

- Design artificial reefs to target specific species.

Key Elements of Successful Partnerships

- Develop a “Best Practices” document to guide artificial reef practitioners:
 - ⇒ Perhaps update the National Artificial Reef Plan. Ensure any updates consider and incorporate regional differences.
 - ⇒ Create accessible, supplementary guidelines for small groups who do not want to utilize the full plan.
- Address issues where improvements are needed:
 - ⇒ Illegal reefs and not enough enforcement to address this problem.
 - ⇒ Ghost artificial reefs—no longer in human use but at times trap and kill turtles and other animals.
 - ⇒ Lack of expertise and training in artificial reef deployment.
- Partnerships should recognize regionally different priorities, including the purpose for applying artificial reefs (e.g., fishing, mitigation, etc.).
- Facilitate open and transparent planning processes, forge partnerships with the recreational fishing community and consider competing interests.
- Anticipate road blocks when developing partnerships (e.g., liability/insurance).

IX. Fostering Mutual Learning and Advancing the Discussion

During the last breakout, participants discussed how to build a bridge toward future artificial reef–related activities (individual and collective) based on new knowledge gained and ideas shared during the course of the workshop. Participants also discussed ways to improve communication, information sharing, and collaboration. Again in small groups, the facilitator suggested participants consider discussing the following topics, or any subject that came to mind as each group considered next steps:

- Enhancing communication and information sharing.
- Building partnerships and strengthening collaboration.
- Improving management, regulations, and policy.
- Advancing the natural and social science.
- Identifying and mobilizing resources (e.g., human, technological, financial).

The full group reconvened one final time and small groups shared workshop takeaways. The following themes and associated takeaways are not necessarily consensus-based. Rather, these outputs grew from 2 days of extensive information sharing and collaborative discussions about regional experiences, challenges, science, and lessons learned.

Management

- Incorporate artificial reefs into ecosystem-based management and marine spatial planning efforts.

- **Question:** Is NOAA Fisheries attempting to identify monitoring gaps as it considers how to conduct EBFM?
 - **Response:** Yes, data gaps will be addressed under item #2 in the EBFM Guiding Principles pyramid: “What is the foundational science we need?” NOAA Fisheries is exploring how to conduct and organize monitoring efforts and utilize data in new, innovative ways.
- **Comment:** Please consider the value of artificial reefs to recreational tourism. For example, artificial reefs make a significant contribution to the Florida economy.
 - **Response:** Indeed, there are human use benefits from artificial reefs beyond ecological considerations (e.g., recreational use/no commercial take).
- **Question:** Has NOAA considered the cumulative ecological impacts of introducing artificial reefs into large areas? For example, if one million acres of artificial reef habitat is introduced into a soft-sediment bottom will the entire species composition of that area change?
 - **Response:** NOAA scientists are currently researching this question.
- **Comment:** Japanese researchers have explored this topic and found it a matter of trade-offs. For example, artificial reefs in an area like this may attract octopus at the expense of reducing flounder because a large area of muddy bottom habitat was removed.
- **Question:** How will NOAA address monitoring and enforcement requirements, and funding needs associated with these activities, within its policy? These questions will come up when new permit requests or renewals are submitted to ACOE for review and approval.
 - **Response:** This is not yet known.
- **Question:** How will NOAA address scale in the context of ecosystems? Are humans considered as another dimensional scale in EBFM?
 - **Response:** Scale has been discussed at length within NOAA Fisheries. Most management decisions are made at the local or regional scale. Assessment design may initially be conducted at an individual stock level, and then scaled up to an ecosystem level as we continue to develop new models and collect needed data. Humans are an integral part of the ecosystem the way [NOAA has defined “ecosystem.”](#)

Presentation: *Overview of the Regulatory Framework*

Presenter: Keith Mille, Florida Fish and Wildlife Commission

Summary of post-presentation comments, questions, and responses:

- **Question:** Is the second regulation listed under 33 CFR 322.5(b) “*Facilitate access and utilization by recreational and commercial fishermen*” in direct opposition to special management zone regulations that exclude use of specific fishing gear at a certain site?
 - **Response:** ACOE regulatory requirements provide guidance for artificial reef construction that could be used for both recreational and commercial fishing activities. In order to protect certain artificial reefs from being fished or limit

