A case of the constraints facing and adaptive strategies of Hawaii’s offshore handline fleet

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I. Context within study of Hawaiian small boat commercial handline fleet
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Study of Hawaiian small boat handline fleet

- Original objective: To describe historic and current trends in Hawaiian ika-shihi fishery
- Context: Rapid decline in participation, effort, catch in commercially, culturally, socially, economically important fishery
Evolution of handline study

• Decline in productivity led to widespread fall out
• Re-diversification of remaining fleet, ~1995-07
• PFAD (stationary & migratory)
• Offshore seamount & weather buoy (day & nighttime handline, troll, short longline, bamboo pole, etc.)
• Seasonally & technologically diverse (ika-shibi, palu ahi, akule, bottomfish*, opelu)
Methods & Approach

• Document analysis & existing sources of participation & production
• Identify social network
• Interviews and observations with key participants in handline fishery:
  – Big Island & Oahu expert handline fishermen, ika-shibi, PFAD, offshore seamount
  – Highliners & pioneers, historic & present
  – Fish buyers, boat builders & tackle shop owners
Methods & Approach, con’t

• Describe handline fisheries (including offshore seamount & weather buoy fishery)

• Explain changes in MHI handline fisheries

• Examine management options & implications

• Qualitative & descriptive: Voices & richness of lived experience & operations of small boat handline fishermen & fisherwomen (today, focusing on the offshore handline component)
History of offshore seamount & weather buoy handline fishery

• Roots in Hawaiian & Japanese/Okinawan traditions
• Historically, Japanese longline on Cross Seamount
• Stranded Japanese fishers tell Kona fishers of Cross SM ~1930s
• Offshore fishing represented minor component of Big Island handline fishery through 1980s: 4-6 participants
• Rise in offshore participation, as many as 14-20 regular participants when handline peaked in 1990s
• Currently, ~4 small boats offshore w/ regularity
“It’s survival of the fittest out here on The Mountain”
The Ao Shibi IV

- Noontime-10pm supply boat
- 11pm departure – Honokohau
- Slept overnight, w/in 10 miles by noon.
- Gear maintenance & fashioning
- Troll lines set, 5 miles out.
- Fish finders, danglers readied
- Watch for bird piles
Operations on “The Mountain”

All gear at hand

Tools for scouting:
- Bird piles
- Fish finder & GPS
- Chum plume
- Visual scans
- Other boats

Variables:
- Geographic quad.
- Time of day
- Bathymetry
- Depth of ‘pile’
- Current
Mixed methods – handline & handheld
Diverse gear – daytime

“Hands free” gear

Trolling
- 2 lines from stern
- Set 5 miles out
- Daytime
- Medium to large pieces

This trip:
- Exclusively target tuna
- Moderately productive
- Attention elsewhere (danglers, handline)
“Hand’s free” gear

**Danglers**
- 3-4 / side, daytime
- Rats – 30+ lbs
- Squid lures, double hooks
- Typically primary source of daytime catch

**This trip:**
- Unusually unproductive
- Minor component of landings
- 5-10 fleas/rats as bait
Mixed methods: handline & bamboo pole

**Bamboo pole**
- Daytime mixed methods
- Specialty of crewman
- Moderate pieces
- Rats/fleas for bait
- Also rod & reel
- Simultaneous to handline

**Handline**
- Up to 2-3 lines out
- Draw fish from depth
- “Big wans”
- Moderately productive
- Opelu bait & chum
Short longline

- Higher market value & bigger pieces
  - 2 sets/24 hours
  - 3-5 hands & no other gear in water
  - 1-2 lines/set
- Expertise: innovative gear, geography, avoid non-target fish
Short longline
Nighttime fishing

• Ika-shibi
  – Large pieces, handline
  – Possibly highly productive
  – 1 or 2 nights
  – Exhaustion factor

• Short longline vs. ika-shibi, contending with:
  – Time of day & the bite
  – Size & quality of pieces
  – Exhaustion & prioritization of longline-caught fish’s higher return
Interactions on the Mountain

• Intraspecies:
  – Marine mammal depredation of longline
  – Minimal non-target (mahimahi & ono – dinner)
  – Seabirds – watched for ‘bouncing’ on horizon

• Social/people:
  – No longline vessels encountered
  – Two ‘small boats’ – charter & commercial
  – VH radio – charter boat (friendly exchange of fishing information), capt’s wife & daughter
  – Sat phone w/ fish buyer
Typical productivity, 2005-07:

• 3 trips prior to ours:
  – 2 – 2.5 days R/T
  – Danglers ‘going off’
  – Short longline set
  – 12,000 lbs +
  – Mixed sized pieces
  – Handline & short LL
  – Alone on the Mt.
  – Buoy, every 4 trips
The a-typical trip

- 9 days R/T
- < 10,000 lbs
- Target “Big wans”
- 3 trips already that month
- 2 other boats on Seamount
- “Big pile” visible, sitting >70 fathoms
- Fish “tired”
Risk & access to capital

- Offshore seamount & weather buoy fishery is an extreme case of risks facing handline fishing.

- Appears to be a strategy employed by those with a willingness to assume risk, and with access to capital to offset the constraints limiting handline fishing in general.
Operational/economic capital

- “Three trips and you’re out!”

- Trip costs: food, ice, bait, fuel for 10 days at sea.
  “5,000 lbs to break even.”

- Time, energy, & safety offshore – prohibitive to many

- Gear: expensive outlay, maintenance on shore & at sea

- Requires knowledgeable, reliable crew (to land fish; also require assumption of liability & salary/percentage)
Operational/economic capital

- Offshore vessel: size & capacity; sun shade; navigation, radar; A/C; hydraulics, galley, insurance.
  - Mechanic – save on maintenance
  - Electrical wiring – if fish bite, no waiting

- Liability

- Exclusive buy/sell agreement with reliable fish buyer

- Business partnership: diversify income, pre-existing financial safety net.
Social capital - foundational

- Fish buyer: trust, guarantee, ‘old world business’ style
- Family: household, children.
- Friend/fisherman: New gear, support each other’s operations
- Reputation: reliable, productive, expert enables cooperation, e.g., finding/keeping crew
Social capital – during offshore trip

• Fish buyer – eye on markets, fishing expertise
• Pamela II – friendly fishing cooperation
• Business partner – advice when to go offshore
• Wife & daughter – support (role of women)
Intellectual capital

• Multigenerational

• Diverse gear necessary, across hour, trip, season, years (ika-shibi was sufficient for decades but no longer)

• Apply fishing knowledge immediately to new environs

• Uncertainty in (nearshore?) bite apparently requires innovation, expertise, extensive intellectual capital to avoid fall-out to ‘land jobs’
Conclusions

- Offshore seamount & weather buoy fishing is one of several adaptive mechanisms handline fishers used to avoid “land jobs”
- Contemporary extension of ancient cultural practice – tuna & handline fishing in HI & Japan
- Like other aspects of handline fishing, evidence of deep cultural, social, economic significance
- While access to operational, economic, social, & intellectual capital helps to ensure success, it is no guarantor of success
- Uncertain future, transfer to younger generations
Mahalos

- Mike Abe, Damien, Oskie
- Ed Glazier, IAI Inc.
- Courtney Carothers, Univ. of Washington
- Uncle Mitchell Wailani
- Craig Severance, UH-H
- David Itano
- Uncle Gilbert Kahele
- Handline fishermen
- Ray Shirakawa
- PFRP
Synopsis of handline decline

- Socio-demographic: age, windfall
- Social: coop. vs. conflict, local vs. outsider, weekender; ohana-based, expert knowledge of older/highliners
- Economic: trip costs, flood market, Suisan, business monopolies, ika-shibi as mainstay of fishery then lost
- Operational: purse seiners, state FAD, PFAD, decline in cooperation – chum lines, safety, etc.
- Biophysical: migration pattern, fewer & further offshore