Rest voltage 60% charged.....	12.2 volts
Rest voltage 40% charged.....	11.9 volts
Rest voltage 20% charged.....	11.6 volts

Troubleshooting

The first step in troubleshooting is ensuring that you have the proper voltage to the device that’s experiencing a problem. Most electronics in these systems are wired to a DC fuse panel. Next check the fuse panel for a blown fuse. If the fuse is ok then check to ensure all electrical connections are clean and tight. In addition some devices such as vhf and single sideband radios may also have inline fuses, check these as well. Blown fuses and poor connections is the most common culprit. If the solar PV panels aren’t charging the 12-volt battery bank check the main solar input fuse to make sure it is good, and ensure that the breaker switch is in the on position. If the solar PV panels still don’t put out proper voltage, check the wiring between the panels and the charge controller and check the connections on the rear of the solar PV panels. Make sure all connections are tight and clean.

Appendix E. Satellite telephone and dispatch instructions.

The following information serves as a Policy Statement regarding the allowable uses of ADF&G satellite phones and Instructions on the proper method to successfully set up and operate the satellite phone system assigned to your camp.

These systems are not like standard telephones or cell phones, nor are they like a single side band or VHF radio. Communication is sent through the transmitter to low level satellites, then is beamed down to ground stations, either directly to another satellite phone system or to a switching station linked to standard telephone lines. As such, there is a much higher cost involved in operation than with standard telephone long distance or cell phone charges.

Under no circumstances may you use this satellite phone system for personal calls unless, for each event, you have obtained direct and explicit permission from your project supervisor. This does not mean that field crew leaders may grant permission for personal use of this phone. Only the project supervisor may give you such permission. Any deliberate misuse of this system, such as making unapproved, non-emergency, or personal calls, will result in disciplinary action, which may include suspension or discharge.

The primary purpose for having this satellite phone is for secure, reliable communications between remote field stations and ADF&G offices (Kodiak, Chignik, Cold Bay, Sand Point, or Port Moller), ADF&G research vessels (Resolution or K-Hi-C), Fish and Wildlife Protection vessels and offices, or other field camps that are similarly equipped. The secondary purpose is for your safety. With these phones you are capable of directly dialing emergency services at any time of the day or night. It is essential that these phone systems are maintained in good working order, are fully charged or hooked to sufficient power at all times, and remain free for official or emergency use.

INSTRUCTIONS

The portable sat phone unit must be charged with power. There is an internal battery pack, and a 12-volt adapter is available in order to hook the phone to a larger battery bank, that may in turn be recharged by generator or solar panels.

Turn the unit on using the power switch in the lower left corner. A green light, just above the switch, should come on indicating that the unit is sufficiently powered. If no light or a red light comes on, you will need to charge the unit, or attach it to your 12-volt battery bank via the appropriate connections.

The back, or top, of the briefcase-like unit is the antenna, and it must be oriented correctly in order to access the receiving satellite. The top of the case should be open and

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pointed in a general east-southeast direction. You must have a fairly clear line-of sight to the horizon in that direction; this unit will not work through walls or mountains. The angle of the antenna should be almost vertical; remember to lock the support arm that attaches the lid to the main body of the unit, along the right side.

This system has two means for calling; a telephone-like handset (for dial in or dial out phone calls), and a push-to-talk microphone (for 'dispatch', unit to unit, calls). All calls made with the handset are billed per minute of use, at an expensive rate. All calls on the 'AlaskaNet' dispatch system, using the microphone, are essentially free.

When first turned on, the handset and microphone should become active, with the display panels on the top of the phone handset and microphone lighting up (one LED panel, hopefully the one on the handset, should read sleep). The display will show, after a few moments, whether a connection has been established with the satellite, and how strong the signal is (ex. *B05 S 21*). Turn the unit slightly, and raise or lower the lid/antenna slightly until the highest possible signal strength is indicated (normally above 20 but will work down to 8). Lock the lid/antenna in place and do not turn the unit again, until your communications are finished. Once a strong signal is acquired push the "*" button for 2 seconds. Wait until there is a "beep" and the LCD screen displays '00:DN ??', then dial the number.

Alaska Dispatch System

Because all calls made on the dispatch system are free, this is the method of choice for using the satellite phone units. There are several ADF&G offices, many field camps, and two research vessels on the AlaskaNet dispatch system, as well as Fish and Wildlife Protection/State Troopers offices and vessels, plus many canneries, fishing vessels, and tenders. You should have received a 10-12 page directory with your phone; if not ask your project supervisor for a copy.

First, make sure the unit is turned on, and that there is sufficient power. Set the unit up so that the signal strength is at the maximum for your location. You should see the signal strength on the microphone display (ex. *B05 S 21*), and the handset display should read SLEEP. Once a strong signal is acquired push the "*" button for 2 seconds. Wait until there is a "beep".

On the microphone display, below the signal strength, there should be a query, '00:DN ??'. This is asking you to 'dial' in the 4-digit dispatch number that you wish to call. After you have entered the 4-digit dispatch number of the unit you wish to contact, hold in the microphone key and a connection will be made with the satellite, which will then try to connect with the dispatch number you punched in. If a connection is made you will hear two beeps ("bird chirps") and the microphone display will read SELF. While continuing to hold in the microphone key, call the station you wish to talk to. Use all

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the same formalities as when calling on a SSB radio. For example, say “Calling the ADF&G Kodiak Office, Calling the ADF&G Kodiak Office; this is Karluk Weir”. When you release the microphone key, the unit will beep again.

Be patient. It will take some time for the signal to go up to the satellite, down to the number you called. It may take the other party some time to get to the microphone and respond (this is especially true for calls to the ADF&G office; supervisors have to walk down to the radio room to respond). When they respond, their 4-digit dispatch number (DN) will show on the microphone display. This is a private conversation, unlike the previous dispatch service.

Just remember to be patient; wait until the other party stops speaking and you hear the unit beep (indicating that they are finished with this portion of their communication), the display should read SELF, and you may key microphone to talk. Then you must again wait for the other party to respond. If the other party is not there, they simply will not answer. If the satellite connection cannot be made, the display will read ‘Unable to Connect’ or ‘Not Available’.

Phone System

Do not use the handset to place calls unless absolutely necessary. All calls made with the handset are billed per minute of use, at an expensive rate. Calls should only be made to supervisors, either when radio or dispatch contact is not possible or when a confidential message needs to be relayed. Calls are made by dialing out, almost like a standard telephone. Punch in the area code and telephone number, then press send (button located in the upper right corner of the handset). Because there is a satellite relay, there will be a slight delay between when you speak and when the other party hears you, so be patient.

Note every call in a phone logbook. The system will show you the amount of time you’ve used on the call, on the LED panel. Note the number called, the date, approximate time, and the length of the call (minutes and seconds). When the call is completed, you must push the end button (top right corner of handset buttons), otherwise the system will remain active and you will be billed for the time (at almost a dollar a minute). Remember to press end.

If someone calls in to this unit, it will ring, like a standard telephone. Press the SEND button to start the conversation, but remember to press end to finish the call. ADF&G is billed for all calls made using the handset, both the calls you dial out and any calls dialed in.

IN CASE OF EMERGENCY:

If there is a medical emergency, or a real danger to life or health, immediately call the US Coast

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Guard Rescue Coordination Center at 800-478-5555. Be ready to tell them your name, exact location (latitude and longitude or nearby major landmark), and the exact nature of your emergency. They may question you extensively, so be prepared. There are emergency doctors on-call that can advise you. After the call is completed, immediately call your supervisor, at work or at home, and relay the details of your experience.

If there is an enforcement emergency, use the dispatch microphone to call the Kodiak office or the Alaska State Trooper, Bureau of Wildlife Enforcement (DN 6370).

Appendix F. GPS coordinates for Kodiak salmon management field camps.

Akalura: 57° 09.85' N. Lat., 154° 13.74' W. Long.

Ayakulik: 57° 11.60' N. Lat., 154° 31.39' W. Long.

Karluk: 57° 33.89' N. Lat., 154° 22.85' W. Long.

Upper Station: 57° 03.33' N. Lat., 154° 31.17' W. Long.

Dog Salmon: 57° 07.75' N. Lat., 154° 00.10' W. Long.

Litnik: 58° 04.52' N. Lat., 152° 49.33' W. Long.

Appendix G. Equipment and supply list

Field equipment for the commercial fisheries salmon management weir and field projects are stored at the ADF&G warehouse on Rezanof Drive. At the warehouse, mustang suits/coats, tents, camp gear, SSB radios, solar panels, and 12-volt batteries can be found on the first floor in the salmon management locker. This locker is located on the first floor at the northeast corner of the building. Additional cold storage gear such as rafts, lines, anchors, and weatherports, can be found in the second van north east of the warehouse. Fuel, propane and gas cans can be found in the fuel shed north of the warehouse. Crews are required to collect, maintain, and return your camp's equipment at the end of the season.

Listed below is a recommend list of equipment and supplies necessary for an extended duration at the weir field camps.

1. Tent – If needed, it is suggested that you set up the tent prior to leaving town to assure the proper poles and rainfly are present. Seam seal all seams thoroughly before going into the field.
 2. Visqueen or tarp - Use for tent ground cloth, and to keep equipment and supplies covered when you arrive or depart from field camp.
 3. Raft - Make sure proper floorboards, pump-hose, oars, drain plug, and patch kit are included. Assemble and inflate raft and check for leaks. Make sure you secure extra raft chamber valves.
 4. Outboard motor – Check lower end unit lube. Bring spare spark plugs, lower end lube, fuel hose, and fuel filters. Make sure you have the proper fuel hose and tank for your motor. Don't forget 2-cycle oil for the motor. Gas tanks are stored in the fuel shed.
 5. Cookstove & hose – If needed, check to assure it works. Propane tanks are in the fuel shed. Be sure you have the proper hose for the cookstove.
 6. Cookware, silverware, & dishes – May already be at your camp, but don't forget the can opener.
 7. Cooler – If needed, be sure to purchase a bag of ice during grocery shopping.
 8. Lantern – Remember to purchase lantern fuel, and extra mantles. Make sure it works.
 9. SSB radio – Make sure the radio suitcase contains the black coaxial cable, 12-volt power cable, antenna (3.230 MHz frequency) and spare fuses.
 10. 12 – Volt battery – Make sure to charge battery; battery testers are available at the office (Battery must be transported in a case).
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11. Solar panel – Check wires and connections.
12. Boat kit – A Rubbermaid tote should include:

Outboard lower end lube	Seine Twine	Fuel filters
15. Funnel	Flashlight (extra batteries)	Tool kit
Extra outboard gas hose	Outboard oil	Hose clamps
Flares and Flare gun	Duct tape	Tide book

The following can be found in the fuel shed at the warehouse. Some fuels may need to be purchased. Fuels can be purchased from Kodiak Oil Sales, 715 Shelikof.

13. Propane tank & blazo – Make sure propane tank is completely full and you have sufficient blazo.
14. Stove oil – Use only #1 heating oil.
15. Outboard gas tank, hose, oil & gas – Be sure to know the correct mixture of your motor. Take at least 3 containers of gas, preferably one tank and two 5-gallon containers.

The following items can be found in the office except for mustang suits and coats, which are found, at the warehouse.

16. Firearm & cleaning kit – Rifles, shotguns, and ammunition are available at the office; check with Jeff Wadle or Dennis Gretsch. Know how to clean, load, and carry the firearm safely.
17. Observation equipment – Binoculars, spotting scope and camera.
18. Communications – Handheld VHF radio's, plus an extra set of AA batteries.
19. Emergency/ safety equipment – This equipment is checked for proper operation semi-annually.
 - EPIRB
 - Firefly Rescue Light (one for each person).
 - First Aid Kit
 - Mustang Suit or Float Coat

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19. Paper work – can be obtained from Paul Kuriscak or Jennifer Creelmen and should include:

2 copies of current commercial fishing regulations	Yellow writing pad
Time sheets	First Aid/Safety booklets
Weekly Salmon Weir Report Form	Tide Book
Yellow Rite-in-the-Rain logbooks	Hunting regulations
Yearly Calendar	Sportfish regulations
Copy of Current ADF&G Harvest Strategy	Stream survey forms
Copy of Current ADF&G S.O.P.	Grocery lists
Previous season Log book	

The following items need to be purchased. When you make a purchase, inform the clerk that your purchase is a Fish and Game, Commercial Fish Management charge and is tax exempt. The receipt you receive should be placed in Joan Brodie's invoice basket.

20. Groceries – Purchase sufficient groceries for approximately two weeks, plus some extra quick meals in case supply flights are delayed. Items need to include matches, dish soap, toilet paper, paper towels, garbage bags, along with food items. When selecting groceries consider the weight and bulk of your items. Keep in mind that besides your groceries you have a fair amount of other gear and supplies for your field camp. There are weight restrictions on all commercial air charters.
21. Personal gear – Warm clothes, rain gear, hipboots, sleeping bag & pad, ADF&G float coat/suit, and books.

Other items to consider taking out to camp include the following:

22. Other equipment/supplies – Include:

- | | |
|-------------|--------------------------|
| • Sandbags | • Microcassette Recorder |
| • Chainsaw | • Cracker Shells |
| • Generator | • Ammunition |

Please Note: The crew leader is responsible for making sure equipment problems are identified with a wire labeling tag. Information on the tag should include item's condition, repair information if any, other comments, the date and your initials. This will alert staff back in the office what items need maintenance. Labeling also speeds up equipment selection when preparing for the season.

At the end of the field season, please make sure all equipment from your camp is put away properly and in the correct place. If you choose to return next season, this may again be your gear. A few items such as lanterns, SSB radios, and 12-volt batteries probably will be shared with the herring camps but we're trying to keep the gear together.

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If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.