

# WEATHERVANE SCALLOP OBSERVER MANUAL



Regional Information Report No. 4K01-36

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

May 2001

Gordon Gruse

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By

Jeffrey P. Barnhart

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## **AUTHOR**

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## **ABSTRACT**

The weathervane scallop observer manual describes onboard-observer duties and sampling methodology for observers participating in the Alaska Department of Fish and Game (ADF&G) Scallop Observer Program. This manual also serves as a reference guide containing information about observer qualifications, training, and certification, as well as the responsibilities and requirements of independent contracting agents, vessel operators and owners, and ADF&G.

## ***PART I***

### **INTRODUCTION**

The commissioner of Fish and Game, under provision 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 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.

This manual, along with the scallop observer classroom training and a pretrip briefing, should adequately prepare onboard observers to carry out their 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**

Laws governing the Onboard Observer Program are found in the 2000-2002 ADF&G Commercial Shellfish Fishing Regulations booklet (ADF&G. 2000. Commercial fishing regulations, 2000-2002. Alaska Department of Fish and Game, Commercial Fisheries Division, Juneau.): 5 AAC 39.141, Onboard Observer Program; 39.142, Conflict of Interest Standards For Onboard Observers and Independent Contracting Agents; 39.143, Onboard Observer Certification and Decertification; 39.144, Onboard Observer Independent Contracting Agent Certification and Decertification; 39.146, Onboard Observer Briefing and Debriefing; 39.645, Shellfish Onboard Observer Program; and 39.646, Shellfish Onboard Observer Trainee Program Qualifications and Requirements. The Commercial Shellfish Fishing Regulations booklet is intended as an informational guide only. Regulations should be referenced in their entirety. Refer to the official codes to be certain of the current laws. All data collected are considered confidential under state statute (AS 16.05.815).

Board of Fisheries findings and regulations in 5 AAC 39.141 (a)-(g) relevant to the scallop observer program are as follows:

- (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.

(d) 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.

## **PROGRAM RESPONSIBILITIES**

### ***Vessel Owners and Operators***

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

(1) contract and pay for observers through an independent contracting agent, unless the onboard observer is provided by the department;

(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) when carrying an observer trainee and within sufficient time to allow for debriefing before expiration of the trainee permit, ensure that the trainee is returned to the port where the department office responsible for management of the fishery the observer's assigned vessel participated in;

(4) provide adequate food and accommodations for the observer that are equal to those provided for the vessel's crew;

(5) provide to the observer daily catch information, including the areas 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, opportunity, and sufficient time to allow the observer to adequately sample catch as specified by the department;

(7) ensure that the transfer of an observer between vessels is conducted in a timely manner, under safe conditions, and with agreement of the observer involved;

(8) assure observer access to SSB radio, fax, telex, or telephone so that catch reports from observers are received at the area management office as specified by the department;

(9) notify the observer before scallops are brought on board to allow sampling unless the observer specifically requests not to be notified; and

(10) provide proof of compliance with U.S. Coast Guard vessel safety requirements.

### ***Contractors***

Responsibilities of the independent contracting agent are described in 5 AAC 39.645 (j):

(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 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.

### *Alaska Department of Fish and Game*

Responsibilities of the Alaska Department of Fish and Game include the following:

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 tests;
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 rules;

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 including those based on contractor supplied transcripts and resumes for compliance with observer program standards; and
18. approve an observer training course.

### **CONFLICT OF INTEREST STANDARDS FOR CONTRACTORS**

Pursuant to 5 AAC 39.142 (b) duties and restrictions relative to conflict of interest standards for an independent contracting agent who provides onboard observers are as follows:

- (1) May not be an individual, partnership, or corporation with a personal or direct financial interest in the proceeds of any vessel licensed to process or harvest in the affected fishery other than the provision of observers;
- (2) Shall assign observers to vessels without regard to requests from vessel owners or operators for a specific individual;
- (3) Repealed 12/26/97;
- (4) 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;
- (5) May not hire an onboard observer on a commission basis;
- (6) 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;

(7) 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.

Relative to the conflict of interest standards "financial interests" and "personal interests" are defined in 5 AAC 39.142 (c):

(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.

#### **CONFLICT OF INTEREST STANDARDS FOR ONBOARD OBSERVERS**

Pursuant to 5 AAC 39.142 (a) a department approved fisheries onboard observer

- (1) must be employed by
  - (A) an independent contracting agent who has been certified by the department; or
  - (B) the department;
- (2) may not have a financial interest in the observed fishery;
- (3) may not have a personal interest 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;
- (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 for a period of seven years preceding application to the onboard observer 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 on board 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.

"Financial interest" and "personal interest" are defined in 5 AAC 39.142 (c) as noted under the heading "Conflict Of Interest Standards For Contractors".

## **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 as described in 5 AAC 39.646:

- (1) a bachelor degree in the sciences of biology, any branch of biology, or limnology; or
- (2) a valid National Marine Fisheries Service observer certification; or
- (3) other fisheries related education or work experience approved by the department.

### ***Trainee Permit***

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. Included in those regulations an onboard scallop observer trainee must

- (1) have the ability to use a radio for communications; and
- (2) be physically able to carry out the duties of an observer and not be incapacitated by chronic or debilitating seasickness.

Under 5 AAC 39.143 (c), a scallop trainee permit expires if 36 days pass between trainee briefing and debriefing for an observer trip or, if after 180 days from the time a trainee permit was issued, the observer fails to gain full observer certification.

### ***Full Certification***

As described in 5 AAC 39.143 (f) the department shall certify as a scallop onboard observer a trainee who

- (1) has a valid ... scallop observer trainee permit;
- (2) has satisfactorily completed all observer trainee trip assigned tasks specified in writing by the department;
- (3) has not engaged in behavior described in 5 AAC 39.143 (j);
- (4) has completed the number of observer trips that the department, in its discretion, determines from debriefing the trainee are necessary to prepare the trainee to perform as a ... scallop onboard observer; and
- (5) is not the subject of revocation proceedings under[ 5 AAC 39.143].

### ***Observer Decertification***

ADF&G reserves the right of decertification, with grounds for decertification outlined in 5 AAC 39.143 (j):

- (1) Significant or consistent failure to satisfactorily 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) repealed;

- (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 demoted to trainee status are detailed in 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*

A fully certified observer's certification expires when that observer fails to participate as an onboard observer for a period of 12 continuous months. Recertification is provided for under 5 AAC 39.143 (e) and (i). Recertification requires an observer candidate to complete retraining and reorientation specified by the department and repass, with a score of at least 90 percent, an exam administered by the department. Candidates who successfully complete observer training, reorientation, and testing achieve trainee status. To become recertified a trainee must meet the criteria set forth in 5 AAC 39.143 (f).

### *Briefing*

Briefing requirements are described in 5 AAC 39.146. 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.

The observer MUST bring all required sampling equipment, as listed in the section of this manual entitled "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 observer manual readily available when contacting ADF&G as questions will likely be answered by referring to the manual.

### ***Debriefing***

Debriefing requirements are described in 5 AAC 39.146. All scallop observers must be debriefed immediately after completion of the assigned trip.

Observers must give ADF&G area staff immediate notice of their departure from the assigned vessel. After departure observers shall return directly to the ADF&G office at which the 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, unless the department authorizes a different location. Contractors shall schedule briefings and debriefings with the department as least 48 hours in advance.

Observers must attend a 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 their completed paperwork and shell collections, answer questions that 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 data are to be **INDEPENDENT** of catch data reported on the fish ticket. Observers should not discuss any aspect of fishing activity on their assigned vessel including catch or fishing location information, with contracting agents, other observers, or industry representatives. All observer-collected data will be turned in to ADF&G only. No copies will 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, and halibut length and condition. ALL OTHER OBSERVER COLLECTED DATA INCLUDING THE OBSERVER'S LOGBOOK, WEEKLY TRIP SUMMARIES, AND RADIO REPORTS ARE CONFIDENTIAL. Vessel operators may submit a written request to ADF&G requesting photocopies or electronic copies of their personal fishing records, including non-confidential observer collected data.

### ***Living and Working at Sea***

Once the observer has successfully completed the initial briefing requirements with ADF&G, they 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.

1. If a conflict or problem (with the crew, equipment, etc.) occurs that affects an observer's ability to sample as directed by ADF&G, the situation should be reported to a vessel operator immediately. If the vessel operator is unable or unwilling to correct the problem the observer should notify ADF&G immediately.
2. Do not interpret the regulations. Regulation interpretation will be done by ADF&G staff or the Alaska Department of Public Safety, Division of Fish and Wildlife Protection (F&WP).
3. Observer sampling activities should be as unobtrusive to vessel fishing and processing operations as possible (5 AAC 39.141 (c)). 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 their 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. Observers should remember their actions reflect on ADF&G, their contractor, other observers, and the entire observer program. Avoid becoming involved in boat politics. Observers should follow vessel rules and be sensitive to restrictions such as wearing rain gear or rubber boots in the living or eating areas. Observers should feel free to ask the vessel master or crew any questions about boat policies.

### *Observer Duties*

The observer's duty is to observe both fishing and processing operations and collect data as directed by ADF&G. **Observers are not enforcement agents and have no enforcement authority.** However, observers are expected to document all violations. The Alaska Department of Public Safety, Division of F&WP will take appropriate enforcement action on information provided by the observer. Observers may be required to testify in court or submit written statements as necessary for prosecution.

As described in 5 AAC 39.141 (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..."

### *Observer Sampling Duties*

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

Sampling duties of onboard scallop fishery observers may include the following:

1. obtaining representative samples of height, weight, and sex frequencies from the retained and /or discarded scallop catch;
2. recording daily catch rates of the catcher vessel, including number of scallops retained and hauls made;
3. collecting representative live weights of scallops, crab, or other species;
4. recording bycatch numbers, size, sex, and condition for all species of crabs and fish as directed by ADF&G;
5. documenting handling procedures, time on deck, and retention of prohibited species;
6. retaining biological samples and enforcement evidence;
7. carrying out additional duties as directed by ADF&G; and
8. reporting vessel and sampling activity to ADF&G via SSB radio or mobile satellite communications or other methods as directed by ADF&G staff.

Additionally, during fishing operations, compliance with all regulations including closed water areas should be observed. Instances where possible violations are observed should be documented.

### ***OBSERVER SAMPLING GEAR AND EQUIPMENT***

#### ***Provided By Contractor***

The following items will be provided to the observer by the 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 eight (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 two (2) #2 red pencils with erasers;
16. locking briefcase large enough to contain sampling equipment, all data forms, and ADF&G issued materials;
17. fish/invertebrate identification book approved by the ADF&G statewide scallop observer program coordinator;
18. black indelible marking pens;
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); and
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***

The vessel must provide the observer with a minimum of six (6) plastic bushel sized baskets. The baskets must be available to the observer at all times for sampling activities. Baskets must be onboard the vessel prior to departing port.

***Provided By ADF&G***

ADF&G will provide the observer with the following:

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; and
10. other materials and supplies as required.

## PERSONAL GEAR

### *Provided By Contractor, Observer, or Vessel*

The following are necessary items that may be provided by the contractor, observer, or vessel:

1. survival suit;
2. personal flotation device (PFD) which could include a floatation coat, vest, or coveralls; PFD's should be worn by the observer at all times while working on deck;
3. rain gear;
4. waterproof deck boots;
5. rubber gloves, two (2) pair minimum; and
6. hard hat (to be worn at all times by the observer while working on deck).

### *Provided by Observer*

The observer is responsible for providing the following:

1. personal clothing, adequate for anticipated length of time at sea and season of the year; and
2. personal articles (e.g. towels, medications, and toothpaste).

## PART II

### GENERAL FORM INSTRUCTIONS

All data forms completed by observers are processed and entered by department staff. It is not possible to change the computer format to accommodate an observer's creative method of data collection or recording. Therefore, all forms must be completed following prescribed methodology. This manual contains specific instructions and examples for completing each type of form. If it becomes necessary to alert ADF&G about some aspect of data collection or recording, write a note on the form and discuss the circumstances with ADF&G at the debriefing.

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 data entry 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 in use.

Time records should be in military format reflecting either standard time or daylight-savings time when appropriate.

## 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 data forms. The notebook should document the crew list, vessel diagram, all sampling activities, sampling difficulties and all perceived regulatory violations. The notebook is a confidential record of your activities. NO ONE should have access to the notebook except the observer and ADF&G.

ALL sampling activity **MUST** be documented, including sampling time, activity, results and difficulties. Document any unmet sampling goals and the reasons for it in a clear and concise manner in your Rite-in-the-Rain notebook.

### *Collecting Evidence*

All potential violations witnessed by an observer **MUST** be documented in detail in the observer's notebook as soon as possible after the incident. The longer you wait to record the incident the greater the chance you will forget the details. Observers are often questioned weeks, months, and sometimes years after the event, so document thoroughly. Details should include the exact nature of the suspected violation, location on the vessel where the violation occurred, time of day, vessel name, and names of crew involved. Detail all conversations with the captain and crew members regarding the violation. When documenting potential violations, remember the four W's (who, what, where, and when). Documentation of potential violations should be kept separate from other notebook entries. Be sure to allow for a blank page prior to and following any violation documentation in your notebook. Document removal of species other than weathervane scallops from the catch for consumption on board or kept (homepacks) by the captain or crew. Other potential violations may include illegal gear, marine pollution (MARPOL) violations, and harassment.

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. Depending upon the illegal activity, include as much of the activity as possible in the photographs and document them thoroughly in your 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 observer notebook entries. A photo log should be kept in the observer notebook. Be sure to indicate the frame number, the date it was taken, and what is shown in each frame.

All photographs, notes, journals, or other written material that discuss fishing activity are confidential and property of ADF&G and are required to be submitted to ADF&G staff at debriefing.

## SAMPLING ON SCALLOP VESSELS

After boarding the vessel, observers should remember that their safety and the safety of others is of primary importance. The fishing industry is considered one of the most dangerous industries in the nation. **OBSERVERS SHOULD BE AWARE OF THEIR SURROUNDINGS AND WHAT IS HAPPENING AROUND THEM AT ALL TIMES.** Observers are urged to familiarize themselves with their personal safety equipment including their survival suit and PFD. Observers should determine where the vessel's safety equipment is stored and pay special attention to vessel emergency drills. Observers should request a detailed safety briefing and ship tour from the captain prior to leaving port.

Observers 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. Sampling procedures should begin following the initial observation period.

Observers 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. 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.

Observers should check with the vessel captain or mate to be sure they will have access to at least six (6) baskets at all times for use in sampling activities. Do not leave port without adequate equipment. If problems arise contact the local ADF&G office.

Determine what method the vessel master will use to determine the 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 operators catch and effort reporting. 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 the number of hauls completed for each statistical area fished. Area and effort information may be obtained from the

Fishing Log for Alaska Scallops. Do not copy catch information from the vessel operators completed fish tickets and do not supply catch information to the operator for completing fish tickets.

Randomly select hauls for species composition and bycatch/scallop discard monitoring. Do not sample the same time periods each day. Sample hauls should be selected throughout the period of fishing activity. All times of the day and night and all distinctly different fishing areas should be represented. Sample pre-selected hauls regardless of gear performance, catch composition, or volume.

Maintain the ADF&G reporting schedule established by the area biologist at the time of the briefing. Observers are required to maintain the reporting schedule even if no fishing occurred or the boat is tied to the dock. In this case, report Item 5 only on your radio report.

Prior to a mid-trip or final debriefing collect the original copy of the Fishing Log For Alaska Scallops from the captain or mate, unless directed otherwise by ADF&G. Observers will submit the log along with other data forms at each mid-trip and the final trip 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 the vessel name, ADF&G number, trip number, observer name, date, fishery code, and haul number. The header information is necessary to identify data associated with each vessel and trip and should be completely filled out on each form.

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 the vessel returned to port but planned to continue to fish in the same registration area with the same observer then the trip number would not change. Changing registration areas or observers requires an observer debriefing and briefing; therefore a new trip number is necessary. Trip numbers start over annually with this state-wide numbering system.

The 5 digit **ADF&G number** is 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.

Each haul, including unsuccessful ones, are assigned a sequential **haul 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 that haul numbers are recorded consecutively; i.e., no duplicates and no skipped haul numbers.

The **fishery code** consists of the letter code designation for the registration area, followed by the letter "S" (designating scallops) and the year. For example, if a scallop vessel fished in the Kodiak Registration Area during the 2001 season, the fishery code designation would be KS01.

### ***Letter Codes for Statewide Scallop Management Areas***

Use the following codes to designate 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, regardless of the reporting method used, must be sent in code. The radio report form should be completed prior to the assigned transmission time. This will facilitate a smooth and accurate radio message.

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

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

ITEM 9. Total number of hauls/number of bycatch sampled hauls. (For example, if 36 hauls were made during the reporting period and 10 were sampled for bycatch, the entry would be 36/10).

### Radio Reporting Procedures

The reporting schedule will be established with the observer at the pre-trip briefing. ADF&G office locations, radio call signs, fax numbers, phone numbers, and email addresses will be provided to the observer.

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.

Observers 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 Sampling Condition, Item 5.

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: \_\_\_\_\_", and so forth. Stay on the radio for confirmation that your report was copied.

### Phonetic Alphabet

Use the phonetic alphabet in your radio reports:

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 for 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 are to 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.) should be completed by the vessel operator, with the exception of the 'Haul sampled' column, which will be completed by the observer. **Data recorded on this form are extremely important and the observer should check twice daily, at a minimum, to be sure all information is recorded accurately, legibly, and in a timely manner.**

Refer to appendix A.3. for examples of filling out the Fishing Log for Alaska Scallops. Details for filling out data fields that are not self-explanatory are provided below.

ADF&G will assign a **trip number** at the time of observer briefing.

Observers will designate **sampled hauls** with a "1" and **unsampled hauls** with a "2". This includes sampling for either bycatch/scallop discard or haul composition. In addition, indicate haul composition samples with the designation "HC" adjacent to the haul sampled column.

Vessel operators will record the total combined **dredge width** to the nearest foot. For example, if two 15-foot dredges were fished, they will record "30".

The captain will determine if the **gear performance** was satisfactory, unsatisfactory, or partially satisfactory.

Hauls should be numbered sequentially starting with **haul number 1** at the beginning of each trip. All hauls must be recorded regardless of gear performance. A trip is defined as the period of time between observer briefing and debriefing. Mid-trip debriefs have no effect on the sequential haul numbering. Haul numbers do not start over with number 1 after a mid trip debrief.

The **set position** should be recorded in degrees, minutes, and hundredths of a minute (decimal minutes to 2 decimal places) and E/W of 180° longitude.

**Fishing times** should be recorded in Alaska local time; either standard time or daylight-savings time when appropriate. The military time designation will be used. Midnight is recorded as 0000 hours.

The **fishing duration** should include the minutes the gear was fishing. Hang-up time should not be included.

The **catch** column refers to the retained catch. Operators will 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.

Operators will record the estimated round weight (in pounds) of **discarded scallop catch** due to size or shell condition. This column is often neglected by the operators. Observers should insure this column is being completed.

Record the 6-digit (5-digit in the Yakutat area) **ADF&G statistical area** fished. The set position will be considered the area fished. Statistical area charts can be obtained from ADF&G.

### *Weekly Summary Form*

The **WEEKLY SUMMARY FORM** (Appendix A.4.) is used to record the daily catch of shucked meats from each statistical area fished. It is also used to record 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. Daily numbers are calculated 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 prohibited species bycatch and not those sampled for haul (species) composition.** The top portion of the form details daily numbers by statistical area, whereas the bottom section provides a weekly summary for each statistical area fished. The 'other Tanner' column in both the top and bottom sections is used to record combined opilio/hybrid crab in the Bering Sea Registration Area and Dungeness crab in all other registration 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 its 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 dredges break the water's surface, the observer should decide if the port or starboard dredge will be sampled. Small quantities of each species are weighed entirely, whereas large amounts are subsampled to estimate the weight. After the dredges have been emptied on deck, sort the sample by species. Some species groups may be recorded together if positive identification is not possible, or if time is short. Weigh small quantities of species separately and record them 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 discarded scallops and record the total weight (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. See Appendix A.5. for an example.

If the haul contains a large volume of a single species (other than scallops) observers may estimate the total weight by first calculating an average basket weight of the species (record in column 6) and then multiplying that average weight by the visually estimated volume (number of baskets) 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 the estimated weight in column 7.

**Pacific Halibut weights are derived from the conversion table (Appendix A.6.).** Enter all halibut lengths in the halibut worksheet space provided on the form. Convert length to weight using the conversion table. Enter the sum of the halibut weights from the worksheet into column 7. **Measuring the halibut and quickly returning them to the sea should be one of the first tasks completed in haul composition sampling.**

Use the blank rows found in the species column for recording additional species found during haul composition sampling. Each species recorded on the Haul Composition Form must be associated with a 5-digit code from the species code book provided by the 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 five hauls will be sampled daily for prohibited species bycatch and scallop discard. Observers will count all halibut and crab encountered. A subsample of discarded scallops will be counted and weighed. The remainder of the scallop discard will be weighed only. These data will be recorded on the **BYCATCH AND SCALLOP DISCARD FORM** (Appendix A.7.)

In addition to counting the bycatch, the animals will be examined in detail following the protocols outlined in the Crab Size and Injury Form and Halibut Length and Condition Form sections of this manual.

In addition to weighing and counting discarded scallops they will be 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 heavy mud 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 (including 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  $n^{\text{th}}$  scallop. For example, 100 intact scallops, divided by 20 equals 5; so every 5<sup>th</sup> scallop in the sample would be measured. Record the measurements on the **Scallop Size Frequency Form** (Appendix A.10.). 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. Sum the weight of the remaining (unsampled) baskets of discarded scallops and record it on the **Bycatch and Scallop Discard Form** (remainder of discard, condition code 3).

### ***Crab Size and Injury Form***

**Crab measured and examined 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 for species, sex, shell condition, and mortality are listed at the bottom of the form. Standards for crab measurement and shell-aging are described in the Terms and Definitions section.

The sampling goal is to measure, if available, 20 each of Tanner (combined *Chionecetes* spp.), 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. This should be avoided. In a random selection each crab should have equal probability of selection. The remaining crab should be counted by species only. Be sure to enter the total number of crab captured in the dredge on the **Bycatch and Scallop Discard Form**.

The form has columns for species code, size (mm), sex, shell condition, and mortality. If the carapace is crushed so that size or sex cannot be determined, insert a null (-0-) in the corresponding space on the form. Do not leave blank. 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 closed lower jaw 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. Refer to the Bycatch and Scallop Discard Section for instructions on measuring discarded scallops.

Twenty scallops from the **retained catch** in each of the six hauls sampled daily for bycatch and discarded scallops will be measured. 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 from the umbo to the outer shell margin, perpendicular to the hinge (Appendix A.11.). Do not measure broken or badly chipped shells.

**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 with a permanent marker. 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.

The shell sampling protocol schedule (Table 1) 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.

Table 1. Shell sampling protocol schedule.

	DAY OF THE WEEK					
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Starting Number	3	2	5	8	7	1

## TERMS AND DEFINITIONS

### *Crab Measurement*

All crabs are measured following previously developed biological standards. The biological measurement for king crab and Korean horsehair crab is the carapace **LENGTH**. Carapace length is described as the straight line measurement from the posterior margin of the right eye orbit of the carapace to the center of the posterior carapace margin as measured with a vernier calipers. Carapace length is recorded to the nearest whole millimeter.

The biological measurement for Tanner crab is the carapace **WIDTH**. The 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. Carapace width 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 king crab (*Paralithodes camtschatica*) and 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-shell 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 and 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. **Unless otherwise specified by directions written on the tag or by instruction of ADF&G, tagged species should be returned to the sea, unharmed and 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. This is a large scallop reaching a shell height of 12 inches. Its range in Alaska is from Dixon Entrance in southeast Alaska to the Aleutian Islands. The genus *Chlamys* is the other scallop that has been commercially harvested on an experimental basis in Alaska. These are small scallops that normally grow to less than three inches in shell height. *Chlamys* are found throughout Alaska from Dixon Entrance to the Bering Sea and Arctic Ocean. Appendix A.13. lists distinguishing characteristics for both weathervane scallops and *Chlamys* sp. scallops.

### ***King Crab Species***

There are three species of king crab commonly harvested commercially in Alaska. However, the red king crab (*Paralithodes camtschatica*), is the king crab species most likely encountered with the scallop dredge throughout the state.

### ***Tanner Crab Species***

Two species of Tanner crab are commonly taken as bycatch in the weathervane scallop fishery. Both are of the genus *Chionoecetes*. Within Alaska waters, *Chionoecetes bairdi* is found in the Gulf of Alaska, Aleutian Islands, and Bering Sea, whereas *C. opilio* is known only from the Bering Sea. There is also a hybrid of these two species, which can display a wide range of mixed characteristics.

**APPENDIX**

Appendix A.1. Scallop Observer Radio Report Form.

# SCALLOP OBSERVER RADIO REPORT FORM

Mgmt Area K - Kodiak  
 Vessel Lucky Duck  
 Observer Joe Bobb

	MONDAY	TUESDAY	MON/TUES TOTALS	WEDNESDAY	THURSDAY	WED/THURS TOTALS	FRIDAY	SATURDAY	SUNDAY	FRI/SAT/SUN TOTALS	WEEKLY TOTAL
DATE	7-2	7-3		7-4	7-5		7-6	7-7	7-8		
ITEM 1. Stat-Area	actual 515730	515730	515730	NO	NO		NO	NO	NO		515730
	code		LR	Fishing	Fishing		Fishing	Fishing	Fishing		
ITEM 2. Total minutes	actual 840	445	1285	in	in		in	in	in		1285
all hauls.	code		WBMG	STAT AREA	STAT AREA		STAT AREA	STAT AREA	STAT AREA		
ITEM 3. Total minutes all	actual 320	125	445	515730	515730		515730	515730	515730		445
bycatch sampled hauls.	code		PAG								
ITEM 4. Number of king crab	actual 0	0	0								0
in all hauls.	code		Y								
ITEM 5. Sampling Condition	actual No Problem	No Problem	No Problem			NO Problem				NO Problem	No Problem
	code		X0			WB				GN	
ITEM 6. Number of <i>C. baird</i>	actual 13	4	17								17
Tanner in bycatch smp'l'd hauls.	code		RQ								
ITEM 7. # of <i>opilio</i> /hybrids or	actual 0	0	0								0
Dungeness in bycatch smp'l'd hauls.	code		S								
ITEM 8. Pounds of scallop	actual 1650	860	2510								2510
meats retained.	code		CNWS								
ITEM 9. Total # hauls /	actual 13/5	7/2	20/7								20/7
# bycatch sampled hauls	code		BY/J								

This is an example of a tri-weekly reporting schedule.

Appendix A.2. Radio Codes.

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 2,3,4,6,7,8,9 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	HARASSMENT, UNABLE TO GET WORK DONE
FY	HARASSMENT, UNABLE TO GET WORK DONE
NC	HARASSMENT, BUT ABLE TO GET WORK DONE
EX	HARASSMENT, BUT ABLE TO GET WORK DONE
YS	SOS
PH	SICK
UU	SICK, UNABLE TO PERFORM WORK
SZ	CRAB DISCARDED 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
IW	SPARE
JQ	SPARE

Appendix A.3. Fishing Log for Alaska Scallops.

ALASKA DEPARTMENT OF FISH AND GAME  
FISHING LOG FOR ALASKA SCALLOPS

Captain's Name Bligh  
Observer name Joe Bobb  
Vessel Name Lucky Duck

Trip number	ADF&G #	Year	Fishery Code
1	174020	01	KSO1

Haul sampled	Total dredge width	Gear performance	Date			Set position			Fishing times in A.L.T.		Fishing duration (minutes)	Average bottom depth (fms)	Average Speed in knots	CATCH		Discarded Catch round weight in pounds	ADF&G statistical area							
			Mon.	Day	Haul No.	Latitude (N)	E W	Longitude	Dredge on bottom	Dredge of bottom				Bushels	Round weight (pounds)		5	1	5	7	3	0		
2	3	0	1	7	2	21	57 34 54	W	151 54 60	0100	0215	75	53	4.8	27	1566	100	5	1	5	7	3	0	
2	3	0	1	7	2	22	57 35 40	W	151 55 40	0225	0325	60	55	4.8	18	1044	100	5	1	5	7	3	0	
2	3	0	1	7	2	23	57 34 30	W	151 54 35	0335	0430	55	55	4.8	35	2030	150	5	1	5	7	3	0	
1	3	0	1	7	2	24	57 33 68	W	151 52 65	0440	0540	60	53	4.8	30	1740	150	5	1	5	7	3	0	
2	3	0	1	7	2	25	57 31 28	W	151 45 88	0555	0700	65	54	4.8	20	1160	100	5	1	5	7	3	0	
2	3	0	1	7	2	26	57 31 18	W	151 46 39	0715	0825	70	54	4.8	20	1160	100	5	1	5	7	3	0	
1	3	0	1	7	2	27	57 36 40	W	151 46 52	1315	1415	60	57	4.8	22	1276	100	5	1	5	7	3	0	
2	3	0	1	7	2	28	57 35 94	W	151 45 10	1425	1530	65	56	4.8	20	1160	60	5	1	5	7	3	0	
1	3	0	1	7	2	29	57 36 20	W	151 45 60	1545	1650	65	58	4.8	21	1218	80	5	1	5	7	3	0	
2	3	0	1	7	2	30	57 35 92	W	151 44 30	1705	1805	60	57	4.8	20	1160	70	5	1	5	7	3	0	
1	3	0	1	7	2	31	57 33 55	W	151 36 76	1820	1930	70	54	4.8	27	1566	110	5	1	5	7	3	0	
1	3	0	1	7	2	32	57 33 51	W	151 39 37	1945	2050	65	58	4.8	35	2030	120	5	1	5	7	3	0	
HC	1	3	0	1	7	2	33	57 33 25	W	151 37 69	2115	2215	60	60	4.8	35	2030	140	5	1	5	7	3	0
2	3	0	1	7	3	34	57 33 35	W	151 36 93	0105	0205	60	62	4.8	24	1392	50	5	1	5	7	3	0	
2	3	0	1	7	3	35	57 35 89	W	151 32 79	0220	0330	70	59	4.8	20	1160	50	5	1	5	7	3	0	
2	3	0	1	7	3	36	57 36 73	W	151 38 68	0340	0440	60	53	4.8	18	1044	30	5	1	5	7	3	0	
2	3	0	1	7	3	37	57 36 89	W	151 46 89	0455	0600	65	58	4.8	15	870	20	5	1	5	7	3	0	
1	3	0	1	7	3	38	57 34 08	W	151 48 70	0610	0710	60	65	4.8	25	1450	60	5	1	5	7	3	0	
2	3	0	1	7	3	39	57 32 59	W	151 48 70	0725	0830	65	64	4.8	35	2030	150	5	1	5	7	3	0	
1	3	0	1	7	3	40	57 30 85	W	151 46 48	0840	0945	65	57	4.8	35	2030	200	5	1	5	7	3	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)





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

HALIBUT LENGTH-TO-WEIGHT CONVERSION TABLE							
Length/Weight		Length/Weight		Length/Weight		Length/Weight	
(cm)	(lbs)	(cm)	(lbs)	(cm)	(lbs)	(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		



Appendix A.8. Crab Size and Injury Form.

**ALASKA DEPARTMENT OF FISH AND GAME  
CRAB SIZE AND INJURY FORM**

Observer Joe Bobb  
 Vessel Lucky Duck  
 Date 7-2-01

Trip	ADF&G #	Fish Code	Haul #
117402	KS01		27

	Species Code	Size (mm)	Sex	Shell Cond.	mort?		Species Code	Size (mm)	Sex	Shell Cond.	mort?
1	6	70	0	0	1	31					
2	6	76	1	1	2	32					
3	6	15	2	0	2	33					
4						34					
5						35					
6						36					
7						37					
8						38					
9						39					
10						40					
11						41					
12						42					
13						43					
14						44					
15						45					
16						46					
17						47					
18						48					
19						49					
20						50					
21						51					
22						52					
23						53					
24						54					
25						55					
26						56					
27						57					
28						58					
29						59					
30						60					

**Species Codes**  
 0=*Chionoecetes* sp. (opilio/hybrids)  
 1=Brown King Crab  
 2=Red King Crab  
 3=Blue King Crab  
 5=Hair Crab  
 6=*C. Bairdi*  
 9=Dungeness crab

**Sex**  
 1-Male  
 2-Female

**Shell Condition**  
 0- Soft  
 1- New  
 2- Old  
 3-Very Old

**Mortality**  
 1-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.



Appendix A.10. Scallop Size Frequency Form.

ALASKA DEPARTMENT OF FISH AND GAME  
SCALLOP SIZE FREQUENCY FORM

Observer Joe Bobb  
Vessel Lucky Duck  
Date 7-2-01

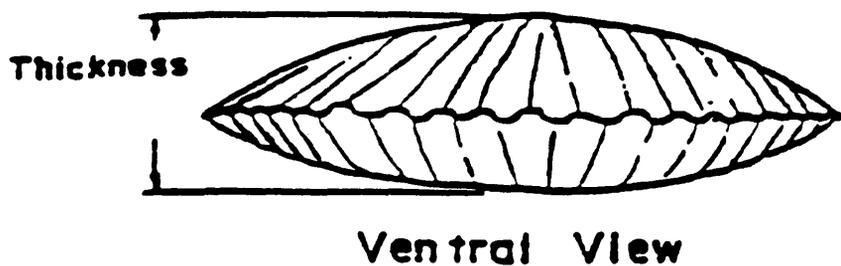
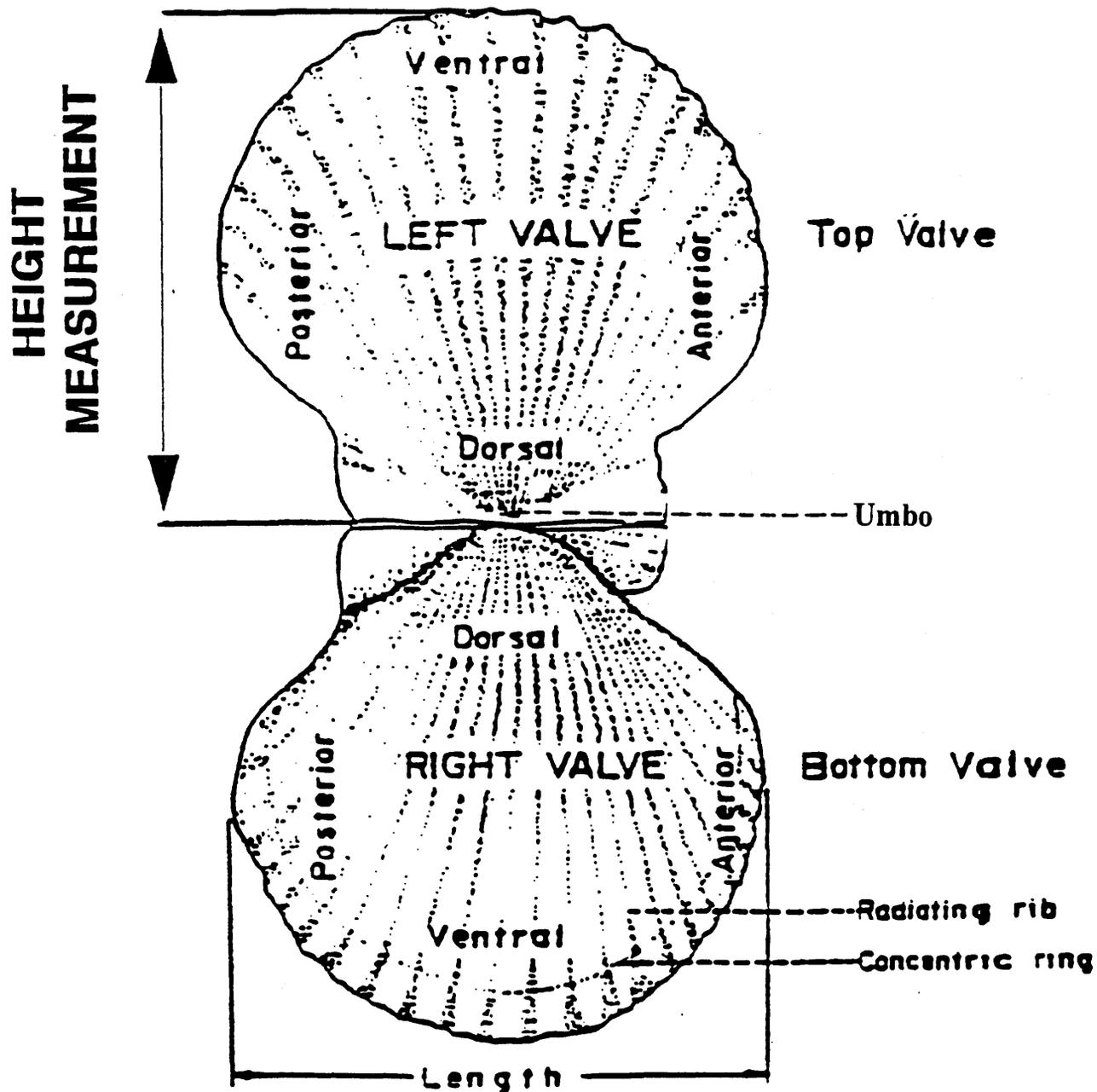
Trip #	ADF&G #	Fish Code	Haul #
1	17402	K501	27

Sample type  2

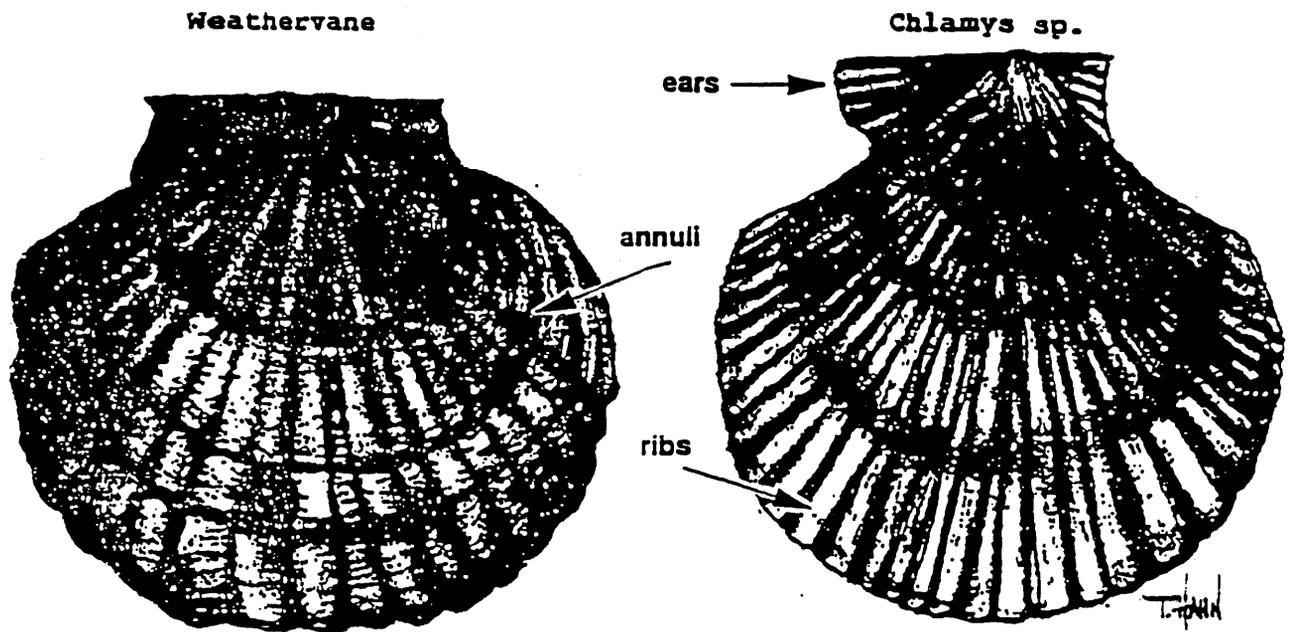
Sample type  3

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

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



Appendix A.12. 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 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.

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