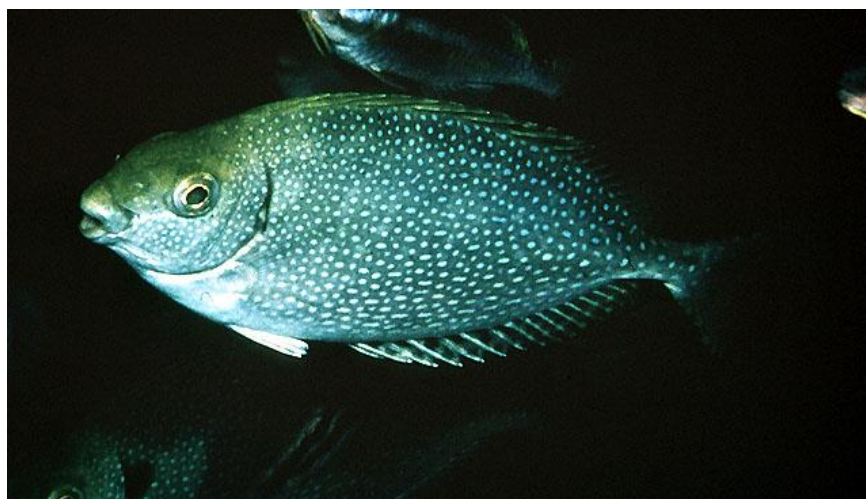


*Siganus fuscescens***Rabbit fish, Mottled spinefoot****Taxonomy**

|                     |                                     |
|---------------------|-------------------------------------|
| <b>Kingdom</b>      | <a href="#">Animalia</a>            |
| <b>Subkingdom</b>   | <a href="#">Bilateria</a>           |
| <b>Infrakingdom</b> | <a href="#">Deuterostomia</a>       |
| <b>Phylum</b>       | <a href="#">Chordata</a>            |
| <b>Subphylum</b>    | <a href="#">Vertebrata</a>          |
| <b>Infraphylum</b>  | <a href="#">Gnathostomata</a>       |
| <b>Megaclass</b>    | <a href="#">Osteichthyes</a>        |
| <b>Superclass</b>   | <a href="#">Actinopterygii</a>      |
| <b>Class</b>        | <a href="#">Actinopteri</a>         |
| <b>Subclass</b>     | <a href="#">Neopterygii</a>         |
| <b>Infraclass</b>   | <a href="#">Teleostei</a>           |
| <b>Megacohort</b>   | <a href="#">Osteoglossocephalai</a> |
| <b>Supercohort</b>  | <a href="#">Clupeocephala</a>       |
| <b>Cohort</b>       | <a href="#">Euteleosteomorpha</a>   |
| <b>Subcohort</b>    | <a href="#">Neoteleostei</a>        |
| <b>Infracohort</b>  | <a href="#">Eurypterygia</a>        |
| <b>Section</b>      | <a href="#">Ctenosquamata</a>       |
| <b>Subsection</b>   | <a href="#">Acanthomorpha</a>       |
| <b>Division</b>     | <a href="#">Acanthopterygii</a>     |
| <b>Subdivision</b>  | <a href="#">Percomorphaceae</a>     |
| <b>Series</b>       | <a href="#">Eupercaria</a>          |
| <b>Order</b>        | <a href="#">Perciformes</a>         |
| <b>Suborder</b>     | <a href="#">Acanthuroidei</a>       |
| <b>Family</b>       | <a href="#">Siganidae</a>           |
| <b>Genus</b>        | <a href="#">Siganus</a>             |
| <b>Species</b>      | <i>Siganus fuscescens</i>           |

## A. Environment/Ecology:

Marine; brackish; reef-associated; oceanodromous (Ref. [51243](#)); depth range 1 - 50 m (Ref. [9813](#)). Tropical; 42°N - 37°S, 90°E - 171°E

## B. Distribution:



Western Pacific: southern Korea, southern Japan, Ogasawara Islands, Taiwan, southern China, Malaysia, Singapore, Thailand, Andaman Islands, Indonesia, Philippines, Yap, Palau, Pohnpei (Caroline Islands), Solomon Islands, Papua New Guinea, Vanuatu, New Caledonia, and Australia. Often misidentified as *Siganus canaliculatus* (Ref. [2334](#)).

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

Maturity:  $L_m$  [5.6](#) range ? - ? cm Max length : 40.0 cm TL male/unsexed; (Ref. [9813](#)); common length : 25.0 cm TL male/unsexed; (Ref. [9813](#))

## D. Short description

**Dorsal spines** (total): 13; **Dorsal soft rays** (total): 10; **Anal spines**: 7; **Anal soft rays**: 9; **Vertebrae**: 13. Body olive green or brown above, silvery below; fish frequently with a dark patch below origin of lateral line. Adults become mottled when frightened. Slender, pungent, venomous spines. Preopercular angle 89°-95°. Lower half to 2/3 of cheeks commonly covered with weak, scattered scales. Midline of thorax between pelvic ridges. Differs from *S. argenteus* in details of coloration and less deeply forked tail (Ref. [37816](#)).

## E. Biology

Inhabits algal and seagrass flats and shallow lagoon and coastal reefs (Ref. [9710](#), [11230](#)). Forms schools. Mainly diurnal. Juveniles feed on filamentous algae, adults feed on leafy algae and

seagrasses (Ref. 9710). Commercially cultured in Japan. Commonly found in large estuaries (Ref. 9002). Anterolateral glandular groove with venom gland (Ref. 57406).

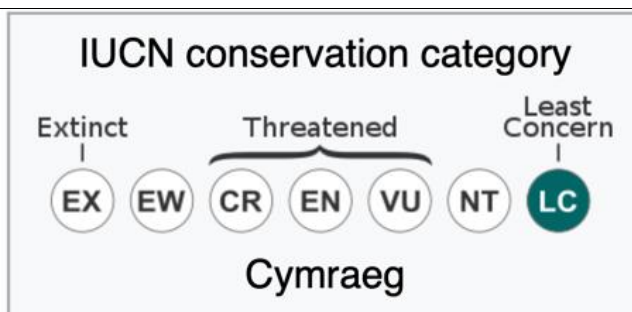
#### F. Life cycle and mating behavior

In Belau, ripe individuals form pre-spawning congregations of 30-60 individuals in shoal areas of inner reef flats; spawning occurs on the 4th or 5th day of the new moon; spawning sites are near reef edge. About 300,000 eggs/female at a single spawning. Individuals that spawn in consecutive yrs. & that 2+ yr. class fish could spawn more than once in a single season. Aug (Ref 1754) in Belau.

#### G. Fisheries

??? In Bolinao, Philippines

#### H. IUCN Red List Status



- **Geographic Range**

**NUMBER OF LOCATIONS**

UPPER DEPTH LIMIT : 1 metres

LOWER DEPTH LIMIT : 50 metres

- **Population**

**DESCRIPTION**

Genetic structuring of populations was detected in the Philippines based on mitochondrial DNA (Magsino and Meñez 2008), suggesting that populations may need to be managed as separate stocks. In the Philippines, this species is very heavily exploited but still one of the most common and abundant siganids in markets (K. Carpenter pers. comm. 2015).

Densities of this species is low to moderate in Raja Ampat and Solomon Islands based on underwater visual surveys (A. Green unpublished data). Surveys around the remote islands of the Solomons showed a mean density of 1.2/ha and data from Raja Ampat showed a mean density of 2.1/ha (A. Green, unpublished data).

- **Habitat and Ecology**

This species is typically found in shallow coastal waters in algal, seagrass and reef habitats to depths of 50 m and appears to prefer clear water (Lieske and Myers 1994, Yamada et al. 1995). As juveniles, this species is locally very abundant, forming schools averaging 200 individuals, but up to 5,000. Adults feed on brown and green algae, while juveniles prefer filamentous algae and seagrasses (Woodland 2001). The maximum recorded length for this species is 40 cm TL (Woodland 1997).

- **THREATS**  
This species is heavily exploited in parts of its range but this does not currently appear to be a major threat.
- **Use and Trade**  
This species is caught with small seine nets, set nets, traps, and by spearing. Adults are marketed fresh, but juveniles are often dried and sold in very large numbers (Woodland 2001).
- **Conservation Actions**  
There are no known species-specific conservation measures in place; however, it may occur in marine protected areas throughout its range..

I. More Information:

1) Stocks

??

2) Ecology

| Ecology of <i>Siganus fuscescens</i> |  |                        |                            |
|--------------------------------------|--|------------------------|----------------------------|
| <b>Main Ref.</b>                     | Woodland, D.J., 1990   |                        |                            |
| <b>Distribution</b>                  | Brackishwater <ul style="list-style-type: none"> <li>• <b>estuaries/lagoons/brackish seas</b></li> </ul> Highlighted items on the list are where <i>Siganus fuscescens</i> may be found.   |                        |                            |
| <b>Remarks</b>                       | Feeds almost continually during daylight and settles at night to sleep. At Heron Is., the young adults at the water's edge under the lip of the beachrock pavement; older adults against the bases of coral clumps on outer reef flat. A sleeping fish adopt a camouflage pattern (Ref. 1419). Aggregates in March, April and May to spawn (Ref. 1363). Also Ref. 58534. |                        |                            |
| <b>Substrate</b>                     |  |                        |                            |
| <b>Special habitats</b>              | Beds: sea grass; Coral Reefs;  |                        |                            |
| <b>Special habitats Ref.</b>         | Broad, G., 2003  |                        |                            |
| <b>Feeding</b>                       |  |                        |                            |
| <b>Feeding type</b>                  | mainly plants/detritus (troph. 2-2.19)   |                        |                            |
| <b>Feeding type ref</b>              | Woodland, D.J., 1990   |                        |                            |
| <b>Feeding habit</b>                 | grazing on aquatic plants  |                        |                            |
| <b>Trophic level(s)</b>              |  | <b>Original sample</b> | <b>Unfished population</b> |
|                                      |  |                        | <b>Remark</b>              |

|  |                                   |       |      |       |      |  |
|--|-----------------------------------|-------|------|-------|------|--|
|  | <b>Estimation method</b>          | Troph | s.e. | Troph | s.e. |  |
|  | <b>From diet composition</b>      | 2.03  | 0.06 |       |      | Troph of adults and juv./adults from 1 study.  |
|  | <b>Ref.</b>                       |       |      |       |      |  |
|  | <b>From individual food items</b> | 2.28  | 0.13 |       |      | Trophic level estimated from a number of food items using a randomized resampling routine. |

## 3) Diet

| Food and Feeding Habits: Diet Composition <i>Siganus fuscescens</i> |         |                   |                     |         |          |                        |
|---|---------|-------------------|---------------------|---------|----------|------------------------|
| n = 1   |         |                   |                     |         |          |                        |
| Main Food   | Percent | Trophic Level (y) | Predator Life Stage | Country | Locality | Ref.                   |
| <a href="#">plants</a>  | 98      | 2.0               | juv./adults         | Kenya   | Gazi Bay | <a href="#">111352</a> |

## 4) Reproduction

| Reproduction of <i>Siganus fuscescens</i>     |   |
|---|---|
| Main Ref.                                     | <a href="#">Woodland, D.J., 1990</a>  |
| Mode  | dioecism  |
| Fertilization                                 | external  |
| Spawning aggregation                          | Yes. Ref. <a href="#">SCRFA, Science and Conservation of Fish Aggregations, 2018</a>  |
| Batch spawner                                 | Yes. Ref. <a href="#">Bryan, P.G., B.B. Madrisan and J.P. McVey, 1975</a>   |
| Reproductive guild                            | nonguarders<br>open water/substratum egg scatterers   |
| Parental Care                                 | none  |
| Description of life cycle and mating behavior | In Belau, ripe individuals form prespawning congregations of 30-60 individuals in shoal areas of inner reef flats; spawning occurs on the 4th or 5th day of the new moon; spawning sites are near reef edge. About 300,000 eggs/female at a single spawning. Individuals that spawn in consecutive yrs. & that 2+ |

|   |  |
|---|--|
|   | yr. class fish could spawn more than once in a single season. Aug (Ref 1754) in Belau. |
| <b>Search for more references on reproduction</b> | <a href="#">Scirus</a>   |

## 5) Maturity

| Maturity studies for <i>Siganus fuscescens</i>  |             |               |        |                        |             |                     |  |
|---|-------------|---------------|--------|------------------------|-------------|---------------------|--|
| n = 2   |             |               |        |                        |             |                     |  |
| Sort by <input checked="" type="radio"/> Lm <input type="radio"/> Country <input type="radio"/> Locality <input type="radio"/> tm |             |               |        |                        |             |                     |  |
| Lm (cm)   | Length (cm) | Age range (y) | tm (y) | Sex of fish            | Country     | Locality            |  |
| 5.0 TL  | -           | -             |        | <a href="#">male</a>   | Philippines | Bolinao, Pangasinan |  |
| 5.6 TL  | -           | -             |        | <a href="#">female</a> | Philippines | Bolinao, Pangasinan |  |

## 6) Spawning

| Spawning for <i>Siganus fuscescens</i> |     |     |     |     |   |   |   |     |     |     |     |             |   |
|--|-----|-----|-----|-----|---|---|---|-----|-----|-----|-----|-------------|---|
| n = 2                                  |     |     |     |     |   |   |   |     |     |     |     |             |   |
| J                                      | F   | M   | A   | M   | J | J | A | S   | O   | N   | D   | Country     | Locality  |
|  |     | 111 | 111 | 111 |   |   |   |     |     |     |     | Japan       | <a href="#">Japan</a>   |
| 111                                    | 111 | 111 |     |     |   |   |   | 111 | 111 | 111 | 111 | Philippines | <a href="#">Pujada Bay, southeastern Mindanao (Aug 2002 - Jul 2003)</a> |

## 7) Spawning aggregation

| Spawning Aggregations of <i>Siganus fuscescens</i> |               |                  |            |
|--|---------------|------------------|------------|
| Country  | Spawning type | Aggregation type | Status     |
| <a href="#">Palau</a>                              | Pair spawning | Transient        | Decreasing |

## 8) Fecundity

| Fecundity for <i>Siganus fuscescens</i>   |                       |                    |     |
|---|-----------------------|--------------------|-----|
| Sort by <input checked="" type="radio"/> Country <input type="radio"/> Locality |                       |                    |     |
| [ n = 2 ]   |                       |                    |     |
| Country   | Locality              | Absolute Fecundity |     |
|   |                       | min                | max |
| Micronesia  | <a href="#">Belau</a> | 300,000            | 0   |

|             |   |         |         |
|-------------|---|---------|---------|
| Philippines | <a href="#">Macambol, Pujada Bay, southeastern Mindanao (Aug 2002 - Jul 2003)</a> | 286,384 | 618,603 |
|-------------|---|---------|---------|

## 9) Eggs

| Egg Characteristics of <i>Siganus fuscescens</i> |  |
|--|--|
| Main Ref.  | <a href="#">Woodland, D.J., 1990</a>   |
| Place of Development                             | on the bottom (demersal)   |
| Attributes                                       | sticky   |
| Additional Characters                            | Under culture conditions, hatching occurs 24-26 hr after spawning at 29°-32°C, 31-34 ppt salinity. |
| Get Information on                               | <a href="#">Scirus</a>   |

## 10) Egg development

(NA)

## 11) Age/Size

| List of Population Characteristics records for <i>Siganus fuscescens</i> |      |           |          |             |                     |
|--|------|-----------|----------|-------------|---------------------|
| n = 2  |      |           |          |             |                     |
| Sex  | Wmax | Lmax (cm) | Tmax (y) | Country     | Locality            |
| <a href="#">unsexed</a>  |      | 22.5      |          | Philippines | Palawan / 1998-2004 |
| <a href="#">unsexed</a>  |      | 40        |          |             | not specified       |

## 12) Growth

| Growth parameters for <i>Siganus fuscescens</i>  |             |                       |         |         |             |                     |              |         |
|--|-------------|-----------------------|---------|---------|-------------|---------------------|--------------|---------|
| Maximum Length 40cm TL   |             |                       |         |         |             |                     |              |         |
| n = 1  |             |                       |         |         |             |                     |              |         |
| Note that studies where Loo is very different (+/- 1/3) from Lmax are doubtful.                  |             |                       |         |         |             |                     |              |         |
| $\phi = 2.73$ $L_{inf} = 25.0$ cm TL $K = 0.9$ Median record no. 1 1363Ref. <a href="#">1363</a> |             |                       |         |         |             |                     |              |         |
| Loo (cm)   | Length Type | K (1/y)               | Temp° C | $\phi'$ | Country     | Locality            | Questionable | Captive |
| 25.0   | TL          | <a href="#">0.850</a> | 28.0    | 2.73    | Philippines | Bolinao, Pangasinan | No           | No      |

## 13) Length-weight

| Length-Weight Parameters for <i>Siganus fuscescens</i> |
|--|
|--|

| <a href="#">Length-weight (log a vs b) graph</a> |                         | [n=4]                      |         |  |             |  |     |               |   |
|--|-------------------------|----------------------------|---------|--|-------------|--|-----|---------------|---|
|  |                         | <a href="#">Hide graph</a> |         |  |             |  |     |               |   |
|  |                         | Sort by                    |         | <input type="radio"/> a <input checked="" type="radio"/> b <input type="radio"/> |             | <input type="radio"/> Country <input type="radio"/> Locality |     |               |   |
| Score  | a                       | b                          | Sex     | Length (cm)  | Length type | r <sup>2</sup>   | n   | Country       | Locality  |
| 0.91   | <a href="#">0.03700</a> | 2.510                      | unsexed | 6.7 - 22.5   | TL          | 0.907  | 192 | Philippines   | Palawan / 1998-2004                                     |
| 0.97   | <a href="#">0.02660</a> | 3.009                      | mixed   |  | SL          | 0.973  |     | Philippines   | Pujada Bay, southeastern Mindanao (Aug 2002 - Jul 2003) |
| 0.98   | <a href="#">0.01620</a> | 3.010                      | unsexed | 3.0 - 29.5   | TL          | 0.980  | 468 | New Caledonia |   |
| 0.99   | <a href="#">0.01373</a> | 3.068                      | mixed   | 3.0 - 29.5   | FL          | 0.992  | 481 | New Caledonia |   |

## 14) Length-length

| Length-length Parameters for <i>Siganus fuscescens</i> |       |       |              |             |
|--|-------|-------|--------------|-------------|
| [n=3]  |       |       |              |             |
| Unknown length   | a     | b     | Known length | Sex of fish |
| <a href="#">FL</a>                                     | 0.000 | 0.940 | TL           | unsexed     |
| <a href="#">SL</a>                                     | 0.000 | 0.895 | FL           | unsexed     |
| 15) <a href="#">SL</a>                                 | 0.000 | 0.841 | TL           | unsexed     |

## 16) Length-frequencies

| List of frequency studies for <i>Siganus fuscescens</i> |                |               |          |                |
|---|----------------|---------------|----------|----------------|
| Locality  | Year from - to | Sex           | Gear     | Frequency type |
| <a href="#">Bolinao reef, Pangasinan, Philippines</a>   | 1987 - 1988    | unsexed/mixed | gillnets | % of sample    |

## 17) Morphometrics

| Morphometric Data for <i>Siganus fuscescens</i> |        |      |           |              |
|---|--------|------|-----------|--------------|
| n = 3   |        |      |           |              |
| Picture Name                                    | Length |      | Lifestage | Aspect ratio |
| <a href="#">Sifus_u0.gif</a>                    |        |      | unsexed   | 1.95         |
| <a href="#">Sifus_u2.jpg</a>                    | 20.8   | FL   | unsexed   | 2.65         |
| <a href="#">Sifus_u4.jpg</a>                    |        | none | unsexed   | 2.07         |



|                            |              |
|----------------------------|--------------|
| Picture Used               | Sifus_u0.gif |
| Sex                        | unsexed      |
| Total length (TL)          | 547 pixels   |
| Standard length            | 83.9 % TL    |
| Fork length                | 94.1 % TL    |
| Pre-anal length            | 40.4 % TL    |
| Pre-dorsal length          | 18.1 % TL    |
| Pre-pelvic length          | 22.5 % TL    |
| Pre-pectoral length        | 17.7 % TL    |
| Body depth                 | 32.4 % TL    |
| Head length (HL)           | 17.9 % TL    |
| Eye diameter               | 31.6 % HL    |
| Pre-orbital length         | 38.8 % HL    |
| Aspect ratio of caudal fin | 1.94772      |
| Picture Used               | Sifus_u2.jpg |
| Size (cm)                  | 20.8 FL      |
| Sex                        | unsexed      |
| Locality                   |              |
| Total length (TL)          | 565 pixels   |
| Standard length            | 84.1 % TL    |
| Fork length                | 94.0 % TL    |
| Pre-anal length            | 41.1 % TL    |
| Pre-dorsal length          | 18.8 % TL    |
| Pre-pelvic length          | 24.4 % TL    |
| Pre-pectoral length        | 16.3 % TL    |
| Body depth                 | 32.9 % TL    |
| Head length (HL)           | 17.7 % TL    |
| Eye diameter               | 33.0 % HL    |
| Pre-orbital length         | 33.0 % HL    |
| Aspect ratio of caudal fin | 2.65042      |

|                   |              |
|-------------------|--------------|
| Picture Used      | Sifus_u4.jpg |
| Sex               | unsexed      |
| Total length (TL) | 552 pixels   |

|                            |           |
|----------------------------|-----------|
| Standard length            | 83.0 % TL |
| Fork length                | 95.5 % TL |
| Pre-anal length            | 40.6 % TL |
| Pre-dorsal length          | 19.7 % TL |
| Pre-pelvic length          | 23.0 % TL |
| Pre-pectoral length        | 19.7 % TL |
| Body depth                 | 31.9 % TL |
| Head length (HL)           | 19.7 % TL |
| Eye diameter               | 42.2 % HL |
| Pre-orbital length         | 28.4 % HL |
| Aspect ratio of caudal fin | 2.07135   |
| Remarks                    | 1         |

## 18) Morphology

| <b>Morphology Data of <i>Siganus fuscescens</i></b>   |  |
|---|--|
| <a href="#">Identification keys</a>                   |  |
| <a href="#">Abnormalities</a>                         |  |
| Main Ref.   | <a href="#">Woodland, D.J., 1990</a>   |
| Appearance refers to                                  | Male; Female   |
| Descriptive characteristics of juvenile and adult     |  |
| Striking features                                     | none   |
| Body shape lateral                                    | fusiform / normal  |
| Cross section   | compressed   |
| Dorsal head profile                                   | more or less straight  |
| Type of eyes  | more or less normal  |
| Type of mouth/snout                                   | more or less normal  |
| Position of mouth                                     | terminal   |
| Type of scales  | cycloid scales   |
| Diagnosis   | Body olive green or brown above, silvery below; fish frequently with a dark patch below origin of lateral line. Adults become mottled when frightened. Slender, pungent, venomous spines. Preopercular angle 89°-95°. Lower half to 2/3 of cheeks commonly covered with weak, scattered scales. Midline of thorax between pelvic ridges. Differs from <i>S. argenteus</i> in details of coloration and less deeply forked tail (Ref. 37816). |
| Ease of Identification                                | likely to be confused with closely related species.  |
| Meristic characteristics of <i>Siganus fuscescens</i> |  |
| Lateral Lines   | 1 Interrupted: No  |

|                               |  |
|-------------------------------|--|
| Scale rows above lateral line | 16 - 21                                |
| Barbels                       | 0                                      |
| on lower limb                 | 20 - 25                                |
| on upper limb                 | 5 - 7                                  |
| total                         | 25 - 32                                |
| Vertebrae                     |  |
| preanal                       | 10 - 10                                |
| total                         | 13 - 13                                |
| Fins                          |  |
| Dorsal fin(s)                 |  |
| Attributes                    | extending over most of the back length |
| Fins number                   | 1                                      |
| Finlets No.                   | Dorsal 0 - 0                           |
|                               | Ventral 0 - 0                          |
| Spines total                  | 13 - 13                                |
| Soft-rays total               | 10 - 10                                |
| Adipose fin                   | absent                                 |
| Caudal fin                    |  |
| Attributes                    | forked; more or less normal            |
| Anal fin(s)                   |  |
| Fins number                   | 1                                      |
| Spines total                  | 7 - 7                                  |
| Soft-rays total               | 9 - 9                                  |
| Paired fins                   |  |
| Pectoral                      | Attributes more or less normal         |
|                               | Spines 0                               |
|                               | Soft-rays 15 - 17                      |
| Pelvics                       | Attributes more or less normal         |
|                               | Position thoracic behind origin of D1  |
|                               | Spines 2                               |
|                               | Soft-rays 3 - 3                        |

## 19) Larvae

Larvae Information Summary for *Siganus fuscescens***Main Ref:**

Woodland, D.J. 1990

Yolk-sac larvae

**Place of development**

planktonic

|  |                                     |
|--|-------------------------------------|
| <b>Larval area</b>   | Northwestern Pacific (Japan)        |
| Newly hatched larvae averaged 2.1 mm in length; have a neutral buoyancy at 32.2 ppt salinity & swarm actively towards the surface; begin to feed 3 days after hatching (diet include phyto- & zoo- plankton). Metamorphosis to juvenile depend on nutritional status, occurs when larvae is 20-24 mm SL. |                                     |
| <b>Post larvae</b>   |                                     |
| <b>Striking feature</b>  | some dorsal fin rays very elongated |
| <b>Striking shape lateral</b>  | normal (not striking)               |
| <b>Striking feature</b>  | some dorsal fin rays very elongated |
| <b>Shape of gut</b>  | triangular                          |
| <b>Peritoneum</b>  | with row of melanophores            |
| <b>Pectorals</b>   | normal                              |
| <b>Pelvics</b>   | with elongated fin rays             |

## 20) Recruitment

(NA)

## 21) Abundance

| Abundance List for <i>Siganus fuscescens</i><br>n = 8 |  |             |                             |                        |
|---|--|-------------|-----------------------------|------------------------|
| Country   | Locality   | Year        | Qualitative Value           | Ref.                   |
| Australia   | Fog Bay  | 1988 - 1988 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | Gulf of Carpentaria (Eastern Deep)                 | 1988 - 1988 | <a href="#">rare</a>        | <a href="#">78120</a>  |
| Australia   | In the Gulf of Carpentaria (Eastern Deep)          | 1988 - 1988 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | Melville Island and Joseph Bonaparte Gulf          | 1988 - 1989 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | off Goulbourn Is and Gulf of Carpentaria (Shallow) | 1988 - 1988 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | off Melville Island (Western Deep)                 | 1988 - 1988 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | Off the Goulburn Is and Gulf of Carpentaria        | 1988 - 1988 | <a href="#">absent</a>      | <a href="#">78120</a>  |
| Australia   | Shark Bay, Western Australia                       | 2009 - 2009 | <a href="#">very common</a> | <a href="#">115274</a> |

## References

1. **Woodland, D.J.**, 1990. Revision of the fish family Siganidae with descriptions of two new species and comments on distribution and biology. Indo-Pac. Fish. (19):136 p. (Ref. [1419](#))

2. IUCN. 2016. The IUCN Red List of Threatened Species. Version 2016-3. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: 07 December 2016).
3. IUCN. 2017. The IUCN Red List of Threatened Species. Version 2017-1. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: 27 April 2017).
4. Lieske, E. and Myers, R. 1994. *Collins Pocket Guide. Coral reef fishes. Indo-Pacific & Caribbean including the Red Sea*. Haper Collins Publishers.
5. Magsino, R.M. and Juinio-Meñez, M.A. 2008. The influence of contrasting life history traits and oceanic processes on genetic structuring of rabbitfish populations *Siganus argenteus* and *Siganus fuscescens* along the eastern Philippine coasts. *Marine Biology* 154(3): 519-532.
6. Woodland, D. 1997. Siganidae. Spinefoots, rabbitfishes. In: Carpenter, K.E. and Niem, V. (eds), *FAO Identification Guide for Fishery Purposes. The Western Central Pacific*, pp. 3627-3650. FAO, Rome.
7. Woodland, D. 2001. Siganidae. Rabbitfishes (spinefoots). In: Carpenter, K.E. and Niem, V. (eds), *FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Vol. 6. Bony fishes part 4 (Labridae to Latimeriidae), estuarine crocodiles, sea turtles, sea snakes and marine mammals.*, pp. 3627-3650. Food and Agriculture Organization of the United Nations, Rome.
8. Yamada, U., Shirai, S., Irie, T., Tokimura, M., Deng, S., Zheng, Y., Li, C., Kim, Y.U. and Kim, Y.S. 1995. *Names and illustrations of fishes from the East China Sea and the Yellow Sea*. Overseas Fishery Cooperation Foundation, Tokyo, Japan.