

WEATHERVANE SCALLOP OBSERVER MANUAL



Regional Information Report No. 4K98-32

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
211 Mission Road
Kodiak, Alaska 99615

June 1998

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By

Jeffrey P. Barnhart

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ACKNOWLEDGMENTS

The following staff from the Alaska Department of Fish and Game provided important assistance: Bonnie Jones provided clerical support; Larry Boyle, Larry Byrne and Donn Tracy provided editorial comments; and Dave Jackson, Dan Urban and William Nippes prepared the original version of this manual.

TABLE OF CONTENTS

	<u>Page</u>
LIST OF APPENDICES.....	i
PART I	
INTRODUCTION	1
ONBOARD OBSERVER PROGRAM.....	1
PROGRAM RESPONSIBILITIES.....	2
Vessel Owners and Operators.....	2
Alaska Department of Fish and Game.....	3
Contractors.....	4
CONFLICT OF INTEREST STANDARDS FOR ONBOARD OBSERVERS	5
CONFLICT OF INTEREST STANDARDS FOR CONTRACTORS.....	6
GENERAL PROGRAM OVERVIEW.....	7
Scallop Observer Candidate Requirements.....	7
Trainee Certification	7
Full Certification.....	7
Observer Decertification.....	8
Disciplinary Trainee Status.....	8
Recertification.....	9
Briefing	9
Debriefing.....	10
Confidentiality of Data	10
Living and Working at Sea	11
Observer Duties	11
Observer Sampling Duties	12
OBSERVER SAMPLING GEAR AND EQUIPMENT.....	12
Provided By Contractor	12
Provided By Vessel.....	13
Provided By ADF&G	13

TABLE OF CONTENTS (Cont.)

	<u>Page</u>
PERSONAL GEAR.....	14
Provided by Contractor, Observer or Vessel.....	14
Provided by Observer.....	14
PART II	
GENERAL FORMS INSTRUCTIONS.....	15
NOTEBOOK ENTRIES.....	15
Collecting Evidence.....	15
SAMPLING ON SCALLOP VESSELS.....	16
DATA FORM INSTRUCTIONS.....	17
General header information--All Forms.....	17
Letter Codes for Scallop Management Areas.....	18
Radio Report Form.....	18
Radio Reporting Procedures.....	19
Phonetic Alphabet.....	19
Radio Codes.....	20
Fishing Log for Alaska Scallops.....	20
Weekly Summary Form.....	21
Haul Composition Form.....	22
Bycatch and Scallop Discard Form.....	23
Crab Size and Injury Form.....	23
Halibut Length and Condition Form.....	24
Scallop Size Frequency Form.....	24
Scallop Gonad Characteristics and Developmental Stages.....	25
Shell Collections.....	26
Scallop Meat Recovery Form.....	26
TERMS AND DEFINITIONS.....	27
Crab Measurement.....	27
Crab Shell-Aging.....	27
Shell-age Characteristics.....	27

TABLE OF CONTENTS (Cont.)

	<u>Page</u>
Random Sample.....	28
Tagged Animals.....	28
Scallop Species	28
King Crab Species.....	29
Tanner Crab Species	29
APPENDIX.....	30

LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
A.1. SCALLOP OBSERVER RADIO REPORT FORM.....	31
A.2. RADIO CODES	32
A.3. FISHING LOG FOR ALASKA SCALLOPS	33
A.4. WEEKLY SUMMARY FORM	34
A.5. HAUL COMPOSITION FORM	35
A.6. HALIBUT LENGTH TO WEIGHT CONVERSION TABLE.....	36
A.7. BYCATCH AND SCALLOP DISCARD FORM.....	37
A.8. CRAB SIZE AND INJURY FORM	38
A.9. HALIBUT LENGTH AND CONDITION FORM	39
A.10. SCALLOP SIZE FREQUENCY FORM	40
A.11. SCALLOP SHELL HEIGHT MEASUREMENT	41
A.12. SCALLOP MEAT RECOVERY FORM.....	42
A.13. CHARACTERISTICS OF ALASKAN SCALLOPS	43
A.14. CHARACTERISTICS OF <i>C. bairdi</i> & <i>C. opilio</i>	44

PART I

INTRODUCTION

The purpose of this manual is to describe the duties of observers participating in the Alaska Department of Fish and Game (ADF&G) Mandatory Shellfish Observer Program for Alaskan scallop processors. The manual also serves as a reference guide for information pertaining to observer qualifications, training, certification, gear, and logistical arrangements as well as responsibilities and requirements of observer contractors, vessel operators and ADF&G.

The Commissioner of Fish and Game, under provisions of the Alaska Administrative Code section 5 AAC 39.210, designated the weathervane scallop fishery a high impact emerging fishery on May 21, 1993. This action required the department to close the fishery and implement an interim management plan prior to reopening the fishery. The interim management plan became effective June 27, 1993 and included an onboard observer program to monitor crab bycatch and collect biological and fishery based information on weathervane scallops.

This manual, along with the scallop observer classroom training and a pretrip briefing, should adequately prepare the observer to carry out his or her duties. In the event observers are confronted with unanticipated sampling problems not fully covered by the classroom training or this manual, they may be required to adapt sampling procedures necessary to insure an unbiased, representative sample of the catch or bycatch. Any deviation from the methods outlined in training or this manual should be brought to the attention of ADF&G as soon as possible.

ONBOARD OBSERVER PROGRAM

Pursuant to Alaska Administrative Code section 5 AAC 39.141 (a), the Board of Fisheries finds that, in particular fisheries, observers on board fishing vessels would greatly enhance management, primarily by facilitating information gathering, and by improving regulatory compliance. Onboard observers may be the only practical fishery monitoring, data gathering, or enforcement mechanism in some Alaska fisheries where a large component of vessels, such as catcher-processors and floating processors, rarely or never enter Alaskan ports.

(b) Every onboard observer shall have free and unobstructed access to inspect the catch, equipment, gear, or operations of the fishing vessel or tender to which the observer is assigned.

(c) Onboard observers must be as unintrusive to vessel operations as practicable and must make the scope of their activities as predictable as possible in the performance of their assigned observer duties.

Onboard observers are not required to obtain criminal or administrative search warrants to conduct their duties.

(e) Onboard observers shall carry out such scientific and other duties as deemed necessary or appropriate to manage, protect, maintain, improve, and extend the fish and aquatic plant resources of the state.

(f) Onboard observers shall have free and unobstructed access to loran or GPS coordinates, at random, at least twice in each 24-hour period. However, an observer shall have access to loran or GPS coordinates at any time if the observer suspects illegal activities. These loran or GPS observations are not to interfere with normal operations of the vessel.

(g) Every independent contracting agent, and their office personnel and business agents while employed by the independent contracting agent and for six months after terminating that employment, may not work as an onboard observer.

Regulations governing the Onboard Observer Program are found in the ADF&G, Commercial Shellfish Regulations, 5 AAC 39.141, 39.142, 39.143, 39.144, 39.645, and 39.646 and should be referenced in their entirety. All data collected are considered confidential information under state statutes (AS 16.05.815).

PROGRAM RESPONSIBILITIES

Vessel Owners and Operators

The responsibilities of vessel owners and operators as described in 5 AAC 39.645(i) are:

1. contract and pay for observers through an independent contracting agent;
2. provide at least 48 hours advance notice to the contracting agent of an observer's arrival at a department area office for debriefing;
3. ensure "trainee observers" are returned to port with sufficient time to allow for debriefing prior to expiration of trainee permit;
4. provide adequate food and accommodations for the observer that are equal to those provided for the vessels crew;
5. provide to the observer daily catch information including the area(s) fished, number and pounds of scallops landed, number of hauls by statistical area, and other information as specified by the department;

6. provide a safe work area, necessary gear (6 baskets), etc.), opportunity and sufficient time to allow the observer to adequately sample catch as specified by the department;
7. assure observer access to SSB radio, fax or telephone so that catch reports from observers are received at the area management office as specified by the department;
8. notify the observer before scallops are brought on board to allow sampling unless the observer specifically requests not to be notified; and
9. provide proof of compliance with U.S. Coast Guard vessel safety requirements.

Alaska Department of Fish and Game

The responsibilities of the Alaska Department of Fish and Game are:

1. establish standards for observer and contractor conflict of interest;
2. determine certification, suspension, probation and decertification criteria for observers and contractors;
3. certify, suspend, and decertify observers and contractors;
4. establish appeal procedures for suspended and decertified observers and contractors;
5. establish, administer, and score observer certification test(s);
6. maintain a list of certified observers and contractors;
7. provide a list of certified observers to contractors upon request;
8. provide a list of certified contractors to observers, industry and the public;
9. determine observer sampling procedures;
10. maintain a list (for ADF&G use) of observer briefing and debriefing dates, and observer and vessel activities for verification of compliance with the 36, 90, and 180 day deployment rule;
11. approve all observer vessel assignments;
12. brief and debrief observers only in the ADF&G office responsible for the management of the specific fishery, unless ADF&G authorizes otherwise;
13. provide observers with appropriate paperwork as listed in the section 'Observer Sampling Gear and Equipment, provided by ADF&G';

14. monitor observer data gathering performance;
15. analyze observer data;
16. prepare reports;
17. review observer candidate's qualifications, based on contractor supplied transcripts, resumes, etc., for compliance of Observer Program standards; and
18. approve observer training course.

Contractors

The responsibilities of the contractors as described in 5 AAC 39.645 (j) are:

1. employ observers in compliance with all applicable state and federal laws and provide all necessary administrative and payroll functions for the observer employees;
2. secure contracts directly with vessel owners and/or operators;
3. provide the department with a certification training program plan and qualifications of instructors for department approval no less than 30 days before implementation;
4. provide the department with complete and legible transcripts, resumes, and other work history documents to qualify observer candidates no less than 30 days before training;
5. provide observer training to meet certification requirements contained in 5 AAC 39.143;
6. coordinate with the department to schedule observer certification examinations and provide observer sampling equipment for use at the examinations;
7. provide all logistical support for observers, including room and board, travel to and from vessels, travel to and from department examinations, briefings and debriefings;
8. assign observers to vessels without regard to requests from vessel owners and operators for, or for exclusion of, a specific observer; any requests for, or for exclusion of, a specific observer shall be reported to the department by the contracting agent;
9. provide, for each observer deployment, a complete set of all necessary observer sampling equipment as specified, in writing, by the department for an observer to complete a trip assignment;

10. provide the department with no less than 48 hour advance notice of an observer's scheduled arrival at the port where the department office responsible for management of the fishery the observer's assigned vessel participates in for briefings and debriefings;
11. schedule all observer briefing and debriefing appointments directly with the department;
12. maintain records of observer's scheduled briefing and debriefing dates, and observer's time on board a vessel to ensure compliance with maximum trip limits for trainee observers as specified in 5 AAC 39.143 (c), and fully certified observers as specified in 5 AAC 39.142 (a)(8);
13. ensure that no less than 65 percent of observer deployment days per year per contractor are performed by certified observers

CONFLICT OF INTEREST STANDARDS FOR ONBOARD OBSERVERS

Pursuant to 5 AAC 39.142 a department approved fisheries observer:

1. must be employed by an independent contracting agent who has been certified by the department;
2. may not have a financial interest¹ in the observed fishery;
3. may not have a personal interest² in the vessel to which he or she is assigned;
4. may not serve as a crew member or processing worker on the vessel to which he or she is assigned;
5. may not solicit, accept, or receive, directly or indirectly, a gift, whether in the form of money, service, loan, travel, entertainment, hospitality, employment, promise, or in any other form, that is a benefit to the observer's personal or financial interests, under circumstances in which it could be reasonably inferred that the gift is intended to influence the performance of official duties, actions, or judgment;

¹ "financial interest" means any source of income to, or a capital investment held by, an individual or the individual's spouse or blood relation up to and including the second degree of kindred;

² "personal interest" means an interest held or involvement by an individual, partnership, or corporation, or an individual's immediate family member or parent, including membership in any organization from which, or as a result of which, a person or organization receives a benefit.

6. may not have been convicted of a misdemeanor or felony involving fraud, dishonesty, an offense against the person in violation of AS 11.41, arson under AS 11.46.400, or a fish and game misdemeanor or fish and game infraction with a penalty in excess of \$300.00 for a period of seven years preceding application to the onboard program
7. may not have a personal or financial interest, other than that of the observer's employee relationship in the contracting agent who serves as the observer's employer;
8. may not spend more than 90 days onboard any one vessel in 12 consecutive months, unless the 90 day limitation is waived by the department for good cause;
9. may be assigned to a vessel only upon approval by the department.

CONFLICT OF INTEREST STANDARDS FOR CONTRACTORS.

Pursuant to 5 AAC 39.142, an independent contracting agent who provides onboard observers:

1. may not be an individual, partnership, or corporation with a personal³ or direct financial interest⁴ in the proceeds of any vessel licensed to process or harvest in the affected fishery other than the provisions of observers;
2. shall assign observers to vessels without regard to requests from vessel owners or operators for a specific individual;
3. may not knowingly or negligently hire as an observer an individual who has a personal or financial interest, other than that of the observer's employee relationship, with the contracting agent;
4. may not hire an onboard observer on a commission basis;
5. shall, for each observer assignment to a vessel, submit to the department, upon request, a written statement, signed by the contracting agent under oath and subject to applicable criminal penalties, stating that the contracting agent does not have a personal interest and does not have a direct or subsidiary financial interest in the vessel or in fishing activities of the vessel;

³ "personal interest" means an interest held or involvement by an individual, partnership, or corporation, or an individual's immediate family member or parent, including membership in any organization from which, or as a result of which, a person or organization receives a benefit.

⁴ "financial interest" means any source of income to, or a capital investment held by, an individual or the individual's spouse or blood relation up to and including the second degree of kindred;

6. shall obtain and submit to the department, upon request, for each observer assignment to a vessel, a written statement, signed by the vessel owner, operator, or owner's agent, under oath and subject to applicable criminal penalties, stating that the vessel owner or operator does not have a personal interest and does not have a direct or subsidiary financial interest in the contracting agent.

GENERAL PROGRAM OVERVIEW

Scallop Observer Candidate Requirements

To qualify as a candidate for the Scallop Observer Program an individual must have the following education or work experience:

- a Bachelor of Science degree in Natural Sciences or;
- a Valid National Marine Fisheries Service observer certification or;
- other fisheries related education or work experience approved by the department

Trainee Certification

All scallop observer candidates who complete the approved training and orientation specified by the department and who pass an exam administered by the department, with a score of at least 90 percent, will be issued a trainee permit. Trainee requirements are set forth in 5 AAC 39.143 and 5 AAC 39.646.

An onboard scallop observer trainee must:

1. possess a radio-telephone (FCC) operator's license;
2. be physically able to carry out the duties of an observer and not be incapacitated by chronic or debilitating seasickness;

Full Certification

An observer with a valid trainee permit is eligible for full certification when he or she:

1. has satisfactorily completed all observer trainee trip assigned tasks specified in writing by the department;
2. has not engaged in behavior described in 5 AAC 39.143 (j);

3. has completed the number of observer trips that the department determines from debriefing the trainee are necessary to prepare the trainee to perform as an onboard observer; and
4. is not the subject of revocation proceedings under 5 AAC 39.143.

Observer Decertification

ADF&G reserves the right of decertification as outlined in 5 AAC 39.143.

Grounds for decertification are:

1. significant or consistent failure to satisfactory complete observer trip assigned tasks specified in writing by the department;
2. impairment of the observer's ability to complete assigned tasks due to the use of alcohol or a controlled substance;
3. engaging in violent or criminal behavior that could endanger a person or property on the assigned vessel or that prevents the observer from performing tasks according to the standards of the onboard observer manual;
4. soliciting or accepting items or services, other than the basic life necessities, from an operator, owner, or crew member of a vessel to which the observer is assigned;
5. failure to report known criminal behavior or cooperate with the investigation or prosecution of criminal behavior arising from fishing operations of the vessel to which the observer is assigned;
6. engaging in emotional or sexual relations with a person on board the assigned vessel in a manner that interferes with the observer's ability to perform according to the standards of the onboard observer manual;
7. having a Federal Communications Commission (FCC) radio operator's license revoked or suspended.
8. exhibiting poor judgment or unprofessional behavior that significantly interferes with the observer's ability to perform assigned tasks or results in a breach of confidentiality, lack of observer coverage, or other actions detrimental to the observer program.

Disciplinary Trainee Status

Provisions under which a certified observer may be returned to trainee status are detailed in the ADF&G commercial shellfish fishing regulation book under section **5 AAC 39.143 (k)**. A

certified onboard observer may be demoted to trainee status for failure to satisfactorily perform assigned tasks specified in writing by the department, if the failure occurs after the department has notified the onboard observer in writing that the onboard observer's performance for the assigned tasks has been deficient.

Recertification

Recertification is provided for under 5 AAC 39.143 (i). Recertification requires the observer candidate to attend the required training, retake the qualifying exam, and fulfill all other observer candidate requirements. Having successfully completed observer training and testing, observers would be considered in trainee status.

ADF&G requires recertification :

1. if more than 36 days pass between trainee briefing and debriefing for an observer trip, 5 AAC 39.143 (c)(1);
2. if, after 180 days from the time a trainee permit was issued, the observer fails to gain full observer certification, 5 AAC 39.143 (c)(2) ;
3. when a fully certified observer fails to participate as an observer for a period of 12 continuous months, 5 AAC 39.143 (i).

Briefing

After assignment to a vessel by the contractor the observer must attend a pretrip briefing. Unless ADF&G authorizes otherwise, all observers will be briefed and debriefed at the ADF&G office responsible for the management of the fishery in which the vessel participates. All observer briefing and debriefing appointments will be made by the representative contractor. Briefings and debriefings must be scheduled at least 48 hours in advance.

ADF&G reserves the right to hold a practicum at any time to test the observer's knowledge of this manual and his or her performance of the required skills.

The observer MUST bring all required sampling equipment, as listed in the section "Observer Sampling Gear and Equipment, Provided by Contractor" to the briefing for visual confirmation by ADF&G. During the briefing, observers will be given state owned equipment for which they are responsible, as well as the necessary forms, paperwork, and fishery specific information for the observer trip. Each observer will be issued a scallop observer manual containing a unique set of confidential codes for encoding catch reports sent to ADF&G.

Observers are encouraged to contact ADF&G if questions arise while at sea. Observers should have the scallop manual readily available when contacting ADF&G as questions will likely be answered by referring to the manual.

Debriefing

All scallop observers must be debriefed immediately after completion of the assigned trip. No observer will spend more than 90 days on any one vessel in 12 consecutive months.

Observers must give ADF&G area staff immediate notice of their departure from the assigned vessel. After departure from the assigned vessel, observers are required to return directly to the ADF&G office at which briefing occurred, unless otherwise permitted by ADF&G. Debriefings are conducted at the ADF&G office responsible for management of the fishery in which the vessel participated, and must be scheduled by the contractor at least 48 hours in advance.

Observers must attend a post-trip debriefing. Observers are expected to have all forms and required reports completed and organized prior to arrival at the ADF&G office. At the debriefing observers will submit completed paperwork, answer questions which might arise from a review of the data forms, return all department issued materials and equipment, and submit evidence to a Fish and Wildlife Protection Officer if potential violations were observed during the trip. ADF&G personnel will check all data forms for accuracy and completeness. Observers may be required to correct any and all data errors prior to subsequent deployments

If an observer's vessel returns to a port of briefing for any reason, the observer **MUST** contact ADF&G. At the discretion of ADF&G, a midtrip debriefing may be scheduled, which will allow a preliminary data check and provide ADF&G an opportunity to resolve sampling problems or answer observer questions.

Confidentiality of Data

Observer information is to be **INDEPENDENT** of catch information reported on the fish ticket. Observers are not to discuss anything involving fishing activity or catch information with their contractor, other observers, or industry representatives. Due to the confidential nature of the information collected, observer data will be turned in to ADF&G only, and no copies are to be made. Upon request of the vessel operator, observers are permitted to verbally provide sampling information pertaining to haul composition, crab bycatch, discarded scallops, retained scallops, halibut length and condition, and scallop meat (adductor muscle) recovery. ALL OTHER OBSERVER COLLECTED INFORMATION, INCLUDING THE OBSERVER'S LOGBOOK, WEEKLY TRIP SUMMARIES, AND RADIO REPORTS ARE COMPLETELY CONFIDENTIAL. Vessel operators may submit a written request to ADF&G requesting photocopies or electronic copies of their personal fishing records, including observer collected information.

Living and Working at Sea

Once the observer has successfully completed the initial briefing requirements with ADF&G, he or she should immediately proceed to their assigned vessel. The safety of the observer on board the assigned vessel is the responsibility of the observer, vessel operator and contractor. **THE STATE ASSUMES NO RESPONSIBILITY FOR THE OBSERVER'S SAFETY.**

The observer should also remember the following:

1. If or when a conflict or problem (with the crew, equipment, etc.) occurs, which affects an observer's ability to sample as directed by ADF&G, the situation should be reported to the vessel operator immediately. If the vessel operator is unable or unwilling to resolve or correct the problem the observer should notify ADF&G immediately.
2. Do not interpret regulations. Interpretation of regulations should be done by the staff of ADF&G or the Alaska Department of Public Safety.
3. Observer sampling activities should be as unobtrusive to vessel fishing and processing operations as possible. However, **SAMPLING DUTIES ASSIGNED BY ADF&G ARE MANDATORY**. Any actions on the part of the vessel's crew or employees to deny an observer space, equipment or opportunity to conduct his or her normal sampling activities should be recorded in the observer's logbook and reported at once to the vessel operator. If the vessel operator is unable or unwilling to correct the problem the observer should notify ADF&G immediately.
4. The observer should remember they are a representative of ADF&G and their actions reflect on ADF&G, their contractor, other observers and the entire observer program. Observers should follow vessel rules and be sensitive to restrictions such as wearing rain gear or rubber boots in the living and/or eating areas, etc. The observer should feel free to ask the vessel master or crew any questions about boat policies.

Observer Duties

The observer's duty is to observe vessel fishing and processing operations and collect data as outlined below. **The observer is not an enforcement agent and has no enforcement authority.** The observer is expected to document all possible violations. The Alaska Department of Public Safety, Division of Fish and Wildlife Protection will take appropriate enforcement action on information collected by the observer concerning possible violations. Observers may be required to testify in court and submit statements as necessary for prosecution.

Every onboard observer of the Alaska Departments of Public Safety and Fish and Game shall have free and unobstructed access to inspect the catch, equipment, gear or operations of the fishing vessel, tender or processor to which the observer is assigned, and to board and inspect the catches of vessels delivering to the vessel to which the observer is assigned while the vessel to

which the observer is assigned is within waters under the jurisdiction of the state, taking or intending to take any species of fish, or transporting or processing any species of fish.

When conducting legal or biological sampling, onboard observers will take representative and unbiased samples, and do so with a maximum amount of precision.

Observer Sampling Duties

The sampling duties of onboard scallop fishery observers are:

1. obtain representative samples of height, weight and sex frequencies from the retained and /or discarded scallop catch;
2. record daily catch rates of the catcher vessel, including number of scallops retained and hauls made;
3. when so directed, obtain representative live weights of crab;
4. record bycatch numbers, size, sex and condition in hauls for all species of crabs and fish as directed by ADF&G;
5. document the handling, time on deck, and retention of prohibited species;
6. retain biological samples and enforcement evidence as directed;
7. carry out additional duties as directed by ADF&G;
8. during fishing operations, compliance or lack of compliance with regard to closed areas and other regulations should be observed. Instances where possible violations are observed should be documented;
9. report vessel and sampling activity to ADF&G via SSB radio or mobile satellite communications as directed.

OBSERVER SAMPLING GEAR AND EQUIPMENT

Provided By Contractor

1. 35 mm waterproof camera capable of taking good quality close-up photos in low light situations.
2. Spare batteries for camera (one complete set).
3. Two 300 mm (12") stainless steel vernier calipers of a type approved by ADF&G.

4. Two cassette tape recorders using standard or micro cassettes (must be as small as possible, battery operated and able to operate in cold and/or damp environments).
5. Two sets of batteries for tape recorder.
6. Two clipboards for 8 1/2" X 11 paper.
7. Small can of rust preventative (for caliper lubrication).
8. A minimum of 12 #2 pencils with erasers.
9. A means to sharpen pencils.
10. Two thumb counters.
11. Small calculator (battery operated).
12. Spare batteries for calculator (one complete set).
13. Calendar.
14. Watch.
15. A minimum of 2 #2 red pencils with erasers.
16. Locking briefcase large enough to contain sampling equipment and all data forms and ADF&G issued materials.
17. Fish identification book.
18. Black indelible marking pen.
19. Hand magnifying lens.
20. Two scallop knives.
21. Other equipment as required by ADF&G (with a minimum of 6 months advanced notice to contractors for additional costs in excess of \$100.00 per observer equipment set).
22. 100 pound spring scale, capable of weighing scallop samples in one (1) pound increments. The scale must be in good working order, of a type approved by ADF&G, and in the observer's possession at the time of the trip briefing.

Provided By Vessel

Six (6) plastic bushel sized baskets. The baskets must be available to the observer for sampling activities and must be onboard the vessel prior to departing port.

Provided By ADF&G

1. Observer manual.
2. Radio reporting codes.
3. Write-in-the-Rain notebooks.
4. 35 mm film.
5. Cassette tapes.
6. Current Shellfish Regulation Booklet.
7. ADF&G statistical area charts.
8. All required data forms.
9. Muslin bags for shell collections.

PERSONAL GEAR

Provided By Contractor, Observer, or Vessel

1. Survival suit.
2. Floatation coat, coveralls, etc. to be worn while on deck
3. Rain gear.
4. Waterproof deck boots.
5. Rubber gloves (2 pair minimum).
6. Hard hat, to be worn while on deck.

Provided by Observer

1. Personal clothing, adequate for anticipated time at sea and time of year.
2. Personal articles (towels, medications, toothpaste, etc.).

PART II

GENERAL FORMS INSTRUCTIONS

All data collected by observers must be processed and summarized. It is not possible to change the computer format to accommodate an individual observer's method of recording data, therefore the forms must be filled out in the prescribed way. Refer to the specific instructions and examples provided for each form. If it is necessary to alert ADF&G about some aspect of the data, place a note in the comments area provided or on back of the form.

All forms should be neat. All numbers should be precisely printed in conventional Arabic numbers so they are legible. Sloppy forms multiply the number of keypunch errors and are time consuming to interpret. Use a sharp pencil, not a pen, to fill out all forms. Erasures should be neat if changes are necessary.

All forms must be filled out **DAILY** and should be double checked for completion and readability as soon as possible. All forms (completed and blank) should be kept locked in the observers briefcase when not being used.

Time records should be in military format reflecting Alaska local time.

NOTEBOOK ENTRIES

ADF&G will provide a rite-in-the-rain notebook to each observer. The observer notebook is intended to be a record of data and pertinent information not noted on any data forms. The notebook should document the crew list, vessel diagram, all sampling activities, sampling difficulties and all perceived regulation violations. The notebook is a confidential record of your activities. NO ONE has access to the notebook except the observer and ADF&G.

ALL sampling activity **MUST** be documented, including time, activity, results and difficulties. Document any sampling goals not met and the reason. These facts must be laid out in a clear and concise manner.

Collecting Evidence

Any potential violations witnessed by an observer **MUST** be documented in the observer notebook. Document any incidence of prohibited species from the catch being consumed or kept (i.e. "homepacks") by crew members. When a potential regulation violation is observed, document all details. This should include vessels and/or crew members involved, details of the

exact nature of the suspected violation, location on vessel, and time of day. Detail all conversations with crew members regarding the violation. When documenting potential violations, remember the 4 W's (who, what, where, and when). Documentation of potential violations should be separate from other notebook entries. Be sure to allow for a blank page prior to and following any documentation including prohibited species, illegal gear, MARPOL violations, harassment, etc. Observers are often questioned weeks, months, and sometimes years after the event, so document thoroughly.

To substantiate information recorded in the observer notebook and on data forms it is important to take pictures of potential violations. When taking photographs of prohibited species, or MARPOL violations position the animal or material in such a way that identification is obvious. Five feet or less seems to be the optimum distance for clear and detailed photos. Depending upon the illegal activity, include as much of the activity as possible in the photographs and document thoroughly in the observer notebook. Take a blank photo or two prior to and following the evidence photographs. This will keep the evidence photos separate from other photos.

All photographs should be documented in the daily entry of the observer notebook. Also a photo log should be kept on the back page of the notebook to facilitate sorting of photos. Be sure to indicate the frame number of the photo, the date it was taken and what is shown in the photo.

All notes, journals or other written material that discuss fishing activity are confidential and property of ADF&G, and should be turned in at the time of debriefing.

SAMPLING ON SCALLOP VESSELS

After boarding the vessel the observer should remember his or her safety and the safety of others is of primary importance. The fishing industry is considered to be one of the most dangerous in the nation. **THE OBSERVER SHOULD, AT ALL TIMES, BE AWARE OF HIS OR HER SURROUNDINGS AND WHAT IS HAPPENING AROUND THEM.** Observers are urged to familiarize themselves with their personal safety equipment (survival suit, etc.), determine where safety equipment is stored and pay special attention to vessel emergency drills.

The observer should establish a sampling plan with the vessel master and crew, which will include a general description of observer sampling activities. Each vessel and crew will present the observer with a unique sampling situation.

Prior to collecting any information, the fishing and sorting operation should be observed to determine the safest and least disruptive sampling location. Following an initial observation period, sampling procedures should begin.

The observer should not cause UNREASONABLE interference with the operation of the vessel and its processing lines, but sampling activities are **MANDATORY** and the vessel **MUST** make

the necessary space, time and equipment available. This will require communication with the vessel master and crew.

Observers should check with the vessel captain or mate to be sure they will have access to at least 6 baskets for use in sampling activities. Do not leave port without adequate equipment.

Determine what method the vessel master will use to complete the fish ticket requirements and daily estimates of retained scallop catch (in pounds of shucked meat). The observer is required to record, on a daily basis, independent data as a cross check of the vessel's reporting of catch and effort. The observer collected data will likely consist of a daily box or bag count of scallop meats, multiplied by the average weight of the box or bag, yielding an estimate of scallops, in pounds, retained each day.

On a daily basis, determine the pounds of scallop meats retained and processed, statistical areas where fishing occurred, and the number of hauls. Area and effort information may be obtained from the Fishing Log for Alaska Scallops. Do not obtain any catch information from the vessel operators completed fish ticket and do not supply catch information for completing fish tickets.

Randomly select hauls daily for species composition and bycatch/scallop discard monitoring. Sample hauls should be selected throughout the period of fishing activity. All times of the day and all distinctly different fishing areas should be represented. Sample pre-selected hauls regardless of gear performance.

Maintain ADF&G reporting schedule as directed at the briefing. The reporting schedule will be established by the area biologist.

Collect the original copy of the Fishing Log For Alaska Scallops from the Captain at the end of the trip and/or mid-trip. Submit the log to ADF&G at the time of debriefing.

DATA FORM INSTRUCTIONS

General Header Information--All Forms

All forms have a header block at the top of the page typically containing space for recording vessel name, ADF&G number, trip number, observer name, date, fishery code, and haul number. These numbers are critical to identifying the data associated with each vessel and trip, and should be completely filled out on each form.

- Trip Number: ADF&G will assign a trip number at the time of the observer briefing. A trip is defined as the period of time between observer briefing and debriefing. Trip numbers do not change with mid-trip debriefs. For example, if a vessel returns to port, and the observer is still assigned to the vessel, and the Registration Area stays the same, then the trip number does not change. Changing registration areas requires an

observer debriefing and briefing and therefore a new trip number is also necessary. Trip numbers start over annually. This is a state-wide numbering system.

- ADF&G #: This is a 5 digit, State of Alaska, vessel license number issued by the Commercial Fishery Entry Commission. The number is required to be display in one foot high digits on the side of the vessel wheelhouse.
- Haul Number: Each haul, including unsuccessful ones, are assigned a sequential number starting with #1 at the beginning of each trip. The skipper will record all hauls in the ADF&G Fishing Log for Alaska Scallops. At least twice per day observers should verify the haul numbers are recorded consecutively, i.e. no duplicates and no skipped haul numbers.
- Fishery Code: The fishery code consists of the letter code designation for the Management Area, followed by the letter "S"(designating scallops) and the year. For example, if a scalloper fished in the Kodiak Management Area during the 1998 season the fishery code designation would be KS98.

Letter Codes for the Scallop Management Areas

D = Yakutat
E = Prince William Sound
H = Cook Inlet
K = Kodiak
M = Alaska Peninsula
O = Dutch Harbor
R = Adak
Q = Bering Sea

Radio Report Form

The **RADIO REPORT FORM** (Appendix A.1.) is used to organize and encode observer data transmitted by radio or mobile satellite communication systems to ADF&G offices. Each observer will be issued an observer manual with a unique set of reporting codes. All reports sent via radio, fax, or e-mail, must be in code. The radio report form should be completed prior to the assigned transmission time. This will facilitate a smooth and accurate radio message.

The observer must submit a report on the designated reporting day and time even if no fishing or processing took place during the reporting period. In this case, report only Item 5, (Sampling Condition).

REPORT THE FOLLOWING ITEMS (IN CODE ONLY) FOR EACH STATISTICAL AREA FISHED:

- ITEM 1. Statistical Area
- ITEM 2. Total number of hauls.
- ITEM 3. Number of bycatch sampled hauls.
- ITEM 4. Number of king crab in bycatch sampled hauls.
- ITEM 5. Sampling conditions.
- ITEM 6. Number of *C. bairdi* Tanner crab in bycatch sampled hauls.
- ITEM 7. Number of *C. opilio* Tanner crab or Dungeness crab in bycatch sampled hauls. (Use item 7 for reporting *C. opilio* Tanner crab in the Bering sea Management Area, Dungeness in all other Management Areas.)
- ITEM 8. Pounds of shucked scallop meats retained for the reporting period.

Radio Reporting Procedures

At the time of the pretrip briefing, ADF&G locations, radio call signs, fax numbers, and phone numbers will be provided to the observer. The reporting schedule will also be established at this time.

Observers are responsible for transmitting the radio report. If the vessel operator prefers to transmit the information himself, the observer should be present at the time it is transmitted in case any questions arise or special instructions are sent to the observer from ADF&G.

The radio is extremely busy at times so keep the radio use to a minimum. Be prompt, accurate, and courteous with all radio communications. Speak slowly enough to allow your report to be copied accurately. Be sure to state your vessel name and coded information as: ITEM ONE: _____, ITEM TWO: _____, ITEM THREE: _____, etc. Stay on the radio for confirmation that your report was copied

Phonetic Alphabet

A - ALPHA	J - JULIET	S - SIERRA
B - BRAVO	K - KILO	T - TANGO
C - CHARLIE	L - LIMA	U - UNIFORM
D - DELTA	M - MIKE	V - VICTOR
E - ECHO	N - NOVEMBER	W - WHISKEY
F - FOX-TROT	O - OSCAR	X - X-RAY
G - GULF	P - PAPA	Y - YANKEE
H - HOTEL	Q - QUEBEC	Z - ZULU
I - INDIA	R - ROMEO	

Radio Codes

Appendix A.2. is an example of radio codes used to complete the scallop observer radio report form. At the time of briefing each observer will be issued a manual with a unique set of codes for encoding observer data prior to transmission by radio or mobile satellite communications to ADF&G offices. Observers should not remove codes from their manual or allow anyone to see their code sheets. Codes should be kept confidential and locked in the observer's briefcase when not in use. If someone other than the observer transmits the observer's report, they should be given the message to transmit in coded form only.

Fishing Log for Alaska Scallops

The **FISHING LOG FOR ALASKA SCALLOPS** (Appendix A.3.) is completed by the vessel operator, with the exception of the 'haul sampled' column, which is completed by the observer. **The data recorded on this form is extremely important and the observer should check daily to be sure all information is being filled out accurately, legibly and in a timely manner.**

Record the following information on the fishing log:

- Trip number. ADF&G will assign a trip number at the time of observer briefing.
- ADF&G number.
- Year.
- Captain's name.
- Observer's name.
- Vessel name.
- Fishery Code.
- Hauls sampled. Observers will record, in this column, sampled hauls with a "1" and unsampled hauls with a "2". This includes sampling for either bycatch/scallop discard or species composition.
- Total combined dredge width to the nearest foot.
- Gear performance. The captain will determine whether the dredges fished correctly.
- Date. Use numeric designation for month.

- Haul number using sequential numbers for each haul. All hauls must be recorded regardless of gear performance. A single haul will be the combined catch of both dredges. Haul numbers will start with number 1 at the beginning of each trip. A trip is defined as the period of time between observer briefing and debriefing. Haul numbers do not change with mid-trip debriefs.
- Set position. Record in degrees, minutes and hundredths of a minute and E/W of 180° longitude.
- Fishing times. Record Alaska local time in military designation. Midnight will be recorded as 0000 hours.
- Fishing duration. Record in minutes the time the gear was fishing. Hang up time should be excluded.
- Average bottom depth. Record in fathoms.
- Average speed. Record average speed in .1 knot increments.
- Retained catch. Record number of bushels and estimated round weight of scallops in pounds. If the original estimate is in bushels, determine the conversion factor for bushels to pounds. The observer can help the captain determine the average weight of a bushel of scallops.
- Discarded catch. Record estimated round weight (in pounds) of scallops discarded due to size or shell condition. This column is often neglected by the captain. Observers should insure this column is being completed by the captain.
- ADF&G Statistical Area. Record the six digit statistical area fished. The set position will be considered the area fished. Statistical Area charts can be obtained from ADF&G.

Weekly Summary Form

Observers will record the daily catch of shucked meats from each statistical area fished on the **WEEKLY SUMMARY FORM** (Appendix A.4.). Also recorded are the number of hauls fished, the number of hauls sampled for bycatch, and the number of king, Dungeness, and Tanner crab captured in the bycatch sampled hauls. The daily numbers are completed utilizing the fishing log, observer data forms, and the captain's record of shucked meat weights. **The number of bycatch sampled hauls includes only those hauls sampled for bycatch, (specifically prohibited species bycatch) not those sampled for haul (species) composition.** The top portion of the form details daily numbers by statistical area and the bottom section is the weekly total of those numbers for each stat area fished. The opilio column in both the top and bottom

sections is used to record opilio in the Bering Sea Management Area and Dungeness in all other Management Areas.

Haul Composition Form

The **HAUL COMPOSITION FORM** (Appendix A.5.), is used to record the catch composition by weight in the scallop dredge, including scallops, other commercial and non-commercial species, and debris. Unless otherwise directed at the time of briefing, the observer will sample one haul per day for catch composition. Only one dredge per haul will be sampled to determine catch composition. All sampled hauls must be selected randomly with the decision to sample a haul made prior to seeing it's contents. **CRAB AND HALIBUT FROM HAUL COMPOSITION SAMPLING ARE NOT ENTERED ON THE CRAB SIZE AND INJURY FORM, THE HALIBUT LENGTH AND CONDITION FORM, OR THE BYCATCH AND SCALLOP DISCARD FORM.**

Before the dredges come aboard, the observer should decide whether the port or starboard dredge will be sampled. Small quantities of each species are weighed entirely, large amounts are sampled to estimate weight. When the dredges have been emptied, sort the sample by species. Some species groups for example, all the sea stars, may be recorded together if positive species identification is not possible, or if time is short. Weigh small quantities of species separately and record to the nearest whole pound in column 7 "weight in sampled dredge."

To estimate the total weight of scallops in the haul, first weigh three baskets of scallops (retained by the crew) and calculate the average weight. Record this number in column 6 "average basket weight". Multiply column 6 by the total number of baskets retained by the crew. Add to this figure, the weight of all discard scallops, and record the total (to the nearest whole pound) in column 7. The blank space to the right of column 7 should be used as a workspace for completing calculations.

If the haul contains a large volume of a single species (other than scallops) you may estimate the total weight of the species by calculating the average weight of a basket of the species (record in column 6) then multiplying by the estimated number of baskets of the species contained in the catch. Record total weight in column 7. The weight of large wood chunks or rocks that are too large to weigh directly may be estimated. Record weights in column 7.

Halibut weights are derived from the conversion table (Appendix A.6.). Enter the halibut lengths in the halibut worksheet space, convert lengths to weights on the worksheet and enter the sum of all halibut weights in column 7. **Measuring halibut and quickly returning them to the sea should be one of the first tasks completed in haul composition sampling.**

Use blank rows in the species column for recording additional species not listed on the form. Each species recorded on the form must be associated with a 5 digit code. Look up the five digit species code in the code book developed by the Resource Assessment and Conservation

Engineering (RACE) Division of National Marine Fisheries Service. These code books will be supplied by ADF&G.

Trash caught in the sampled dredge should be sorted by category type and weighed. Enter the total weight in column 7 and the actual number of items in column 8.

Bycatch and Scallop Discard

One dredge from each of six hauls will be sampled daily for prohibited species bycatch and scallop discard data. Observers will count and record the number of each crab species and all halibut encountered as well as discarded scallops on the **BYCATCH AND SCALLOP DISCARD FORM** (Appendix A.7.)

The prohibited species bycatch is sampled and examined in detail following the prescribed protocols outlined in the Crab Size and Injury Form and Halibut Length and Condition Form sections of this manual.

The scallop discard is examined in detail. **AFTER** the crew has removed the retained scallop catch from the contents of the dredge, observers should collect the remaining scallops (discarded scallop catch) from the deck. Discarded scallops should be cleaned of mud, debris, etc. before they are weighed. Select one full basket for subsampling. Do not bias your sample by shape, size, or position of the scallops. Sort scallops from the subsample basket into two other baskets, one for broken or crushed scallops the other for intact scallops. Weigh the basket of **broken/crushed** scallops and count the individuals. Record the weight and count on the **Bycatch and Scallop Discard Form**. Weigh the basket of **intact** scallops and count the individuals. Record the weight and count on the **Bycatch and Scallop Discard Form**. Measure the shell height of 20 scallops from the basket of intact scallops. The 20 scallop sample will be selected by dividing the number of intact scallops by 20 and measuring every n^{th} scallop. For example: 100 intact scallops, divided by 20 equals 5. So every 5th scallop in the sample would be measured. Record the measurements on the **Scallop Size Frequency Form**. Because the scallop size frequency form is also used to record shell heights from the retained scallop catch, observers need to indicate the sample type in the appropriate box at the top of the form. The discarded catch sample type is code 3. Scallop sex and gonad development information is not required from the discarded scallop subsample, therefore the sex and gonad columns should remain blank when using the Scallop Size Frequency form for discarded scallop measurements. Record the weight of the remaining (unsampled) baskets of discarded scallops on the **Bycatch and Scallop Discard Form**.

Crab Size and Injury Form

Crab sampled during bycatch sampling are recorded on the CRAB SIZE AND INJURY FORM (Appendix A.8.). This form is used to detail crab catches observed during bycatch monitoring. Codes are listed on the form for species, sex, shell condition, injuries and mortality.

A carapace length measurement is required for king crab and Korean horsehair crab, and a carapace width measurement for other crabs. Crab measurements, shell-aging, and shell-age characteristic standards are described in the Terms and Definitions section of this report.

The sampling goal is to measure, if available, 20 each of Tanner (genus *Chionoecetes*), king, and Dungeness crab per sampled dredge. If the dredge is judged to contain more than 20 crabs of a single type, Tanner for example, measure and speciate the first 20, then count and speciate the remainder. Observers should collect the first 20 crabs from the discard pile for detailed examination. Alternate the starting position on a daily basis. Take time to sort the bycatch pile carefully, **avoiding size bias** when collecting the first 20 crabs. Be aware, the tendency is to select the larger crabs while overlooking the small ones. Avoid doing this. In a random selection of crabs to be measured each crab should have equal probability of selection. The remaining crab should be counted and speciated only. Be sure to enter the total number of crab captured in the dredge on the **Bycatch and Scallop Discard Form**.

The damage columns are divided into carapace (c'pace), legs, and mortality (mort?) categories. The carapace is coded as old injury, new injury, both old and new injuries, or crushed. Old and new injuries to the legs are recorded in separate columns with the actual number of injuries being entered (maximum of one old and new injury per leg). Old injuries include regenerating legs which are noticeably smaller than expected. The leg category includes the claw appendages. There is a total of 10 appendages each for Tanner (*Chionoecetes* spp) and Dungeness crab, and 8 appendages for king crabs. Moribund crabs which are nearly dead and not likely to survive should be coded as dead.

Halibut Length and Condition

Halibut sampled during bycatch sampling are recorded on the HALIBUT LENGTH AND CONDITION FORM (Appendix A.9).

Halibut are measured to the nearest centimeter (cm) from the tip of the nose to the end of the central rays of the caudal fin (fork length).

Halibut condition codes are listed at the bottom of the form. A single form may be used for more than one haul.

Scallop Size Frequency Form

The **SCALLOP SIZE FREQUENCY FORM (Appendix A.10.)** is used to record two sample types; retained and discarded scallops. A unique code will be recorded on the form to identify each sample type.

Twenty scallops from the **retained catch** in each of the six hauls sampled daily for bycatch and discarded scallops will be measured, sexed, and gonad condition determined, unless otherwise

directed at the time of the observer briefing. Scallops will be randomly selected from the baskets of retained scallops collected by the crew. Do not bias your sample by shape, size, or position of the scallops. Mark the sample type box on the form with a 2, indicating the sample was from the retained catch.

Scallop shell heights are measured to the nearest millimeter, the straight line distance perpendicular from the umbo to the outer shell margin (Appendix A.11.). Do not measure broken or badly chipped shells.

Scallop sex is determined by gonad coloration. Immature scallops have small flattened and transparent gonads. Mature females contain ovaries ranging in color from dull amber to pink to bright orange depending upon the time of year. Males testes range from nearly colorless to flat white depending upon the time of year. Many weathervane scallops are physiologically mature at age three and all are physiologically mature by age four. Spawning occurs primarily during May and June.

Scallop Gonad Characteristics and Developmental Stages

Scallop gonad developmental stages are grouped into three categories; Not Ripe (code 0), Full or Ripe (code 2), and Cannot be Determined (code 3).

The Not Ripe category includes all the following stages:

Immature or Juvenile. The gonad is relatively small in relation to other body parts. It is angular and flattened, transparent and colorless. No reproductive tissue visible to the unaided eye.

Empty or Spawned Out. Gonad reduced in size and collapsed. Contains free fluid throughout, transparent. Loop of alimentary canal clearly visible. Testes nearly colorless, ovaries a dull amber to nearly colorless.

Initial recovery. Gonad increasing in size, contains 1/4 to 1/2 the estimated capacity of sex cells, free fluid exists in portions of the gonad, loop of alimentary canal visible but fading. Portion of testes containing sex cell is cloudy white, otherwise transparent. Ovaries are amber to dull pink or orange.

Filling. Gonad near maximum size, contains 3/4 or more of the estimated capacity of sex cells, free fluid exists only as small canals or at the extreme distal end of the gonad, loop of alimentary canal visible only where it is close to the surface, if at all. Testes a pasty white, ovaries orange to bright orange.

The Ripe category includes the following stage:

Full or Ripe. Gonad is large in relation to other body parts, completely full and rounded. Contains no free fluid. Canals of the arterial and venous system are not readily apparent. Loop of alimentary canal not usually visible, texture granular. Testes a flat white, ovaries bright orange or red.

The ‘cannot be determined’ category: Use this if you cannot determine if the gonad is ripe or not ripe.

Shell Collections

Observers will collect the dorsal (left) valve of every tenth shell examined from the retained scallop samples (those coded as sample type 2 on the **Scallop Size Frequency Form**) as indicated by the shell sampling protocol. Record the haul number and corresponding shell number from the Scallop Size Frequency Form, as well as the statistical area number, ADF&G number, and date on the inside of the shell. The haul number will be indicated by the prefix **H** followed by the number. The shell number will be indicated by the prefix **S** followed by the number.

Shell Sampling Protocol:

	Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Starting Number	3	2	5	8	7	1	6

The shell sampling protocol schedule indicates which shell to start with on any given day. For example, on Sunday the observer will collect shell numbers 3 and 13 (every tenth shell) from each of the six hauls. On Wednesday collect shell numbers 8 and 18.

Scallop Meat Recovery Form

Observers will collect scallop meat (adductor muscle) recovery information twice per day. Choose a haul to sample and randomly select 3 baskets of scallops retained by the crew. Record the individual basket weights, to the nearest quarter pound, on the **SCALLOP MEAT RECOVERY FORM** (Appendix A.12.). Count the number of scallops in each basket, sum the counts, and record the total in the ‘Number of Scallops’ column. Ask a crew member to shuck the meats from the three baskets of shell-stock, into one container. Weigh the single container of meats to the nearest quarter pound, record in the ‘Scallop Meat Basket Weight’ column. Record the date, haul number, and statistical area with each sample. It is important to collect accurate information. If weather and sea conditions result in widely fluctuating scale readings, do not collect meat recovery information. On good weather days, increase your sampling intensity. The sampling goal is 2 samples/day, 14 samples/week.

TERMS AND DEFINITIONS

Crab Measurement

The observer will measure crab following previously developed biological standards. The biological measurement for king crab and Korean horsehair crab is the carapace **LENGTH**. To make the biological measurement, a vernier calipers must be used. The measurement is taken from the posterior margin of the right eye orbit of the carapace to the center of the posterior carapace margin. The length is recorded to the nearest whole millimeter.

The biological measurement for Tanner crab is the carapace **WIDTH**. This width measurement is the greatest straight line distance across the carapace EXCLUDING SPINES, at a right angle to an imaginary line midway between the eyes to the mid-point of the posterior portion of the carapace. This measurement is recorded to the nearest whole millimeter.

The biological measurement for Dungeness crab is the carapace width as measured inside the tenth antero-lateral spine.

Crab Shell-Aging

For each crab sampled during the bycatch monitoring, a shell-age determination must be made. Shell-age is an estimate of elapsed time since the last molt. The observer should keep in mind the subjective nature of this determination. Only by looking at many crab from a similar area can a relatively accurate assessment of shell age be made. The time of year and type of seabed where the crabs reside will cause crabs to “age” at seemingly different rates. It is helpful to examine several areas on the crab, especially the ventral side and dactyls, to determine shell-age. The amount of scratches and the color on the ventral surface of the exoskeleton, combined with spine wear, are clues used to determine shell-age. The more hands-on experience with the aging techniques, the more confident and accurate each observer will become.

Shell-age Characteristics

Red and blue king crab as well as Tanner crab (*C. bairdi* and *C. opilio*) are shell-aged by examining the color and amount of scratches on the ventral surfaces, in combination with the presence of epifauna on the carapace.

Soft shell crabs of all species are crabs that have recently molted. They are very pliable, and the legs will not support the weight of the body without bending. The exoskeleton is like skin. The soft shell phase is short, typically less than 2 weeks, because the exoskeleton hardens quickly. This classification should not be confused with crabs several months after a molt that exhibit hardened exoskeletons but which can be compressed due to the lack of meat within the shell.

New shell king crab exhibit white ventral surfaces with relatively few scratches or abrasions. Shells are normally 2 weeks to 12 months old. **Old shell king crab** have a yellowish ventral surface with a number of dark stained scratches. The shells are typically 13 to 24 months old. **Very old king crab** have a yellowish ventral surface, darkened by several years of accumulated scratches and abrasions. Scratches are also present on the carapace. Carapace spines and dactyl ends are worn. Epifauna is often apparent. Shells are more than 24 months old.

New shell Tanner crab exhibit a pinkish colored ventral surface with limited scratches. The carapace is pink to brownish-red with sharp spines. Shells are normally 3 weeks to 12 months old. **Old shell Tanner crab** exhibit a ventral surface with numerous scratches and abrasions. The exoskeleton is brown with worn spines. Epifauna may be present. Shells are 13 to 24 months old. **Very old shell Tanner crab** typically have numerous scratches and abrasions on the ventral surface. The exoskeleton is dark brown to blackish with very worn spines. Epifauna is almost always present. Shells are more than 24 months old.

Random Sample

In a random sample, animals are selected in such a way that each animal or combination of animals has an equal probability of selection. A random sample must be unbiased. Do not bias the sample by size, shape, or position of the animal

Tagged Animals

If a tagged animal is encountered while sampling, or if a crew member brings the observer a tagged animal; record the tag number and color, and any other information recorded on the tag. Also record the date, location (longitude and latitude), size, species, depth, and method of capture. Fish length, or the biological measurement and shell age of crab, should also be recorded if tagged animals are encountered. **Tagged species should be returned to the sea, unharmed, with the tag attached, as soon as possible.**

Scallop Species

There are two types of scallops that are commercially fished in Alaskan waters. The weathervane scallop, *Patinopecten caurinus*, is the primary scallop species harvested, accounting for over 99 percent of the commercial catch. This is a large scallop reaching a shell height of 12 inches. In Alaska it's range is from Dixon Entrance in southeast Alaska to the Bering Sea in western Alaska. Pink scallops, *Chlamys* sp., are the other scallop harvested in Alaska. These are small scallops growing to four inches in shell height. Pink scallops are found throughout Alaska from Dixon Entrance to the Bering Sea and Arctic Ocean. They have only been fished on an experimental basis. Appendix A.13. lists distinguishing characteristics for both weathervane scallops and *Chlamys* sp. scallops.

King Crab Species

The three commonly harvested species of king crab in Alaska are:

Paralithodes camtschatica (red king crab): This is the king crab species most likely encountered with the scallop dredge throughout the state. Abundance is centered in Bristol Bay.

Paralithodes platypus (blue king crab): Highest abundance around the Pribilof and St. Matthew Islands.

Lithodes aequispina (brown or golden king crab): Greatest concentrations are along the Aleutian Islands. Generally found in areas too deep and rocky for scallop dredging.

Tanner Crab Species

There are two commonly harvested species of Tanner crab in Alaska. Both are of the genus *Chionoecetes*. *Chionoecetes bairdi* is found in the Gulf of Alaska and Bering Sea, while *C. opilio* is found primarily in the Bering Sea. There is also a hybrid of these two species which can display a wide range of mixed characteristics. Distinguishing characteristics are shown in Appendix A.14..

APPENDIX

AREA: Kodiak
 VESSEL: Fairweather
 OBSERVER: Joe Skokum

SCALLOP OBSERVER RADIO REPORT FORM

	MONDAY	TUESDAY	MON/TUES TOTALS	WEDNESDAY	THURSDAY	WED/THURS TOTALS	FRIDAY	SATURDAY	SUNDAY	FRI/SAT/SUN TOTALS	WEEKLY TOTAL
DATE	7-4	7-5		7-6	7-7		7-8	7-9	7-10		
ITEM 1. Stat-Area	actual 515700		515700	515700	515700	515700		515700		515700	515700
code			NN			NL	NO		NO	NN	
ITEM 2. Total number of hauls.	actual 19		19	22	5	27	Fishing in	12	Fishing in	12	58
code		NO Fishing	RE			CJ			in	WC	
ITEM 3. Number of bycatch sampled hauls.	actual 3		3	6	1	7	STAT. AREA	3	STAT. AREA	3	13
code			K			Q			AREA	K	
ITEM 4. Number of king crab in bycatch sampled hauls.	actual 0		0	1	0	1	515700	0	515700	0	1
code			S			R				Y	
ITEM 5. Sampling Condition	actual No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem
code			VR			MD				GN	
ITEM 6. Number of C. bairdi Tanner in bycatch smp'l'd hauls.	actual 9		9	28	2	30		20		20	59
code			E			KS				BY	
ITEM 7. Number of C. opilio or Dungeness in bycatch smp'l'd hauls.	actual 0		0	0	0	0		0		0	0
code			S			F				S	
ITEM 8. Pounds of scallop meats retained.	actual 660		660	2190	300	2490		750		750	3900
code			TTY			BAES				JGY	
ITEM 9.	actual										
code											

This is an example of a tri-weekly reporting schedule. If the reporting schedule were weekly than the weekly total column would be coded.

(EXAMPLE ONLY)

ITEM 1:STAT-AREA CODES	MEANING
Y, K	0
F, A	1
L, N	2
R, T	3
C, V	4
X, D	5
Z, W	6
Q, U	7
M, E	8
H, O	9

ITEMS 2,3,4,6,7,8.	
CODES	MEANING
Y, S	0
F, V	00
L, D	000
R, W	1
C, B	2
X, K	3
P, A	4
G, N	5
Z, T	6
Q, J	7
M, U	8
H, E	9
I, O	BLANK

SAMPLING CONDITION CODES (Item #5)	
CODES	MEANING
VR	NO PROBLEM
XO	NO PROBLEM
WB	NO PROBLEM
MD	NO PROBLEM
GN	NO PROBLEM
AF	NO PROBLEM
QP	POTENTIAL
DL	POTENTIAL
RM	HARRASSMENT, UNABLE TO GET WORK DONE
FY	HARRASSMENT, UNABLE TO GET WORK DONE
NC	HARRASSMENT, BUT ABLE TO GET WORK DONE
EX	HARRASSMENT, BUT ABLE TO GET WORK DONE
YS	SOS
PH	SICK
UU	SICK, UNABLE TO PERFORM WORK
SZ	CRAB DISCRADED BY CREW PRIOR TO ME GETTING SAMPLES
CG	CRAB DISCARDED BY CREW PRIOR TO ME GETTING SAMPLES
OE	SKIPPER AWARE OF HIGH BYCATCH, BUT DOESN'T CARE
I W	SPARE
J Q	SPARE

Appendix A.3. Fishing Log for Alaska Scallops.

ALASKA DEPARTMENT OF FISH AND GAME
FISHING LOG FOR ALASKA SCALLOPS

Trip number	ADF&G #	Year	Fishery Code
4	9961596	1996	K1519B

Captain's name Jim Cook
 Observer name Joe Skookum
 Vessel Name Fairweather

Haul sampled	Total dredge width	Gear performance	Date		Haul No.	Set position		Fishing time in ALT		Fishing duration (minutes)	Average bottom depth (fms)	Average Speed in Knots	CATCH		Discarded catch: round weight in pounds	ADF&G statistical area					
			Mon.	Day		Latitude (N)	Longitude (W)	Dredge on bottom	Dredge off bottom				Bushels	Round weight (pounds)							
2	3	0	7	3	13	570794	152-18-80	0330	0415	45	42	5.0	15	750	200	5	2	5	7	0	2
2	3	0	7	3	14	571025	152-25-65	0430	0530	60	44	5.0	7	350	0	5	2	5	7	0	2
2	3	0	7	3	15	571090	152-2270	0545	0635	50	43	5.0	8	400	0	5	2	5	7	0	2
2	3	0	7	3	16	573368	151-52-65	0650	0740	50	71	4.5	40	2000	0	5	1	5	7	3	0
2	3	0	7	3	17	573128	151-45-88	0755	0845	50	67	4.5	0	0	0	5	1	5	7	3	0
1	3	0	7	3	18	573118	151-46-39	0900	0950	50	65	4.7	15	750	35	5	1	5	7	3	0
1	3	0	7	3	19	573640	151-46-52	1000	1110	70	64	4.8	4	200	30	5	1	5	7	3	0
1	3	0	7	3	20	573574	151-45-10	1120	1220	60	64	4.8	10	500	150	5	1	5	7	3	0
1	3	0	7	3	21	573620	151-45-60	1240	1340	60	65	4.8	13	650	100	5	1	5	7	3	0
1	3	0	7	3	22	573592	151-44-30	1440	1535	55	66	4.8	23	1150	0	5	1	5	7	3	0
2	3	0	7	3	23	573355	151-36-76	1550	1640	50	68	4.8	20	1000	120	5	1	5	7	3	0
2	3	0	7	3	24	573355	151-39-37	1650	1740	50	70	4.8	21	1050	0	5	1	5	7	3	0
2	3	0	7	3	25	573325	151-37-69	1800	1855	55	68	5.0	30	1500	0	5	1	5	7	3	0
2	3	0	7	3	26	573335	151-36-93	1910	2005	55	65	5.0	18	900	80	5	1	5	7	3	0
2	3	0	7	3	27	573589	151-32-99	2020	2115	55	62	5.0	23	1150	0	5	1	5	7	3	0
1	3	0	7	3	28	573673	151-38-68	2135	2230	55	67	5.0	30	1500	0	5	1	5	7	3	0
2	3	0	7	3	29	573689	151-46-89	2250	2345	55	51	4.8	20	1000	0	5	1	5	7	3	0
2	3	0	7	4	30	573408	151-48-70	0000	0055	55	51	4.8	15	750	100	5	1	5	7	3	0
2	3	0	7	4	31	573259	151-48-70	0115	0210	55	54	4.8	32	1600	200	5	1	5	7	3	0
2	3	0	7	4	32	573085	151-46-48	0230	0320	50	56	4.8	0	0	0	5	1	5	7	3	0
2	3	0	7	4	33	572902	151-36-03	0340	0435	55	58	4.8	7	350	50	5	1	5	7	0	0
2	1	5	7	4	34	572900	151-28-56	0455	0545	50	52	5.0	20	1000	250	5	1	5	7	0	0
2	3	0	7	4	35	572879	151-23-13	0600	0650	50	49	5.0	31	1550	0	5	1	5	7	0	0
2	3	0	7	4	36	572880	151-23-50	0710	0800	50	49	5.0	28	1400	0	5	1	5	7	0	0
1	3	0	7	4	37	572902	151-22-71	0815	0905	50	47	5.0	25	1250	400	5	1	5	7	0	0

Haul sampled

1- yes

2- no

gear performance

1-satisfactory (both dredges)

2-unsatisfactory (both dredges)

3-partially satisfactory (one dredge satisfactory and one dredge unsatisfactory)

ALASKA DEPARTMENT OF FISH AND GAME
WEEKLY SUMMARY: SCALLOP CATCHER PROCESSOR

Beginning Monday July 4 through Sunday July 10

Observer Joe Skookum
 Vessel Fairweather

Trip Number	ADF&G #	Fishery Code
499615	K598	

Date fished		Statistical Area	Pounds of meat	Number of hauls	# bycatch smpr'd hauls ^a	# king crab in bycatch smpr'd haul	# bairdi Tanner crab in bycatch sampled hauls	# opilio Tanner ^b in bycatch smpr'd hauls
mon.	day							
7	4	515730	510	3	3		10	
7	4	515700	660	9	3		9	
7	5	No Fishing						
7	6	515700	2190	2	6	1	28	
7	7	515730	1440	1	5		30	
7	7	515700	300	5	1		2	
7	8	515730	1380	2	3		20	
7	9	515700	250	1	2		20	
7	9	515730	300	1	3		17	

WEEKLY TRIP SUMMARY

Statistical Area	Pounds of shucked meat	Number of hauls	# bycatch sample hauls	# of king crab	# of bairdi Tanner crab	# of opilio Tanner crab	Estimated # of king crab ^c	Estimated # of bairdi Tanner crab ^d	Estimated # of opilio Tanner ^e
515700	3900	58	13	1	59		9	526	
515730	3630	53	17	0	77		0	480	
TOTALS	7530	111	30	1	136		9	1006	

^a Number of bycatch sampled hauls means: number of hauls examined for crab and halibut incidence.

^b Record opilio in the Bering Sea Management Area, Dungeness in all other Management Areas.

^c Estimated number of king crab = (ave. number per sampled dredge x 2) x number of hauls. (C/B x 2) x A

^d Estimated number of bairdi Tanner crab = (ave. number per sampled dredge x 2) x number of hauls. (D/B x 2) x A

^e Estimated number of opilio Tanner crab = (ave. number per sampled dredge X 2) x number of hauls. (E/B x 2) x A

Appendix A.6. Halibut Length-To-Weight Conversion Table.

HALIBUT LENGTH-TO-WEIGHT CONVERSION TABLE

Length/Weight (cm) (lbs)		Length/Weight (cm) (lbs)		Length/Weight (cm) (lbs)		Length/Weight (cm) (lbs)	
21	0.2	69	8.4	117	46.3	165	140.8
22	0.2	70	8.8	118	47.5	166	143.6
23	0.2	71	9.2	119	48.8	167	146.4
24	0.3	72	9.6	120	50.3	168	149.2
25	0.3	73	10.0	121	51.6	169	152.2
26	0.4	74	10.5	122	52.9	170	155.1
27	0.4	75	10.9	123	54.5	171	158.1
28	0.5	76	11.4	124	55.8	172	161.1
29	0.5	77	11.9	125	57.3	173	164.1
30	0.6	78	12.4	126	58.8	174	167.3
31	0.6	79	13.0	127	60.3	175	170.4
32	0.7	80	13.5	128	61.8	176	173.6
33	0.8	81	14.0	129	63.9	177	176.8
34	0.8	82	14.6	130	65.2	178	180.0
35	0.9	83	15.2	131	66.7	179	183.3
36	1.0	84	15.8	132	68.3	180	186.7
37	1.1	85	16.4	133	70.6	181	190.1
38	1.2	86	17.1	134	71.8	182	193.5
39	1.3	87	17.7	135	73.5	183	196.9
40	1.4	88	18.4	136	75.3	184	200.4
41	1.6	89	19.1	137	77.1	185	204.0
42	1.7	90	19.8	138	78.9	186	207.6
43	1.8	91	20.5	139	80.9	187	211.2
44	1.9	92	21.2	140	82.8	188	214.9
45	2.1	93	22.0	141	84.0	189	218.0
46	2.2	94	22.7	142	86.7	190	222.4
47	2.4	95	23.5	143	88.7	191	226.2
48	2.6	96	24.4	144	90.6	192	230.1
49	2.8	97	25.2	145	92.0	193	234.0
50	2.9	98	26.0	146	94.7	194	237.9
51	3.1	99	26.9	147	96.9	195	241.9
52	3.3	100	27.8	148	99.0	196	246.0
53	3.6	101	28.7	149	101.2	197	250.1
54	3.8	102	29.6	150	103.4	198	255.2
55	4.0	103	30.6	151	105.7	199	258.4
56	4.2	104	31.6	152	107.8	200	262.6
57	4.5	105	32.6	153	110.3	201	266.9
58	4.8	106	33.6	154	112.6	202	271.2
59	5.0	107	34.7	155	115.0	203	275.6
60	5.3	108	35.7	156	117.4	204	280.0
61	5.6	109	36.8	157	119.9	205	284.5
62	5.9	110	37.9	158	122.4	206	289.0
63	6.2	111	39.0	159	124.9	207	293.6
64	6.5	112	40.2	160	127.5	208	298.2
65	6.9	113	41.4	161	130.0	209	302.9
66	7.2	114	42.6	162	132.7		
67	7.6	115	43.8	163	135.4		
68	8.0	116	45.0	164	138.1		

ALASKA DEPARTMENT OF FISH AND GAME
CRAB SIZE AND INJURY FORMPage 1 of 1Observer Joe Skookum
Vessel Fairweather
Date 7-3-98Trip # | ADF&G # | Fish. Code | Haul #
| 499615 | KJ98 | 119

1	Spp. Code	size (mm)	Sex	Shell Cond	injury check	Damage		
						carapace	legs & claw	mort?
					?	old	new	
1	6	35	1	1	1		3	2
2	6	37	1	0	1		4	2
3	6	39	1	1	1		2	3
4	6	48	1	1	1		1	2
5	6	103	1	1	1	2		2
6	6	37	1	1	1		7	1
7	6	157	1	1	1		1	2
8	6	160	1	2	1		2	2
9	6	32	2	0	1		2	2
10	6	33	2	1	1			2
11	6	18	2	1	1	2		2
12	6	25	2	1	1			2
13	6	35	2	1	1		8	1
14	6	101	2	3	1		2	2
15	6	100	2	3	1		1	2
16	6	98	2	1	1		1	2
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

36	Spp. Code	size (mm)	Sex	Shell Cond.	injury check	Damage		
						carapace	legs & claw	mort?
					?	old	new	
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
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68								
69								
70								

Species Codes1=Brown King Crab
2=Red King Crab
3=Blue King Crab
5=Hair Crab
6=C. Bairdi
7=C. opilio
8=Tanner hybrid
9=Dungeness crab**Sex**1-male
2-female**Shell Condition**0-Soft
1-New
2-Old
3-Very Old**Injury Check**1=yes
2=no**Damage (leave blank if no injury)****CARAPACE**1-Old injury
2-New injury
3-Old and new injuries
4-Crushed

LEGS: enter actual number of old & new injuries to legs & claws.

Mortality1-Dead or moribund
2-alive

Note: 1. Measure the length of king crab and Korean horsehair crab, the width of other crab species.

2. Add the number of crab measured to any crab counted and not measured and record on bycatch form.

ALASKA DEPARTMENT OF FISH AND GAME
SCALLOP SIZE FREQUENCY FORM

Page 1 of 1

Observer Joe Skookum
Vessel Fairweather
Date 7-3-98

Trip #	ADF&G #	Fish Code	Haul #
499615	KS98		17

Sample type 2

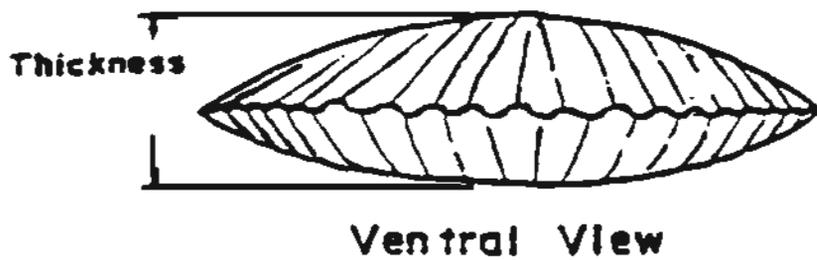
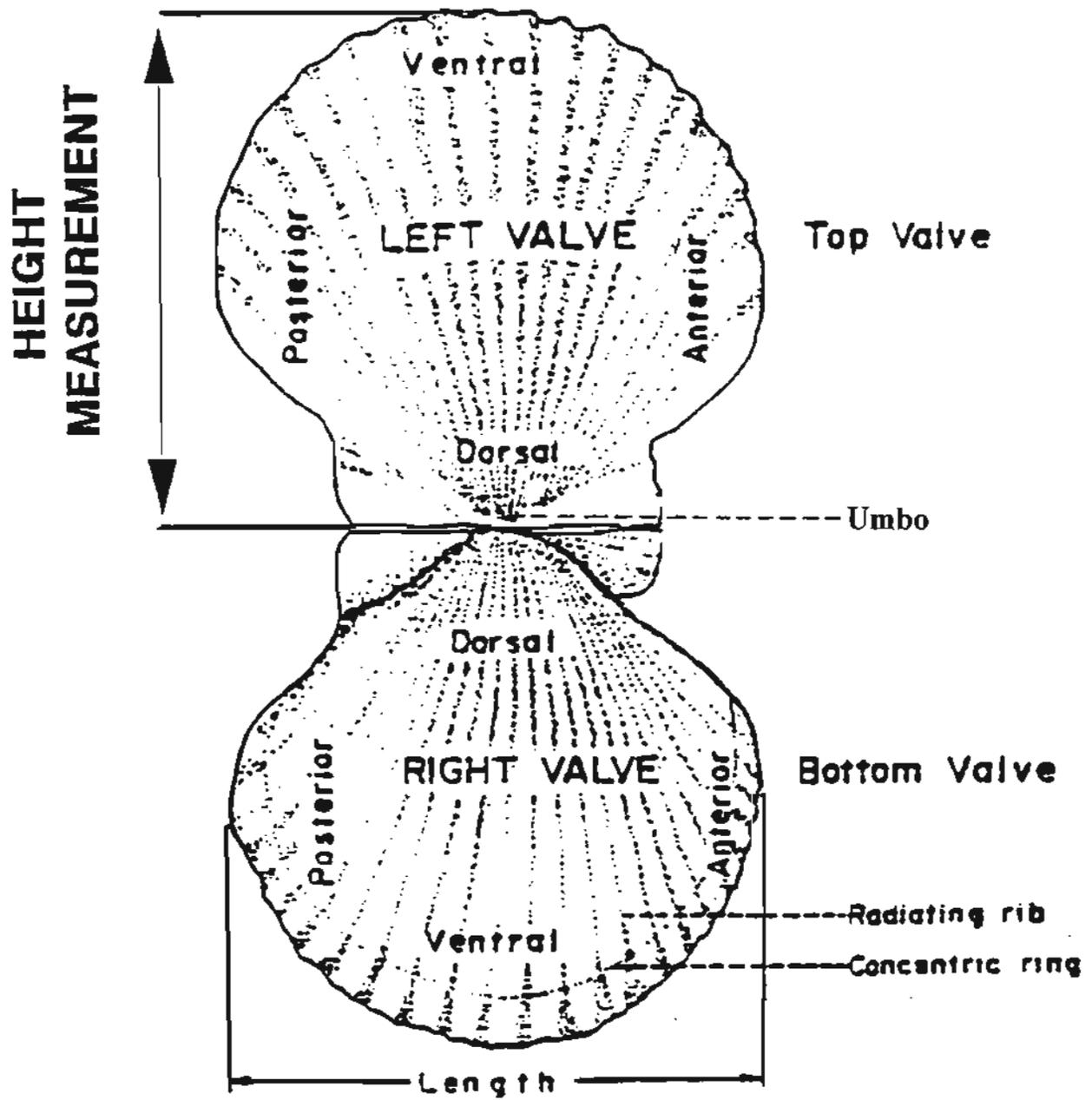
	Shell height (mm)			Sex	Gonad Develop	Comments
1	1	0	4	1	2	
2	1	0	6	1	2	
3	1	3	5	1	2	
4	1	0	5	2	2	
5	1	1	7	1	2	
6	1	0	4	2	0	
7	1	2	8	2	2	
8	1	2	9	2	2	
9	1	2	1	2	2	
10	1	2	8	1	2	
11	1	1	7	2	2	
12	1	0	8	1	2	
13	1	0	6	1	2	
14	1	1	6	1	2	
15		9	4	2	0	
16	1	0	1	2	0	
17	1	3	0	1	2	
18	1	2	0	2	2	
19	1	5	7	1	2	
20	1	1	0	1	2	
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						

Sex
1-Male
2-Female
3-can not be determined

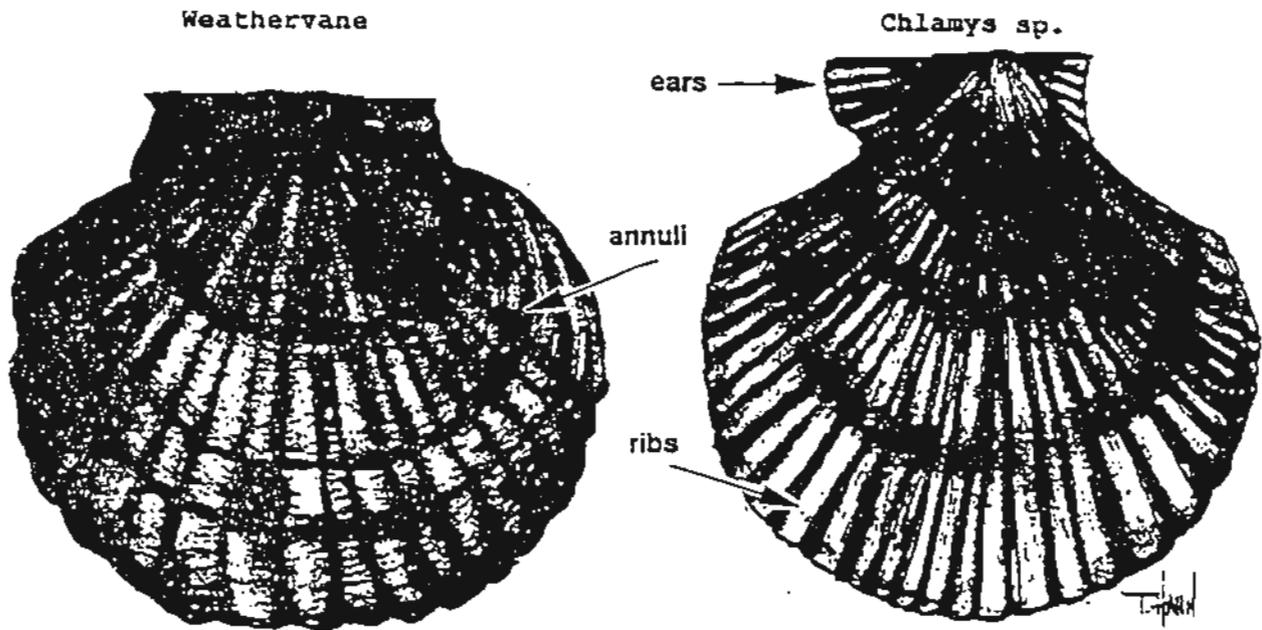
Gonad Development
0-Not Ripe
2-Full or ripe
3-Cannot be Determined

Sample type
1-Unsorted catch
2-Retained catch
3-Discarded catch

Appendix A.11. Scallop Shell Height Measurements.



Appendix A.13. Characteristics of Alaskan Scallops.



Weathervane Scallops:

A large scallop with prominent, heavy, widely spaced, smooth ribs. The valves are wider than long and slightly convex. The left valve is typically dark brown in color with barnacles and other marine flora and fauna attached to it. The right valve is light brown to golden yellow in color. The anterior and posterior ears are nearly equal. Shell height to 12 inches.

Chlamys sp. Scallops:

Small scallops with valves that are longer than wide and strongly convex. The ribs are narrow and prominent. May have prominent spines depending upon the species. Color ranges from pink to golden brown to white. Frequently they are covered with scallop sponge and/or other marine organisms. The anterior ears are longer than the posterior ears.

Appendix A.14. Characteristics of *C. bairdi* and *C. opilio*.

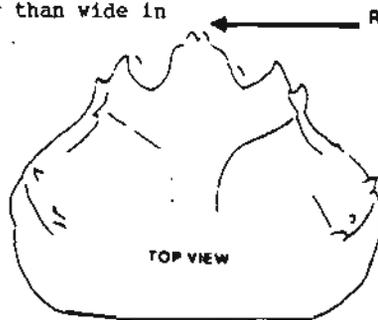
TANNER CRAB IDENTIFICATION GUIDE

bairdi

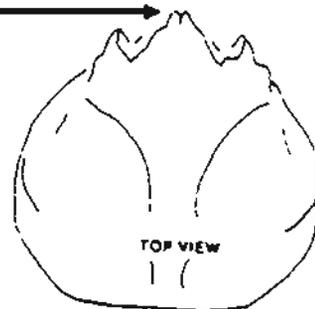
opilio

NOTE: Small *C. bairdi*
(generally less than 70mm)
are longer than wide in
shape.

CARAPACE SHAPE



Wider than long. w/l ratio 1.27
(Mature Crab Ratio)

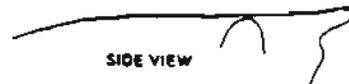


Slightly rounder w/l ratio 1.05 to 1.20
(Mature Crab Ratio)

ROSTRUM SHAPE



SIDE VIEW



SIDE VIEW



TOP VIEW



TOP VIEW

MOUTH AREA (EPISTOME) SHAPE



EYE COLOR

Red

Green

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