FORM OF REGIONAL NETWORK Habitat Loss, Degradation and Restoration

Structure - A single body will develop, guide and oversee the network. This "steering committee" will include representatives of the key partner groups. They will develop a process for decision-making and strategic planning.

Type of organization - The network organization will not have any regulatory or legislative mandate or authority.

Geography - The network will encompass the northeast North American Atlantic bioregion, its boundaries and activities defined by habitat/biological parameters rather than political boundaries.

Governance - The network will operate as a partnership whose member groups agree to comply voluntarily with goals and guidance (e.g., monitoring protocols) developed by the network.

Operating budget - It is anticipated the operating budget will be modest and focused on developing the network infrastructure (e.g., hiring part-time staff).

Funding sources - Participating groups will be asked to contribute start-up funding. The network partners will actively seek grants and contracts from public and private sources to maintain the network. This is likely to include working towards the dedication of annual funding from participating governments.

Partners - The network will include US and Canadian federal, state and provincial partners as well as non-profit monitoring groups.

Staffing - The intention is to hire a new part-time dedicated staff person with expertise in data management and web systems. This staff person will work with existing staff in the federal/state and non-profit partner programs to create and maintain the infrastructure of the network.

FUNCTION Habitat Loss, Degradation and Restoration

Scale - Tidal aquatic habitat encompasses those estuarine and coastal areas directly influenced by tidal incursion. This includes mudflats, sandy and rocky areas exposed between tides (intertidal) as well as estuarine riverine habitat reaching upstream to the head of tide. Subtidal habitat includes permanently submerged coastal habitat (seaward of the lowest tide line).

Scope - The sources of monitoring data will include federal, provincial, state and local government entities as well as non- government (citizen) monitoring groups.

Program design and implementation - For key monitoring parameters, standardized monitoring protocols and quality assurance steps will be developed and approved by the steering body. The participating groups will agree to promote and disseminate these protocols, working towards uniformity in the way data is collected and documented in the future.

Data management - Data management will include development of a network web page. Web links will be created to the monitoring databases of the participating groups. Members will, to the extent possible, provide spatially georeferenced maps. These maps will allow users to click on a map location and access relevant habitat data. Network participants will also agree to document new monitoring data using a standardized metadata format (e.g., location/time/date/QA etc.) and to make that metadata available through their individual web sites.

Data synthesis and communication - The network will undertake habitat assessments for specific issues and at selected scales (e.g., changes in the areal extent of eelgrass beds in the Gulf of Maine over the past decade). The results will be communicated to the network members through the web and other means.

Links to research - The network will identify research questions arising from the regional monitoring data (e.g., through the data synthesis process, additional monitoring needs will become evident). The network will prioritize these needs and will solicit the assistance of the academic community, NEPs and other partners in meeting these needs.

Services provided - For a fee, the network will coordinate and administer assessment projects requested by the participating groups (e.g., assess changes in the acreage of shellfish habitat closed due to bacterial pollution over the past five years in the area encompassing the southern Maine seacoast and New Hampshire coastal embayments).

Habitat Loss,	Degradation	and Restoratio	n – Supplemental	Table
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Habitat Monitoring Parameter	Corresponding Habitat Monitoring Programs
Eel Grass - location, extent, health (e.g., wasting), restoration	- Eelgrass Mapping (Massachusetts Department of
successes	Environmental Protection)
	- Casco Bay: Changes in Eelgrass (Maine Department of
	Marine Resources, Casco Bay Estuary Project)
Algae – community structure & composition, aerial extent,	- Marine Biotoxins Monitoring (Maine Department of Marine
timing, toxic HABs, phytoplankton	Resources)
	- Marine Resources Monitoring, Assessment and Prediction
	(National Oceanic and Atmospheric Administration, National
	Marine Fisheries Service, Northeast Fisheries Science
	Center)
	- Enteromorpha Monitoring (St. Croix Estuary Project)
	- Phytoplankton Monitoring (Fisheries and Oceans Canada)
Wetlands - % change, functional indicators (e.g., estuarine	- National Wetlands Inventory (U.S. Fish and Wildlife
fish species, etc.), permitted & unpermitted activity, , climate	Service, Fish Wildlife Enhancement Branch of Special
change/sea level rise, tidal restrictions	Projects)
	- National Resources Inventory (Department of Agriculture,
	Soil Conservation Service Resources Inventory Division)
	- National Land Use and Land Cover Mapping Program (U.S.
	Geological Survey, Office of Geographic and Cartographic
	Research)
	 Wetlands Conservancy Program, Mapping Inventory
	(Massachusetts Department of Environmental Protection)
	- Wetland Assessment Program (Massachusetts Coastal Zone
	Management Program)
Shellfish – fecal coliform, location, extent, abundance, HABs,	- Gulfwatch (Gulf of Maine Council on the Marine
contaminants (metals & organics), land use (impervious	Environment)
surfaces, etc.)	- Biotoxin Monitoring Program (Canadian Food Inspection

	Agency) - Mussel Watch Project (National Oceanic and Atmospheric Administration, National Ocean Service Office of Ocean Resources, Conservation and Assessment Coastal Monitoring and Bioeffects Assessment Division, Coastal Monitoring Branch) - Fisheries Statistics Program (National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Research and Environmental Information,
	 Living Marine Resources (National Oceanic and Atmospheric Administration, National Ocean Service, Office of Ocean Resources, Conservation and Assessment Strategic Environmental Assessments Division)
Fish Habitat – NPS/water quality, flow, quantity, sediment, fluvial geomorphology, riparian buffers, dams & fish ladders, obstructions	 Casco Bay Wildlife Areas and Protected Lands Mapping (Casco Bay Estuary Project and United States Fish and Wildlife Service) Massachusetts Ecosystem Assessment Program, Estuaries (National Coastal Assessment, Environmental Protection Agency, and Massachusetts Coastal Zone Management Program) Salt Marsh Monitoring (Massachusetts Audubon Society)
Beach/Dunes – vegetation, presence/absence of endangered species (e.g., terns, piping plovers, turtles), migratory shorebirds, invertebrates	 North American Breeding Bird Survey (U.S. Fish and Wildlife Service, Office of Migratory Bird Management Patuxent Wildlife Research Center) Coastal Waterbird Program (Massachusetts Audubon Society)
Water column – contaminants, DO, salinity, temperature, clarity, water column profile, nutrients/productivity	 Maritime Shellfish Sanitation Program (Environment Canada, Environmental Protection Branch) Classified Shellfishing Waters (National Oceanic and

	Atmospheric Administration National Ocean Service, Office
	of Ocean Resources, Conservation and Assessment Strategic
	Environmental Assessments Division)
	- National Coastal Pollutant Discharge Inventory Program
	(National Oceanic and Atmospheric Administration National
	Ocean Service Office of Ocean Resources, Conservation and
	Assessment Strategic Environmental Assessments Division
	Pollution Sources Characterization Branch)
	- National Estuarine Research Reserve System Monitoring
	(National Oceanic and Atmospheric Administration, National
	Ocean Service, Estuarine Reserves Division)
	- Cooperative Bacterial Monitoring Program (Eastern
	Charlotte Waterways, Inc.)
	- Maine Coastal 2000: Gulf of Maine Assessment (United
	States Environmental Protection Agency and Maine
	Department of Environmental Protection)
	- Ocean Studies Penobscot Estuary Project (Maine Maritime
	Academy, Corning School of Ocean Studies)
Benthic community - sediment type and contaminants,	- Benthic Surveillance Project (National Oceanic and
community structure	Atmospheric Administration National Ocean Service, Office
	of Ocean Resources, Conservation and Assessment Coastal
	Monitoring and Bioeffects Assessment Division, Bioeffects
	Assessment Branch)
	- Dredged Material Ocean Disposal Site Monitoring Program
	(Disposal at Sea Program, Environment Canada)
Marine invertebrates - community structure (composition,	- Living Marine Resources (National Oceanic and Atmospheric
diversity, numbers, etc.)	Administration, National Ocean Service, Office of Ocean
	Resources, Conservation and Assessment Strategic
	Environmental Assessments Division)
Island – estuarine & seabird populations, distributions,	- North American Breeding Bird Survey (U.S. Fish and

predators, nesting & fledging, land use impacts & effects	Wildlife Service, Office of Migratory Bird Management	
	Patuxent Wildlife Research Center)	
	- Living Marine Resources (National Oceanic and Atmospheric	
	Administration, National Ocean Service, Office of Ocean	
	Resources, Conservation and Assessment Strategic	
	Environmental Assessments Division)	
	- Important Bird Areas (IBA) Program (Massachusetts	
	Audubon Society, National Audubon Society, American Bird	
	Conservancy, and others)	
	- Casco Bay Waterbird Survey (Casco Bay Estuary Project,	
	United States Fish and Wildlife Service, and Maine	
	Department of Inland Fisheries and Wildlife)	

Form of Network	Simplicity		S	ophistication
Structure	A single entity (e.g., steering committee)	Jurisdictional boards (e.g., state/provincial)		Tiered state/provincial board engaging all stakeholders & committees (e.g., science, TAC, etc.)
Type of organization	Association w/no legal standing	US/Canadian non-profit		Regional public agency w/federal sanctions & mandates
Geography	Substate	State/Provincial	Regional by political subdivision	Biogrographical
Governance/decision- making	Advisory - optional participation	Voluntary compliance	Consensus	Mandatory
Operating budget	Existing and in-kind	Seed funding	Incremental growth	Major ongoing initiative
Funding sources	Current array of public and private sources	New grants and contracts (e.g., government, foundations,)	Dedicated program resources	Dedicated public and private funds, philanthropy
Partners	State, provincial & federal agencies (US & Canada)	Volunteer Programs	Regional organizations (e.g., RARGOM, GoMOOS)	Government, NGOs, businesses, academia, regional organizations
Staffing	Existing staff dedicate time to network	New part-time staff		Ongoing full-time professional staff of Network

Integrated Monitoring Network in 2005

Habitat Loss, Degradation and Restoration Option¹

Functions of	Simplicity Sophistication			
Network				
Scale	Tidal and subtidal	Near-shore & inshore	Coastal	Watersheds and Blue Water/Ocean
Scope/Reach	State & federal marine monitoring programs	Government and volunteer	Government, volunteer and academic programs	All monitoring data
Program design & implementation	Evaluate based on established protocols	Apply standardized protocols selectively	Amend programs to meet regional needs	Standardized protocols and regional needs
Data management	Rely on current mechanisms	Web links to databases with spatial references & metadata		Distributed & linked (e.g., archival and retrieval)
Data synthesis and communication	Existing level of program activity	Embayment assessments by selected issue	Integrated multi-factor regional assessments	Biogeographical trends and assessment w/active marketing/dissem
Links to research	Spontaneous - no formal connection	Identifies priorities linked to monitoring	Active proponent for regional research	Supports and conducts research (e.g., cause & effect)
Services provided @ fee/consulting	Local scale assessments	Gulfwide assessments	Integrated multivariate assessments	Development of plans, strategies, BMPs, etc.

Notes on Illustrative Management Issues:

- 1. Habitat loss eel grass die-off, competing uses on islands affecting bird nesting
- 2. Degradation wetlands filling, draining & hardening of upland edge, shellfish water quality, shoreline modification, NPS & fish habitat
- 3. Restoration fish access to spawning habitat, tidal restrictions, ditch plugging,

¹ In a 1999 survey of New England managers by the Coastal States Organization they identified habitat loss, degradation and restoration as the most important coastal management issue. (Insert CICEET web site)