

Commercial Herring Fisheries in Southeast Alaska

2018 Report to the Alaska Board of Fisheries

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Sitka, Alaska

by

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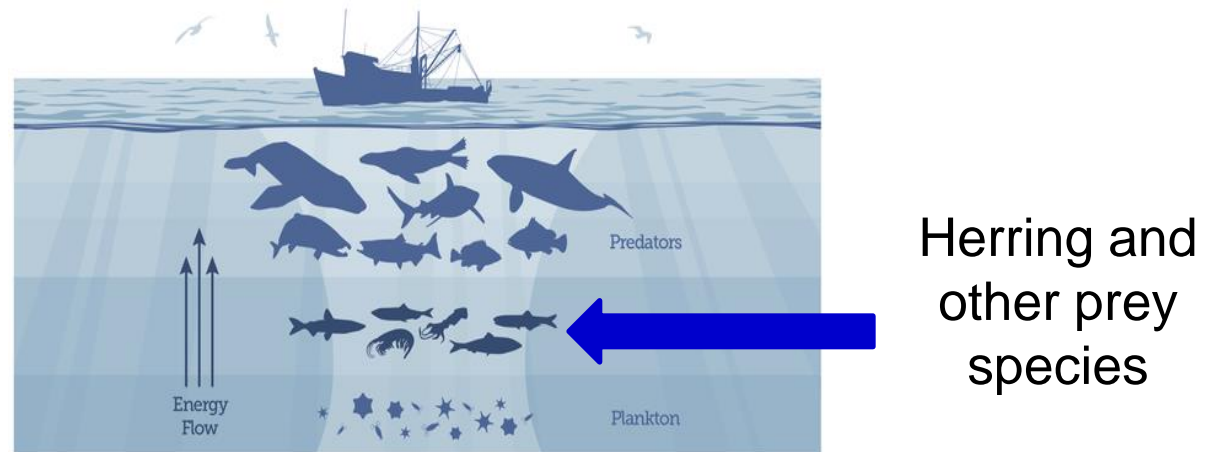
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Alaska Department of Fish and Game
Division of Commercial Fisheries

Topics

- 19 herring proposals – focus on pertinent issues
- Ecosystem considerations for herring
- Orientation of stocks and fisheries
- Management plan overview
- Harvest rate/thresholds (Props 98-100)
- Herring resiliency (Props 95,96,100)
- Potential commercial fishery effects on subsistence
- Sitka closed waters, historical spawn, historical fishery openings (Props 104,105,106)
- Spawn-on-kelp fishery (Props 101,102,103,107,112)

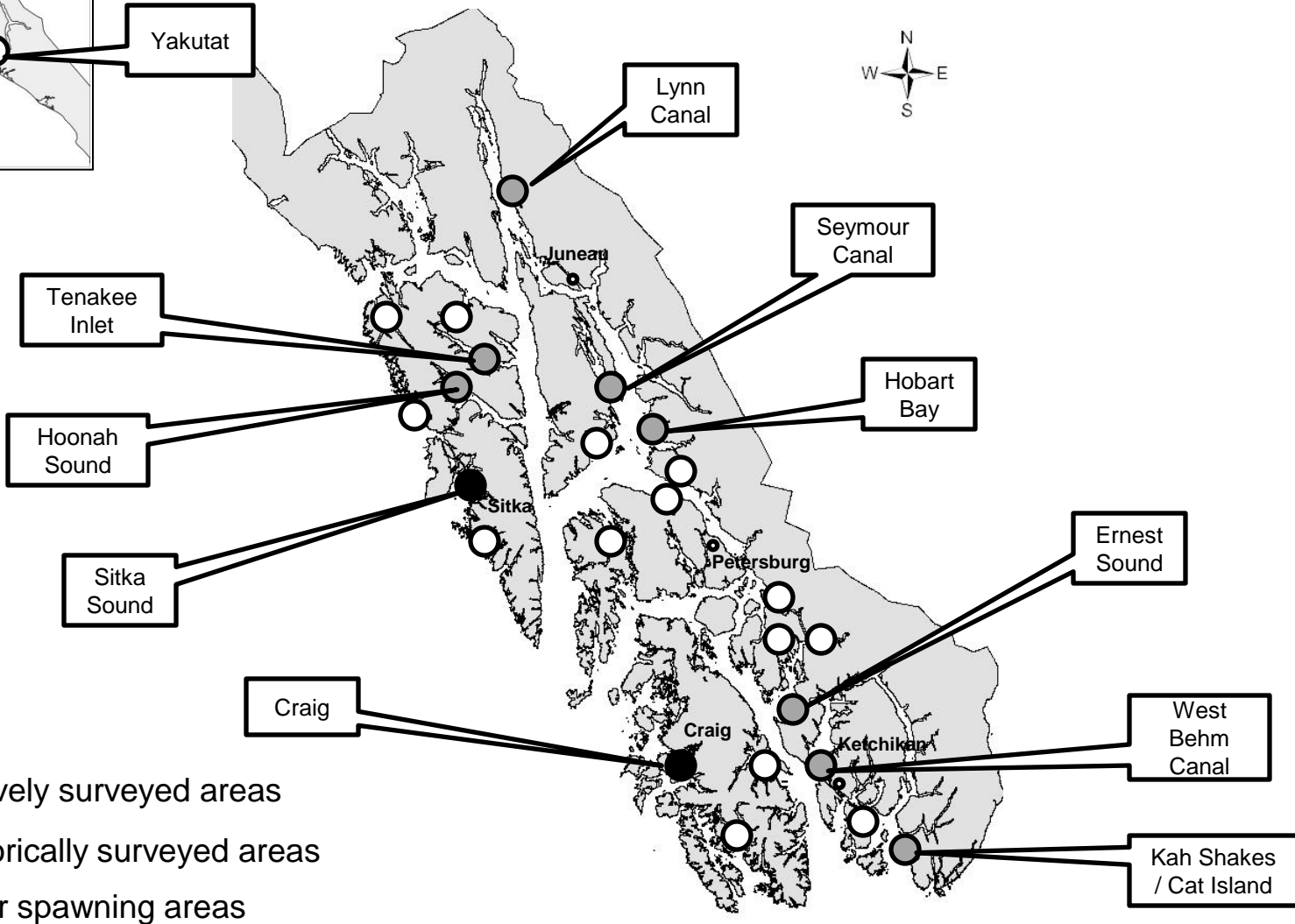
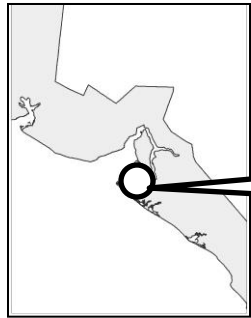
Ecosystem Considerations

- Herring play an important role in ecosystem, linking lower and higher trophic levels



- Important as prey for many marine mammals, fish, birds

Location of Spawning Areas



Southeast Commercial Herring Fisheries and Gear Types

- Sac-roe
 - Purse seine or gillnet
 - Spring fisheries
 - Largest fishery for landings and usually for overall value
- Spawn on kelp
 - Closed or open pounds; herring collected with purse seine
 - Spring fisheries
- Bait/food
 - Purse seine
 - Fall/Winter fisheries
 - Smallest fishery for landings and overall value
- Some areas have multiple fisheries with allocations
 - Example is Craig: Bait/food (60%) and spawn on kelp (40%)

Southeast Herring Management Plan (5 AAC 27.190)

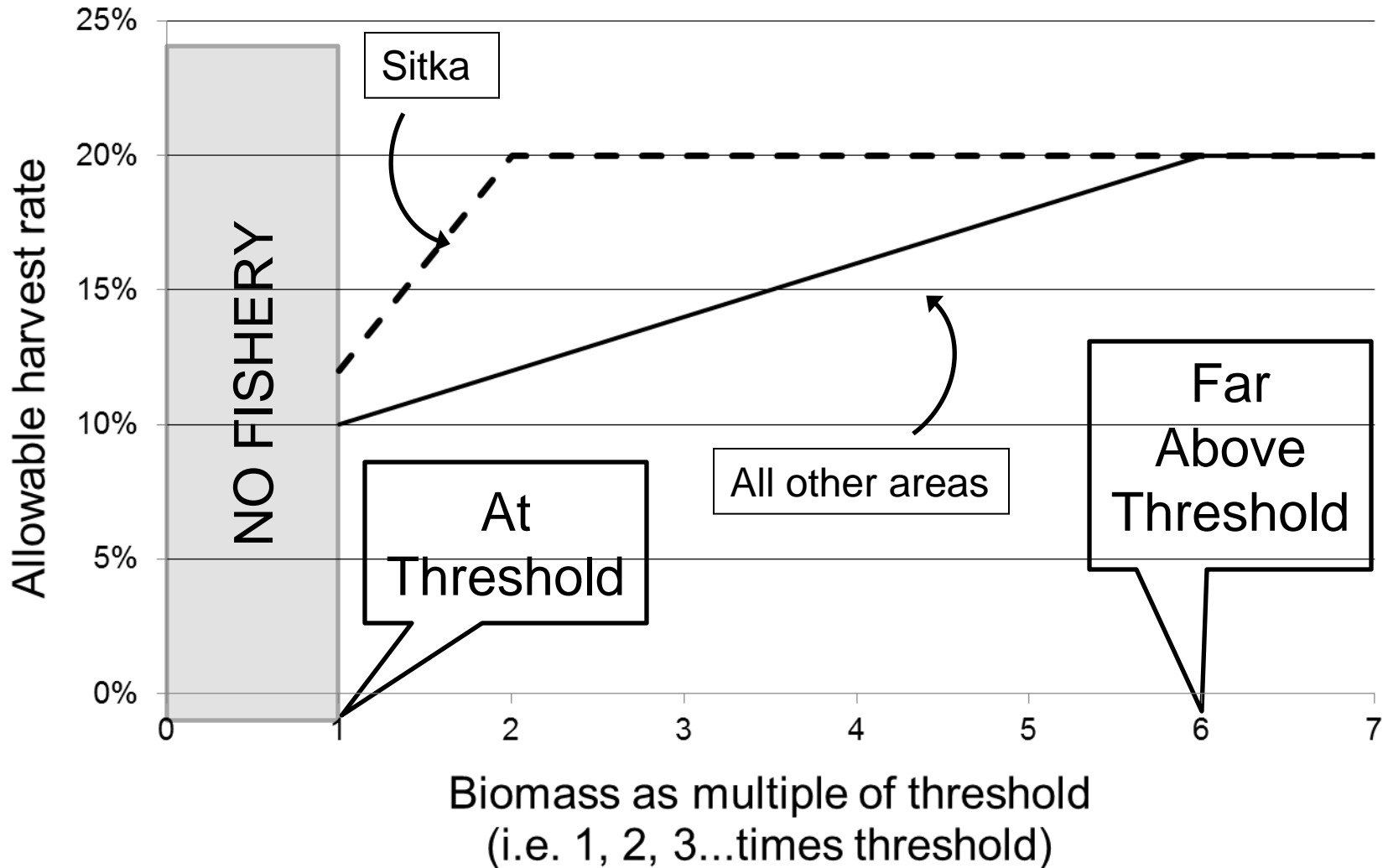
For management of herring, the department :

- 1) Shall identify stocks on a spawning area basis;
- 2) Shall establish minimum spawning biomass thresholds;
- 3) Shall assess abundance of mature herring before fishing;
- 4) May set exploitation rate between 10% and 20%;
- 5) May consider sources of mortality;
- 6) May modify fishing periods to minimize incidental mortalities.

Harvest Rates

- Goals: sustainability; optimize yield; minimize closures
- Established based on analysis of other Alaskan herring stocks
- Southeast uses sliding scale to add a measure of conservatism
- Recent research suggests that a fixed 20% harvest rate with a threshold set at 25% of pristine biomass:
 - successful at maintaining and rebuilding populations in high productivity states and possibly for maintaining populations in low productivity states
 - might not be successful at rebuilding populations in low productivity states

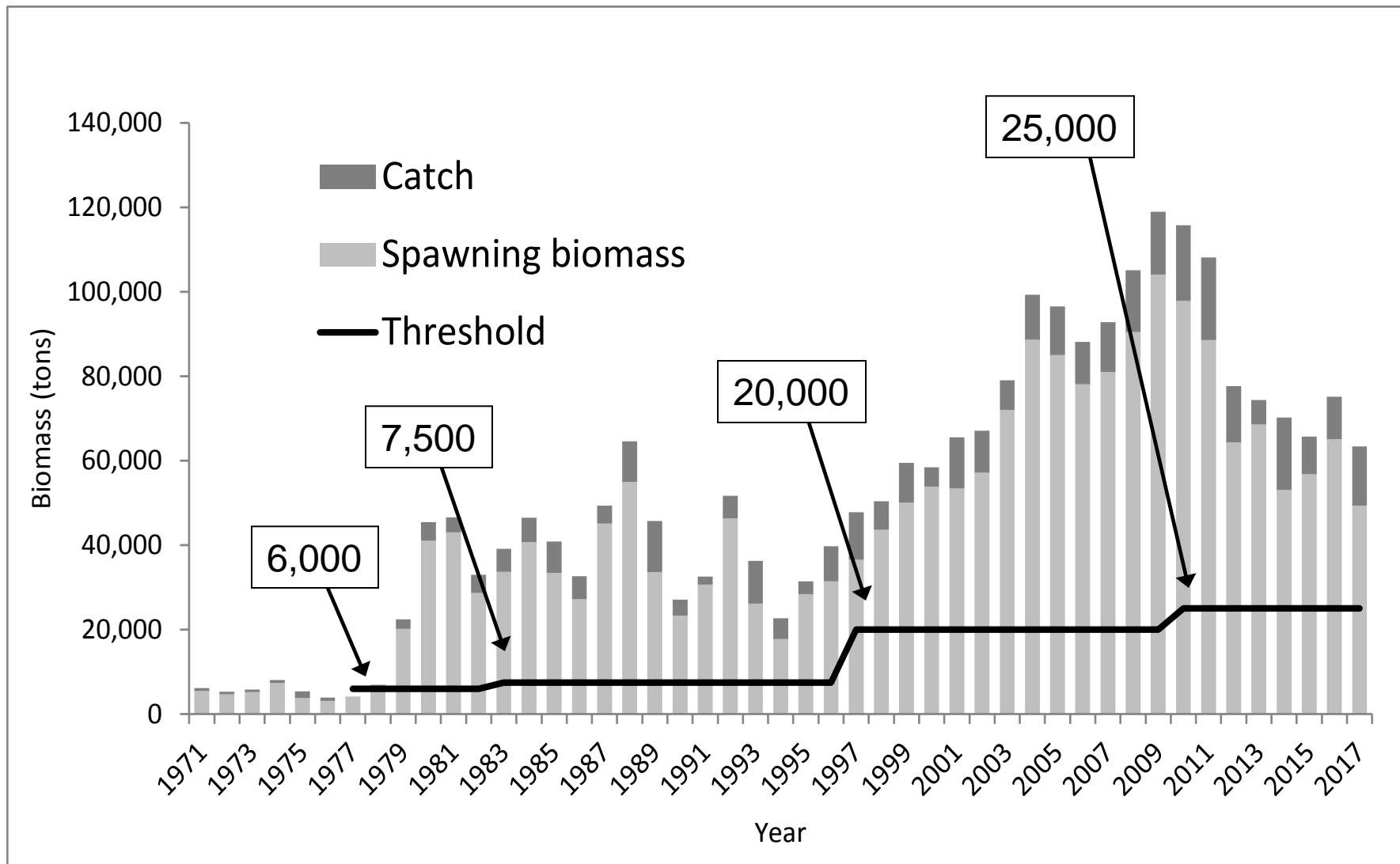
Sliding Scale Harvest Rate



Thresholds

- Goals
 - Allow stock to rebound more quickly when at low levels
 - Provide spawning base for reproduction / future recruitment
 - Use with corresponding appropriate harvest rate
- Established based on one of two approaches:
 - 25% of estimated pristine biomass, a commonly used approach
 - Set based on estimates of historical abundance and data quality
- Recent research suggests thresholds above 25% of pristine biomass may be necessary for other species, and to allow low productivity stocks to recover

Sitka Sound Biomass and Threshold



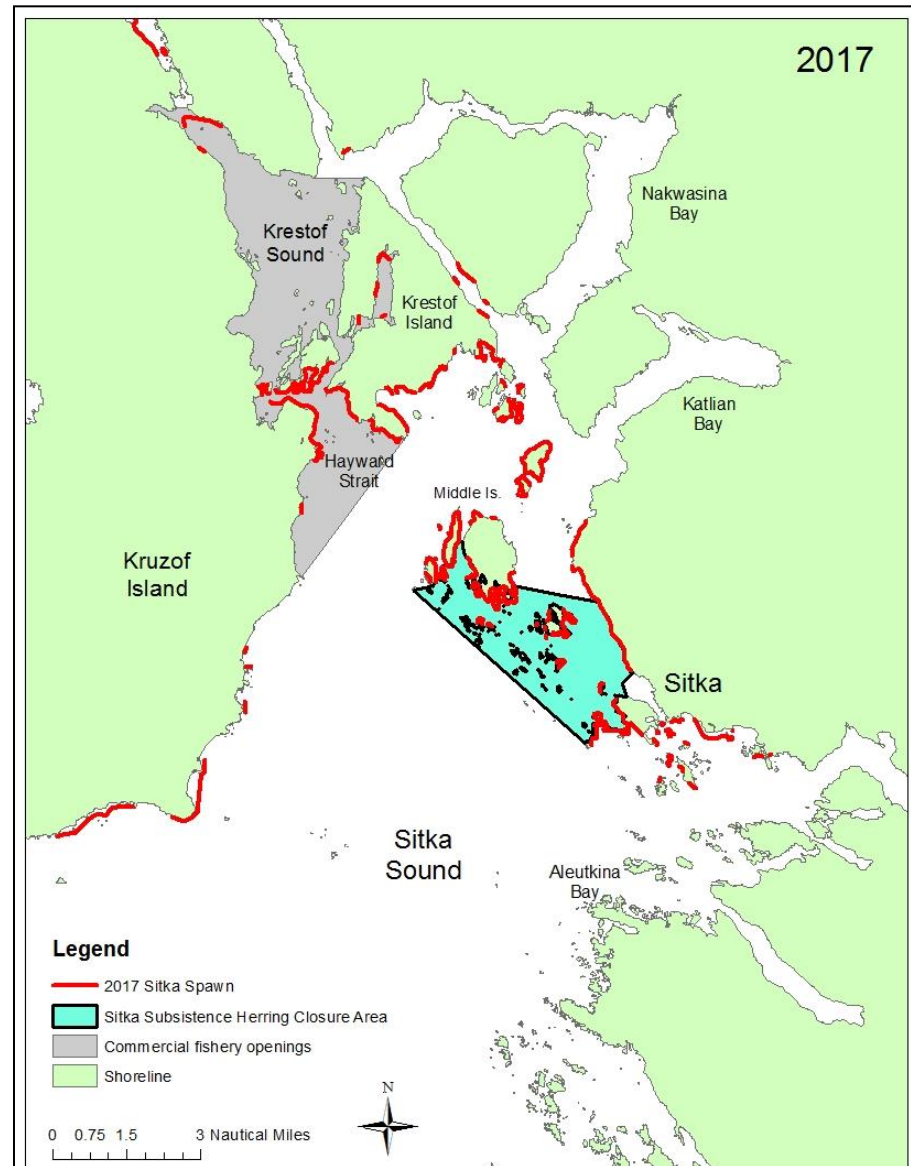
Effect of Commercial Fishery on Subsistence Opportunity

- Big question – do commercial openings affect spawning behavior, and/or subsistence fisheries and if so, how much? (Props 104-106)
 - Potentially, but difficult to determine if it is happening, how, or to what extent
 - Ways fishery could affect spawning or subsistence
 - Does spawn happen because of the location of fishery or does the fishery happen because of the location of spawn?

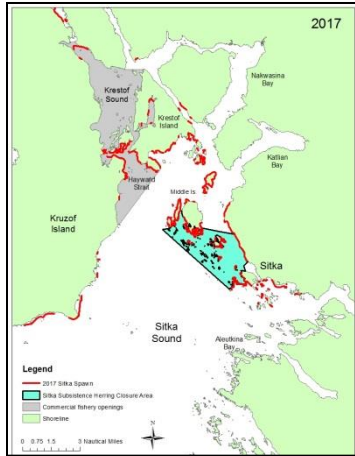
Sitka Sound 2017 Spawn and Fishery Areas

- Proposals
104,105,106

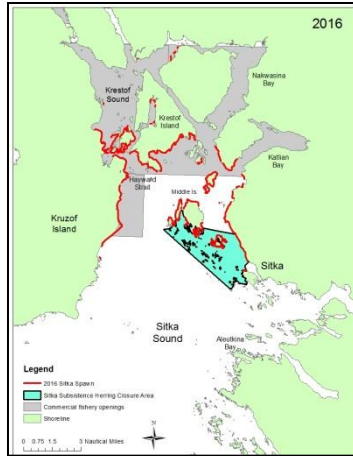
- Map shows:
 - subsistence closure area (light blue)
 - 2017 areas of commercial openings (gray)
 - Shoreline with spawn (red line)



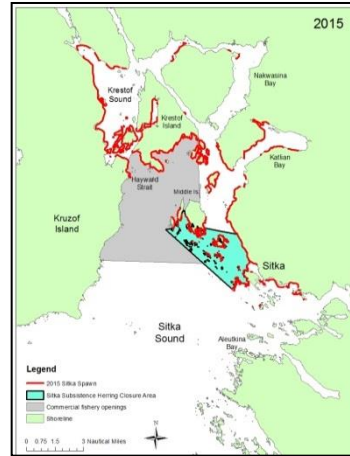
Sitka Sound Herring Spawn and Fishery Areas



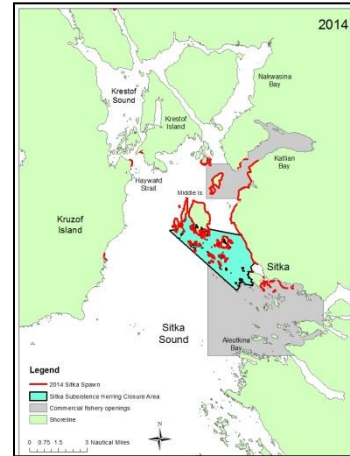
2017



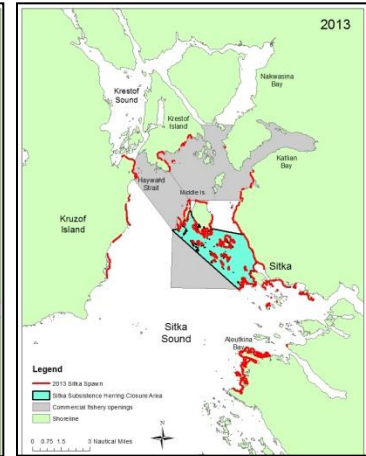
2016



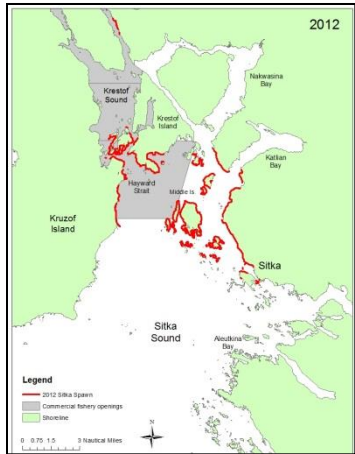
2015



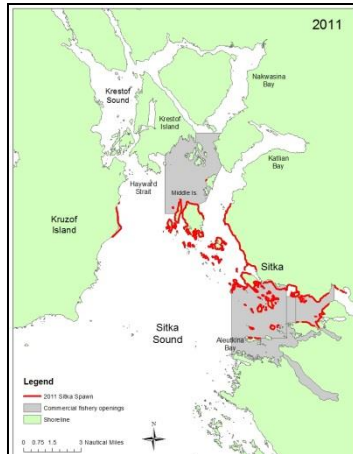
2014



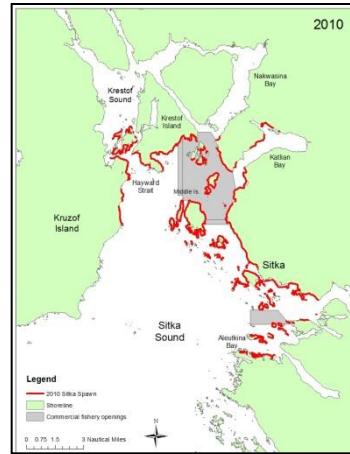
2013



2012



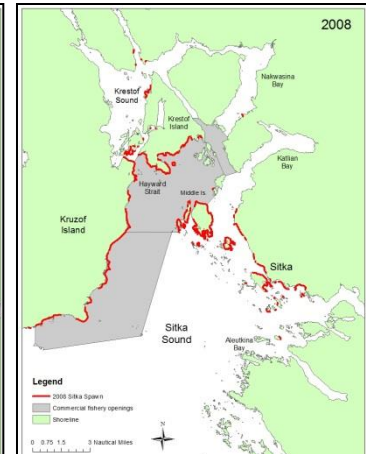
2011



2010



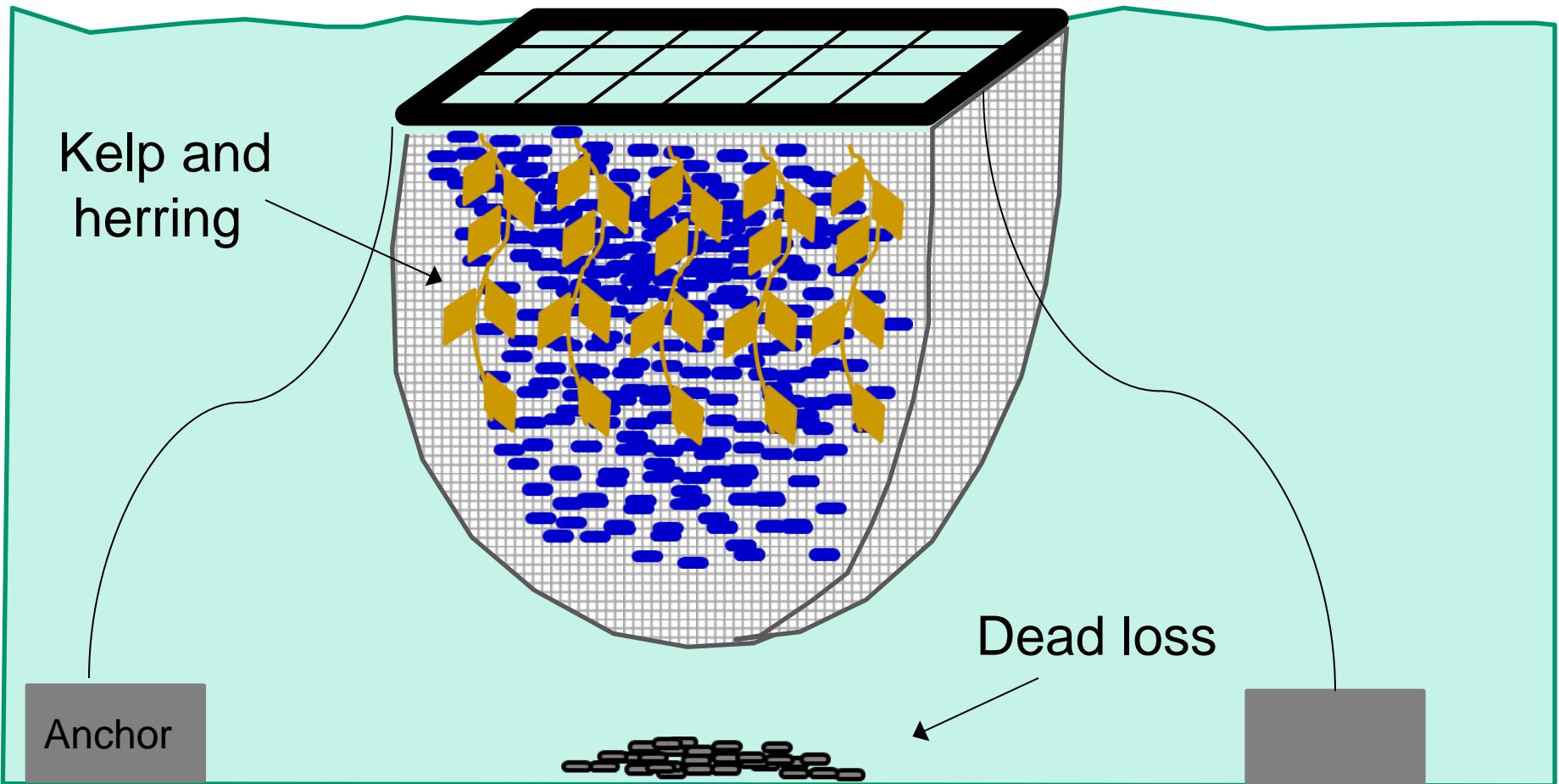
2009



2008

SOK Fishery

- * Requires careful handling of herring to transfer to pounds.
- * Release herring alive after spawn but before SOK harvest.
- * No opportunity to measure quantity of herring in pounds.



Spawn on Kelp Fisheries

- Kelp allocations
 - Means to control herring usage
 - Allocation tables with incentives to form groups
- Estimates of herring use
 - Difficult to determine accurately
 - Partially based on results from PWS and Southeast AK
 - Estimate average of 20 tons used per pound
- Estimates of dead loss
 - Assume 75% mortality (15 tons per pound)
 - True mortality unknown, but 75% assumed