



## Mangroves as Fish Habitat

Karen J. Murchie and Pedram P. Daneshgar (editors). American Fisheries Society, Bethesda, MD. 2015. 148 pages. US\$ 79.00 (paperback or ebook)

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Once mangroves were considered to be no more than insect-infested, muddy swamps. That all changed in the 1970s, 80s, and 90s as more and more research highlighted their many values and critical ecosystem

supporting roles. One of the most prominent of those is the vital role they play as nursery and adult habitats for fisheries species. Although research has been happening around the world, it has been scattered; however, over the last 10 years a series of targeted symposia have begun to draw the work together. The most recent of these, the 2014 *2nd International Symposium on Mangroves as Fish Habitats*, held in Mazatlan, Mexico, brought together mangrove fish researchers from around the world and culminated in the beautifully presented and succinct book *Mangroves as Fish Habitat*.

piecemeal way resulting in disparate, scattered data, making the development of widely applicable models difficult. There are ways forward, and the types of integrative research that will be vital if key knowledge gaps are to be addressed in a timely manner are identified. Other key tools in developing the understanding of mangroves as fish habitats are investigated, including the role of recreational fisheries as tools for mangrove conservation, and the use of metadata analysis to expand local scale understanding to a regional focus. The section finishes on a salutary note by documenting the decline in mangrove-based artisanal fisheries along the Arabian Sea Coast of Pakistan, one of the world's largest and most endangered mangrove areas. The reasons are complex and the example stands as a reminder of the urgent need to develop a functional understanding of mangroves as fish habitats, the processes that support those values and the key information needed for robust management.

The second section of the book focuses on community ecology and connectivity, highlighting multiscale variation in the composition and richness of fish assemblages between habitats within mangrove systems and among mangroves systems, and looking at the implications of variable use of mangroves by predatory fish. In highlighting the variability in mangrove fish assemblages, this section emphasises the importance to effective management of understanding spatial and temporal variations in mangrove fish assemblages. The third section hones in on the services provided by mangroves; initially in terms of secondary productivity and carbon sequestration, then by considering how the provision of services is impacted over multiple timescales by external factors, how the services provided are influenced by the type of fish in question and the part of the system they utilise, and how individual juveniles vary their use of the mangrove habitat mosaic. The book finishes with two punchy sections comprised of extended abstracts that look at the impacts of climate change and other disturbances on mangrove ecosystems as well as two examples of successful outcomes for fish of mangrove restoration.

Although only 148 pages in length, *Mangroves as Fish Habitat* brings together the perspectives of a diversity of mangrove researchers to provide an up to date snapshot of our current understanding of the important themes of mangrove fish research that provides a focused summary for established researchers and a key compilation for those new to the field. **AFS**

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The first five chapters deal directly with the signature book topic—mangroves as fish habitats—highlighting key impediments to understanding and beginning to develop new approaches to filling fundamental knowledge gaps. Because mangroves systems have often been seen as the poor cousins of marine ecosystems, they have usually been studied in a