



4.4.1: Assessment and monitoring methods for bycatch species composition and abundance

Management Question being addressed

Do southern state fisheries impose a high risk to sustainability of TEPS and other bycatch species?

Outputs of Relevance to management

- Highlight gaps in our knowledge of monitoring and recording bycatch
- Provide a risk assessment framework for assessing bycatch across fisheries
- Highlight at-risk species in fisheries in the West Coast and Gascoyne Bioregions
- Development of appropriate monitoring methods for particular at-risk fisheries

What data do we have?

Bioregion	Fishery	Data Collected
Gascoyne	Shark Bay Prawn Managed Fishery	02-03
	Recreational	05-09
	Exmouth Prawn Managed Fishery	04
	Gascoyne Charter Fishery	02-08
	Gascoyne Demersal Scalefish Fishery	03-09
	Shark Bay Scallop Managed Fishery	N
	Shark Bay Crab (Including other northern crabs)	N
	Gascoyne open access inshore net fishery	N
	Exmouth Gulf Beach Seine	N
	Shark Bay Beach Seine	N
	West Coast	Demersal Gillnet and Longline Fishery (incl. Sth Coast)
Recreational		05-09
West Coast Rock Lobster Fishery		06-08
South West Trawl		91-92
West Coast Charter Fishery		02-08
Abrolhos Islands and MidWest Trawl Managed Fishery		Y
Roe's Abalone Fishery		N
West Coast Blue Swimmer Crab Fishery		N
West Coast Deep Sea Crab		N
West Coast Demersal Scalefish Fishery		N
West Coast Purse Seine Managed Fishery		N
West Coast Beach Bait Managed Fishery (SW beach seine also)		N
West Coast Tailor Fishery		N
West Coast Open Access Inshore Net Fishery		N
West Coast Estuarine (Interim) Managed Fishery		N
Cockburn Sound Fisheries	N	



West Coast – Max score 23



Pomatomidae	Tailor	Pomatomus saltatrix	5.37
Serranidae	Leopard Wirrah	Acanthistius pardalotus	5.53
Labridae	Groper, Baldchin	Choerodon rubescens	5.61
Plotosidae	Cobbler	Cnidoglanis macrocephalus	5.75
Syngnathidae	Common seadragon	Phyllopteryx taeniolatus	5.98
Sparidae	Snapper, Pink	Pagrus auratus	6.04
Neosebastidae	Gurnard Perches	Neosebastes pandus	6.87
Berycidae	Snapper, Red (Nannygai)	Centroberyx gerrardi	7.05
Glaucosomatidae	Dhufish, Western Australian	Glaucosoma hebraicum	7.15
Triakidae	Shark, Whiskery	Furgaleus macki	7.15
Serranidae	Cod, Breaksea (Black-arse Cod)	Epinephelides armatus	7.18
Carcharhinidae	Shark, Blue (Blue Whaler)	Prionace glauca	7.42
Odontaspidae	Grey Nurse Sharks	Carcharias taurus	7.43
Carcharhinidae	Shark, Spinner	Carcharhinus Brevipinna (melanopterus)	6.76
Carcharhinidae	Shark, Tiger	Galeocerdo cuvier	7.52
Lamnidae	Great White Shark	Carcharodon carcharias	8.19
Carcharhinidae	Shark, Sandbar	Carcharhinus plumbeus	8.25
Sphyrnidae	Smooth hammerhead	Sphyrna zygaena	8.35
Triakidae	Shark, Gummy	Mustelus antarcticus	8.36
Heterodontidae	Port Jackson Shark	Heterodontus portusjacksoni	8.84

Gascoyne – Max score 23



Sillaginidae	Whiting, Trumpeter	Sillago berrus	6.09
Platycephalidae	Flathead, Long-spined	Platycephalus longispinis	6.10
Sillaginidae	Whiting, Robust	Sillago robusta	6.10
Lethrinidae	Emperor, Blue-Lined (Black Snap)	Lethrinus laticaudis	6.19
Glaucosomatidae	Deepsea jewfish	Glaucosoma burgeri	6.19
Lethrinidae	Emperor, Blue-Spotted	Lethrinus punctulatus	6.29
Bothidae	Flounder, Spiny	Pseudorhombus spinosus	6.36
Platycephalidae	Flathead, Fringe-eyed	Cymbacephalus nematophthalmus	6.36
Serranidae	Cod, Breaksea (Black-arse Cod)	Epinephelides armatus	6.38
Mullidae	Goatfish, Yellow-striped	Parupeneus chrysopleuron	6.42
Plotosidae	Catfish, Striped	Plotosus lineatus	6.47
Carcharhinidae	Sandbar shark	Carcharhinus plumbeus	6.48
Platycephalidae	Flathead, Spiny	Onigocia spinosa	6.53
Aulostomidae	Flutemouth, Smooth	Fistularia commersonii	6.54
Sparidae	Pink snapper	Pagrus auratus	7.36
Dasyatididae	Stingray, Brown Reticulated	Dasyatis leylandi	7.55
Plotosidae	Catfish, Small-headed	Euristhmus microceps	7.59
Rhynchobatidae	Shovelnose Ray, Whitespot/White	Rhynchobatus australiae	7.63
Ariidae	Giant seacatfish	Netuma thalassina	7.76
Dasyatididae	Stingray, Black-blotched	Taeniura meyeri	9.14

TEPS – max score 25

Gascoyne

Syngnathids (bycatch)	Hippocampus angustus	3.93
Cormorant, General	Phalacrocorax varius	3.98
Seasnake	Hydrophis elegans	4.87
Shark, Saw	Pristiophorus cirratus	5.52
Turtle, Green	Chelonia mydas	11.32
Turtle, loggerhead	Caretta caretta	11.32
Turtle, flatback	Natator depressus	12.03
Turtle, General	Chelonia mydas	12.90

West Coast

Eagle Ray	Aetobatus narinari	4.809524
Cormorant, General	Phalacrocorax varius	4.956633
Whales	Megaptera novaeangliae	6.62602
Shark, Great White	Carcharodon carcharias	6.753912
Shark, Grey nurse	Carcharius taurus	7.412755
Dolphins	Tursiops truncatus	7.576531
Seal, General	Arctocephalus forsteri	11.34643
Turtle, General	Caretta caretta	11.75969

South Coast

Cormorant, General	Phalacrocorax varius	4.17415
Whale, General	Megaptera novaeangliae	4.242857
Manta rays	Manta birostris	4.483163
Duck, Musk	Biziura lobata	6.682398
Dolphin	Tursiops truncatus	6.743112
Shark, Grey nurse	Carcharius taurus	7.552211
Shark, White pointer	Carcharodon carcharias	8.229932
Shearwater, General	Puffinus carneipes	9.547619
Turtle, Leatherback	Dermochelys coriacea	9.735714
Turtles, General	Caretta caretta	9.735714
Seal, General	Arctocephalus forsteri	11.05051
Sea lions	Neophoca cinerea	15.0733



Cameras – TEPS interactions





-
- Provided a bioregional risk assessment framework for assessing bycatch across fisheries
 - Based on current available data most species are low to moderate risk.
 - Highlight gaps in our knowledge of monitoring and recording bycatch
 - Require strategic bycatch sampling across all fisheries that are believed to need bycatch data
 - Collect some ‘baseline’ data for future reference in some fisheries – which ones?
 - Protected species data collection requires more than present efforts
 - Training of fishers?
 - Observer programs?
 - Cameras?