7th International Bonefish & Tarpon Trust Science Symposium, November 4-5, 2022

Session Descriptions

Symposium Theme: Conservation Connections

The overall goal of BTT Symposia is to bring together internationally recognized marine scientists, resource managers, fishing guides, anglers, and educators to share information and learn from one another. The mix of attendees and diversity of presentations and expert panels is unique and empowering.

The overall theme for the 7th International Symposium is Conservation Connections. Within this broad context, the priority focus of this Symposium will be **connecting research and education to management**. Previous symposia have been very successful at sharing information, some of which was eventually applied to policy. The goal at this Symposium is to take advantage of the diverse mix of attendees representing research, stakeholders, conservation advocates, and resource managers to take the next step in the science-to-management connection and address known management needs with actionable science.

Management-themed Sessions: Science Connections to Management

To achieve this goal, the Science Symposium is split into management-themed sessions. Four of the sessions will be comprised of scientific presentations followed by a panel discussion. The goal of each panel will be to explore ideas for applying new information to revise and improve management and conservation strategy. The theme sessions will be:

Juvenile Habitats – The Future of the Fishery

Habitat loss and degradation are among the top threats to coastal fisheries worldwide, and this is especially true to species that are catch and release or harvested but well managed. Of particular concern are habitats that support juvenile life stages, with coastal habitats such as wetlands among the most endangered. Although the importance of juvenile habitats to successful fisheries conservation and management has long been realized, thus far juvenile habitats have not generally been included in fisheries management actions. This session will include presentations that share new information on the importance of these habitats. The panel will discuss the numerous strategies that might be used to shift the management paradigm so that these important habitats are appropriately included in fisheries management.

Conservation Engagement

Stakeholder engagement is essential to conserve ecosystems, associated biodiversity, and the fisheries that depend upon healthy ecosystems. Outdoor recreation specialists, such as flats anglers, represent a stakeholder group that have unique incentives to contribute to conservation and stewardship. Although engagement of flats anglers and others who depend on healthy coastal ecosystems is important and has been increasing, it has not yet scaled up sufficiently to influence policy and angler behavior (ethics) at meaningful levels. This session will include presentations on the many aspects of angler engagement in

conservation. The panel will discuss ways to be more effective and efficient in engagement that empowers stakeholders to become conservation advocates.

Emerging Information

So much research on bonefish, tarpon, and permit is ongoing that not all fits into the session themes outlined above. The Emerging Information session will include presentations on multiple exciting research projects.

Spatial Management for Effective Conservation

The scales of fisheries management and the biology of managed species are mismatched for coastal fisheries. Fisheries management is based on jurisdictional boundaries, whereas life cycles of all flats species and most coastal species cross jurisdictional boundaries via migrations and larval transport, both within and between nations. Similarly, the spatial dimensions of fish movements, ontogeny, and habitat use both within and between jurisdictional boundaries are not incorporated into management. An intact, unfragmented, coastal habitat mosaic with good water quality is required for the sustainability of coastal fish species, yet this receives insufficient attention in fisheries management. As information further delineating the habitat mosaic and cross-jurisdictional boundary connections come to light, it is essential that this guides management revisions that take a broader spatial approach to flats fisheries management. This session will include presentations that focus on flats fish movement, habitat use, and connectivity at the local and regional scale. The panel will propose and discuss management policy revisions to include spatial information in flats fishery management.

Water Quality and Infrastructure

The most important habitat to our fishery is water, yet water quality, and the infrastructure that effects water quality, is rarely considered in fisheries management. This is especially concerning for coastal fisheries. Water infrastructure mismanagement includes alteration of freshwater flows into coastal waters, excess nutrients, contaminants, insufficient wastewater treatment, insufficient stormwater treatment, excess use of fertilizers, herbicides, and pesticides. The impacts of some of these issues on our fisheries and habitats have long been known, others are coming to light. Recent and ongoing coastal ecological collapses highlight the urgency of this issue for flats fishery conservation. This session will include presentations that focus on the occurrence of pharmaceuticals and other contaminants in bonefish and their prey in the Florida Keys and the wider Caribbean Sea, and the presence of bonefish diseases in these areas. The panel discussion will focus on needed infrastructure changes to address these issues with urgency.

Panel Structure:

The sessions on Juvenile Habitats, Conservation Engagement, and Spatial Management will include panels that immediately follow the science presentations. The panels will last one hour. Each panel's goal will be to propose and discuss viable conservation applications based on the presented science and

related scientific, stakeholder, and other information. Panels will be comprised of a moderator and five panelists with expertise in the session theme.