



NOAA
FISHERIES

Alaska Fisheries
Science Center

AFSC longline survey & the sablefish logbook program

Status of Stocks and Multispecies Assessments

Fishery Dependent and Independent Data Review
August 26, 2013

Japan - US Cooperative Longline Survey

1978 - 1994



Fish-and-chips
Policy

Sablefish (blackcod)
"Anoplopoma fimbria"



US Domestic Longline Survey

1987-Present

F/V Alaskan Leader



F/V Ocean Prowler

US Domestic Longline Survey

Details

Based on US/Japan Cooperative Survey

Surveys Only Alaskan Waters

Surveys 150m - 1000m

Annual Survey Cycle

Summer Survey - June thru September

Contracted US Fishing Vessel (> 135ft)

Cost Recovery Survey

Cost Recovery Survey Details

Vessel Pays

- Contract Biologists
- Operational Costs
- Archival Tags

Vessel Keeps

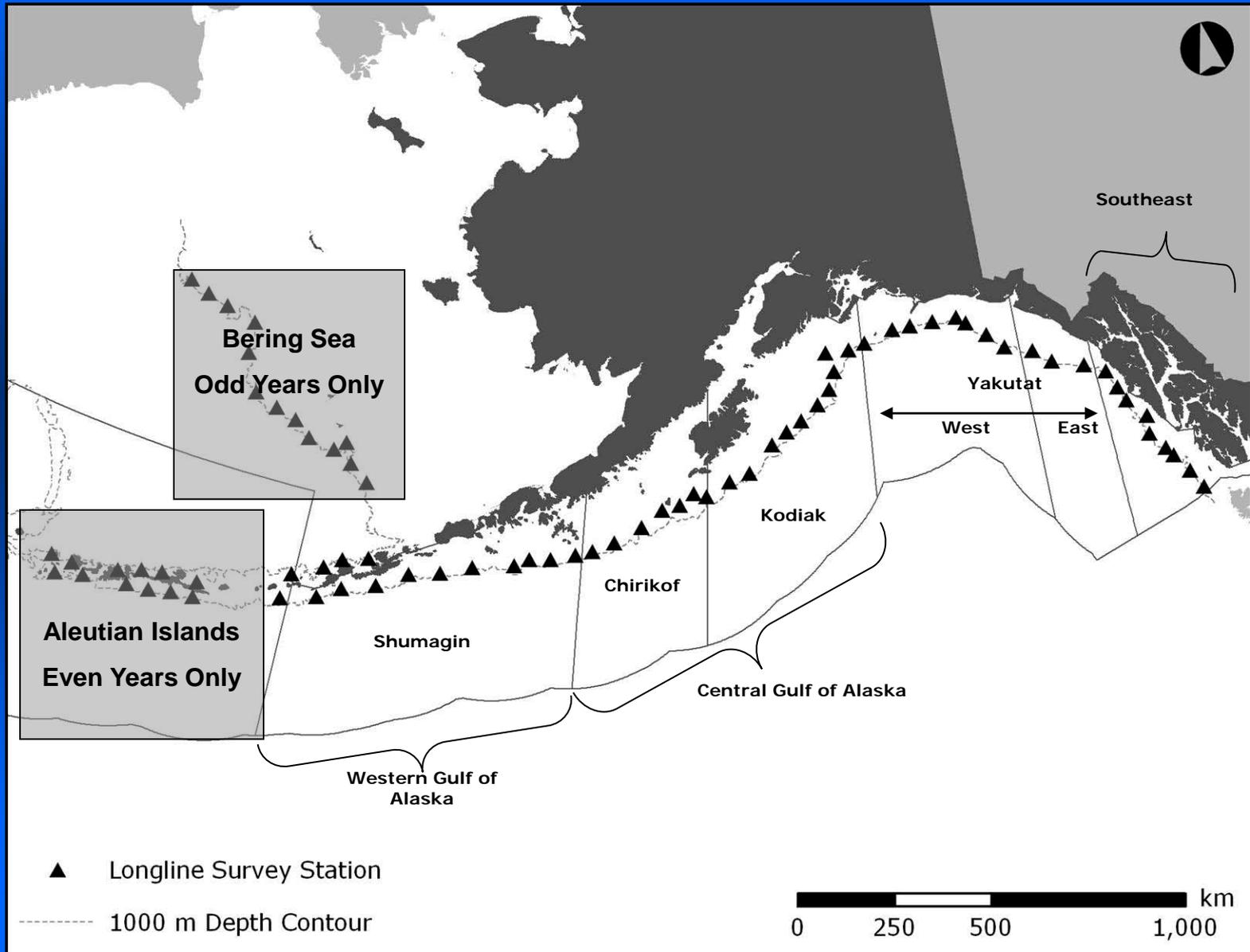
- Catch of any species except salmon, crab and halibut

Government Pays

- Fishing Gear/Supplies
- Travel / OT



Survey Geographic Coverage



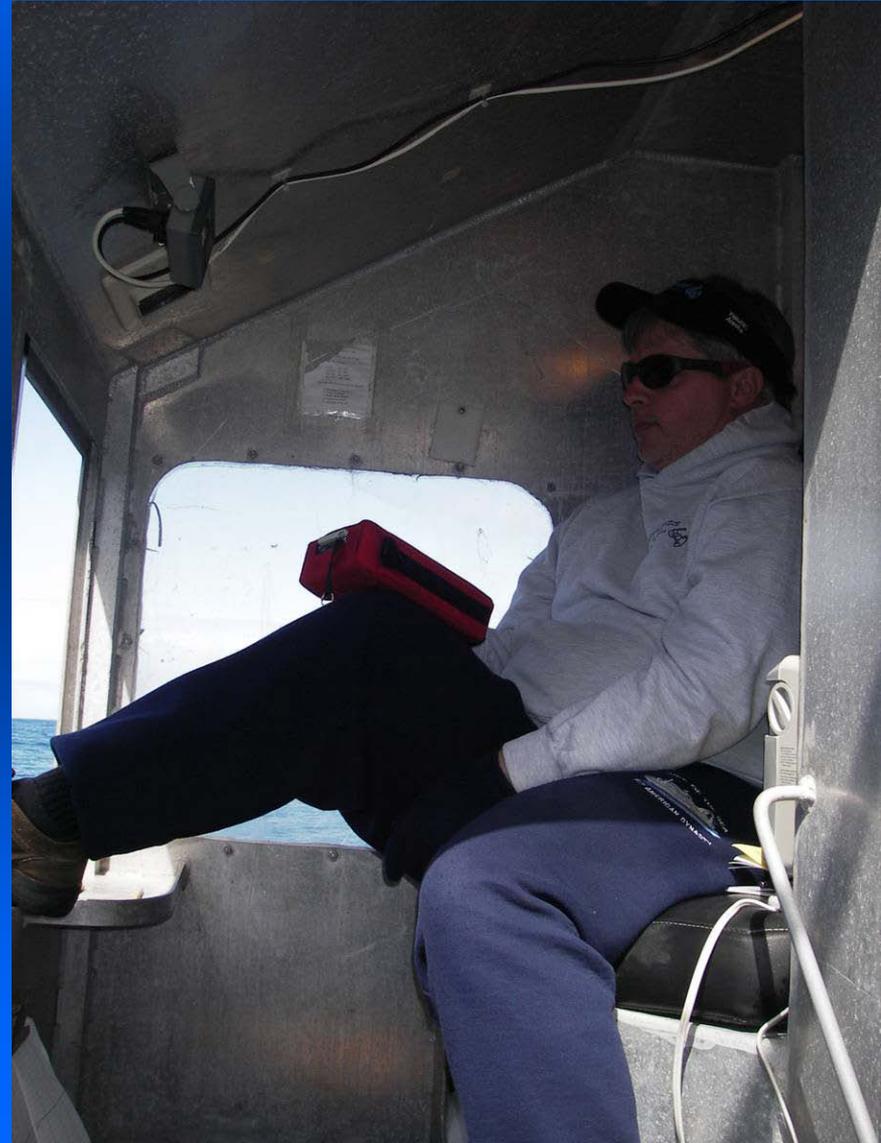
Survey Design

- Systematic design
- Stations based on Japan/US coop survey
- 30-60 km apart
- Continental Slope
- Depth range 150-1000m
- Gullies added 1995



Data Collection

- 100% Hook condition/catch tally
- Lengths 14 species
- Otoliths collected for sablefish only
- Tag sablefish, turbot and thornyheads



Survey Data Outputs

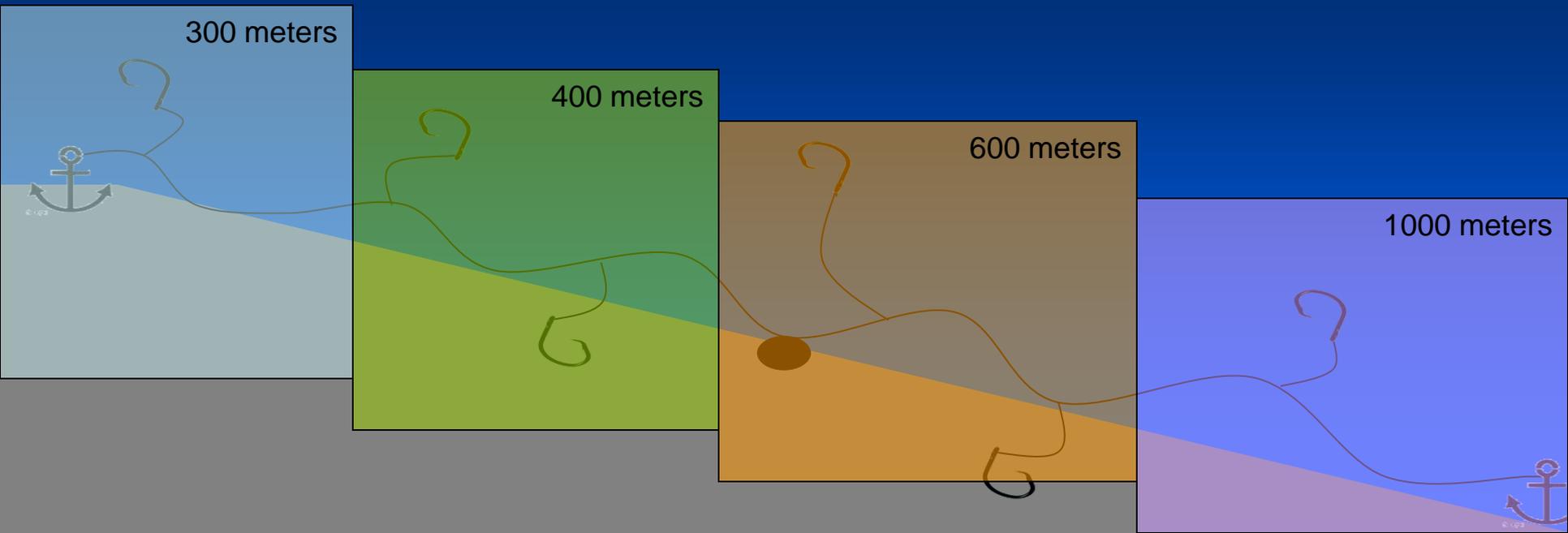
- Age Structures - sablefish
- Catch Per Unit Effort
- Relative Population Numbers
- Relative Population Weights
- RPN Weighted Length
- Frequencies



Catch Per Unit Effort

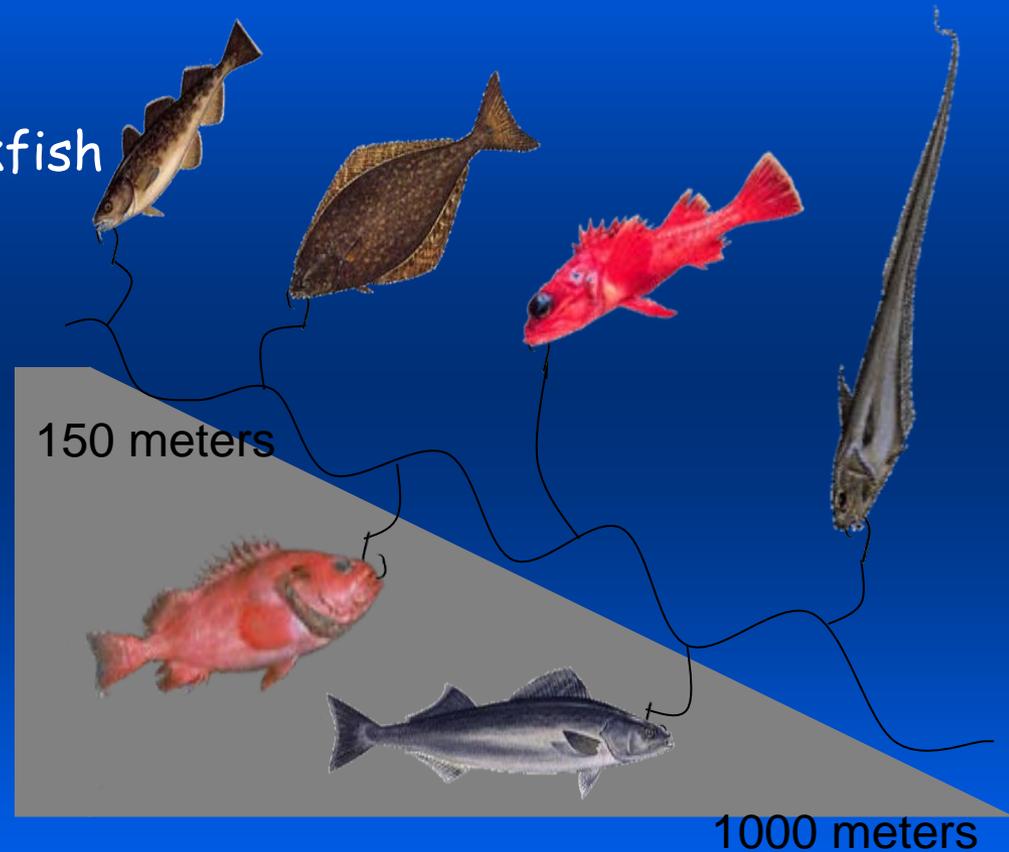
- Sampling Unit is a Station
- Depth stratification
8 strata

$$CPUE_{s,d} = \frac{\# Fish_{s,d}}{\# Skates_{s,d}}$$



Assessments That Use LL Survey

- GOA/BSAI Sablefish
- GOA Rougheyeye/blackspotted rockfish
- BSAI Greenland turbot
- GOA Shortspine thornyhead
- GOA/BSAI Sharks
- GOA/BSAI Grenadiers



Survey Data Availability

- Rigorous at-sea data checking
- Available by October 1
- Easy access - web reporting tools (AKFIN)
- Publicly available December (AFSC website)



LL Survey Strengths

- One of longest survey time series 1979-2013
- Cost recovery - Govt costs are ~\$125,000 annually
- Database well documented and easy access
- Evolved beyond a sablefish only survey
- Surveys depths greater than trawl survey
- Surveys untrawlable habitat

Longline Survey - Design Challenges

- Fixed station sampling design
- Whale depredation affects precision and accuracy
- Cost-recovery success dependent on catch/prices
- Limited data collection ability - 2 scientists

Longline Survey - Data Challenges

- Are catch rates proportional to abundance?
- Provides relative measure of abundance
- Variance estimates are approximate
- Hook competition/gear saturation
- Accounting for whale depredation

Longline Survey - Proposed Solutions

- Correct catch rates for whale depredation
- Test index for hyperstability/gear saturation
- Integrating trawl survey and longline estimates
- Consider factors that could affect annual catchability

Sablefish Logbook Program



- Sablefish assessment only assessment that fits a fishery CPUE index in model
- Industry requested through NPFMC - 1999
- Observer coverage 14% of sablefish IFQ catch - vessels > 60ft

PVOA

Petersburg Vessel Owners Association



Sablefish Logbook Program

- Vessels $> 60\text{ft}$ required to fill out logbook
- Vessels $< 60\text{ft}$ voluntarily submit logbook
- International Pacific Halibut Commission port samplers provide dockside collection and edits

Logbooks capture

- 50% of IFQ catch
- 75% of logs voluntary



Sablefish Logbook Program

Fishery data in sablefish assessment

- Logbook and observer catch rates combined
- Used as CPUE index in model
- Used with survey data to determine apportionment



Sablefish Logbook Program

Strengths

- Industry driven and supported
- Supplements observer data
- Provides seasonal data in addition to survey
- Provides additional index for use in model and apportionment



Sablefish Logbook Program

Challenges

- Classic fishery data - data deficiencies
- Funding (~\$75k annually)
- Current fishery index may be hyper-stable
- Observer restructuring effects on fishery data unknown



Sablefish Logbook Program

Proposed solutions

- Standardizing fishery index with a model
- Utilizing national Cooperative Research Program to fund
- Monitor changes in Observer Program

