

= Sparsely @-@ spotted stingaree =

The sparsely @-@ spotted stingaree , white @-@ spotted stingaree , or Dixon 's stingaree (*Urolophus paucimaculatus*) is a species of stingray in the family Urolophidae , common off the southern Australian coast . Preferring sandy flats and seagrass beds , this benthic ray can be found from close to shore to a depth of at least 150 m (490 ft) , and tends to occur deeper in the northern portion of its range . Reaching a length of 57 cm (22 in) , this species has a broad , diamond @-@ shaped pectoral fin disc that is typically plain gray in color above with a V @-@ shaped marking between the eyes . Individuals from southerly waters also generally exhibit a smattering of small , dark @-@ edged white spots . This ray is further characterized by a distinctively bell @-@ shaped curtain of skin between the nostrils . Its tail has a skin fold running along either side and a leaf @-@ shaped caudal fin , but no dorsal fin .

Relatively inactive during daytime , the sparsely @-@ spotted stingaree preys mainly on crustaceans , and to a much lesser extent on polychaete worms and other small benthic organisms . It is aplacental viviparous , with the mother provisioning her young with histotroph (" uterine milk ") . Life history differs between the eastern and western subpopulations : eastern females bear litters of up to six pups with a twelve @-@ month gestation period , while western females bear litters of only one or two pups with a ten @-@ month gestation period . Also , western rays mature later and live longer than eastern rays . The venomous sting of the sparsely @-@ spotted stingaree is potentially injurious to humans , and it has been reported to react aggressively if disturbed . The International Union for Conservation of Nature (IUCN) has listed it under Least Concern , as there is little fishing activity over the majority of its range .

= = Taxonomy = =

The sparsely @-@ spotted stingaree was described in a 1969 issue of *The Victorian Naturalist* by Joan Dixon of the Museum Victoria . The specific epithet *paucimaculatus* is derived from the Latin *paucus* , meaning " few " , and *maculatus* , meaning " spotted " . The type specimen was collected from the Bass Strait , near Cape Patton in Victoria . Subpopulations from the eastern and western portions of its range differ in aspects of life history and merit further taxonomic investigation , according to the International Union for Conservation of Nature (IUCN) .

= = Distribution and habitat = =

One of the most abundant cartilaginous fishes off southern Australia , the sparsely @-@ spotted stingaree has a relatively wide distribution extending from Crowdy Head in New South Wales to Lancelin in Western Australia , including the entirety of Tasmania . Its range has expanded southward in the past few decades , apparently due to climate change . In Port Phillip , its numbers increased from 1970 to 1991 , likely as a result of fisheries depleting its ecological competitors .

Bottom @-@ dwelling in nature , the sparsely @-@ spotted stingaree inhabits a variety of sandy or seagrass @-@ bottomed habitats , ranging from very shallow , sheltered bays and inlets to the open continental shelf , 150 m (490 ft) deep or more . Rays found further north , such as in the Great Australian Bight , tend to be found at depths greater than 80 ? 100 m (260 ? 330 ft) . By contrast , rays found further south , off Victoria and Tasmania , are most common in less than 30 m (100 ft) of water . There is no evidence for segregation by age or sex , though there may be an offshore migration during winter .

= = Description = =

The sparsely @-@ spotted stingray has a more or less diamond @-@ shaped pectoral fin disc wider than long , with rounded outer corners . The anterior margins of the disc are nearly straight and converge at an obtuse angle on the fleshy snout , the tip of which barely protrudes from the disc . The small eyes are immediately followed by comma @-@ shaped spiracles with angular or

rounded posterior rims . The outer rim of each nostril is enlarged into a knob towards the back . Between the nostrils is a bell @-@ shaped curtain of skin with a finely fringed trailing margin ; only the Kapala stingaree (*U. kapalensis*) has a similarly shaped nasal curtain . The small mouth contains five or six papillae (nipple @-@ like structures) on the floor , most of which have forked tips . Additional small papillae are present on the outside of the lower jaw . The teeth in both jaws are small with roughly oval bases , and are arranged in a quincunx pattern . The five pairs of gill slits are short . The pelvic fins are small and rounded .

The tail measures 77 ? 98 % as long as the disc ; it is very flattened at the base and slender towards the tip , which bears a deep , leaf @-@ shaped caudal fin . There is a prominent fold of skin running along either side of the tail , and a serrated stinging spine placed on the upper surface about halfway along its length . There is no dorsal fin . The skin is completely devoid of dermal denticles . This species is uniformly light gray above with a darker V @-@ shaped marking between the eyes , and white below with slightly darker lateral disc margins . Most rays from the southern portion of its range also have a handful of small , regularly arranged spots atop the disc , each white with a dark border . Juveniles have a black caudal fin , which lightens with age (except sometimes for the margin) . The largest individual on record was 57 cm (22 in) long .

= = Biology and ecology = =

During the day , the sparsely @-@ spotted stingaree spends much time resting motionless on the bottom , often buried in sand . Crustaceans form the main component of its diet , accounting for over 80 % of food intake by volume with amphipods , mysids , and shrimps being most important . Polychaete worms , mostly of the relatively mobile , shallowly buried " errant " type , are a major secondary food source . On rare occasions , molluscs , echinoderms , and small bony fishes are also eaten . This species incorporates a progressively greater diversity of prey into its diet as it grows older ; specifically , mysids , isopods , and amphipods decline in importance , while shrimps , polychaete worms , penaeid prawns , and crabs are consumed in greater proportions . The sparsely @-@ spotted stingaree is preyed upon by the broadnose sevengill shark (*Notorynchus cepedianus*) . It is known to be parasitized by a tapeworm in the genus *Acanthobothrium* , and the monogeneans *Calicotyle urolophi* and *Merizocotyle urolophi* .

Like other stingrays , the sparsely @-@ spotted stingaree is aplacental viviparous : once the developing embryos exhaust their supply of yolk , the mother supplies them with nutrient @-@ rich histotroph (" uterine milk ") via specialized extensions of the uterine epithelium called " trophonemata " . Females have a single functional ovary and uterus , on the right side , and an annual reproductive cycle . In the eastern subpopulation , ovulation occurs in spring or early summer and the litter size ranges from one to six , increasing with female size . The gestation period lasts approximately one year , and the newborns measure about 15 ? 16 cm (5 @.@ 9 ? 6 @.@ 3 in) long . Males reach sexual maturity at around 28 cm (11 in) long and two and a half years of age , and females at around 27 cm (11 in) long and three years of age . The maximum lifespan is at least 8 years for males and 9 years for females . In the western subpopulation , mating occurs in early or mid @-@ summer and females only bear litters of one or two pups . The gestation period lasts ten months , with birthing taking place in late spring or early summer . The newborns measure 13 cm (5 @.@ 1 in) across . Males mature sexually at around 21 cm (8 @.@ 3 in) across and three years of age , and females at around 22 cm (8 @.@ 7 in) across and five years of age . The maximum lifespan is 14 years . In both subpopulations , females grow more slowly and to a larger ultimate size than males .

= = Human interactions = =

Reported to be more aggressive than other stingarees , the sparsely @-@ spotted stingaree readily employs its venomous sting if disturbed and can inflict a painful injury on a human . It is edible , but seldom brought to market . Fishing pressure is insignificant across large portions of this ray 's range , including in the Great Australian Bight , though substantial numbers are caught incidentally by

commercial fisheries off southeastern and southwestern Australia in beach seines and bottom trawls . The sparsely @-@ spotted stingaree generally survives being captured , sorted , and discarded , though the process often causes it to abort any unborn young . Nevertheless , losses to fisheries appear to be sustainable at present , and thus the IUCN has listed this species under Least Concern . There are a number of small Marine Protected Areas (MPAs) within its range , and it would potentially benefit from the implementation of the 2004 Australian National Plan of Action for the Conservation and Management of Sharks .