The use of echo-sounder buoys in EPO fleets fishing with FADs

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Drifting FAD fishery evolution

Mid 80’s

Nowadays
Workshops with fishers since 2010

Introduction | Material and Methods | Results | Discussion

RFMOs, GOVERNMENTS, PUBLIC
2015

61 Questionnaires

Use of Echo-sounder Buoys (ESB)

Fishing strategy with echo-sounder buoys

Echo-sounder buoy state of technology
use of echo-sounder buoys

- Time of introduction
  - 2008
  - 2010

- Proportion of buoys with echo-sounders
  - 75-100%

- Brand Selection
  - 2 main brands

- Choice Reason
  - Fleet owners
Fishing strategy with echo-sounder buoys

- Seeding strategy
- Alternating
- High or most important tool
- Choosing fishing zone
- Only at the end of the trip
- Share all FADs
- Reduced searching time
- Effect of ESB

• Sharing FADs
Introduction | Material and Methods | Results | Discussion

Echo-sounder buoy state of technology

- Sounder Reliability
  - Brand specific
  - Rated From 5 to 6.8 (0-10 scale)

- Used info
  - Echo-sounder image

- Discrimination
  - Not achieved yet
**USE of ESB**
- Increased percentage of FADs with ESB
- Important to account for brand

**Fishing efficiency**
- Reduced searching time
- More movements between areas

**Provided information**
- Not comparable among brands
- Room for improvement in estimates and discrimination
Towards acoustic discrimination of tunas at FADs

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Fisher using acoustic equipment
• Improve technology

Rough biomass estimates

Biologically relevant measures
2 Research cruises on-board purse seiners to study:

- Frequency response
- *In situ* Target strength
Target Strength measurements based on theoretical models

74 cm Yellowfin 20 min post mortem
Skipjack tuna frequency response
Big-eye tuna frequency response

38 kHz  120 kHz  200 kHz

Big-eye
Target Strength - length distribution for BET and SKJ
Upcoming research: Target Strength of YFT of 40-60 cm

Research in Achotines laboratory
Tuna species discrimination at FADs
The potential to discriminate between SKJ from BET and YFT is confirmed.

There is no echo-sounder buoy with discrimination capability yet but buoy manufacturers are working with scientist to reach this goal.

The use of improved echo-sounder buoys, properly managed, would allow more selective fishing.

The use of echo-sounder buoys’ data for science could provide fishery-independent data on distribution and abundance of tuna species.
✓ IATTC staff

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