



Human Dimensions Analysis of Hawaii's *Ika-Shibi* Fishery

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[Background]

- Small firm focused on social and economic aspects of marine fisheries
- Federal contract work: NMFS, MMS, NPS, DOE
- Current NMFS work: GOM, V.I., Pac NW
- Recent driftnet – oil industry interactions
- Small boat fisheries Hawaiian Islands: UH, JIMAR

[Expertise]

- Use archival research, observation, and interview methods to describe fishing operations, fleet dynamics, cost-earnings, geographic aspects of resource use, conflict issues
- Assess effects of regulatory, resource, climatic, market, and other sources of change on captains and crew, fleets, processors/distributors, “communities”

[Overview of Presentation]

- Project Overview
- The *Ika-Shibi* Fishery
- Study Impetus
- Project Goals and Objectives
- Research Plan

Project Overview and Rationale

- Responds to NMFS & WPFMC interest in understanding apparent changes in a long-standing fishery
- Investigate and describe history and current status of fishery and fleet
- Explain apparent changes in catch, effort, gear use and other strategies, and economic factors for Big Island fleet

[Hawaii's *Ika-Shibi* Fishery]

- Developed on Hawai'i in 1920s by persons of Okinawan ancestry
- Relatively few participants through 1970s
- Increased participation in the 1980s
- Fishery peaked mid-80s, then slow decline, with spikes into mid-90s
- Significant decline in recent years

[Fishing *Ika-Shibi*]

- Night-time fishery
- Sea anchor, slow drift
- Attracting lights above and underwater
- Handline – multiple vertical mainlines w/leader, circle hooks baited w/squid or opelu, sometimes weighted, staggered between 15 and 35 m, breakaway lines
- Plenty palu (e.g., anchovy)

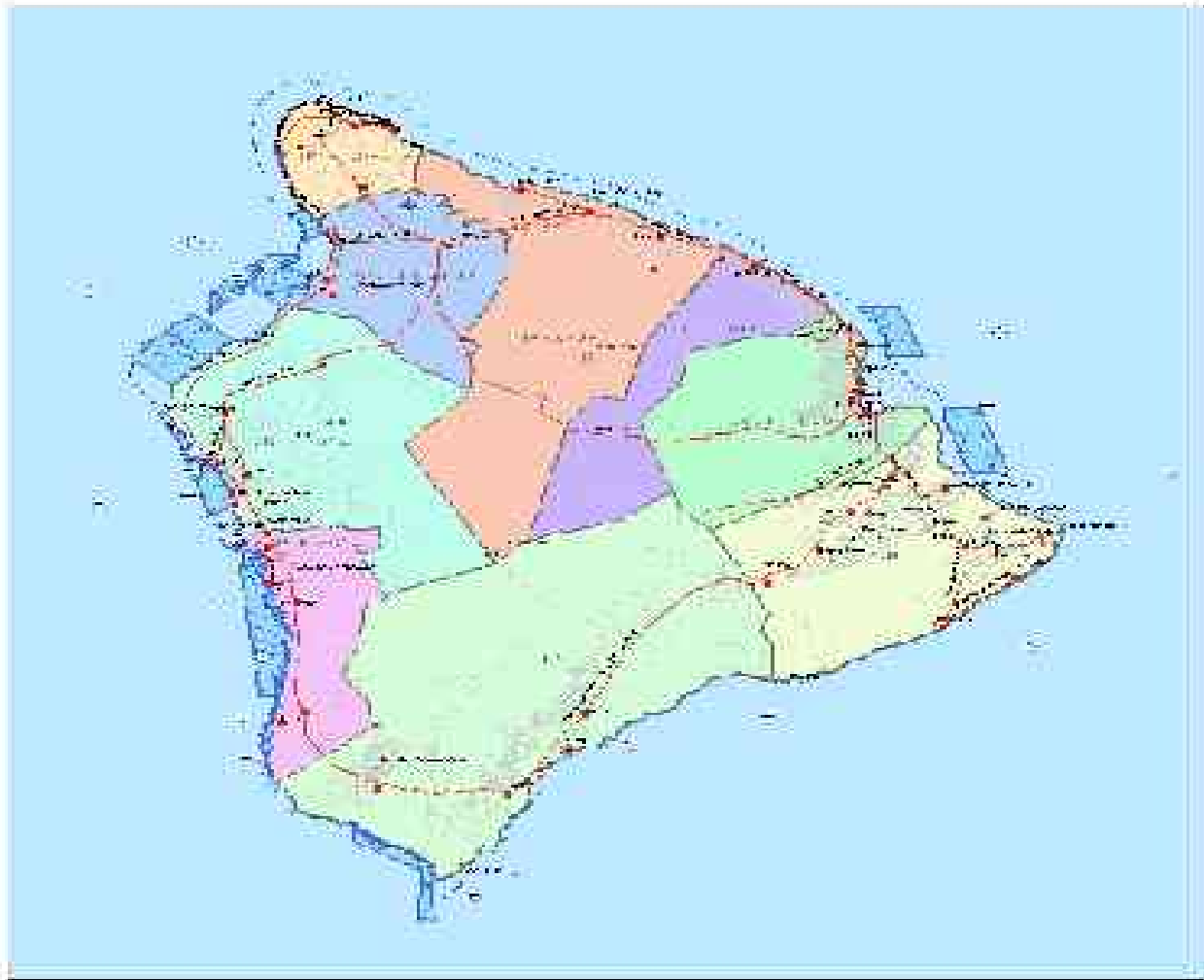
[Fishing *Ika-Shibi* (continued)]

- Target FADs, ko'a, other features
- Primarily shibi, but also bigeye, tombo
- May to October, peak mid-summer

[*Ika-Shibi* Geography]

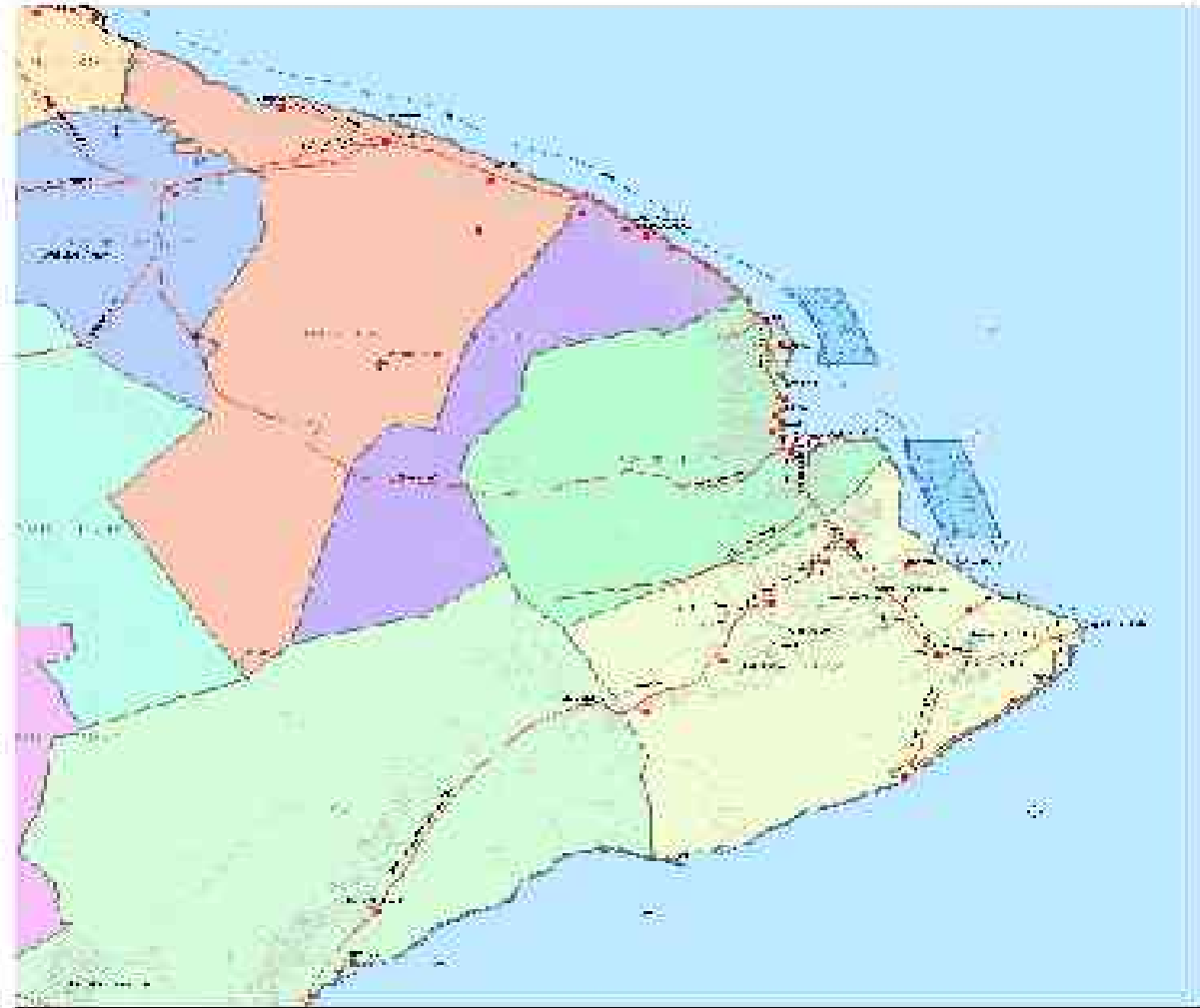
- Hawai'i Island –
- Hilo, Hamakua, Pohoiki, Punalu'u
- Ka Lae
- Kona side – Honokahau, Keahou, ?

- Kaua'i



- Points and Boundaries**
- Great Circle Lines
 - ▲ DLR Districts/County Divides
 - City
 - Hialeah
 - County
 - Major Road
 - Other Road
 - Topographic Line
 - ▨ DLR Managed Roadway Area
 - ▨ DLR North Managed Area

- DISTRICT**
- KONA
 - KOHALA
 - NORTH KOHALA
 - NORTH KONA
 - PLUHA
 - SOUTH HAMAKUA
 - SOUTH KOHALA
 - SOUTH HAMAKUA



Hilo and Puna Districts

0 1 2 3 4 5 6 7 8 9 10 Miles

- Points and Boundaries**
- Small Communities
 - Main Road connecting Districts
 - City
 - Hilo
 - Hamlets
 - Major Roads
 - Other Roads
 - Railroad Line
 - ▨ DNR managed Forest Area
 - ▨ DNR water managed Area

- DISTRICT**
- KAUAIKELE
 - KONA
 - NORTH HILO
 - NORTH KONA
 - NORTH KONA
 - PUNA
 - SOUTH HILO
 - SOUTH KONA
 - SOUTH HILO



Kona Districts



Points and Boundaries

- State Capital (Hilo)
- ▲ DCLR Headquarters (Kona)
- City
- Hilo
- Kona
- Major Road
- Other Road
- Topographic Line
- ▨ DCLR Managed Roadway Area
- ▨ DCLR Water Managed Area

DISTRICT

- KONA
- NORTH KONA
- SOUTH KONA
- NORTH HILO
- SOUTH HILO
- SOUTH KONA
- SOUTH KONA

[Characteristics* (full/part-time combined)]

- Mean number of crew: 2
- Usual miles offshore: .5 min, 60 max, 8 mean
- Flexible gear use, full-time rare
- Primarily commercially motivated
- 32 trips year, part-time 10
- Most trips <24 hrs.

* (from Hamilton & Huffman 1997)

[Characteristics* *(full-time)*]

- Mean LOA: 27 feet (std. dev. 4)
 - also a small fleet of larger boats
- Mean electronics cost: \$6,780
- Mean fishing gear costs: \$5,510
- Mean total fixed costs: \$11,233
- Mean total trip costs: \$207.61

[Characteristics* *(full-time)*]

- Mean lbs. prev. yr.: 31,563
- Pelagic lbs. landed: 28,056
- Pounds sold : 31,150
- Trips full-timers (n=10) 99
- Total sales revenue: \$70,813
- Fixed + trip cost: \$31,786







Study Impetus:

Apparent Diminished Involvement

Ika-Shibi Trips: Big Island

Manner of Participation	Data Year		
	1995	2000	2003
Fishing > 50 % personal income	4130	1942	1045
Fishing < 50% of personal income	2474	2480	1126

Study Impetus *(continued)*

Big Island *Ika-Shibi* Trip Trends by Area/Type

Type/ Area	Data Year		
	1995	2000	2003
East/Comm.	3,086	1,355	799
East/Non	1,973	1,292	429
West/Comm	941	511	244
West/Non	427	936	696

[Study Impetus *(continued)*]

- Reports of fleet attrition due to retirement, some attrition in comm. licenses, need more data years for licenses and landings
- Reports of smaller pieces being landed
- Reports of lucrative shift in strategy and gear by former *ika-shibi* participants

Project Goals and Objectives

- Principal Goals in keeping with NMFS/Council needs
 - (1) Describe History, Trends in Participation & Production
 - (2) Describe Nature of Current Operations & Changes in
 - Geography of Harvest & Marketing
 - Operational and Market Economics,
 - Support infrastructure
 - Demographic shifts in participation
 - Environmental Changes/Challenges and Solutions
 - Operation & Gear Strategies & Dynamics
 - (3) Explain Current Trend of Apparent Diminished *Ika-Shibi* gear strategy

[Objectives and Methods]

- Conduct literature review
- Compile/Analyze HDAR data (license, trip, landings, dealer) for relevant gear & areas
- Contact known experts to identify: salient issues, trends & other expert participants, *hui*
- Recruit local assistance for fieldwork
- Observe fishery & associated fisheries
- Interview expert participants in harvest sector N =?
- Interview participants in market sector
- Interview knowledgeable observers & resource managers

[Objectives and Methods *(continued)*]

- Conduct quantitative & qualitative analyses of all data, cross-validate data types
- Refine hypotheses about participation trends
- Conduct follow-up fieldwork, cross-validate
- Develop narrative & graphic description & explanatory analysis, relate to ecosystem management
- Produce and deliver for review interim & draft research products
- Deliver final report

[Answering why? in the field]

- Frame research as it is – comprehensive study of historically important fishery
- Information vital to balanced management. Without it – *ika-shibi*?
What's *ika-shibi*?



Pau