

Table S1. Biological information and the number of trips where interactions occurred (n=435 total trips) for all species or higher taxon recorded by observers.

Order or higher classification	Family	Common name	Species	Trips with interactions
Rhinopristiformes	Rhinobatidae	Eastern Shovelnose Ray*	<i>Aptychotrema rostrata</i>	251
Torpediniformes	Hypnidae	Coffin Ray*	<i>Hypnos monopterygius</i>	122
Rhinopristiformes	Rhinobatidae	Eastern Fiddler Ray* ^{NSW(mainly)}	<i>Trygonorrhina fasciata</i>	78
Myliobatiformes	Urolophidae	Stingarees	Undifferentiated	54
Heterodontiformes	Heterodontidae	Port Jackson Shark*	<i>Heterodontus portusjacksoni</i>	49
Myliobatiformes	Urolophidae	Common Stingaree* ^{NSW(mainly)} NT	<i>Trygonoptera Testacea</i>	47
Carcharhiniformes	Triakidae	Gummy Shark* ^{Eastern stock}	<i>Mustelus antarcticus</i>	37
Rajiformes	Rajidae	Sydney Skate* ^{NSW(mainly)} VU	<i>Dentiraja australis</i>	30
Myliobatiformes	Urolophidae	Greenback Stingaree* ^{VU}	<i>Urolophus viridis</i>	30
Carcharhiniformes	Scyliorhinidae, Pentanchidae	Catsharks	Undifferentiated	30
Rajiformes	Rajidae	Skates	Undifferentiated	20
Orectolobiformes	Orectolobidae	Wobbegong	Undifferentiated	17
Torpediniformes	Torpedinidae, Narcinidae, Hypnidae	Torpedo Rays, Coffin Rays and Numbfishes	Undifferentiated	14
Myliobatiformes	Myliobatidae, Aetobatidae	Eagle Rays	Undifferentiated	12
Squatiniformes	Squatinidae	Angelsharks*	Undifferentiated	12
Myliobatiformes	Dasyatidae	Brown Stingray	<i>Bathytoshia lata</i>	11
Myliobatiformes	Myliobatidae	Southern Eagle Ray	<i>Myliobatis tenuicaudatus</i>	7
Carcharhiniformes	Scyliorhinidae	Grey Spotted Catshark (Australian)* ^{NSW(mainly)}	<i>Asymbolus analis</i>	6
Pristiophoriformes	Pristiophoridae	Sawshark*	Undifferentiated	6
Myliobatiformes	Dasyatidae	Stingrays	Undifferentiated	5
Myliobatiformes	Dasyatidae	Smooth Stingray	<i>Bathytoshia brevicaudata</i>	5
Myliobatiformes	Dasyatidae	Bluespotted Maskray	<i>Neotrygon australiae</i>	5
Orectolobiformes	Parascylliidae	Collar Carpetshark* ^{NSW(mainly)}	<i>Parascyllium collare</i>	5
Carcharhiniformes	Scyliorhinidae	Banded Catshark* ^{Unlikely}	<i>Atelomycterus fasciatus</i>	5
Squaliformes	Squalidae	Dogfish	Undifferentiated	5

Carcharhiniformes	Scyliorhinidae	Blackspotted Catshark ^{Unlikely}	<i>Aulohalaelurus labiosus</i>	3
Squaliformes	Centrophoridae, Dalatiidae, Squalidae, Somniosidae & Etmopteridae -	Gulper Sharks, Sleeper Sharks & Dogfishes, Lantern Sharks	Undifferentiated	3
Rhinopristiformes	Rhinidae	Whitespotted Guitarfish ^{NT LB}	<i>Rhynchobatus australiae</i>	3
Rhinopristiformes	Trygonorrhinidae	Southern Fiddler Ray*	<i>Trygonorrhina dumerilii</i>	2
Torpediniformes	Torpedinidae	Short-tail Torpedo Ray	<i>Tetronarce nobiliana</i>	2
Carcharhiniformes	Carcharhinidae	Tiger Shark ^{COS NT}	<i>Galeocerdo cuvier</i>	2
Carcharhiniformes	Carcharhinidae, Hemigaleidae	Whaler & Weasel Sharks	Undifferentiated	2
Carcharhiniformes	Carcharhinidae	Dusky Whaler ^{COS NT LB}	<i>Carcharhinus obscurus</i>	2
Myliobatiformes	Urolophidae	Coastal Stingaree ^{Unlikely}	<i>Urolophus orarius</i>	1
Myliobatiformes	Urolophidae	Kapala Stingaree ^{*NSW(Mainly) NT}	<i>Urolophus kapalensis</i>	1
Chimaeriformes	Chimaeridae	Shortnose Chimaeras	Undifferentiated	1
Heterodontiformes	Heterodontidae	Horn Sharks	Undifferentiated	1
Heterodontiformes	Heterodontidae	Crested Hornshark*	<i>Heterodontus galeatus</i>	1
Lamniformes	Odontaspidae	Grey Nurse Shark ^{COS} FMA-CR EPBC VU Eastern stock	<i>Carcharias taurus</i>	1
Lamniformes	Alopiidae	Thresher Sharks (Pelagic, Common, Bigeye) ^{COS N/VU/NT} LB(Common)	Undifferentiated	1
Lamniformes	Odontaspidae	Sandtiger Shark ^{FMA-CR} NT LB	<i>Odontaspis ferox</i>	1
Orectolobiformes	Stegostomatidae	Zebra Shark ^{LB}	<i>Stegostoma tigrinum</i>	1
Orectolobiformes	Brachaeluridae	Blind Shark ^{*NSW(Mainly)}	<i>Brachaelurus waddi</i>	1
Carcharhiniformes	Carcharhinidae	Bignose Shark ^{COS}	<i>Carcharhinus altimus</i>	1
Pristiophoriformes	Pristiophoridae	Common Sawshark*	<i>Pristiophorus cirratus</i>	1
Elasmobranchii or Holocephali (Chondrichthyes)		Sharks (other)	Sharks – other undifferentiated	1
Orectolobiformes	Orectolobidae	Carpet Sharks	Undifferentiated	1
Chimaeriformes	Callorhynchidae, Chimaeridae, Rhinochimaeridae	Chimaeras and Spookfish	Undifferentiated	1
Orectolobiformes	Orectolobidae	Spotted Wobbegong*	<i>Orectolobus maculatus</i>	1
Carcharhiniformes	Triakidae	School Shark ^{EN CD-EPBC}	<i>Galeorhinus galeus</i>	1
Carcharhiniformes	Carcharhinidae	Bronze Whaler ^{COS LB}	<i>Carcharhinus brachyurus</i>	1

Carcharhiniformes	Carcharhinidae	Sandbar Shark ^{COS NT LB}	<i>Carcharhinus plumbeus</i>	1
Carcharhiniformes	Carcharhinidae	Australian Blacktip Shark ^{Unlikely LB}	<i>Carcharhinus tilstoni</i>	1
Rhinopristiformes	Rhinidae	Shark Ray ^{NT LB}	<i>Rhina ancylostoma</i>	1

Listing is done by Kyne et al 2021 unless indicated EPBC (Australian Commonwealth Government) of FMA (NSW Government). * - Australian endemic possibly with, NSW - endemic to the state of NSW, or NSW(mainly) - NSW endemic but including either adjacent state (Queensland or Victoria); CR - critically endangered; EN – endangered; NT - near threatened; VU – vulnerable; CD = conservation dependent; COS = cosmopolitan; LB - lifeboat; Unlikely - possible misidentification as out of range; Eastern stock – eastern Australian genetic stock.

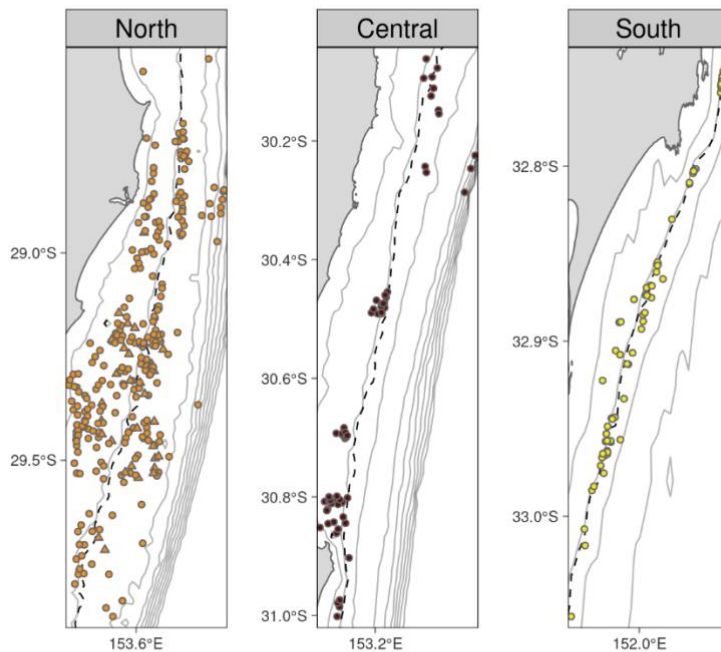


Fig. S1. Zoomed map showing the 435 observed New South Wales ocean prawn trawl trips depicted by circles as trips recording elasmobranchs and triangles no records with the north in orange, central dark brown, and south yellow. Trips were observed over all four austral seasons from 2017 to 2019. Contours indicate bathymetry at 30m increments with a range of 0 to 300m. The dashed contour is the 64m depth separating the two depth classes in the analysis

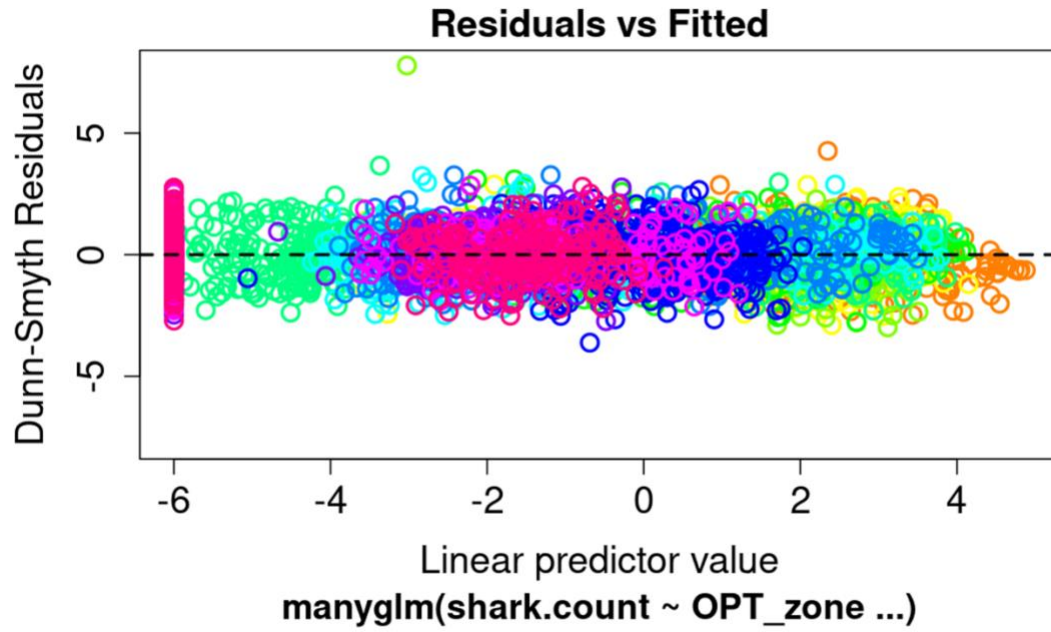


Fig S2. MVGLMM predicted and Dunn-Smyth residuals for model diagnostics.

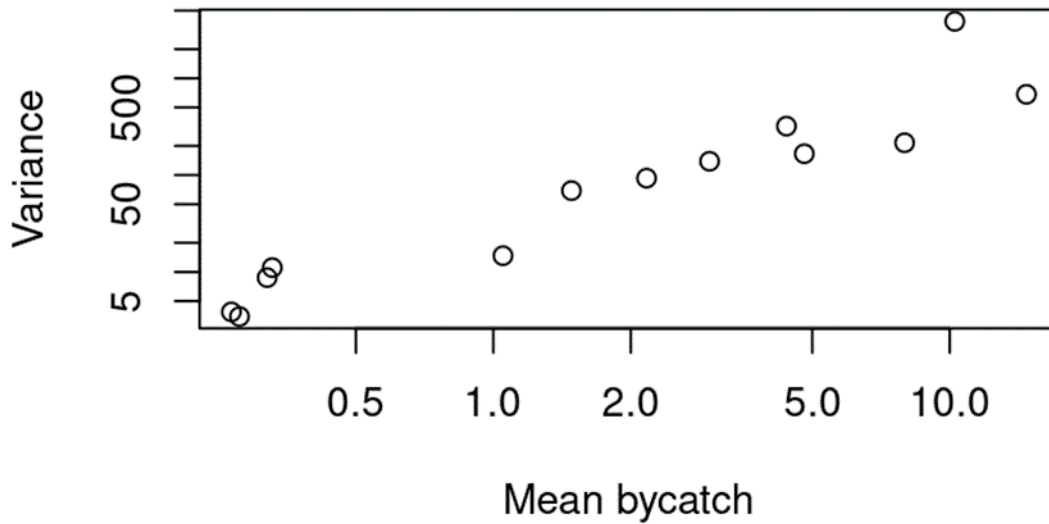


Fig S3. Relationship of mean and variance for each common elasmobranch species from the 360 observed New South Wales, ocean prawn trawl trips observed (2017 to 2019).