Kevin Weng, Andrew Gray, Jeff Muir, Dave Itano, Kim Holland, Mike Seki
Supported by NOAA-PIFSC. Many thanks to Bruce and Carson, FV Hoku.

monchong at cross seamount
pelagic

seamount/ deep slope

North Pacific Bramids

- Two largest of eleven known pelagic "Bramid" species in North Pacific (most "forage-fishes")
  - Attain ca. 80 cm TL & 13.5 kg (~30 lbs)

Don Hawn et al.
Monchong species specific UFA sampling

NMFS-UFA monitoring, 1984-2000

<table>
<thead>
<tr>
<th>Species</th>
<th>No. (%)</th>
<th>Lbs. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>E. illustris</em></td>
<td>1,020 (2.1%)</td>
<td>14,526 (2.0%)</td>
</tr>
<tr>
<td><em>T. steindachneri</em></td>
<td>46,786 (97.9%)</td>
<td>717,174 (98.0%)</td>
</tr>
</tbody>
</table>

**recent confirmation of mixed catch on set – mixed schools (?)**

Don Hawn et al
• key bigeye tuna fishery
• expanding monchong fishery
• rising effort? NWHI bottomfish closure, bigeye catch limits

fisheries of cross sea mount
• NOAA-PIFSC: acoustics to characterize ecosystem components (Domokos)

• reversible flow patterns (Domokos)

• diet of tunas – micronekton (Holland, Grubbs, Drazen)

ecology of cross seamount
cross seamount fishery
continuous effort by multiple boats
pole and line, dangler, handline
shortline fishery (longline methods)
protected species

- birds
- mammals
- precious corals
- demersal sharks
• stock structure - residence time
• behavior - efficient fishing - reduced bycatch, eg sharks

monchong at cross seamount
<table>
<thead>
<tr>
<th>Cruise</th>
<th>No. days</th>
<th>Monchong Tagged</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 2010</td>
<td>7</td>
<td>6</td>
<td>Deploy acoustic receiver array</td>
</tr>
<tr>
<td>May 2010</td>
<td>15</td>
<td>0</td>
<td>Fishing not good, no monchong tagged, primarily due to high current</td>
</tr>
<tr>
<td>Sept 2010</td>
<td>7</td>
<td>9</td>
<td>Fishing slow</td>
</tr>
<tr>
<td>Apr 2011</td>
<td>7</td>
<td>19</td>
<td>Retrieve acoustic array and redeploy. Station 5 lost. Good fishing.</td>
</tr>
</tbody>
</table>

**Tagging to date**
returned data for 6 of 9 fish
chased to surface, tag fell to bottom

intermittent visitor?

awesome

deread

intermittent visitor?

intermittent visitor?

data interpretation, qc
data after qc
stock structure, residence
transmitter vs. date_utc_10_00

6 months (life of tag)
transmitter vs. date_utc_10_00

4.5 months

depart, return
• preliminary results indicate long residence
• movements away from seamount
• connectivity with other deep demersal habitats unknown

stock structure: need more data
behavior
Monchong ascend at night.
full moon shallow behavior
depth time series
depth time series
<table>
<thead>
<tr>
<th>18 April – 20 May</th>
<th>South</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 May – 5 July</td>
<td>North</td>
</tr>
</tbody>
</table>
- Anticyclonic flow advects zooplankton into area, attracting micronekton.
- Increased currents correspond to higher micronekton biomass.
Apr 15
May 20
Jul 8
Jul 22
Aug 12

SSH + geostrophic currents
• detailed diel / lunar / mesoscale behavioral patterns
• interpretation of NOAA acoustic surveys
• efficient fishing
• reduction in lost gear, negative impacts
• will download data for 19 fish this spring
• longer tag lifespans - residence
• relationship with physical environment
• compare with acoustics data

future work
• Thanks to FV Hoku - Bruce, Carson et al.
• Funded by NOAA - PIFSC
• Thanks to Dodie Lau, Johnoel Ancheta

thanks!
hycom+ncoda @ 300m, 20 Apr
monchong on south