Ecosystem Management of Pacific Halibut in Prince William Sound

Cordova Flatfish
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Presentation Overview

• Ecosystem: Gulf of Alaska and Prince William Sound
• Halibut Biology
• Current Fishing and Management Practices
• Factors Affecting Halibut
• Proposed Ecosystem Management Plan
Gulf of Alaska

• Diverse Ecosystem
• Alaska Coastal Current
• Precipitation and wind driven
Prince William Sound

- Summer circulation mainly freshwater driven.

- Winter circulation mainly wind driven.
Basic Biology

- *Hippoglossus stenolepis*
- On average 42 in and 30 lbs
- Biggest: 8 ft and 500 lbs
- Most are 10 – 80 lbs
- 25 years old
- Oldest: 55 years
- Flat body, both eyes are on one side, the “colored” side, with a pale underside
Food

• Carnivorous
• Juveniles: Plankton
• 1-3 Years: Small Fish
• 3+ Years: Cod, Sablefish, Pollock, Rockfish, Sculpins, Turbot, Other Flatfish, Octopus, Crabs, Clams, Sand Lance, and Herring
• Often leave bottom for food
Location

- Exploitable Biomass = 258,000 t
- Found on continental shelf of North Pacific Ocean
- Distributed from California to Alaska to Japan
- Most concentrated area is around Gulf of Alaska
Habitat

• Generally live on the bottom
• Cold temps. 37 – 46°F
• Summer: 900 – 90 ft
• Winter: 1,500 – 600 ft
• Edge of continental shelf in winter; shallower areas in summer
• Migrations aren’t long, but can be
Reproduction

• Spawning Season: November – March
• Males can reproduce at 8; females at 12
• Broadcast Spawners
• Larvae float for 6 – 7 months
• Settle to bottom and take on Halibut shape
What's a longliner?

- Commercial Halibut Fisherman = longliner
- Longline miles in length
- Gangions with baited hooks
- Buoys on both ends
International Pacific Halibut Commission (IPHC)

- Series of test cruises from WA to the end of the Aleutian Islands.
- Results = Optimal Sustainable Yield (OSY)
- OSY minus bycatch, subsistence, and recreational catch equals the Total Allowable Catch (TAC).
- TAC = the total percentage of quotas shared between the fisherman.
National Marine Fisheries Service (NMFS)

• Federal organization manages U.S. fishing zones.
• Uses results of IPHC test
• Partnered with National Pacific Fisheries Marine Council (NPFMC) for Gulf of Alaska groundfish and halibut
Subsistence

- Maximum of 30 hooks set
- Must obtain a Subsistence Halibut Registration Certificate (SHARC)
- Limit of 20 Halibut
- Logged by voluntary survey
- More than 1 license is allowed onboard
Recreational Catch

- Monitored by a statewide survey
- Minimal regulations
- Bag limit of 2 halibut per day
- 4 halibut on board total
Factors Affecting Halibut

• Climate factors measured by the Pacific Decadal Oscillation Index

• Bycatch
PDO Index

- Positive regimes, warm coastal currents, high productivity in GOA.

- Negative regimes, cold coastal currents, low productivity in GOA

- Correlation between climate patterns and halibut productivity.
PDO Index

Regime type and raw and smoothed annual PDO series

Recruits (M)

Raw and smoothed recruitment
Bycatch

• Tracked by NMFS, foreign and domestic observer programs.
Ecosystem Management Plan

- Halibut Charter Boat Industry
- Climate Change
- Bycatch
- Local Area Management Plan
Charter Quota

- Fast Growing Charter Fleet
- Voluntary Survey to set Guideline Harvest Level (GHL)
- IFQ System
- Enforce Guideline Harvest Level through Alaska Department of Fish and Game
Climate Changes

• Recruitment relates to current climate factors
• Changes in climate can negatively effect the plankton populations, which is the food source for juvenile
• Changes in currents can move larvae to unhealthy environments
• Monitored by Alaska Ocean Observing System
Bycatch

• Research shows the earlier halibut are sorted and released the greater survivability they have
• Increase sorting on deck
• Increase sorting capacity in processors
• Informational pamphlets
LAMP

• Local Area Management Plan
• Local Task forces meet to plan
• Pass Proposal onto ADF&G then NPFMC, Board of Fisheries, then to the IPHC
• Balanced approach to manage diverse ecosystems and economies
Example LAMP

- Task force chosen to include prominent fishermen, leading scientists, and other community members (Marine Advisory Program takes the lead)
- They would meet to decide what areas around town would be open to whom
- Certain areas closer to town would be open only to Sport/Subsistence Fisheries
- Farther away would be open to all fisheries
Summary

• Closer monitoring on charter industry and growth and greater enforcement
• Monitoring of climate changes and plankton populations using AOOS
• Monitor bycatch levels and increase sorting speed
• Put together Local Area Management Plan
Thank You

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