HABITAT ASSESSMENT IMPROVEMENT PLAN
Why Habitat?
Goals of the HAIP

- Meet Magnuson-Stevens Act mandates
- Improve identification and impact assessments of essential fish habitat
- Reduce habitat-related uncertainty in stock assessments and facilitate a greater number of advanced stock assessments
- Contribute to assessments of ecosystem services
- Help prepare NOAA Fisheries for management challenges associated with climate change
- Support ecosystem-based management, integrated ecosystem assessments, and coastal and marine spatial planning
Scope of the Plan

- Habitat science for managed fisheries stocks
- Includes all aspects of marine habitats (demersal and pelagic)
- Considers temporal and spatial scales
- Considers ecological linkages
- Takes into account current data availability and state of NOAA Fisheries habitat assessments
What is a Habitat Assessment?

Feedback
- Identify key issues
- Identify key data gaps
- Identify ways to improve habitat assessments
- Adaptive management needs

Habitat Assessment

Science Application

Policy Development

Essential Fish Habitat

Stock Assessments

Integrated Ecosystem Assessments

Data Products
- Habitat type & area (maps)
- Habitat status or condition
- Spatially explicit environmental data
  - Ocean and climate properties
  - Seafloor substratum types
  - Water depth
- Fish-habitat associations
  - Types of habitat
  - Distribution of habitat
  - Abundance of habitat
  - Ecological value of habitat
- Habitat-specific vital rates
  - Growth, maturity, fecundity
  - Natural mortality
  - Fish movement

Reporting

Review & Validation

Data Interpretation

Data Modeling & Analysis

Data Processing

Data Collection & Consolidation
Example of Framework for the Habitat Assessment and Policy Development for West Coast Groundfish EFH
HAIP Questionnaire

- HAIP Team sent questionnaires out to assess the current state of habitat assessments.
- Two separate questionnaires: one for NMFS habitat/ecosystem and stock assessment scientists and resource managers, one for NMFS program managers.
- Questionnaire objectives:
  - Identify most important factors hampering ability to provide accurate, precise, valid, and defensible habitat assessments.
  - Determine needed resources to meet Three Tiers of Habitat Assessments.
  - Determine how needs vary by region.
Data Adequacy

Efforts to collect habitat data have been fragmented and limited

Most habitat data occur at low resolution based on insufficient or no information
Obstacles and Needs

- Fishery-independent habitat-specific abundance
- Habitat data collection staff
- Habitat analyses staff
- Research on environmental effects
- Research on multispecies interactions
- Habitat assessment modelers
- Habitat-specific biological parameters
- Database programmers/managers
- Training to improve habitat-related skills & tools
- Fine-scale data for regulatory analyses
- Population and genetic structure
- Habitat-specific recreational catch & effort data
- Habitat-related communication staff
- Habitat-specific commercial catch & effort data

Minor obstacle
Lowest priority
Major obstacle
Highest priority

- Habitat/Ecosystem Scientists (n = 65)
- Population/Stock Assessment Scientists (n = 53)
- Resource Managers (n = 14)
Staffing Issues

- Only ~5% of NOAA Fisheries staff are currently working on habitat science activities.
- Many habitat-related staff are contractors supported with transient, non-NOAA funds.
- Habitat staff time is fully committed (in many cases overcommitted).
- Additional staff will be necessary to achieve improvements to habitat assessments.
Benefits of Implementing the HAIP

Full support and implementation of the HAIP will:

- Improve NOAA’s ability to identify and conserve critical habitats
- Improve abundance surveys and stock assessments
- Deliver high-quality science in support of management decision-making
- Help NOAA to better understand and predict the effects of climate change and other anthropogenic impacts
- Allow NOAA to better address conflicting demands on limited marine resources
- Build partnerships and streamline habitat science efforts
Recommendations of the HAIP

- Develop new budget and staffing initiatives to fund habitat science that is directly linked to NOAA Fisheries mandates.

- Develop criteria to prioritize stocks and geographic locations that would benefit from habitat assessments.

- Habitat and stock assessment scientists should work together to initiate demonstration projects that incorporate habitat data into stock assessment models.
Recommendations of the HAIP

- Identify and prioritize data inadequacies for stocks and their respective habitats

- Increase collection of habitat data during fishery-independent surveys and develop a plan for better utilizing advanced sampling technologies

- Engage partners within and outside of NOAA to coordinate habitat data collection efforts and data management initiatives. Data management systems and integration applications should be upgraded to improve accessibility.
Recommendations of the HAIP

- Convene regional and national workshops to develop strategies to integrate habitat science and assessments, stock assessments, and integrated ecosystem assessments.

- Establish a habitat assessment fellowship program.

- Unite with other NOAA line offices to develop a NOAA-wide strategic plan for habitat science and assessments in support of the nation’s ocean policy priorities.
Outcomes to Date

- Development/publication of HAIP has increased awareness of habitat science within NOAA Fisheries
- HAIP is basis for new budget initiatives and the new Habitat Monitoring and Assessment capability
- Three joint habitat/stock assessment pilot projects have been funded and are underway
- 1st National Habitat Assessment Workshop held in May 2010
Council Actions to Consider

- Endorsement of the HAIP
- Integration of Council’s research priorities with HAIP: e.g., direct application to Groundfish EFH 5-y review and Ecosystem Plan Development Team
- Leverage available resources and data
- Assist NMFS in garnering necessary funding
- Assist in prioritizing specific stocks, geographic areas, and data needs for the Pacific region
Questions?

Download a copy of the HAIP:

Contact your HAIP representative:

- Mary Yoklavich, SWFSC (Chair)
- Michael Parke, PIFSC
- Frank Parrish, PIFSC
- Correigh Greene, NWFSC
- Waldo Wakefield, NWFSC
- Bob McConnaughey, AFSC
- Tom Minello, SEFSC
- Tom Noji, NEFSC
- Kristan Blackhart, OST
- Steve Brown, OST
- Susan-Marie Stedman, OHC
THANK YOU!
Outline

- Why habitat?
- HAIP goals and scope
- HAIP questionnaire
- Current state of habitat assessments
- Three tiers of habitat assessments
- Recommendations of the HAIP
- Outcomes and Council action
Three Tiers of Habitat Assessments

- **Tier 1**: Comprehensive evaluation and synthesis of existing habitat information by life stage
- **Tier 2**: New or expanded data collection and research initiatives result in a higher level of habitat assessments
- **Tier 3**: Provide quantitative estimates of fish productivity by habitat and ecosystem considerations for incorporation into stock assessments
## National Resource Requirements

<table>
<thead>
<tr>
<th>Activity</th>
<th>Current</th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tiers 1+2</th>
<th>Tier 3</th>
<th>All Tiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect habitat-related data</td>
<td>97</td>
<td>30</td>
<td>64</td>
<td>94</td>
<td>72</td>
<td>166</td>
</tr>
<tr>
<td>Process and convert raw habitat data into usable products</td>
<td>46</td>
<td>34</td>
<td>32</td>
<td>66</td>
<td>44</td>
<td>110</td>
</tr>
<tr>
<td>Produce habitat-specific assessments</td>
<td>22</td>
<td>27</td>
<td>32</td>
<td>59</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>Determine habitat-specific vital rates over time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Refine existing habitat-related survey methods/tools and develop new ones</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refine existing population models and develop new habitat-related ones</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporate habitat and ecosystem information into stock assessments at SAIP Tier 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>Refine existing habitat and ecosystem models and develop new ones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Develop improved habitat risk assessments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Communicate improved assessment results and conduct other follow-up work</td>
<td>17</td>
<td>9</td>
<td>13</td>
<td>22</td>
<td>17</td>
<td>39</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>221</td>
<td>100</td>
<td>169</td>
<td>269</td>
<td>288</td>
<td>557</td>
</tr>
</tbody>
</table>