

# Pacific halibut

*Hippoglossus stenolepis*



5

Halibut in Alaska



Home



Presentations



Readings



Video  
Resources



Questions

This module will cover five main areas:

1. Biology
2. Fisheries
3. Management
4. Economics/ Uses
5. Research/ Conservation Issues

When viewing recorded lectures, the slides will automatically advance. The Prev and Next buttons are available but it is recommended you listen and view the recorded lectures in auto mode. You can return to the main menu of the recorded lectures by tapping the recorded lecture icon (speaker).

At the end of each of the areas there are self-check quizzes to make sure that you understand the basic student learning outcomes for each area.



### **By the end of this module, you should be able to:**

1. Describe the life-history of Pacific halibut
2. Describe what happens to the eye and head of a halibut when it undergoes “metamorphosis”
3. List the different types of fisheries for halibut
4. Describe the importance of halibut to Alaska’s economy
5. Describe the primary uses for Pacific halibut
6. Describe the concept of “Declining Size at Age”
7. Describe the role of the International Pacific Halibut Commission (IPHC)
8. List some of the Conservation Issues with halibut in the Pacific Ocean



## Fisheries Technology

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Read pp. 1-12 in  
Halibut.pdf in iBooks



## Fisheries Technology

About the Presenter

Andrew Seitz, Ph.D., University of Alaska Fairbanks

Biology

Life history, movements, ecology (20 min)

Fisheries

Types of vessels, gear used (8 min)

Management

Management organizations, IPHC, NPFMC (13 min)

Economics/ Uses

Economics of fishery, primary products (4 min)

Conservation issues/  
Research

Current issues and topics of related research (12 min)



## Andrew "Andy" Seitz

Associate Professor  
School of Fisheries and Ocean Sciences  
University of Alaska Fairbanks



### Biography

I was raised in the wonderful town of North Yarmouth, Maine, where I developed my fascination with fish. When young, I spent innumerable hours searching for brook trout in tiny streams, and chasing bluefish and striped bass in Maine's coastal waters. During my summers in high school and college at Cornell University, I was fortunate enough to work on a charter fishing boat, from which we pursued a variety of fishes, including the mighty bluefin tuna. After graduating from college, I was able to combine my addiction for tuna fishing and my interest in biology at the Monterey Bay Aquarium, where I worked at the Tuna Research and Conservation Center. My electronic tagging fieldwork skills led me to Alaska, where I helped start a halibut tagging project, which turned into my graduate school project at the University of Alaska Fairbanks. After completing my graduate degree, I worked as fisheries course instructor and now as a member of the Fisheries Division faculty at UAF's School of Fisheries and Ocean Sciences. When not working, I enjoy floating rivers, hiking, hunting, and raising poultry, all with my family.



## Today's gameplan

### Pacific halibut:

Biology/Ecology

Fisheries

Management

Economics/Uses and products

Conservation issues/Research



## 1. Pelagic stage =

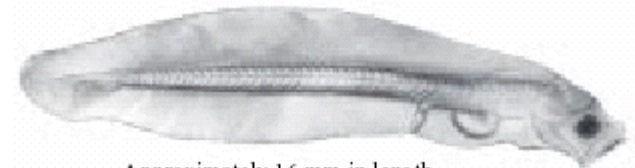
Eggs and larvae drifting in the water column

## 2. Benthic stage =

Juveniles and adult fish living on bottom



Approximately 9 mm in length



Approximately 16 mm in length.



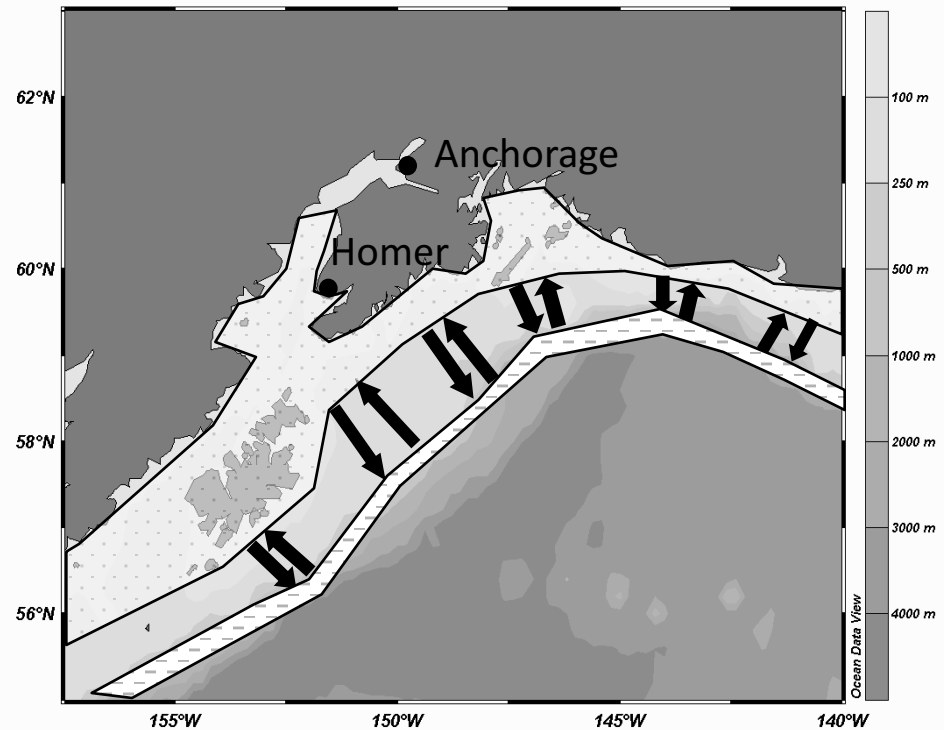


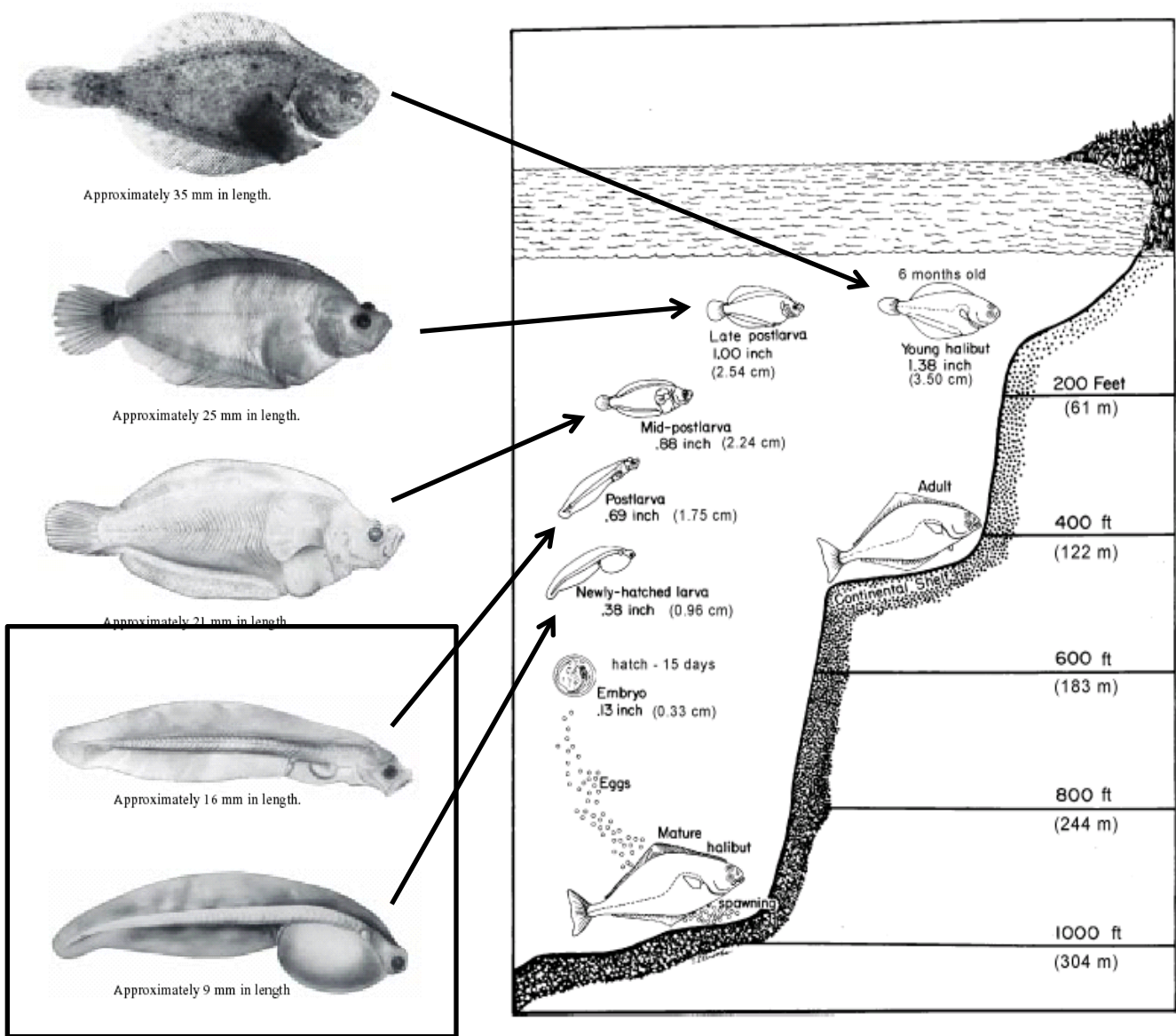


## Adult seasonal movement

Summer feeding grounds  
nearshore

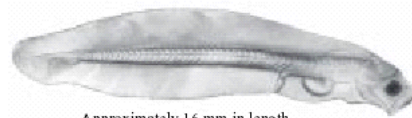
- In late fall, migrate offshore to spawn
- In spring, migrate back to summer grounds







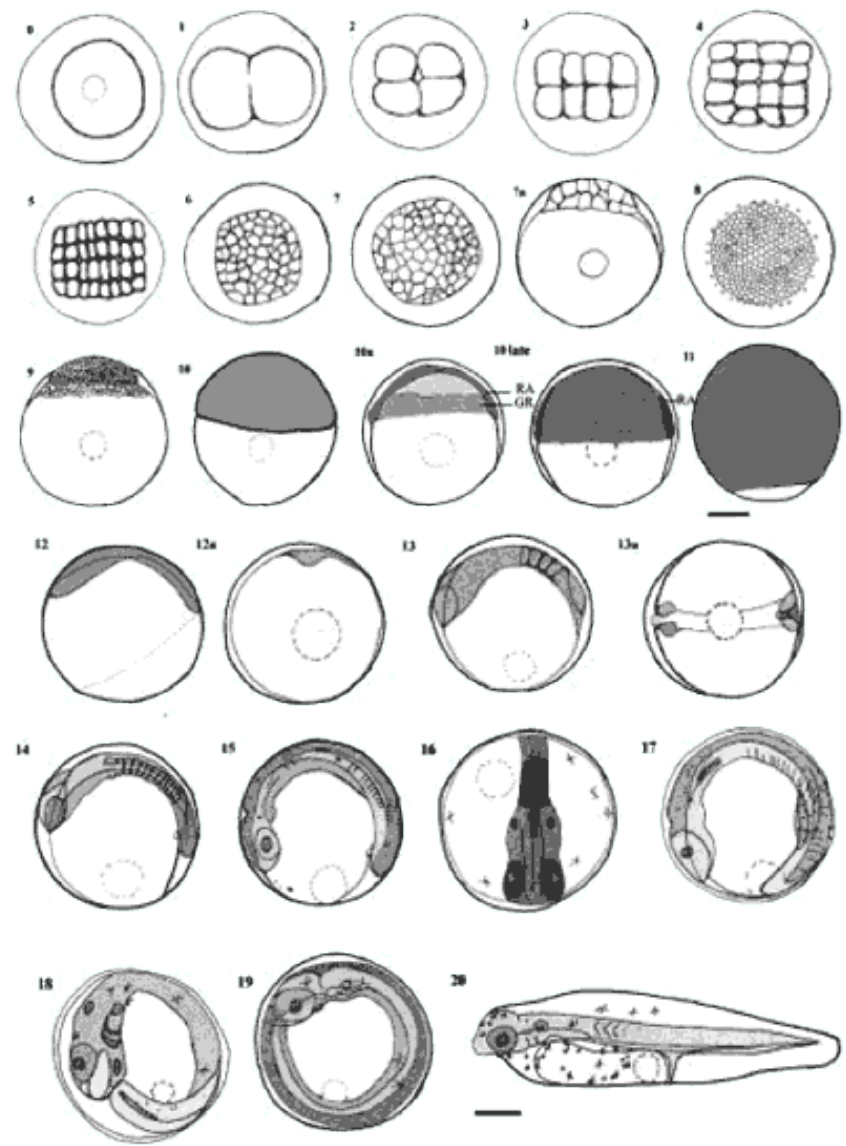
- Pelagic larvae:
  - bilaterally symmetrical
  - swim upright until  $\sim 25$  mm
  - bones incompletely ossified



Approximately 16 mm in length.



Approximately 9 mm in length



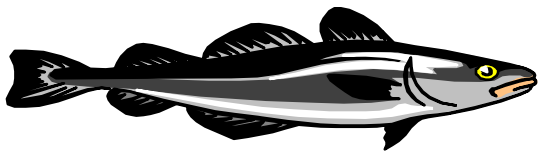


Young, immature fish travel north and west from inshore nursery areas in Canada and the eastern Gulf of Alaska to the western Gulf of Alaska, Bering Sea, and Aleutian Islands.  
Older, mature fish move offshore and return eastward.

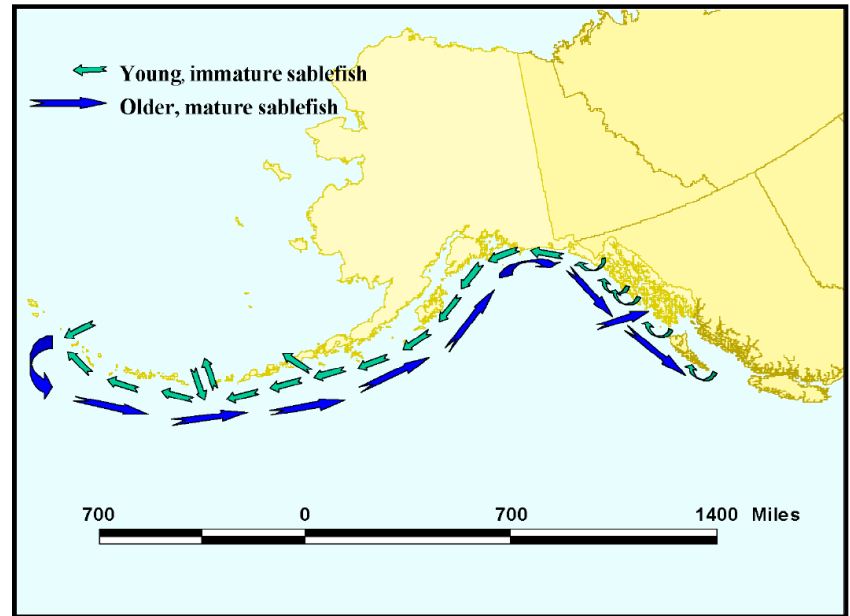
## Basic migration pattern of sablefish in the northeast Pacific Ocean



halibut

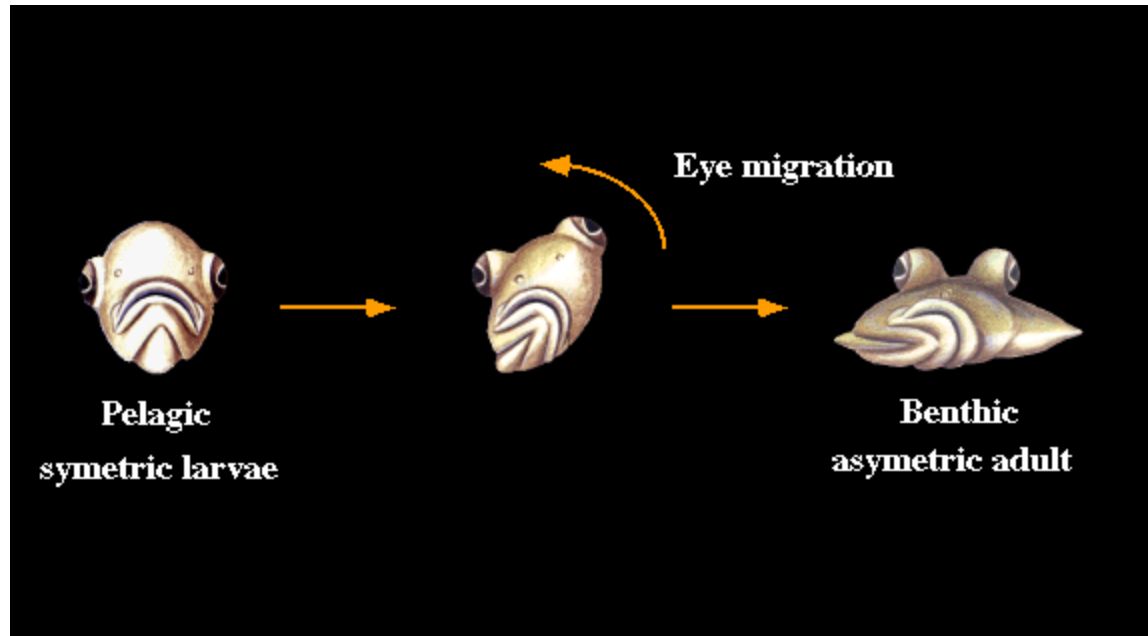


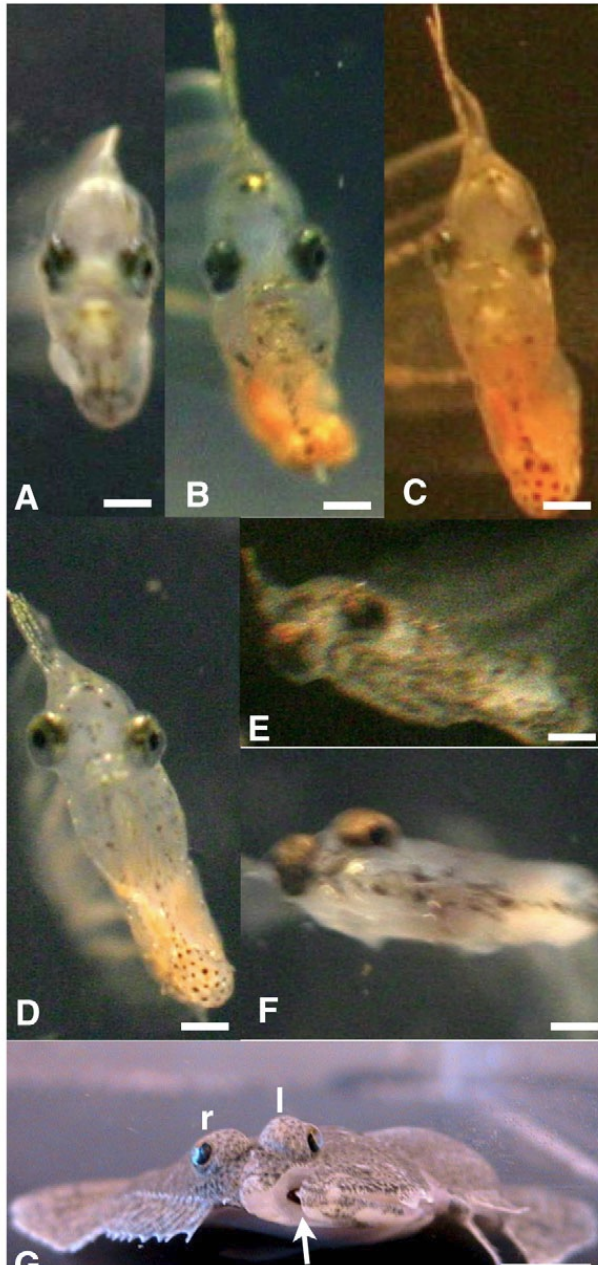
sablefish





# Metamorphosis



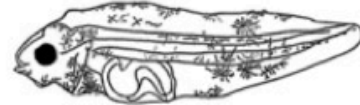




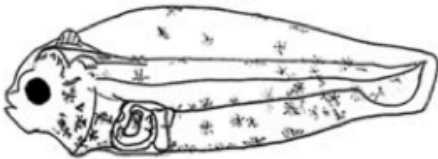
**A**



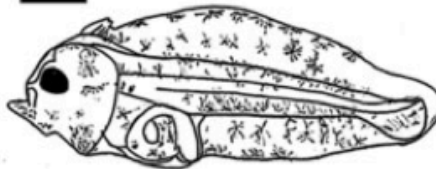
**B**



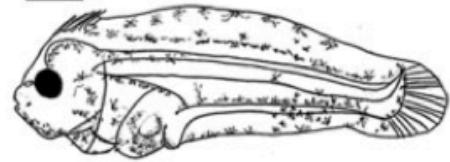
**C early**



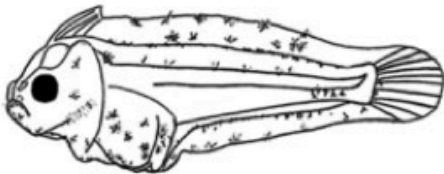
**C late**



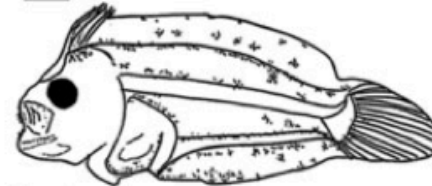
**D early**



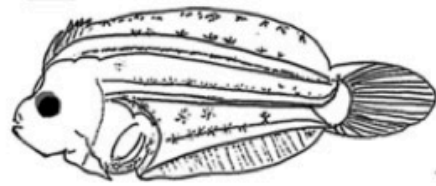
**D late**



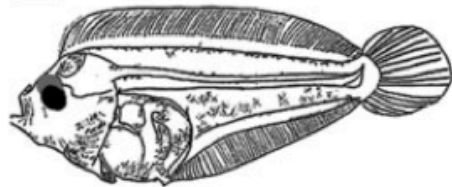
**E**



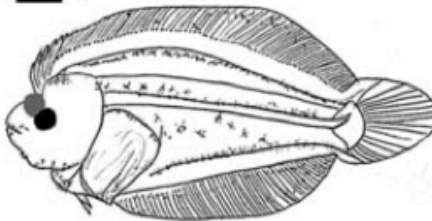
**F early**



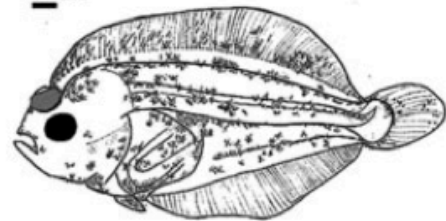
**F late**



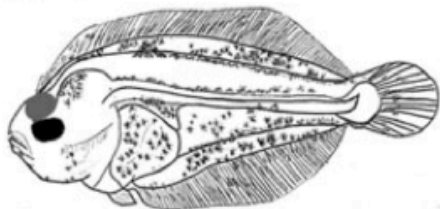
**G early**



**G late**

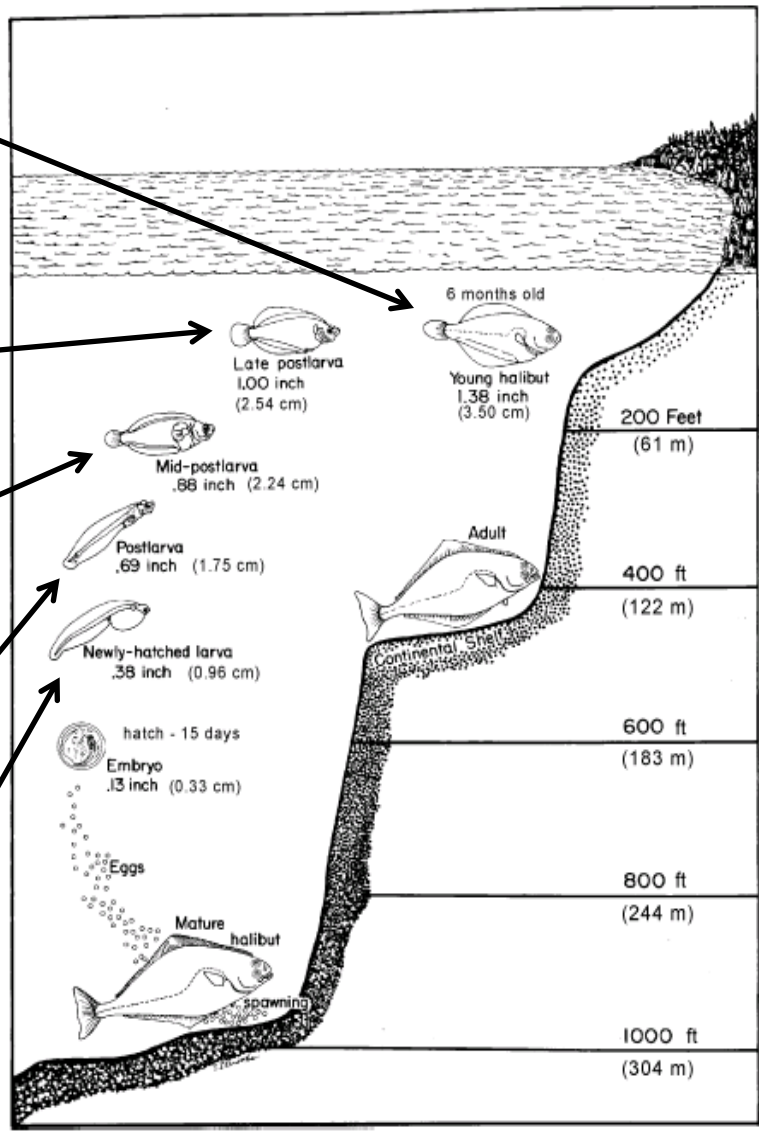
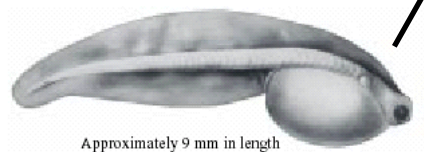
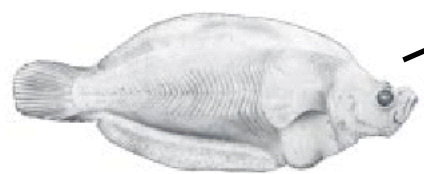
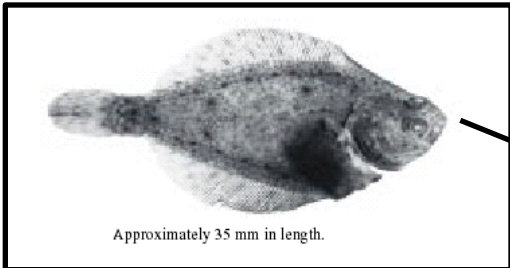


**H**



**I**







## Asymmetrical

Shift in: neurocranium, eye socket, eye, nostril, inner ear, semicircular canal, body angle

Laterally compressed

Most right-handed

Camouflage

Protrusible eyes

Bury themselves

No swimbladder





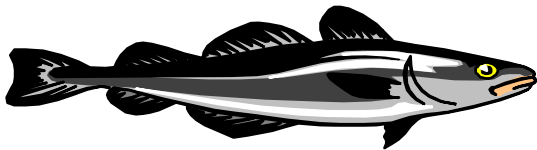
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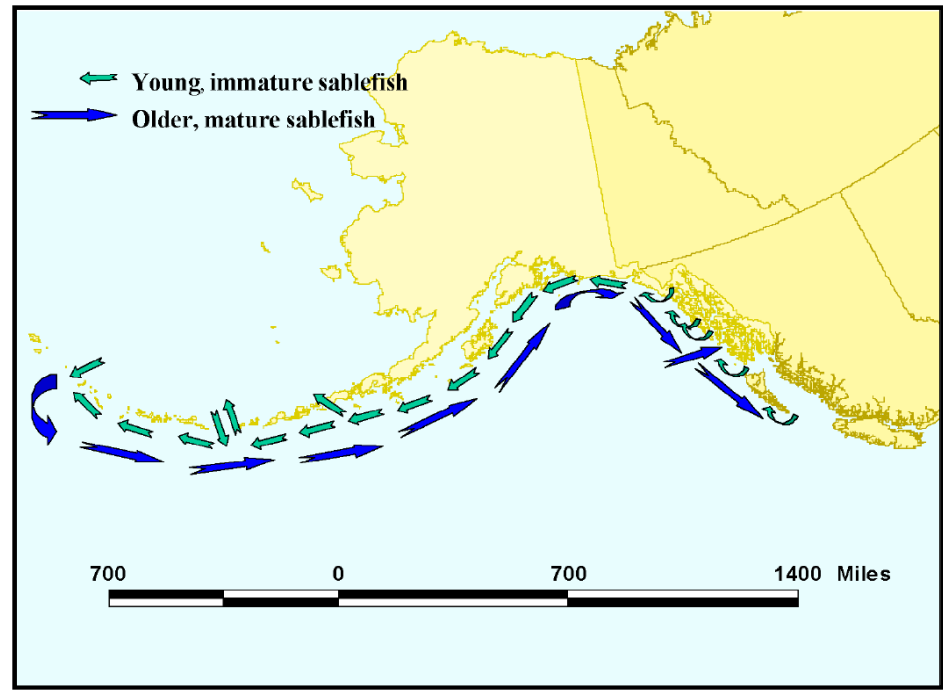
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halibut



sablefish

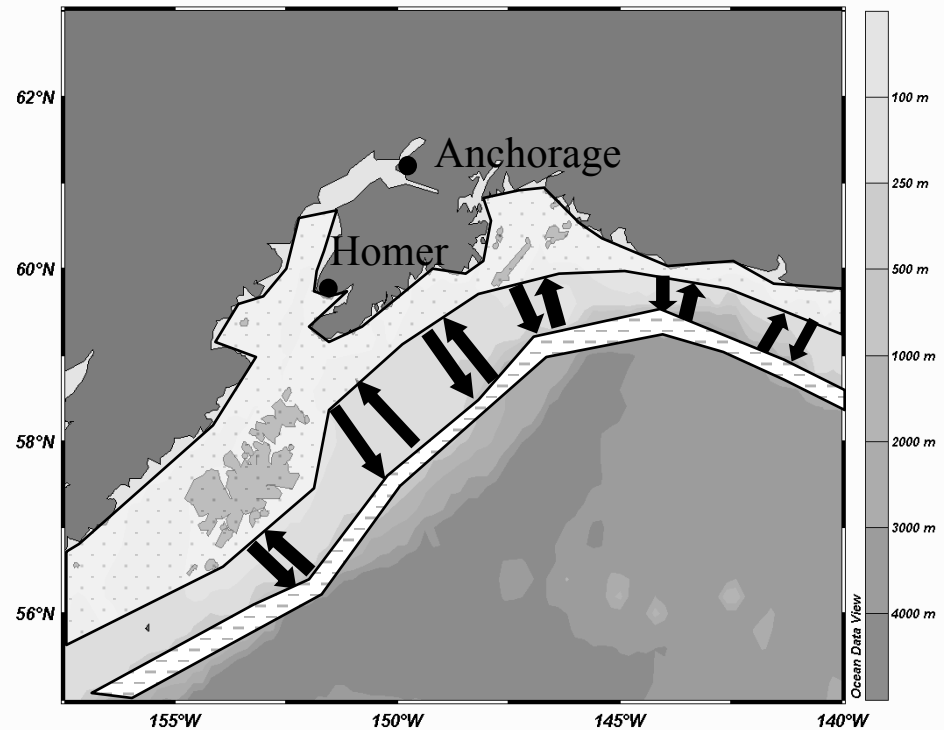




## Adult seasonal movement

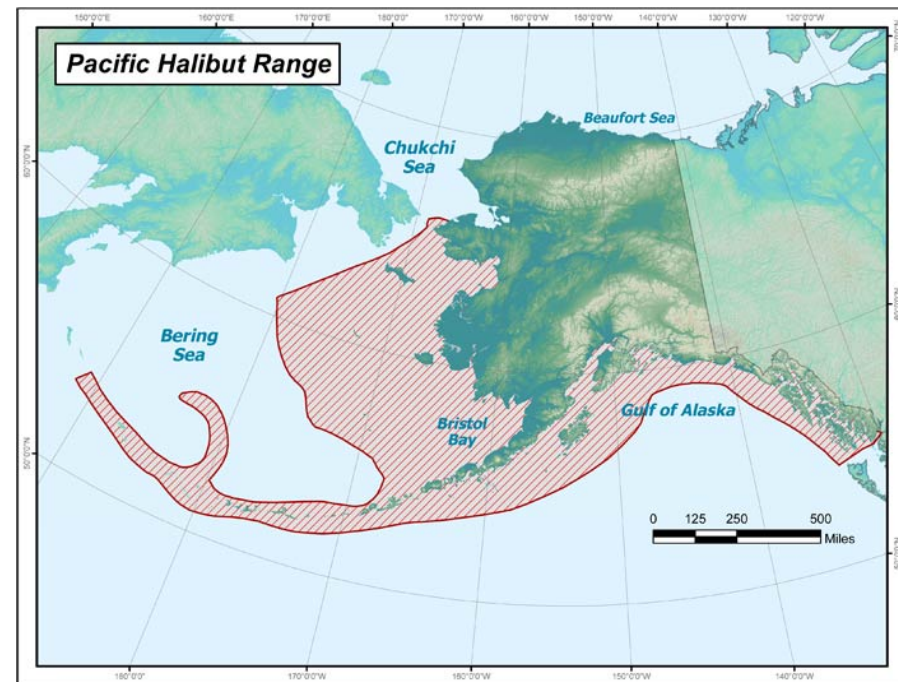
Summer feeding grounds nearshore

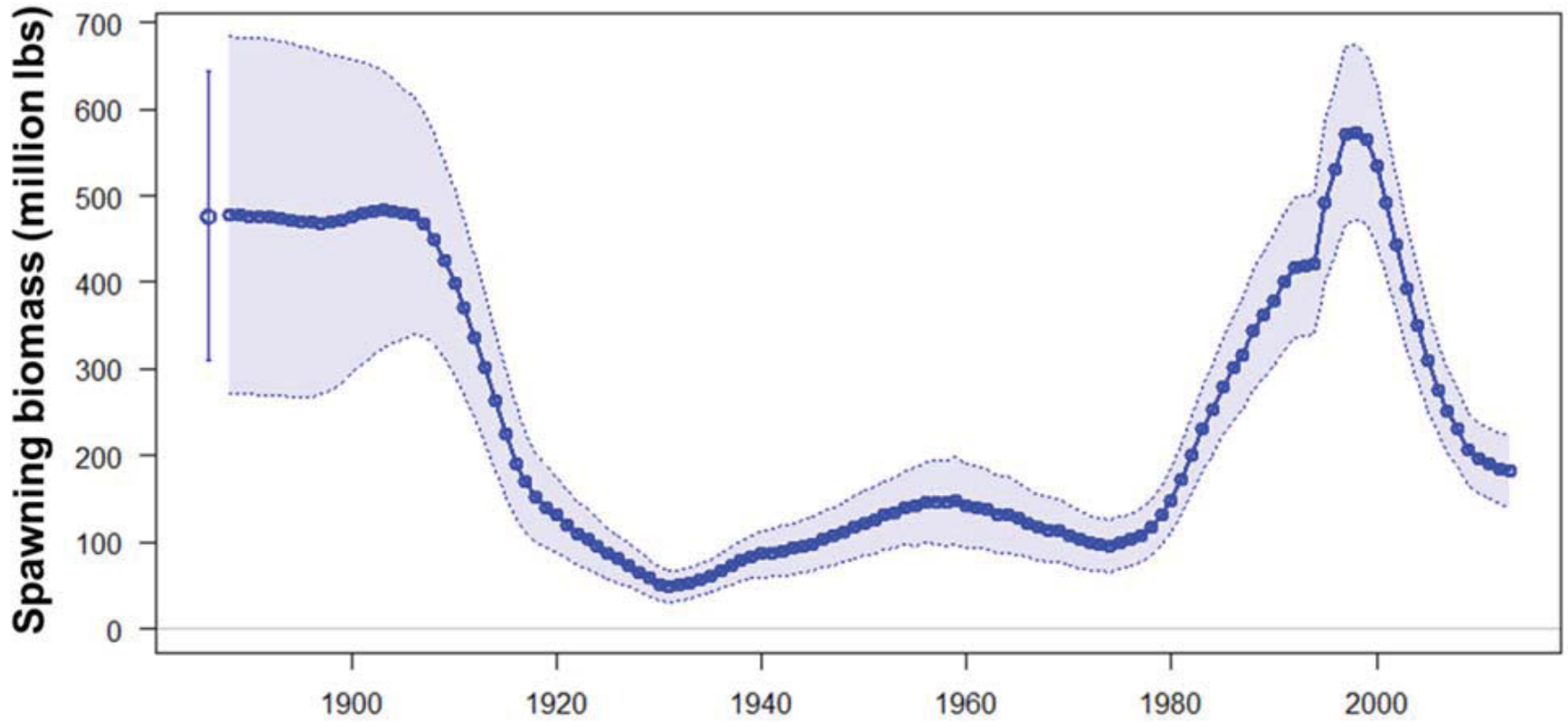
- In late fall, migrate offshore to spawn
- In spring, migrate back to summer grounds





- Inhabit shelf/slope, with other fishes
- Inhabit benthos, may swim in water column
- Young eaten by a variety of animals
- Big, top level predators
  - Start eating inverts
  - As adults, shift to fish





Pacific halibut are born with both eyes on the same side.  
- True  
- False

## Biology

*Quiz - 4 questions*

Last Modified: Dec 18, 2015 at 09:53 AM

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Edit in Quizmaker



Edit Properties



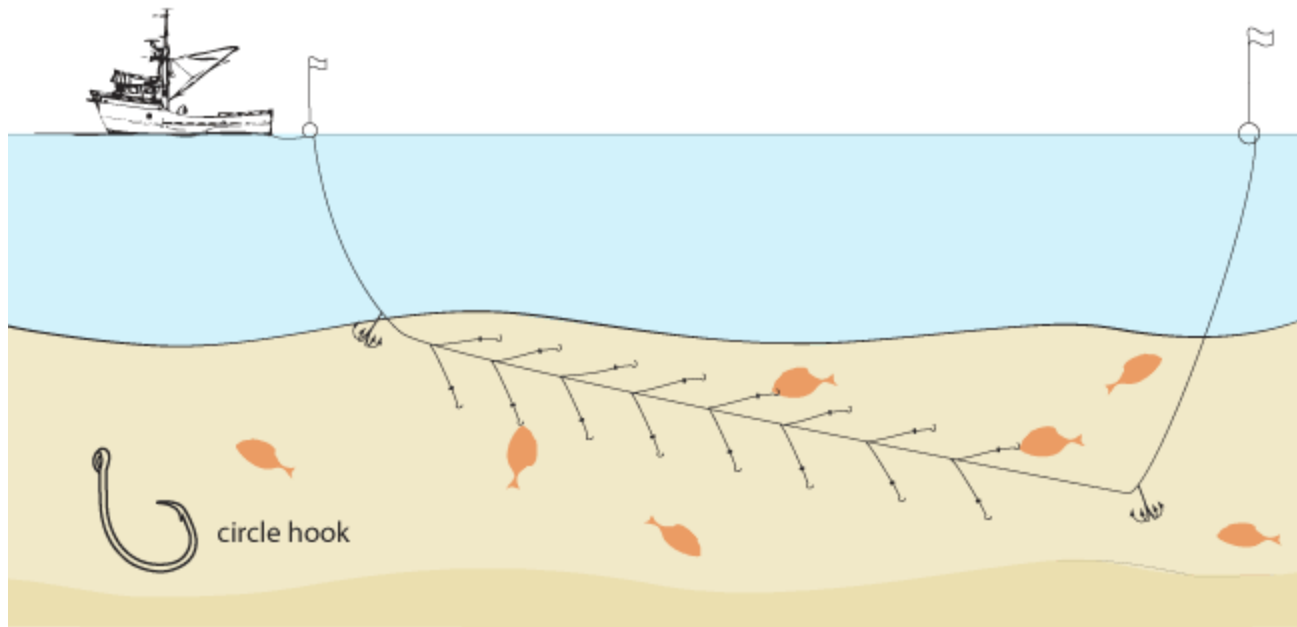
# Capture methods







# Capture methods





# Capture methods





# Capture methods



In Alaska the only gear allowed for commercial fishing Pacific halibut is pots.  
- True  
- False

## Fisheries

*Quiz - 3 questions*

Last Modified: Dec 16, 2015 at 05:03 PM

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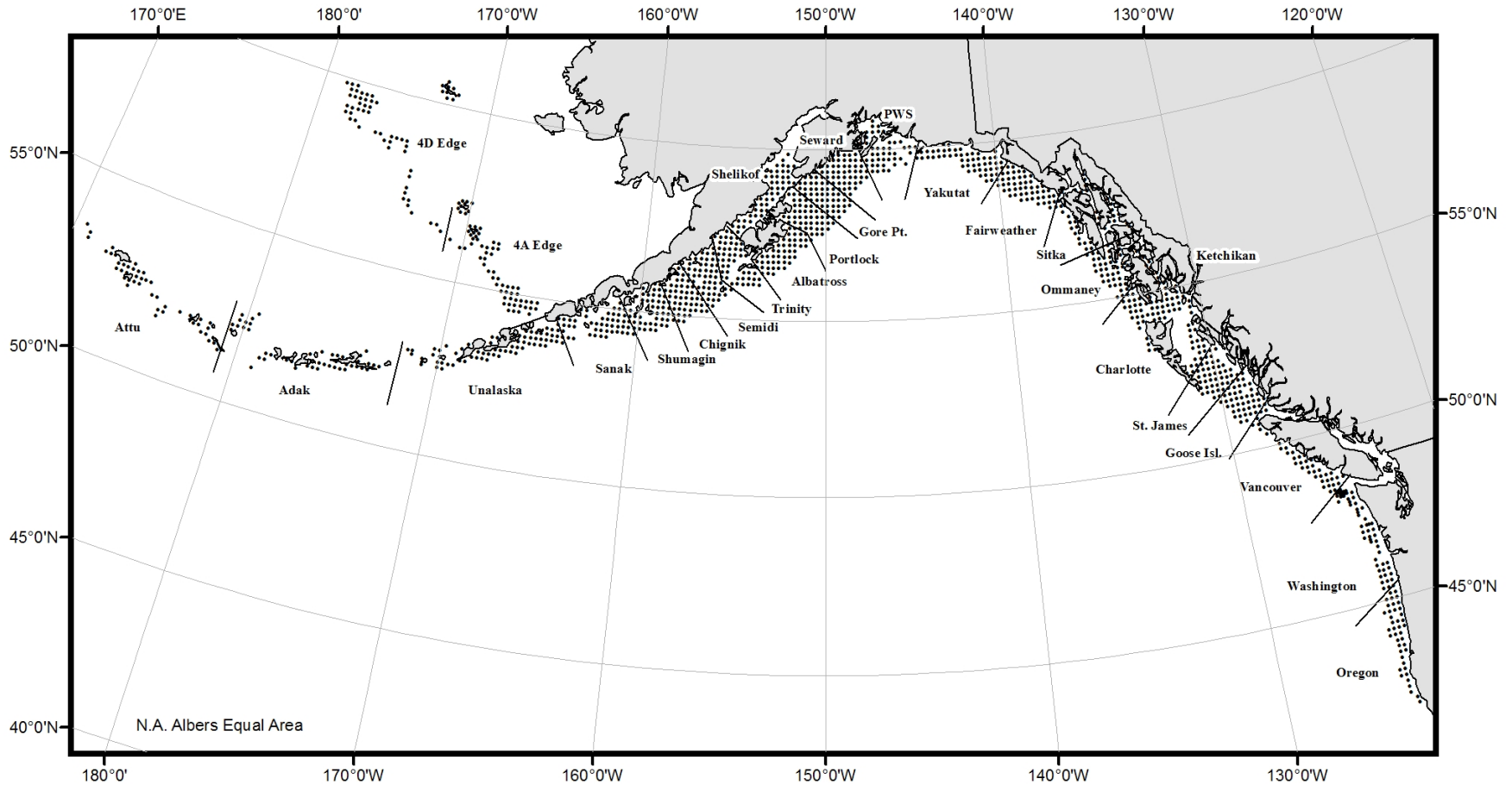
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## Commercial fishery managed by IPHC

- Treaty between US and Canada
- Recommend catch limits
- Limits enacted by NPFMC
- Enforcement by NMFS

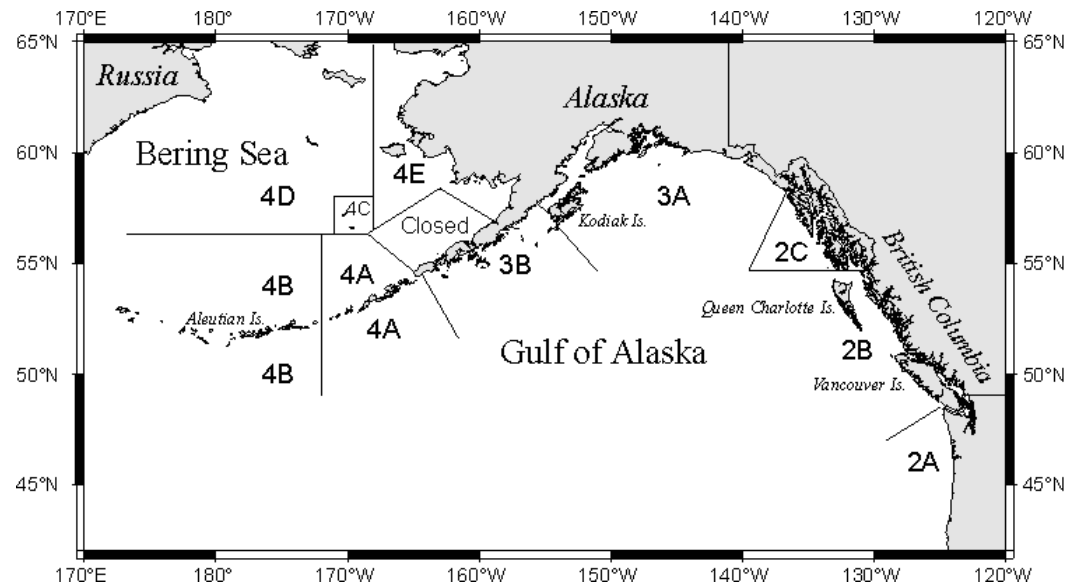






Size, gear, season, area and catch restrictions

IFQ, IVQ and derbies





Science, Service, Stewardship

March 7, 2014



## NOAA FISHERIES SERVICE



This guide summarizes regulations for charter halibut fisheries in Alaska. If you are required to comply with the regulations, you should consult and rely on the actual regulatory text. Please refer to the [annual management measures and regulations under 50 CFR 300](#) or contact NMFS at 907-586-7228 or 907-586-7225.

### New 2014 Regulations for Charter Halibut Anglers

NMFS announces new regulations for the charter halibut fishery in Southeast (Area 2C) and South-central (Area 3A) Alaska for 2014.

#### Regulations Applicable to Both Areas

- **Sport fishery season dates:** February 1 through December 31, 2014.
- **Filleting halibut at sea:** Each halibut filleted at sea may be cut into no more than 2 ventral pieces, 2 dorsal pieces, and 2 cheek pieces, with enough skin on each piece to identify if it is from the light or dark side of the fish.
- **Skipper and crew prohibition:** Skipper and crew may not harvest halibut during a charter vessel fishing trip.
- **Logbook signature requirement:** Charter vessel anglers must sign the logbook at the end of the charter vessel fishing trip to verify the numbers of halibut caught and kept.
- **Allowable gear:** Charter vessel anglers may use a single line with no more than 2 hooks attached or a spear to fish for halibut. No other gear types are allowed.
- **Possession limit:** The possession limit is two daily bag limits.
- **Transporting halibut in excess of possession limit:** Halibut in excess of the possession limit may be transported on a vessel that does not contain sport fishing gear, fishing rods, hand lines, or gaffs.

#### Area 2C (Southeast Alaska)

- **One fish daily bag limit:** Charter vessel anglers may catch and retain one halibut per day.
- **Reverse slot limit:** Retained halibut must be under 44 inches or over 76 inches in total length. This reverse slot limit allows anglers to keep halibut less than approximately 30 pounds and greater than 176 pounds, after the head and guts have been removed.
- **Carcass retention requirement:** If halibut are filleted at sea, charter vessel anglers are required to retain the carcass until landing, so enforcement officers can verify compliance with the reverse slot limit.

#### Area 3A (South-central Alaska)

- **Two fish daily bag limit:** Charter vessel anglers may catch and retain two halibut per day.
- **29-inch maximum size limit on one fish:** Charter vessel anglers may keep one fish of any size per day and one fish that is less than or equal to 29 inches in total length. The 29-inch maximum size limit allows anglers to keep a second fish that weighs approximately 8 pounds, after the head and guts have been removed.
- **Carcass retention requirement:** If halibut are filleted at sea, charter anglers are required to retain the carcass of the halibut that is less than or equal to 29 inches until landing, so enforcement officers can verify compliance with the maximum size limit.
- **Trip limit:** Charter vessels may only take one trip during which charter vessel anglers retain halibut per day.

**Guided Angler Fish (GAF)** The GAF program is new for 2014. Charter vessel operators who choose to participate in the GAF program may offer their clients the opportunity to harvest up to two halibut of any size per day. Special regulations apply for GAF halibut. Ask your guide if he or she will have GAF available for 2014.





## Other fisheries:

- CDQ
- Tribal commercial in WA, OR
- US Federal Subsistence
  - Community
  - Ceremonial
  - Educational
  - ~5600 participants

The primary tool used by the IPHC to research Pacific halibut is the coastwide annully set-line survey.

- True  
- False

## Management

*Quiz - 3 questions*

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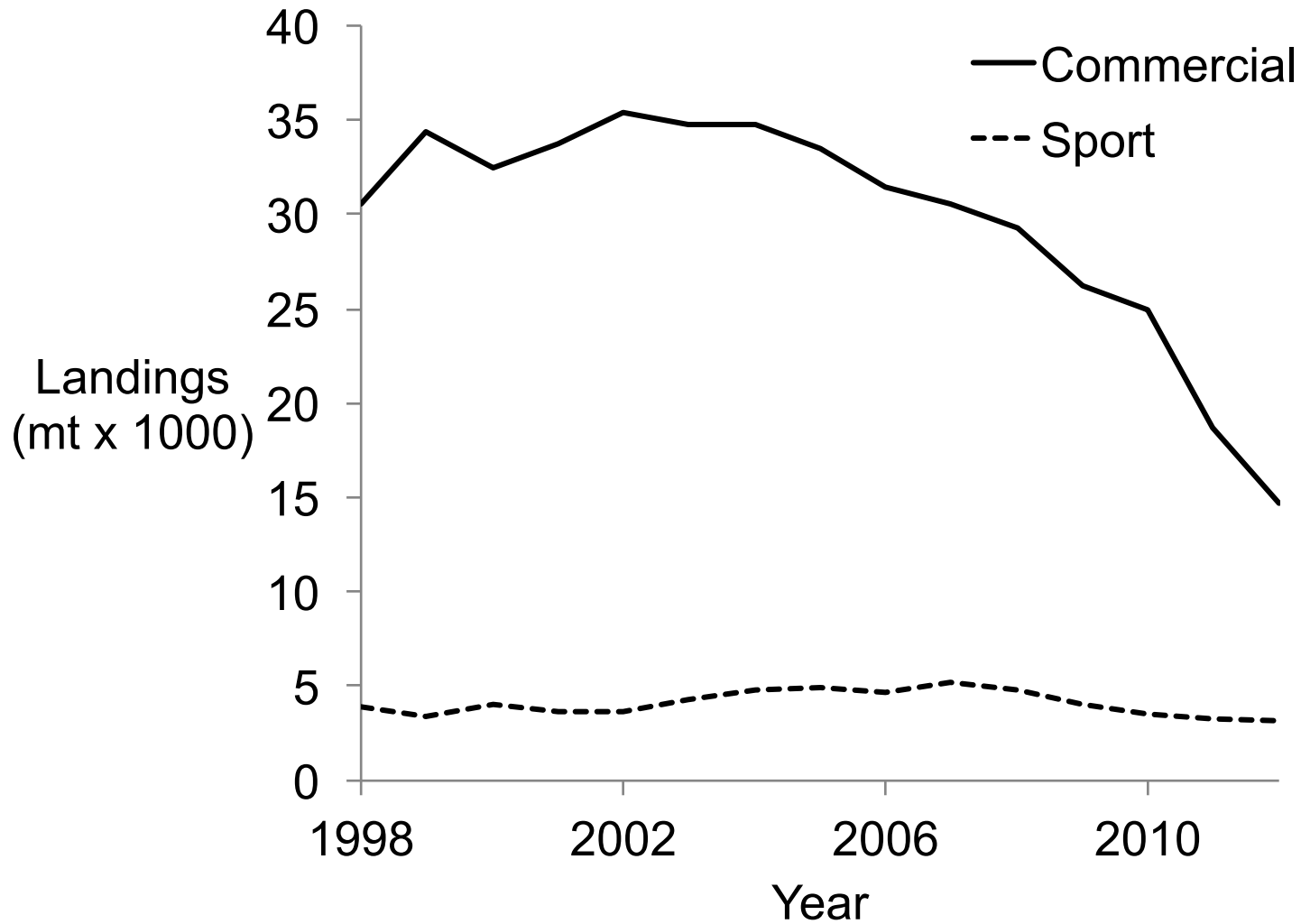
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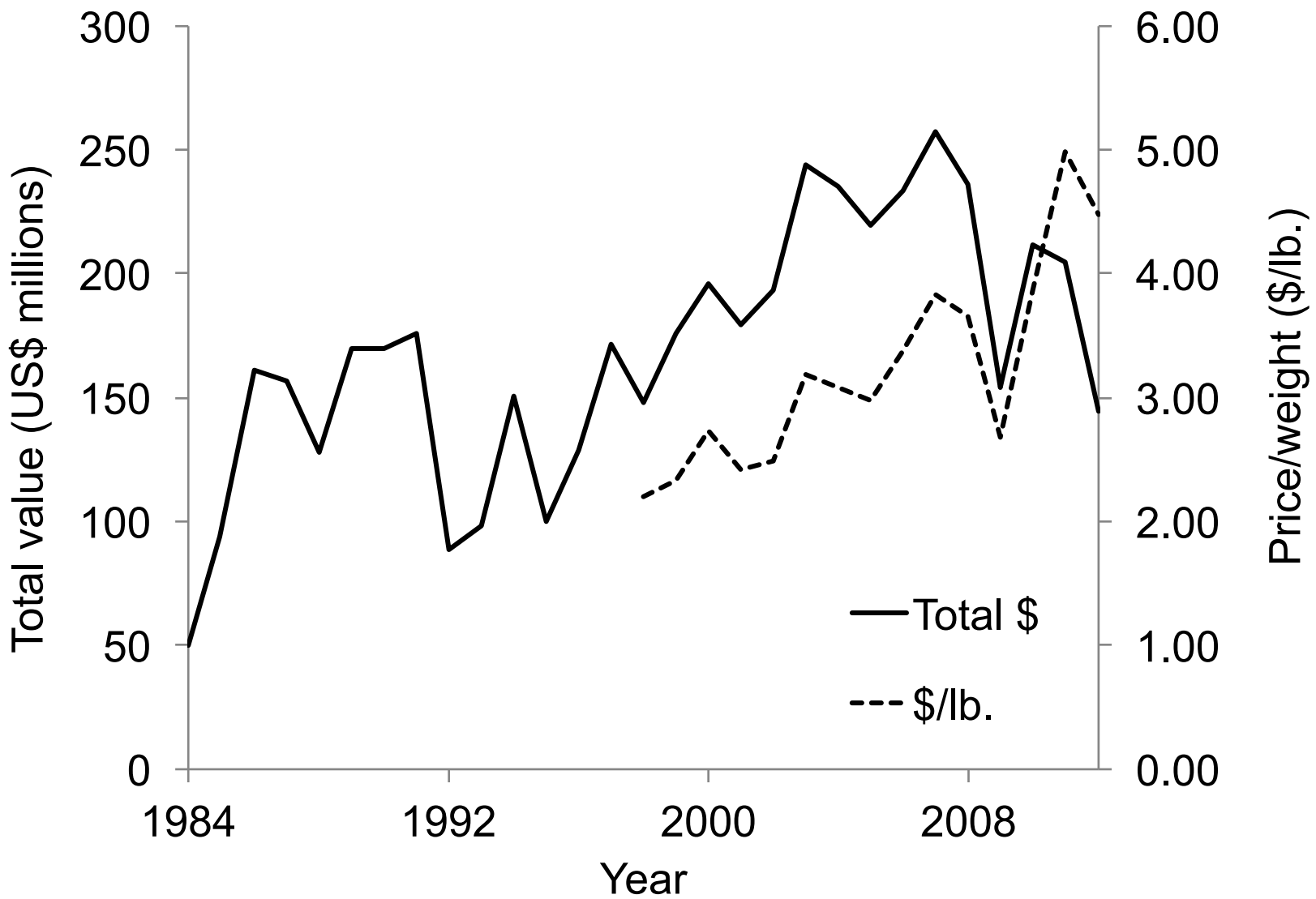


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Edit Properties







# Uses and products





# Uses and products



Commercial landing for Pacific halibut are usually higher than those from sport landings.

- True
- False

## Economics and Uses

*Quiz - 3 questions*

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Edit Properties



## Conservation issues

- Bycatch of juveniles in several other fisheries
- Mushy halibut
- Chalky halibut
- Shrinking size-at-age
- Massive decrease in biomass
- Inaccurate stock assessment
- Allocation among sectors

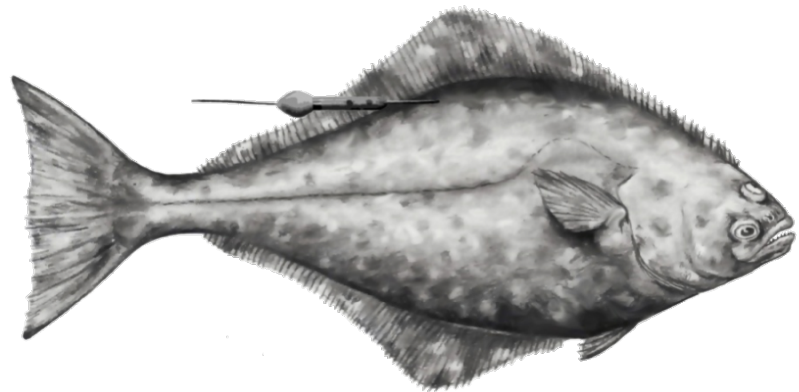


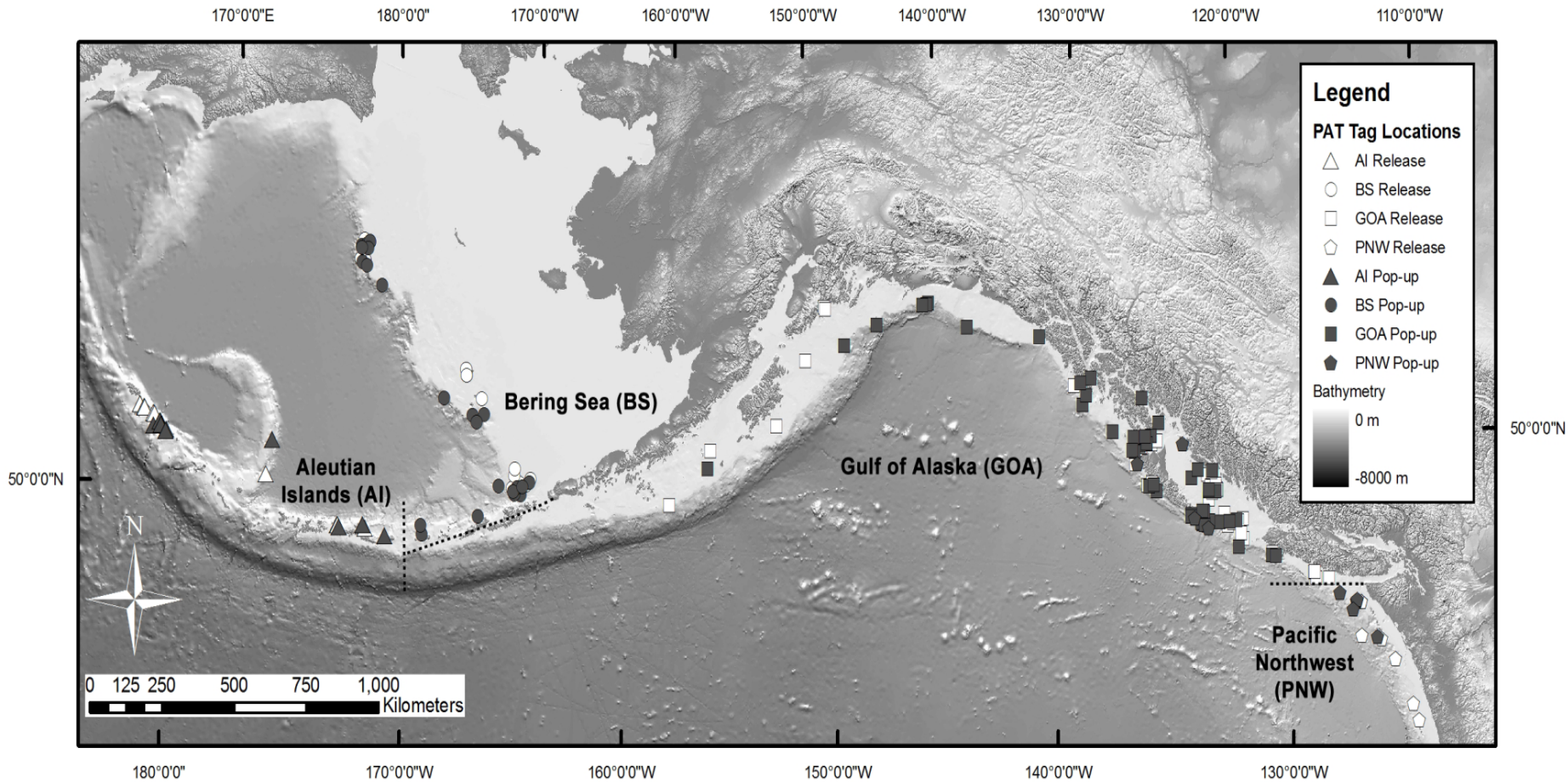


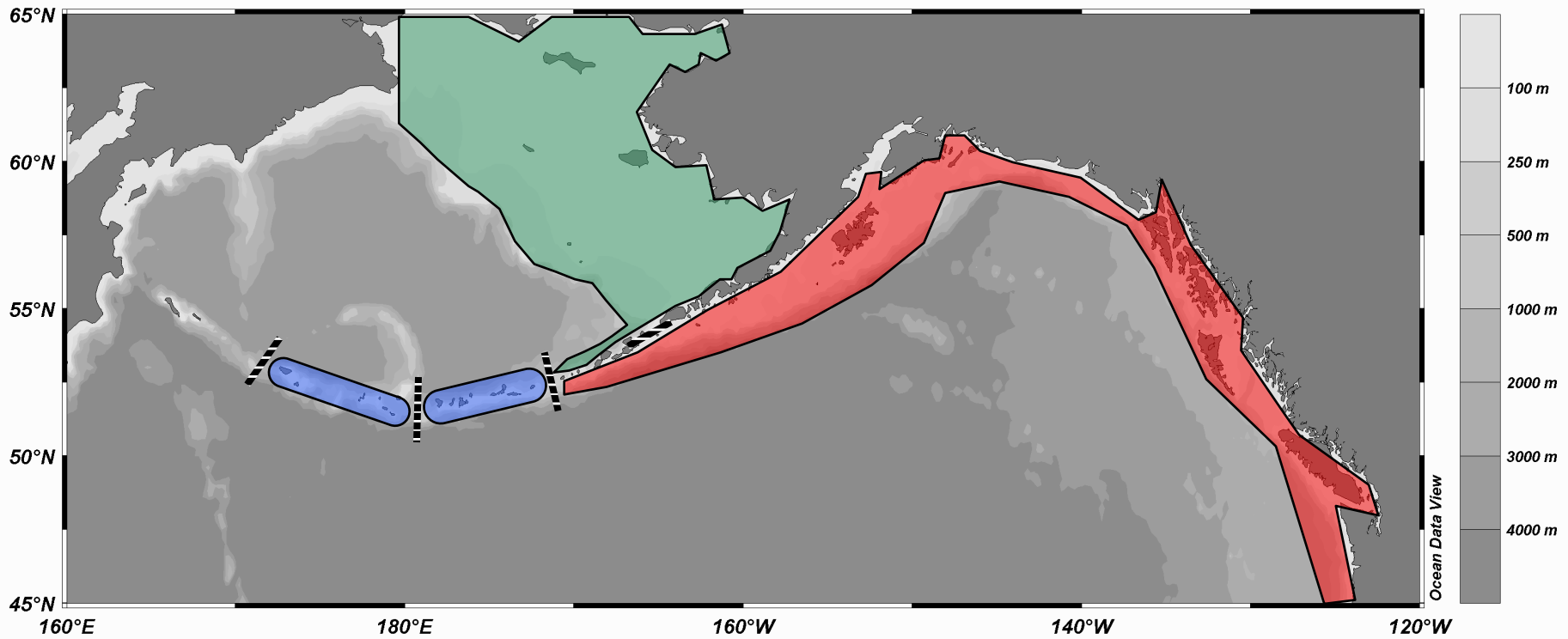


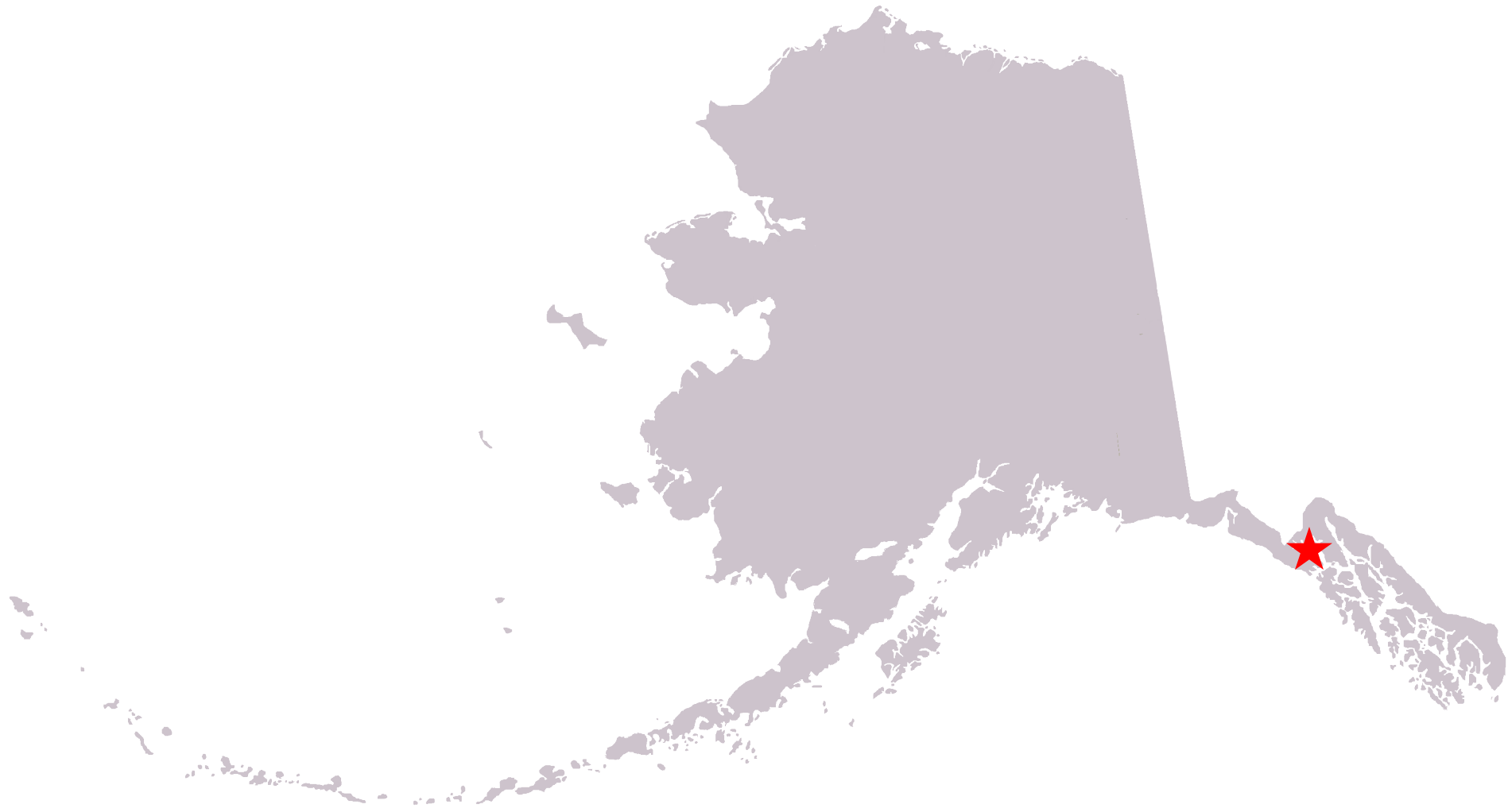
## Pop-up Satellite Archival Transmitting (PSAT) tag

- Measure and archive temperature, depth and ambient light intensity every two minutes
- On pre-programmed date, detaches from fish, floats to surface and transmits archived data to satellites
- While transmitting, end location is determined
- Fisheries independent







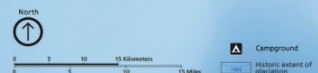


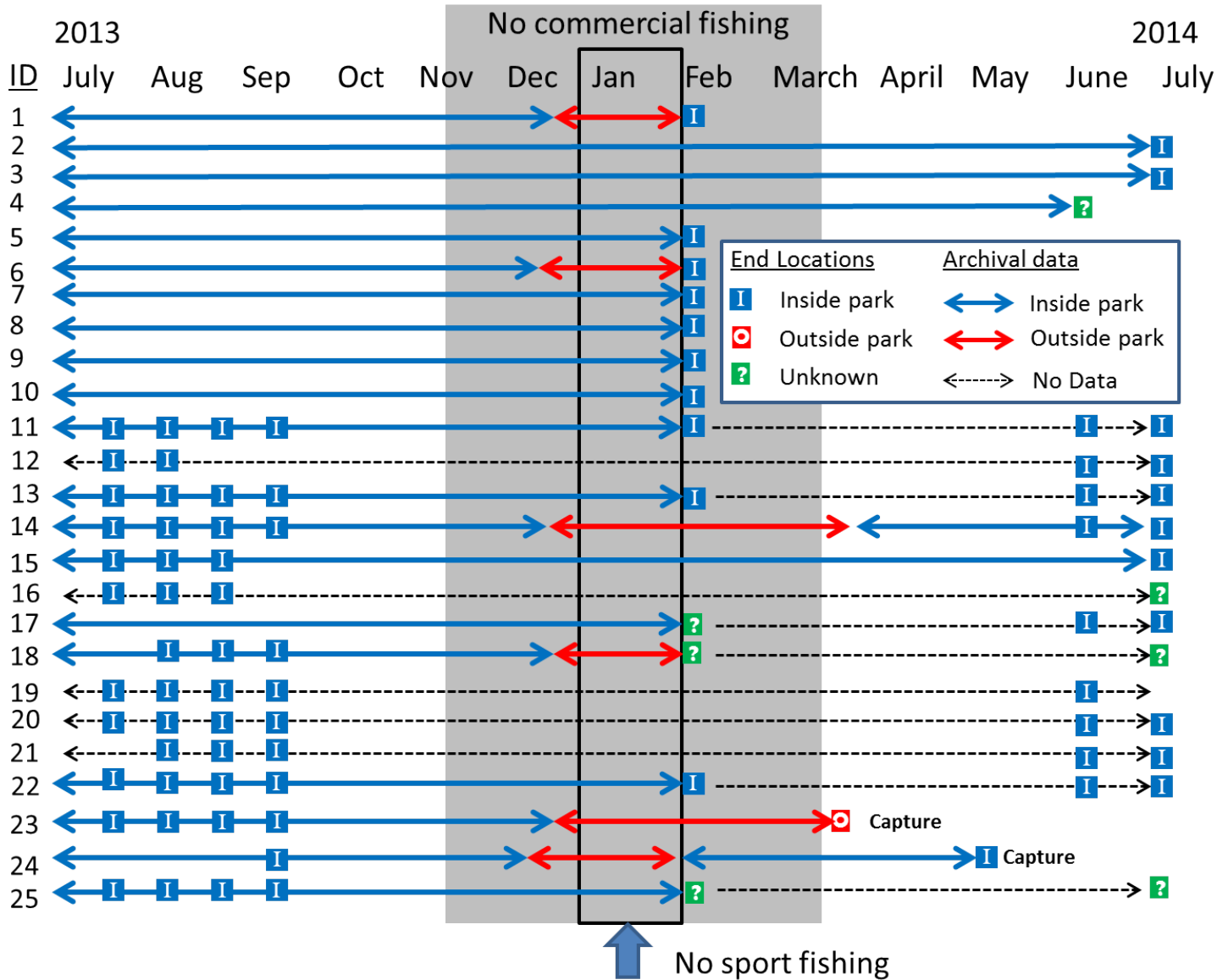


## Glacier Bay



Glacier Bay National Park and Preserve is one of the prime Inside Passage experiences. The park and preserve are part of the world's largest protected natural area, a 25-million-acre World Heritage Site under the auspices of the United Nations Education, Scientific, and Cultural Organization (UNESCO). Glacier Bay was first protected by presidential proclamation in 1925, recognizing its many values for scientific study. Today 2.7 million acres of the park are also protected as wilderness designated by the U.S. Congress.







## Summary:

92.4% of days in Glacier Bay Proper

7.4% of days outside Glacier Bay Proper when the fishery was closed

0.2% of days outside Glacier Bay Proper when the fishery was open





Questions?



Chalky halibut and Mushy halibut are basically the same thing.

- True  
- False

## Conservation Issues and Research

*Quiz - 3 questions*

Last Modified: Dec 17, 2015 at 04:53 PM

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No video resources for this module

A vertical stack of five small, stylized fish icons in shades of blue and white, positioned to the left of the 'Fisheries Technology' text.

## Fisheries Technology



Are Pacific halibut broadcast spawners?



What is the range for Pacific halibut?



How old do halibut get/ when do they reach maturity?



How many eggs do females lay?



How do you sex halibut?



Are halibut captured as by-catch? Are they thrown back?



What is the difference between a population and a stock?



Ultimately who decides how much halibut can be fished?

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