



# **Small Boat Fishing in Hawai'i: A Preliminary Look at Classification, Behavior, and Costs**

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# BIG PICTURE

- **Classification issues complicate management of the small boat fishery**
- **Behavioral aspects of the small boat fishery will complicate management in the future**
- **Small boat fishing has an economic and social importance in Hawai'i**

# OUTLINE

- **Introduction/Motivation**
- **Recent Work in the Fishery**
- **Survey Methodology**
- **Data Collected**
- **Preliminary Results**
  - **Classification**
  - **Behavior**
  - **Costs**
  - **Social**
- **Next Steps**

# INTRODUCTION - MOTIVATION

- **Reauthorized Magnuson-Stevens Act (2007)**
  - Total Allowable Catch (TAC) for all federally-managed stocks by 2011
    - Allocation
- **Council Small Boat Management Issues**
  - Limited entry for non-longline pelagic fishery

# RECENT ECONOMICS WORK IN THE FISHERY

- **Economic**
  - **Hamilton and Huffman (1997)**
    - Commercial
    - “Expense”
    - Recreational
  - **McConnell and Haab (2001)**
    - Recreational
  - **HMRFSS Economic Add-on (2006)**
    - Recreational

# METHODOLOGY

- **Sampling**
  - Intercept Surveys
  - State-wide
  - Trailered and moored
  - Mixture of day and night fishers
    - Hamilton and Huffman (1997)
- **Target Population**
  - Non-recreational small boat fishermen
    - Issues: Classification

# DATA COLLECTED

- **Trip length**
- Fisher experience
- **Fisher self-classification**
- Vessel characteristics
- Levels of investment
- Annual fixed costs
- Trip disposition
- Most common gear usage
- Trip costs
- Catch
- Sales/Revenue
- **Fishing behavior**
  - Distance offshore
  - Crew
  - **Number of ramps used**
  - **Travel miles to launch boat**
- **Market access**
- **Social questions**
  - **Important source of food**
  - **Percentage consumed/shared**
- **Catch reporting**
- Demographics
- Comments/Concerns

# PRELIMINARY RESULTS - CLASSIFICATION



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- **MSA vs. State of Hawai'i vs. Reality**
- **Three question approach to classify fishers**
  - Self-classify
  - Sell fish in past 12 months?
  - Percentage of personal income from fishing
- **Self Classification vs. Behavior**
  - 34% self-classified as recreational sold fish
  - 12% sold fish with no CML
  - 9% self-classified as part-time commercial did not sell any fish in past 12 months

# PRELIMINARY RESULTS - BEHAVIOR



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- The average small boat trolling trip was just over 9 hours long
- The average distance traveled to launch boat was 16 miles (one way)
  - Opportunity cost
    - 74% of sample employed full time
    - 27% of sample has taken leave without pay to fish

# PRELIMINARY RESULTS – BEHAVIOR (FADs)

- **The average distance offshore fished was 11.8 miles – majority hitting FADs**
  - **Distance varied by motivation**
    - **Full time commercial: 16.4 miles**
    - **Part time commercial: 12.5 miles**
    - **Recreational: 8.9 miles**
- **FAD complaints (and comments)**

# PRELIMINARY RESULTS - BEHAVIOR

- **Reporting Implications**
  - **Do you keep a log of catch, expenses, and/or fishing activity?**
    - 83% of recreational fishermen do not keep records
  - **An average of 2.33 people were on board for fishing trips**
    - Full time commercial: 2.00, *max 4*
    - Part time commercial: 2.28, *max 8*
    - Recreational: 2.63, *max 8*

# PRELIMINARY RESULTS – COSTS

## Average costs per trip Trolling

<b>Boat Fuel</b>	<b>\$ 97.47</b>
<b>Ice</b>	<b>\$ 18.19</b>
<b>Food/Bev</b>	<b>\$ 18.03</b>
<b>Truck Fuel</b>	<b>\$ 15.59</b>
<b>Maintenance</b>	<b>\$ 9.10</b>
<b>Bait</b>	<b>\$ 5.61</b>
<b>Oil</b>	<b>\$ 1.50</b>

**Total Trip Cost: \$165.49**



# PRELIMINARY RESULTS – COSTS

## Percentage of Total Trip Costs Trolling



<b>Fuel</b>	<b>69.8 %</b>
<b>Boat</b>	<b>58.9 %</b>
<b>Truck</b>	<b>10.9 %</b>
<b>Ice</b>	<b>11.0 %</b>
<b>Food/Bev</b>	<b>9.4 %</b>
<b>Maintenance</b>	<b>5.5 %</b>
<b>Bait</b>	<b>3.4 %</b>
<b>Oil</b>	<b>0.1 %</b>

# PRELIMINARY RESULTS - SOCIAL



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- What percentage of the fish you catch do you and your family consume?
  - Full time 7.8% (*mode* = 1%)
  - Part time 18.7% (*mode* = 10%)
  - Recreational 48.9% (*mode* = 50%)
- Are the fish you catch an important source of food for your family?
  - Yes 62%
  - No 38%



# PRELIMINARY RESULTS - SOCIAL

- What percentage of the fish you catch do you give away?
  - Full time 10.4% (*mode* = 5%)
  - Part time 23.3% (*mode* = 5%)
  - Recreational 51.1% (*mode* = 50%)



# BIG PICTURE - REVISIT

- **Managers are going to have to tackle some inherent issues in the small boat fishery to successfully address MSA 2007 mandates**
  - **Classification**
  - **Behavior**
- **This study will help**

# NEXT STEPS

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  - **Vessel characteristics, levels of investment, fixed costs, trip costs, catch, earnings, market access, demographics, etc...**

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- **Revisit these findings and others in context of complete sample**
  - **Vessel characteristics, levels of investment, fixed costs, trip costs, catch, earnings, market access, demographics, etc...**
    - **Present by Island, Motivation, Gear type, etc...**
    - **Compare to current data available**
      - **Hamilton and Huffman (1997)**
      - **Complement HMRFSS 2006 Economic Add-On**

# NEXT STEPS

To obtain a copy of the results or for additional inquiries contact:

**[Justin.Hospital@noaa.gov](mailto:Justin.Hospital@noaa.gov)**

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- **Small boat fishermen**
- **State Harbor Agents, DAR employees, HMRFSS surveyors**
- **Hawaii Fishing News**
- **Pelagic Fisheries Research Program**



**PAU**





# RESPONSE RATES

Overall response rate of **76.4% (n=255)**

- Lanaʻi (92.0%) n=14
- Kauaʻi (89.1%) n=59
- Maui (86.7%) n=15
- Molokaʻi (80.0%) n=4
- Hawaiʻi (74.1%) n=80
- Oʻahu (70.9%) n=117

# SUMMER WAVE DISPOSITION

- **N=255**
- **Sell fish = 168**
- **Full time = 40**
- **Part time = 120**
- **Recreational = 95**
- **Rec and sell = 32/95 (34%)**
- **Sell and no cml = 20/168 (11.9%)**

# PRELIMINARY RESULTS – COSTS

Average costs per trip (st. dev.)

## Trolling

Boat Fuel	\$ 97.47	(52.65)
Ice	\$ 18.19	(21.55)
Food/Bev	\$ 18.03	(16.20)
Truck Fuel	\$ 15.59	(11.09)
Maintenance	\$ 9.10	(58.86)
Bait	\$ 5.61	(12.86)
Oil	\$ 1.50	(5.02)

**Total Trip Cost: \$165.49 (91.32)**



# PRELIMINARY RESULTS – FISHING COSTS

## Percentage of Total Trip Costs



<b>Boat Fuel</b>	<b>58.4 %</b>
<b>Ice</b>	<b>11.1 %</b>
<b>Food/Bev</b>	<b>10.7 %</b>
<b>Truck Fuel</b>	<b>9.2 %</b>
<b>Maintenance</b>	<b>5.7 %</b>
<b>Bait</b>	<b>3.9 %</b>
<b>Oil</b>	<b>0.9 %</b>

# PRELIMINARY RESULTS – BEHAVIOR (FADs)

- The average distance offshore fished was **11.8** miles – majority hitting FADs
  - Distance varied by motivation (*st. dev.*)
    - Full time commercial: **16.4** (9.4)
    - Part time commercial: **12.5** (9.7)
    - Recreational: **8.9** (7.5)
- FAD complaints (and comments)