Journal for Oyster Reef Restoration Literature Review

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1 Summary of Ecosystem Services Model

2 Summary of Foundation Species Model

3 Application of Models to Oyster Restoration and Aquaculture

Oysters and oyster reefs are modeled using both the ecosystem services model and the foundation species model. Sometimes both of these models are referenced in the same paper (Mercaldo-Allen et al., 2023). There is evidence in the literature to support the use of both of these models for understanding oyster ecology. For example, Newell (1988) reports that prior to their depletion during the 19th and 20th centuries, oyster reefs could remove 22 — 44% of phytoplankton C production in the Chesapeake Bay, indicating a significant alteration of material cycling in the system consistent with the role of a foundation species (Fields & Silbiger, 2022). Other studies support the idea that the function of oyster reefs is dependent on their structural development indicating that it is the creation of a particular habitat and its associated conditions that drives the effect. ? (?) found that macroinvertebrate communities recovered on the interior of restored reefs but not their margins, suggesting that a certain oyster density or reef structure was required to facilitate the colonization of the macroinvertebrates.

4 Impact of Models on Understanding Oyster Management

References

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