

3.5 Pearce Point to NT-WA border

Coast region start: Lat: -14.42668
 Long: 129.35406
 Coast region end: Lat: -14.72703
 Long: 128.22284

Region includes Joseph Bonaparte Gulf, Fitzmaurice River, Victoria River and Keep River.

- 455 km coast surveyed, making 9% of the total 5102 km.
- Mangroves are found along 94.2% of the shoreline in this region, 428.6 km. Total area of tidal wetland in the region is 2301.23 km² (OzCoasts 2009), calculated as 5.06 km² tidal wetland per kilometer of coastline surveyed in the region.
- Sand flats, mud flats and salt flats dominate in this region, being found 419.1 km, 92.1% of the coastline.
- Estuaries include the mouths of the Keep River, Forsyth Creek, Victoria River, Fitzmaurice River and New Moon Inlet.
- No marine megafauna was observed in this region.

Table 26: Summary of coastal characteristics from Pearce Point to NT-WA border.

		km	% of region
<u>Physical characteristics</u>	Rocky	25.5	5.6
	Beach	55.8	12.3
	Flat	419.1	92.1
	Dune	109.5	24.1
	Other wetland	2.4	0.5
<u>Vegetated habitat type</u>	Mangrove	428.6	94.2
	Saltmarsh	386.0	84.8
	Fringing coral	1.8	0.4
	Seagrass verge	0.0	0.0
	Coastal Woodland	62.3	13.7
<u>State of erosion and deposition</u>	Deposition	184.5	40.6
	Erosion	156.1	34.3
	Stable	89.2	19.6
<u>Tidal wetlands</u>	Mangrove	428.6	94.2
	Saltmarsh	386.0	84.8
	Sand and mud flats	209.9	46.1
	Salt flat	355.3	78.1
<u>Other</u>	Human modified	1.2	0.3
	Water reach	70.0	15.4

Pearce Point to NT-WA border

Figure 36: Representative coastline imagery from the Pearce Point to the NT-WA border region. Image numbers are unique within the electronic database



Table 27: Coastline data for Pearce Point to NT-WA border, NT. Source OzCoasts 2009.

NT-WA Survey – 5. Pearce Point to NT-WA border, NT		
Features	#5	Relevance to survey region
Annual Rainfall –range & mean (mm)	1134-1416 (1229)	Above average
Number of estuaries listed	7	Average
Total Catchment Area (km ²)	99500	Above average size
Total Estuary Length (km)	329.0	Above average size
Tidal Range (in m)	5.40	
Condition Status	Near Pristine	Virtually no disturbance by humans
Area of Mangrove (km ²)	394.62	
Area of Salt Marsh (km ²)	1906.61	
WCI% from Region Total	17.1	
Total Tidal Wetland (km ²)	2301.23	
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	
Mangrove species number	12	18 in vicinity
Mangrove species limit west	0	

Table 28: Estuary data for notable estuaries within Pearce Point to NT-WA border, NT . Source NLWRA; 1998

NT-WA Survey 5. Pearce Point to NT-WA border, NT				
Feature / Location	Keep River	Victoria River	Fitzmaurice River	New Moon Inlet
NLWRA Estuary Reference#	83	85	86	87
Latitude S	14.917	14.883	14.794	14.589
Longitude E	129.181	129.500	129.656	129.558
Annual Rainfall – mean (mm)	1134	1193	1212	1327
Catchment Area (km ²)	7495	81216	8522	1242
Estuary Length (km)	44.12	129.35	77.72	30.5
Tidal Range (in m)	5.2	5.3	5.4	5.6
Condition Status	P	P	P	P
Area of Mangrove (km ²)	55.55	198.90	26.90	47.42
Area of Salt Marsh (km ²)	504.00	522.03	255.96	382.60
Wetland Cover Index (WCI %)	9.9	27.6	9.5	11.0
Total Tidal Wetland (km ²)	559.55	720.93	282.86	430.02
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn
Mangrove species number		10 (18)	12 (18)	
Source of mangrove data:		GW85	GW85	

Table 29: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the Pearce Point to NT-WA border region (NT) (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

5. Pearce Point to NT-WA border		
Species/ Locations	Victoria River #85	Fitzmaurice River #86
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>		
<i>Acanthus ilicifolius</i>		
<i>Acrostichum speciosum</i>		
<i>Aegialitis annulata</i>	X	X
<i>Aegiceras corniculatum</i>	X	X
<i>Avicennia integra</i>		
<i>Avicennia marina</i>	X	X
<i>Bruguiera exaristata</i>		X
<i>Bruguiera gymnorhiza</i>		
<i>Bruguiera parviflora</i>		
<i>Bruguiera sexangula</i>		
<i>Camptostemon schultzei</i>	X	X
<i>Ceriops australis</i>	X	X
<i>Ceriops decandra</i>		
<i>Ceriops tagal</i>		
<i>Cynometra iripa</i>		
<i>Diospyros littorea</i>		
<i>Excoecaria agallocha</i>	X	X
<i>Lumnitzera littorea</i>		
<i>Lumnitzera racemosa</i>	X	X
<i>Nypa fruticans</i>		
<i>Osbornia octodonta</i>	X	X
<i>Pemphis acidula</i>		
<i>Rhizophora apiculata</i>		
<i>Rhizophora X lamarckii</i>		
<i>Rhizophora stylosa</i>	X	X
<i>Scyphiphora hydrophyllacea</i>		
<i>Sonneratia alba</i>		X
<i>Sonneratia lanceolata</i>		
<i>Sonneratia X urama</i>		
<i>Xylocarpus granatum</i>		
<i>Xylocarpus moluccensis</i>	X	X
TOTAL recorded	10	12
TOTAL in vicinity	18	18
Sources:	GW85	GW85

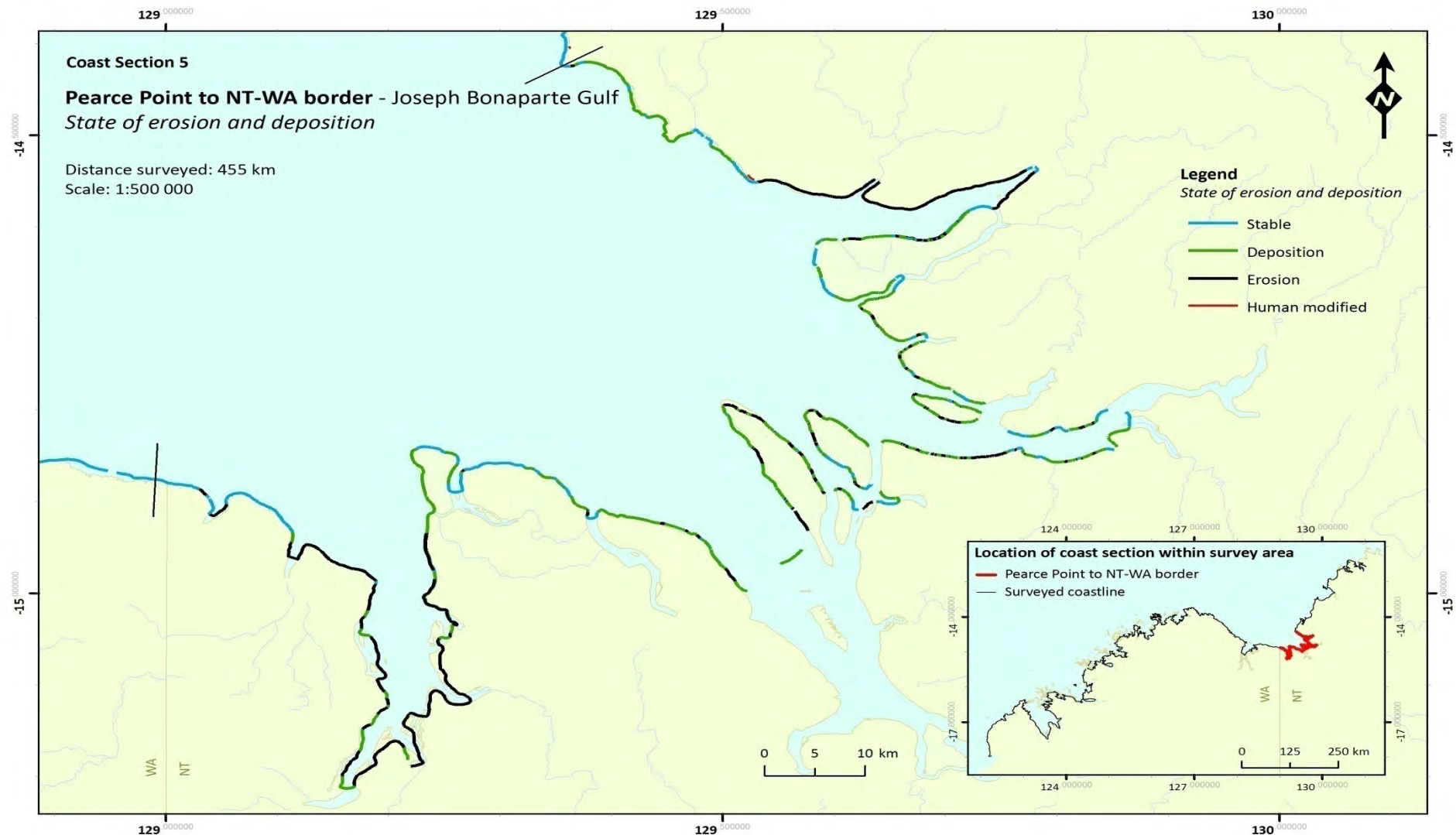


Figure 37: Shoreline stability in the Pearce Pt to the Northern Territory – Western Australian border region

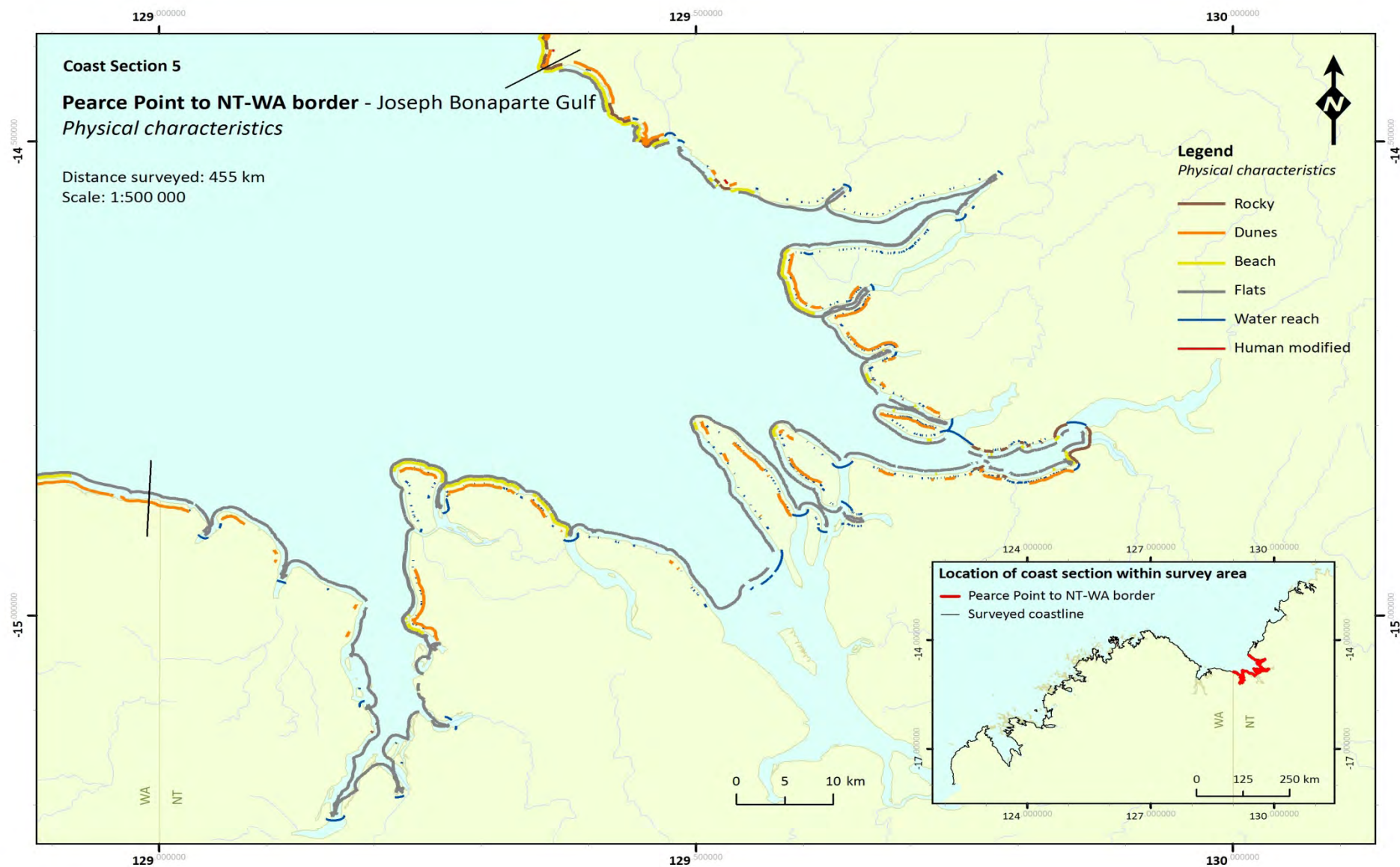


Figure 38: Shoreline stability in the Pearce Pt to the Northern Territory – Western Australian border region

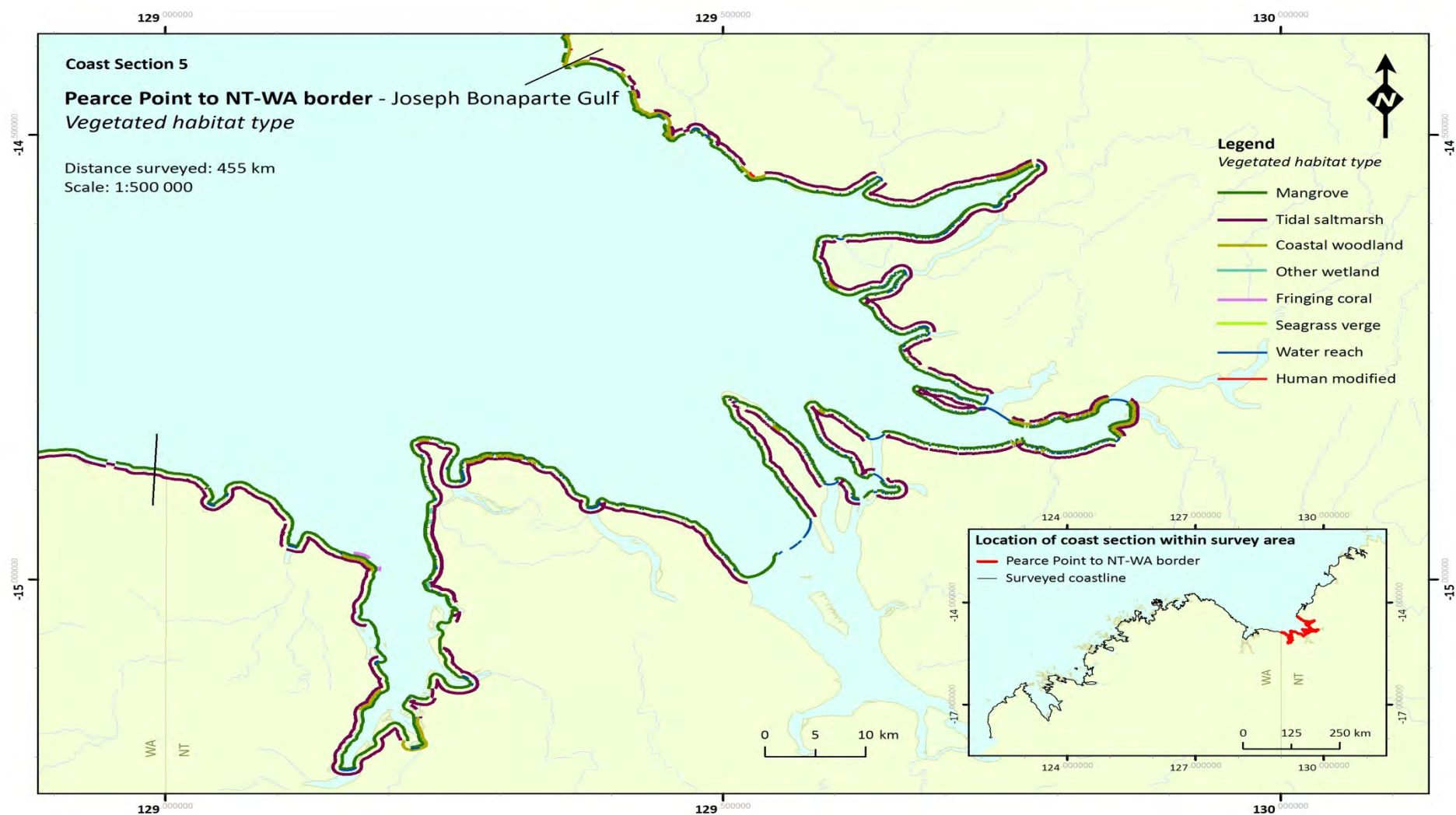


Figure 39: Vegetated Habitat Types in the Pearce Pt to the Northern Territory – Western Australian border region

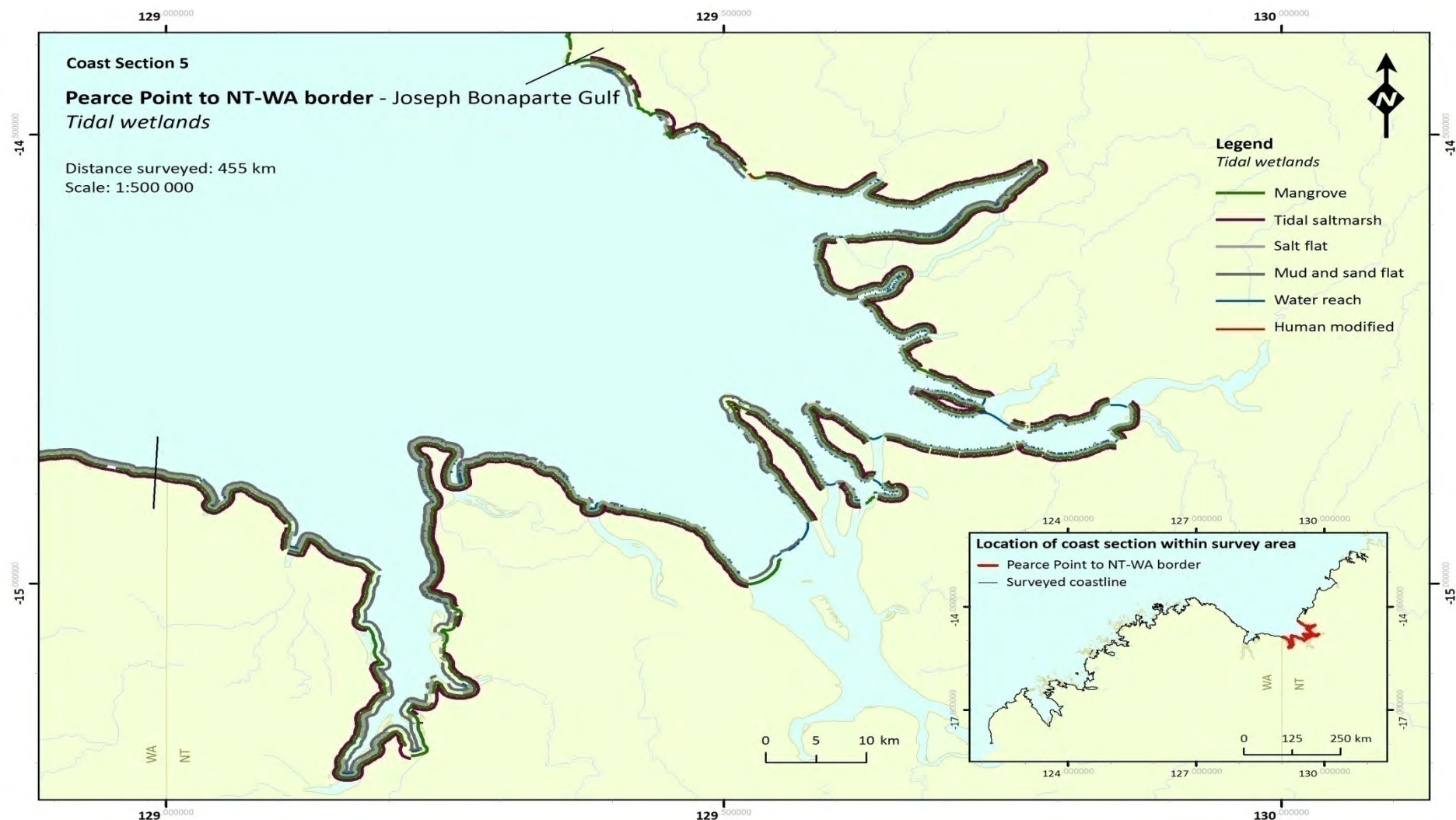


Figure 40: Tidal wetlands in the Pearce Pt to the Northern Territory – Western Australian border region

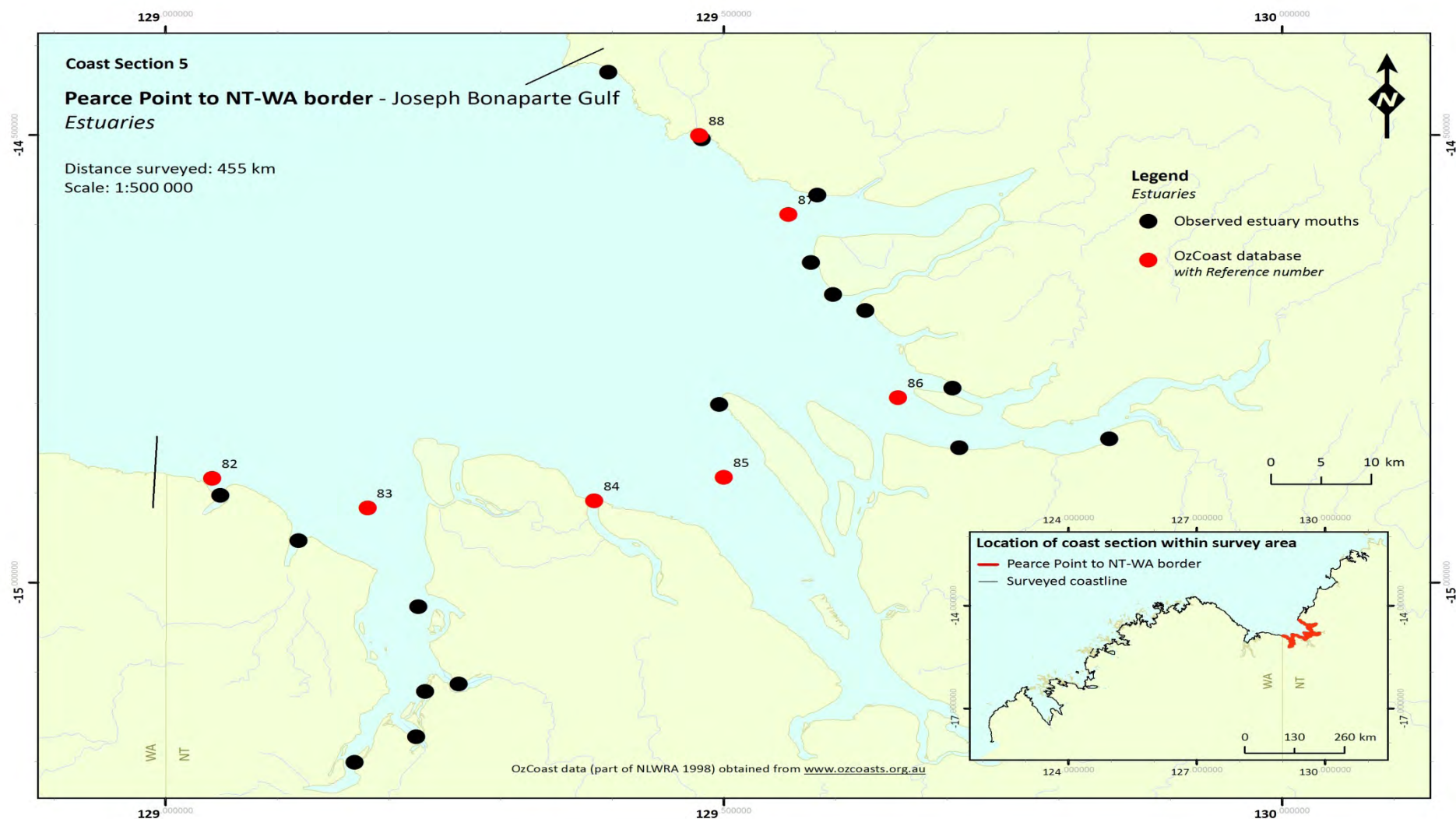


Figure 41: Estuaries in the Pearce Pt to the Northern Territory – Western Australian border region

3.6 NT-WA border to Cape Dussejour

Coast region start: Lat: -14.87234
 Long: 128.99128
 Coast region end: Lat: -13.99172
 Long: 127.46695

Region includes Joseph Bonaparte Gulf and Cambridge Gulf

- 232 km coast surveyed, making 5% of the total 5102 km.
- Region dominated by mangroves and sand/mud/salt flats. Mangroves grow along 189.9 km of coast, 81.9 % of the region. Flats are found over 179 km, 77.3% of the regions coastline. Total area of tidal wetland in the region is 2524.84 km² (OzCoasts 2009), calculated as 10.88 km² tidal wetland per kilometer of coastline surveyed in the region.
- This 232 km of coastline was totally free from human modification.
- Estuaries include the mouths of the Helby River, Lyne River, Thompson River, Ord River as well as three Ningbing Range Creeks and the false mouth of the Ord.
- Marine megafauna in the region included several dolphins and sea turtles.

Table 30: Summary of coastal characteristics from NT-WA border to Cape Dussejour.

		km	% of region
<u>Physical characteristics</u>	Rocky	54.3	23.4
	Beach	48.2	20.8
	Flat	179.0	77.3
	Dune	60.6	26.2
	Other wetland	0.0	0.0
<u>Vegetated habitat type</u>	Mangrove	189.9	81.9
	Saltmarsh	79.9	34.5
	Fringing coral	0.0	0.0
	Seagrass verge	0.0	0.0
	Coastal Woodland	71.3	30.8
<u>State of erosion and deposition</u>	Deposition	17.8	7.7
	Erosion	120.5	52.0
	Stable	85.7	37.0
<u>Tidal wetlands</u>	Mangrove	189.9	81.9
	Saltmarsh	79.9	34.5
	Sand and mud flats	64.0	27.6
	Salt flat	175.0	75.5
<u>Other</u>	Human modified	0.0	0.0
	Water reach	31.1	13.4

NT-WA border to Cape Dussejour

Figure 42: Representative coastline imagery from the Cape Ford to Pearce Point region.
Image numbers are unique within the electronic database.



Table 31: Summary of marine megafauna observed during aerial surveys of NT-WA border to Cape Dussejour (WA).

Common name	Genus/Species	Total observed
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	5
Indo-Pacific bottlenose	<i>Tursiops aduncas</i>	0
Unidentified dolphin species	Family Delphinidae	2
Sea turtle	<i>Chelonia</i> or <i>Caretta</i> spp	4
Sea turtle track	<i>Chelonia</i> or <i>Caretta</i> spp	0
Dugong	<i>Dugong dugong</i>	2
Whale	Order Cetacea	0
Manta ray	<i>Manta birostris</i>	0
Ray species	Superorder Batoidea	0
Saltwater crocodile	<i>Crocodylus porosus</i>	0
Unidentified shark species	Superorder: Selachimorph	0

Table 32: Coastline data for the NT-WA border to Cape Dussejour region (WA). Source OzCoasts 2009.

NT-WA Survey – 6. NT-WA border to Cape Dussejour, WA		
Features	#6	Relevance to survey region
Annual Rainfall –range & mean (mm)	916-1151 (994)	Below average
Number of estuaries listed	8	Average
Total Catchment Area (km2)	88730	Above average size
Total Estuary Length (km)	231.3	Above average size
Tidal Range (in m)	5.35	
Condition Status	Near Pristine to Largely Unmodified	Very low disturbance by humans
Area of Mangrove (km2)	575.69	
Area of Salt Marsh (km2)	1949.15	
WCI% from Region Total	22.8	
Total Tidal Wetland (km2)	2524.84	
BOM 1998 Climatic Area	Dry hot steppe - Winter drought to Tropical Savannah - Wet Autumn	
Mangrove species number	13	18 in vicinity
Mangrove species limit west	1	

Table 33: Estuary data for notable estuaries within the NT-WA border to Cape Dussejour region (WA). Source NLWRA; 1998.

NT-WA Survey 6. NT-WA border to Cape Dussejour, WA				
Feature / Location	Ord River, Cambridge Gulf	False Mouth of Ord	Ningbing Range Creeks	Ningbing Range Creeks, East
NLWRA Estuary Reference#	776	777	779	780
Latitude S	14.764	14.851	14.795	14.833
Longitude E	128.307	128.370	128.609	128.745
Annual Rainfall – mean (mm)	1151	933	1000	1100
Catchment Area (km2)	85213	2298	176	355
Estuary Length (km)	119.37	38.89	8.09	11.2
Tidal Range (in m)	6	5.2	5.3	5.3
Condition Status	LU	P	P	P
Area of Mangrove (km2)	418.79	102.52	3.34	0.29
Area of Salt Marsh (km2)	1385.89	362.32	42.52	61.99
Wetland Cover Index (WCI %)	23.2	22.1	7.3	0.5
Total Tidal Wetland (km2)	1804.69	464.84	45.86	62.28
BOM 1998 Climatic Area	Dry hot steppe - Winter drought	Dry hot steppe - Winter drought	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn
Mangrove species number	13 (18)			1 (18)
Source of mangrove data:	GW 86, SKW			NCD

Table 34: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the NT-WA border to Cape Dussejour region (WA) (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

6. NT-WA border to Cape Dussejour			
Species/ Locations	King River, Cambridge Gulf ~#776	Ord River, Cambridge Gulf #776	E Ningbing Range Creeks #780
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>	X->	X	
<i>Acanthus ilicifolius</i>			
<i>Acrostichum speciosum</i>			
<i>Aegialitis annulata</i>	X	X	
<i>Aegiceras corniculatum</i>	X	X	
<i>Avicennia integra</i>			
<i>Avicennia marina</i>	X	X	
<i>Bruguiera exaristata</i>	X	X	
<i>Bruguiera gymnorhiza</i>			
<i>Bruguiera parviflora</i>			
<i>Bruguiera sexangula</i>			
<i>Camptostemon schultzei</i>	X	X	
<i>Ceriops australis</i>	X	X	
<i>Ceriops decandra</i>			
<i>Ceriops tagal</i>			
<i>Cynometra iripa</i>			
<i>Diospyros littorea</i>			
<i>Excoecaria agallocha</i>	X	X	
<i>Lumnitzera littorea</i>			
<i>Lumnitzera racemosa</i>	X	X	
<i>Nypa fruticans</i>			
<i>Osbornia octodonta</i>	X	X	
<i>Pemphis acidula</i>			
<i>Rhizophora apiculata</i>			
<i>Rhizophora X lamarckii</i>			
<i>Rhizophora stylosa</i>	X	X	X
<i>Scyphiphora hydrophyllacea</i>			
<i>Sonneratia alba</i>	X	X	
<i>Sonneratia lanceolata</i>			
<i>Sonneratia X urama</i>			
<i>Xylocarpus granatum</i>			
<i>Xylocarpus moluccensis</i>	X	X	
TOTAL recorded	13	13	1
TOTAL in vicinity	18	18	18
Sources:	SKW	GW 86	NCD

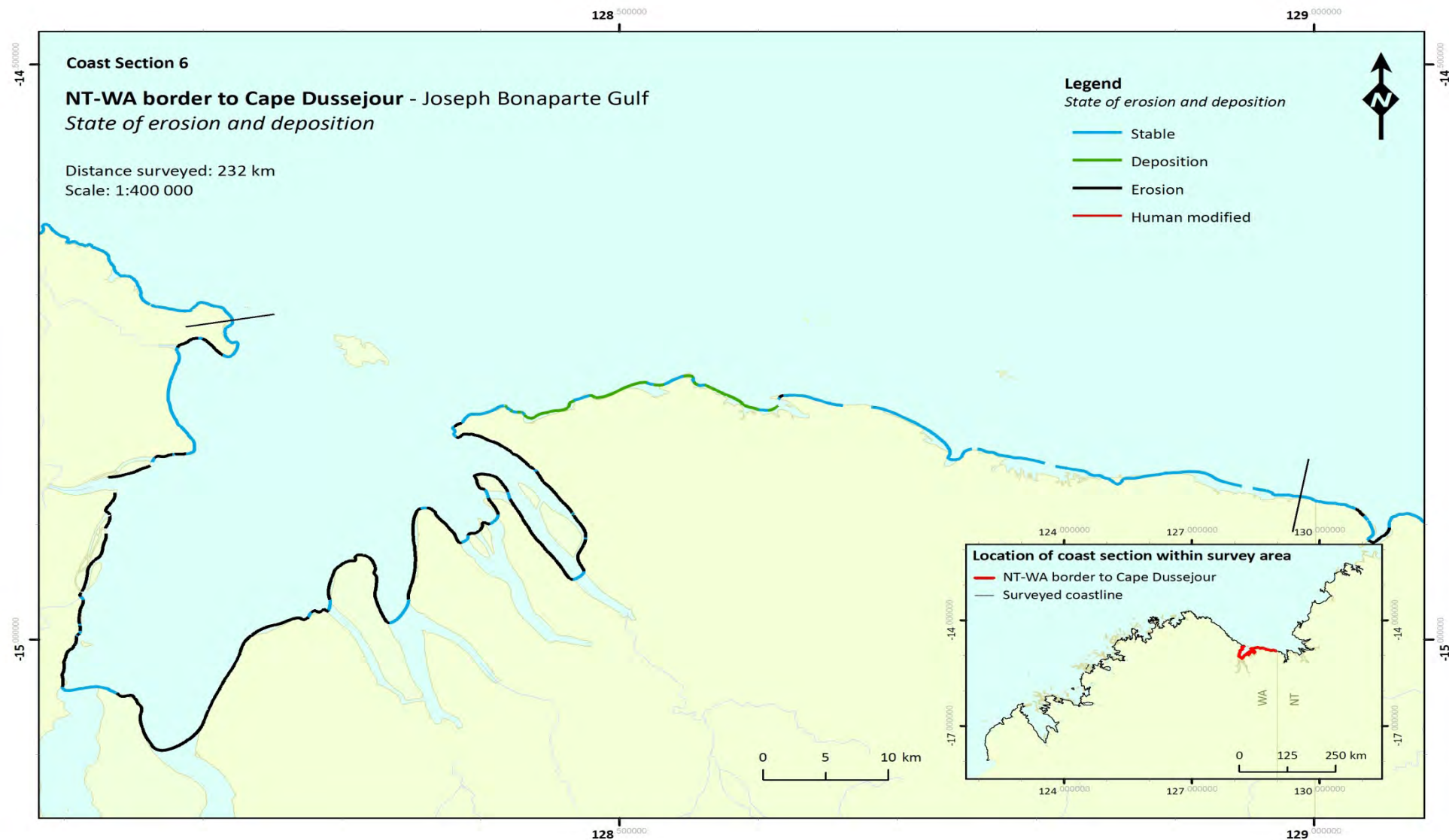


Figure 43: Shoreline stability in the Northern Territory – Western Australian border to Cape Dussejour region

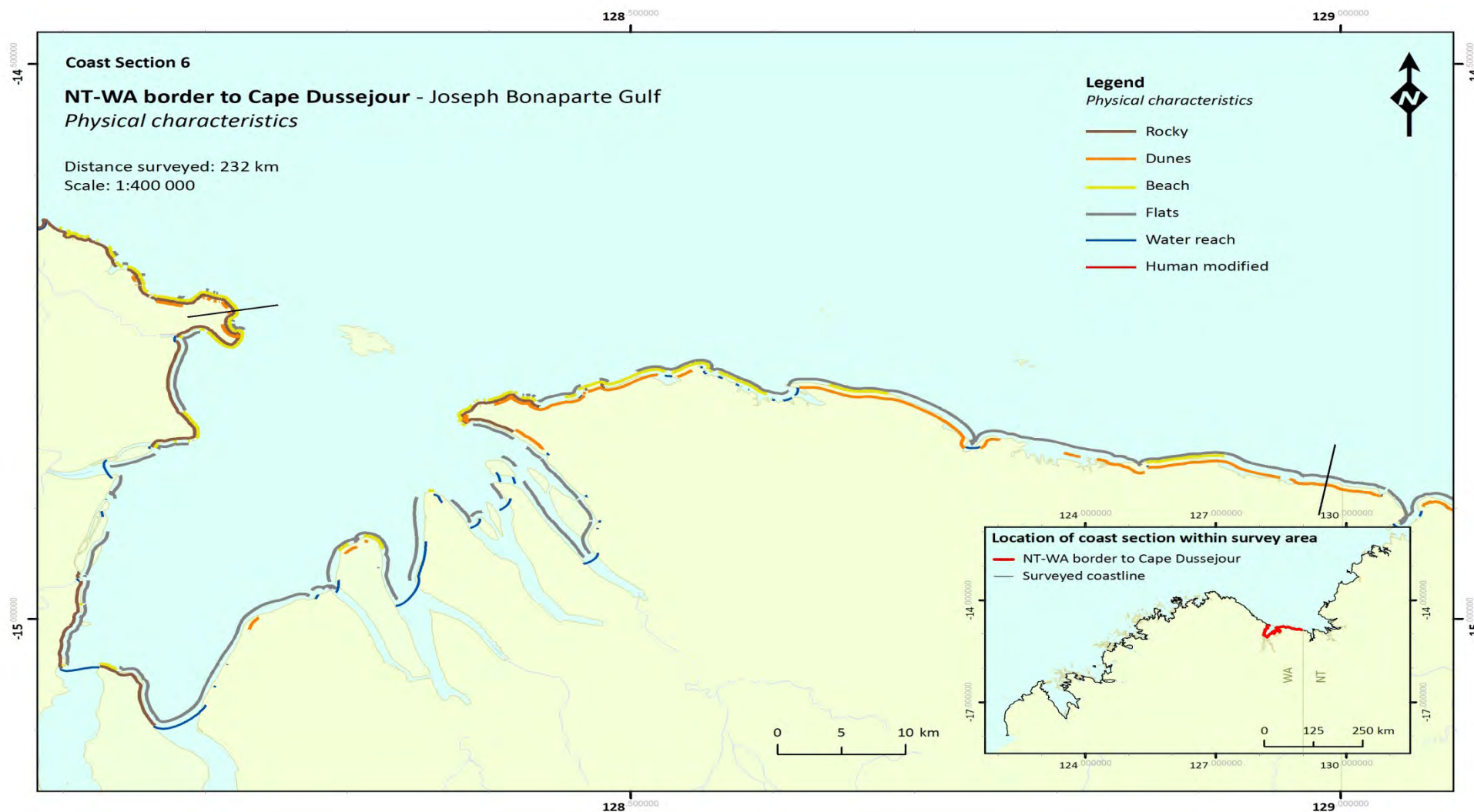


Figure 44: Shoreline physical characteristics in the Northern Territory – Western Australian border to Cape Dussejour region

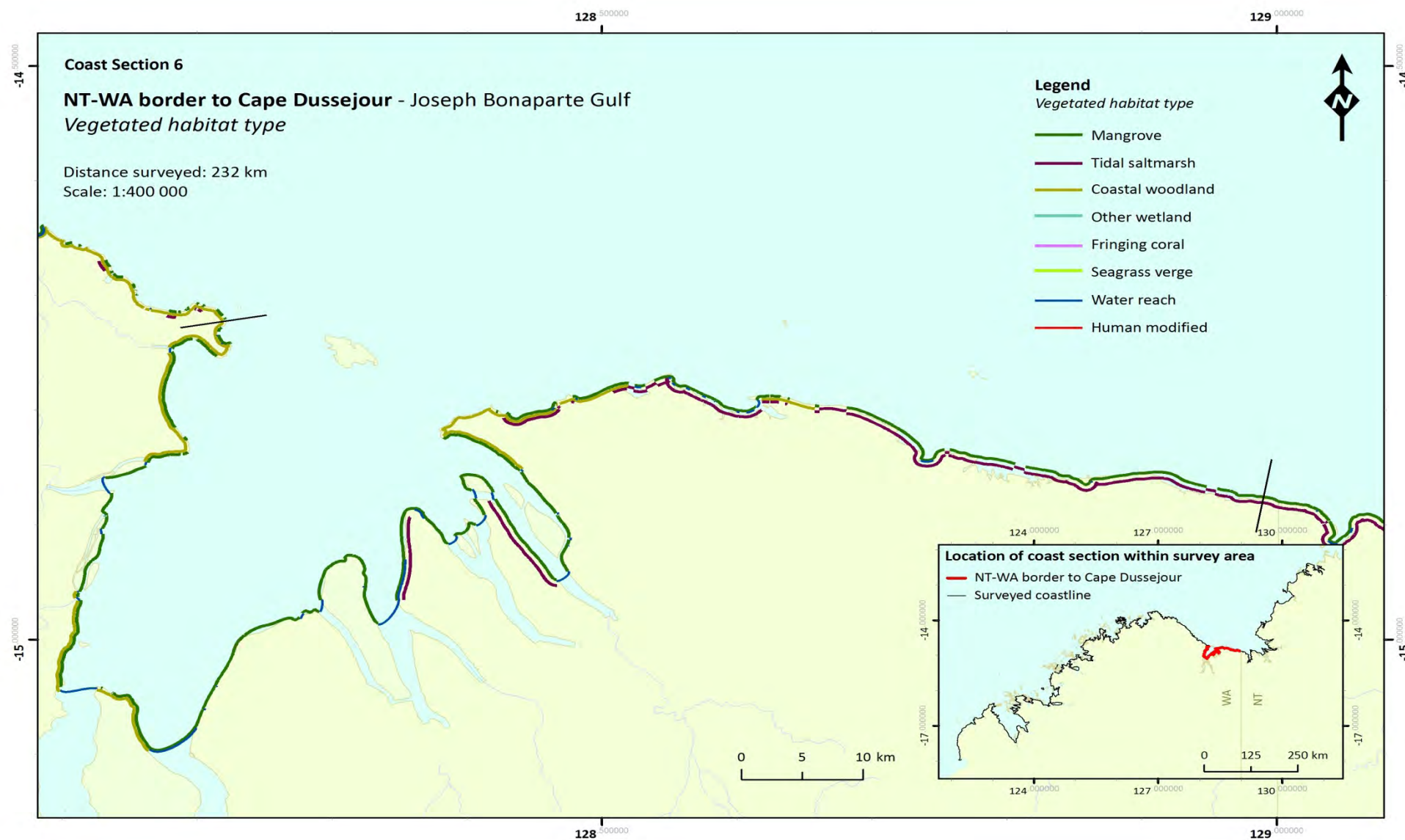


Figure 45: Vegetated habitat types in the Northern Territory – Western Australian border to Cape Dussejour region

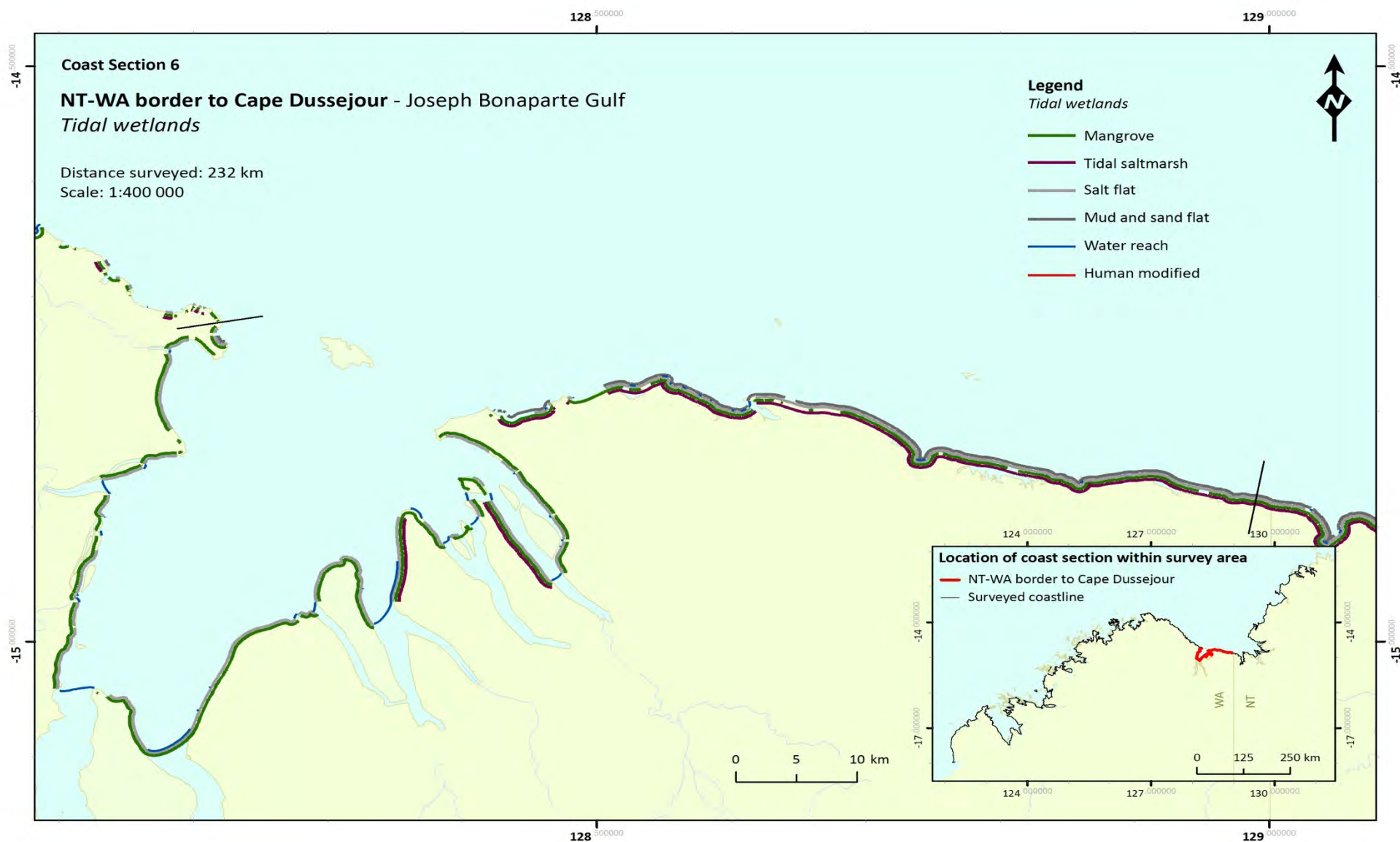


Figure 46: Tidal wetlands in the Northern Territory – Western Australian border to Cape Dussejour region

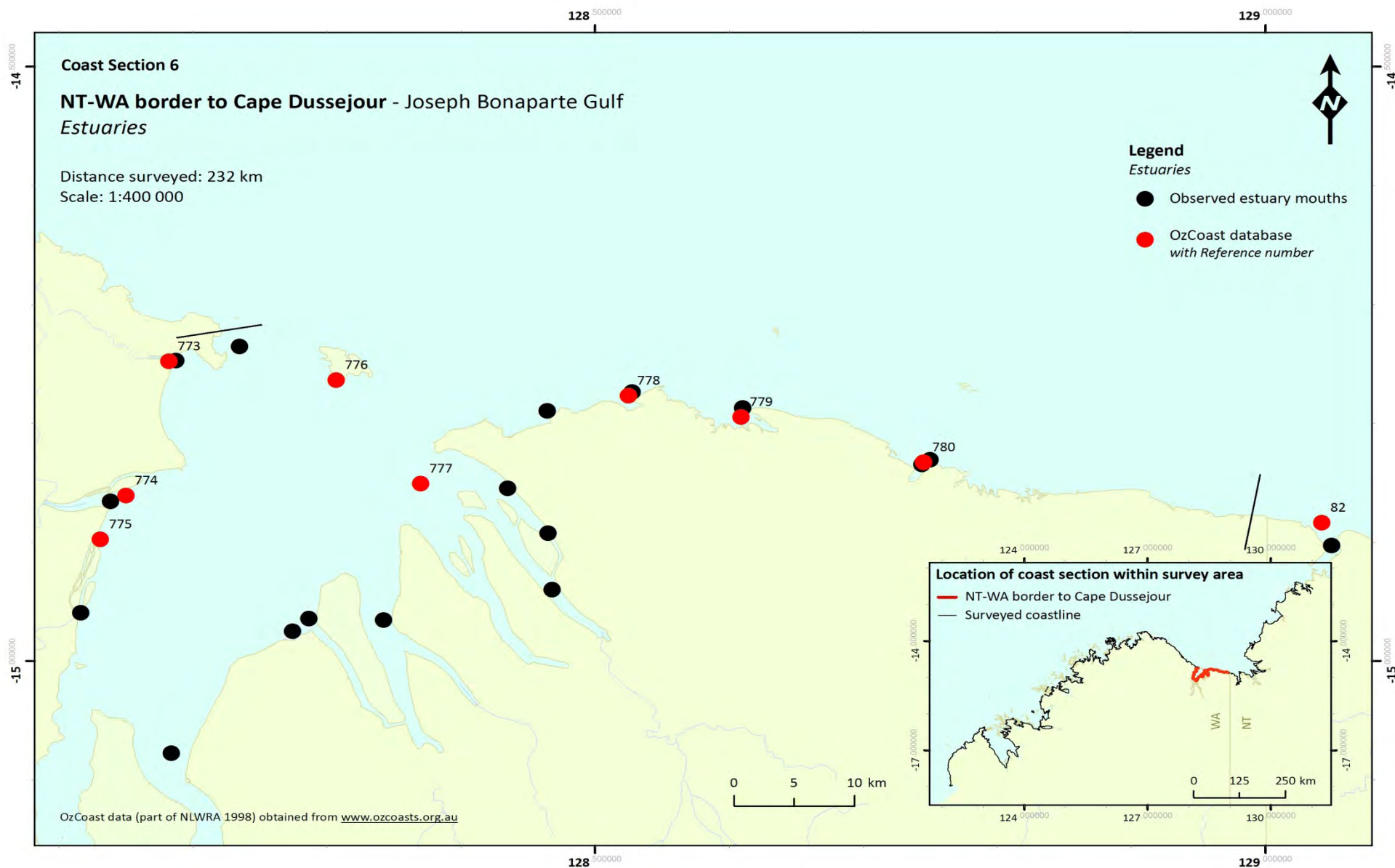


Figure 47: Estuaries in the Northern Territory – Western Australian border to Cape Dussejour region

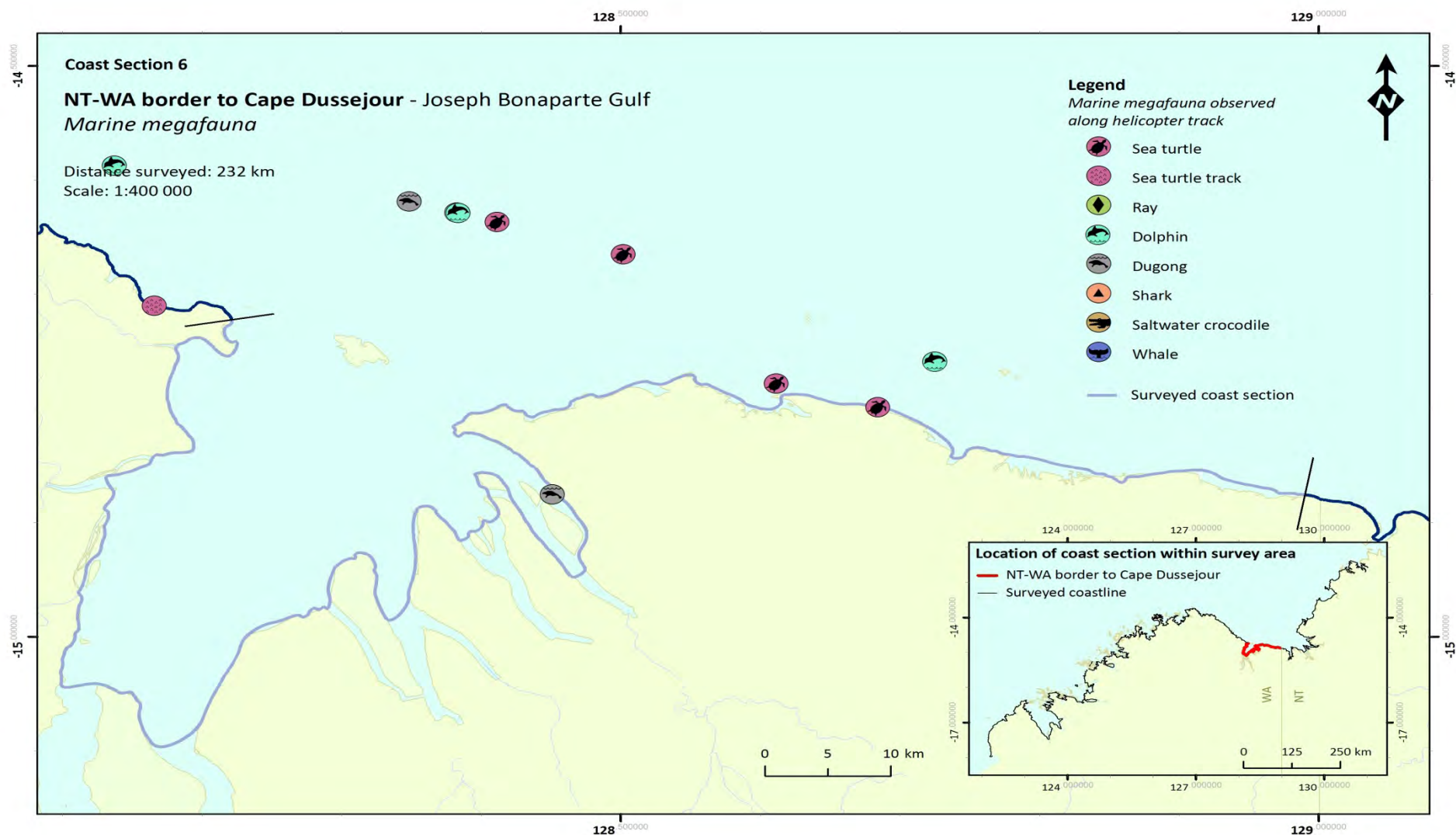


Figure 48: Marine megafauna observed in the Northern Territory – Western Australian border to Cape Dussejour region

3.7 Cape Dussejour to Cape Bernier (WA)

Coast region start: Lat: -14.72250
 Long: 128.22309

Coast region end: Lat: -13.99172
 Long: 127.46695

Region includes Thurburn Creek, Bucklehead Creek, Berkeley River, Cape Whiskey Creek to Cape Bernier.

- 169 km coast surveyed, making 3% of the total 5102 km.
- Mangroves were present along 64.6 km of coast, 38.4% of the region. Total area of tidal wetland in the region is 23.97 km² (OzCoasts 2009), calculated as 0.14 km² tidal wetland per kilometer of coastline surveyed in the region.
- Fringing coral was found along 79 km of coast, 46.9% of the region.
- No human modification was present.
- Estuaries in this region include the mouths of Cape Whiskey Creek, Berkely River, Buckle Head Creek and Thurburn Creek.
- Dolphins, dugongs, rays and sea turtles were all commonly observed during marine megafauna surveys in the region.

Table 35: Summary of coastal characteristics from Cape Dussejour to Cape Bernier.

		km	% of region
<u>Physical characteristics</u>	Rocky	143.9	85.4
	Beach	70.9	42.1
	Flat	41.1	24.4
	Dune	29.8	17.7
	Other wetland	0.0	0.0
<u>Vegetated habitat type</u>	Mangrove	64.6	38.4
	Saltmarsh	14.7	8.7
	Fringing coral	79.0	46.9
	Seagrass verge	0.0	0.0
	Coastal Woodland	143.4	85.1
<u>State of erosion and deposition</u>	Deposition	0.0	0.0
	Erosion	0.6	0.4
	Stable	151.0	89.6
<u>Tidal wetlands</u>	Mangrove	64.6	38.4
	Saltmarsh	14.7	8.7
	Sand and mud flats	31.4	18.6
	Salt flat	20.4	12.1
<u>Other</u>	Human modified	0.0	0.0
	Water reach	13.5	8.0

Cape Dussejour to Cape Bernier (WA)

Figure 49: Representative coastline imagery from the Cape Dussejour to Cape Bernier region.
Image numbers are unique within the electronic database



Table 36: Summary of marine megafauna observed during aerial surveys of Cape Dussejour to Cape Bernier (WA).

Common name	Genus/Species	Total observed
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	0
Indo-Pacific bottlenose	<i>Tursiops aduncas</i>	4
Unidentified dolphin species	Family Delphinidae	16
Sea turtle	<i>Chelonia</i> or <i>Caretta</i> spp	29
Sea turtle track	<i>Chelonia</i> or <i>Caretta</i> spp	1
Dugong	<i>Dugong dugong</i>	10
Whale	Order Cetacea	0
Manta ray	<i>Manta birostris</i>	0
Ray species	Superorder Batoidea	11
Saltwater crocodile	<i>Crocodylus porosus</i>	1
Unidentified shark species	Superorder: Selachimorph	2

Table 37: Coastline data for the Cape Dussejour to Cape Bernier region (WA). Source OzCoasts 2009.

NT-WA Survey – 7. Cape Dussejour to Cape Bernier, WA		
Features	#7	Relevance to survey region
Annual Rainfall –range & mean (mm)	967-1000 (987)	Below average
Number of estuaries listed	4	Below average
Total Catchment Area (km2)	5968	Below average size
Total Estuary Length (km)	40.1	Below average size
Tidal Range (in m)	4.18	
Condition Status	Near Pristine to Largely Unmodified	Very low disturbance by humans
Area of Mangrove (km2)	8.95	
Area of Salt Marsh (km2)	15.03	
WCI% from Region Total	37.3	
Total Tidal Wetland (km2)	23.97	
BOM 1998 Climatic Area	Dry hot steppe - Winter drought to Tropical Savannah - Wet Autumn	
Mangrove species number		17 in vicinity
Mangrove species limit west	0	

Table 38: Estuary data for notable estuaries within the Cape Dussejour to Cape Bernier region (WA). Source NLWRA; 1998.

NT-WA Survey 7. Cape Dussejour to Cape Bernier, WA				
Feature / Location	Cape Whiskey Creek	Berkeley River	Buckle Head Creek	Thurburn Creek
NLWRA Estuary Reference#	769	770	771	772
Latitude S	14.064	14.349	14.451	14.581
Longitude E	127.457	127.781	127.832	127.956
Annual Rainfall – mean (mm)	1000	1000	981	967
Catchment Area (km2)	157	5149	115	547
Estuary Length (km)	2.3	24.82	6.23	6.76
Tidal Range (in m)	3.4	4	4.4	4.9
Condition Status	P	P	LU	LU
Area of Mangrove (km2)	0.80	1.52	2.86	3.77
Area of Salt Marsh (km2)	0.37	3.05	5.15	6.45
Wetland Cover Index (WCI %)	68.4	33.3	35.7	36.9
Total Tidal Wetland (km2)	1.17	4.57	8.01	10.22
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	Dry hot steppe - Winter drought	Dry hot steppe - Winter drought	Dry hot steppe - Winter drought
Mangrove species number				
Source of mangrove data:				

Table 39: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the Cape Dussejour to Cape Bernier region (WA). (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

7. Cape Dussejour to Cape Bernier	
Species/ Locations	None recorded
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>	
<i>Acanthus ilicifolius</i>	
<i>Acrostichum speciosum</i>	
<i>Aegialitis annulata</i>	
<i>Aegiceras corniculatum</i>	
<i>Avicennia integra</i>	
<i>Avicennia marina</i>	
<i>Bruguiera exaristata</i>	
<i>Bruguiera gymnorhiza</i>	
<i>Bruguiera parviflora</i>	
<i>Bruguiera sexangula</i>	
<i>Camptostemon schultzei</i>	
<i>Ceriops australis</i>	
<i>Ceriops decandra</i>	
<i>Ceriops tagal</i>	
<i>Cynometra iripa</i>	
<i>Diospyros littorea</i>	
<i>Excoecaria agallocha</i>	
<i>Lumnitzera littorea</i>	
<i>Lumnitzera racemosa</i>	
<i>Nypa fruticans</i>	
<i>Osbornia octodonta</i>	
<i>Pemphis acidula</i>	
<i>Rhizophora apiculata</i>	
<i>Rhizophora X lamarckii</i>	
<i>Rhizophora stylosa</i>	
<i>Scyphiphora hydrophyllacea</i>	
<i>Sonneratia alba</i>	
<i>Sonneratia lanceolata</i>	
<i>Sonneratia X urama</i>	
<i>Xylocarpus granatum</i>	
<i>Xylocarpus moluccensis</i>	
TOTAL recorded	0
TOTAL in vicinity	17
Sources:	

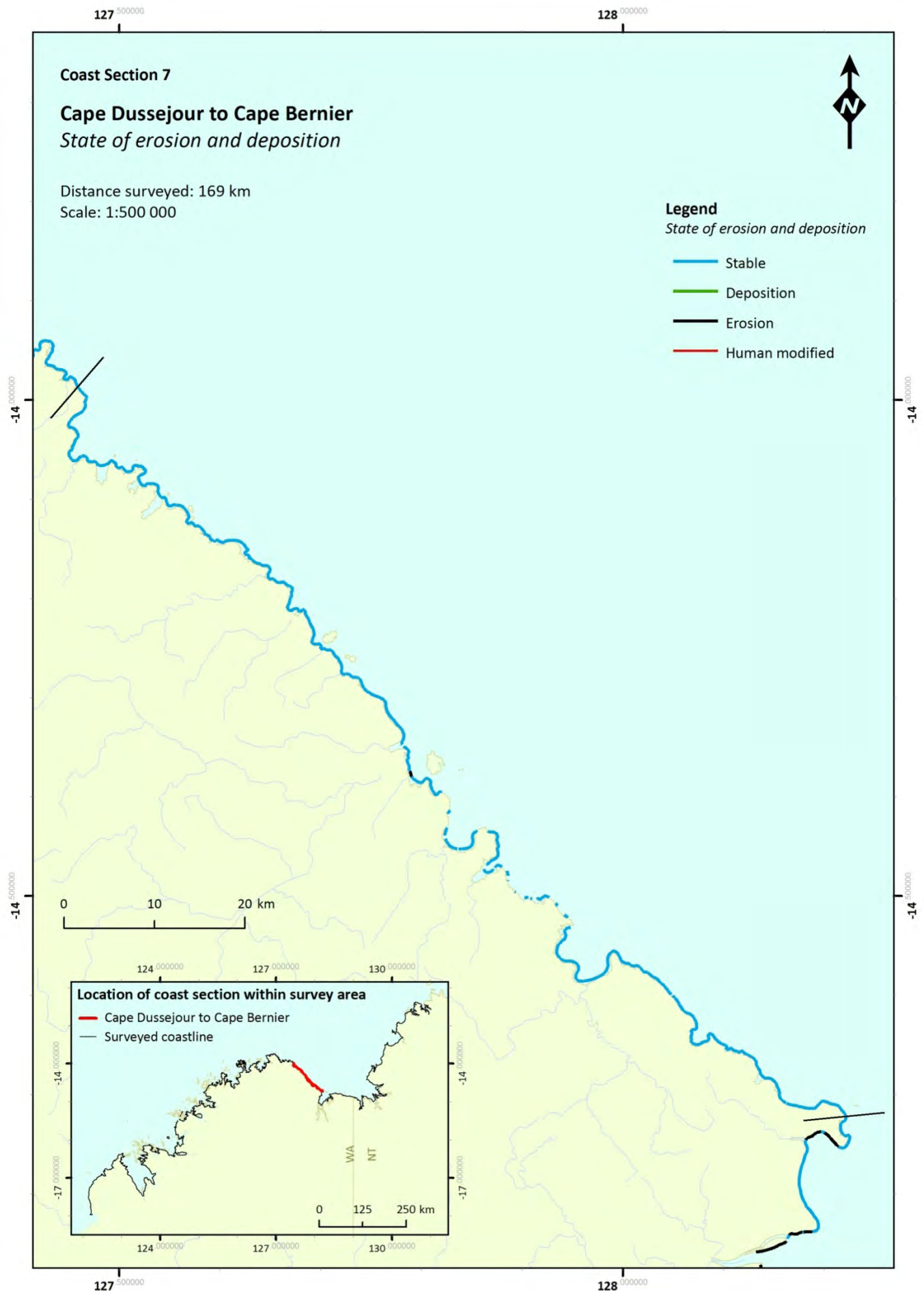


Figure 50: Shoreline stability in the Cape Dussejour to Cape Bernier region

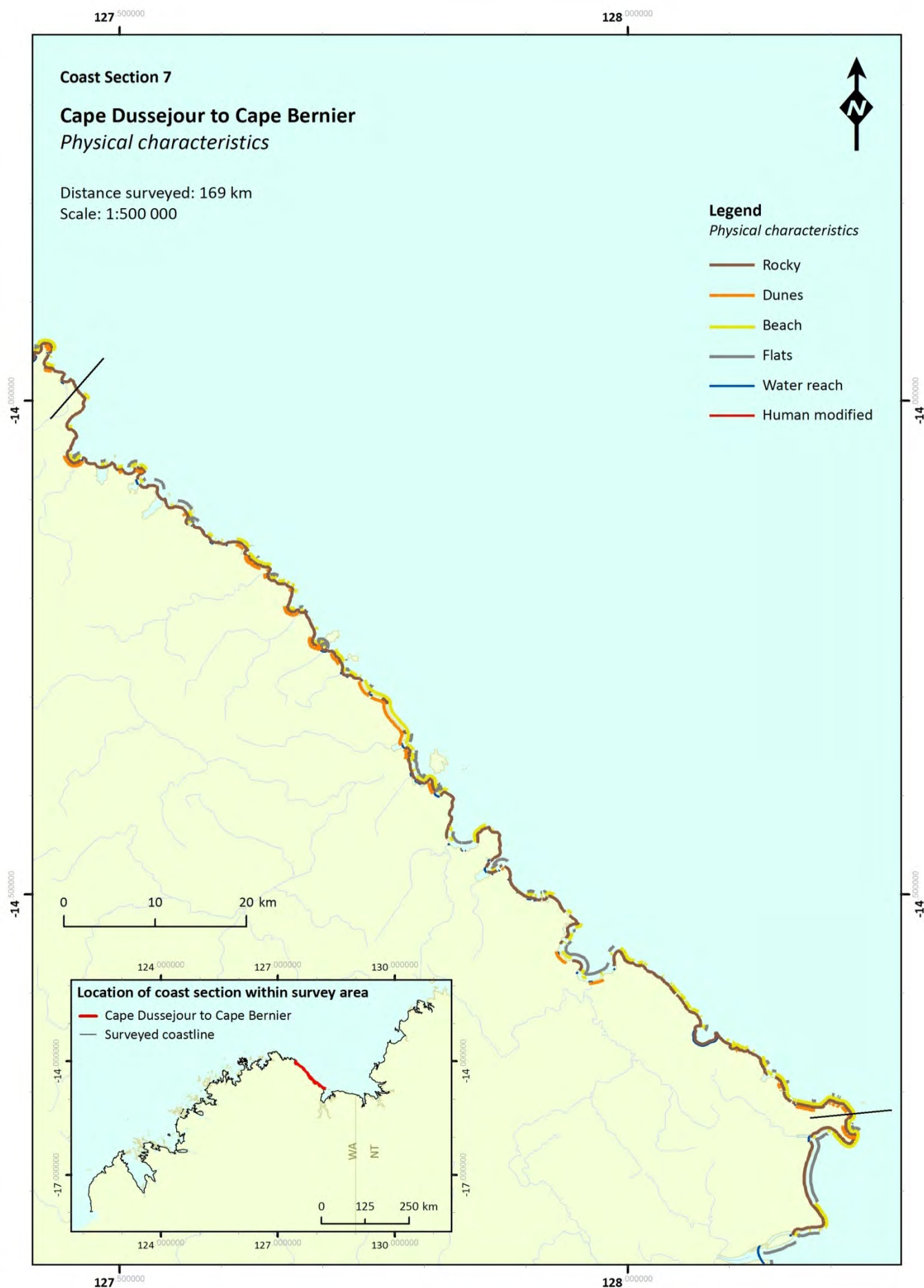


Figure 51: Physical characteristics in the Cape Dussejour to Cape Bernier region

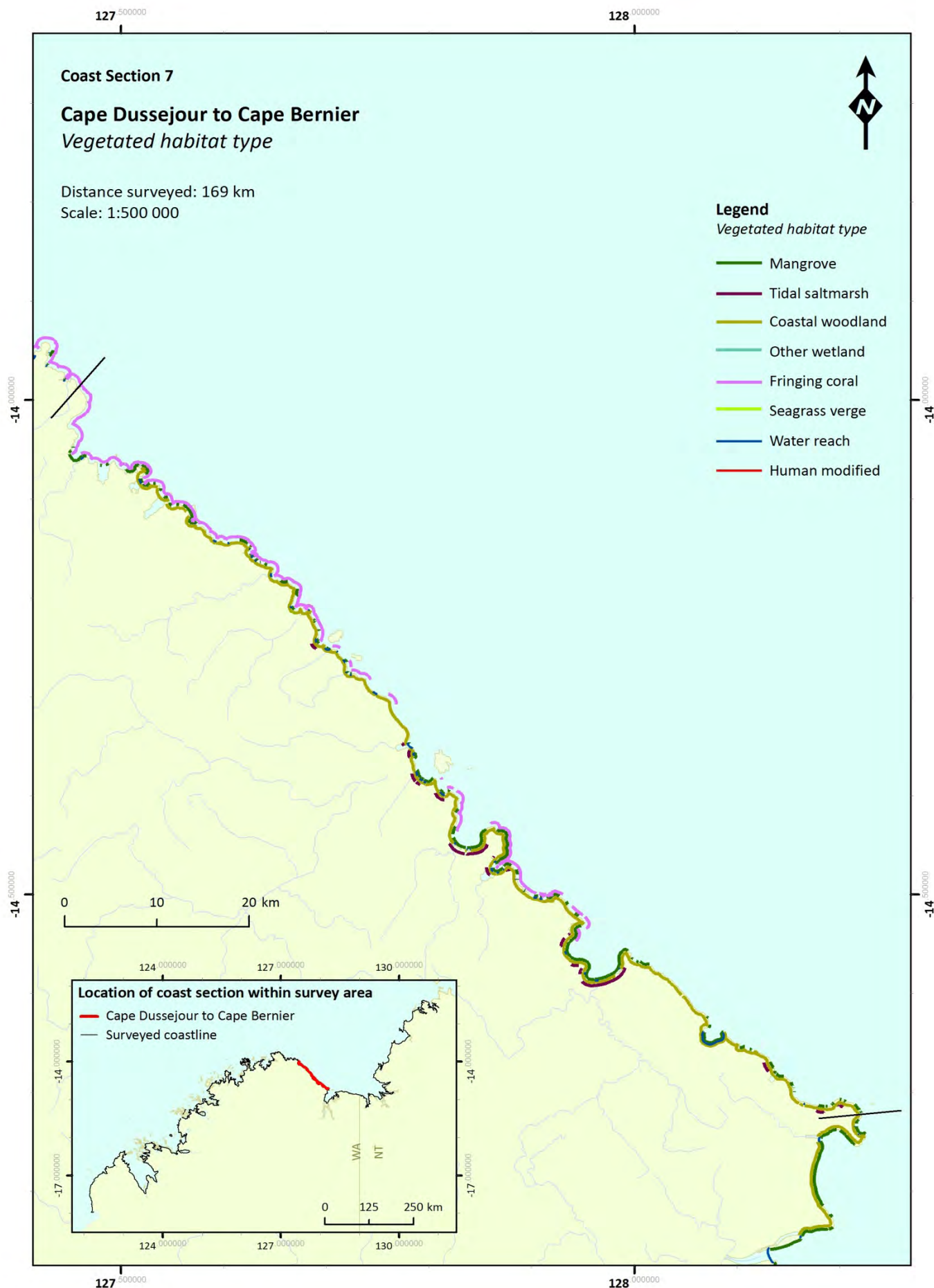


Figure 52: Vegetated habitat types in the Cape Dussejour to Cape Bernier region

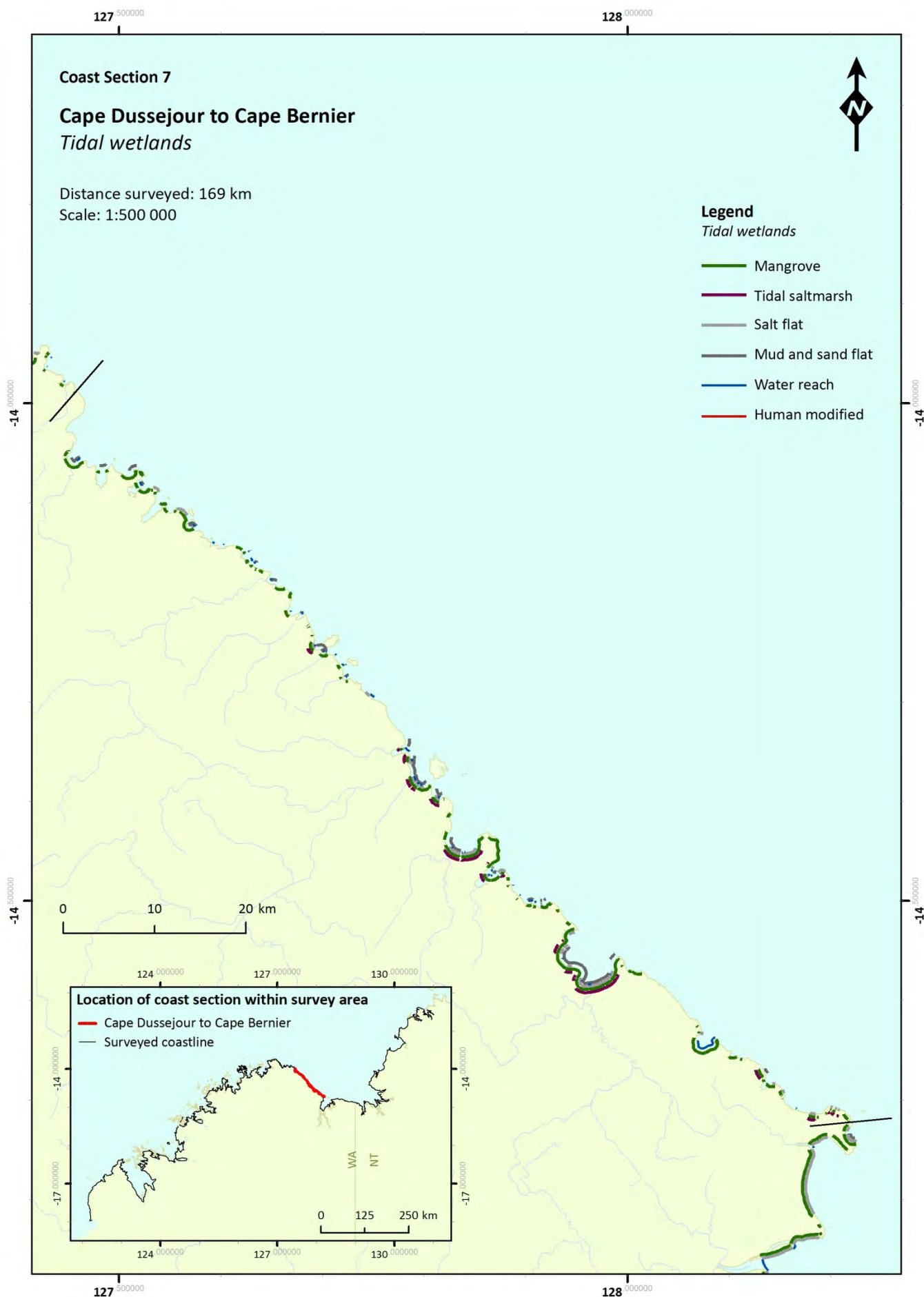


Figure 53: Tidal wetlands types in the Cape Dussejour to Cape Bernier region

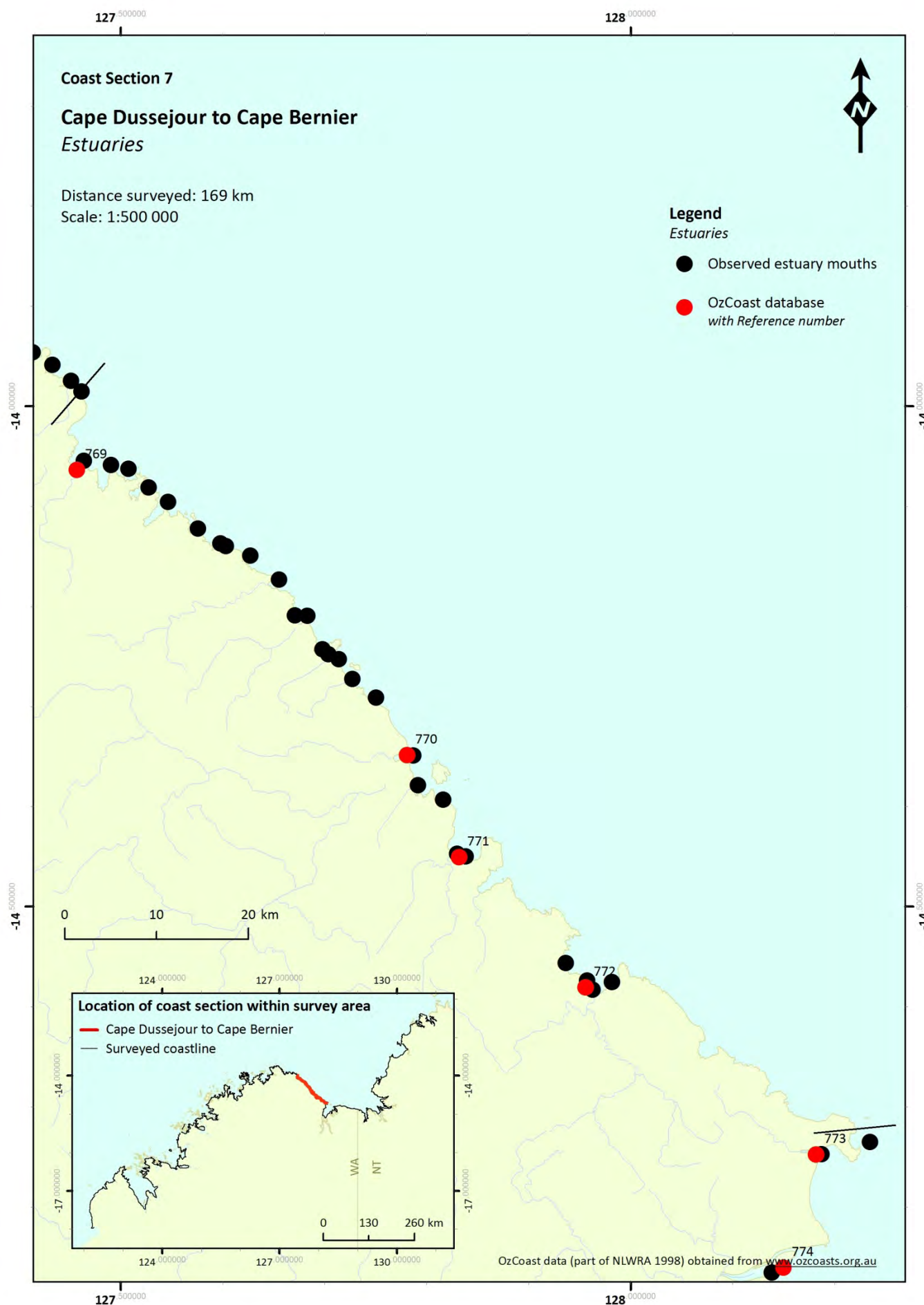


Figure 54: Estuary types in the Cape Dussejour to Cape Bernier region

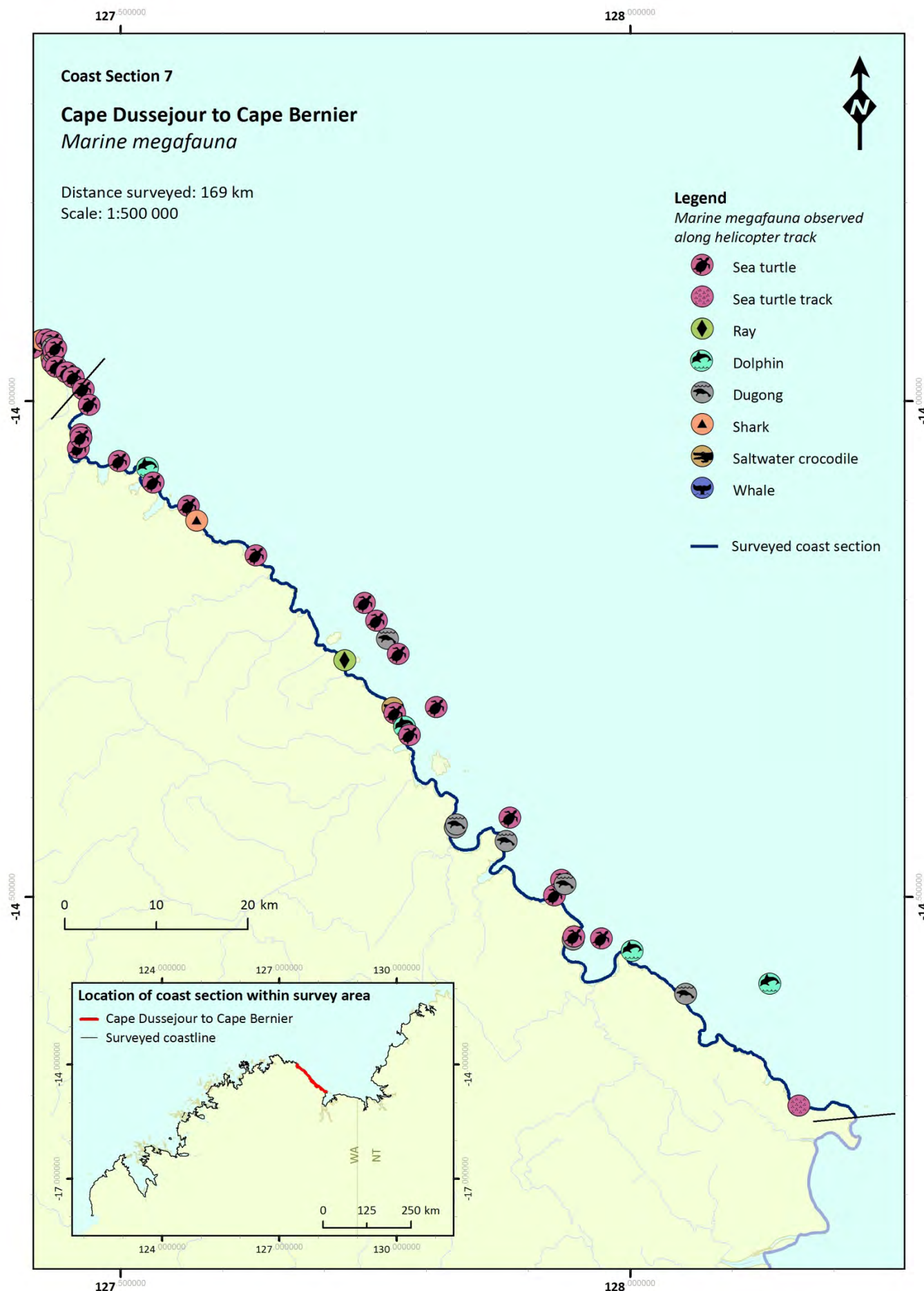


Figure 55: Marine megafauna in the Cape Dussejour to Cape Bernier region

3.8 Cape Bernier to Napier Broome Bay (WA)

Coast region start: Lat: -13.98607
 Long: 127.46216

Coast region end: Lat: -13.93868
 Long: 126.54137

Region includes King George River, Cape Londonderry, Cape Talbot and Napier Broome Bay.

- 386 km coast surveyed, making 8% of the total 5102 km.
- Mangroves were present along 195.6 km of the coast, 50.7% of the region. Total area of tidal wetland in the region is 59.60 km² (OzCoasts 2009), calculated as 0.15 km² tidal wetland per kilometer of coastline surveyed in the region.
- Rocky shore again dominates, covering 269.7 km, 69.8% of the region.
- Fringing coral was found along 99.2 km of coast, 25.7% of the region.
- A small area of coastline was modified by human activity: 6.4 km, 1.7%.
- Estuaries in this region include Woppinbie Creek, King Edward River, Mission Cove, Drysdale River, four Cape Londonderry Creeks and the King George River.
- Over 250 sea turtles were identified in the region. Dugong and sharks were also common.

Table 40: Summary of coastal characteristics from Cape Bernier to Napier Broome Bay.

		km	% of region
<u>Physical characteristics</u>	Rocky	269.7	69.8
	Beach	170.0	44.0
	Flat	146.1	37.9
	Dune	180.8	46.8
	Other wetland	0.4	0.1
<u>Vegetated habitat type</u>	Mangrove	195.6	50.7
	Saltmarsh	53.2	13.8
	Fringing coral	99.2	25.7
	Seagrass verge	0.4	0.1
	Coastal Woodland	329.5	85.3
<u>State of erosion and deposition</u>	Deposition	2.6	0.7
	Erosion	12.1	3.1
	Stable	357.9	92.7
<u>Tidal wetlands</u>	Mangrove	195.6	50.7
	Saltmarsh	53.2	13.8
	Sand and mud flats	120.2	31.1
	Salt flat	57.8	15.0
	Human modified	6.4	1.7
<u>Other</u>	Water reach	25.6	6.6

Cape Bernier to Napier Broome Bay (WA)

Figure 56: Representative coastline imagery from the Cape Bernier to Napier Broome Bay region. Image numbers are unique within the electronic database



Table 41: Summary of marine megafauna observed during aerial surveys of Cape Bernier to Napier Broome Bay (WA).

Common name	Genus/Species	Total observed
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	0
Indo-Pacific bottlenose	<i>Tursiops aduncas</i>	3
Unidentified dolphin species	Family Delphinidae	14
Sea turtle	<i>Chelonia</i> or <i>Caretta</i> spp	283
Sea turtle track	<i>Chelonia</i> or <i>Caretta</i> spp	4
Dugong	<i>Dugong dugong</i>	18
Whale	Order Cetacea	0
Manta ray	<i>Manta birostris</i>	2
Ray species	Superorder Batoidea	3
Saltwater crocodile	<i>Crocodylus porosus</i>	1
Unidentified shark species	Superorder: Selachimorph	6

Table 42: Coastline data for the Cape Bernier to Napier Broome Bay, WA region. Source OzCoasts 2009.

NT-WA Survey – 8. Cape Bernier to Napier Broome Bay, WA		
Features	#8	Relevance to survey region
Annual Rainfall –range & mean (mm)	1016-1200 (1100)	Average
Number of estuaries listed	9	Average
Total Catchment Area (km ²)	28435	Average size
Total Estuary Length (km)	103.9	Average size
Tidal Range (in m)	2.87	
Condition Status	Near Pristine to Modified	Low disturbance by humans
Area of Mangrove (km ²)	44.44	
Area of Salt Marsh (km ²)	15.16	
WCI% from Region Total	74.6	
Total Tidal Wetland (km ²)	59.60	
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	
Mangrove species number	11	17 in vicinity
Mangrove species limit west	1	

Table 43: Estuary data for notable estuaries within the Cape Bernier to Napier Broome Bay, WA region. Source NLWRA; 1998.

NT-WA Survey 8. Cape Bernier to Napier Broome Bay, WA				
Feature / Location	King Edward River, Napier Broome Bay	Drysdale River	Cape Londonderry Creeks	King George River
NLWRA Estuary Reference#	761	763	767	768
Latitude S	14.179	13.947	13.945	13.958
Longitude E	126.587	126.800	127.205	127.330
Annual Rainfall – mean (mm)	1175	1125	1034	1016
Catchment Area (km2)	9002	15106	134	2776
Estuary Length (km)	28.96	25.77	9.21	18.24
Tidal Range (in m)	2.8	2.8	3	2.9
Condition Status	LU	MOD	P	P
Area of Mangrove (km2)	9.21	27.30	1.16	2.76
Area of Salt Marsh (km2)	2.69	6.95	1.28	0.72
Wetland Cover Index (WCI %)	77.4	79.7	47.5	79.3
Total Tidal Wetland (km2)	11.89	34.25	2.44	3.48
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn
Mangrove species number	7 (16)		9 (17)	
Source of mangrove data:	SKW, NCD		NCD, SKW	

Table 44: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the Cape Bernier to Napier Broome Bay, WA region (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

8. Cape Bernier to Napier Broome Bay			
Species/ Locations	Anjo Point	Napier Broome Bay ~#761	Cape Londonderry #764-767
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>			
<i>Acanthus ilicifolius</i>			
<i>Acrostichum speciosum</i>			
<i>Aegialitis annulata</i>			X
<i>Aegiceras corniculatum</i>		X	X
<i>Avicennia integra</i>			
<i>Avicennia marina</i>		X	X
<i>Bruguiera exaristata</i>		X	X
<i>Bruguiera gymnorhiza</i>			
<i>Bruguiera parviflora</i>			
<i>Bruguiera sexangula</i>			
<i>Camptostemon schultzei</i>			
<i>Ceriops australis</i>			X
<i>Ceriops decandra</i>			
<i>Ceriops tagal</i>			
<i>Cynometra iripa</i>			
<i>Diospyros littorea</i>			
<i>Excoecaria agallocha</i>			
<i>Lumnitzera littorea</i>			
<i>Lumnitzera racemosa</i>			X
<i>Nypa fruticans</i>			
<i>Osbornia octodonta</i>			
<i>Pemphis acidula</i>	X	X	
<i>Rhizophora apiculata</i>			
<i>Rhizophora X lamarckii</i>			
<i>Rhizophora stylosa</i>	X	X	X
<i>Scyphiphora hydrophyllacea</i>			X->
<i>Sonneratia alba</i>		X	
<i>Sonneratia lanceolata</i>			
<i>Sonneratia X urama</i>			
<i>Xylocarpus granatum</i>			
<i>Xylocarpus moluccensis</i>		X	X
TOTAL recorded	2	7	9
TOTAL in vicinity	16	16	17
Sources:	NCD	SKW, NCD	NCD, SKW

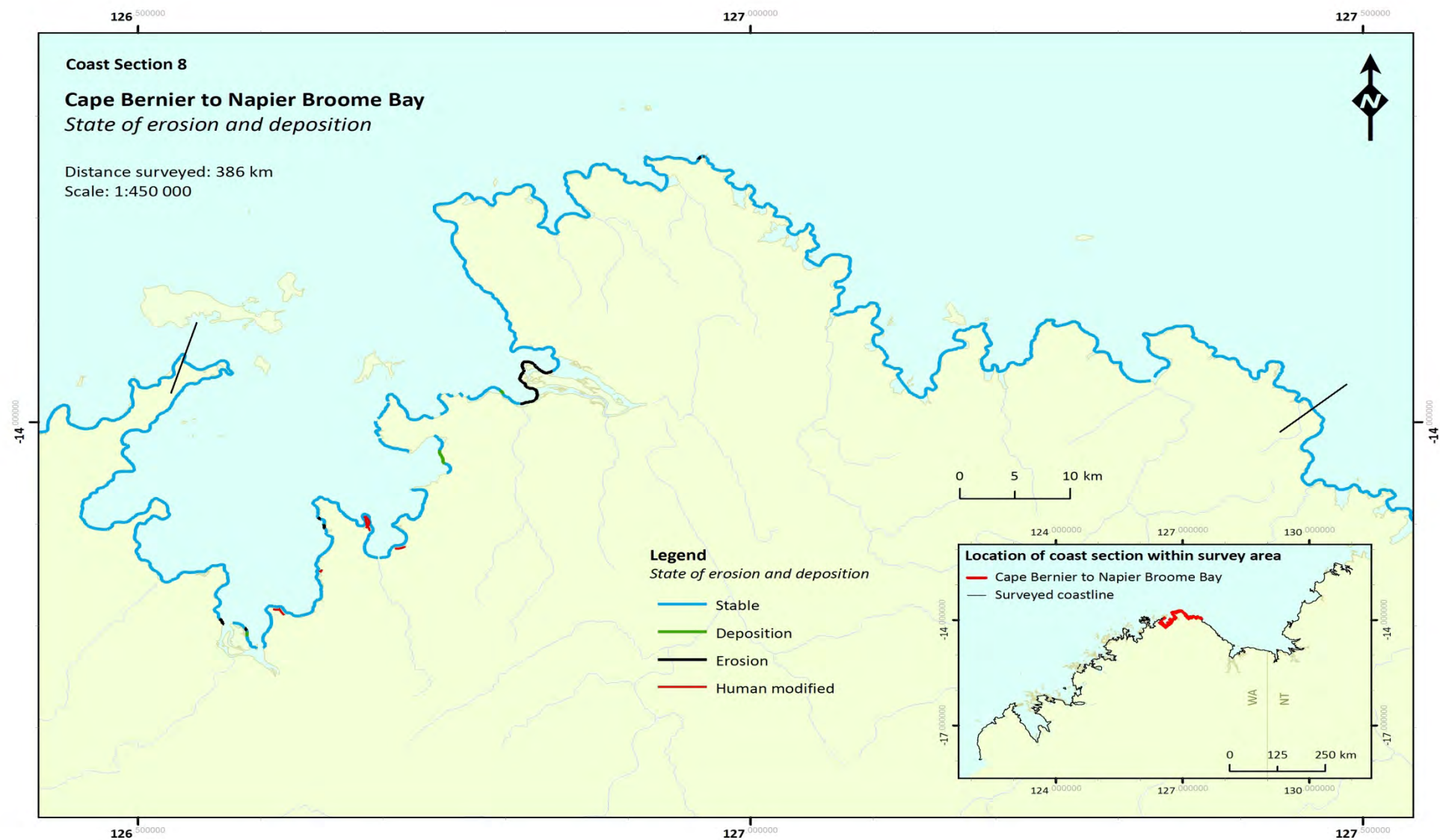


Figure 57: Shoreline stability in the Cape Bernier to Napier Broome Bay region

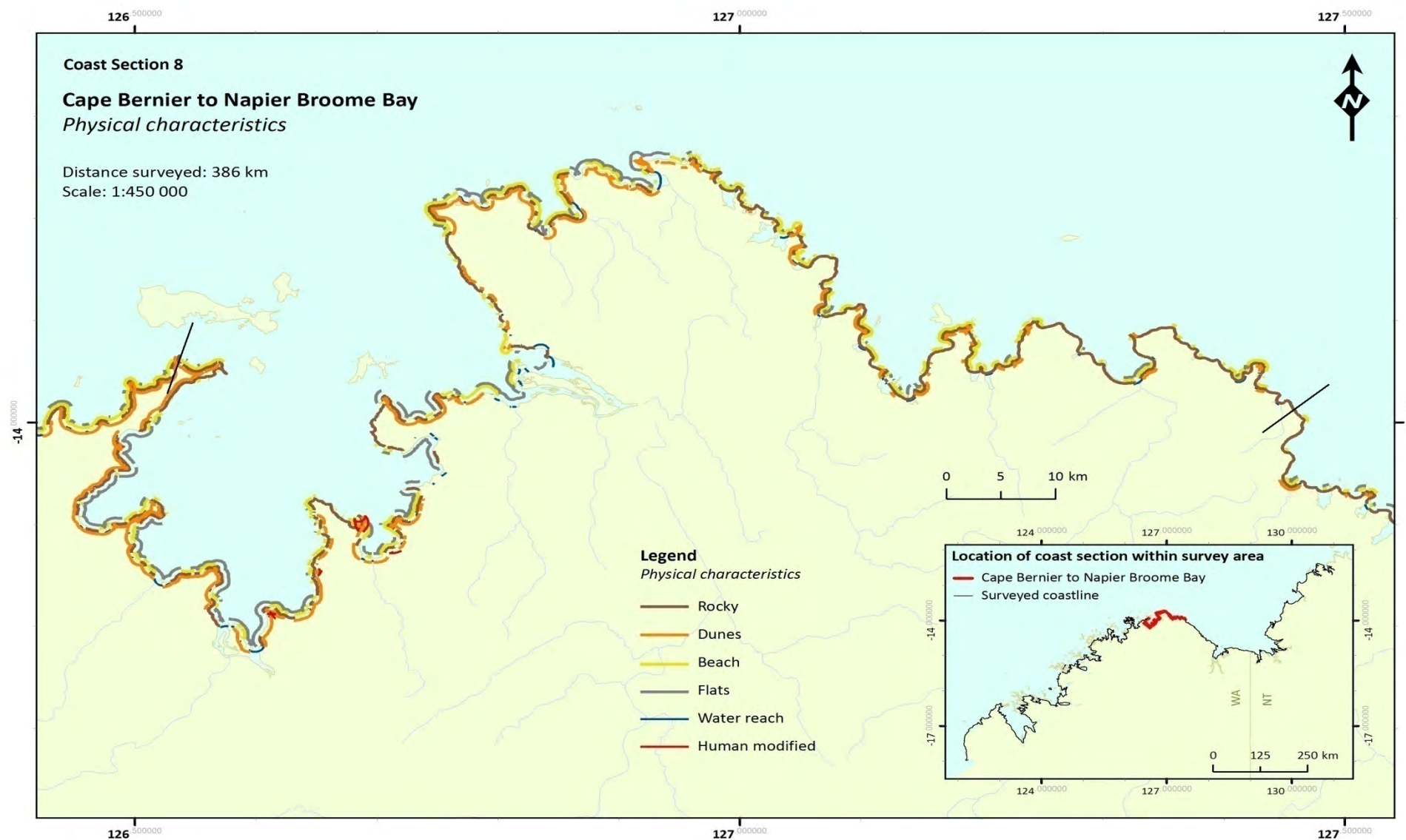


Figure 58: Shoreline physical characteristics in the Cape Bernier to Napier Broome Bay region

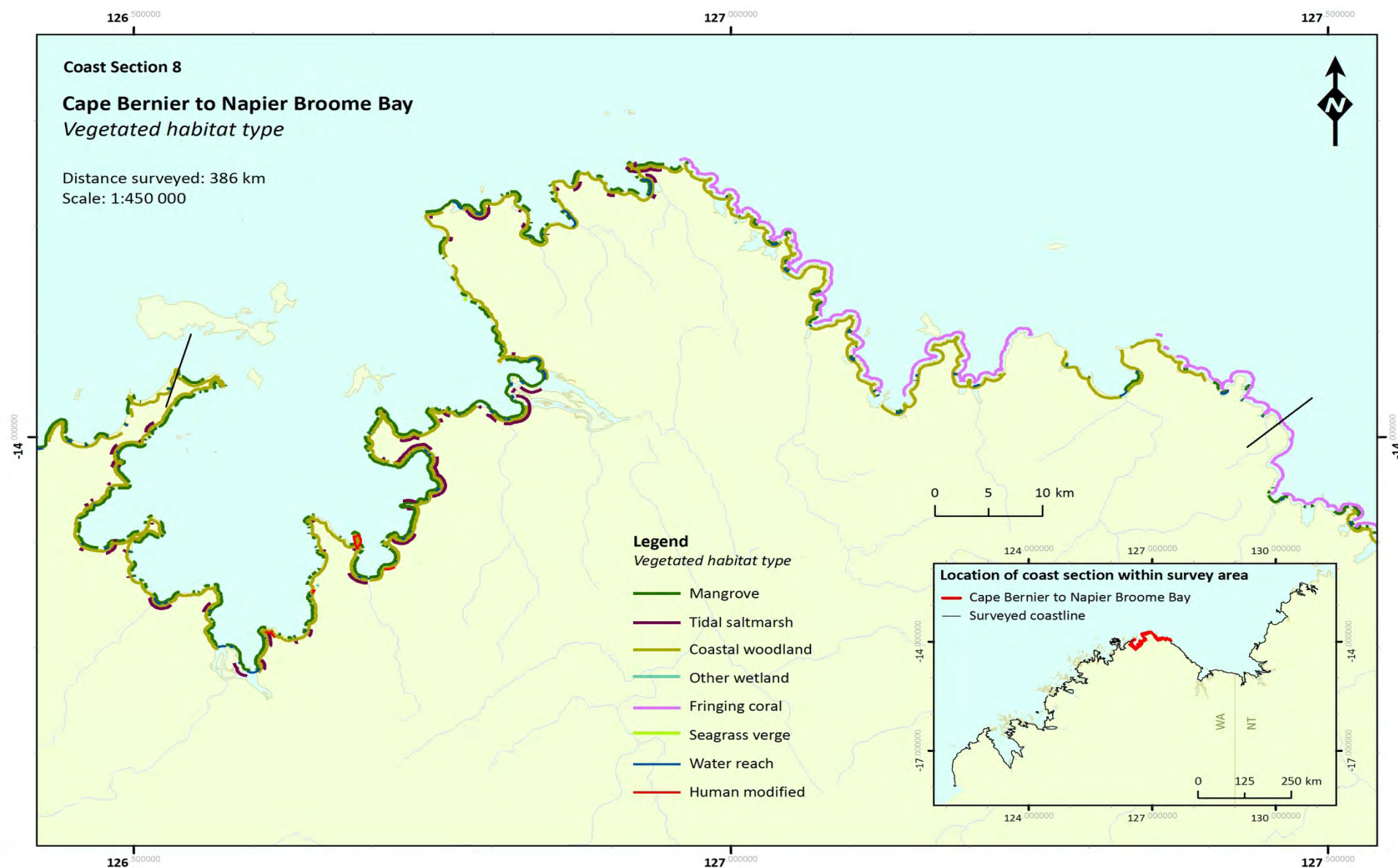


Figure 59: Vegetated habitat types in the Cape Bernier to Napier Broome Bay region

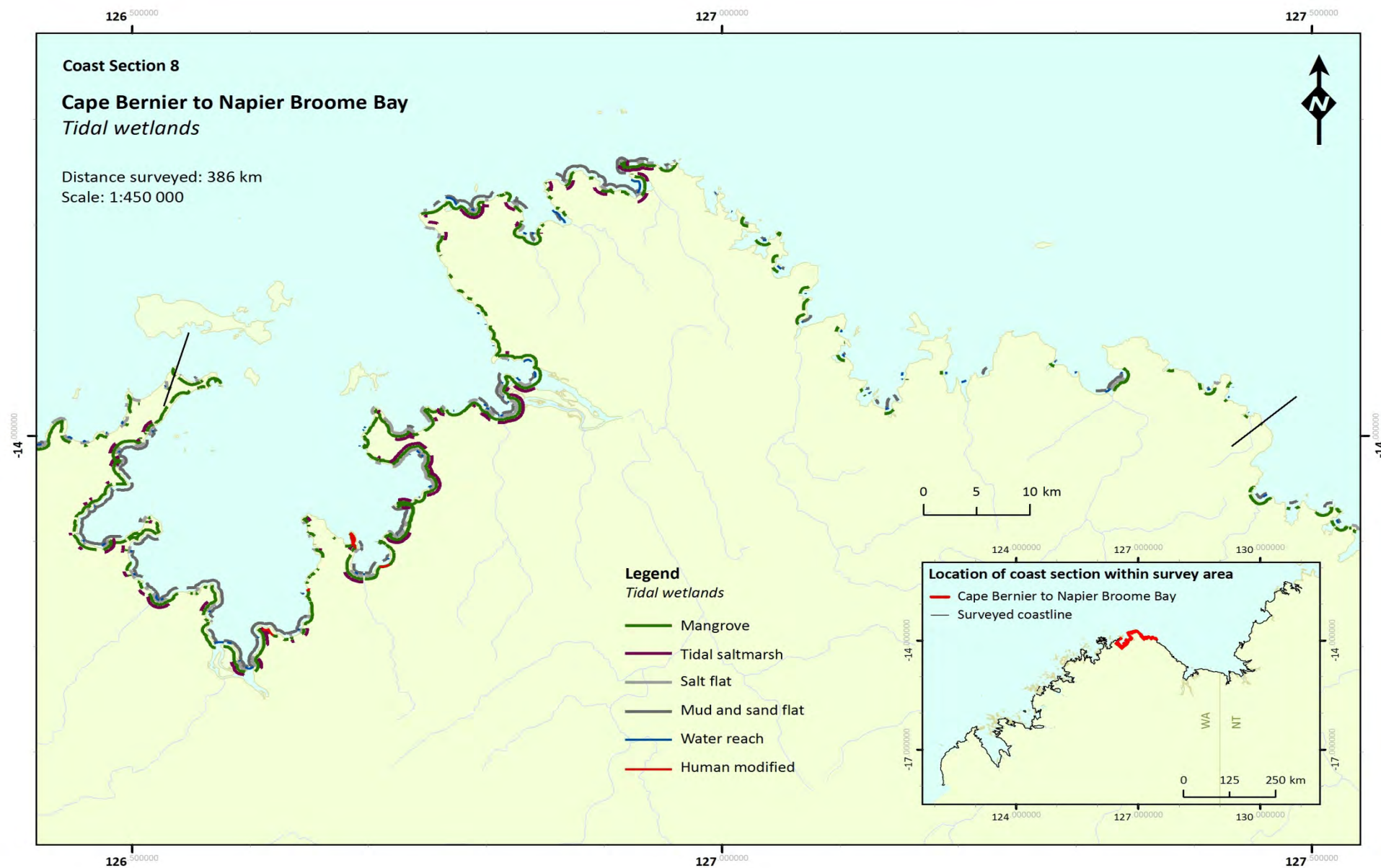


Figure 60: Tidal wetlands in the Cape Bernier to Napier Broome Bay region

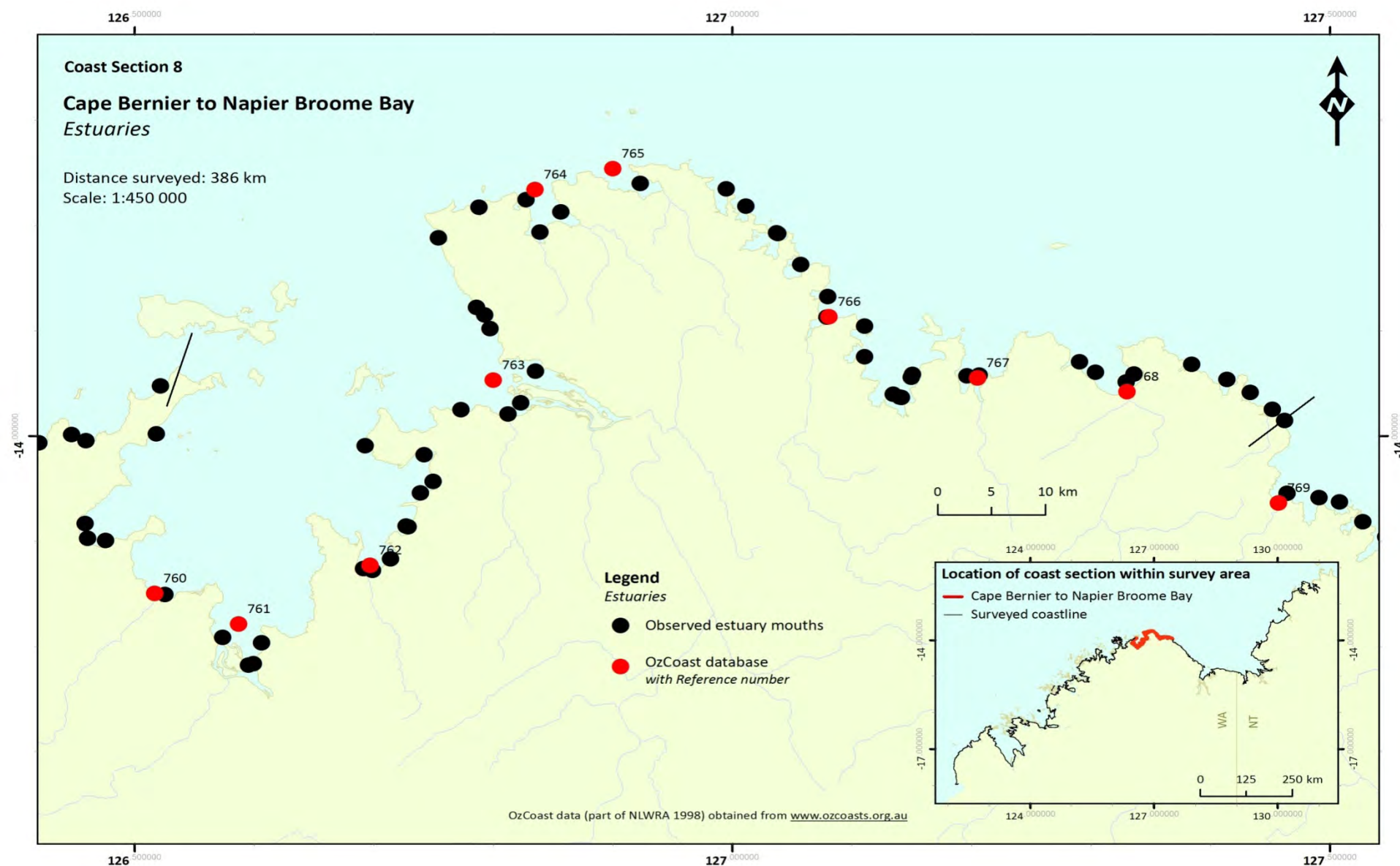


Figure 61: Estuaries in the Cape Bernier to Napier Broome Bay region

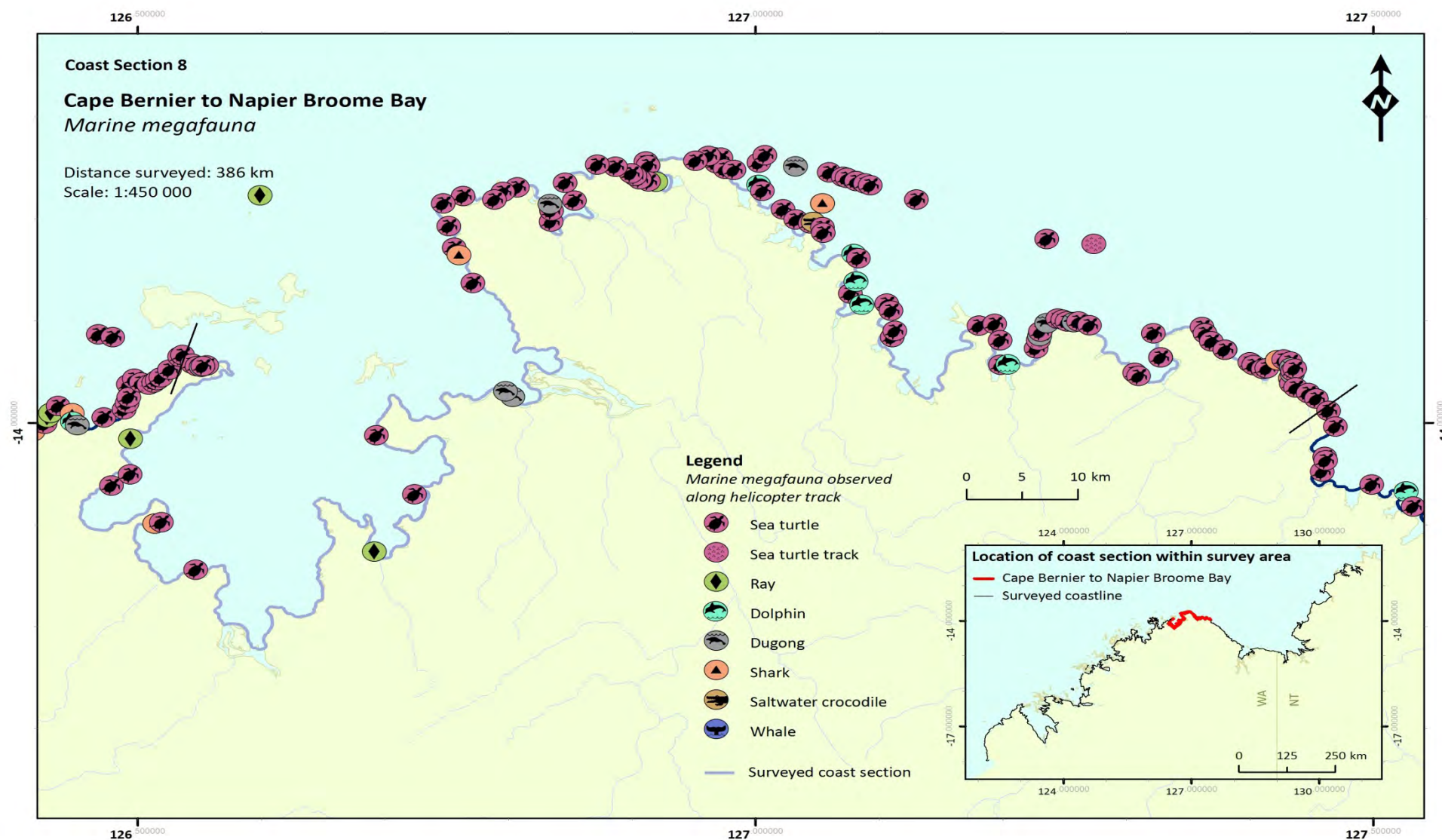


Figure 62: Marine megafauna observed in the Cape Bernier to Napier Broome Bay region

3.9 Vansittart Bay to Admiralty Gulf (WA)

Coast region start: Lat: -13.937
 Long: 126.54091

Coast region end: Lat: -14.23192
 Long: 125.62873

Region includes Cape Bouganville, Anjo Peninsula, Cape Voltaire and Admiralty Gulf.

- 674 km coast surveyed, making 13% of the total 5102 km.
- Mangroves were present along 438.6 km of the coast, 65.1% of the region. Total area of tidal wetland in the region is 116.76 km² (OzCoasts 2009), calculated as 0.17 km² tidal wetland per kilometer of coastline surveyed in the region.
- Rocky shore dominates, spanning 522 km, 77.5% of the region.
- Less than 0.5 km of coast in this region was modified by human activity.
- Estuaries in this region include three Montague Sound Creeks, the mouths of both the Mitchell River and the Lawley River, as well as Mt Conner Creek, Wade Creek, Rocky Cove and Pauline Bay.
- Marine megafauna observations were very common in this region and included dolphins, sea turtles and many rays.

Table 45: Summary of coastal characteristics from Vansittart Bay to Admiralty Gulf.

		km	% of region
<u>Physical characteristics</u>	Rocky	522.0	77.5
	Beach	211.0	31.3
	Flat	146.8	21.8
	Dune	140.3	20.8
	Other wetland	0.0	0.0
<u>Vegetated habitat type</u>	Mangrove	438.6	65.1
	Saltmarsh	41.1	6.1
	Fringing coral	143.0	21.2
	Seagrass verge	5.2	0.8
	Coastal Woodland	648.4	96.2
<u>State of erosion and deposition</u>	Deposition	0.0	0.0
	Erosion	0.0	0.0
	Stable	595.6	88.4
<u>Tidal wetlands</u>	Mangrove	438.6	65.1
	Saltmarsh	41.1	6.1
	Sand and mud flats	46.8	6.9
	Salt flat	125.0	18.5
<u>Other</u>	Human modified	0.1	0.0
	Water reach	31.4	4.7

Vansittart Bay to Admiralty Gulf (WA)

Figure 63: Representative coastline imagery from the Cape Dussejour to Cape Bernier region.

Image numbers are unique within the electronic database



Table 46: Summary of marine megafauna observed during aerial surveys of Vansittart Bay to Admiralty Gulf (WA).

Common name	Genus/Species	Total observed
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	0
Indo-Pacific bottlenose	<i>Tursiops aduncas</i>	5
Unidentified dolphin species	Family Delphinidae	20
Sea turtle	<i>Chelonia</i> or <i>Caretta</i> spp	135
Sea turtle track	<i>Chelonia</i> or <i>Caretta</i> spp	7
Dugong	<i>Dugong dugong</i>	12
Whale	Order Cetacea	0
Manta ray	<i>Manta birostris</i>	0
Ray species	Superorder Batoidea	52
Saltwater crocodile	<i>Crocodylus porosus</i>	3
Unidentified shark species	Superorder: Selachimorph	7

Table 47: Coastline data for the Vansittart Bay to Admiralty Gulf, WA region. Source OzCoasts 2009.

NT-WA Survey – 9. Vansittart Bay to Admiralty Gulf, WA		
Features	#9	Relevance to survey region
Annual Rainfall –range & mean (mm)	1200-1275 (1237)	Above average
Number of estuaries listed	9	Average
Total Catchment Area (km ²)	5963	Below average size
Total Estuary Length (km)	79.6	Below average size
Tidal Range (in m)	4.83	
Condition Status	Near Pristine to Largely Unmodified	Very low disturbance by humans
Area of Mangrove (km ²)	80.78	
Area of Salt Marsh (km ²)	35.99	
WCI% from Region Total	69.2	
Total Tidal Wetland (km ²)	116.76	
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	
Mangrove species number	13	16 in vicinity
Mangrove species limit west	0	

Table 48: Estuary data for notable estuaries within the Vansittart Bay to Admiralty Gulf, WA region. Source NLWRA; 1998.

NT-WA Survey 9. Vansittart Bay to Admiralty Gulf, WA				
Feature / Location	Mitchell River	Lawley River	Mt Connor Creek	Rocky Cove
NLWRA Estuary Reference#	754	755	756	757
Latitude S	14.427	14.632	14.535	14.220
Longitude E	125.697	125.917	126.043	126.245
Annual Rainfall – mean (mm)	1251	1275	1233	1200
Catchment Area (km2)	3704	1201	100	155
Estuary Length (km)	37.22	10.18	5.41	10.08
Tidal Range (in m)	5.7	6	5.8	3
Condition Status	LU	P	P	P
Area of Mangrove (km2)	33.59	25.07	8.40	3.44
Area of Salt Marsh (km2)	15.35	7.27	9.37	1.95
Wetland Cover Index (WCI %)	68.6	77.5	47.3	63.8
Total Tidal Wetland (km2)	48.93	32.34	17.77	5.39
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn
Mangrove species number	13 (16)	13 (16)		
Source of mangrove data:	GW85	GW81, SKW, NCD		

Table 49: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the Vansittart Bay to Admiralty Gulf, WA region (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

9. Vansittart Bay to Admiralty Gulf				
Species/ Locations	Mitchell River #754	Lawley River #755	Osborne Bonaparte Archipelago ~#755	Gibson Point ~#755
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>				
<i>Acanthus ilicifolius</i>				
<i>Acrostichum speciosum</i>				
<i>Aegialitis annulata</i>	X	X		
<i>Aegiceras corniculatum</i>	X	X	X	X
<i>Avicennia integra</i>				
<i>Avicennia marina</i>	X	X	X	X
<i>Bruguiera exaristata</i>	X	X	X	
<i>Bruguiera gymnorhiza</i>				
<i>Bruguiera parviflora</i>	X	X		
<i>Bruguiera sexangula</i>				
<i>Camptostemon schultzei</i>	X	X		X
<i>Ceriops australis</i>	X	X	X	X
<i>Ceriops decandra</i>				
<i>Ceriops tagal</i>				
<i>Cynometra iripa</i>				
<i>Diospyros littorea</i>				
<i>Excoecaria agallocha</i>	X	X		
<i>Lumnitzera littorea</i>				
<i>Lumnitzera racemosa</i>	X	X	X	X
<i>Nypa fruticans</i>				
<i>Osbornia octodonta</i>	X	X	X	
<i>Pemphis acidula</i>				
<i>Rhizophora apiculata</i>				
<i>Rhizophora X lamarckii</i>				
<i>Rhizophora stylosa</i>	X	X		X
<i>Scyphiphora hydrophyllacea</i>				
<i>Sonneratia alba</i>	X	X		
<i>Sonneratia lanceolata</i>				
<i>Sonneratia X urama</i>				
<i>Xylocarpus granatum</i>				
<i>Xylocarpus moluccensis</i>	X	X	X	X
TOTAL recorded	13	13	7	7
TOTAL in vicinity	16	16	16	16
Sources:	GW85	GW81, SKW	SKW	NCD

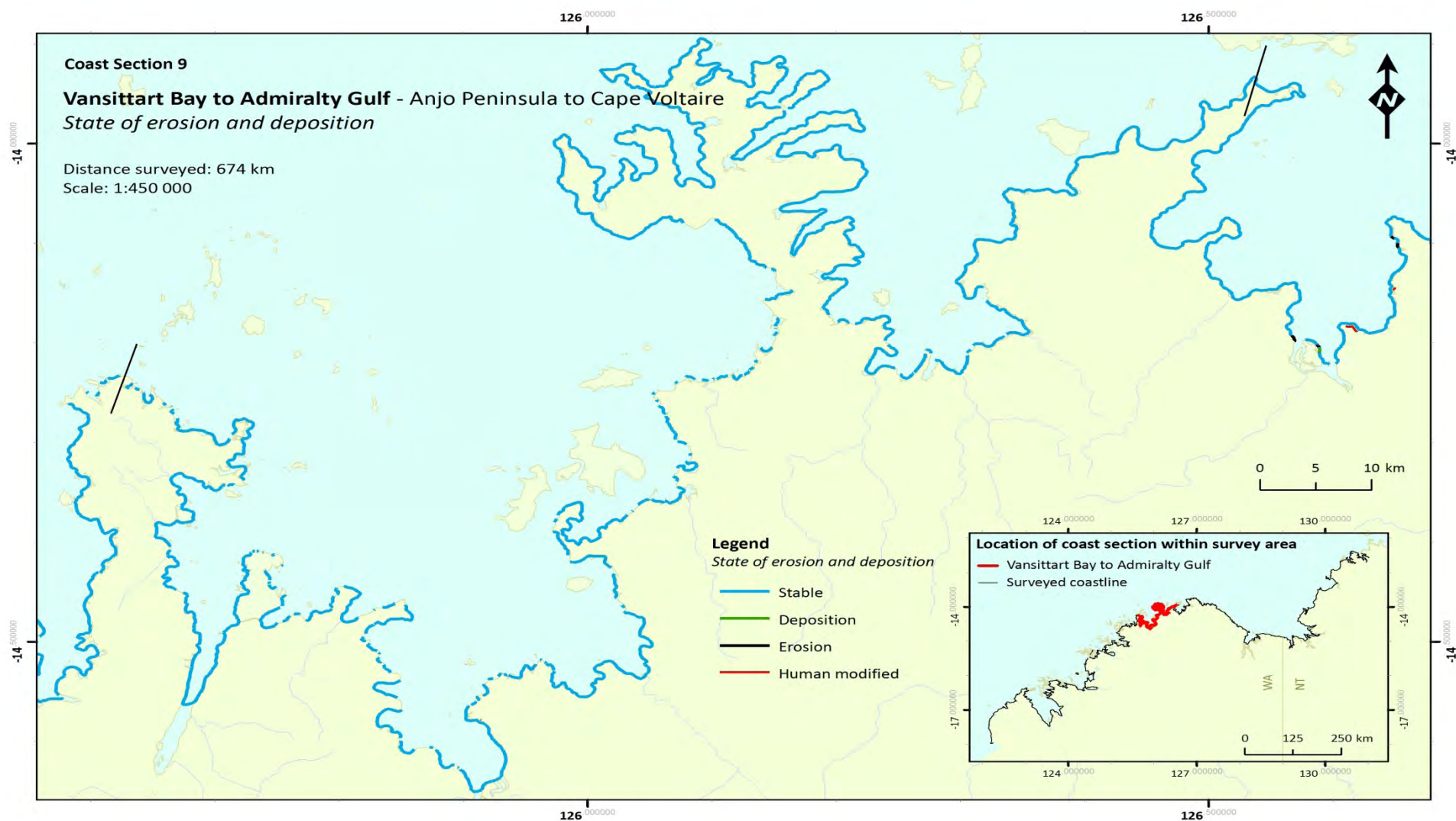


Figure 64: Shoreline stability in the Varsittart Bay to Admiralty Gulf region

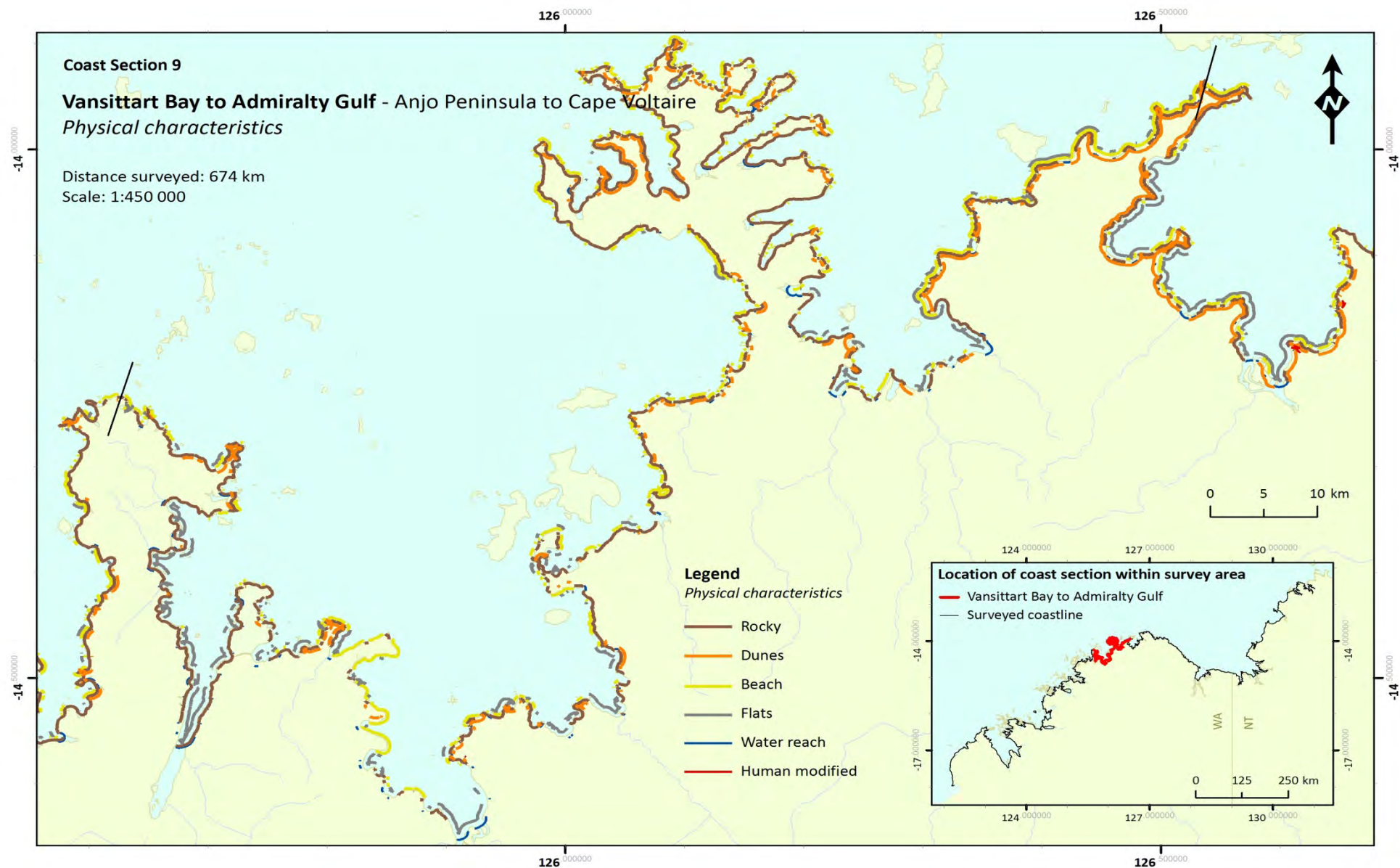


Figure 65: Shoreline physical characteristics in the Varsittart Bay to Admiralty Gulf region

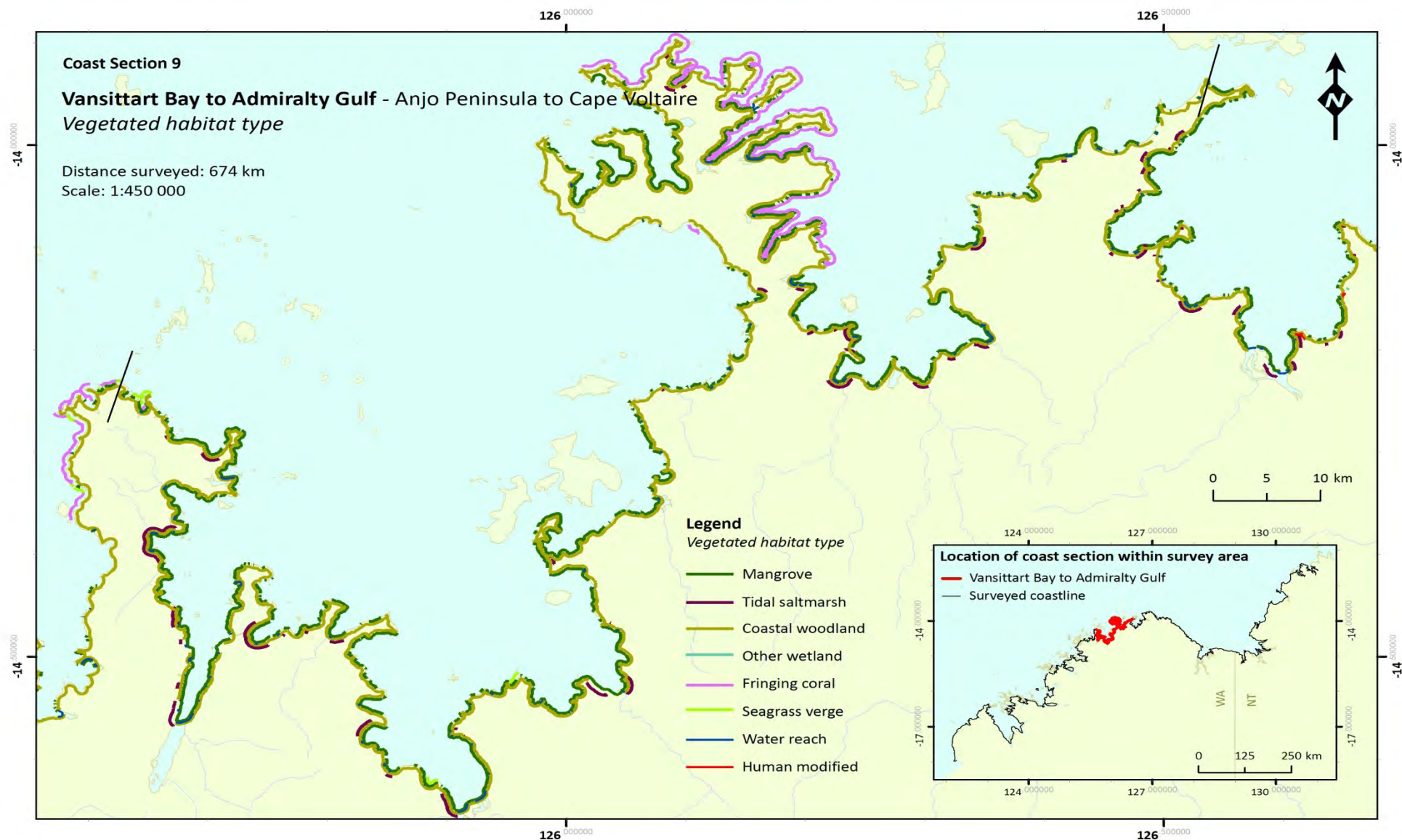


Figure 66: Vegetated habitat types in the Varsittart Bay to Admiralty Gulf region

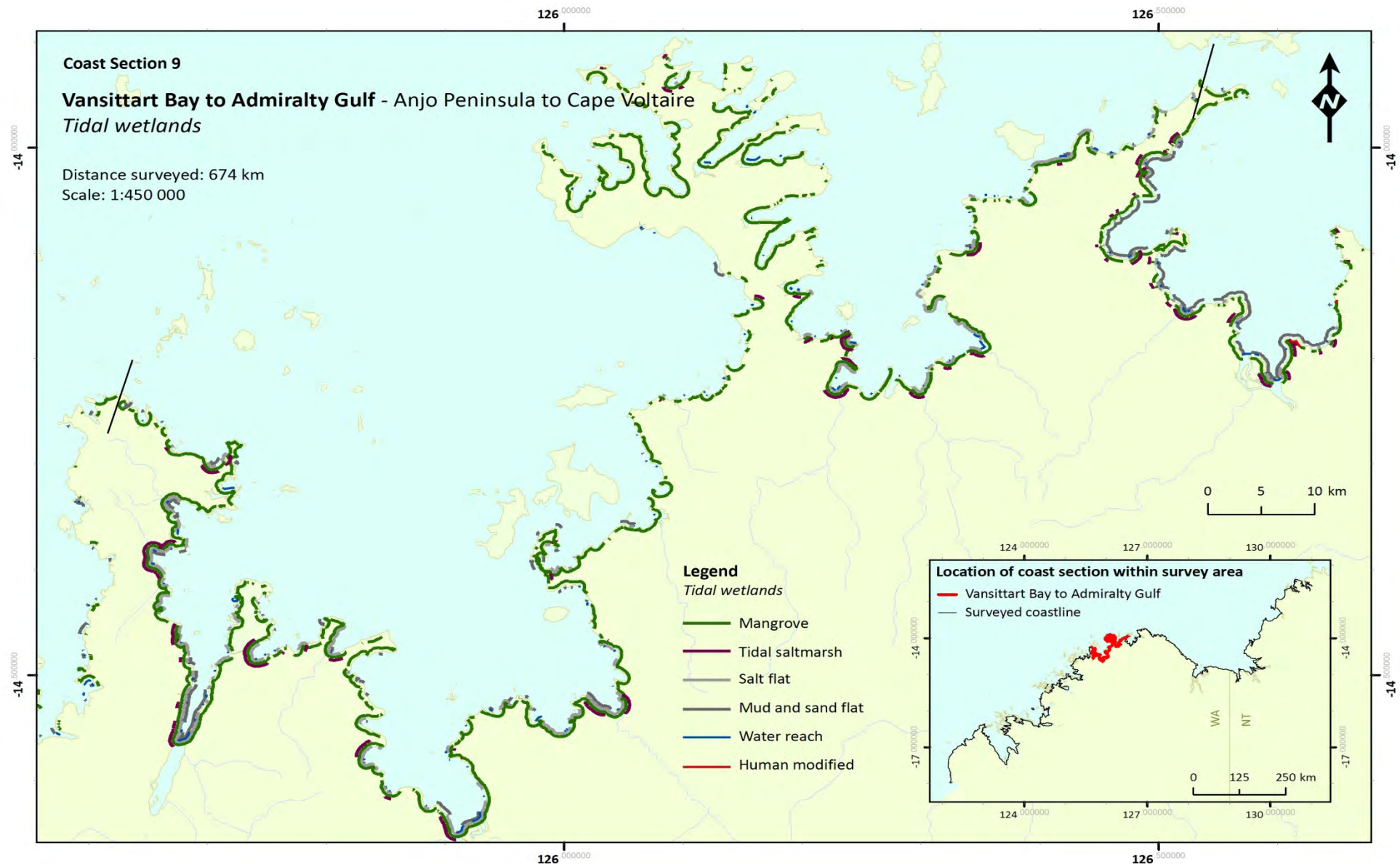


Figure 67: Tidal wetlands in the Varsittart Bay to Admiralty Gulf region

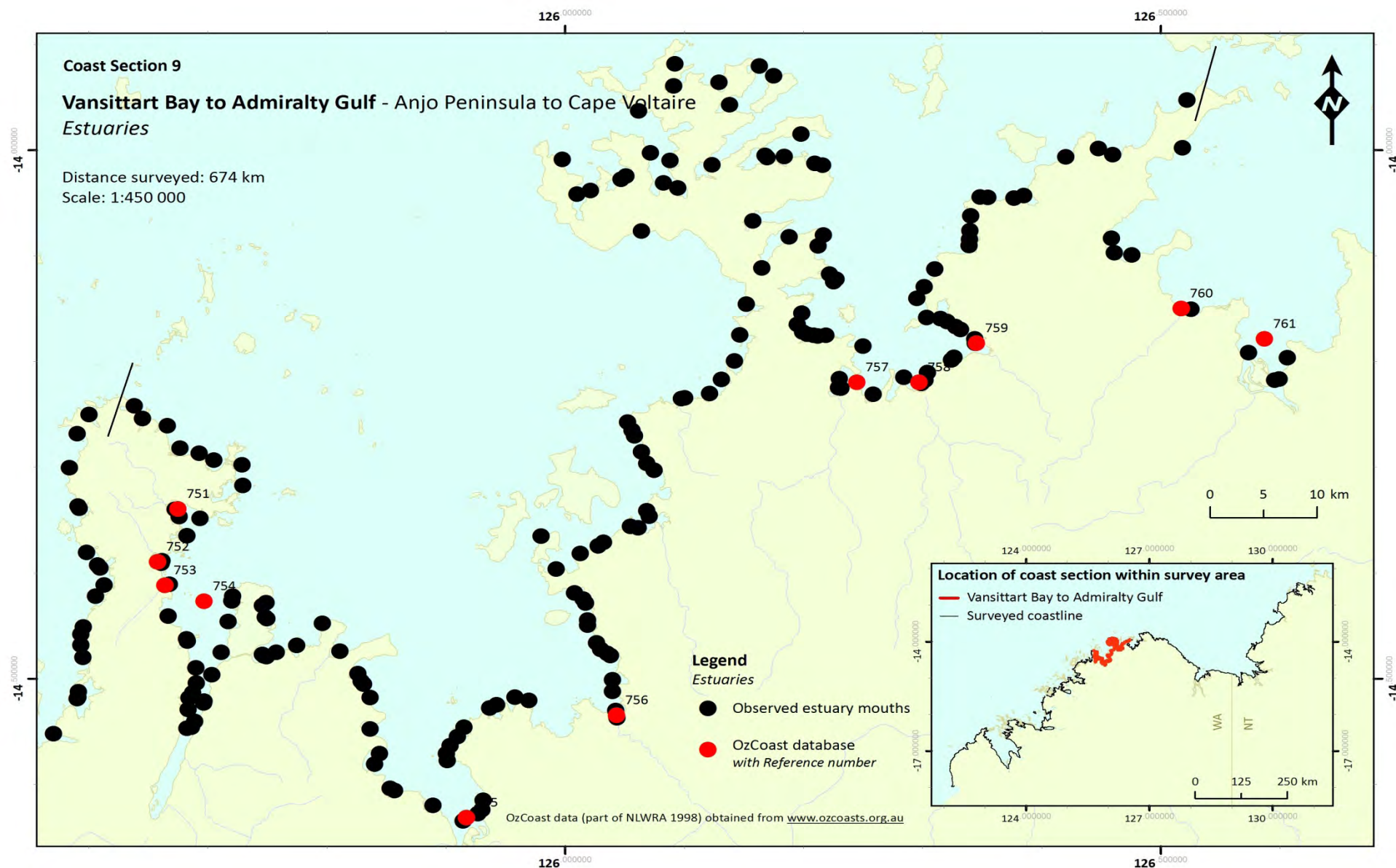


Figure 68: Estuaries in the Varsittart Bay to Admiralty Gulf region

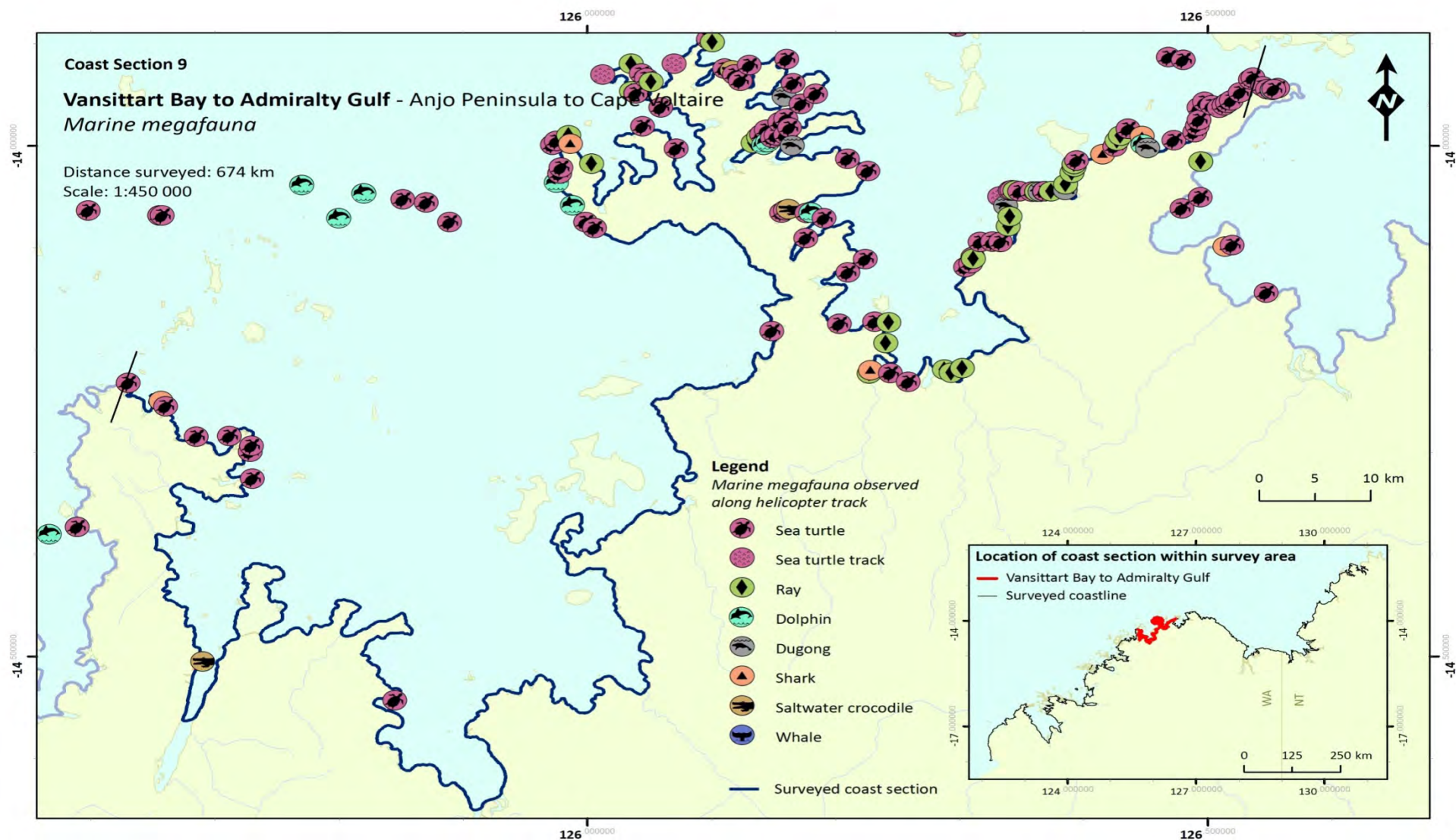


Figure 69: Marine megafauna observed in the Varsittart Bay to Admiralty Gulf region

3.10 Montague Sound (WA)

Coast region start: Lat: -14.23183
 Long: 125.62801

Coast region end: Lat: -14.75394
 Long: 125.12416

Region encompasses Cape Voltaire to Augereau Island.

- 211 km coast surveyed, being 4% of the total 5102 km.
- The region is highly dominated by rocky shore, which spans 198 km of the coast, comprising 93.8% of the region.
- Mangroves were scarce, growing on 19.8 km or 9.4% of the region. Total area of tidal wetland in the region is 8.78 km² (OzCoasts 2009), calculated as 0.04 km² tidal wetland per kilometer of coastline surveyed in the region.
- The shoreline in the Montague Sound region remains completely free of human modification.
- Estuaries in this region include the Scott Straight Creeks, Mudge Bay and Pauline Bay.
- Six sea turtle tracks were identified on beaches in this region.

Table 50: Summary of coastal characteristics the Montague Sound region.

		km	% of region
<u>Physical characteristics</u>	Rocky	198.0	93.8
	Beach	56.4	26.7
	Flat	10.7	5.1
	Dune	16.0	7.6
	Other wetland	0.0	0.0
<u>Vegetated habitat type</u>	Mangrove	19.8	9.4
	Saltmarsh	0.0	0.0
	Fringing coral	20.8	9.8
	Seagrass verge	3.6	1.7
	Coastal Woodland	199.4	94.4
<u>State of erosion and deposition</u>	Deposition	0.0	0.0
	Erosion	0.0	0.0
	Stable	190.5	90.2
<u>Tidal wetlands</u>	Mangrove	19.8	9.4
	Saltmarsh	0.0	0.0
	Sand and mud flats	10.7	5.1
	Salt flat	2.3	1.1
<u>Other</u>	Human modified	0.0	0.0
	Water reach	36.1	17.1

Montague Sound (WA)

Figure 70: Representative coastline imagery from the Cape Bernier to Napier Broome Bay region. Image numbers are unique within the electronic database

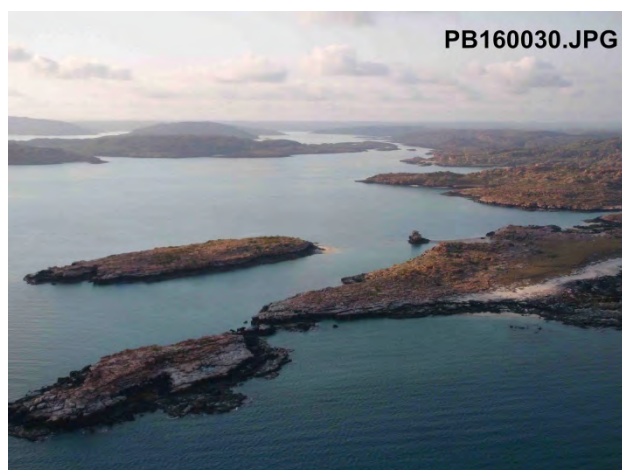


Table 51: Summary of marine megafauna observed during aerial surveys of Montague Sound (WA).

Common name	Genus/Species	Total observed
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	0
Indo-Pacific bottlenose	<i>Tursiops aduncas</i>	0
Unidentified dolphin species	Family Delphinidae	2
Sea turtle	<i>Chelonia</i> or <i>Caretta</i> spp	10
Sea turtle track	<i>Chelonia</i> or <i>Caretta</i> spp	6
Dugong	<i>Dugong dugong</i>	0
Whale	Order Cetacea	0
Manta ray	<i>Manta birostris</i>	0
Ray species	Superorder Batoidea	1
Saltwater crocodile	<i>Crocodylus porosus</i>	0
Unidentified shark species	Superorder: Selachimorph	1

Table 52: Coastline data for the Montague Sound, WA region. Source OzCoasts 2009.

NT-WA Survey – 10. Montague Sound, WA		
Features	#10	Relevance to survey region
Annual Rainfall –range & mean (mm)	1266-1271 (1269)	Above average
Number of estuaries listed	3	Far below average
Total Catchment Area (km2)	655	Below average size
Total Estuary Length (km)	38.2	Below average size
Tidal Range (in m)	5.67	
Condition Status	Near Pristine	Virtually no disturbance by humans
Area of Mangrove (km2)	8.78	
Area of Salt Marsh (km2)	0.00	
WCI% from Region Total	100.0	
Total Tidal Wetland (km2)	8.78	
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	
Mangrove species number		16 in vicinity
Mangrove species limit west	0	

Table 53: Estuary data for notable estuaries within the Montague Sound, WA shoreline region.
 Source NLWRA; 1998.

NT-WA Survey 10. Montague Sound, WA			
Feature / Location	Scott Straight Creeks	Mudge Bay	Montague Sound Creeks
NLWRA Estuary Reference#	748	749	750
Latitude S	14.664	14.569	14.537
Longitude E	125.211	125.374	125.453
Annual Rainfall – mean (mm)	1271	1271	1266
Catchment Area (km2)	411	60	184
Estuary Length (km)	16.96	6.75	14.51
Tidal Range (in m)	5.8	5.6	5.6
Condition Status	P	P	P
Area of Mangrove (km2)	6.85	0.17	1.76
Area of Salt Marsh (km2)	0	0	0
Wetland Cover Index (WCI %)	100.0	100.0	100.0
Total Tidal Wetland (km2)	6.85	0.17	1.76
BOM 1998 Climatic Area	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn	Tropical Savannah - Wet Autumn
Mangrove species number			
Source of mangrove data:			

Table 54: Mangrove species present in the Northern Territory and Western Australia. Green highlights species with ranges within the Montague Sound, WA region (source: Duke 2006). Crosses identify recorded species occurrence in the listed estuary. Yellow denotes western limit of species range.

10. Montague Sound	
Species/ Locations	None recorded
<i>Acanthus ebracteatus</i> subsp. <i>ebarbatus</i>	
<i>Acanthus ilicifolius</i>	
<i>Acrostichum speciosum</i>	
<i>Aegialitis annulata</i>	
<i>Aegiceras corniculatum</i>	
<i>Avicennia integra</i>	
<i>Avicennia marina</i>	
<i>Bruguiera exaristata</i>	
<i>Bruguiera gymnorhiza</i>	
<i>Bruguiera parviflora</i>	
<i>Bruguiera sexangula</i>	
<i>Camptostemon schultzei</i>	
<i>Ceriops australis</i>	
<i>Ceriops decandra</i>	
<i>Ceriops tagal</i>	
<i>Cynometra iripa</i>	
<i>Diospyros littorea</i>	
<i>Excoecaria agallocha</i>	
<i>Lumnitzera littorea</i>	
<i>Lumnitzera racemosa</i>	
<i>Nypa fruticans</i>	
<i>Osbornia octodonta</i>	
<i>Pemphis acidula</i>	
<i>Rhizophora apiculata</i>	
<i>Rhizophora X lamarckii</i>	
<i>Rhizophora stylosa</i>	
<i>Scyphiphora hydrophyllacea</i>	
<i>Sonneratia alba</i>	
<i>Sonneratia lanceolata</i>	
<i>Sonneratia X urama</i>	
<i>Xylocarpus granatum</i>	
<i>Xylocarpus moluccensis</i>	
TOTAL recorded	0
TOTAL in vicinity	16
Sources:	

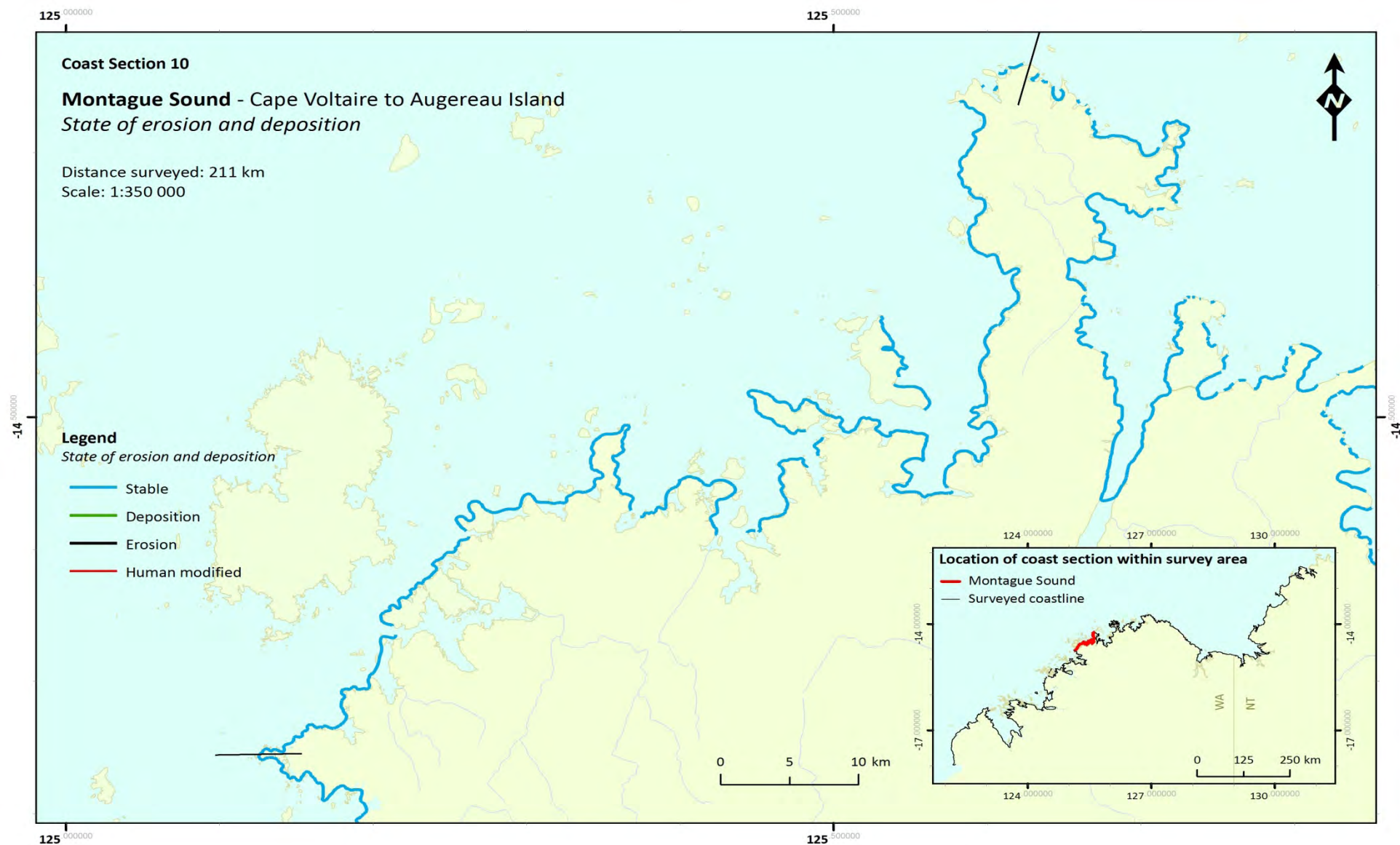


Figure 71: Shoreline stability in the Montague Sound region

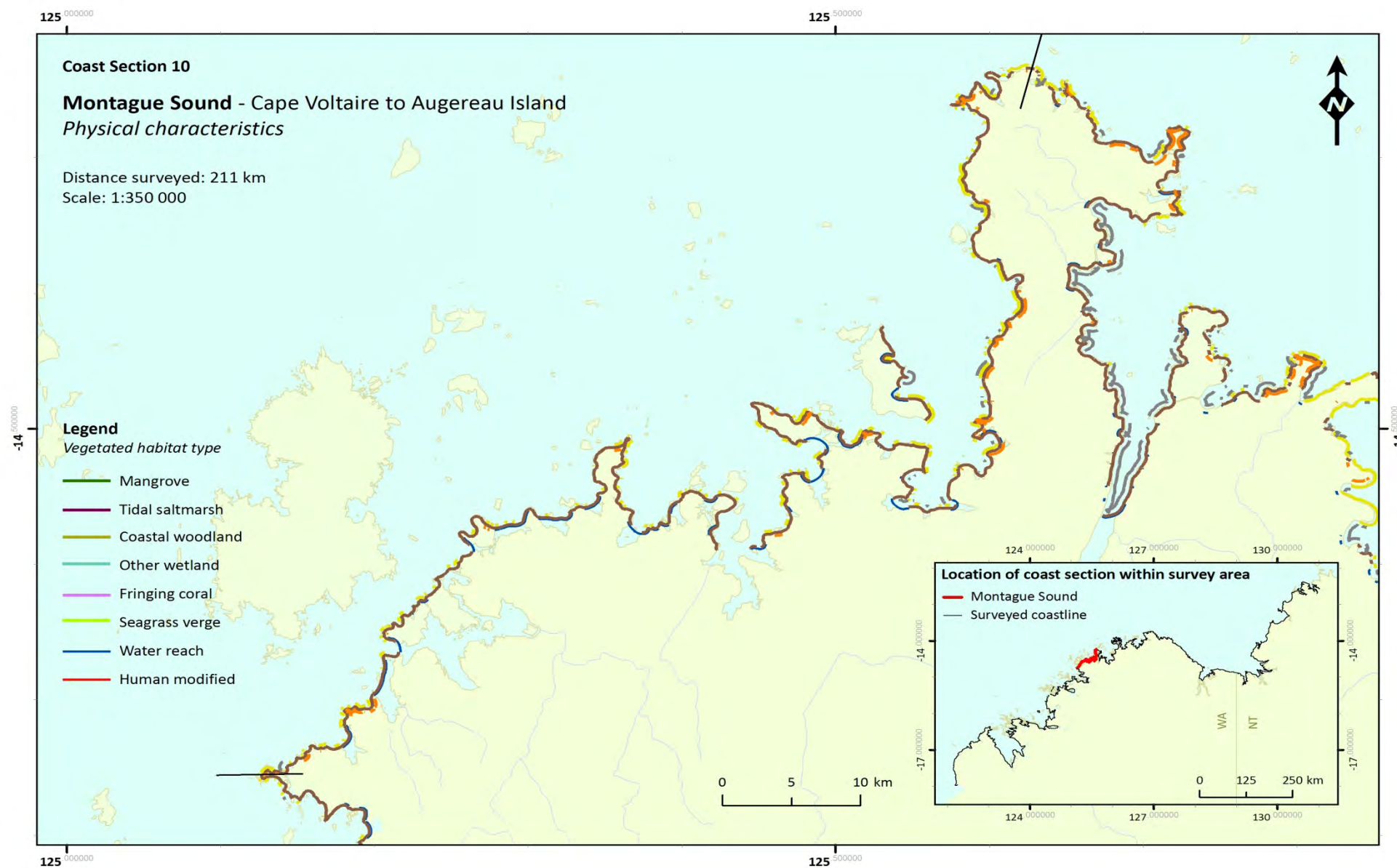


Figure 72: Shoreline physical characteristics in the Montague Sound region

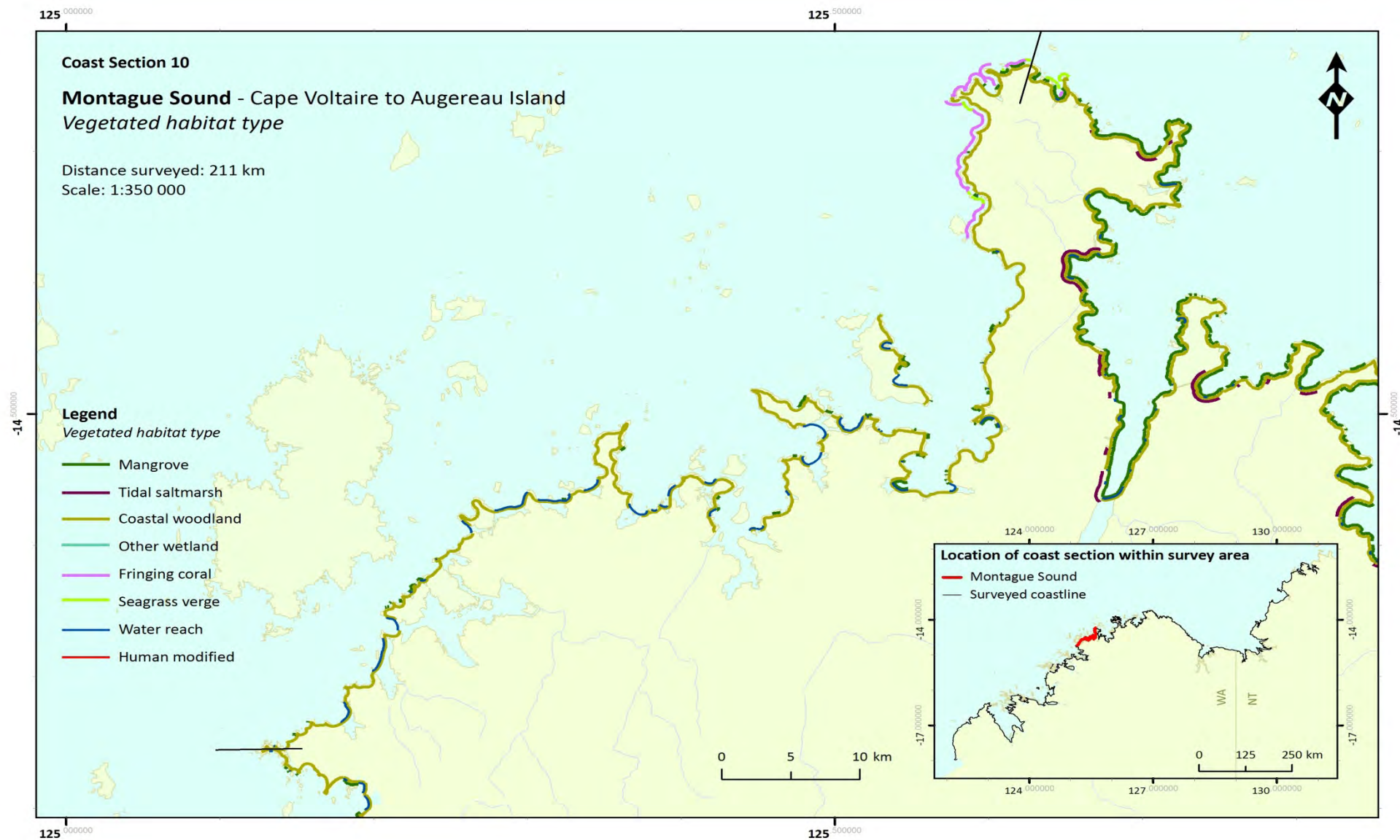


Figure 73: Vegetated habitat types in the Montague Sound region

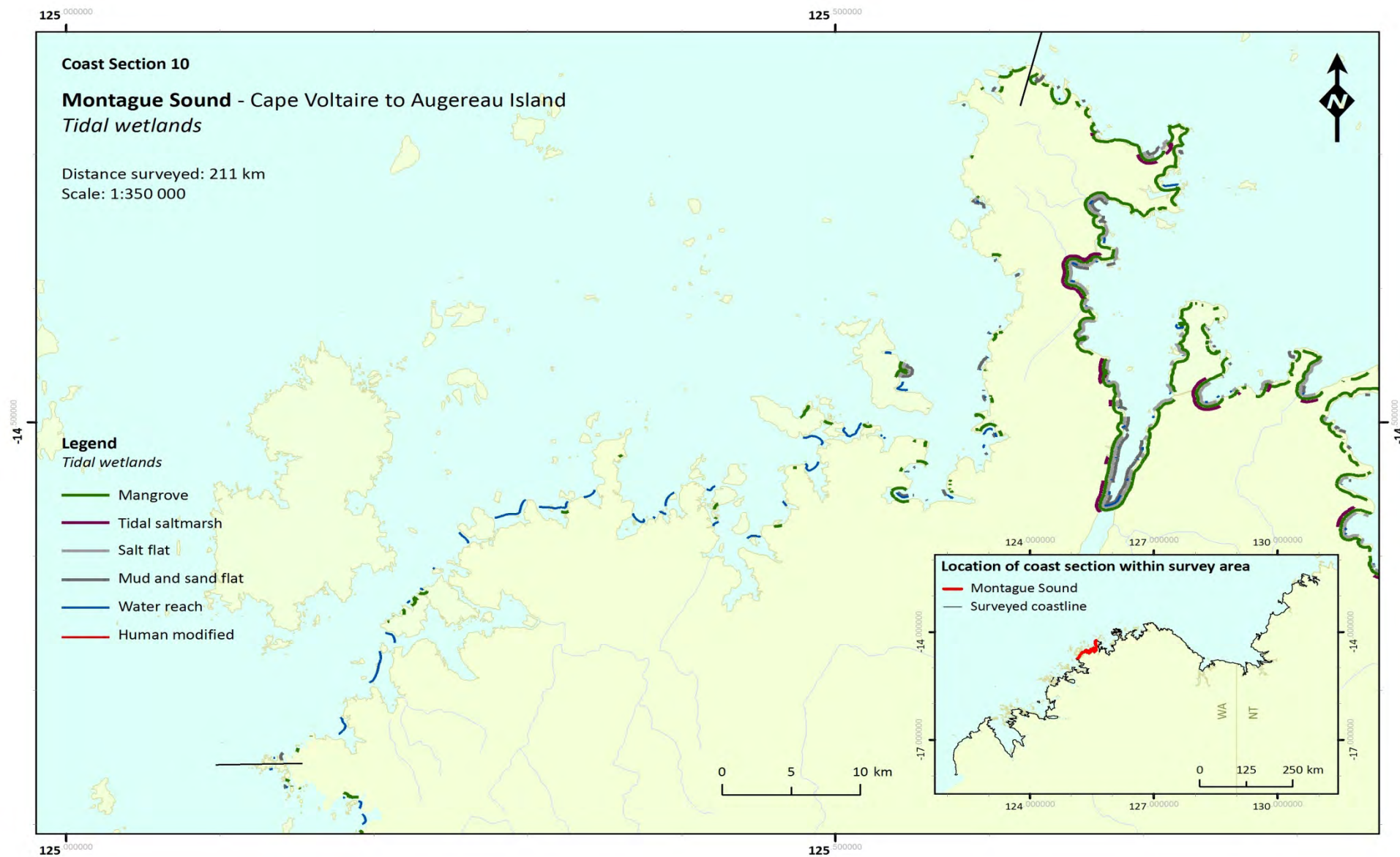


Figure 74: Tidal wetlands in the Montague Sound region

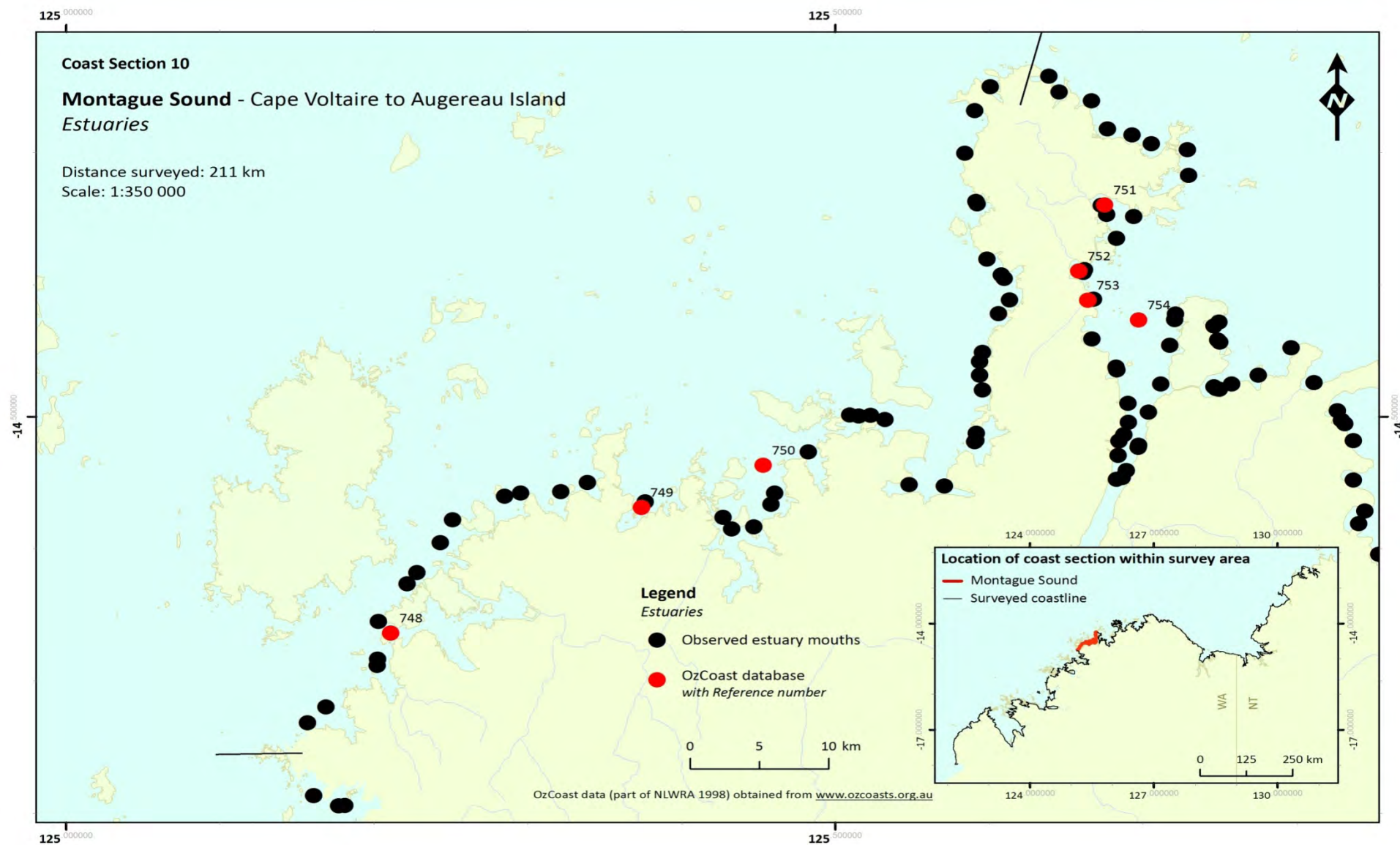


Figure 75: Estuaries in the Montague Sound region

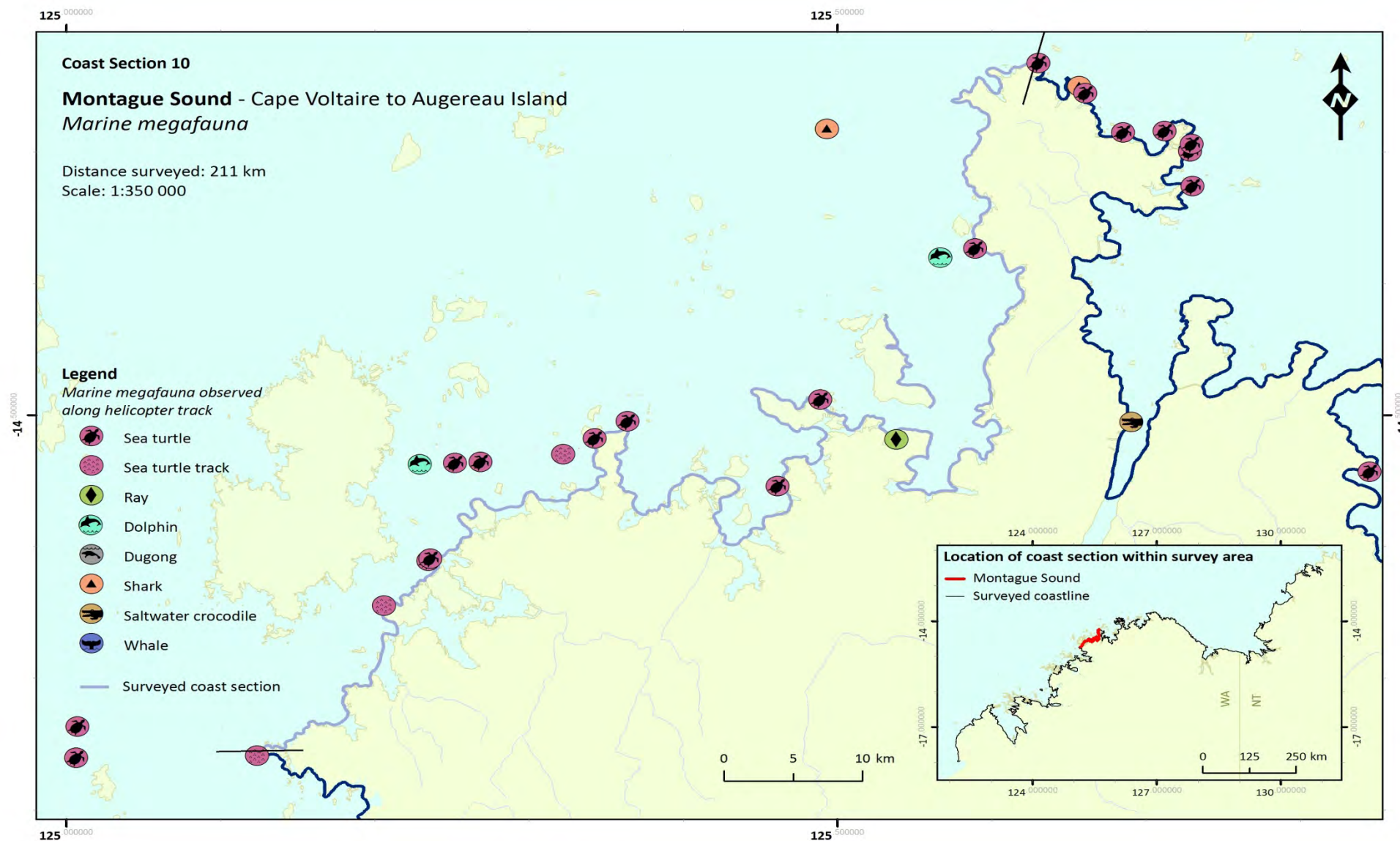


Figure 76: Marine megafauna observed in the Montague Sound region