



**NOAA  
FISHERIES**

# Case Study: Hawaii-based Shallow-set Longline Fishery Consultation



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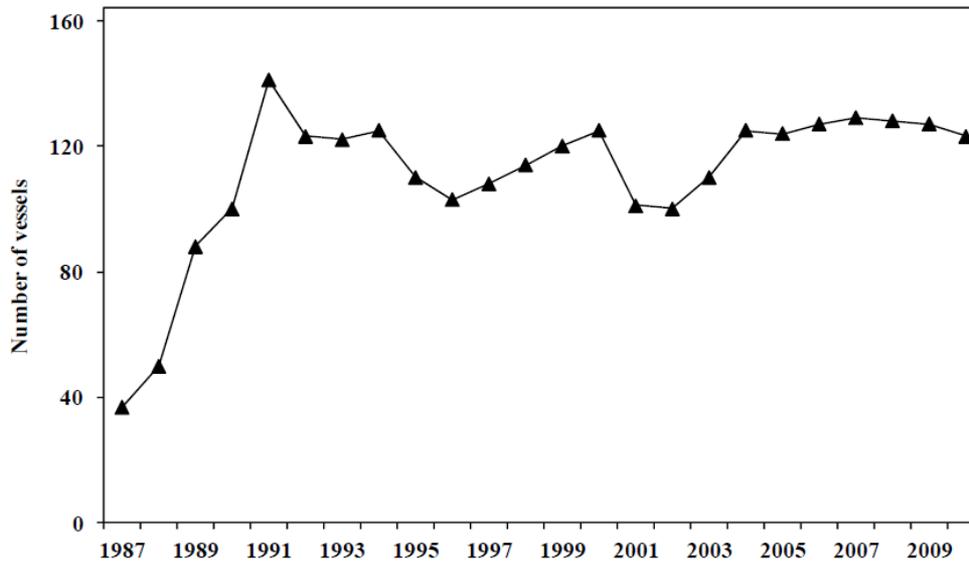
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# Roles in the ESA Consultation Process

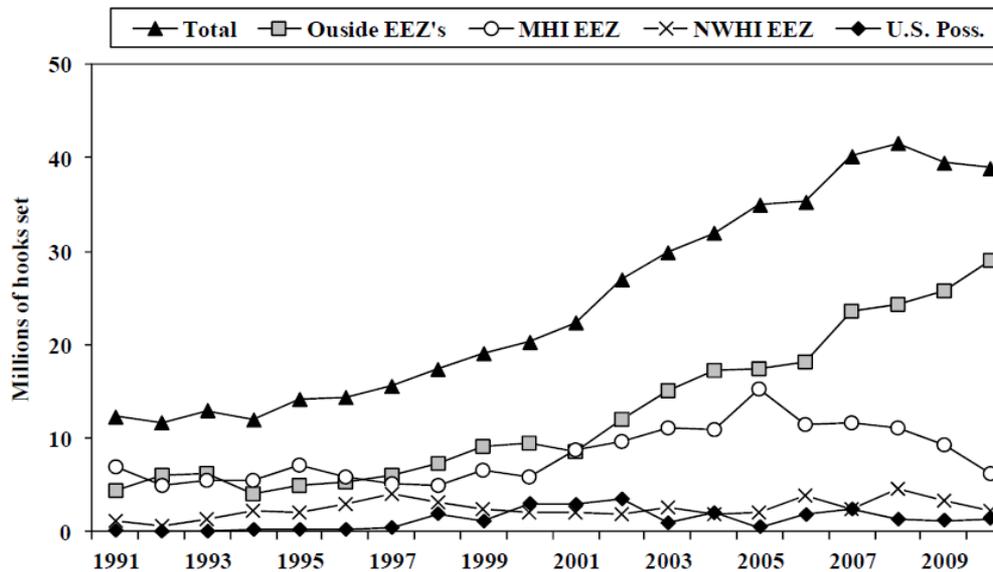
Agency	Role
<i>Council</i>	<ul style="list-style-type: none"><li>• Works with Sustainable Fisheries in developing Fishery Management Plan Amendments</li></ul>
<i>NOAA Fisheries Sustainable Fisheries Division (SFD)</i>	<ul style="list-style-type: none"><li>• "Action Agency"</li><li>• Develops consultation package to submit to the Protected Resources Division using information the Council provides (e.g., via an environmental assessment)</li></ul>
<i>NOAA Fisheries Protected Resources Division (PRD)</i>	<ul style="list-style-type: none"><li>• "Consulting Agency"</li><li>• Analyzes all the available information and drafts the biological opinion</li></ul>
<i>Hawaii Longline Association</i>	<ul style="list-style-type: none"><li>• "Applicant"</li><li>• Communicates with and provides information to the action agency</li></ul>

# History of Hawaii Longline Fishery

- Commenced by Okinawan migrants to Hawaii in 1917
  - Nearshore fishery using tarred rope and buoys with flag (“flag-line” fishery)
  - Reached peak of about 50 vessels in mid 1950s, after which long period of decline
  
- Revival in mid 1980s with discovery of swordfish resource
  - Rapid expansion in late 80s-early 90s
  - Fleet size peaked in 1991 (141 vessels)
  - Effort in hooks peaked in 2008 with 41.6 million hooks

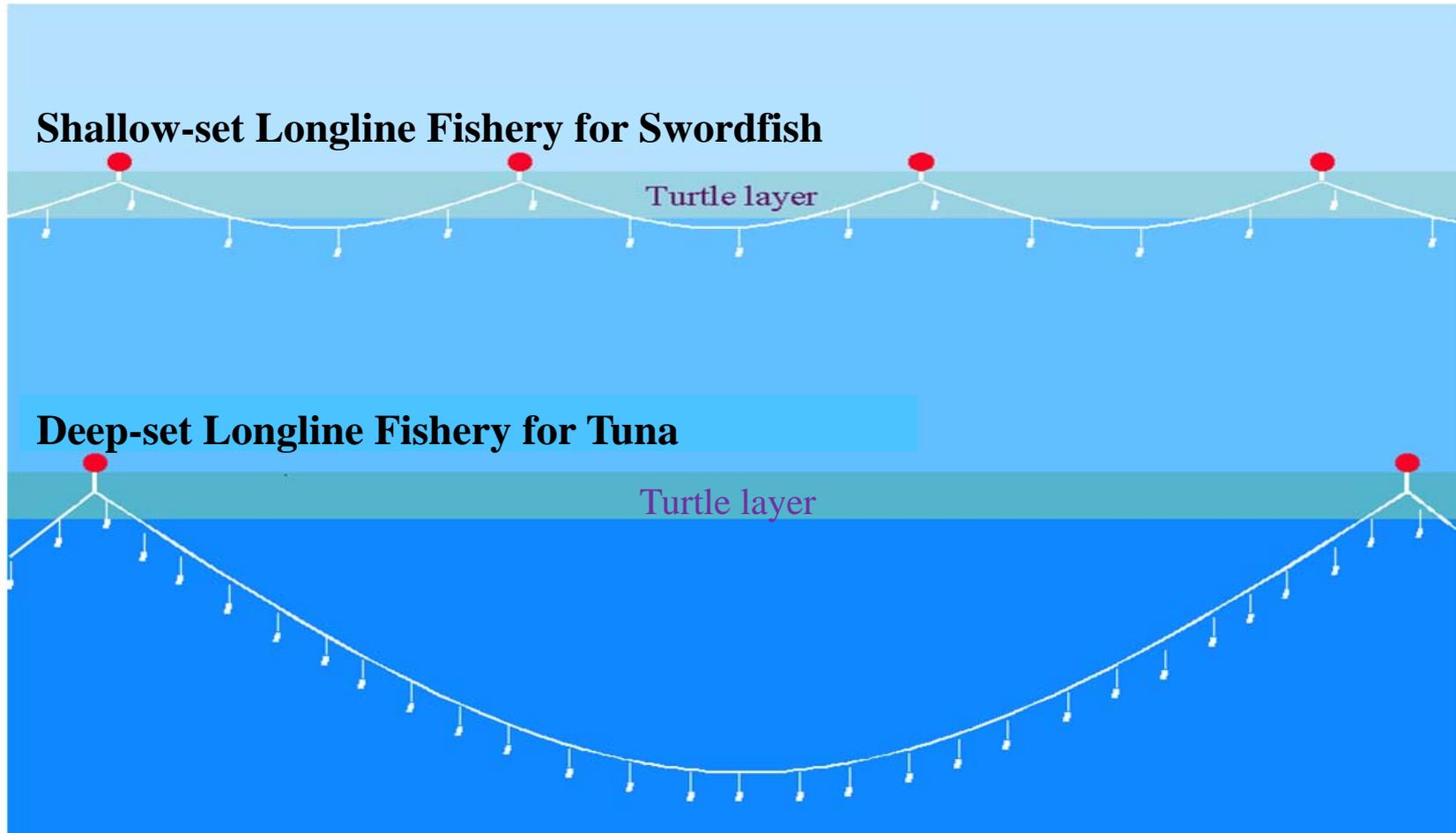


← Fleet size  
(shallow- & deep-set combined)



← Hooks  
deployed  
(shallow- & deep-set combined)

# Hawaii Deep-set vs. Shallow-set Longlines:



# Biological Opinion History

Year	Fishery	Jeopardy?
1991	Entire fishery	No jeopardy
1993	Entire fishery	No jeopardy
1998	Entire fishery	No jeopardy
2001	Entire fishery	<u>Jeopardy</u> for LH, LB, GT; closes swordfish fishery
2004	Entire fishery	No jeopardy; permits swordfish fishery with gear/effort modifications
2005	Deep-set	No jeopardy
2008	Shallow-set	No jeopardy
2012	Shallow-set	No jeopardy

# Amendment 18 to Pelagic Fishery Management Plan

- Modification of Hawaii-based shallow-set longline fishery management regime
- Action:
  - ✓ Remove effort set limit
  - ✓ Implement new loggerhead turtle interaction hard cap of 46 (increase from 17)
- Purpose:
  - ✓ Provide increased sustainable harvest opportunity for swordfish
  - ✓ Continuing to avoid jeopardizing survival and recovery of ESA-listed sea turtles

# Timeline: Pelagic FMP Amendment 18 and 2008 & 2012 Biological Opinions

- Jun-07: Council recommends Amendment development
- Aug-08: SFD initiates ESA consultation with PRD
- Oct-08: BiOp issued (no jeopardy)
- Mar-09: Council transmits Amendment 18
- Dec-09: Final rule implementing Amendment 18
- Jan-11 : NOAA Fisheries settlement agreement (2008 BiOp loggerhead & leatherback provisions vacated and remanded; 2004 take limits)
- Sept-11: Consultation reinitiated
- Jan-12: New BiOp issued (no jeopardy; ITS: 34 loggerheads & 26 leatherbacks)
- June-12: NOAA Fisheries requests Council to take action on new take limits in the BiOp; Council finds proposed action consistent with Amendment 18
- Oct-12: Final rule for revised turtle take limits

# 2008 & 2012 Consultation Process

	2008 BiOp	2012 BiOp
<i>Reason for Consultation</i>	Development of Amendment 18 involving higher fishing effort & turtle take limits	BiOp remanded and take limits vacated; settlement requires NOAA Fisheries to issue new BiOp within 135 days of loggerhead ESA listing final rule
<i>Consultation Process (Interaction between NOAA Fisheries &amp; other parties)</i>	<p>SFD initiated ESA Section 7 consultation with PRD</p> <p>Coordination between Council, SFD/PRD and PIFSC in developing Final EIS and Amendment to ensure consistency between BiOp and Council documents</p> <p>Final EIS and Amendment document informed ESA consultation process</p>	<p>SFD initiated ESA Section 7 consultation with PRD after loggerhead rule publication</p> <p>Lack of “typical” interaction between Council and SFD due to no new fishery amendment</p> <p>SFD provided updates to the Council on consultation status; PRD provided briefings to Scientific and Statistical Committee (SSC) and the Council regarding status</p> <p>SFD consulted with PRD and communicated with HLA throughout the process</p>

# 2008 & 2012 Consultation Process

	2008 BiOp	2012 BiOp
<i>Review of Draft BiOp</i>	<p>SFD shared draft BiOp with HLA and discussed its contents and analyses relied upon</p> <p>Council received draft BiOp from HLA</p>	<p>SFD shared draft BiOp with HLA and discussed its contents and analyses relied upon</p> <p>Council received draft BiOp from HLA</p>
<i>Review of analysis by Council</i>	<p>SSC reviewed unpublished model analyzing impact of proposed action early in the process, prior to initiation of consultation</p>	<p>NOAA Fisheries held webinar for SSC on the published component of the climate-based model, but information on how the model may be used in the BiOp was not provided</p>
<i>Implementation of fishery action</i>	<p>Publication of final rule on Amendment 18</p>	<p>Council required to adopt new sea turtle limits after the BiOp was published and confirm consistency with Amendment 18</p>

# How were protected species considered during the development of the fishery management action?

- Part of the Amendment 18 action involved revising loggerhead turtle hard caps – thus consideration of protected species interaction was central to the fishery management process
- The fishery management action's Environmental Impact Statement considered the species conservation status, threats to the species, species abundance, and impacts of the fishery on the species (e.g., bycatch)

# What information was available on the species and how was it used in the consultation?

Information Available	How was it used
Fishing effort and interaction information	Used to calculate the number of protected species captured as bycatch in the fishery
NOAA Fisheries sea turtle post-release mortality information	Used to calculate the estimated mortality of sea turtles that interact with the fishery
Sea turtle nesting and climate information	Used for a climate-based population viability assessment
Sea turtle literature, status reviews	Used in status evaluations and effects analyses

# Species Information used in 2012 Biological Opinion

Table 1. Fishing effort (sets), interactions, and interaction rates in the Hawaii-based shallow-set longline fishery for the 5 species considered in this opinion over a 7-year period (4<sup>th</sup> quarter 2004 – 2011).

Year	Sets	Interactions				
		Humpbacks	Loggerheads	Leatherbacks	Olive Ridleys	Greens
2004	135	0	1	1	0	0
2005	1,645	0	12	8	0	0
2006	850	1	17	2	0	0
2007	1,570	1	15	5	1	0
2008	1,605	0	0	2	2	1
2009	1,761	0	3	9	0	1
2010	1,875	0	7	8	0	0
2011	1,463	1	12	16	0	4
Total	10,904	3	67	51	3	6
Interaction Rate		.00028	0.00614	0.00468	0.00028	0.00055
Estimated Annual Interactions from Proposed Action		2 (1.54)	34 (33.77)	26(25.74)	2 (1.54)	3 (3.03)

# Would additional information have improved the consultation?

Yes

- More information on sea turtle population
- More accurate and complete information on international fishing effort and associated bycatch

# How did NOAA Fisheries interact with Councils and others in developing reasonable and prudent alternatives and reasonable and prudent measures?

- Not a “jeopardy” opinion, so no RPAs
- Draft RPMs were shared and discussed with the Sustainable Fisheries Division, as well as the applicant, Hawaii Longline Association

# Lessons Learned (Consultation Process): Council Perspective

- Council is statutorily responsible for federal fishery management policy in the Western Pacific
  - The 2008 BiOp was developed concurrently with Fishery Management Plan Amendment
  - Council had no role in the settlement agreement to remand the 2008 BiOp and no Council involvement in the development of the 2012 BiOp
  - SSC provided input to impact analysis model for the 2008 BiOp well ahead of the consultation, but SSC limited to review of published version of new model for 2012 BiOp
  - Council was told that no Amendment was necessary after the settlement, but later asked to formally approve take limits in the 2012 BiOp to ensure consistency with Amendment 18
  - Reasons for the marginalization of the Council in the 2012 BiOp remains uncertain
- ➔ **Need for a consistent transparent ESA consultation process involving Councils regardless of what drives the consultation**

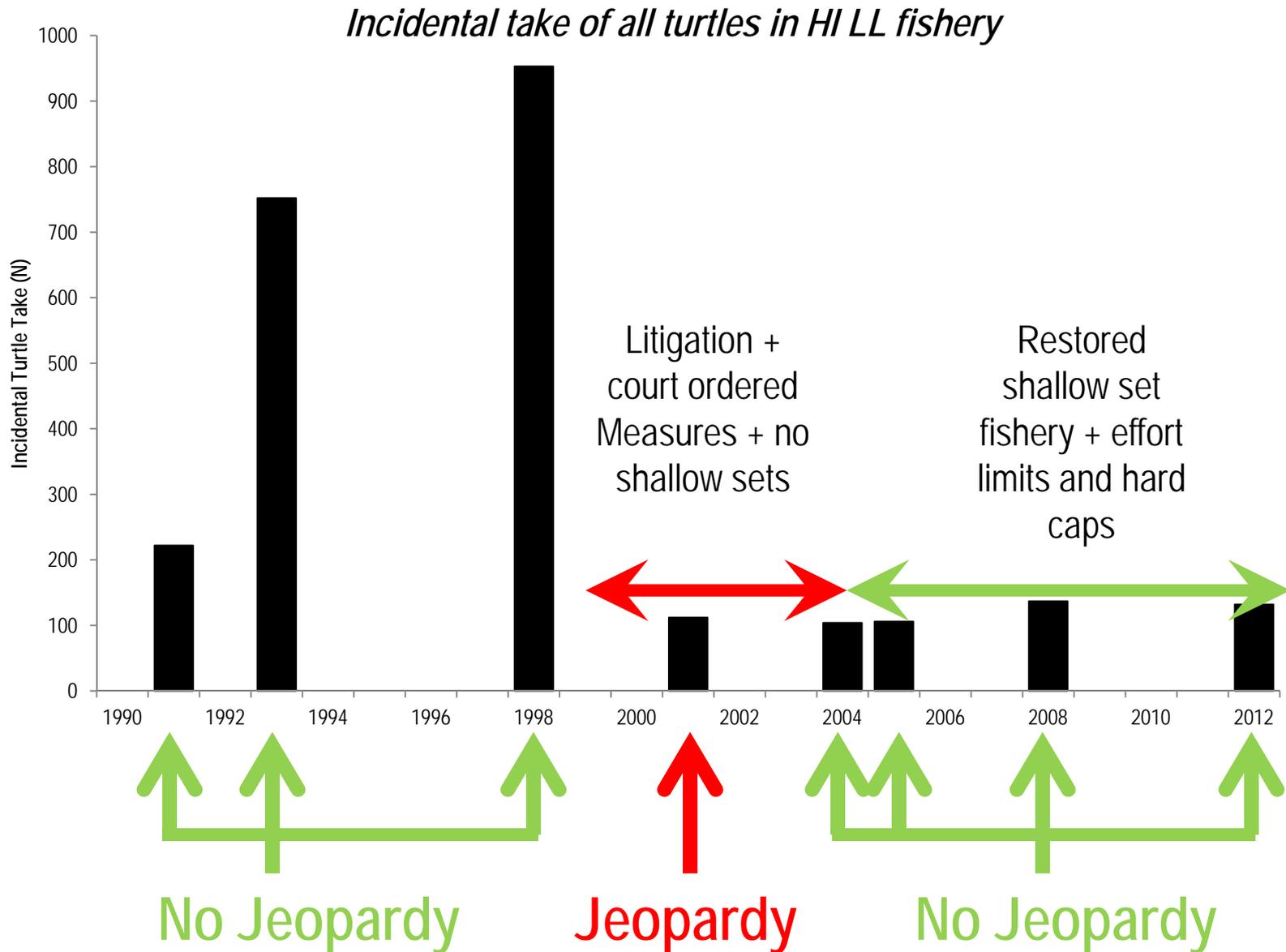
# Lessons Learned (Scientific information & Analytical Methods): Council Perspective

- Improvements in data availability and population models over time for use in Biological Opinions, FEP Amendments, and EIS
- Lack of robust stock assessment for sea turtles (dependent on nesting beach counts)
- Lack of demographic data for sea turtles to develop robust models for assessing impacts
- Threshold for “jeopardy” remains unclear

# Models used in Biological Opinions

Year	Fishery	Model?	Jeopardy?
1991	Entire fishery	None used	No
1993	Entire fishery	None used	No
1998	Entire fishery	TURTSIM	No
2001	Entire fishery	Dennis model & Matrix model	Yes
2004	Entire fishery	Not clear	No
2005	Deep-set	Quasi-extinction model	No
2008	Shallow-set	Quasi-extinction model	No
2012	Shallow-set	Climate forcing PVA model	No

# Jeopardy Threshold?



# Lessons Learned (Consultation Process): NOAA Fisheries Perspective

- It is important that each party understand its role in the consultation process
- Additional communication between the Sustainable Fisheries Division and the Council could improve the process
- Communication with the applicant (Hawaii Longline Association) and incorporation of the applicant's substantive comments was useful to the process
- NOAA Fisheries must ensure the consultation process and resultant biological opinion is objective, scientifically sound, and legally defensible

# Lessons Learned (Scientific information & Analytical Methods): NOAA Fisheries Perspective

- While NOAA Fisheries used the best *available* information, we need to continue to address the information gaps in order to strengthen future analyses
- NOAA Fisheries should rely on a variety of sources of information and analyses in conducting a consultation; models, while useful, are only one of these sources

# Questions?