Regional Operational Plan CF.4K.2014.08

Alaska Peninsula Salmon Catch Sampling Procedures, 2014

by

Dawn M. Wilburn

and

Robert L. Murphy

March 2014

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

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

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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Division of Commercial Fisheries

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SIGNATURE/TITLE PAGE

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Approval

Title	Name	Signature	Date
Project Leader	Dawn Wilburn		3/13/14
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PURPOSE

The primary purpose of this project is to sample the annual commercial salmon harvest of the Alaska Peninsula Management Area (Area M). The biological data collected from samples are used to create brood tables and generate run forecasts to assist with the inseason and long-term management of Alaska Peninsula salmon stocks. In 2014, samples will primarily be taken on the North Alaska Peninsula which will be supervised by the Assistant Area Management Biologist in Port Moller. Data analysis and reporting is not covered in this operational plan and will be completed in a Regional Information Report by the Alaska Department of Fish and Game Salmon Research in Kodiak.

Keywords: Alaska Peninsula, Area M, sampling, operational plan, Chinook salmon, *Oncorhynchus tshawytscha*, sockeye salmon, *Oncorhynchus nerka*, coho salmon, *Oncorhynchus kisutch*, pink salmon, *Oncorhynchus gorbuscha*, chum salmon, *Oncorhynchus keta*

BACKGROUND

The Alaska Peninsula Management Area can be divided into two sub-areas: the North Alaska Peninsula west of Cape Menshikof to Cape Sarichef, and the South Alaska Peninsula west of Kupreanof Point to Scotch Cap (Figure 1). There are 307 salmon producing streams in the Alaska Peninsula Management Area (McCullough 2001).

Five species of salmon are commercially harvested in Area M: Chinook salmon *Oncorhynchus tshawytscha*, sockeye salmon *O. nerka*, pink salmon *O. gorbuscha*, chum salmon *O. keta*, and coho salmon *O. kisutch*. Economically, sockeye and pink salmon are the primary species harvested on the South Alaska Peninsula, while sockeye salmon, followed by coho salmon are the primary species harvested on the North Alaska Peninsula.

In 1985, an expanded Chinook, sockeye, chum, and coho salmon commercial catch sampling project was initiated in Area M to establish a database for separating stocks, evaluating escapement goals, forecasting, and assessing inseason run timing. Due to budget reductions over the years, the catch-sampling program in King Cove was eliminated in 2002. Likewise, the catch-sampling program in Sand Point was eliminated in 2003. In 2004, the South Unimak June fishery was once again sampled in King Cove to help assess the strength of the Bristol Bay sockeye salmon run, and collect age composition data to assess the accuracy of the preseason forecast. In 2005, the North Peninsula commercial harvests began being sampled solely out of Port Moller. The emphasis of catch sampling was on sockeye and chum salmon, with Chinook and coho salmon being sampled opportunistically. In 2008, significant changes to the catch sampling program were necessary to adapt to changes that had occurred over the past several years. The department moved away from scale pattern analysis in Area M and now attempt to determine stock of origin by genetic analysis. The main emphasis for commercial catch sampling is now the Nelson Lagoon commercial sockeye salmon fishery and the late (post July 31) Bear River sockeye salmon run.

OBJECTIVES

The objective of this project is to provide age data from the Nelson Lagoon and late Bear River sockeye salmon commercial harvests in the Northern District of the North Alaska Peninsula (Figure 2) to assist with the long-term management of the Alaska Peninsula sockeye salmon

runs. This objective will be achieved through the acquisition of specific data derived from samples of the commercial salmon catch. These data will:

- facilitate the construction of accurate brood tables of the Nelson River and late Bear River sockeye salmon runs,
- allow the development of accurate run forecasts,
- aid in the evaluation of escapement goals and run timing.

METHODS

The main responsibility of the port sampling crew is to collect adult sockeye salmon scale samples from the commercial catch following the proper protocols in Appendix A1–A6. To ensure that samples represent the entire catch from a designated area, mixed loads from multiple areas will not be sampled, nor will there be any pre-selection of fish for length, sex, or condition. The tender schedules and locations (determined by tender interviews and fish tickets) will be reviewed to ensure that samples of pure loads are obtained from the separate areas (Table 1). To ensure that sampling goals are met, the crew will begin sampling the first day catches are delivered from the designated sampling areas for each statistical week. In 2014, the statistical week occurs from Saturday through the following Friday (Appendix A5). The crew will maximize the opportunity to collect samples once the fishery begins (typically a Monday). If there is an opportunity of collecting a sample from the same area on more than one occasion during a week, the crew will attempt to collect the samples over the entire week. If it is uncertain whether another sample can be collected later in the week, the crew should collect the entire sample when they are first available.

The Port Moller catch sampling crew will collect 400 scale samples per statistical week, per area, for sockeye salmon (Table 2). Sample sizes are statistically derived to ensure the accuracy and precision of age composition estimates. The sample size was constructed to permit each age class proportion estimates to be within at least 0.075 of the true proportion with a 90% confidence interval, regardless of number of age classes or population proportions (Thompson 1987, Bromaghin 1993). Sample sizes assume at least 80% of the scale samples will be readable. Obtaining scale samples of the highest quality will increase the percentage of readable scales and hence increase the precision of the estimates. In June and July, Nelson Lagoon Section will be sampled to obtain samples of the Nelson River sockeye salmon run. Beginning in August, the area from Harbor Point to Strogonof Point (Figure 2) will be sampled to obtain data on the late Bear River sockeye salmon run. The statistical area numbers for these locations are listed in Table 2.

Pure loads from multiple deliveries can be sampled and combined to reach the weekly sample goal. An area will not be sampled unless at least 75 fish can be sampled for a given species during a given week. The exception to this rule would be where knowledge of a run is limited. Some areas may never have a pure load. From these areas, the crew will attempt to sample the fish when deliveries are 90% or more from one area: the percentage of the catch from each fishing area will be noted in the comments section on the back of the scale card. For areas that will never be greater than 90% pure, sample as time permits. Future analysis of the data will account for the mixed catch and subsequent sample. Proper identification of catch area will be the responsibility of the dockside catch sampling crew.

In the past, sampling crews have been asked to sample fish for length and sex data; however this has not been the case in recent years. If length data are to be collected refer to Appendix A6.

Sex data will be determined by kype (nose) development or visual determination of the presence or absence of an ovipositor, eggs, or milt. It is imperative that all scales collected correspond to the length and sex data for that fish. For the Nelson Lagoon sockeye salmon catch, a sex ratio is taken on a weekly basis. Sex ratio is recorded by waiting to sample 15 minutes after fish first start getting pumped off of the tender. This helps ensure that male and female fish in the tank are mixed. Experienced personnel will provide training on these procedures for new employees.

The port sampling crew will document and report all fin-clipped and tagged fish to their supervisor. For Chinook salmon with a clipped adipose fin, the head will be removed and sealed in plastic bag, frozen, and sent via air freight Pen-Pak® to: CWT & Otolith Processing Lab, 10107 Bentwoood Place, Juneau, AK 99802-5526. Catch location of the fin-clipped Chinook salmon, catch date, gear type, tag number or head of fish, type of tag, length, weight, and several scales from the preferred area (Appendix A2) will be included with the report and any shipped samples.

The Port Moller crew will also be responsible for pressing all scales (Appendix B) collected from the commercial catch as well as the escapement sampling performed throughout the Alaska Peninsula onto acetate cards, and keeping logbooks tracking weekly samples. The original scale "gum" cards and sampling log books will be sent to the Kodiak office at the end of the season.

SCHEDULE AND DELIVERABLES

The general schedule for the 2014 commercial salmon catch sampling activities is as follows (this is a very general timeline as sampling will be dependent upon commercial fishing time and activities on the North Peninsula):

Date:	Activity:
June 1	Meet Peter Pan/Tender crews, prepare sampling supplies, log books, etc.
June 1–July 31	Sample Nelson Lagoon sockeye salmon run (400 scales/wk)
August 1–September 15	Sample late Bear River sockeye salmon run (400 scales/wk)
Daily	Logbook detailing sampling activities
Weekly	Scales pressed onto acetates, labeled and stored for shipment to Kodiak
Post season	Logbooks and scales/acetates sent back to Kodiak, scales aged

RESPONSIBILITIES

Fishery Biologist III:	Project leader
Fishery Biologist II:	Supervises project, coordinates logistics, trains crew, assists as necessary
Fish and Wildlife Technician III:	Port catch sampler, collects weekly samples, processes samples, assists in field office, and camp chores

REFERENCES CITED

Bromaghin, J. F. 1993. Sample size determination for interval estimation of multinomial probabilities. The American Statistician. 47: 203-206.

McCullough, J. N. 2001. Alaska Peninsula Management Area salmon systems: managers manual, Regional Information Report No. 4K01-1, Alaska Department of Fish and Game, Division of Commercial Fisheries, Region IV Report, Kodiak.

Thompson, S. K. 1987. Sample size for estimating multinomial proportions. The American Statistician. 41: 42-46.

TABLES AND FIGURES

Table 1.–List of districts, sections, and statistical areas for the Alaska Peninsula Management Area to be sampled in 2014.

Fishing Area Location	Statistical Areas
NORTH PENINSULA	
Northern District	
Nelson Lagoon Section	313-30
Port Moller Bight Section	314-12
Bear River Section	315-11, 315-20
Three Hills Section	316-10
Ilnik Section	316-20, 316-22, 316-25

Table 2.–Sockeye salmon catch sampling schedule for the Alaska Peninsula Management Area, 2014.

Sampling Area			Sample		
Geographic Area	Statistical Areas	Statistical Code	Frequency	Size	Data
Nelson Lagoon	313-10	313-30- -051	Weekly	400	Scale
Harbor Point to Strogonof Point (Bear River, Three Hills, and Ilnik Sections-post July 31)	314-12, 315-11, 315-20, 316-10, 316-20, 316-22, 316-25	316- - -051	Weekly	400	Scale

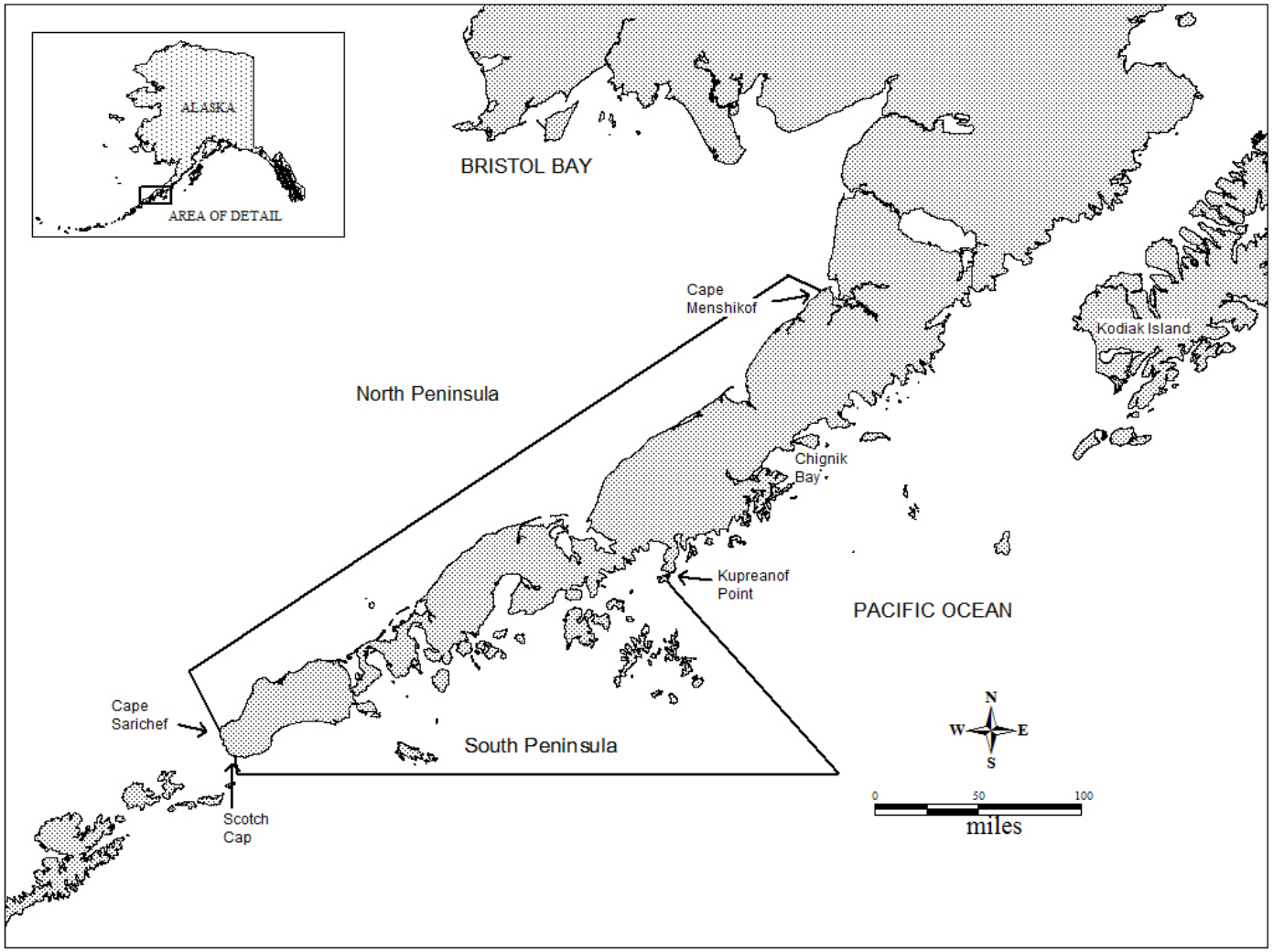


Figure 1.–Map of the Alaska Peninsula Management Area, with the North and South Peninsula defined.

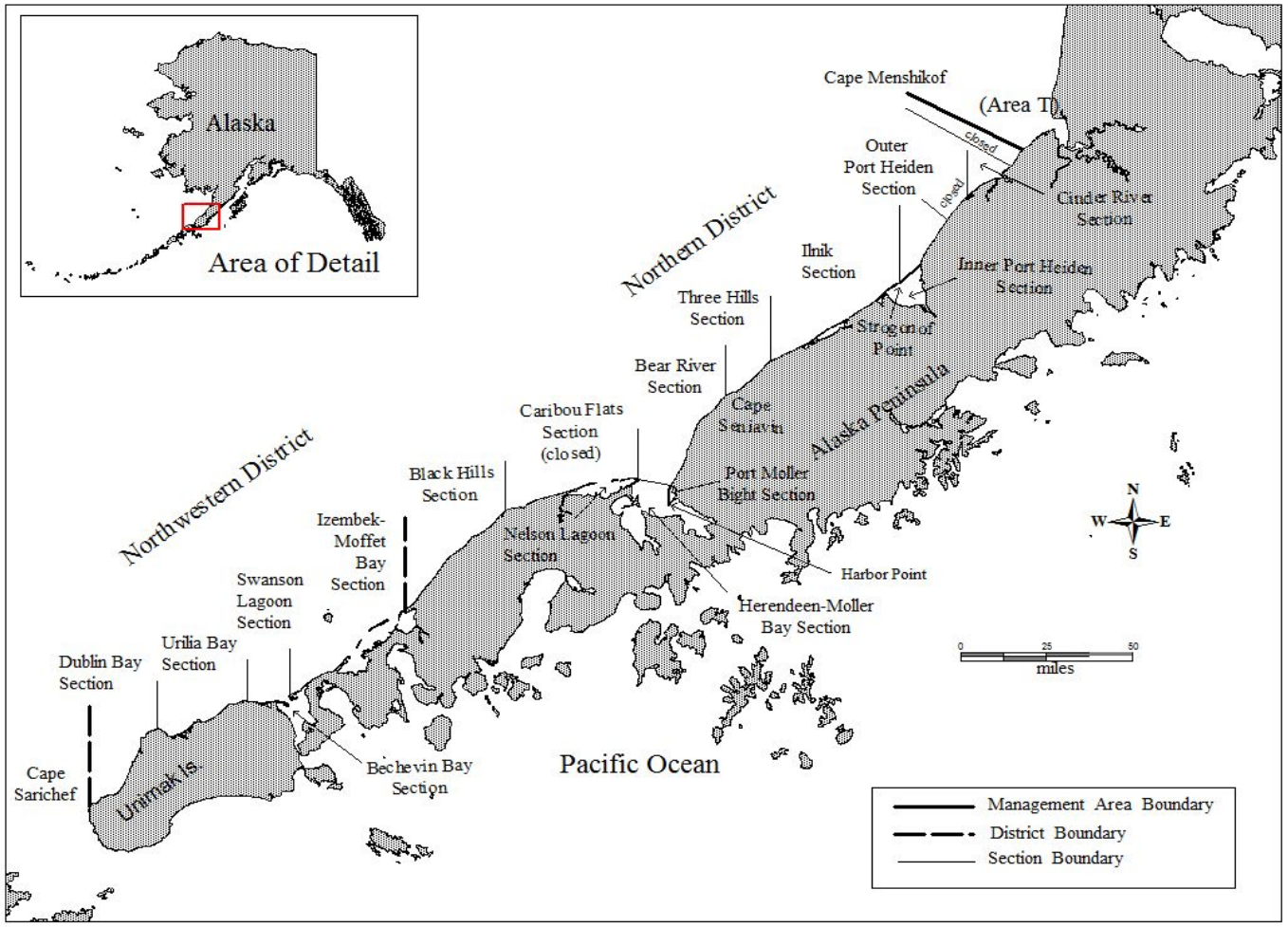


Figure 2.– Map of the North Alaska Peninsula with districts and sections defined.

APPENDIX A. PROCEDURES FOR SAMPLING ADULT SALMON

Scale Gum Cards

A scale card is a gum-backed sheet with 40 spaces for mounting individual scales (refer to Appendix A2 and A3). During sampling, a gum card should be held using a plastic scale card holder. A clear acetate cover helps protect the card from water and the holder provides a rigid backing for the card. The completed gum card should be allowed to dry fully before long-term storage. It is important to keep the scale gum card dry at all times. If weather does not allow you to do this, it is best to suspend sampling until dryer conditions exist. A wet gum card is useless as the scales will fall off and prevent a readable impression from being taken. However, if the gum card does get wet, the scales should be remounted onto a new gum card with care taken to keep each scale in its original position. After sampling, all gum cards should be stored in a dry location with sheets of wax paper placed between them, to keep them from sticking to each other.

A new scale card is started each day, even if the previous card is not filled. A daily log should also be kept to record the number of samples and the date they were taken.

Scale Sampling

The following is an explanation of proper procedures and techniques used to obtain salmon scale samples. If you have not taken scales before, or if you have any questions, ask somebody who has experience with scale sampling. Below is a technique used for sampling sockeye at a fish processing plant.

1. Conduct a tender interview to determine the geographical location of the commercial catch. Only sample sockeye salmon when deliveries are 90% or more from one geographical location.
2. At the sampling station, lay out 10 fish on their right side onto the sampling table, (belly will be on the left side up and tail will be at the bottom of the table).
3. Using gloves, wipe off slime, ice or blood from the preferred area on the fish.
4. Remove one scale from the “preferred area” as shown in Appendix A2, of each fish using forceps and place the scales in a row on the back of your hand. This technique reduces sampling time and keeps the fish cycling through the processing plant quicker.
5. Remove silver skin, slime or grit from each scale by taking the forceps and gripping the tip of the scale and sliding the scale off on your hand before mounting the scale to the gum card.
6. Mount the scale so the anterior end (the end of the scale closest to the salmon’s head) is oriented toward the top of the gum card. The posterior end of the scale is the end closest to the tail and the part you grab with the forceps. The side of the scale that is exposed on the salmon has small ridges that will be used to generate an impression of the scale when pressed against acetate under heat and pressure. The ridged side of the scale must face up when attached to the gum card for an impression to be made. Mount the scale on the gum card directly over the appropriate number as shown in Appendix A2.

-continued-

7. Continue sampling sockeye by repeating steps 2 through 5 for as many fish needed. If you are sampling 200 sockeye salmon, you will need five scale card holders.
8. After sampling, record sampling information onto the scale card, place a sheet of wax paper over the scales and store scale cards in a flat position until pressing. Clean the scale card holder and all sampling equipment.

Sampling Different Species

Most of the commercial catch sampling will be for sockeye salmon samples, however the sampler may be required at times to sample other species. If this occurs, the following protocols should be followed for each species.

Sockeye

Pluck one scale per fish. Place each scale directly over its corresponding number on the gum card.

Chum

Pluck one scale per fish. Place each scale directly over its corresponding number on the gum card.

Chinook

Prepare four gum cards, labeled 1A, 1B, 1C and 1D. This allows up to 40 fish to be sampled per set of cards. Pluck three scales per fish. Place the scales from fish number 1 over gum card positions 1, 11, and 21 on card 1A. Scales from fish number 2 go over positions 2, 12, and 22 on card A. Continue until you have 10 fish on a card (i.e. fish number 10 will be on positions 10, 20 and 30). When you mount scales from fish number 11, place them on card B in positions 1, 11, and 21. If you have more fish to sample, prepare four more cards (2A, 2B, 2C and 2D) and repeat the sampling procedures.

Coho

Pluck four scales per fish. Prepare four gum cards, labeled 1A, 1B, 1C and 1D. This allows up to 40 fish to be sampled per set of cards. Place the scales from fish number 1 over gum card positions 1, 11, 21 and 31 on card 1A. Scales from fish number 2 go over positions 2, 12, 22 and 32 on card 1A. Continue until you have 10 fish on a card (i.e. fish number 10 will be on positions 10, 20, 30 and 40). When you mount scales from fish number 11, place them on card B in positions 1, 11, 21 and 31. If you have more fish to sample, prepare four more cards (2A, 2B, 2C and 2D) and repeat the sampling procedures.

Labeling a Scale Gum Card

Record the following information on each gum card in the appropriate field:

Species:

Write out completely (*e.g.*, sockeye).

-continued-

Locality:

Write out the full name of the area in which the fish were caught, followed by the word "catch" (*e.g.,* Nelson Lagoon Catch).

Statistical code:

Start with the three digit district, then the two digit subdistrict, leave the three digit stream number blank, and finally use your three digit port code, which is 051 (Appendix A4) (*e.g.,* the statistical code for Nelson Lagoon Catch is 313-30- -051).

Sampling date:

Cross out "sampling" on the scale card. Record the date as the first (earliest) day of harvest, not the day they were delivered. Below in the remarks, record the sampling date.

Gear:

If known, write out completely (*e.g.,* set gillnet, drift gillnet,). If gear type is mixed, such as drift and set net in Nelson Lagoon, write mixed.

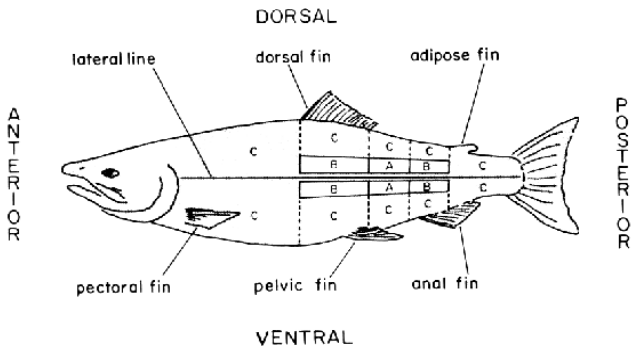
Collector(s):

Record the last name or initials of the person(s) sampling.

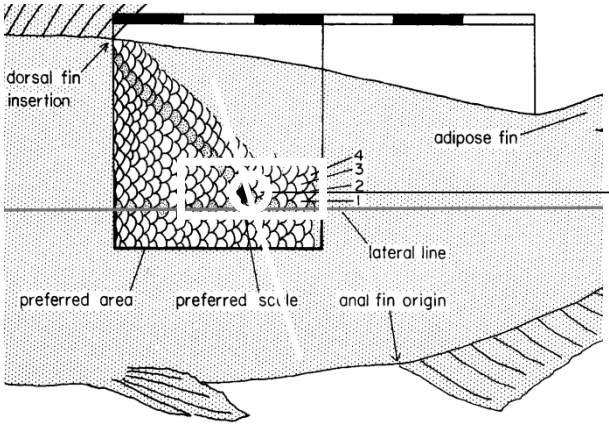
Remarks:

Record sample date, tender vessel and any other pertinent information.

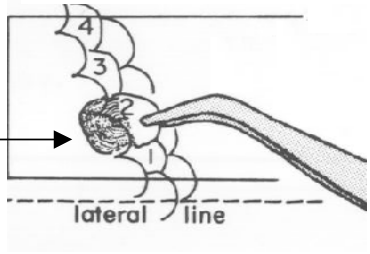
Appendix A2.–Preferred scale sampling area on an adult salmon.



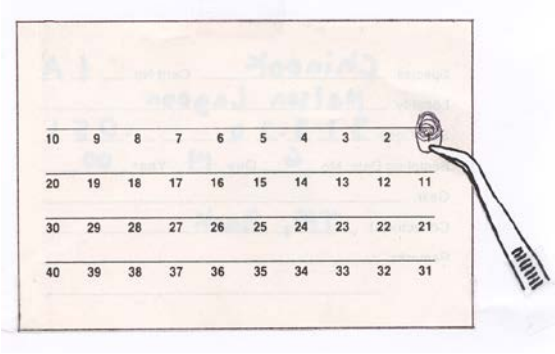
Area A is the preferred area. If scales on the left side are missing, try the right side. Area B is the second choice if there are no scales in Area A on either side of the fish. Area C designates non-preferred areas.



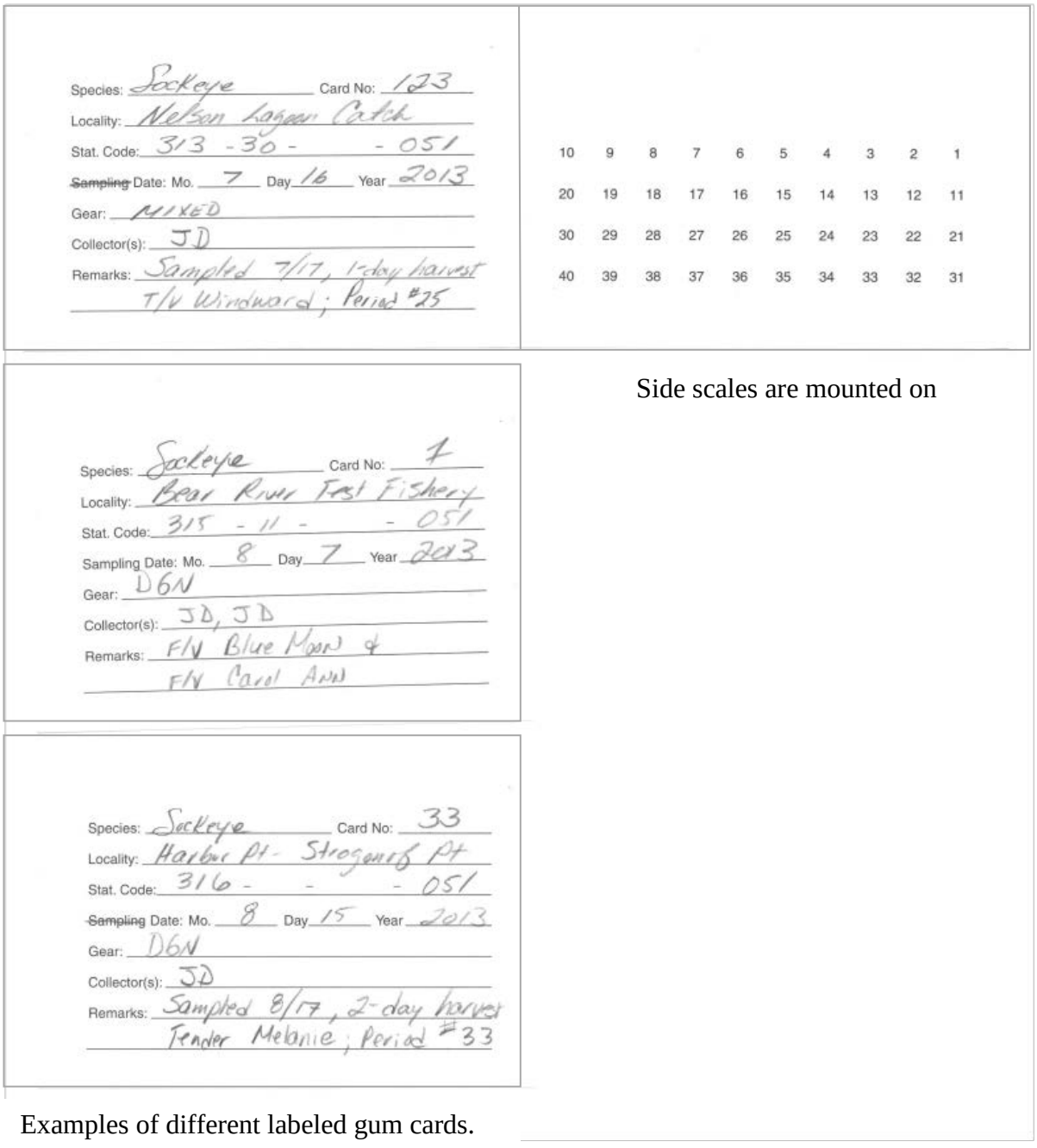
Do not turn scale over.



The preferred scale in this diagram is solid black. It is located 2 rows up from the lateral line, on a diagonal from the insertion (posterior) of the dorsal fin "back" toward the origin of the anal fin.



Appendix A3.–Sockeye salmon gum card.



Side scales are mounted on

Examples of different labeled gum cards.

Appendix A4.–Assigned port and statistical codes.

Port codes	
050	King Cove
051	Port Moller
052	Dutch Harbor
053	Akutan
054	Sand Point
057	Canoe Bay

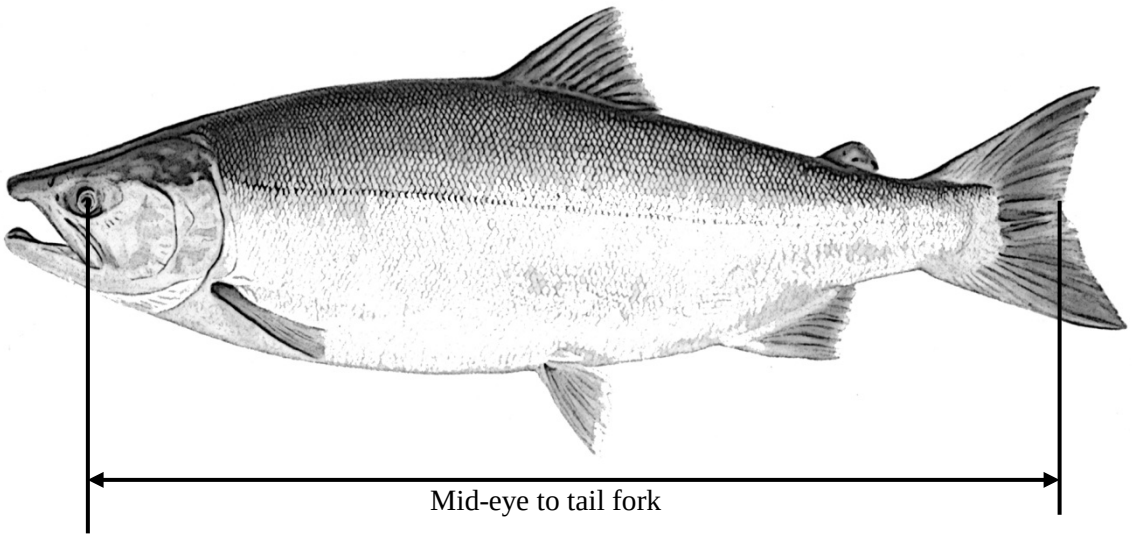
Statistical Codes		
313-30-	-051	Nelson Lagoon Catch
313-10-	-051	Black Hills Catch
314-20-	-051	Herendeen Bay Catch
316- -	-051[a]	Harbor Point to Strogonof Point Catch
316-22-	-051	Inner Port Heiden Catch
315-11-	-051	Bear River Test Fishery
316-20-	-051	SW Ilnik Test Fishery
316-25-	-051	NE Ilnik Test Fishery

[a] Prior to 2002, this area was labeled as Harbor Point to Cape Seniavin (315- - -151) and Cape Seniavin to Strogonof Point (316- - -151).

Appendix A5.–Sampling week (period) and corresponding calendar dates, 2014.

Week	Calendar Dates	Week	Calendar Dates
10	1-Mar – 7-Mar	28	5-Jul – 11-Jul
11	8-Mar – 14-Mar	29	12-Jul – 18-Jul
12	15-Mar – 21-Mar	30	19-Jul – 25-Jul
13	22-Mar – 28-Mar	31	26-Jul – 1-Aug
14	29-Mar – 4-Apr	32	2-Aug – 8-Aug
15	5-Apr – 11-Apr	33	9-Aug – 15-Aug
16	12-Apr – 18-Apr	34	16-Aug – 22-Aug
17	19-Apr – 25-Apr	35	23-Aug – 29-Aug
18	26-Apr – 2-May	36	30-Aug – 5-Sep
19	3-May – 9-May	37	6-Sep – 12-Sep
20	10-May – 16-May	38	13-Sep – 19-Sep
21	17-May – 23-May	39	20-Sep – 26-Sep
22	24-May – 30-May	40	27-Sep – 3-Oct
23	31-May – 6-Jun	41	4-Oct – 10-Oct
24	7-Jun – 13-Jun	42	11-Oct – 17-Oct
25	14-Jun – 20-Jun	43	18-Oct – 24-Oct
26	21-Jun – 27-Jun	44	25-Oct – 31-Oct
27	28-Jun – 4-Jul	45	1-Nov – 7-Nov

Appendix A6.–Measuring adult salmon length.



The following is an explanation of how to measure adult salmon for length data. Because the length and shape of the snout of salmon changes as the fish approaches sexual maturity, length measurements are made from the middle of the eye to the fork of the tail. The length is always recorded to the nearest millimeter. The procedure for measuring mid-eye to fork of tail is as follows:

1. Place the salmon flat with the right side down. Orient the salmon with its head on your right, the tail in your left hand, and the salmon's dorsal surface (back) towards you. This puts the salmon in the correct orientation for a plucker to remove the preferred scale if they are standing on the other side of the measuring board.

2. Line the eye of the salmon up with the end of the ruler, and then hold the salmon's head with your right hand. Gently sliding your thumb into the salmon's mouth and grasping the lower jaw works well for larger fish.

3. Flatten and spread the tail against the board with your left hand. Read the mid-eye to tail fork length to the nearest millimeter.

APPENDIX B. ADULT SALMON SCALE PRESS OPERATION

Appendix B1.–Adult Salmon Scale Press Operation.

The scale press is not regulated by a thermostat. During a long press, turn the heat switch on/off several times to keep the temperature consistent.

1. Pump up the jack until the metal plates (jaws) are touching.
2. Plug in and allow the press to heat until about 170 degrees, which takes about 20 minutes. Unplug and wait about 8 minutes, as the temperature will continue to rise. The goal is to have the temperature move slowly, not spike.
3. Open the jaws by taking the pressure off the jack and pushing the plates apart far enough to insert metal sheets.
4. Center 3 scale cards between the metal sheets (with the scratched sides on the outside). Be sure that the cards are not touching or the acetates will melt together
5. Insert the metal sheets so that there is an equal amount of sheet sticking out the sides as well as the front and back.
6. Pump the press up with the jack until it becomes a little difficult.
7. Press the cards at 185° for ~15 seconds. Release the pressure and open the jaws.
8. Remove metal sheets from press and peel the gum card away from the acetate. It is okay to leave the top part of the gum card without scales on the acetate until you are ready to label.
9. Quickly, place the gum card/acetate underneath a brick to flatten it while you continue to press.
10. Repeat steps 4-9 until all scale cards are pressed.
11. Label the acetates. Labeled acetates should have the following information: location, date, and in the upper right hand corner the scale card number. Lastly, the scale area of the acetate should have a vertical line between the 5^{th} and 6^{th} scale and each row should be numbered (i.e. 1, 11, 21, 31). Place an 'X' where a scale is missing.

APPENDIX C. CAMP POLICY, FIRST AID, AND SAFETY

EMPLOYEE CONDUCT

All employees will act in a professional manner at all times and shall be especially courteous to the public. The AAMB shall establish a policy on living standards and personnel behavior in accordance with State guidelines.

All sampling stations will operate as directed. Time off for individual crew members shall be scheduled by the supervisor. Overtime will be approved by the supervisor prior to any overtime worked.

It will be the responsibility of the crew leader to prevent any abuse to State equipment which includes ATV's, boats, equipment, and facilities. The crew leader must report within 24 hours any damaged or lost equipment. All injuries to employees will be reported immediately to the supervisor.

The crew leader must report any accidents immediately to the Area Management Biologist who will then report the accident to the Regional Finfish Management Supervisor.

PERSONAL GEAR AND PETS

Generally 100 lbs. is a maximum for personal gear. If you anticipate bringing more than that amount, check with your supervisor first. Pets shall not be brought to Port Moller unless approved by the supervisor beforehand.

Rabies is common on the Alaska Peninsula, be careful of all mammals including ground squirrels, fox, wolf, otters, and your pet. If bitten, administer proper first aid techniques to the person and then kill the animal immediately and notify the supervisor. Remove the head of the animal if possible, wrap the head in several layers of plastic, put in a good box and freeze if possible. Burn and bury remaining parts of the carcass away from water sources and cabins, take precautions such as wearing plastic gloves to dispose of the carcass. Do not send suspected rabid animals out of your area unless you are bitten, instead burn and bury the entire carcass.

FISH AND WILDLIFE VIOLATIONS

In the event that you observe a violation of a fish or wildlife regulation, contact the AMB and/or the AAMB as soon as possible. This is not intended as an inclusive procedure for handling violations, it is not your job. Use this as a guideline for obtaining the necessary information and/or evidence to show and prove that a violation has been committed. It is important to be familiar with the commercial fishing, subsistence fishing, sport fishing, and hunting regulations in your area. Violation reporting procedures are printed on the back cover of the commercial fishing regulation book. Request the regulation book if your camp does not have one.

The use of the "4 W's" can greatly aid in obtaining sufficient evidence for a case.

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1. What is the violation?
2. When did the violation occur (date, time, tide condition, etc.)?
3. Where did the violation occur?
4. Who is in violation and who are witnesses?

It is important that all witnesses to a violation are interviewed, preferably by Alaska Bureau of Wildlife Enforcement (ABWE) staff, and all statements pertaining to a violation are recorded along with their names and addresses. If you have a camera available, pictures are extremely valuable in prosecuting offenders. Collect as much information as possible and contact your supervisor or a State Trooper from the ABWE Division immediately. If you do not feel comfortable, or your personal safety may be in danger, do not pursue the violation. Contact your supervisor and they will handle the violation. Be aware that you do not have the authority to arrest somebody and never attempt this.

FIREARMS

A State firearm will be available at each location and staff should be familiar with firearm safety and proper use. Personal firearms are not necessary in Port Moller unless being used for recreational purposes, and must be approved by the immediate supervisor. Loaded guns are prohibited inside any facility. Anyone handling a firearm should always treat it as if it were loaded. Guns should be kept clean and oiled and be completely unloaded while being cleaned. **Any horseplay with or misuse of firearms while working for the Department of Fish and Game will not be tolerated and will be grounds for immediate dismissal.** Completely unload a firearm of all rounds before entering a vessel, airplane, or four-wheeler.

BEARS

Do not antagonize bears; each bear must be considered dangerous. Do not encourage bears to come around camp by leaving food or unburned garbage around. Do not shoot at a bear unless, in your best judgment, it is endangering someone's life or damaging valuable personal or state property. If shooting cracker shells at bears, be careful especially at close ranges (<30’) since the shell could penetrate the bear and be lethal. Use your best judgment on whether to shoot a bear if property is at stake. When trying to frighten a bear away by shooting, do not fire toward it. By chance, you may accidentally wound the animal. If you are having problems with a particular bear around camp, notify your immediate supervisor of the situation. When possible, staff from the Division of Wildlife Conservation will take care of the problem.

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TRANSPORTATION

Do not endanger life or property by going out in a boat on dangerously rough water. If you are unfamiliar with marine safety, ask for information or advice from your immediate supervisor. All personnel must wear a Coast Guard approved life jacket when out on any water. If you think it is dangerous situation, don't go out on the water.

Extra shear pins or propellers (impellers and sleeves) and a tool kit which includes pliers, spark plugs, spark plug wrench, wrenches of various sizes, various screwdrivers, and other tools should be in the boat at all times. In case travel at night (which should be avoided when possible) becomes necessary, carry a flashlight.

Some camps have 4-wheel all-terrain vehicles (ATV). The following safety precautions shall be observed at all times regarding department ATV. Safety helmets are provided for all riders.

Review the Marine Safety and Light Aircraft Safety Manuals located at all camps before boating or flying. Do not get in a boat or plane if you feel uncomfortable with the situation. Consult the crew leader, pilot, or immediate supervisor if you are uncomfortable.

APPEARANCE

Keep the facilities, surrounding area, and yourself clean and neat. Appearance is important even in remote camps. Visitor impressions are often based on your personal appearances. Do your best to look respectable and keep the grounds clean.

COMPATIBILITY OF FIELD PERSONNEL

If you find yourself unable to get along with other members at your camp, notify the appropriate supervisor and an attempt will be made to amicably solve the problem. Usually, the person with the most experience in camp will be the crew leader. If it is not clear who has been designated crew leader in your camp, ask the Assistant Area Management Biologist. Where satellite phones are provided, all employees must understand how to operate the phone. If you are unsure, please ask someone that does. All emergency contact phone numbers will be posted near or on the phone. These phones could be the difference between life and death. Also, if there are any personnel difficulties within the camp, all employees are encouraged to call the Assistant Area Management Biologist in Port Moller at any time.

FIRST AID AND SAFETY

Check the facilities fire extinguisher and emergency exits. Know where they are and how to use them! Inventory your camp first aid kit, replace items as needed and become familiar with basic first aid treatment. Review the first aid booklet. Make sure the smoke and carbon monoxide detectors are functioning properly with new batteries. All field personnel will have current Red Cross cardio-pulmonary resuscitation (CPR) and First Aid training and file copies of the associated certificates with the Department.

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MEMORANDUM *State of Alaska*

Department of Fish and Game

Office of the Commissioner

To: Catch Sampling Crew

From: Bob Murphy and Dawn Wilburn
Area Management Biologists
Division of Commercial Fisheries
Department of Fish & Game - Kodiak, Port Moller

SUBJECT: Health and Welfare of Crew Members

All employees must read the Safety Standard Operational Plans and included safety materials and must be fully aware of all health and safety practices (e.g. basic first aid, location of fire extinguishers, etc.). With camps, as remote as they are, do not neglect proper health and safety practices. There can be serious ramifications if an employee were to become ill.

Sand Point, Port Moller, and King Cove have medical clinics. Insurance forms will be available at all locations. Inform your supervisor immediately of any illness or injury that will require medical assistance or lost work time. Report all injuries to your supervisor immediately.

A State firearm may be available at each location. Loaded guns are prohibited inside any facility. Anyone handling a firearm should always treat it as if it were loaded. Guns should be kept clean and oiled and be completely unloaded while being cleaned. **Any horseplay with or misuse of firearms while working for the Department of Fish and Game will not be tolerated and will be grounds for immediate dismissal**. Completely unload a firearm of all rounds before entering a vessel or airplane. Keep an empty chamber under the firing pin of each pistol to prevent accidental discharge by accidentally dropping the weapon. If you are unfamiliar with firearms, please notify me immediately and proper safety and handling instructions will be given.

Do not antagonize bears - each one is a potential danger. Do not encourage bears to come around camp by leaving food or unburned garbage around. Do not shoot at a bear unless, in your best judgment, he is endangering someone's life or damaging valuable personal or state property. Use your best judgment on whether to shoot a bear if property is at stake. Be careful when, and if, trying to frighten a bear away by shooting near it. By chance, you may wound the animal accidentally. If you are having repeated problems with a particular bear around camp, call the AMB and notify them of the situation.

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Port Moller, Sand Point, and Ilnik and Sandy Rivers have 4-wheel all terrain vehicles (ATV). The following safety precautions shall be observed at all times regarding department ATV use. A safety helmet will be provided during operation of an ATV. An ATV will provide transport of State materials, supplies, and equipment between camp sites and supply planes or vessels. In addition, they may be used for transportation to and from assigned duties in the field such as monitoring a fishery or collecting harvest information, etc. Reasonable recreational activities within reason are permitted but safety of the rider and vehicle must be observed.

Check your camp's fire extinguisher. Know where it is and how to use it! Check carbon monoxide and smoke detectors to make sure they are in working conditions with a new installed battery. Inventory your camp first aid kit, replace items as needed and become familiar with basic first aid treatment. Review the first aid booklet.

Keep the cabin, surrounding area, and yourself clean and neat. Appearance is important. You will not always be notified of the intended arrival of visitors, officials, etc. Impressions of visitors are often based on appearance. Personal hygiene is very important in field camps or remote sites since everyone lives in close proximity to each other. Always wash hands after using the restroom and prior to food preparation.

Rabies is common on the Alaska Peninsula, so be careful of all mammals including ground squirrels, fox, wolf, otters, and your pet. If bitten save the head of the animal if possible, wrap the head in several layers of plastic, put in a good box and freeze if possible. Notify your supervisor of the accident immediately. Burn and bury remaining parts of the carcass away from water sources and cabins, take precautions such as wearing plastic gloves to dispose of the carcass. Do not send suspected rabies animals out of your area unless you are bitten.