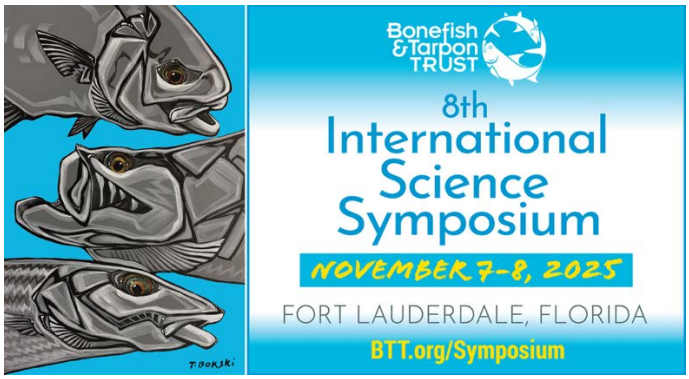


Managing the Landscape for the Future of Coastal Fisheries

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The importance of habitat, water quality, and other environmental metrics for marine fisheries has long been acknowledged, but it has been challenging to incorporate these factors in marine fisheries management that relies heavily on stock assessments. Human-caused pollution, modified watershed hydrology, and habitat loss, degradation, and fragmentation that are negatively impacting coastal fisheries are not being adequately included in fisheries and coastal resource management. For example, as Florida's surface and groundwaters move from inland to the coasts, they flow through increasingly fragmented natural landscapes affected by agriculture, residential developments, and urbanized areas.

These water and habitat problems are causing coastal systems to reach or exceed ecological tipping points, with disastrous effects. Like falling off a cliff, everything seems fine until that last fatal step. For example, in many locations the level of nutrients from sewage effluent, septic leaching, agriculture, and residential areas entering estuaries have already reached a threshold where environmental conditions changed suddenly for the worst. Wastewater infrastructure introducing contaminants is also a growing problem.

In Florida, for example, FWC managers are working with other agencies to assemble data on factors specific to different management regions, including harmful algal blooms, and seagrass, wetland, and mangrove coverage, to supplement standard stock assessments to inform regulations. Although FWC has made great progress, these metrics are reactive. For example, measures like fishery closures and reduced slot limits do not address many of the causes of declines in ecosystems and the fisheries they support. The larger-scale problems impacting local habitats (for example, too many nutrients in freshwater flows, alteration of freshwater flow regimes) are not yet included. Treating the symptoms rather than causes of a disease would not be effective medical care, and is not effective for fisheries management and conservation.

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Improving coastal fisheries management will require a landscape approach that accounts for connectivity at the watershed scale and integrates landscape and seascape in a more proactive fashion. This will require improved collaboration between the agencies responsible for managing Florida's water, habitats, land use, and fisheries, and fully integrating their missions to enable holistic fisheries management. This landscape approach is similar to the approach taken toward implementation of the Florida Wildlife Corridor. Enacting this strategy is possible through better integration and collaboration between current conservation and management efforts. with agencies, NGOs, and stakeholders, integration of new approaches, better mapping, and public education highlighting better coastal fisheries management. A similar collaborative structure exists under the umbrella of the National Estuary Program for general estuary restoration and management, such as inclusion of municipal land use planning in estuary management efforts, but this lacks mandates or enforcement.

Essential for this approach is a focus on connectivity across landscapes--from watersheds to springs to estuaries and coastal habitats. The ultimate goal is to conserve or restore overall ecological function by focusing on habitat protection/restoration and maintaining or restoring connectivity across an entire watershed.

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