Appendix 3

Ecosystem Values and Management Needs

Sandy Coasts

Rocky Coasts (Headlands and Bluffs)

Non-tidal Wetlands

Tidal Wetlands

Fringing Reefs

Rocky Foreshores

Sandy Bottoms

Soft Bottoms

Source: Saenger and Pitts (1997)

Values and Management Needs: Sandy Coasts

Biological Values

- important habitat including habitat for rare or threatened species

Functional Values

- dissipative barrier to erosive on-shore wave action
- stabilisation of windblown sand
- high scenic amenity
- high recreational amenity
- regionally important for groundwater recharge

Management Considerations

Sandy Coasts are sensitive to:

- changes in sediment deposition patterns or rates
- changes to tidal regimes/tidal drainage patterns
- erosion due to increased currents and wave action
- physical disturbance of substrates or shorelines
- removal of vegetative cover (wind erosion)
- nutrient enrichment
- changes in groundwater levels
- fire

Values and Management Needs: Rocky Coasts (Headlands and Bluffs)

Biological Values

- important habitat including habitat for rare or threatened species

Functional Values

- dissipative barrier to erosive on-shore wave action
- stabilisation of windblown sand
- high scenic amenity
- high recreational amenity

Management Considerations

Rocky Coasts are sensitive to:

- physical disturbance of substrates or shorelines
- removal of vegetative cover (wind erosion)
- nutrient enrichment
- changes in groundwater levels
- fire
- changes to tidal regimes/tidal drainage patterns
- introduced species

Values and Management Needs: Non-tidal Wetlands

Biological Values

- important habitat including habitat for rare or threatened species
- provision of drought refuges for waterbirds
- provision of summer feeding areas for migratory waders

Functional Values

- store and regulate terrestrial flood run-off
- filter sediment from terrestrial run-off
- provide biological uptake of excessive nutrients and other pollutants
- high scenic amenity
- important habitat and migratory pathway for fisheries resources
- high recreational value
- high educational value (nature study)

Management Considerations

Non-tidal Wetlands are sensitive to:

- changes in sediment deposition and erosion patterns or rates
- changes to water quality, particularly nutrients, organic loading and turbidity
- changes in drainage patterns or flow rates
- physical disturbance of substrates or shorelines
- groundwater extraction and drawdown
- erosion due to increased currents, wave action or surface run-off
- clearing of catchments
- changes in adjacent land use

Values and Management Needs: Tidal Wetlands

Biological Values

- important habitat including habitat for rare or threatened species
- important habitat for waders and other migratory birds
- high biological productivity
- generally high biological diversity

Functional Values

- physical barrier to erosive wave or current action and tidal and storm inundation
- prevention of salt intrusion
- shoreline and tidal channel bank stabilisation
- stabilisation of sediment deposits
- important habitat for commercial and recreational fisheries resources
- important nursery or breeding habitat for important commercial and recreational offshore fisheries resources
- silt trapping (maintain marine water quality and reduce in-channel sedimentation)

Management Considerations

Tidal Wetlands are sensitive to :

- physical disturbance of substrates or shorelines
- changes in sediment deposition patterns or rates
- changes to water quality, including nutrient loadings
- changes in local drainage patterns
- changes to salinity regimes
- changes to turbidity levels
- changes to tidal regimes/tidal drainage patterns
- substrate erosion due to increased currents, wave action or surface run-off
- changes to temperature regimes (thermal pollution)

Values and Management Needs: Fringing Reefs

Biological Values

- high biological diversity
- important habitat including habitat for rare or threatened species
- high biological standing stock with low productivity

Functional Values

- important habitat for commercial and recreational fisheries resources
- physical/dissipative barrier to erosive wave action
- high scenic/visitor value
- high education value (nature study)

Management Considerations

Fringing Reefs are sensitive to:

- changes in sediment deposition patterns or rates
- changes to water quality particularly nutrients and salinity
- changes to turbidity levels
- trampling and overharvesting
- changes to tidal regimes/tidal drainage patterns
- physical disturbance of substrates or shorelines (e.g. anchor damage)
- changes in wave regimes
- changes to temperature regimes (thermal pollution)

Values and Management Needs: Rocky Foreshore

Biological Values

- high biological diversity
- important habitat including habitat for rare or threatened species
- high biological standing stock with low productivity

Functional Values

- important habitat for commercial and recreational fisheries resources
- physical/dissipative barrier to erosive wave action
- generally high recreational value (bait collecting, rock fishing)
- high educational value (nature study)

Management Considerations

Rocky Foreshores are sensitive to:

- changes in sediment deposition patterns or rates
- changes to water quality, including nutrient and salinity levels
- changes to turbidity levels
- changes to tidal regimes/tidal drainage patterns
- physical disturbance of substrates or shorelines
- trampling and overharvesting
- changes in wave regimes
- changes to temperature regimes (thermal pollution)

Values and Management Needs: Sandy Bottoms

Biological Values

- high biological diversity
- important habitat including habitat for rare or threatened species
- biological productivity variable

Functional Values

- important habitat for commercial and recreational fisheries resources

Management Considerations

Sandy Bottoms are sensitive to:

- changes in sediment deposition patterns or rates
- changes to water quality, including nutrient and organic loadings
- changes in wave regimes
- changes to temperature regimes (thermal pollution)
- disturbance of substrates

Values and Management Needs: Soft Bottoms

Biological Values

- high biological diversity
- important habitat including habitat for rare or threatened species

Functional Values

- important habitat for commercial and recreational fisheries resources
- important role in recycling organic matter
- important trophic linkage between seabottom communities and organisms swimming actively in the water
- important role in adsorption of pollutants

Management Considerations

Soft Bottoms are sensitive to:

- changes in sediment deposition patterns or rates
- physical disturbance of substrates
- changes to temperature regimes (thermal pollution)