

Panulirus polyphagus
Mud Spiny Lobster



Scientific classification

Kingdom:	Animalia
Phylum:	Arthropoda
Subphylum:	Crustacea
Class:	Malacostraca
Order:	Decapoda
Family:	Palinuridae
Genus:	Panulirus
Species:	<i>P. polyphagus</i>

Binomial name

Panulirus polyphagus
 ([Herbst](#), 1793)

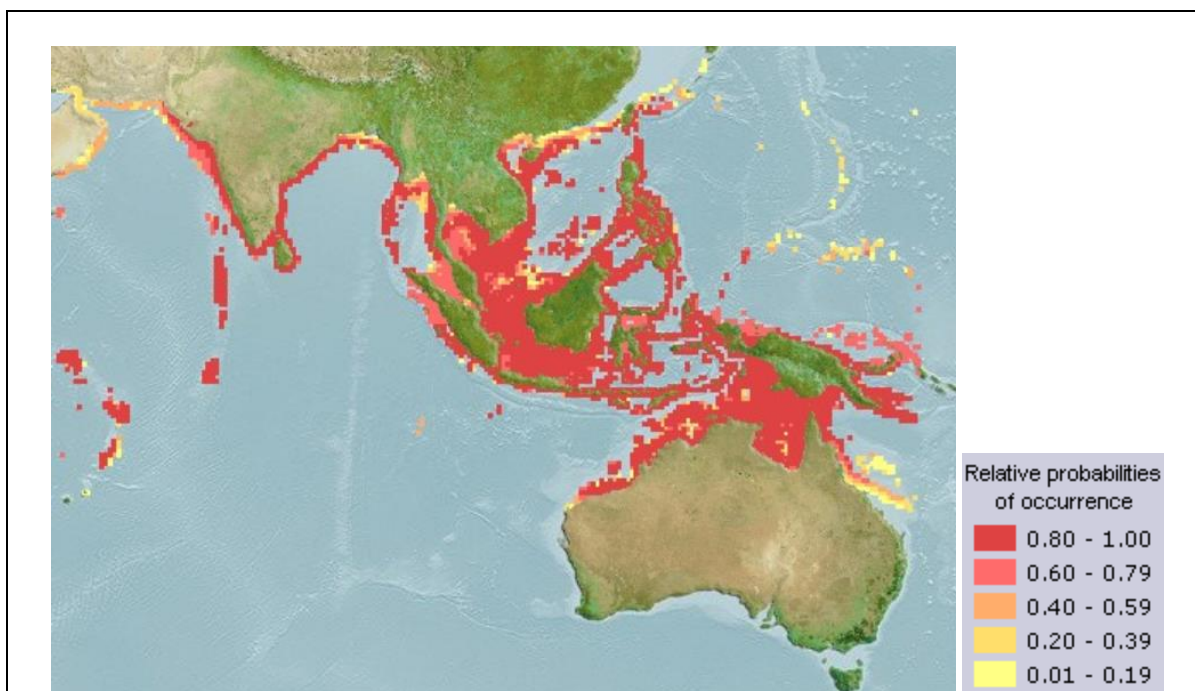
Synonyms

- *Cancer (Astacus) polyphagus* Herbst, 1793
- *Palinurus fasciatus* Fabricius, 1798
- *Panulirus fasciatus* (Fabricius, 1798)
- *Panulirus orientalis* Doflein, 1900

A. Environment/Ecology:

Benthic; brackish; depth range 3 - 90 m (Ref. [4](#)). Tropical; 26°N - 14°S, 64°E - 145°E (Ref. [107402](#))

B. Distribution:



Indo-West Pacific: from the coasts of Pakistan and India to Vietnam, the Philippines, Indonesia, Northwest Australia and the Gulf of Papua.

C. Length at first maturity / Size / Weight / Age:

Maturity: L_m [10.5](#) range ? - ? cm **Max length** : 40.0 cm TL male/unsexed; (Ref. [4](#)); common length : 25.0 cm TL male/unsexed; (Ref. [4](#)) **Maximum total body length** About 40 cm, common from 20 to 25 cm. **Size at first maturity (male 51-55 mm CL; female 51-60 mm)** (Kizhakudan & Patel, 2010), **80 mm CL** (Alias et al. 2000)

D. Short description

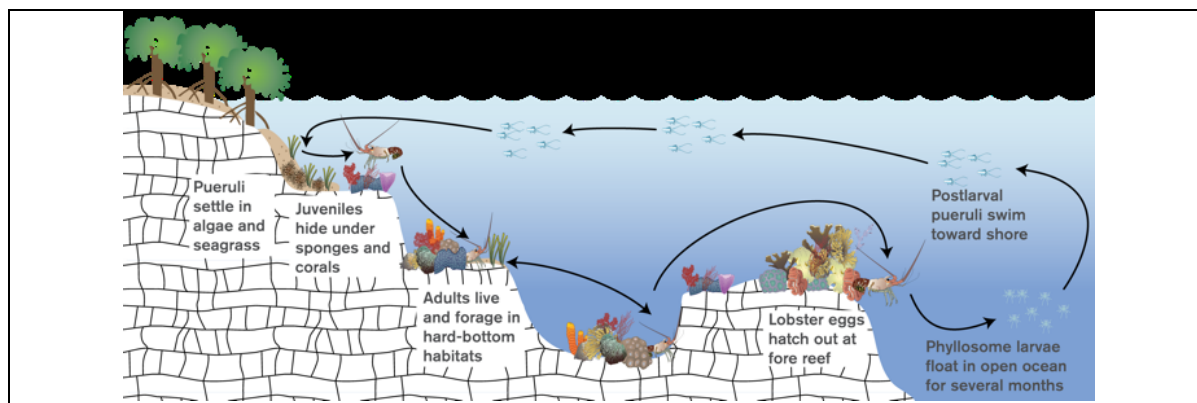
Panulirus polyphagus grows to a length of about 40 cm (16 in). The antennal plate bears two large spines and there are no transverse grooves on the abdominal segments. Distinctive colour features by which this species can be distinguished from other spiny lobsters include a greenish-grey background colour and a thin white band near the hind edge of each segment. In Europe, the otherwise similar native species, the north eastern [Atlantic spiny crawfish](#) (*Panulirus regius*), has four large spines on the antennal plate, and smooth grooves on the abdominal segments.

E. Biology

It has lengths of 40 cm, maximum total body length; 20 to 25 cm, common length. Occurs at a depth range from 3 to 90 m, but usually less than 40 m (Ref. [4](#)). It is found on muddy substrates and sometimes on rocky bottoms near river mouths in turbid water (Ref. [4](#)). Lives mainly at river-influenced shelf in shallow, turbid water with moderate run-off (Ref. [105109](#)). In general, palinurids are mainly considered carnivores, usually feeding upon sluggish, easily captured animals where most material is eaten alive or freshly killed (Ref. [105260](#)). Individuals reared in captivity fed on a

natural diet of gastropods, clams, crabs, squids and fish (Ref. [105110](#)). Mating behavior: Precopulatory courtship ritual is common (through olfactory and tactile cues); usually indirect sperm transfer (Ref. [833](#)). Major spawning occurs in January and September, minor peaks were observed in March and June, occasional spawning were observed in April, May, August and October to December, least spawning occurs in February and July (Ref. [106340](#)).

F. Life cycle and mating behavior



- **Gonadosomatic index and size frequency**
 - Egg-bearing lobsters are usually found during the months of July – September.
 - This coincide with a previous study by Alias Man (2000). Which state that the peak breeding seasons is in August.
- **Area of habitat in each stage/migration pattern**
 - Juvenile stage : rocky shore area.
 - Spawning adult : coral reef slooping to deeper water.
 - Larvae : open sea

G. Fisheries

In the Bay of Bengal and the Gulf of Thailand, the species is quite important commercially. In India, the main fishing season extends from November to March. The animals are caught by trawling, but also with set nets, seines, etc.; they rarely enter traps. Sold fresh and frozen in local markets and also transported to the larger towns. Served regularly in restaurants in Thailand, and else-where. In Thailand, mounted dry specimens, usually in fancy glass cases, are sold as curios to tourists.

H. IUCN Red List Status

GEOGRAPHIC RANGE

- **Taxonomy**

Kingdom: [Animalia](#)

Phylum: [Arthropoda](#)

Class: [Malacostraca](#)

Order: [Decapoda](#)

Family: [Palinuridae](#)

Genus: [Panulirus](#)

- **Geographic Range**

NUMBER OF LOCATIONS

UPPER DEPTH LIMIT : 3 metres

LOWER DEPTH LIMIT : 90 metres

RANGE DESCRIPTION

This species has a broad geographic range from Pakistan and India to Viet Nam, the Philippines, Indonesia, northwest Australia, and the Gulf of Papua (Holthuis 1991).

- **Population**

CURRENT POPULATION TREND : *Unknow*

POPULATION SEVERELY FRAGMENTED : **No**

- **Habitat and Ecology**

System : Marine

Habitat type : Marine Neritic

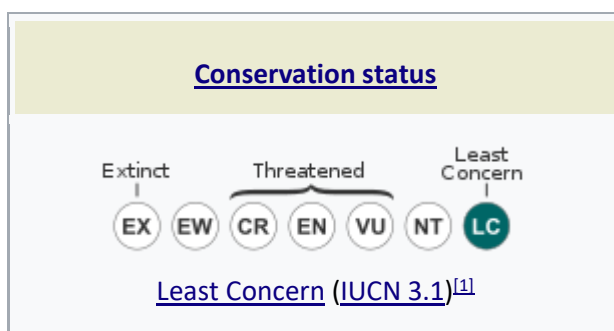
- **Biological resource use :**

Fishing & harvesting aquatic resource

Logging & wood harvesting

- **Threats**

This species is subject to localised over-exploitation by fisheries in India. It is also threatened by incidental catch in parts of its range where it is found on muddy substrates.



- **Use and Trade**

This species is harvested in India for food, particularly in the northwest and in Mumbai, where significant declines in landings have been recorded (Radhakrishnan *et al.* 2005). The fishing season extends from November to March (Holthuis 1991). Additionally a commercial fishery for this species is operating in Thailand selling caught lobsters in local markets and larger towns (Holthuis 1991).

- **Conservation Action**

Management strategies for this species need to be developed and enforced to maintain the population at a sustainable level in regions where it is over-exploited. It is recommended that accurate fisheries data be collected and that there is regular monitoring of Catch Per Unit Effort (CPUE) data to create a baseline to measure trends into the future.

I. More Information:

1) Stocks

(NA)

2) Ecology

Ecology of *Panulirus Polyphagus*

Main Ref.	Holthuis, L.B., 1991
distribution	Brackishwater <ul style="list-style-type: none"> • estuaries/lagoons/brackish seas <p>Highlighted items on the list are where <i>Panulirus polyphagus</i> may be found.</p>
Remarks	It is found on muddy substrates and sometimes on rocky bottoms near river mouths in turbid water (Ref. 4). Lives mainly at river-influenced shelf in shallow, turbid water with moderate run-off (Ref. 105109). In general, palinurids are mainly considered carnivores, usually feeding upon sluggish, easily captured animals where most material is eaten alive or freshly killed (Ref. 105260). Individuals reared in captivity fed on a natural diet of gastropods, clams, crabs, squids and fish (Ref. 105110).

3) Diet

(NA)

4) Reproduction

Reproduction of *Panulirus Polyphagus*

Main Ref.	Kagwade, P.V., 1988
Mode	dioecism
Fertilization	
Spawning Frequency	throughout the year, but peaking once
Batch Spawner	No

Reproductive Guild	bearers External brooders
Description of life cycle and mating behavior	Mating behavior: Precopulatory courtship ritual is common (through olfactory and tactile cues); usually indirect sperm transfer (Ref. 833).
Search for more references on reproduction	Scirus

5) Maturity

Maturity studies for <i>Panulirus Polyphagus</i>							
n = 3							
Lm (cm)	Length (cm)	Age range (y)	tm (y)	Sex of fish	Country	Locality	
0.5 CL	-	-	2.20	female	India	Kovalam/ 1977-1978	
20.5 TL	-	-		female	India	Sassoon Dock and Kasara Bunder/ 1976-1985	
26.5 TL	-	-		male	India	Sassoon Dock and Kasara Bunder/ 1976-1985	

6) Spawning

Spawning for <i>Panulirus Polyphagus</i>													
n = 1													
J	F	M	A	M	J	J	A	S	O	N	D	Country	Locality
111	111	111	111	111	111	111	111	111	111	111	111	India	Sassoon Dock and Kasara Bunder

7) Spawning aggregation

(NA)

8) Fecundity

Fecundity 72 000 – 945 000 (depending on size). (Kagwade, 1988)

9) Eggs

(NA)

10) Egg development

(NA)

11) Age/Size

Size at first maturity (male 51-55 mm CL; female 51-60 mm) (Kizhakudan & Patel, 2010), 80 mm CL (Alias et al. 2000)

12) Growth

Growth parameters for *Panulirus Polyphagus*

Maximum Length 40cm TL n = 6

Note that studies where Loo is very different (+/- 1/3) from Lmax are doubtful.

Auximetric graph [n = 6]

M vs K graph [n = 4]

M vs Linf graph [n = 4]

$\phi = 3.56$ $L_{inf} = 43.8$ cm CW $K = 1.9$ Median record no. 4 Ref. 116140

Loo (cm)	Length Type	K (1/y)	to	Sex	M (1/y)	Temp° C	Lm	Ø'	Country	Locality	Questionable	Captive
36.10	TL	1.580		F	2.29			3.31	India	Maharashtra	No	No
36.50	TL	1.830		M	2.51			3.39	India	Maharashtra	No	No
37.50	CW	1.600		F	2.20			3.35	India	Maharashtra	No	Yes
43.80	CW	1.900		M	2.40			3.56	India	Maharashtra	No	Yes
44.30	TL	0.223	0.20	F				2.64	India	Bombay	No	Yes
53.70	TL	0.200	0.60	M				2.76	India	Bombay	No	Yes

13) Length-weight

Length-Weight Parameters for *Panulirus Polyphagus*

Length-weight (a vs b) graph

[n=4]

Median Record No. 3

$a = 0.4897$ cm CL

$b = 3.1400$ Ref. 106343

a	b	Doubtful?	Sex	Length (cm)	Length type	No.	Country	Locality
0.0806	2.616	No	female		TL		India	Unspecified
0.0472	2.802	No	male		TL		India	Unspecified

0.4897	3.140	No	male	CL	India	off Kovalam, Mangalore / 1977-1978
0.2570	3.710	No	female	CL	India	off Kovalam, Mangalore / 1977-1978

14) Length-length

Length-length Parameters for *Panulirus Polyphagus*

n=2

Unknown length	a	b	Known length	r	Length range (cm)	Sex of fish
CL	0.579	0.395	TL		-	female
CL	0.646	0.407	TL		-	male

15) Length-frequencies

(NA)

16) Morphometrics

(NA)

17) Morphology

(NA)

18) Larvae

(NA)

19) Recruitment

(NA)

20) Abundance

(NA)

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