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Habitat PDT Conference Call Summary

November 10, 2008

The PDT met on November 10, 2008 via conference call to continue work on the Vulnerability Analysis portion of Phase 2 of the Omnibus Habitat Amendment.

Independent review

The PDT discussed the Committee's motion requesting Draft Terms of Reference for an independent Science and Statistical Committee review of the Team's Phase II work.

The Chair proposed the following Draft TOR's:
"Evaluate the sufficiency of the vulnerability assessment and spatial model as a basis for crafting alternatives to minimize to the extent practicable the adverse effects from fishing on essential fish habitat. Specifically, provide the Council with commentary on the adequacy of the following components:

1. Vulnerability Assessment
    - Literature review methods
    - Assessment methods and results
    - Adverse impact determinations
2. Spatial model
    - Characterization of habitats (i.e. physical, biological, prey species, deep sea corals)
    - Swept Area Seabed Impact model
    - Critical Sheer Stress model
    - Habitat Reduction model"

After discussion, the TOR's were modified to eliminate reference to individual models, reflecting the fact that each step in the Vulnerability Assessment is cumulative, not discrete. Also, one Team member pointed out that referencing specific components in TORs may be counter-productive if those components are not included/complete for the review.

Revised TOR's now read:

"Evaluate the sufficiency of the vulnerability assessment and spatial model as a basis for crafting alternatives to minimize to the extent practicable the adverse effects from fishing on essential fish habitat. Specifically, provide the Council with commentary on the adequacy of the following components:

Vulnerability Assessment

- Literature review methods
- Assessment methods and results
- Adverse impact determinations
- Characterization and representation of:
    i. habitats
    ii. disturbance
    iii. fishing impacts"

Gear Effects - data consolidation and evaluation

The Chair reviewed the Team's conception of the literature database, reiterating that this would not be a separate literature evaluation but rather an exercise in coding the references using the already-completed evaluations and adding any more that may need to be done. One Team member brought up the fact that at least two coding evaluations would probably need to be done for every database entry. The database should be up and running within a matter of days, and coding assignments should soon follow.

Assessment Endpoints

Endpoint names were solidified months ago, but they began to break lose from their foundations within the last two months. The Team firmed up that the endpoints would be referred to in terms of Components of Habitats: Geological, Biological, Prey and Deep Sea Corals (DSC). Subsequent discussions mentioned the possibility of combining Biological and Prey into one matrix. DSC may be a candidate for similar treatment.

Matrix development

The Team discussed the revised Geological habitat component matrix. Importantly, the new assessment metrics (column headings) imply a change from the previously considered paradigm.

In constructing matrices for Biological and Prey habitat components, the Team had constructed separate Susceptibility (S) and Recovery (R) matrices that would, through an as-yet-undetermined algorithm, provide values for a Bio and Prey summary table (Table 1 - Table 3). Under these tables, the degrees to which the organisms either possess a characteristic (tall/hard, etc) or their characteristic contributes to recovery (life history, etc) provide the basis for the 0-3 scoring.

Table 1 – Example of prior S matrix for biological habitat components

Gear type/Energy/Substrate/Depth	Susceptibilty			
Type	**Tall/Hard**	**Tall/Soft**	**Short/Hard**	**Short/Soft**
Sponges	*0-3*	*0-3*	*0-3*	*0-3*
Mussles	*0-3*	*0-3*	*0-3*	*0-3*
Bryozoans/hydrozoans	*0-3*	*0-3*	*0-3*	*0-3*
Tunicates	*0-3*	*0-3*	*0-3*	*0-3*
Brachiopods	*0-3*	*0-3*	*0-3*	*0-3*
Tube-building polychaetes	*0-3*	*0-3*	*0-3*	*0-3*
Tube-building amphipods	*0-3*	*0-3*	*0-3*	*0-3*
Algea	*0-3*	*0-3*	*0-3*	*0-3*
Anemones	*0-3*	*0-3*	*0-3*	*0-3*

Table 2 – Example of prior R matrix for biological habitat components

Gear type/Energy/Substrate/Depth	Recovery			
Type	**LifeHist.**	**Turnover**	**RecovTim**	**RecovPot**
Sponges	*0-3*	*0-3*	*0-3*	*0-3*
Mussles	*0-3*	*0-3*	*0-3*	*0-3*
Bryozoans/hydrozoans	*0-3*	*0-3*	*0-3*	*0-3*
Tunicates	*0-3*	*0-3*	*0-3*	*0-3*
Brachiopods	*0-3*	*0-3*	*0-3*	*0-3*
Tube-building polychaetes	*0-3*	*0-3*	*0-3*	*0-3*
Tube-building amphipods	*0-3*	*0-3*	*0-3*	*0-3*
Algea	*0-3*	*0-3*	*0-3*	*0-3*
Anemones	*0-3*	*0-3*	*0-3*	*0-3*

Table 3 – Example of prior summary table for biological habitat components

Gear type/Energy/Substrate/Depth	*Fishing gear impact type*	Susceptibilty	Recovery
Type			
Sponges		*0-3*	*0-3*
Mussles		*0-3*	*0-3*
Bryozoans/hydrozoans		*0-3*	*0-3*
Tunicates		*0-3*	*0-3*
Brachiopods		*0-3*	*0-3*
Tube-building polychaetes		*0-3*	*0-3*
Tube-building amphipods		*0-3*	*0-3*
Algae		*0-3*	*0-3*
Anemones		*0-3*	*0-3*

For the proposed change, identical metrics for S and R are evaluated and those metrics are evaluated on a scale of 0-3 representing *the severity of anticipated gear impact or modification.* This is not-so-subtly different. Under the former, the evaluation scale is

based on *characteristics* while under the latter the characteristics are assumed and the evaluation scale is based on the *outcomes* (Table 4).

Table 4 – Proposed Geological habitat component matrix

						Gear Type							
						Gear Effects							
			Geological Habitat			Re-suspend		Homogenize		Redistribute		De-structure	
		Impact Type	Substrate	Energy	Depth	S	R	S	R	S	R	S	R
Dominated	Muds	*sli, cru, etc.*	Mud-Silt	High	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
				Low	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
	Sands	*sli, cru, etc.*	Sand	High	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
				Low	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
	Gravels	*sli, cru, etc.*	Granule-Pebble	High	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
				Low	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
			Cobble	High	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
				Low	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
			Boulder	High	High	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*
					Low	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*	*0-3*

The Team discussed this change in focus/structure, and after much back-and-forth agreed that it was more appropriate, primarily because of its direct integration into the SASI model. Further, the Team agreed that the proposed metrics (re-suspend, homogenize, redistribute and de-structure) represented an appropriate matrix for the Geological habitat component. These categories may need to be amended based on the literature database coding exercise, but the Team felt that they adequately captured the range of the effect of various gear impact types on geological components of habitat.

The Team's attention next turned to the Biological habitat component matrix, where we discussed the current organism-based approach (see Table 1 - Table 3) and how that may be assimilated for a matrix that evaluates outcomes rather than characteristics. The Team spent a good deal of time discussing this, but no firm conclusions were reached.

One Team member proposed that, with an outcome-based matrix, Biological and Prey components could potentially be combined into the same matrix. The Chair feels that DSC's could be similarly treated. The Chair will prepare a very short discussion memo on this topic.

Another Team member was on the cusp of an idea for developing an outcome-based Biological component matrix, and would work with the Chair to produce a very short discussion memo.

Swept Area Seabed Impact Model

One important issue with using the matrices to populate the Sensitivity Index (SI) in the SASI model is that the matrix approach does not disaggregate impacts to the gear component level, yet the SASI model allows for independent SI's for each gear component (doors, sweeps, etc). The team discussed a way to generate independent SI values based on the Impact Type (slicing, crushing, etc) linked to each gear component, and the Impact Type linked to each matrix row. Essentially, the SI value for a given gear component would be based on matrix S and R values from the gear matrices for rows with common Impact Types.

The Team was thoroughly confused by the Chair's feeble attempts to explain this. An alternate approach would be to use the same SI for all gear components. This idea was quite popular, but the Team reserved their right to reconsider this at a later date.