

# Saltery Creek Salmon Weir Operational Plan, 2013

by

**Jodi L. Estrada**

April 2013

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



## Symbols and Abbreviations

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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Mathematics, statistics</b>	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	$H_A$
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	$e$
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, $\chi^2$ , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	°
<b>Weights and measures (English)</b>		Company	Co.	degrees of freedom	df
cubic feet per second	ft <sup>3</sup> /s	Corporation	Corp.	expected value	$E$
foot	ft	Incorporated	Inc.	greater than	>
gallon	gal	Limited	Ltd.	greater than or equal to	≥
inch	in	District of Columbia	D.C.	harvest per unit effort	HPUE
mile	mi	et alii (and others)	et al.	less than	<
nautical mile	nmi	et cetera (and so forth)	etc.	less than or equal to	≤
ounce	oz	exempli gratia	e.g.	logarithm (natural)	ln
pound	lb	(for example)		logarithm (base 10)	log
quart	qt	Federal Information Code	FIC	logarithm (specify base)	log <sub>2</sub> , etc.
yard	yd	id est (that is)	i.e.	minute (angular)	'
		latitude or longitude	lat. or long.	not significant	NS
<b>Time and temperature</b>		monetary symbols (U.S.)	\$, ¢	null hypothesis	$H_0$
day	d	months (tables and figures): first three letters	Jan, ..., Dec	percent	%
degrees Celsius	°C	registered trademark	®	probability	P
degrees Fahrenheit	°F	trademark	™	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
degrees kelvin	K	United States (adjective)	U.S.	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
hour	h	United States of America (noun)	USA	second (angular)	"
minute	min	U.S.C.	United States Code	standard deviation	SD
second	s	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard error	SE
				variance	
<b>Physics and chemistry</b>				population sample	Var var
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

# **SALTERY CREEK SALMON WEIR OPERATIONAL PLAN, 2013**

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## **ABSTRACT**

Adult sockeye salmon (*Oncorhynchus nerka*) escapement estimates into Saltery Lake are based on the operation of an enumeration weir in Saltery Creek. The Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries in cooperation with the Kodiak Regional Aquaculture Association (KRAA) will continue to operate the salmon weir at Saltery Creek in 2013. This information (escapement and limnology) assists the ADF&G management staff in their decisions to open and close the salmon fisheries throughout the season. This operational plan will provide seasonal employees a reference document in order to run the field camp effectively, operate the weir, and live safely at the remote site.

Key words: Saltery Lake, Saltery Creek, sockeye salmon, *Oncorhynchus nerka*, weir, escapement, Kodiak Management Area, KMA, field camp operational plan

## **INTRODUCTION**

Saltery Lake produces the largest run of sockeye salmon (*Oncorhynchus nerka*) on the northeast side of Kodiak Island. The lake's proximity to the Kodiak road system makes it an important resource for a wide range of user groups (sport, subsistence, and commercial). In addition to being an important resource to various user groups, Saltery Lake sockeye salmon is a brood source for the development of a brood-stock at Little Kitoi Lake for the Spiridon Lake enhancement project (Figure 1).

The primary function of maintaining a weir at Saltery Creek (Figure 1) is to enumerate sockeye salmon returning to Saltery Lake. Estimates of sockeye salmon escapement into Saltery Lake have been based on weir counts or aerial surveys. From 1993 to 2003 and 2008 to 2012, a weir has been operated in Saltery Creek. From 2004 to 2007 sockeye salmon escapement estimates were based on aerial survey data.

Saltery Creek weir will be located in approximately the same location as in the past, about one quarter mile below the outlet of Saltery Lake. The Alaska Department of Fish and Game (ADF&G) in conjunction with Kodiak Regional Aquaculture Association (KRAA) will operate the Saltery Creek weir from approximately June 15<sup>th</sup> to August 15<sup>th</sup>. ADF&G will provide project oversight, training, and logistical support. KRAA will provide project funding for two technicians; one hired by ADF&G and one hired by KRAA.

This operational plan is a reference guide for the field staff, so that they understand what is expected of them to safely and effectively accomplish the required tasks and duties of the project. Project activities at Saltery Creek weir will include installation and maintenance of a weir and the collection of biological samples (i.e., sex, length, and scales for age).

## **OBJECTIVES**

1. Enumerate salmon escapement through the weir into Saltery Lake.
2. Collect age, sex, and length (ASL) data from the sockeye salmon escapement into Saltery Lake.
3. Estimate salmon build-up below the weir in the river, lagoon and bay.

## **TASKS**

1. Install, maintain, and operate a weir in Saltery Creek.
2. Sample a minimum of 600 adult sockeye salmon throughout the escapement into Saltery Lake.

3. Provide salmon management biologists with estimations of salmon build-up below the weir in the river, lagoon and bay.

## **SUPERVISION AND TRAINING**

The project biologist, Jodi Estrada, will be responsible for project supervision which will include: training, oversight, logistical support, and technical support for the camp operation. The crew leader is responsible for establishing work schedules, prioritizing daily work assignments, and supervising camp duties. The crew leader is also responsible for ensuring that the data collected are accurate, complete, and well organized, as well as ensuring a safe work environment.

## **PROCEDURES**

### **TASKS**

1. Open camp and install weir.  
Target date: 15 June.
2. Conduct surveys to estimate adult sockeye salmon build up.  
Target dates: 16 June – as time permits through end of season.
3. Enumerate salmon escapement through Saltery Creek weir.  
Target dates: 16 June – 8 August.
4. Collect 600 scales total from the sockeye salmon escapement for age, sex, and length (ASL).  
Target dates: 21 June – 7 August.
5. Collect physical data daily: air and water temperature, and weather observations.  
Target dates: 18 June – 7 August.
6. Communicate daily with Kodiak ADF&G personnel by satellite phone or single sideband (SSB) radio.
7. Inventory and secure Saltery Creek camp and close down for the season.  
Target Date: 9 August.

### **PRIOR TO OPENING CAMP**

The crew is required to read and follow this document, the escapement sampling operational plan (Moore, 2012) and the following State Operational Plans: Safety Policy Standards, Building Safety, Field Camp Safety, Aircraft Passenger Safety, Emergency Survival Equipment Required in Aircraft, Vehicle Safety, Small Tool Handling, Firearm and Bear Safety. All crew members are required to have current certification in CPR and First Aid. Once these criteria are met, the crew should gather the necessary equipment from the ADF&G warehouse prior to departure (listed in Table 1).

## **OPENING CAMP**

Upon arrival at camp, the first day of work will consist of setting up the weatherport tent, organizing, storing supplies and personal gear, setting up the single sideband (SSB) radio, testing the satellite phone for a signal, and preparing the necessary gear and equipment for weir installation. Weir installation, operation, maintenance, and removal procedures are covered below.

## **WEIR INSTALLATION**

Saltery Creek weir is 25.6 meters long (84 feet).

1. Move tripods from their staged location on the far bank into the river and evenly space them across the river. The back legs of each tripod will lean against the next tripod. Place a few sandbags (2 to 4 depending on stream height) on each tripod platform to weight them down (Figures 2 and 3).
2. Place the two outer tripods (nearest the stream banks) slightly upstream from the rest of the tripods and string a taught line (use seine twine) across the river. Move the remaining tripods upstream until they touch the line. Square the tripods perpendicular to the upstream river flow.
3. 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 the boardwalk. Place a minimum of ten sandbags on each tripod platform.
4. 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 12' 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 (Figure 2).
5. Level the 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.
6. Lay upper (aluminum) and lower (steel) stringers in an alternating pattern across all tripods. At both stream banks, use a sledgehammer to drive the upper and lower stringers partially into the stream bank for stability.
7. Begin installing weir panels from the near bank. 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. The first (and last) panel may require minute bank modifications and sandbags to fill gaps. Continue setting weir panels the length of the weir. Sand bags may need to be placed at the base of the panels to maintain a "fish tight" weir.
8. Don't forget to install three counting gate frames along with your weir panels. Two of the gates are for counting and one is for the trap. The first counting gate should be located between the second and third tripods (approximately 15 feet), starting from the near bank. The second counting gate should be located between the fourth and fifth tripods

(approximately 40 feet), starting from the near bank. The trap gate should be located between the second and third tripods (approximately 15 feet), starting from the far bank. Typically install them where water flow is greater and depth is adequate for fish passage (Figure 2).

9. Tie off the upper portion of all weir panels to the upper stringer with seine twine or cable ties.
10. Place flash panels in front of and against each counting gate (gates one and two) on the river bottom and weigh down with large rocks or sandbags.
11. Install “keep off weir” sign, stream gauge, and counting seats (Figures 2 and 3).
12. Inspect your work. Walk along the front of the weir backfilling the base of panels where necessary to ensure the weir is fish tight (use the aqua-scope).
13. Install the “Scott” trap upstream at the far bank gate. Use two 10 foot panels and two 4 foot panels (entrance deflectors), to form a “W” coming out from the gate frame and resting on either side of the frame. Use two 6 foot panels (must be the ones with the smaller pipes) as the upstream 45° angle and interlock them with each other and the 10 foot panels. Use seine twine or zip-ties to affix all panels together. Use the pre-cut triangle panels to shore the trap to the sides of the gate frame, affix them to the weir and the trap. Place loose panels on the lead edges of the trap so that fish can’t jump out the front of the trap, and one panel across the very rear of the trap on the deflectors so fish can’t jump out the back. Backfill gravel at the bottom of all panels and surround the outside, underwater side of the trap with sandbags to ensure the trap is fish tight. See Figure 4 for an example of a “Scott” trap.

## **WEIR OPERATION**

1. Monitor the weir throughout the day to pass fish. Mornings and evenings are typically the best times for fish passage. The crew leader will organize a schedule.
2. If you don’t have experience identifying fish, your project leader or designee 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.
3. Begin counting fish by opening a gate and enumerate 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. Monitor escapement quality, including the numbers of net-marked and “jack” (salmon < 400 mm mideye to tail fork) sockeye salmon.
4. 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.
5. 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.
6. Periodically check your tally counters to ensure they are working properly.
7. When finished counting make sure the counting gate is closed completely.

## **WEIR MAINTENANCE**

1. 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.
2. Cleaning the weir includes getting into the river to remove sticks, logs, leaves, grass, gravel, fish carcasses, and garbage.
3. Throw all debris (except garbage) over the weir, allowing it to flow down river.
4. Inspect the weir to ensure it is fish tight; look for scouring, panels out of place, gaps between panels (greater than a fingers width), sandbags that have been pushed off of tripods by bears, and make sure flash panels are in place and secure. Make repairs if needed.
5. Make sure the framework of the weir is sound and secure. If you find any of the boardwalks loose, or any section or parts of the weir broken or unsafe, repair it immediately.
6. If the water level increases to the point where the bottom of the sandbags on the tripod platform are in the water, weir panels and the trap will need to be pulled to avoid a weir wash out. If a weir wash out is possible, closely monitor fish build-up below the weir for fish pass estimation. If pulling the weir is needed, pull the trap and the three gates (keeping the weir clean also lowers the water level). If the visibility allows, count fish passing through the gates. If the water level continues to rise, pull panels from the center of the weir or where the current is the greatest.
7. Keep bears away and off of the weir as much as possible to minimize damage.

## **WEIR REMOVAL**

1. Remove counting seats and “keep off weir” signs.
2. Remove most (leave two or three depending on water flow) sandbags from tripods and place them on the south side of the river well above winter ice flows.
3. Cut and remove all seine twine or cable ties attaching the weir panels to the upper stringers.
4. Remove all weir panels, counting gates, and flash panels, placing them on the south side of the river well above winter ice flows.
5. Remove all upper and lower stringers and store in the same location.
6. Remove all duplex nails securing the boardwalk and then move all sections of the boardwalk and store in the same location.
7. Remove all remaining sandbags and tripods and store in the same location.
8. Remove all sandbags from the river and store in the same location.

## **ESCAPEMENT SAMPLING**

Throughout the season, sample sockeye salmon passing through the trap at Sallery Creek weir for ASL data. Sample a minimum of 600 sockeye salmon for the season or an average of 120 per week, for ASL. The exact number of samples collected will be dependent on the run strength, with the greatest number of samples collected during the greatest fish passage

Refer to Moore (2012) for procedures on how to sample adult salmon properly. Ask the project supervisor if you have any questions.

## **OTHER REQUIREMENTS**

### **RADIO AND PHONE SCHEDULE**

Saltery Creek camp personnel will be contacted by ADF&G salmon management staff each morning at approximately 8:10 AM on single side band (SSB) frequency 3.230 MHz; the SSB should be turned on about 10 minutes prior to radio time to allow it to warm up and gain signal strength. The ADF&G salmon management staff will ask for a cursory weather report, the previous day's counts, cumulative salmon escapement, estimation of salmon behind the weir, and a report of any unusual happenings or of high bear activity at the weir. There is a non-mandatory 1630 (4:30 PM) radio schedule wherein Saltery crew can alert management to anomalies, emergency situations, sudden changes in counts, or just check in. Unless otherwise agreed upon, Saltery Creek weir personnel will also be contacted by ADF&G Kodiak Research Staff via SSB, radio frequency 3.230 MHz, at 0845-0900 (8:45-9:00 AM) hours Monday through Friday.

During the weekend (Saturday and Sunday) field crew members will contact Jodi Estrada at 907-280-7249 using the Iridium Satellite phone at 1315-1330 (1:15-1:30 PM) hours. If contact is not made with the Iridium Satellite phone, Kodiak ADF&G office personnel will contact the camp by SSB (radio frequency 3.230 MHz) as soon as possible.

All members of the camp should be familiar with both methods of communication. Training in the use of Iridium satellite phone and SSB radio will be provided by the crew lead and/or by the project biologist prior to the crew leaving for the field. Instructions for operation are also provided for the Iridium phone in the phone case. Advise your supervisor if you plan to miss a radio schedule.

### **DAILY FORMS**

The crew leader will fill out a *Daily Physical Observation Form* (Figure 5), a *Weekly Weir Camp Reporting Form* (Figure 6), and maintain a camp log ("rite in the rain" booklet) every day. The *Weekly Weir Camp Reporting Form* includes daily escapement data that occurred during the past week.

### **TIME SHEETS**

Unless prior arrangements have been made with Kevin Brennan at KRAA; the KRAA employee will fill out a KRAA timesheet by the 15<sup>th</sup> and the last day of each month. The ADFG employee will fill out an ADFG timesheet also due by the 15<sup>th</sup> and the last day of each month to Jodi Estrada. The crew leader is responsible for keeping an accurate record of employees work hours. Time sheets need to be sent into town when the camp is re-supplied. Field crew must plan ahead to ensure that timesheets are completed prior to re-supply. If unusual circumstances arise that require overtime, the crew leader must notify the project leader immediately.

### **CLOSING CAMP**

Put the oven and refrigerator in their crates and screw the crates shut. Place the bunk beds, furniture, shovels, rakes, fish pews, fish measuring board, dip net, weir signage, stove and

refrigerator, weatherport frame and door in the shed. Hang previously air-dried foam pads from the shed ceiling using rope. Surround the shed with the bear fence and place the battery far enough in the fence so that the battery switch cannot be accessed from outside the fence. Turn on the bear fence and use a ladder to get safely out of the fenced area.

DO NOT leave any food, batteries, power tools, the generator, or ATV trailers on-site.

## **SEASON SUMMARY REPORT**

The crew leader is responsible for writing a brief end of season summary report. The report will summarize weekly activities, sampling, problems with the weir, and suggested improvements or needs for the next field season. Keep a daily log of project activities in the camp log for reference.

## **ADDITIONAL GUIDELINES AND PROCEDURES**

### **CAMP POLICIES**

- Alcoholic beverages are not to be stored or consumed in areas open to public view. If alcohol is consumed at a camp the employee must be 21 years of age or older and off work without any duty scheduled for the remainder of the day. 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 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 must be reported to the project supervisor within 24 hours.
- Loss or damage of equipment must be reported to the project supervisor within 24 hours.

### **ORDERING FOOD AND SUPPLIES**

Field crews will purchase all essential items prior to leaving Kodiak. Additional items can be requested while in the field (e.g., groceries, supplies, and equipment). To make purchasing camp supplies more convenient, before leaving Kodiak, complete a minimum re-supply food order and give a copy to the project supervisor. Be sure to keep a copy for your reference. Items can be added to the re-supply list during the normal phone (radio) schedule each day. Camp re-supply will be provided twice a month near the 1<sup>st</sup> and 15<sup>th</sup> and may be by means of plane or ATV.

Alcoholic beverages, personal grooming supplies, newspapers, magazines, and tobacco must be purchased with personal funds. Please set up a slush fund before departure and limit personal requests.

### **VISITORS/PUBLIC INTERACTION**

The weir site will get many visitors. Visitors come by the camp to watch fish passing through the weir and ask about fish passage. 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 the “keep off weir” sign is posted in a visible location. Remember, your primary role is to operate and maintain the weir and accomplish the associated responsibilities of the project. Under no circumstance should any employee accept gratuities or payment.

## **FIREARMS**

All field camp employees must be able to safely use firearms. A firearm will be provided for camp use. 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, unloaded, in a location out of sight from 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 vehicle, vessel, or aircraft.

## **GARBAGE**

Completely burn garbage to prevent attracting bears. Do not burn during windy or dry weather conditions. Never start fires with fuel. To prevent grass fires keep grass and brush trimmed to at least fifteen inches away from the burn pit. 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.

Tin cans should be burned with burnable garbage to eliminate residual food and odors that attract bears. Send in burnt cans and non-burnable items on supply flights. All garbage that is sent to town must be double bagged. Empty fuel containers should also be sent in as soon as possible on return grocery flights for immediate reuse.

Biodegradable garbage should be placed into a slop bucket (food scraps, etc.) and dumped away from camp either in the river or bay. Don't compost biodegradable food because it attracts bears.

## **FIRST AID AND FIRE SAFETY**

All crew members will take a mandatory CPR and First Aid training course prior to going in the field. The crew leader will ensure that 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 installed and operational.

## **DRINKING WATER**

Stream and lake water may be contaminated with bacteria or harmful parasites. A "Micron" water filter is provided in the camp 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 the instruction manual with each filter for cleaning and care information.

## **ALL-TERRAIN VEHICLES**

Saltery weir is furnished with an All-Terrain Vehicle (ATV; 4-wheeler). The ATV has been provided to transport materials, supplies, and equipment between the camp and supply planes or vehicles. It may be used for transportation to and from sites of assigned field duties, such as surveys. It is not intended for personal use or recreational purposes. The ATV may be accessed and operated only by trained personnel and will be secured when not in use. Be safety conscious at all times; do not speed or drive recklessly and always wear an ATV helmet.

Unauthorized use of the ATV will result in a notation on your evaluation or your dismissal from employment.

## **MAINTENANCE**

Facility maintenance is an important aspect of camp life; the tent and weir must be kept structurally sound and safe. Refer to last year's end of season crew leader report for a list of needed projects and repairs. Provide a list of materials needed to accomplish the projects and repairs to your project leader. Repairs and maintenance should be scheduled on days when fish passage is slow to keep this work within normal work periods.

The generator and ATV must be kept in good operating condition and require regular maintenance. At the end of each season, equipment should be winterized and tagged with a description of the equipment's condition on the tag. See Appendix B for instructions on operation and maintenance of the ATV and generator.

Keep the area on the far side of the weir mowed so that bears can be seen sooner.

## **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 and kept in camp. Any violation will be recorded on your evaluation and may be cause for immediate dismissal.

## **VIOLATIONS**

If a violation is observed, all information pertaining to the violation should be recorded immediately and retained by the employee. The project leader must be notified. If you have a camera, record as much as possible on film.

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?

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 the project leader.

## **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 **800-478-5555** on the Iridium 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 (57°29'26.34 N, 152°35'11.70 W),
- Name and phone number of supervisor,
- General nature of medical emergency,

- Number of patients
- 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.

## **ACKNOWLEDGEMENTS**

I acknowledge and thank Steven Thomsen for allowing the use of content used in his previous version of this document (Thomsen 2011).

## **REFERENCES CITED**

Moore, M. L. 2013. Kodiak Management Area salmon catch and escapement sampling operational plan, 2013. [In] Salmon research operational plans for the Kodiak area, 2013. Alaska Department of Fish and Game, Regional Information Report 4K13-04, Kodiak.

## **TABLES AND FIGURES**

Table 1.–Saltery Creek weir equipment and supply list.

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Field equipment for the Saltery Creek weir stored at the ADF&G warehouse on Rezanof Drive.

1. Weatherport tent canvas.
2. Tarps - Use for tent vapor barrier and to keep equipment and supplies covered when you arrive or depart from field camp.
3. Propane tanks are in the fuel van.
4. Lantern(s) - Remember to purchase lantern fuel, and extra mantles. Make sure it works.
5. SSB radio - Make sure the radio suitcase contains the black coaxial cable, 12-volt power cable, antenna (3.230 MHz frequency) and spare fuses.
6. Iridium Satellite Phone – Make sure the battery is good and that it is activated.
7. Generator, 2 x solar panels, and 3 x 12 Volt batteries - Make sure to charge batteries; battery testers are available at the office (Batteries must be transported in a case).
8. Cooking and cleaning supplies, catadyn with 3 filters
9. ATV (4 wheeler), trailer, and tool kit - The tool kit should have spare spark plugs, fuel filter, tire pump, and tools.
10. ATV gas and oil - Take at least 15 gallons of gas.
11. Firearm & cleaning kit - Shotguns, ammunition, and gun cases are available at the office; check with Jodi Estrada, Steven Thomsen, or Steve Schrof. Know how to clean, load, and carry the firearm safely.
12. First aid kit
13. Sampling gear- Scale cards, tweezers, write in the rain books, tally whackers, polarized glasses, gloves, waders and wading boots.
14. Paper work - Take enough copies of all forms, timesheets, food list, and office supplies for the season. Can be obtained from Jodi Estrada, Steven Thomsen, or Steve Schrof.
15. Groceries - Purchase sufficient groceries for approximately two weeks, plus some extra in case supply flights are delayed. When selecting groceries consider the weight and bulk of your items.
16. Personal gear - Warm clothes, rain gear, personal grooming supplies, alarm clock, head lamp and batteries, sleeping bag, and books.
17. Tools – At a minimum bring; nail hammers, sledgehammer, nails, pliers, screw drivers, socket set, square, tape measures (100' and 16'), hand saw, skill saw, drill, and drill bits. Also bring sand bags, duplex nails, seine twine, bailing wire, and spikes.
18. Weed whacker with 50:1 mixed gas and extra cutting line

Field equipment for the Saltery Creek weir project stored at the weir site.

1. Weir parts – The tripods (11), weir panels (55), board walk (12 - 2x12's), stringers (26 - pipes), gates (3), flash panels (2)
2. Furniture - Bunk beds, small tables, chairs, foam sleeping pads, weatherport door and frame.
3. Signs – “stay off weir” sign and “no fishing” signs.
4. Tools - shovels, rake, ladder, and fish pews
5. Sampling gear – fish measuring board, dip net, stream gauge
6. Propane cook stove, refrigerator, heater & hoses



Figure taken from Google Earth.

Figure 1.—Map depicting the location of Saltery Creek Weir, 2012.

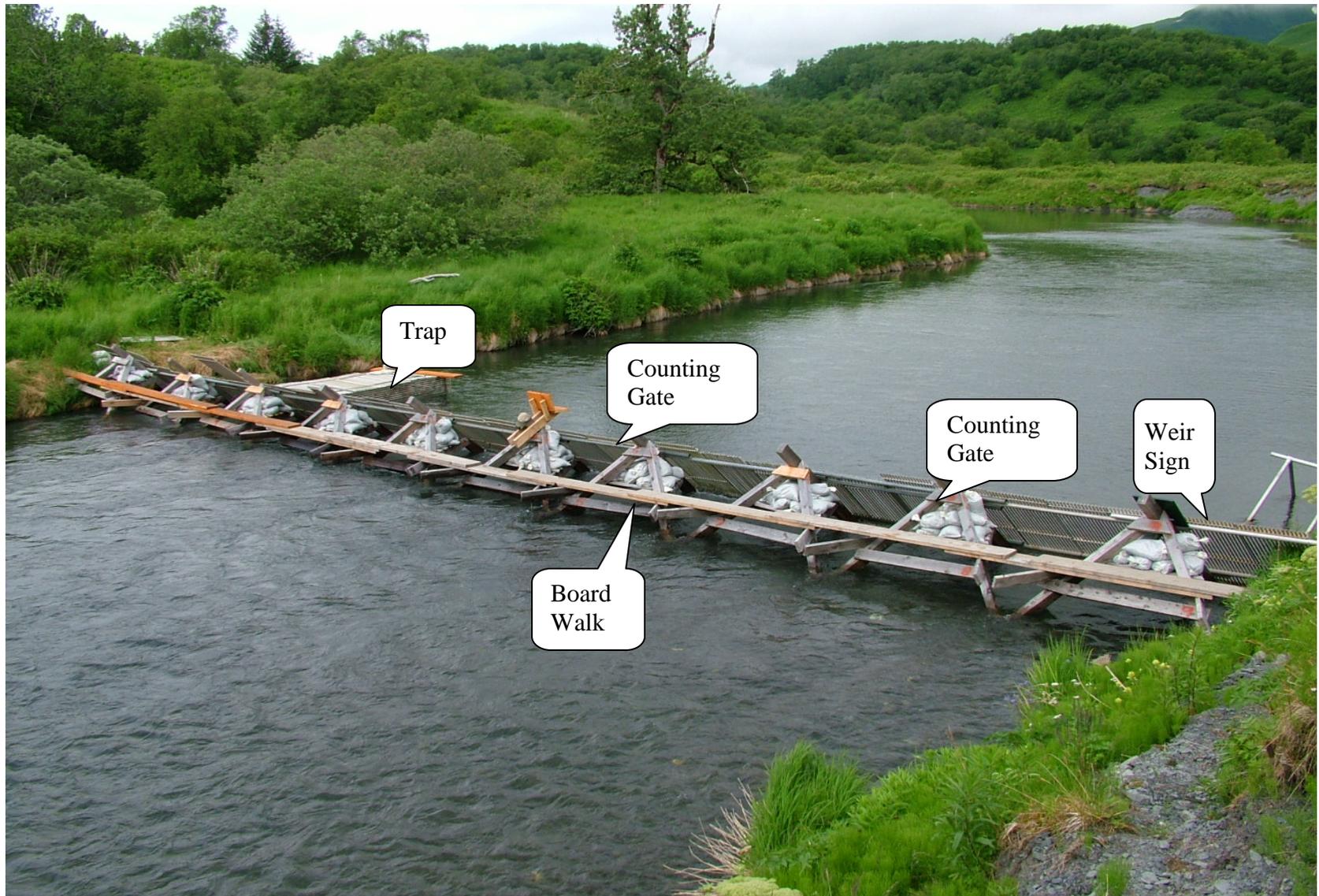


Figure 2.—Saltery weir showing tripod, trap, and boardwalk placement.

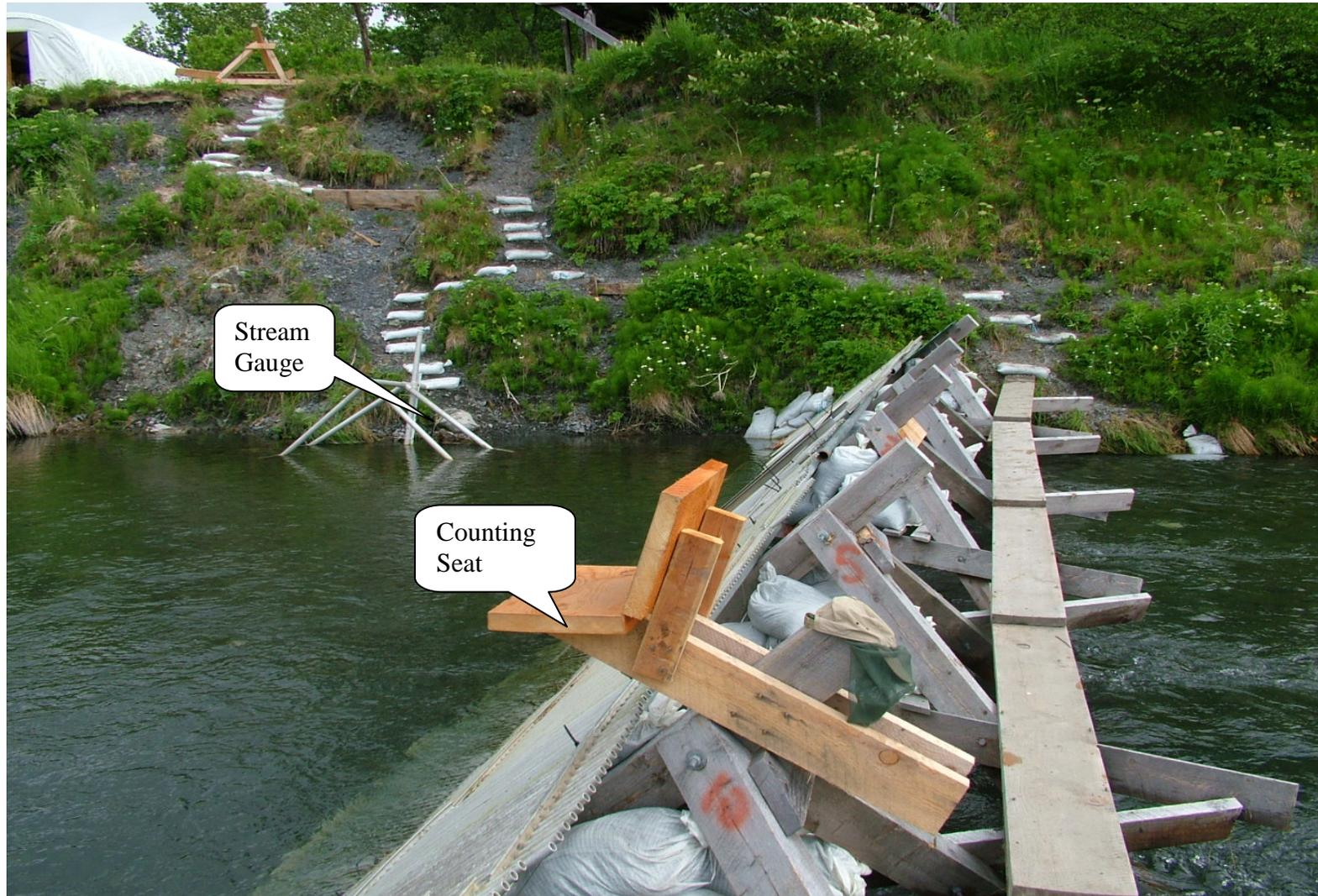


Figure 3.–Saltery weir showing bank and stream gauge placement.

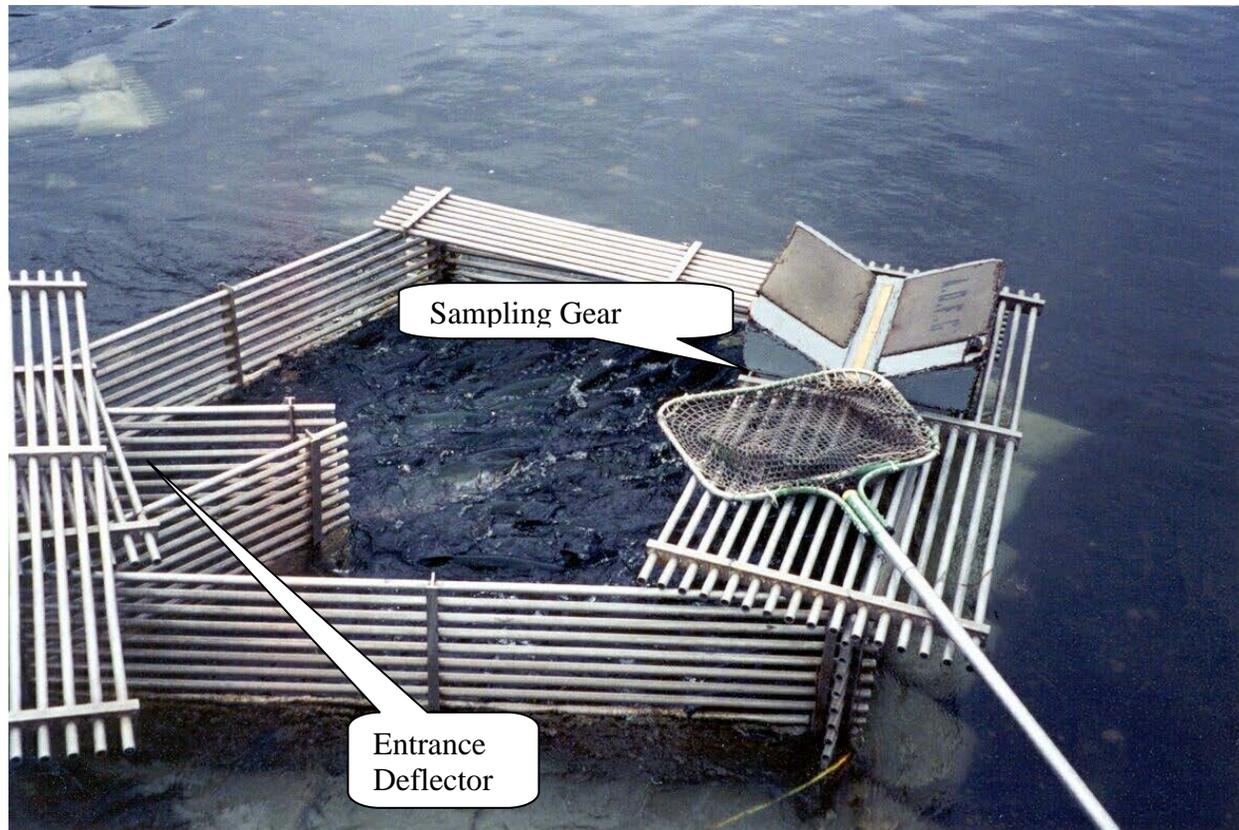


Figure 4.- The "Scott" 6-panel adult salmon live box trap (photo taken at Upper Station weir).



**WEEKLY WEIR CAMP REPORTING FORM**

Location:		Personnel:					Weekly Report no:					For Week Ending Saturday:							
Date	Daily Total Salmon Escapement						Daily Totals	Steelhead		Jack No.	Jack % Sockeye	Net Mark Sockeye	Reds Sampled	Dollys up	H <sub>2</sub> O Level	H <sub>2</sub> O Temp.	Weather		
	Sockeye	L. Sockeye	Chinook	Pink	Coho	Chum		Down	Up								Ceiling	Vis.	Wind Dir/Sp
Sun. D																			
C																			
Mon. D																			
C																			
Tue. D																			
C																			
Wed. D																			
C																			
Thur. D																			
C																			
Fri. D																			
C																			
Sat. D																			
C																			
Total for week																			

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

Figure taken from Caldentey (2007)

Figure 6.—Weekly weir camp reporting form.

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

Generator and ATV

A portable generator and ATV are available for use at the camp. The generator and ATV 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.