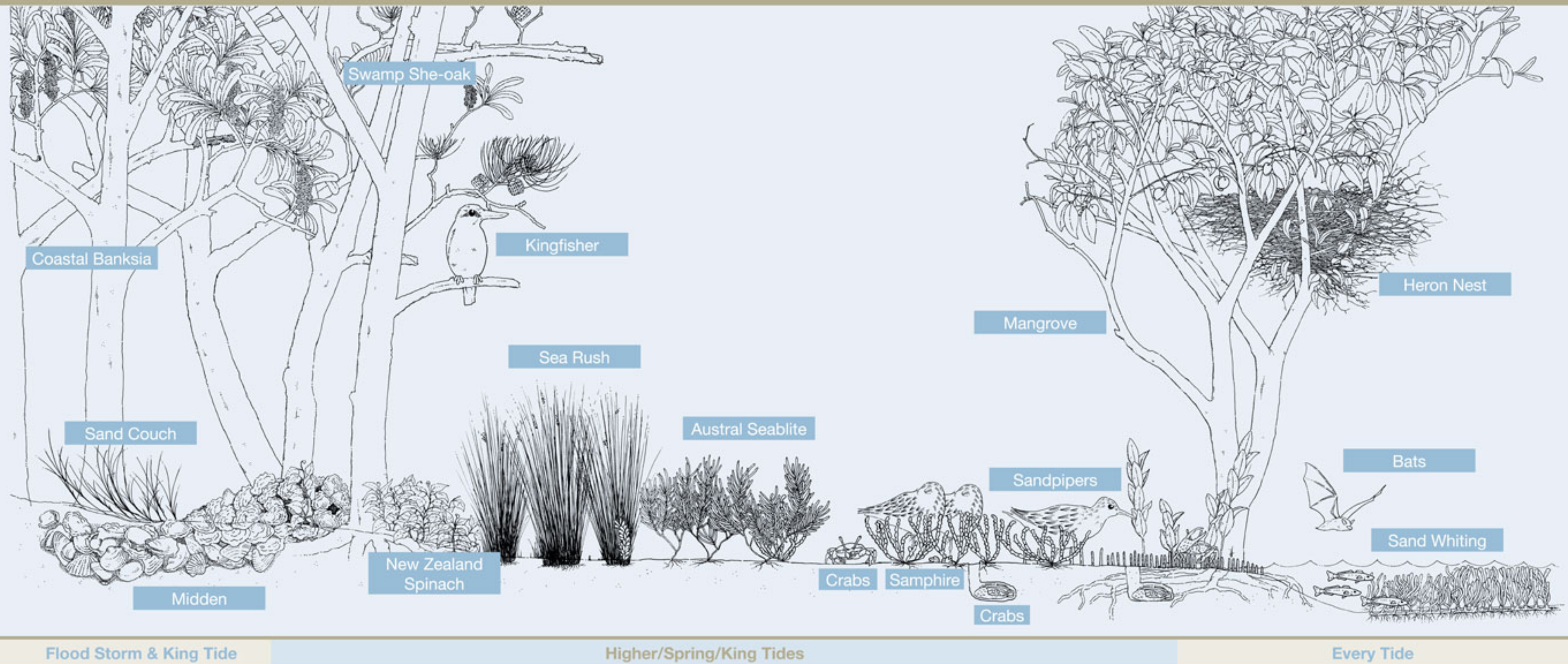


# SUSTAINING SALTMARSHES IN THE HAWKESBURY RIVER ESTUARY

## WHAT IS SALTMARSH?

Saltmarsh consists of a variety of plants that can tolerate high levels of salt and occasional wetting from salt water by the rising tide. Saltmarsh is usually found between mangroves and the edge of the land in an estuary.



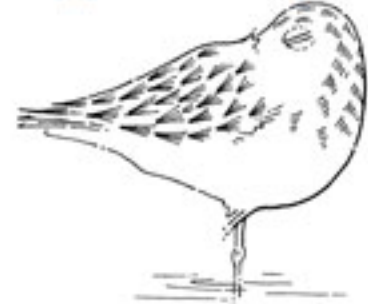
Tidal flushing is a critical factor in the effective functioning of saltmarsh and many species of fauna and flora rely on this intriguing ecosystem

### Samphire



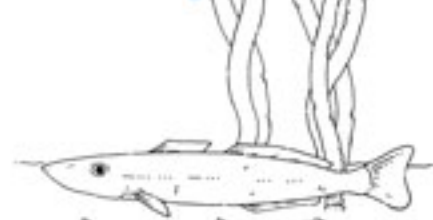
Herb plants such as Samphire are very sensitive to human interference and can tolerate higher levels of salinity than Sea Rush

### Sandpipers Roosting



Saltmarsh provides summer feeding & roosting grounds for migratory birds of international significance such as Curlews, Godwits & Sandpipers

### Sand Whiting



Many species of fish such as Sand Whiting, Bream, Mullet, Flathead and School prawns visit a saltmarsh and feed, shelter and swim among saltmarsh plants when they are inundated by a high tide. Some species of juvenile fish can also survive in ponds on the saltmarsh and use them as a nursery habitat

### Myotis



Bats flying over saltmarsh at night feed on insects including mosquitos and may feed on thousands over the course of a few hours

### Midden



Well before the pyramids were built, Aboriginal people were catching crabs, molluscs, and eating them, making piles of shells (middens) on the edge of the saltmarsh. Middens near saltmarsh are usually found along creek lines underneath Swamp Oak Forests and have been carbon dated back to thousands of years BC

### Saltmarsh Crabs



Crabs living in saltmarsh release considerable quantities of larvae during the ebb tide, which is an important food source for estuarine fish

## OBJECTIVES

### Protect the best, restore the rest:

- ▶ Understand condition and function
- ▶ Improve knowledge and raise awareness
- ▶ Protect existing values
- ▶ Improve management of issues

## METHODS

### Establish targeted Saltmarsh Restoration Program:

- ▶ Establish partnerships - community champions, recreational fishers, state and local government
- ▶ Compile existing knowledge and research; establish expert reference panel, support new research
- ▶ Map extent, assess condition, estimate trends
- ▶ Identify community values - e.g. Aboriginal cultural heritage, recreation, fishing, bird watching, research
- ▶ Promote values and educate about threats - field days, media, brochures, posters and maps
- ▶ Support restoration projects - provide technical advice, project planning and grants for improved management

[www.hn.cma.nsw.gov.au](http://www.hn.cma.nsw.gov.au)

## CONTEXT

### FOR THE HAWKESBURY NEPEAN CATCHMENT MANAGEMENT AUTHORITY'S SALTMARSH RESTORATION PROGRAM.

#### Hawkesbury River estuary saltmarsh facts:

- ▶ Recent research shows a 51 to 96 percent loss in the last 60 years
- ▶ Significant areas historically degraded by drainage, levee and road works
- ▶ Ongoing degradation; informal levees & roads, motor bike and 4WD damage, trampling, grazing and mowing
- ▶ Identified as high priority vegetation, wetland and fauna habitat in the Hawkesbury Nepean Catchment Action Plan



## RESULTS

- ▶ Trend study over last 60 years completed
- ▶ Disparate mapping of extent consolidated and publicised
- ▶ Literature review and ongoing research informs actions
- ▶ Site assessment tool including condition and threats finalised, applied and recorded in GIS
- ▶ Strong local government partnership established - case studies & demonstration sites
- ▶ Improved management through funded on-ground works - weeding, fencing, formalised access, revegetation, re-creation
- ▶ Education & communication program implemented - saltmarsh diagram (above), tidal mapping

## CONCLUSIONS

- ▶ Values of saltmarsh as endangered ecological community and aquatic habitat are poorly understood
- ▶ Availability of funding for on-ground works raises the profile of saltmarsh
- ▶ Historical modifications are difficult to correct eg. roads, levees, floodplain drainage
- ▶ Recreational activities in a peri-urban environment increasingly impact on high quality marshes
- ▶ Ongoing research into restoration techniques and results is required
- ▶ Identification of landward buffer zones in planning documents for sea level rise is required

