

Regional Information Report No. 4K08-01

Kodiak Commercial Fisheries Salmon Management Field Camp and Weir Operational Plan, 2008

By

Iris O. Caldentey

December 2007

Alaska Department of Fish and Game

Division of Commercial Fisheries



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CAMP AND WEIR OPERATIONAL PLAN, 2008**

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211 Mission Road
Kodiak, Alaska 99615

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The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric, and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: <http://www.sf.adfg.ak.us/statewide/divreports/html/intersearch.cfm>.

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ABSTRACT

The Alaska Department of Fish and Game (ADF&G) Division of Commercial Fisheries (CFD) management staff will operate five weirs in the Kodiak Management Area (KMA) in 2007. These weirs include the Karluk, Ayakulik, Dog Salmon, Upper Station and Litnik weirs. Weirs are used to estimate salmon escapements into KMA river systems. This information assists the ADF&G management staff in their decisions to open and close the salmon fisheries throughout the season. This operational plan will inform seasonal employees of their responsibilities in order to run effective field camps, operate weirs, and live at a remote site.

Key words: weir, escapement, salmon, Kodiak Management Area, field camp

INTRODUCTION

This operational plan will inform Alaska Department of Fish and Game (ADF&G) seasonal field camp employees of their responsibilities for opening field camps, instruct them on preparing, maintaining, installing, and operating weirs, and provide tips on how to effectively accomplish required tasks, duties, and responsibilities. Field employees will also read the Standard Operating Procedures (SOP) pertinent to their position and be familiar with the current Kodiak Management Area (KMA) commercial salmon fishery harvest strategy (Wadle, *in press*).

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 KMA is composed of seven commercial salmon fishing districts and 52 sections, which encompass approximately 440 streams supporting commercially viable salmon populations. Five species of salmon are harvested within the KMA. The combined escapement goals for KMA salmon spawning systems range from 8,400 – 16,900 Chinook salmon *Oncorhynchus tshawytscha*, 747,000 – 1,715,000 million sockeye salmon *O. nerka*, 5,800 – 13,600 coho salmon *O. kisutch*, 2,250,000 – 5,750,000 pink salmon *O. gorbuscha*, and 300,300 chum salmon *O. keta* (Nelson et al. 2005). Only four streams in the KMA have established coho salmon escapement goals, all of which are accessible from the Kodiak road system.

Weirs are used to estimate the number of sockeye salmon in major systems in the KMA. These systems include the Karluk River, Ayakulik River, Dog Salmon Creek, and Upper Station (Olga Creek; Figure 2). The Litnik (Afognak River) weir is the only management staff weir on a minor system (Figure 2). Aerial and foot surveys are conducted to enumerate escapement on streams without weirs.

ADF&G personnel will collect biological samples from sockeye salmon escapements (i.e., scales for age, sex, and length (ASL)). These samples provide the foundation for pre-season run forecasts, escapement goal evaluation, and accurate assignment of the run to the stock of origin (run reconstruction; Foster, *in press*). It is important that data collected are of the highest quality possible.

ADF&G will operate KMA weirs from approximately the May 15th to the September 15th, with the exception of the Karluk weir, which may be operated beyond September 30th. Two crewmembers are assigned to each project. Additional assistance may be provided during weir installation and removal, periods of intense salmon escapements, high water, and heavy debris loads.

Jeff Wadle, the Kodiak Finfish Area Management Biologist, is responsible for the management of KMA commercial salmon fisheries and is the overall project supervisor. Kodiak finfish

management biologists Joe Dinnocenzo, Geoff Spalinger and Iris O. Caldentey are the weir camp project leaders. They will provide oversight, logistical, and technical support for weir operations.

GOAL

The primary goal of KMA weir projects is to enumerate salmon escapements so ADF&G can ensure that escapement goals are met, and that commercial fisherman have an opportunity to harvest surplus salmon within the KMA.

OBJECTIVES

1. Enumerate adult salmon escapement through the weir and estimate salmon build-up below the weir in the rivers, lagoons and bays.
2. Monitor escapement quality, including the numbers of net-marked and “jack” (salmon \leq 400 mm mideye to tail fork) sockeye salmon.
3. Conduct escapement sampling.

DUTIES

1. Install, operate, and maintain weirs and field facilities.
2. Provide timely information on salmon escapement into the river system by enumerating salmon species as they pass through the weir.
3. Estimate concentrations of fish below the weir in rivers, lagoons, and bays.
4. Collect representative scale samples from salmon escapements for ASL composition ratios and estimates.
5. Collect and maintain accurate data, and transmit reports on a timely basis.

METHODS AND PROCEDURES

OPENING CAMP

Gather the necessary equipment from the ADF&G warehouse prior to departure (Table 1). Upon arrival at camp, the first day of work will consist of opening the field camp facility, organizing, storing supplies and personal gear, setting up the single sideband (SSB) radio, satellite phone, and preparing the necessary gear and equipment for weir installation. Weir installation will normally occur after the field cabin has been readied.

WEIR INSTALLATION

Refer to Appendix A for weir operations specific to individual camps.

- Move tripods from their staged location into the river and evenly space them across the river.
- Line up and square the tripods perpendicular to the upstream river flow.
- Fine tune tripod spacing and leveling. Level each tripod by digging under the highest rear leg to level it out. Leveled tripods make it easier to install and level your boardwalk.

- Install the entire boardwalk shiplap on the posterior portion of the tripod arms; do not nail it down until it is all leveled. Start at one end of the weir laying a 2”x 12” x 14’ board across the first set of tripod arms ensuring it rests on the next consecutive tripod arm. Continue laying out the boardwalk the length of the weir.
- Level boardwalk with spacers or leveling blocks nailed to the tripod arm, and fine tune the straightness of the boardwalk. Toenail the boardwalk to tripod arms and toenail the boards that overlap one another together, with 16d duplex nails. Make sure the end of each individual board rests on a tripod arm.
- Place large rocks or sandbags on each tripod platform to weight them down.
- Install upper and lower stringers in an alternating pattern across all tripods and extending to the riverbanks on both ends of the weir.
- Begin installing weir panels. Lay each panel flat against the stringers 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 stream gravel and rock to ensure it is fish tight. Continue setting weir panels the length of the weir.
- Don’t forget to install counting gate frames along with your weir panels. Determine counting gate locations based on stream depth and river flow. Typically install them where water flow is greater and depth is adequate for fish passage.
- Tie off the upper portion of all weir panels to the upper stringer with seine twine or cable ties.
- Install flash panels in front of and against each counting gate on the river bottom and weight down with large rocks or sandbags.
- Inspect your work. Walk along the front of the weir backfilling the base of panels where necessary to ensure the weir is fish tight.

WEIR OPERATION

- Monitor weirs throughout the day to pass fish. The crew leader will organize a schedule.
- If you don’t have experience identifying fish, your crew leader will train you to visually recognize the different salmon species and their swimming patterns. When fish have accumulated behind the weir take time to visually study them and note differences as they pass through the weir.
- 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 quickly and you will not be able to accurately count and identify them.
- If a counting gate will not open, it is probably 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. Free up the gate by inspecting for wedged rock or gravel and removing it with your fingers or a fish pew.

- When counting fish and conducting surveys, 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.

WEIR MAINTENANCE

- 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.
- Cleaning the weir includes getting into the river to remove sticks, logs, leaves, grass, gravel and fish carcasses.
- Throw all debris over the weir, allowing it to flow down river.
- 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.
- 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.
- If water levels increase considerably you may need to pull weir panels to avoid a weir wash out.
- Keep bears away and off of the weir as much as possible to minimize damage.

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 or cable ties attaching the weir panels to the upper stringers.
- Remove all weir panels, counting gates, and flash panels, placing them on the rear of the tripods. Place half of all weir panels, gates, and flash panels at 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; remove the other half and stage on the opposite side of the river.
- Remove all sandbags from the river.
- Stage weir materials in a location to avoid damage from flooding, and ice movement during spring break-up.

ESCAPEMENT SAMPLING

In most camps, sockeye salmon ASL sampling is conducted at a rate of 240 fish per statistical week (Saturday through Friday). 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 (Foster *in prep*). Refer to this plan for sampling guidelines and procedures. Ask a weir camp project supervisor if you have any sampling questions.

CREW LEADER RESPONSIBILITIES

Crew leaders are responsible for training new employees, establishing work schedules, prioritizing daily work assignments, and supervising camp duties. The crew leader will collect accurate, complete, and well organized data, as well as ensuring that safety is a priority.

Daily Radio Schedule

The previous days counts and cumulative salmon escapement information will be reported each morning at approximately 8:10 AM on single side band (SSB) frequency 3.230 MHz to the Kodiak ADF&G office. A second radio schedule occurs at 4:30 PM. The evening schedule is intended to check on field personnel, discuss salmon build up and escapements, to pass along short lists of supply requests, and receive the latest commercial fishery announcements. Radio schedules are very important, and must be taken seriously. Failure to make two consecutive radio schedules may result in a flight to the camp to ensure the safety of the crew. Advise your supervisor if you plan to miss a radio schedule. Keep your battery charged and have spare fuses available.

Use the satellite phone if the radio will not operate. You may also contact someone at the Kodiak ADF&G during normal working hours on SSB frequency 3.230 MHz. The satellite dispatch phone can also be used for communicating with the office when SSB reception is poor. Refer to Appendix B for satellite phone and dispatch instructions and Appendix C for instructions on operating your electrical system.

Forms

The crew leader will fill out a weekly weir camp report (Figure 3) and a bimonthly (twice a month) report (Figure 4). The weekly weir camp report includes weather and daily escapement data that occurred during the past week. The bimonthly report will keep the project supervisor informed on fish estimates, conflicts between crew or public, and the duties accomplished during the past two weeks. In addition, any items that were sent to the office and any items that were not received on the most recent supply flight will be recorded. Entries to bimonthly reports should be made daily.

Time Sheets and Leave

Crew leaders are responsible for keeping an accurate record of employees work hours. Each employee will fill out a timesheet on the 15th and the last day of each month (Figure 5). 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. Complete in **PEN** only.

Data Management

It is imperative that measurements be accurate and data be recorded properly. Forms and samples should be complete, correct, and neat. It is the crew leader's responsibility to keep a daily log that includes a record of weather, water temperature, stream depth (recorded at 7:55 AM), water conditions, work accomplished, escapement counts, and survey notes. Additional entries should include comments related to fishing activity, bear and people encounters, smolt migrations, weir problems, regulation violations, cabin maintenance, and aircraft traffic.

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, and chaining and locking boats in a secure location. See Tables 2 and 3 for examples of a weir camp closing inventory and a camp closing checklist.

ADDITIONAL GUIDELINES AND PROCEDURES

Camp Policies

- Alcoholic beverages are not to be stored in areas open to public view. If alcohol is consumed at a camp the employee must be 21 years of age and off work without any duty scheduled for the remainder of the day and under no circumstances shall he or she engage in the operation of any State equipment, nor shall he or she return to duty status under the influence of alcohol. **The abuse of alcoholic beverages or illegal drugs will be grounds for immediate dismissal.**
- All employees will be required to act in a professional manner at all times and be especially courteous to the public.
- Injuries, and loss or damage of state equipment must be reported to the project supervisor within 24 hours.

Ordering Food and Supplies

Field crews will purchase items prior to leaving Kodiak and may also request items (e.g., groceries, supplies, and equipment) while in the field. Crews will only purchase items authorized by the project leader. Grocery and supply flights are scheduled twice a month. Order enough food to eat healthy but be reasonable. If grocery orders become unreasonable, less expensive items will be substituted. Grocery and supply orders must be in the Kodiak office at least one week prior to the scheduled flight. Grocery forms/ordering lists are provided to keep track of needed items.

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

Visitors/Public Interaction

Weir sites get many visitors. Visitors come by the camp to see bears and watch fish passing through the weir. Keep the camp clean and be courteous and helpful to visitors, but also inform them of the boundaries. The general public is not allowed to access the weir. Make sure "keep off weir" signs are posted in visible locations at both ends of the weir. Remember, your primary role is to operate and maintain the weir and accomplish the associated responsibilities of the project. Under no circumstance should any state employee accept payment or gratuities for such tours or public contact.

Firearms

All field camp employees must be able to safely use firearms. A state owned shotgun will be provided at each camp. Training on safe handling and shooting of firearms will be conducted for all personnel. 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.** Clean guns frequently. 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 misuse of firearms will not be tolerated and may be cause for immediate dismissal. Always unload a firearm of all ammunition before boarding a vessel or aircraft.

Bears

Weir camps have high concentrations of bears. Do not antagonize bears and make every attempt to coexist with them. 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 and maintain a clean camp. If you are having problems with a particular bear notify your supervisor. When attempting to frighten a bear away by shooting, shoot away from the bear because you may inadvertently wound it. Do not shoot a bear unless, in your best judgment, it is endangering someone's life. Do not shoot unless it is absolutely necessary. If a bear is shot, notify your project supervisor immediately. If a bear hangs around or on the weir and will not leave, cracker shells can be loaded and shot in the approximate direction of bears, but **NOT** at bears. Rocks may also be used at your discretion, keeping in mind that a bear is a potential danger.

Garbage

Burn garbage completely to prevent bear problems. Do not burn during windy or dry weather conditions. The U.S. Fish and Wildlife Service prohibits garbage pits on the refuge. Never start fires with fuel. To prevent grass fires keep grass and brush trimmed at least fifteen feet away from the burn barrel. It is best to burn trash early in the morning or late in the evening when the wind is minimal and humidity is high. Never leave a fire unattended.

Burn tin cans along with burnable garbage. Burning cans eliminates residual food and odors that attract bears. Send in burnt cans and non-burnable items on supply flights. All garbage must be double bagged. Empty fuel containers should also be sent in as soon as possible on return grocery flights for immediate recycling.

Use a slop bucket for biodegradable garbage (food scraps, etc.) that is dumped away from camp either in the river or bay. Don't compost biodegradable food because it attracts bears.

Fire and First Aid Safety

All crew members will take a mandatory CPR and First Aid training course prior to going in the field. Ensure a fully stocked first aid kit and fully charged, operable fire extinguishers are in camp, and that all personnel know where they are located and how to use them. Make sure smoke and carbon monoxide alarms are up and operational.

Drinking Water

Stream and lake water may be contaminated with bacteria or harmful parasites. "Micron" water filters are provided in field camps to filter all drinking water. If filter cartridges are damaged, replace them immediately. If filters are not available, boil your drinking water for at least 10 minutes. "Be sure to read instruction manual with each filter for cleaning and care information."

Boating and ATVs

Some camps are furnished with boats and ATVs. They have been provided to transport materials, supplies, and equipment between campsites and supply planes or vessels. They may be used for transportation to and from assigned field duties, such as surveys, fishery monitoring, or collecting harvest information. They are not intended for personal use or recreational purposes. Boats and ATVs may be accessed and operated only by trained ADF&G personnel and will be secured when not in use. Be safety conscious at all times; do not speed or drive recklessly.

All personnel must wear United States Coast Guard approved Personal Flotation Devices (life jacket, float coat, or exposure suit) at all times when operating boats. If you suspect conditions may be dangerously rough, don't go out on the water. A waterproof Emergency Positioning Indicator Radio Beacon (EPIRB), a flare kit, and a tool kit (that includes wrenches, pliers, screw drivers, spare spark plugs, and spark plug wrench) must be in the boat or raft at all times. If you must travel at night, carry a flashlight. Know how to activate your EPIRB; check the battery power and expiration date.

Unauthorized use of an ATV or boat will result in a notation on your evaluation, and the discontinuation of ATV or boat use at your field station, or your dismissal from employment.

- Only state employees may use the vehicles, ATV's and boats.
- Only one employee may ride on an ATV at a time.
- A safety helmet must always be worn when riding an ATV.

Equipment Maintenance

Outboard motors and generators must be kept in good operating condition and require regular maintenance. At the end of each season, equipment should be tagged with a description of the equipment's condition on the tag. All equipment returning to Kodiak is stored at the warehouse in the salmon management locker or the salmon management trailer van behind the warehouse. Check with Danny Wilson concerning the storage of any unused fuels returned to town. See Appendix D for instructions on operation and maintenance of outboards and generators

Maintenance and Cleanliness of Cabins and Outbuildings

Cabin and facility maintenance is an important aspect of camp life; the buildings must be kept structurally sound and safe. Make a list of projects and repairs that need to be accomplished during the season. Send in a list of materials needed for these projects/repairs. Order supplies in advance. Repairs and maintenance should be scheduled on days when fish migrations are slow to keep this work within normal work periods.

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 camp personnel. Any violation will be recorded on your evaluation and may be cause for immediate dismissal.

Basic Procedures Regarding Violations

ADF&G field personnel have a responsibility to be aware of and report violations of state or federal fishing and hunting regulations. The following is a guideline for obtaining the appropriate information and/or evidence to prove that a violation has been committed. If a violation is seen, all pertinent information pertaining to the violation should be recorded immediately, retained by

the employee, and the project leader must be notified. A copy of each regulation book should be available in camp.

The use of the five Ws can aid in obtaining sufficient information pertaining to a violation.

1. What is the violation?
2. When did the violation take place?
3. Where did the violation occur?
4. Who is in violation and who are the witnesses?
5. Why was the violation committed?

Interview all witnesses to a violation and record 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. Collect as much information and evidence as possible and immediately contact your supervisor or a State Trooper from the Alaska Bureau of Wildlife Enforcement (ABWE).

If the violator 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 ABWE officer as soon as possible.

Emergencies

In the event of a medical emergency, administer first aid to stabilize the situation. If an injury is life threatening immediately notify the US Coast Guard, at their Search and Rescue Emergency phone number **800-478-5555** on the satellite phone. The US Coast Guard can also be reached on SSB radio frequency 4.125 MHz or on VHF channel 16.

When contacting the U.S. Coast Guard, have the following information ready to pass along:

- Location of your field camp or specific location of the emergency (see below),
- 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, and
- Other information pertinent to a possible medical evacuation.

Emergency Numbers and Radio Frequency.

Contact	Phone Number	Radio Frequency	Other Radio Frequencies
US Coast Guard	800-478-5555	SSB frequency 4.125 MHz	VHF channel 16
Fish and Game Office	486-1830 or 486-1825	SSB frequency 3.230 MHz (WON 32)	2.450 MHz, 4.125 MHz
State Troopers	486-4121		

Fish and Game Staff	Phone Number
Jeff Wadle	486-1808 or 481-2974 or 539-5495
Joe Dinnocenzo	486-1807 or 486-5014
Geoff Spalinger	486-1804 or 486-5582
Iris Caldentey	486-1810 or 539-7101
Logistics Person	539-5809

Camps	GPS Coordinates	SSB Radio Call Sign
Ayakulik	57° 11.60' N. Lat., 154° 31.39' W. Long	WQF 466
Karluk	57° 33.89' N. Lat., 154° 22.85' W. Long	WNJI 929
Upper Station	57° 03.33' N. Lat., 154° 21.17' W. Long	WNJI 929
Dog Salmon	57° 07.75' N. Lat., 154° 00.10' W. Long	WNJI 929
Litnik	58° 04.52' N. Lat., 152° 49.33' W. Long	WNJI 929

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TABLES AND FIGURES

Table 1.—Equipment and supply list.

Field equipment for the commercial fisheries salmon management weir and field projects is stored at the ADF&G warehouse on Rezanof Drive.

1. Tent – If needed.
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 - Change lower end unit lube at the start of the season. 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. Cook stove & hose - If needed, check to assure it works. Propane tanks are in the fuel shed.
6. Cooler - If needed.
7. Lantern - Remember to purchase lantern fuel, and extra mantles. Make sure it works.
8. SSB radio - Make sure the radio suitcase contains the black coaxial cable, 12-volt power cable, antenna (3.230 MHz frequency) and spare fuses.
9. Satellite Phone – Make sure battery is good and that it is activated.
10. Communications - Handheld VHF radios, plus an extra set of AA batteries.
11. 12 Volt battery - Make sure to charge battery; battery testers are available at the office (Battery must be transported in a case).
12. Solar panel - Check wires and connections.
13. Boat kit - A Rubbermaid tote should include: Lower end lube, fuel filters, hose connectors, hose clamps, seine twine, tool kit, outboard oil, cable ties, metal wire, fuel pump diaphragms and a flare kit.
14. Propane - Make sure propane tanks are full.
15. Stove oil - Use only #1 heating oil.
16. 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.
17. Firearm & cleaning kit - Shotguns, ammunition, and gun cases are available at the office; check with Joe Dinnocenzo or Iris Caldentey. Know how to clean, load, and carry the firearm safely.
18. Emergency/ safety equipment - EPIRB, rescue light, first aid kit, mustang suit or float coat.
19. Paper work - Can be obtained from Geoff Spalinger or Iris Caldentey.
20. Groceries - Purchase sufficient groceries for approximately two weeks, plus some extra quick meals in case supply flights are delayed. When selecting groceries consider the weight and bulk of your items.
21. Personal gear - Warm clothes, sleeping bag & pad, and books.
22. Sampling gear- Scale cards, write in the rain books, polarized glasses, gloves, waders and wading boots.

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.

Table 2.—Example of a weir camp closing inventory.

WEIR CAMP CLOSING INVENTORY

Weir Camp: Karluk

Date 9/2008

#	Item	Location
1	Stihl Chainsaw	Shed
1	DeWalt tool set	Town warehouse
1	Skillsaw - Worm drive	Shed
1	Ratchet set	Shed
1	Stihl Weedeater	Shed
2	Flashlights	Attic
2	Headlamps	Attic
1	Shotgun cleaning kit	Storage Bench
1	First aid kit	Town warehouse
3	Extension cords	Shed
2	Come alongs	Shed
3	Shovels	Shed
2	Rakes	Shed
3	Pews	Shed
2	4' Levels	Shed
2	Hammers	Shed
1	Tool box with hand tools	Shed
1	5 gal. Gasoline	Shed
1	5 gal. Stove oil	
1	100 lb. Propane tank 1/3 full	Shed
1	40 lb. Propane tank 1/4 full	Shed
2	Handheld VHF's	Town warehouse

Need for next season

100 lb. Propane full
15 gal. Gasoline
15 gal. Stove oil
New headlamps

Table 3.–Camp closing checklist.

Camp chores
Box/store food
Clean stove
Clean behind stove
Clean refrigerator - defrost and block door open
Mop Floor
Make sure coax cable is secure
Disconnect propane lines and tape ends
Make a pile of gear to return to town
Clean ashes out of wood stoves
Spray tools with WD-40
Winterize outboard - if not brought to town
Store gas jugs in shed
Flip outhouse and cover hole
Lock and Chain skiffs that remain on site
Make sure batteries are properly hooked up to solar panels for an overwinter charge
Place mothballs in each room
Store all tools
Clean up burn pit
Board windows
Board shed door shut
Items to town
Radios - SSB and VHF
Shotgun
Satellite phone
First aid kit
Outboard motor - depending on camp
Generator - depending on camp
Solar panels - Karluk only
Rafts

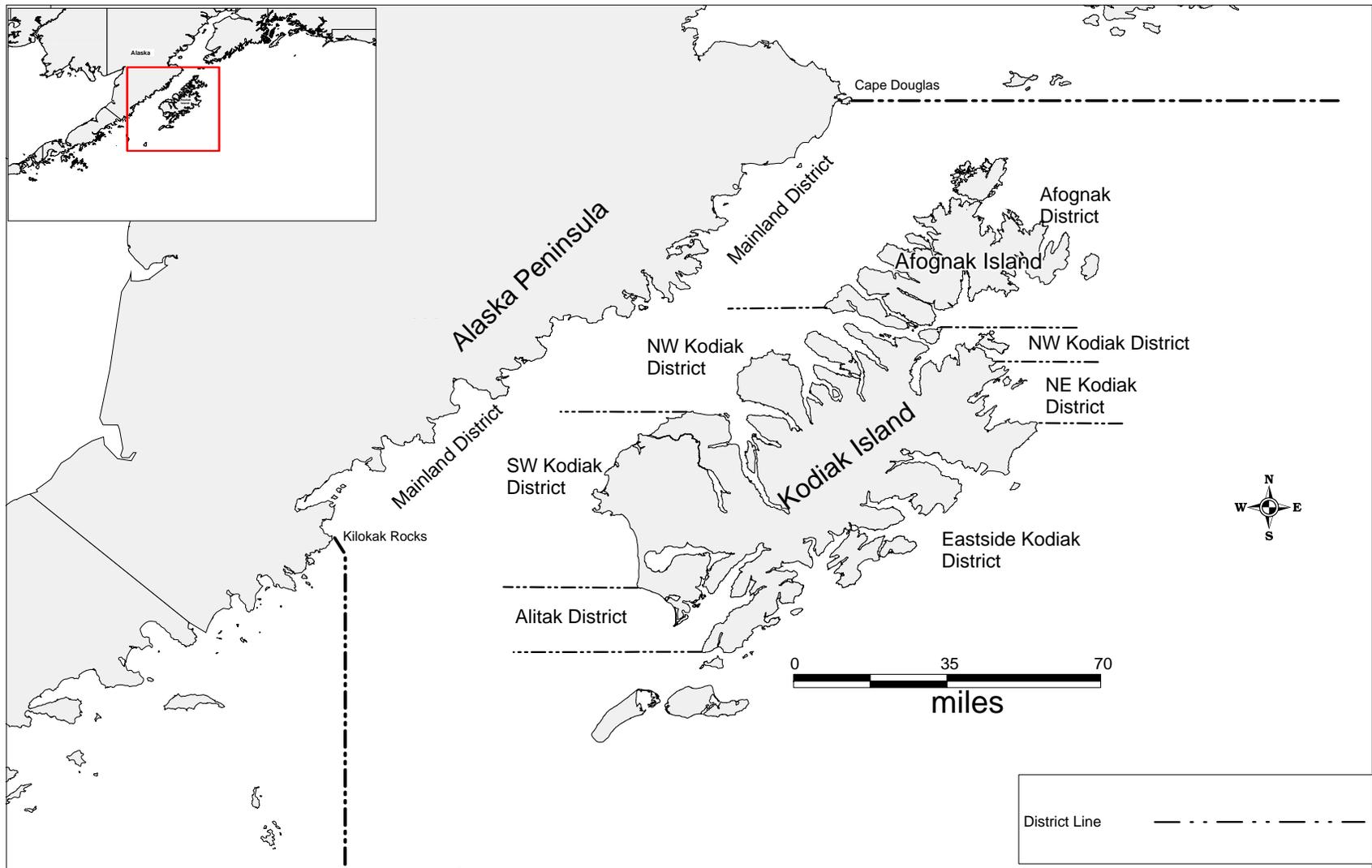


Figure 1.-Map depicting the Kodiak Salmon Management Area.

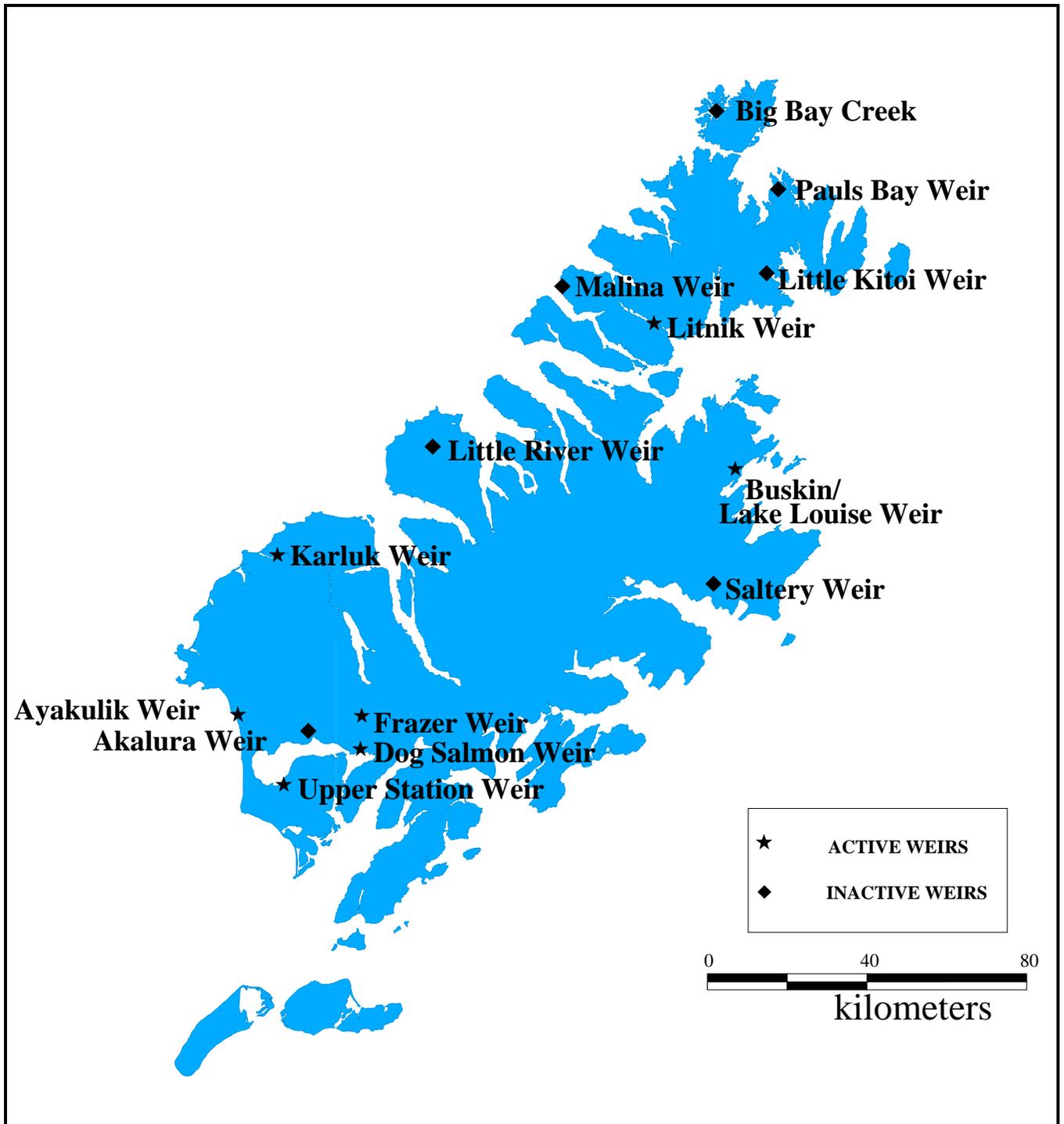


Figure 2.-Map depicting the Kodiak Management Area weir locations operated by ADF&G CFD in 2008.

**ALASKA DEPARTMENT OF FISH AND GAME
KODIAK MANAGEMENT AREA
WEEKLY SALMON WEIR CAMP REPORT FOR YEAR: 2005**

Location: **Ayakulik** Personnel: **Chiles/Reid** Weekly Report no: **7** For Week Ending Saturday: **July 7**

Date	Daily Total Salmon Escapement						Daily Totals	Steelhead		Jack No.	Jack % Sockeye	Net Mark Sockeye	Reds Sampled	Dollys up	H ₂ O Level	H ₂ O Temp.	Weather		
	Sockeye	L. Sockeye	Chinook	Pink	Coho	Chum		Down	Up								Ceiling	Vis.	Wind Dir/Sp
Sun. D	296		56	0	0	0	352	0	0	20	6.8	4	0	12	13	7.5	2,000 solid	5	SE 15-20
7/1 C	213,789		6,211	0	0	0	220000	697	0	4,256	2.0	675		623			Rain		
Mon. D	26		100	0	0	0	126	0	0	0	0.0	1	80	36	13.5	7.5	1,000 Solid	3-5	E 10-15
7/2 C	213,815		6,311	0	0	0	220126	697	0	4,256	2.0	676		659			RDF		
Tue. D	569		29	0	0	0	598	0	0	102	17.9	15	0	50	13.5	7.5	500 Solid	1-2	NE 20-25
7/3 C	214,384		6,340	0	0	0	220724	697	0	4,358	2.0	691		709			RDF		
Wed. D	2,326		39	0	0	0	2365	0	0	156	6.7	30	80	106	14	7.5	CAVU		SW 5-10
7/4 C	216,710		6,379	0	0	0	223089	697	0	4,514	2.1	721		815					
Thur. D	781		212	0	0	0	993	0	0	68	8.7	24	0	26	14	8	CAVU		Calm
7/5 C	217,491		6,591	0	0	0	224082	697	0	4,582	2.1	745		841					
Fri. D	105		62	0	0	0	167	0	0	9	8.6	5	80	16	13.5	8	4,000	Unl.	W 15
7/6 C	217,596		6,653	0	0	0	224249	697	0	4,591	2.1	750		857					
Sat. D	265		106	0	0	0	371	0	0	18	6.8	9	0	93	13.5	8	4,000	Unl.	SW 15-25
7/7 C	217,861		6,759	0	0	0	224620	697	0	4,609	2.1	759		950					
Total for week	4,368		604				4,972			373		88	240	339					

Additional Comments: Bear and people problems, smolt migration, weir problems, estimated escapements, cabin repair, etc.

- 1-Jul Approximately 2,000 Sockeye in lagoon
- 2-Jul No additional build up in lagoon, small numbers of jumpers off mouth
- 3-Jul Found hole in Weir in the morning, Estimate of 200 Sockeye included in escapement counts
- 4-Jul Lots of rafters today, fishing is slow upriver
- 5-Jul Approximately 500 Sockeye in lagoon
- 6-Jul New sow with cubs trying to fish behind weir, respond well to yelling
- 7-Jul Lots of jumpers off the mouth, looks some pinks starting to jump as well

***Note** Daily sockeye jack counts must be included in the overall daily count

Figure 3.-Weekly weir camp reporting form.

BIMONTHLY CREW LEADER REPORT

Crew Leader: Latham		Crew: Glenn						
Weir Camp: Karluk		Project Biologist: Wadle						
Time Period for Report: 6/1 - 6/14								
Date:	<input checked="" type="checkbox"/> Weir was fish tight? If not why?	Hrs. compromised between:						
6/1		Estimated escapement through by species:						
<input checked="" type="checkbox"/>	Survey:	Kings	Reds	Pink	Coho	Chum	Time	Water Clarity
	Quality: Excellent	200	15,000				13:00	good
	Describe where fish were seen: 1/2 the fish were from the barrel to floatplane landing and the other 1/2 were off of Indian pt.				Ceiling	Visibility	Wind dr/sp	
					2,000	Unl.	SW 5	
Date:	<input type="checkbox"/> Weir was fish tight? No If not why?	Hrs. compromised between: 23:00 - 07:00						
6/2	Minor Bear Damage	Estimated escapement through by species: 1,000 Reds, 25 Kings						
<input checked="" type="checkbox"/>	Survey:	Kings	Reds	Pink	Coho	Chum	Time	Water Clarity
	Quality: Poor	0	5 - 10,000				12:00	poor
	Describe where fish were seen: All fish were seen at the river mouth, visibility was poor so we suspect more fish than were seen.				Ceiling	Visibility	Wind dr/sp	
					1,000	5	NE 15 - 10	
Date:	<input checked="" type="checkbox"/> Weir was fish tight? If not why?	Hrs. compromised between:						
6/3		Estimated escapement through by species:						
<input checked="" type="checkbox"/>	Survey:	Kings	Reds	Pink	Coho	Chum	Time	Water Clarity
	Quality: OK	100	50,000				13:00	decent
	Describe where fish were seen: Lots of fish throughout lagoon, but mainly from the barrel to float plane landing				Ceiling	Visibility	Wind dr/sp	
					1,500	15	NW 15	
Date:	<input type="checkbox"/> Weir was fish tight? No If not why?	Hrs. compromised between: 22:30 - 07:30						
6/4	Bears shifted panels around	Estimated escapement through by species: 5,000 sockeye, 200 Kings						
<input checked="" type="checkbox"/>	Survey:	Kings	Reds	Pink	Coho	Chum	Time	Water Clarity
	Quality: Excellent	0	30,000				14:00	excellent
	Describe where fish were seen: 3/4 from the barrel to the floatplane landing and 1/4 off Indian Pt.				Ceiling	Visibility	Wind dr/sp	
					CAVU		NW 10	
Date:	<input checked="" type="checkbox"/> Weir was fish tight? If not why?	Hrs. compromised between:						
6/5		Estimated escapement through by species:						
<input checked="" type="checkbox"/>	Survey:	Kings	Reds	Pink	Coho	Chum	Time	Water Clarity
	Quality: Good	100	35,000				15:00	good
	Describe where fish were seen: Fish were spread throughout the lagoon, there were lots of jumpers off of the mouth.				Ceiling	Visibility	Wind dr/sp	
					3,000	15	W 15 - 20	

Figure 4.-Bimonthly crew leader report.

APPENDIX A. WEIR CAMPS.

The Karluk weir is approximately 101 m (330 ft) long and is located about 1.3 km (0.8 mi) 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 location and was operated annually at this location until 1941. The weir was moved to “the portage,” approximately 12.9 km (8 mi) down river from the Karluk Lake outlet from 1942 to 1945. Between 1946 and 1975 it was operated at the outlet of Karluk Lake. It was re-established at its present location in 1976.

Opening Camp

- Obtain keys from your project supervisor.
- Equipment and tools for the Karluk weir are stored in the ADF&G warehouse.
- Batteries and solar panels are stored at the ADF&G warehouse and need to be brought to camp.
- 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.
- Weir personnel will be transported to the Andrew Airways cabin by air charter to obtain the survey skiff. All gear and supplies are moved to the cabin and weir site with the canoe after securing the survey skiff at the skiff landing.
- Living quarters consist of a two story, 16’ x 20’, cabin with two propane connections for a refrigerator and lights.
- There is no water supply to the cabin. Water is obtained from the river and filtered.
- 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.

Weir Installation

- The 2008 weir will be placed in the same location as in 2007, directly in front of the cabin. The Karluk weir is a conventional wooden tripod weir. This weir also utilizes a section of floating weir panel that serves as a raft gate to allow 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’ boards and is staged between the cabin and banya. All weir panels are staged adjacent to the cabin and tripods are on both river banks.
- Weigh tripods down with large rocks from the riverbed or sandbags.
- Install five to six 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 trap.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning and cleaned throughout the day as necessary.

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- The debris load is usually heavy after medium to heavy rainfall, and may increase later in the season especially on large pink salmon years.
- Consider pulling weir panels during high water events; when 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.
 - 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 the boat and canoe. During the season, the boat is moored at the head of the lagoon.
 - Conduct surveys of the lagoon and river when directed by office staff.
 - Clean and lime outhouse on a regular basis.
 - The grocery/supply flight arrives on the north shore of the lagoon approximately .5 km 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.
-

The Ayakulik weir is approximately 35 m (120 ft) long and is located about 1.3 km (0.8 mi) upstream from the outlet of the Ayakulik River into 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 has been at its current location since 1970.

Opening Camp

- Assorted tools and equipment for the Ayakulik camp are stored at the ADF&G warehouse.
- Fuels required at this camp consist of gasoline, propane, and two-cycle oils.
- Obtain the keys to the cabin from your project supervisor. You will need a cordless drill, claw hammer and an adjustable wrench. The basement of 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.
- Living quarters consist of a one story, 16' x 20', single room cabin with half basement and a 16' x 24' one story cabin with loft. The small cabin has four bunks, a propane refrigerator and cook stove, a gravity fed water system, a wood heating stove, propane and 12-volt lights.
- 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.
- The cabin has a 12-volt battery bank charged by solar panels permanently attached to the roof. This 12-volt system powers the SSB radio and VHF base station.

Weir Installation

- In 2008 the weir will be placed in the same location as 2007. The Ayakulik weir is a wooden tripod weir. That utilizes a 20' raft gate stored below the small cabin. The tripods are staged on both riverbanks and the weir panels are staged behind the banya.
- Weigh down each tripod with large rocks from the river bottom.
- Install two 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 adult sampling trap
- Install the steelhead out-migration trap.
- Install the raft gate on the far bank.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning 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.

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- When the water level covers this rock you should reevaluate the situation and consider pulling panels.

Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
 - This camp has a large number of bears that frequent the weir. Do not let them loiter around the camp and weir!
 - 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.
 - Clean and lime the outhouse on a regular basis.
 - Repair and maintain the boat. During the season the boat is anchored on the shore of the lagoon next to the trail.
 - Grocery and supply flights land in the lagoon near the lodge and sometimes on the beach.
 - At the end of the season the boat is stored next to the cabin with four to six full sandbags on top.
 - 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; at the end of the season 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.
 - Remove all food from the cabin at the end of the season.
 - At the end of the season return the shotgun, SSB radio and antenna, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak.
-

The Upper Station weir is approximately 11 m (35 ft) long and is located near the outlet of Olga Creek into upper Olga Bay on the south end of Kodiak Island (Figure 1). The weir was first constructed in 1929 just above the lagoon, approximately 0.23 km (0.14 mi) above its current location, and was operated there until 1969. From 1969 to 1992 the weir was operated near the outlet of lower Olga Lake, then moved to its current location in 1993.

Opening Camp

- Obtain keys to the cabin and the combination to one lock from your weir camp project leader before departing for this camp. You will need a cordless drill, with phillips and square-head bits to remove window board screws.
- 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.
- The air charter will transport personnel to Olga Bay. Personnel will then cross the creek in chest waders and install the footbridge across the creek to move gear and supplies to the cabin. The footbridge involves placement of one tripod in the middle of the creek and installing a section of boardwalk from each bank of the river to the tripod.
- Living quarters consist of a one story, 14' x 24', cabin. The cabin is wired to operate 110 volt AC powered lights when connected to the generator. An oil stove heats the cabin.
- The master buss bar fuse stored next to the fuse panel needs to be installed prior to operating the 12-volt solar system.
- 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.

Weir Installation

- The 2008 weir will be placed in the same location as in 2007. The weir is located northwest of the cabin, and downstream approximately 225 yards. There is a boardwalk from the cabin leading to the weir.
- The weir is a conventional wooden tripod weir, it utilizes three tripods, one counting gate, and one sampling trap gate.
- 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.
- Other weir materials are staged on the bluff 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.

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- Install the 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.

Weir Maintenance

- The weir is cleaned and inspected for scouring and holes every morning and cleaned throughout the day as necessary.
- Debris load can be heavy after medium to heavy rainfall, or 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 has a shower stall with shower bag.
 - 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.
 - Conduct salmon surveys of the stream several times per day. The best technique is to walk the beach side of the river from the mouth to the weir.
 - 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.
 - Grocery and supply flights are normally unloaded on the beach near the footbridge. Weather conditions may force the plane to land at lower Olga Lake. Supplies are transported in a wheelbarrow to the camp.
 - The 12-volt battery bank remains connected to solar panels at the end of the season.
 - 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.
 - Window boards are attached with square head screws.
 - At season’s end return the shotgun, SSB antenna, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak.
 - Winterize motorized equipment stored on site at the end of the season.
 - Clean the rain barrels and water filter at season’s end.
 - All tools and the generator are stored in the cabin at season’s end. Fuels are stored in the fuel shed, and remaining gear and equipment is returned to Kodiak and stored in the warehouse.
-

The Dog Salmon weir consists of three weirs, 38 m (125'), 41 m (135'), and 8 m (25') in length, on the three lower forks of the Dog Salmon River, 0.5 km (0.3 mi) upstream of their outlets into Olga Bay on the south end of Kodiak Island (Figure 2). The Dog Salmon River drains from Frazer Lake.

Opening Camp

- Before departing Kodiak for camp, obtain keys from the project supervisor.
- Fuels needed for this camp include propane, #1 heating oil, gasoline, and two-cycle oil.
- If possible arrange your arrival time during high tide in Olga Bay. The air charter can then taxi into the river and drop personnel and supplies on the bank of the east river branch upstream near the trailhead close to the signpost.
- 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. The main cabin has an oil stove, propane and 12-volt lights, and is wired for 110-volt service by connecting the three prong 110 plug located in the generator shed to the generator.
- There is an outbuilding that serves as a bunkhouse and banya. The bunkroom has two bunks. A wood stove heats the banya. Wood used for burning is obtained from dead trees on site or wood collected on the weir throughout the season.
- 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.
- Window shutters are attached with wing nuts screwed to hangar bolts.
- 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.

Weir Installation

- The 2008 weirs will be placed in the same locations as the 2007 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. The Dog Salmon weirs are conventional wooden tripod weirs and utilize a total of 22 tripods. All weir materials are staged at their respective weir sites.
- Weigh each tripod down with eight sandbags.
- The gravel and rock in the riverbed at the east weir tends to scour under panels. Make sure panels are entrenched when this weir is installed.
- Install four counting gates accompanied by flash panels at both the east and west weirs.
- Secure the upper portion of weir panels to the upper stringers with seine twine.
- Install the steelhead trap on the west weir.

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Weir Maintenance

- The weirs are cleaned and inspected for scouring and holes every morning and cleaned throughout the day as necessary.
- Debris load can be heavy after medium to heavy rainfall, or high winds.
- Consider pulling weir panels during high water when 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.

Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weirs.
 - Maintain buildings and grounds surrounding the cabin and banya.
 - Maintain and make repairs on two boats The 22 foot boat is moored offshore at the edge of Dog Salmon Flats or to the east of the camp in Iversons Cove. The 16 foot Lund is moored in the river at upper or lower skiff landings, depending on the river water level.
 - 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 surveys of the river branches and the Dog Salmon Flats Section throughout the day as required.
 - Survey the lower East River and the Dog Salmon Flats Section with the small skiff. The West River is surveyed by 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.
 - Clean and lime outhouse on a regular basis.
 - Check and maintain 12-volt battery bank.
 - 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.
 - At the end of the season, the large skiff is transported back to Kodiak by tender, and the smaller skiff 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.
 - All tools, the generator, the outboard motor for the smaller boat, ladders and fuels are stored on site; at the end of the season 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 and dispose of it in the bay.
 - 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.
-

The Litnik weir is approximately 27 m (88 ft) long and is located about 0.8 km (0.5 mi) above the outlet of the Afognak River, which flows into Afognak Bay, on the south end of Afognak Island (Figure 2). A weir was first constructed in 1921 at a site located approximately 0.64 km (0.4 mi) below the outlet of Afognak Lake, where intermittent weir counts occurred up to 1978, then annually until 1985. In 1986 it was moved to its current location and has been operated there since.

Opening Camp

- Obtain the keys to the cabin from your weir camp project leader.
- Obtain a cordless drill from the warehouse.
- Fuels needed at this camp include propane, #1 heating oil, gasoline, and two-cycle oil.
- The four wheel ATVs are stored at the warehouse.
- Equipment, supplies, and the ATV are transported to this camp via the state R/V K-Hi-C.
- Offload equipment, supplies, and the ATV from the R/V K-Hi-C to shore with a skiff at high tide.
- Equipment and tools are stored in the basement and banya.
- 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.
- The main cabin has one propane hookup located outside next to the oil barrel for the refrigerator and propane lights. 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, cook stove, and oil stove. 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.
- Drinking water is obtained from the river and filtered for drinking.
- A battery bank consisting of 3 12-volt batteries powers the SSB radio. The batteries are charged by solar panels mounted to the roof.

Weir Installation

- The 2008 weir will be placed in the same location as in 2007, directly downstream and adjacent to the main cabin. The weir is a wooden tripod weir with the 2" aluminum pipes for upper and lower stringers.
- Tripods and weir materials are divided and stored on both sides of the river.
- This weir uses 10 tripods. Each tripod should be weighted down with large rocks from the river bottom.
- Install the adult sampling trap. It is installed approximately 15 feet from the bank closest to the main cabin.
- Only one counting gate is installed near the center of the weir.

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- Secure the upper portion of weir panels to upper stringers with seine twine.

Weir Maintenance

- Weir is cleaned and inspected for scouring and holes every morning and throughout the day as 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.
- 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.
 - Clean and lime the outhouse regularly.
 - Routinely trim and cut grass around buildings and on the trail to the weir.
 - Biodegradables from the slop bucket are dumped behind the weir.
 - Burn trash and burnables in the burn barrel and backhaul non-burnables to town.
 - Install the boat running line in the river at the trailhead to the cabin.
 - Conduct daily salmon surveys of the lower river and bay.
 - When this weir is removed half of the materials are staged on each side the river adjacent to the weir.
 - At the end of the season store the dishes, tools, and miscellaneous equipment in the basement and banya.
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**APPENDIX B. SATELLITE TELEPHONE AND DISPATCH
INSTRUCTIONS.**

Appendix B1.—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 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.

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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 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’.

LOCKING UP

Occasionally if someone hits the wrong buttons on the portable ST-151 model (the big clunky suitcase model) it could lock up the handset. To unlock the handset there is an unlock code which can be generic or specific to your phone. Turn on the phone and hit 0 0 0 0 (the generic code). If that doesn’t unlock the handset punch in FCN 8 2 (function, 8, 2). The phone should then give you an UNLOCK CODE message followed by 4 digits. Enter these 4 digits and it should unlock the handset. If this doesn’t work sometimes you can unlock your handset by punching FCN 8 2 followed by 0 0 0 0. One of these methods should unlock your handset.

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.

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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 CoastGuard 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).

See page 9 - 10 for further instruction.

APPENDIX C. ELECTRICAL SYSTEM OPERATION MANUAL.

Appendix C1.–Solar panel and electrical system operation manual.

Each field camp utilizes an independent power system, consisting of 12-volt photovoltaic (PV) solar panels and a PV charge controller that charge a 12-volt battery bank for powering needed electrical components. 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.

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 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. 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.

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.

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. 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.

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.

SEASONAL SHUTDOWN PROCEDURE

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.

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.

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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 are 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. If corrosion is evident, use contact cleaner and or fire emery cloth or sand paper to gently clean connections.

**APPENDIX D. GENERAL EQUIPMENT AND CAMP
MAINTENANCE.**

Appendix D1.—General equipment and camp maintenance.

Outboard Operation

- 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.
- Always mix fuel tanks or equipment under cover to prevent water contamination and always use a funnel and filter.
- 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.
- 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.
- Never start or run an outboard in the fully upright position.
- In the normal operation of an outboard, a 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. Check the water intake and water discharge tube under the cowling, they may be clogged.
- 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.
- If the skeg or jet unit hits bottom, check the screws for tightness, and look for housing damage or oil leakage.
- If your outboard will not start, check the following:
 - Make sure the on/off switch and safety "kill switch" clip is in the on position
 - 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.
 - Check to see if there is water in the gasoline.
 - If the engine is flooded, wait five minutes for the plugs to dry before attempting to start again.
 - Check the spark plugs, they may be fouled or defective (replace if needed), also check for corroded, loose, or disconnected wires.
 - All outboards are to be tilted in the up position when moored.
 - 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

- 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.
- Maintain a bowline on each boat and ensure that each boat is properly moored at the end of each workday.
- Check for leaks.

Generators

Portable generators are supplied to field camps. Their maintenance follows the same line as 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.