

Community Conservation of the Far Eastern Curlew

Shorebird Habitat Restoration – Mangrove Removal

Each year migratory shorebirds make their way to the coastlines, estuaries, and inland wetlands of Australia, travelling huge distances along the East Asian Australasian Flyway. Migratory shorebirds, including the Eastern Curlew, arrive in Australia between September to April where they come to feed in preparation for their return to breeding grounds in the far northern hemisphere. Unfortunately, shorebird numbers are in decline due to loss of important habitat, in particular feeding and roosting grounds associated with estuaries and coastal wetlands.



Shorebird Habitat vs Mangroves

Mangroves generally occupy areas adjacent to coastal saltmarsh at slightly lower elevation, in the intertidal zone. Mangrove forests perform vital functions within estuaries and rivers including:

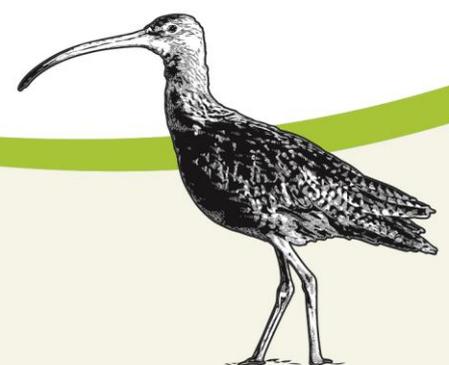
- Providing essential feeding and breeding habitat for aquatic organisms (i.e. fish, prawns)
- Shoreline protection by buffering floodwater and tidal / wave energy
- Sequester carbon in biomass and sediment

However human induced changes to rivers and estuaries, such as increased sedimentation and climatic changes, are causing the increasing landward march of mangroves, in particular the Grey Mangrove (*Avicennia marina*). As a result, mangrove incursion is threatening shorebird habitat by modifying the ecology and function of mudflats and saltmarsh, reducing areas available for shorebird roosting and foraging.

Controlling Mangrove Incursion

Mangrove forests, along-side saltmarsh, are protected as a threatened community under state and federal legislation. However Despite this legislative protection, control programs are underway in areas where mangrove incursion threatens critical habitat for migratory shorebirds.

A long-term program of shorebird habitat restoration involving mangrove removal is currently underway at a number of sites in the Hunter Estuary, NSW. This program is driven by local volunteers in partnership with NPWS and industry, and forms a major component of the Community Conservation of the Far Eastern Curlew Project. All mangrove removal work is undertaken in accordance with a licence issued by the NSW DPI (Fisheries).



Community Conservation of the Far Eastern Curlew



Volunteers undertaking mangrove removal, Hunter Wetlands National Park

There are a number of suitable methods that can be used to remove and control mangroves invading shorebird habitat (i.e. mudflats and saltmarsh). The appropriate method to choose will be determined by the extent and life stage of the mangrove incursion. The following techniques can be used to remove mangroves in shorebird habitat, and ensure their lifecycle is controlled to prevent on-going incursion.

- Primary removal – using manual and mechanical techniques (chainsaw, brushcutter, hand-saw, machinery)
- Follow-up removal – hand pull seedlings or cut to ground level
- Barrier installation – prevent the continual tidal inflow of floating mangrove propagules
- Maintenance & monitoring – hand pull remaining seedlings and collect propagules

Primary and follow-up control techniques are based on a simple method of removing mangrove biomass to ground level. Daily tidal flows then drown the remaining stump and root structures preventing reshoots. To ensure mangroves do not continue to recolonise the area, the inflow of floating mangrove propagules also needs to be controlled. This can be achieved by creating barriers at tidal entry points, such as installing floating booms or screens over culverts and channels.

An ongoing program of monitoring and maintenance will still be required to remove any remaining seedlings and propagules that make their way past any barriers, particularly between October to December when propagules are released from the Grey Mangrove.



Mesh & boom barriers

Risk Management

Ensure appropriate environmental assessments are undertaken, and licences are obtained from relevant state authorities (i.e. Fisheries Department) prior to undertaking mangrove removal.

Further Information

Contact your relevant state Fisheries authority and see the following case study from Hunter Bird Observers Club.

<https://www.hboc.org.au/wp-content/uploads/2010-Annual-Report-Appendix-C-MPS-and-SH-Restoration.pdf>