

# 'Ike Kai

A Curriculum on Division of Aquatic Resources (DAR) Rules  
for the Makai Watch Program

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# PURPOSE

The purpose of this guidebook is to introduce Makai Watch volunteers to identifying regulated marine life and providing an overview of Division of Aquatic Resources (DAR) rules related to marine life and fishing.

This information directly supports the Awareness-Raising and Outreach and the Observation and Incident Reporting components of the Makai Watch program.

# SUPPORT

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Photos of regulated species were generously provided by Keeki Stender ([www.marinelifephotography.com](http://www.marinelifephotography.com)).



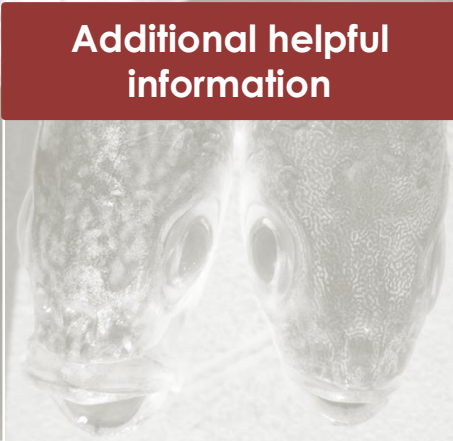
Hawaiian Name	Common Name	Scientific Name (Genus, species)
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Identifying Feature

Identifying Feature

Quick, commonly known information to help you identify each species



Additional helpful information

**State Rules (effective statewide)**

**Site-Specific Rules (effective only in certain places)**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
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Hawaiian Name

Common Name

Scientific Name (Genus, species)

**Local Knowledge**

**'Ōlelo**

**Name Translation**

Hawaiian proverbs that feature this species

English translation of the Hawaiian name

**Biology**

**Endemic?**

**Spawning Season**

**Reproductive size (L50)**

**Max Length**

Endemic species are only found in Hawaii

When the species reproduces

The length a fish will be when it has a 50% chance to have reproduced at least once, equation used to determine minimum sizes

Maximum size of the species

**Ecology**

**Feeding**

**Habitat**

**Kumulipo**

What the species eats

Type of environment where you will find this species

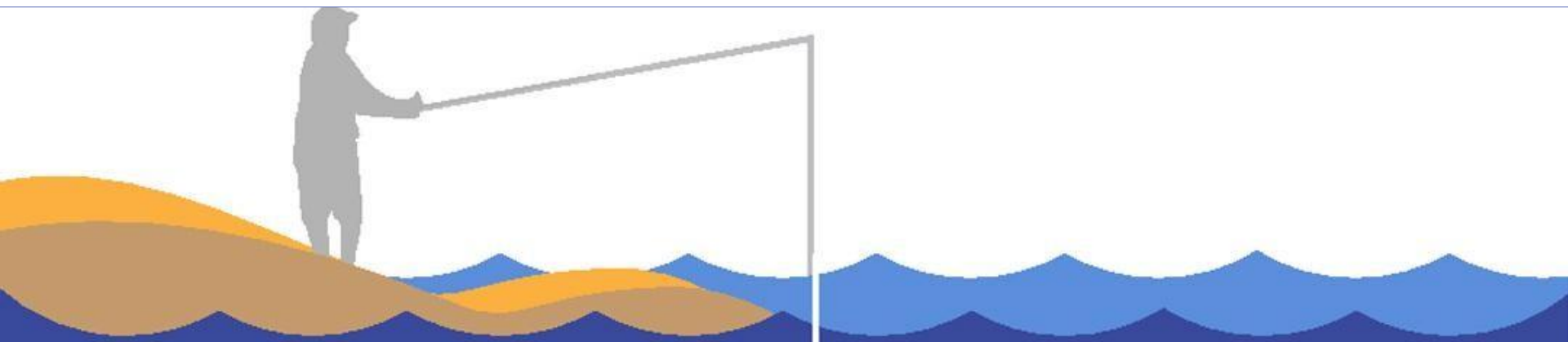
A Hawaiian Cosmogonic and genealogical chant. The curriculum includes the relevant text and translations.

**Notes:**

Please add more information or personal stories that help you remember this species.



# Identifying Regulated Marine Life



SECTION ONE

I'A  
(FISH)



# SILVERY FISH

- These fish share a silvery color
- Can be easily confused for one another
- Many live in waters close to shore
- Highly-prized for eating

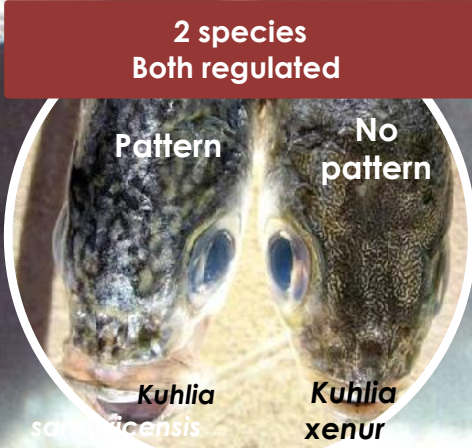






Deep notch in tail

Large eye



2 species  
Both regulated

Pattern

No pattern

*Kuhlia sandwicensis*

*Kuhlia xenur*

- Found in large schools
- Minimum size (5") is about palm- sized
- Caught with spear, net
- Common to eat, sometimes fried

Photo credit: Keoki Stender

Photo credit (right): Kim Morishige

**State Rules:**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
5"	-	-	-	-

**Local Knowledge**

**'Ōlelo**

*He āhole ka i'a, hole ke aloha.*  
Like the fish āhole, love is restless.

**Name Translation**

'hole means to pry out,  
āholehole were used in ceremonies to pry out or remove evil spirits

**Biology**

**Endemic?**

Yes, only *Kuhlia xenura*

**Spawning Season**

Jan – Apr (Hanalei, Maunaloa, Mo'omomi)

**Reproductive size (L50)**

5"

**Max Length**

8"

**Ecology**

**Feeding**

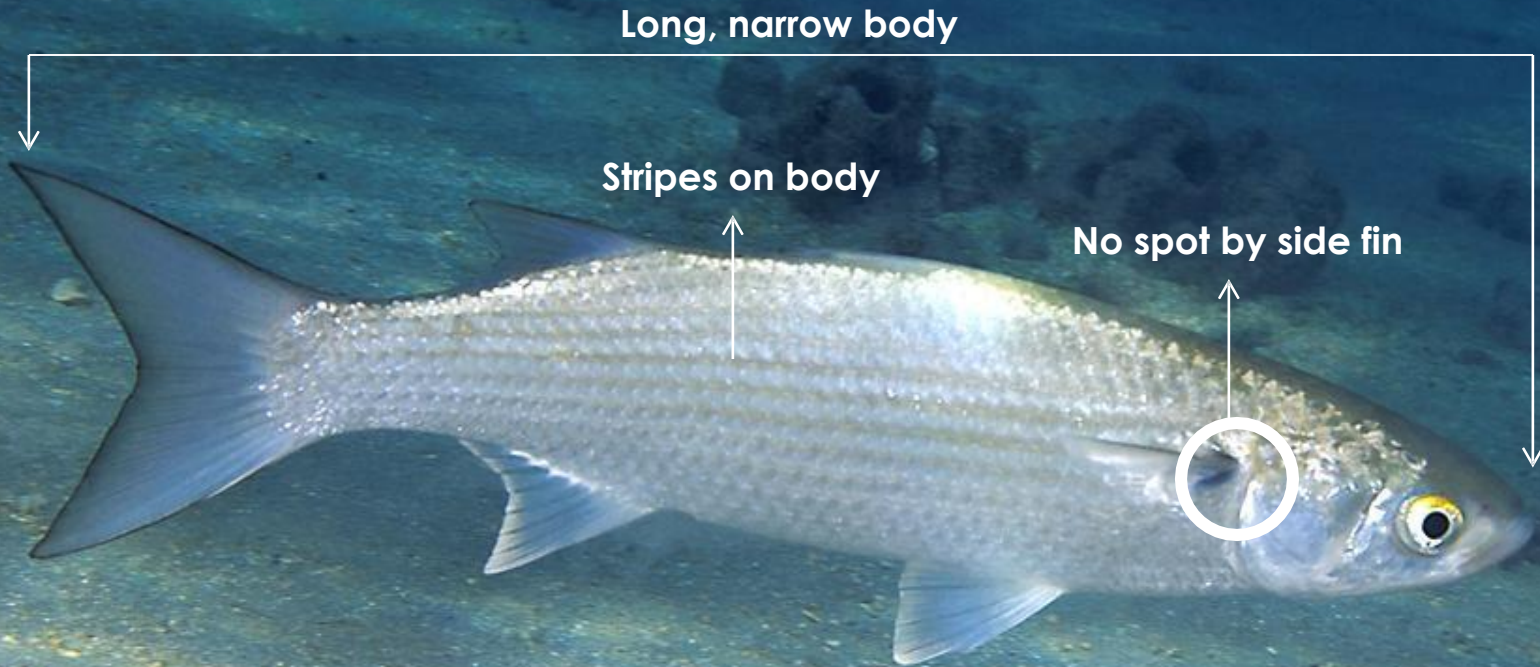
Crustaceans

**Habitat**

Tide pool, estuary, reef flat

**Notes:**

**Regulated:**



- Long, narrow silver fish
- Found in schools in shallows, fishponds
- Known to leap out of water
- Caught with net

Photo credit: Keoki Stender

**Not regulated:**

*Neomyxus leuciscus* /uouoa



Photo: Keoki Stender

*Moolgarda engeli*/kandra mullet



Dark spot by side fin

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses	Similar but not regulated species
11"	Dec - Mar	-	-	-	uouoa/sharppnose mullet/ <i>Neomyxus leuciscus</i> , <i>Moolgarda engeli</i> /kandra mullet

## Local Knowledge

## 'Ōlelo

*Ka i'a kā wāwae o Hīlīa*  
 The fish of Hīlīa, kicked by the feet;  
 To gather mullet, people waded into the water in Hīlīa  
 (Moloka'i) and kick mullet ashore for others to gather

## Name Translation

'ama'ama can be used in slang to mean an easy mark,  
 'ama also means light, bright

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Dec - Mar	11-12"	1.5 ft

## Ecology

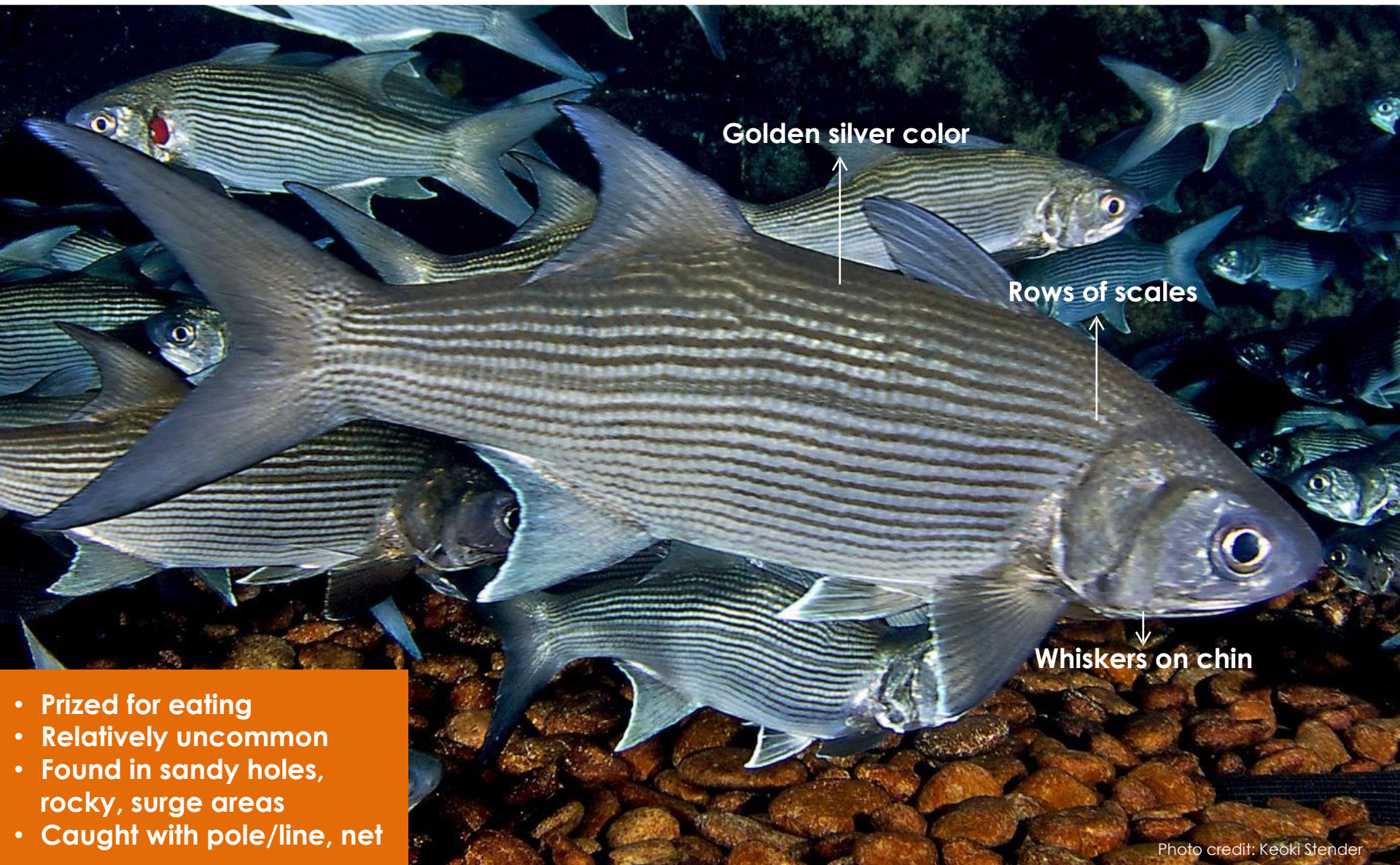
Feeding	Habitat	Kumulipo
Algae, small plants	Tide pool, estuary, reef flat. Known to migrate long distances	<i>Hanau ka 'Ama'ama, hanai ka 'Anaee I ke kai la, holo 'Ama'ama are born, 'Anaee (adult mullet) are born in the sea, swim</i>

## Notes:

Moi

Threadfin

*Polydactylus sexfilis*



Golden silver color

Rows of scales

Whiskers on chin

Photo credit: Keoki Stender

- Prized for eating
- Relatively uncommon
- Found in sandy holes, rocky, surge areas
- Caught with pole/line, net

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
11"	June - Aug	15	-	-

## Local Knowledge

## 'Ōlelo

*Ehuehu kai, noho ka moi;*  
Where the sea broils, there the moi fish dwell

## Name Translation

*Moi* means a white birthmark, also a variety of taro and sweet potato

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Jun - Aug	9-11"	2 ft

## Ecology

Feeding	Habitat	Kumulipo
Crustaceans	Estuary, reef flat, rough coastlines with wave action	<i>Hanau ka 'Ahi Kananā, Hanau ka Manamoi I ke kai la 'Ahi Kananā</i> (young tuna) are born, <i>moi</i> are born

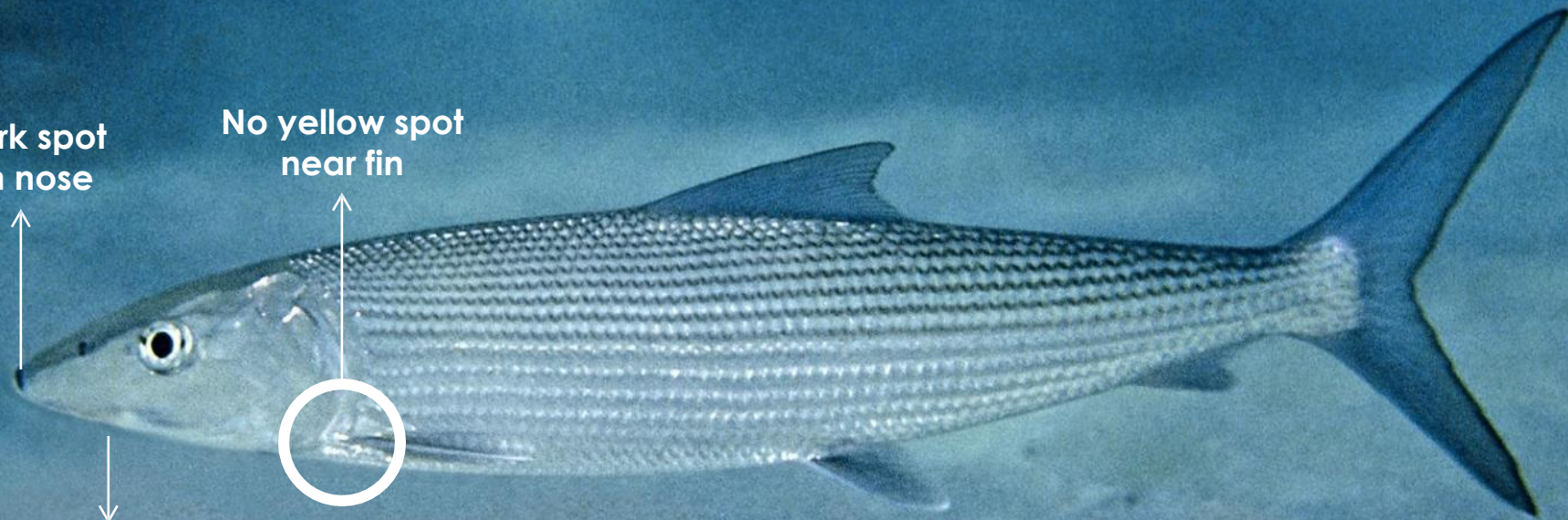
## Notes:



Dark spot on nose

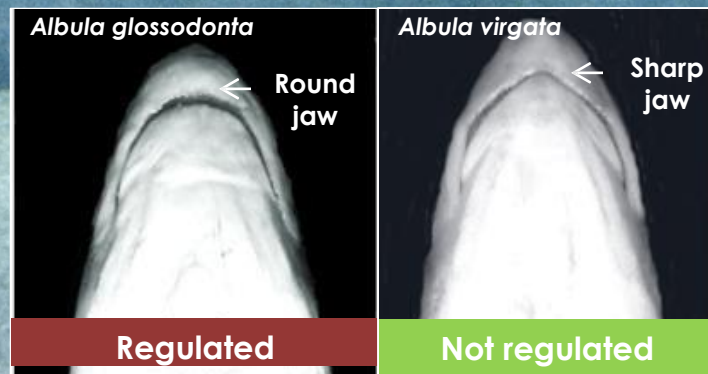
No yellow spot near fin

Rounded jaw



- Relatively large, silver fish
- Active at night (nocturnal)
- Caught with pole/line, net
- Meat spooned out for fishcake

Photo credit: Keoki Stender



- No yellow spot by side fin
- Found on reef flat

- Yellow spot by side fin
- Found in deep water

State Rules

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses	Similar but not regulated species
14"	-	-	-	-	'Ō'io/Bonefish/ <i>Albula virgata</i>

**Local Knowledge****Name Translation**

'Ō'io is the term for the soft, jelly-like coconut flesh (perhaps like the flesh of the 'Ō'io fish. Also a kind of braid used in hat bands, resembling the back of the 'Ō'io fish.  
Stone used for polishing and as a lure for fishing. he'e (octopus)

**Biology**

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Jun – Aug Nov – April (West Maui)	14"	3 ft

**Ecology**

Feeding	Habitat
Crustaceans, small fish	Reef flat

**Notes:**

Small, toothless mouth

Olive green color

Deep notch in tail

- Swims just below surface
- Caught with pole/line, net
- Used to make fishcake
- Typical size = 18-24 inch, 40 lbs

Photo credit: Keoki Stender

### State Rules

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
9" (spearing and sale)	-	-	-	-

## Local Knowledge

## 'Ōlelo

*He loko kapu ia, he awa ka i'a noho; eia ka ua komo 'ia e ka 'ā kōkokī;*  
It was a pond reserved only for awa fish, but now a bait-stealing ā fish has gotten into it;  
A high ranking woman is having intimate relations with a lower ranking man.

## Name Translation

Awa also means port/harbor and a channel or passage through a reef

## Biology

## Endemic?

No

## Reproductive size (L50)

9"

## Max Length

3 ft

## Ecology

## Feeding

Algae, plankton

## Habitat

Estuary, reef flat

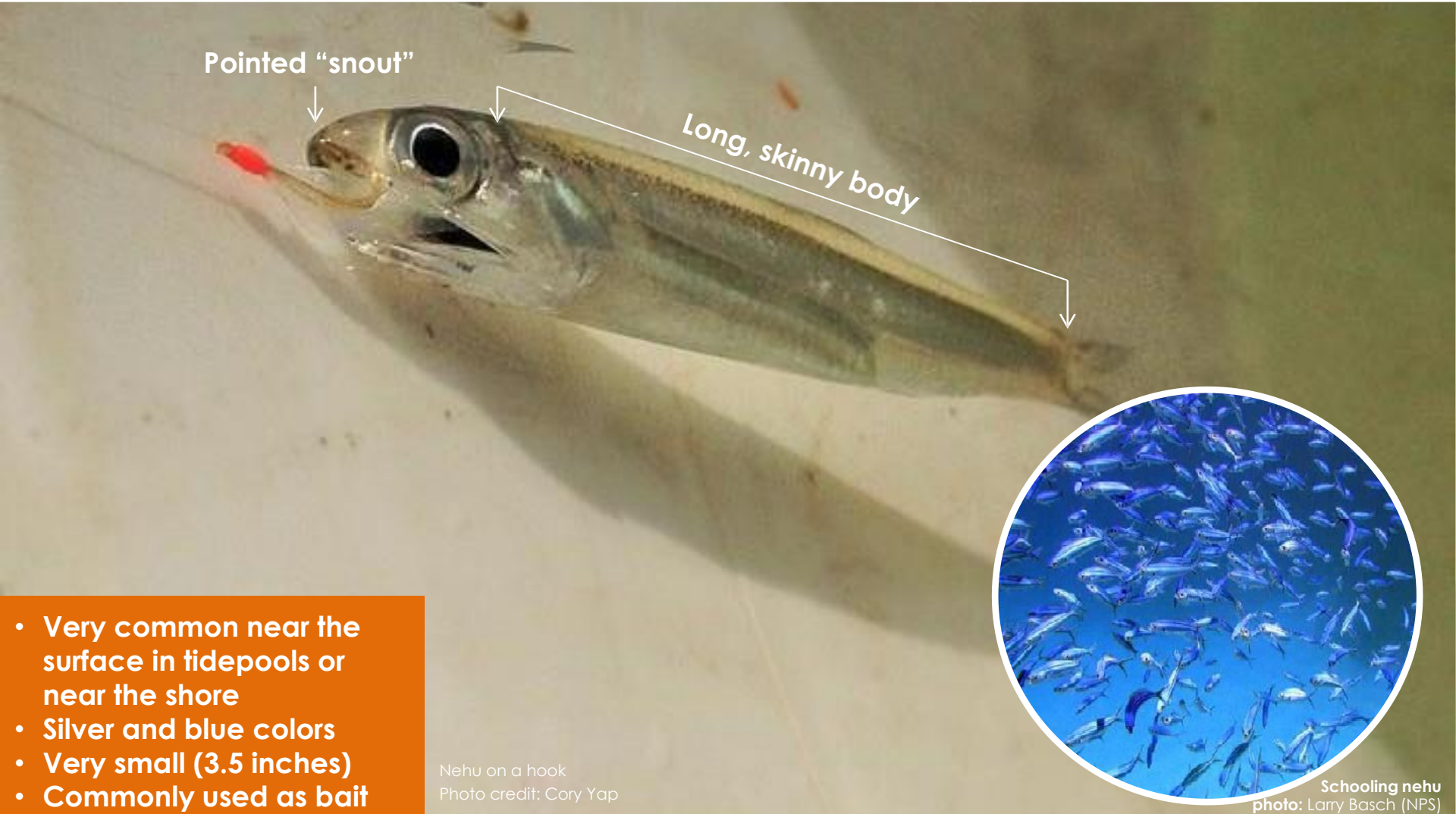
## Kumulipo

*Hanau ke Ao, hanau ke Awa i ke kai la, holo*  
Ao (unknown fish) is born, awa is born

## Notes:

Pointed "snout"

Long, skinny body



Nehu on a hook  
Photo credit: Cory Yap

Schooling nehū  
photo: Larry Basch (NPS)

- Very common near the surface in tidepools or near the shore
- Silver and blue colors
- Very small (3.5 inches)
- Commonly used as bait

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
-	-	1 gallon (home consumption)	Can only use net 50 ft or more for commercial use	Bait license needed for commercial sale; unlawful to sell dried or cured

### Local Knowledge

#### 'Ōlelo

*He ua he'e nehu no ka lawai'a;*  
It is the rain that brings *nehu* for the fishermen

### Biology

#### Endemic?

Yes

#### Max Length

3 inch

### Ecology

#### Feeding

#### Habitat

#### Kumulipo

Plankton

Common in shallow waters, estuary,  
tide pool, reef flat

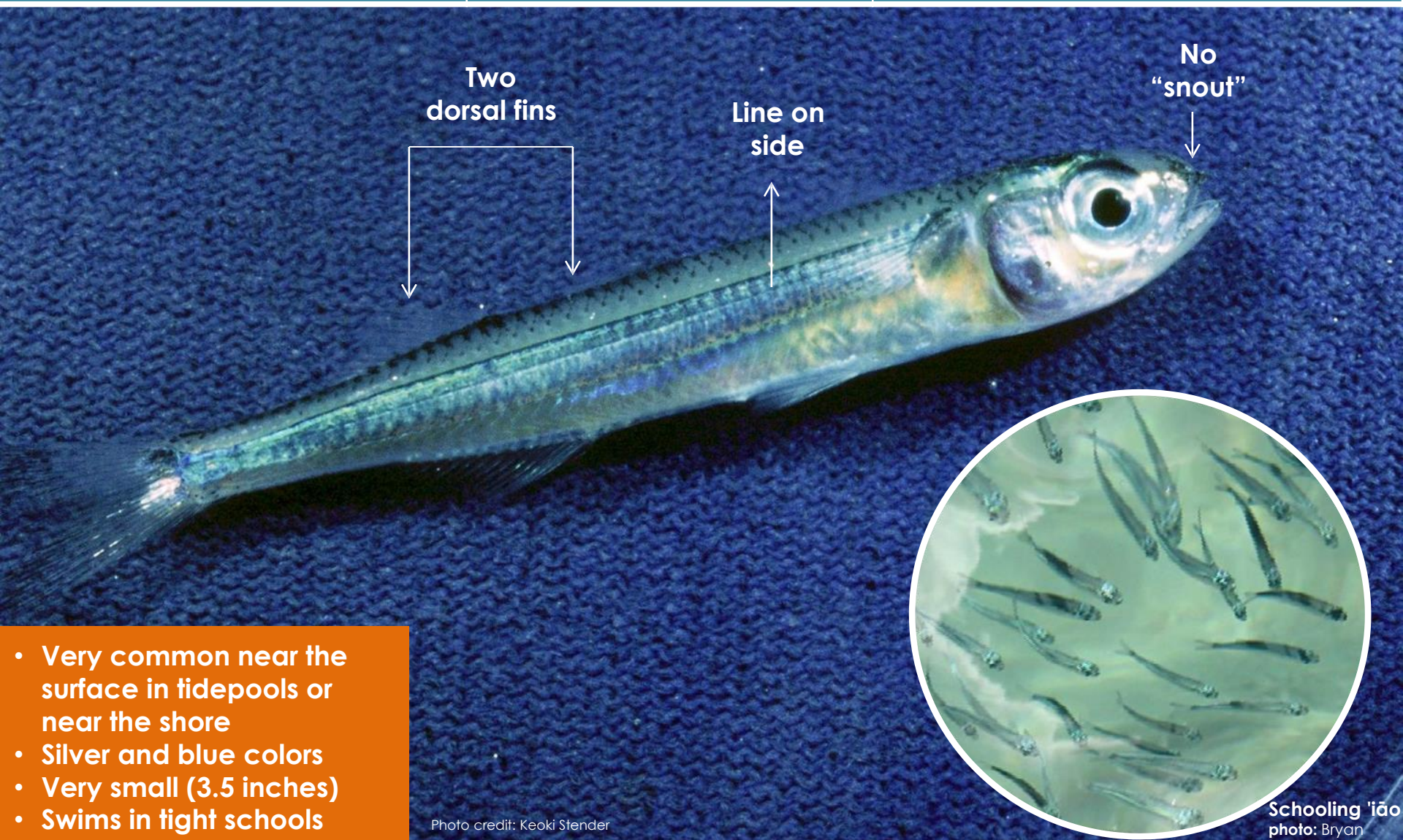
*Hanau ka 'Ehu, hanau ka Nehu i ke kai la, holo*  
'Ehu (red snapper) are born, Nehu are born in the sea, swim

### Notes:

'iāo

Silverside

*Atherinomorus insularum*



Two dorsal fins

Line on side

No "snout"

- Very common near the surface in tidepools or near the shore
- Silver and blue colors
- Very small (3.5 inches)
- Swims in tight schools

Photo credit: Keoki Stender



Schooling 'iāo photo: Bryan

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
-	-	-	-	Bait license needed for commercial sale; unlawful to sell dried or cured

## Local Knowledge

## 'Ōlelo

*Hānai 'ia I ka 'iao;*  
Fed with the 'iao fish;  
The 'iao was used as bait for larger fish

## Name Translation

'Iāo also figuratively means dawn,  
also the name of an endemic bird said to resemble the  
moho

## Biology

## Endemic?

Yes

## Max length

3.5"

## Ecology

## Feeding

Plankton

## Habitat

Tide pools, reef flat

## Kumulipo

*Hanau ka'Iāo, hanau ka 'Ao'ao I ke kai , holo*  
*'Iāo are born, 'Ao'ao (a star) are born in the sea, swim*

## Notes:



'Ōpelu

Mackarel Scad/Kusayamoro

*Decapterus macarellus*



Dark spot near gills

- Seen near coast and middle of water column
- Caught with handlines at night, with special lift nets during the day
- Considered excellent food fish and for bait for large fish

Photo credit: Keoki Stender

'Ōpelu in a net, photo: Cory

### State Rules

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
-	Only open Aug and Sept <b>(Waimea Bay ONLY)</b>	-	No minimum mesh size for nets Cannot use animal bait (except with hook and line in certain South Kona waters)	-

## Local Knowledge

## 'Ōlelo

'Ōpelu ha'alili I ke kai;  
'Ōpelu that make the sea ripple

## Name Translation

'Ōpelu is also a variety of taro,  
A plant (*Lobelia hypoleuca*) whose leaves resemble the fish

## Biology

## Endemic?

No

## Spawning Season

Apr - Aug

## Reproductive size (L50)

9.5"

## Max Length

1.8 ft

## Ecology

## Feeding

Plankton, small crustaceans

## Habitat

Outer reef

## Kumulipo

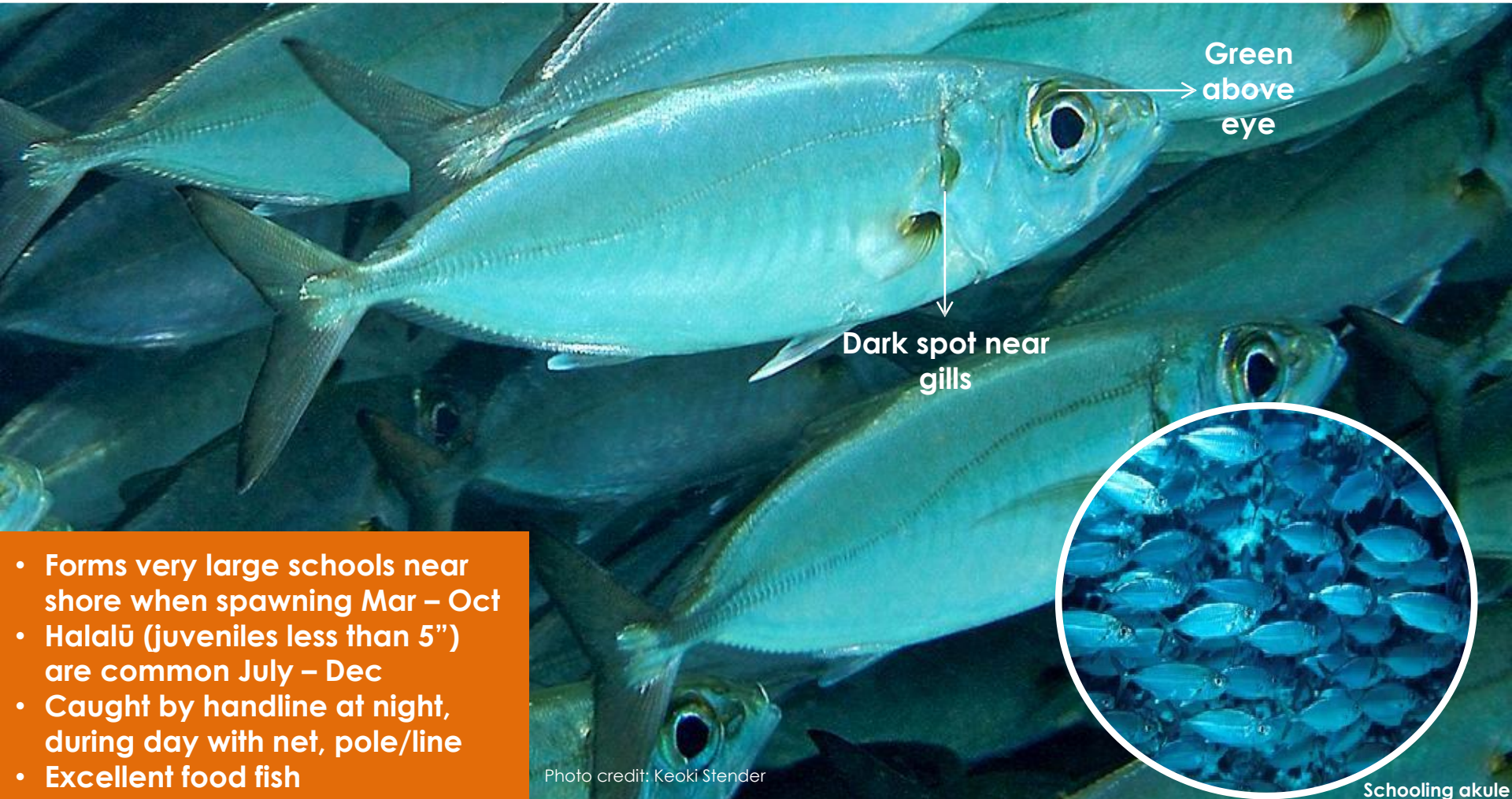
*Hanau ka 'Ōpelu, hanau ke Akule I ke kai la, holo  
'Ōpelu are born, akule are born*

## Notes:

Akule, halalū

Bigeye Scad/aji

*Selar crumenophthalmus*



Green above eye

Dark spot near gills



Schooling akule

Photo credit: Keeki Stender

- Forms very large schools near shore when spawning Mar – Oct
- Halalū (juveniles less than 5”) are common July – Dec
- Caught by handline at night, during day with net, pole/line
- Excellent food fish

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
-	Unlawful to take akule under 8.5 inches with net July - October, or possess or sell more than 200 lbs of akule under 8.5 inches per day from July – October <b>Only open Nov and Dec (Waimea Bay ONLY)</b>	-	Cannot use animal bait (except with hook and line in certain South Kona waters) Several net rules (see DAR reg. book and gear section)	-

## Local Knowledge

## 'Ōlelo

*Wehe ke akule i ka hohonu;*  
The akule fish takes off to the deep

## Name Translation

*Halalū* also means to rumble or strum like an instrument

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Apr – Oct (Hanalei), June – July (Oahu), Apr - Jun (West Maui)	8.5"	2.3 ft

## Ecology

Feeding	Habitat	Kumulipo
Small crustaceans	Found seasonally in bays; form large schools	<i>Hanau ka 'Ōpelu, hanau ke Akule I ke kai la, holo 'Ōpelu are born, akule are born</i>

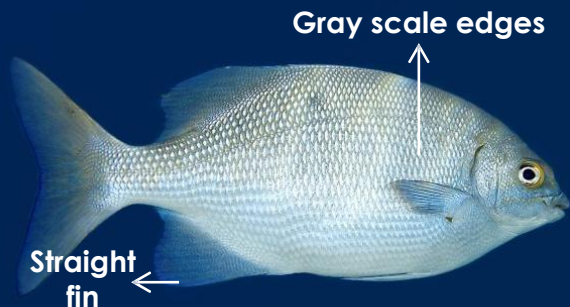
## Notes:

**Nenu/Enenu**

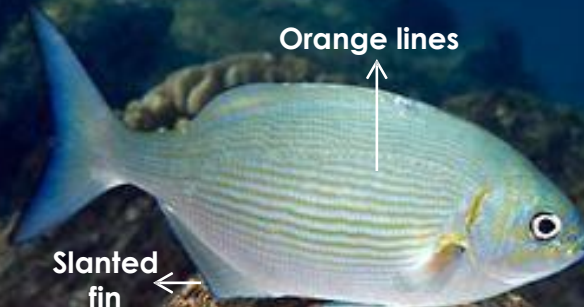
**Chub/Rudderfish/Tenjikuaisaki/Isuzumi/**

***Kyphosus spp.***

*Kyphosus cinerascens*/Highfin chub



*Kyphosus vaigiensis*/Lowfin chub



*Sectator ocyurus*/Blue striped chub

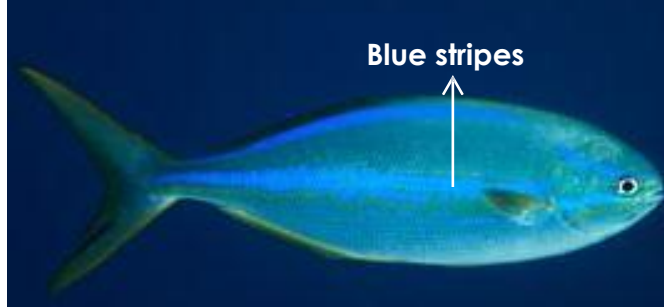
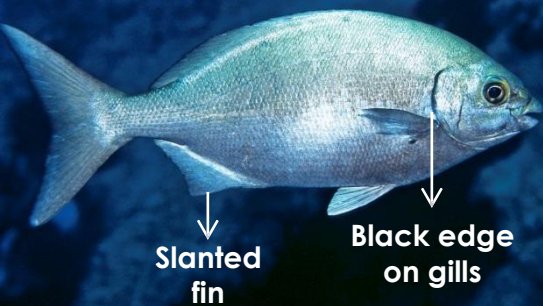
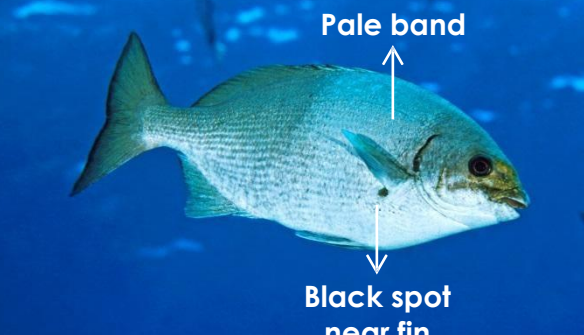


Photo credit: John Johnson

*Kyphosus sandwicensis*/Gray or Pacific chub



*Kyphosus hawaiiensis*



*Kyphosus hawaiiensis* - **YELLOW MORPH**



Photo credit: Keoki Stender

- Football-shaped body
- Gather in rocky, nearshore areas
- Yellow morph is rare to see

**Kahekili Herbivore Fisheries Management Area (KHfMA) ONLY**

Illegal injure, kill, possess, or remove any nenu/rudderfish within the boundaries in the KHfMA

### Local Knowledge

#### Name Translation

*Nenu* is a variety of seaweed,  
also a type of paddle with a broad blade

### Biology

#### Endemic?

Yes,  
*Kyphosus sandwicensis* and *Kyphosus hawaiiensis* only

#### Max Length

Range in size from 15-30 inches

### Ecology

#### Feeding

#### Habitat

#### Kumulipo

Algae

Found in rocky areas, coral reefs

*Hanau ka Nenu noho i kai, kiai ia e ka Lauhue noho i uka* *Nenu* are born in the sea, guarded by the *Lauhue* (poisonous gourd)

### Notes:

# WEKE - GOAT FISH

- Goatfish have a long, narrow body and a forked tail
- Known for a pair of chin whiskers that help the fish detect food in the sand
- Usually found in large groups
- Highly prized for eating because of their shrimp-like taste and red color







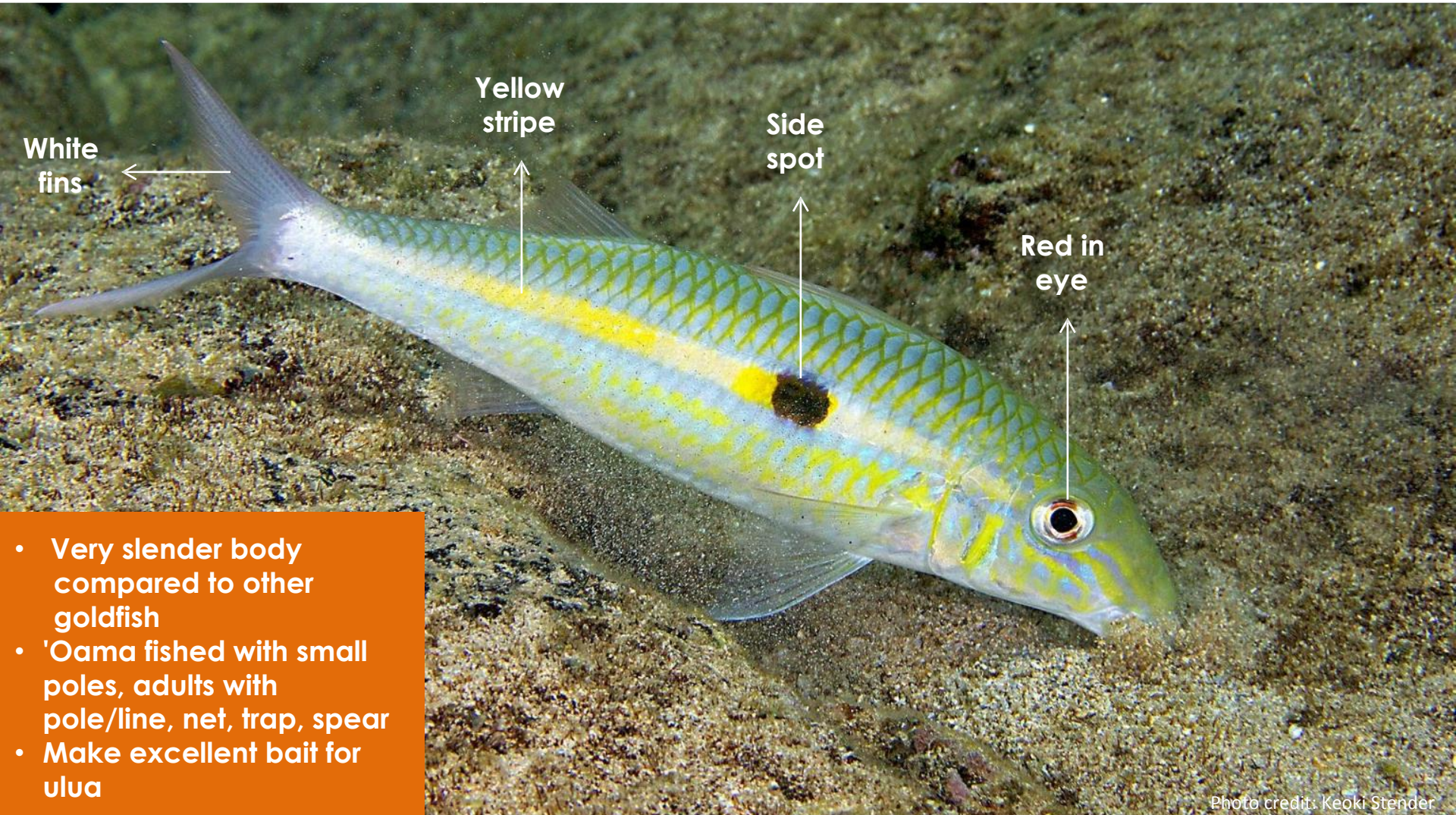


Photo credit: Keoki Stender

- Very slender body compared to other goldfish
- 'Oama fished with small poles, adults with pole/line, net, trap, spear
- Make excellent bait for ulua

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
7" for sale 8" (Maui only, for sale or home consumption)	-	50 for 'oama (weke under 7", 5" on Maui)	Pole and line only for 'oama (Maui only)	-

## Local Knowledge

## 'Ōlelo

*He weke, he i'a pahulu;*  
It is a weke, the fish that produces nightmares;  
The head of the weke is known to cause hallucinations if eaten

## Name Translation

Weke means to open, crack open, or loosen

## Biology

## Endemic?

No

## Spawning Season

Apr – Jun (West Maui)

Reproductive size  
(L50)

6.6 – 6.8"

## Max Length

10"

## Ecology

## Feeding

Crustaceans,  
worms

## Habitat

Found on shallow reef flats, shallow  
and deeper reefs

## Kumulipo

*Hanau ka Weke noho i kai, kiai ia e ka Wauke noho i uka*  
Weke are in the sea, guarded by Wauka (mulberry) on  
land

## Notes:

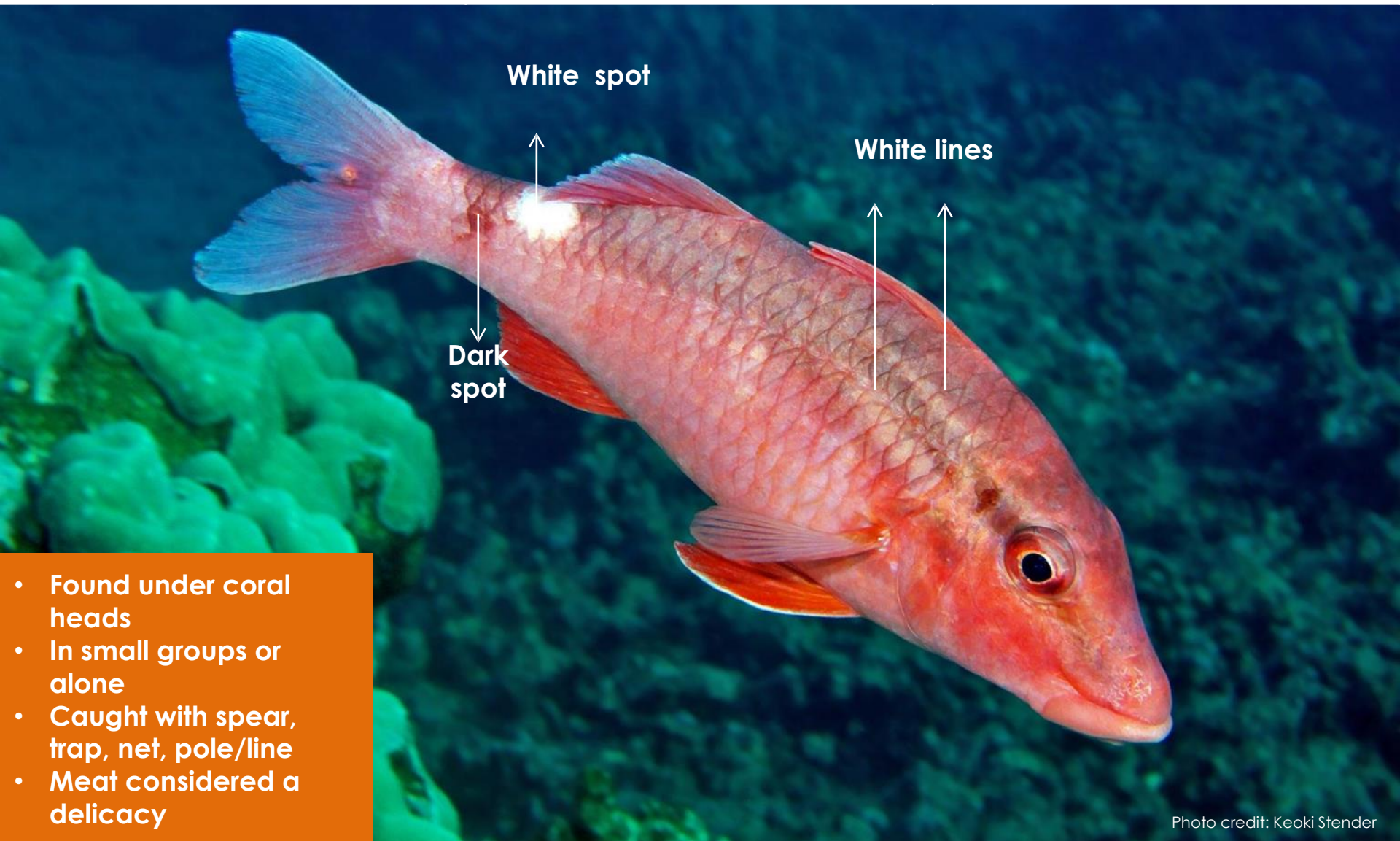


Photo credit: Keoki Stender

- Found under coral heads
- In small groups or alone
- Caught with spear, trap, net, pole/line
- Meat considered a delicacy

### State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
10", 12" (Maui only)	-	1 fish (Maui only)	-	-

## Local Knowledge

## 'Ōlelo

*He kūmū ka i'a mu'emu'a;*  
Kūmū is the fish, bitter is love  
An expression used in *hana aloha* sorcery

## Name Translation

*Kūmū* is also a type of red-colored taro plant

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
Yes	Nov - Aug Jan – Mar (Mo'omomi)	10 – 11"	1.5 ft

## Ecology

Feeding	Habitat
Crustaceans	Reef flat, outer reef, under ledges and coral heads

## Notes:



Yellow edges on scales

White and dark bars

Chin whiskers

- Color can be variable, reddish with shades of yellow and white
- Found in sandy bottom near coral heads
- Caught with trap, spear, pole/line

Photo credit: Keoki Stender

### State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses	Similar but not regulated species
7", 8" (Maui only)	-	-	-	-	-

## Local Knowledge

## 'Ōlelo

*Ku'u 'ia ka palu l pi'l ka moano;*  
To use a mashed fish lure so that the moano fish rises to the surface;  
To tell lies to attract gullible people

## Name Translation

*Moano* is also a pale red color, like the *Moano* fish  
Figuratively means to bloom (a flower turns red when in bloom)  
A variety of sugar cane that is red, becoming dark purple  
A variety of taro

## Biology

## Endemic?

No

## Reproductive size (L50)

7"

## Max Length

1 ft

## Ecology

## Feeding

Crustaceans, small fish

## Habitat

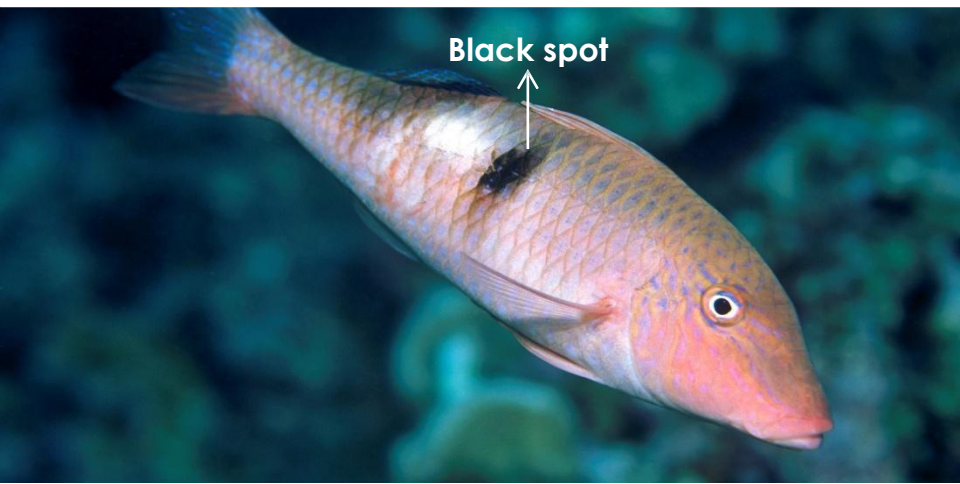
Reef flat, outer reef

## Kumulipo

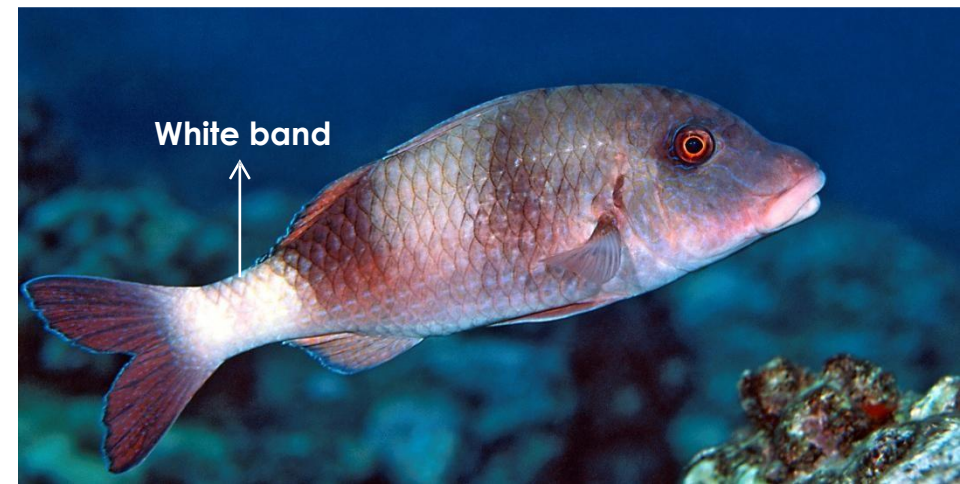
*Hanau ka Manō, hanau ka Moano* *Manō*  
(sharks) are born, *moano* are born

## Notes:

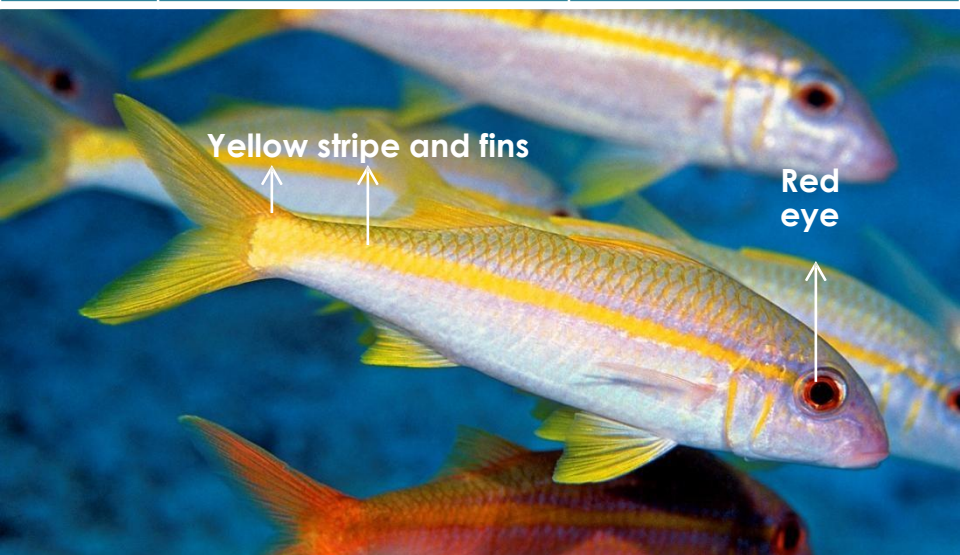
Malu Sidespot Goatfish *Parupeneus pluerostigma*



Munu Doublebar Goatfish *Parupeneus insularis*



Weke 'ula Yellowfin Goatfish/ Aka-himeji/red weke *Mulloidichthys vaicolensis*



Weke pueo Bandtail Goatfish *Upeneus spp.*

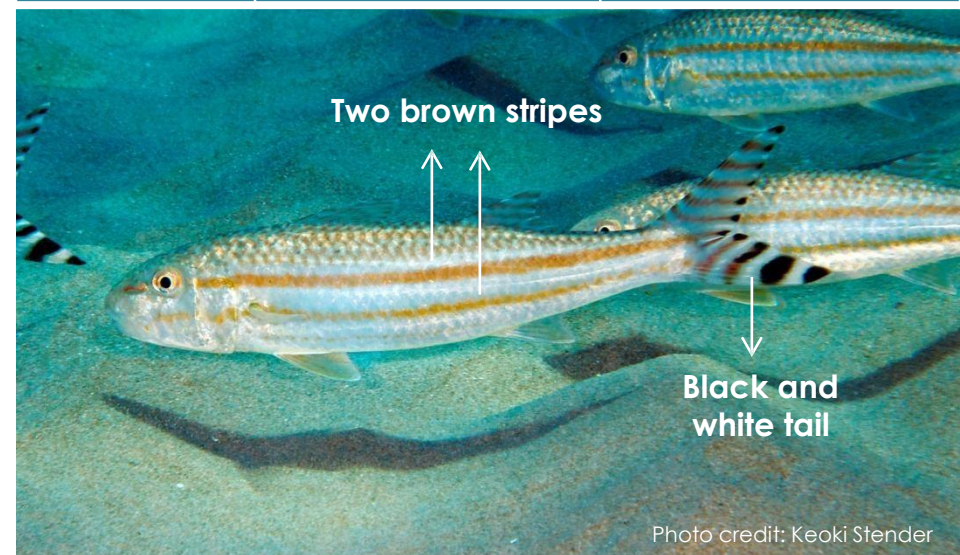


Photo credit: Keoki Stender

**Maui Rules ONLY**

**Minimum Size**

8"

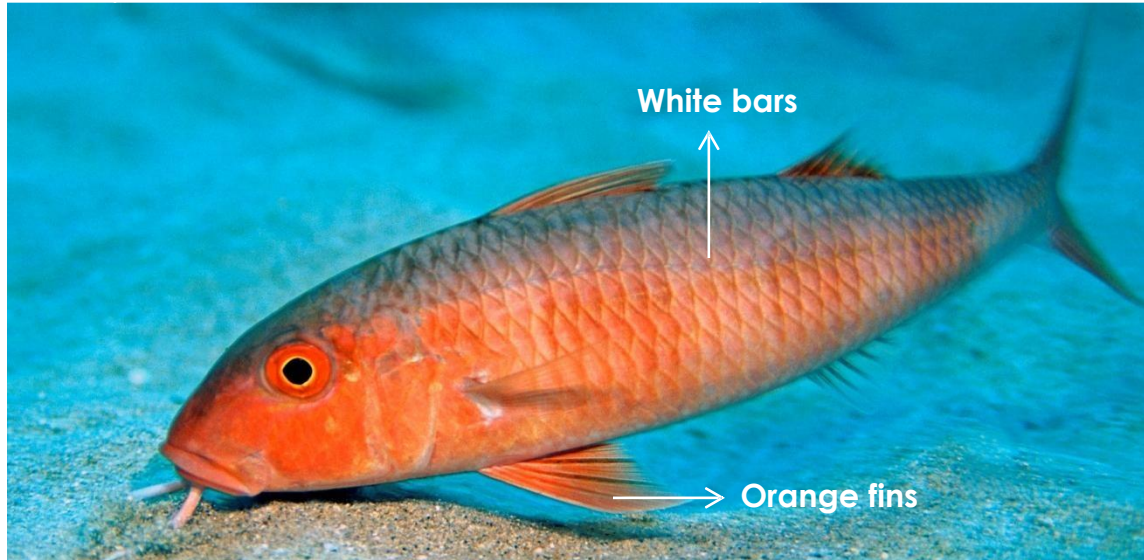
**Bag Limit**

2 fish (**Munu only**)

Weke 'ula/weke nono/moe lua

Pflueger's or Orange Goatfish

*Mulloidichthys pfluegeri*



Moano kea/Moano kali

Blue Goatfish

*Parupeneus cyclostomus*

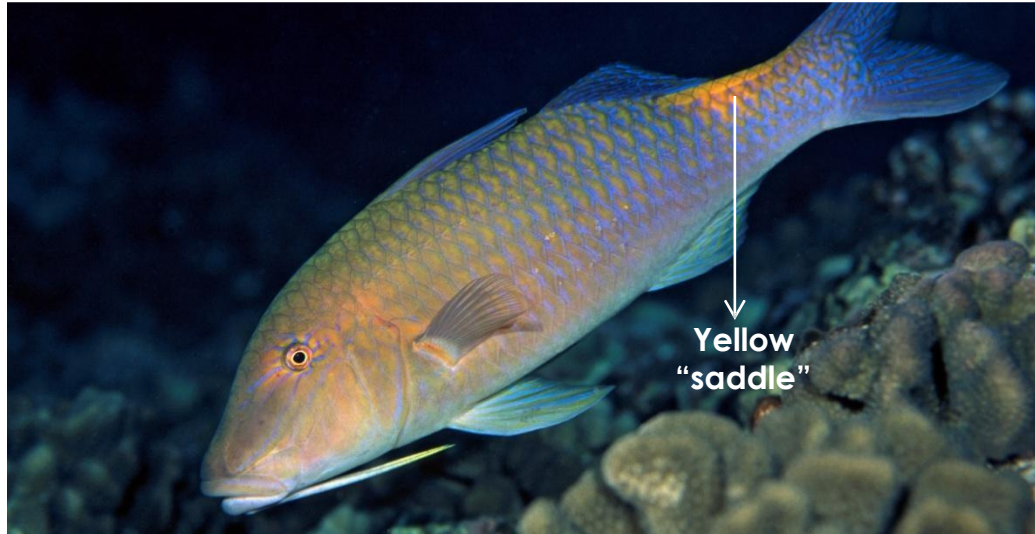


Photo credit: Keoki Stender

**Maui Rules ONLY**

**Minimum Size**

12"

**Bag Limit**

2 fish (**Moano kea only**)



# SURGEON FISH

- Named for their blade-like tail spine
- Disc-shaped body
- Many species are herbivorous, these fish play an important role on coral reefs feeding on algae
- One species (Goldring Surgeonfish) is endemic to Hawai'i





Manini

Convict Tang/Shima-hagi

*Acanthurus triostegus*



Not regulated:



- Very commonly seen, most abundant surgeonfish species in Hawaii
- Form very large feeding schools
- Caught with net, spear

Photo credit: Keoki Stender

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses	Similar but not regulated species
5"	-	-	-	-	Mamo ( <i>Abudefduf vaigiensis</i> )

## Local Knowledge

## 'Ōlelo

*Ka i'a a ke kualau I lawe mai ai;* The fish brought in by the rain at sea

## Name Translation

*Manini* means to be stingy, also to pour or spill  
Also a variety of banana (with green and white stripes), sugar cane, and dryland taro (also with stripes)

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Mar– Jun (Hanalei), Jan – July (Maunaloa), Feb – Apr (Mo'omomi) Mar – Jun (West Maui)	5"	10.5"

## Ecology

Feeding	Habitat
Algae	Reef flat, outer reef

## Notes:

Lau'ipala

Yellow Tang

*Zebrasoma flavescens*

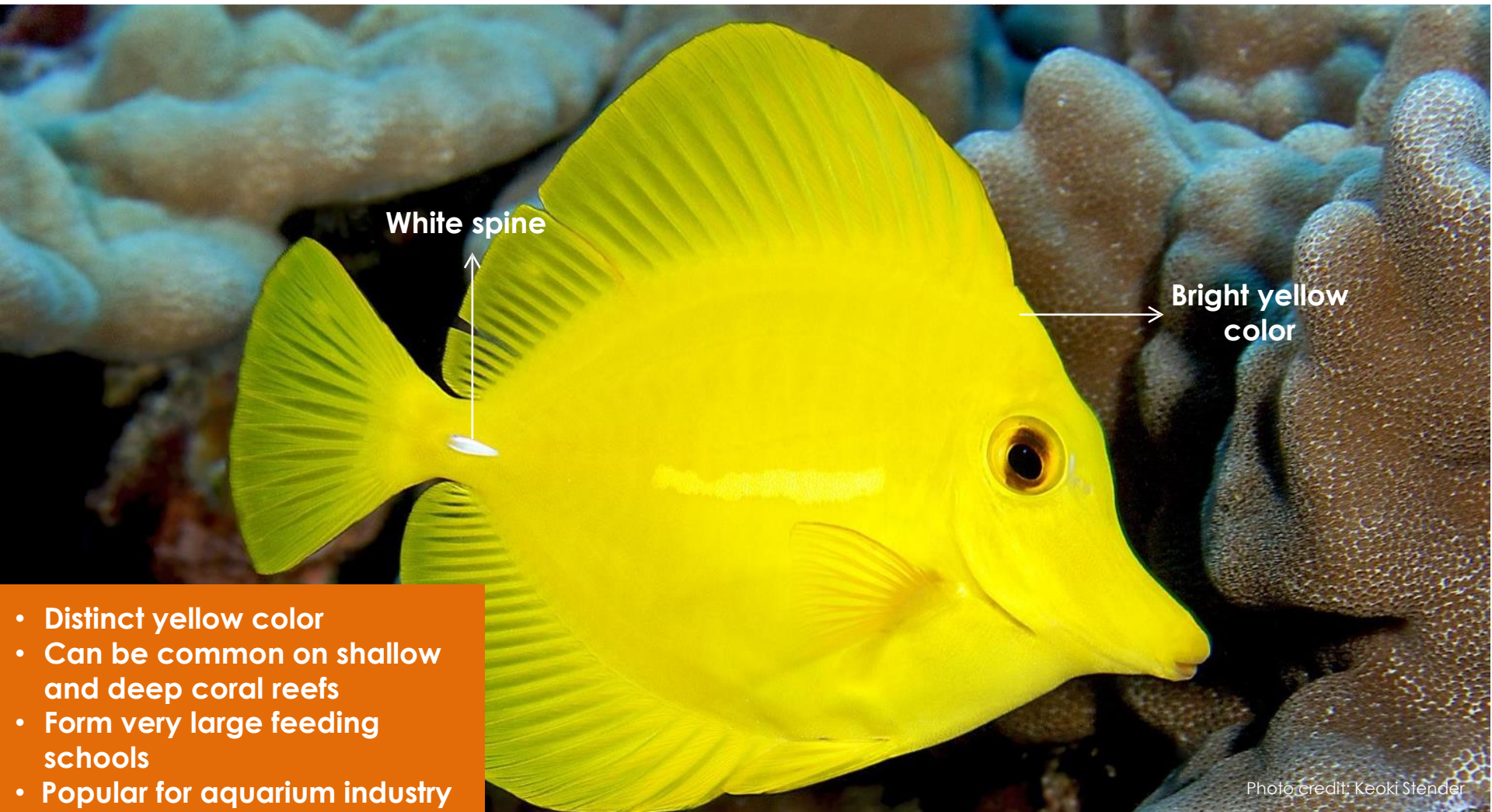


Photo credit: Keoki Stender

- Distinct yellow color
- Can be common on shallow and deep coral reefs
- Form very large feeding schools
- Popular for aquarium industry

**West Hawaii Fisheries Management Area ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
-	-	If between 2 – 4.5 inches, no bag limit 5 fish larger than 4.5 inches or smaller than 2 inches	-	If for aquarium sale, <b>West Hawaii Aquarium Permit</b>

## Local Knowledge

### Name Translation

*Lau'ipala* also means a yellow ti leaf (*lau* means leaf)

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	June - August	5"	8"

## Ecology

Feeding	Habitat	Kumulipo
Algae	Coral reef	<i>Hanau ka Pala, hanau ke Kala i ke kai la, holo Lau'ipala are born, Kala are born in the sea, swim</i>

## Notes:

Pāku'iku'i

Achilles tang

*Acanthurus achilles*



Orange teardrop-shaped spot near tail

Photo credit: Ryan Murphy

- Common on shallow reefs
- Popular for aquarium collectors

**West Hawaii FMA ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
-	-	10 fish (aquarium collectors only)	-	If for aquarium sale, <b>West Hawaii Aquarium Permit</b>

**Local Knowledge****Name Translation**

*Pāku'iku'i* refers to a method of fishing where fish are herded by beating the surface of the water

**Biology****Endemic?**

No

**Max Length**

10"

**Ecology****Feeding****Habitat****Kumulipo**

Algae

Coral reef

*Hanau ka Pāku'iku'i noho i kai, kiai ia e ke Kukui noho i uka*  
*Pāku'iku'i* are born dwelling in the sea, guarded by the Kukui  
 (candlenut tree) that dwells upland

**Notes:**



Gold ring  
around eye



- Common on shallow reefs
- Popular to eat and for aquarium collectors

### West Hawaii FMA ONLY

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
-	-	5 fish >4" (aquarium collectors only)	-	If for aquarium sale, <b>West Hawaii Aquarium Permit</b>

## Local Knowledge

## 'Ōlelo

*He nanea o ka lawai'a kole*  
It is interesting to gather and tell stories

## Name Translation

*Kole* means raw  
*Kole maka onaona*, a phrase said of attractive people, as the eye of this fish is considered beautiful

## Biology

## Endemic?

Yes

## Reproductive size (L50)

5"

## Max Length

6"

## Ecology

## Feeding

Algae

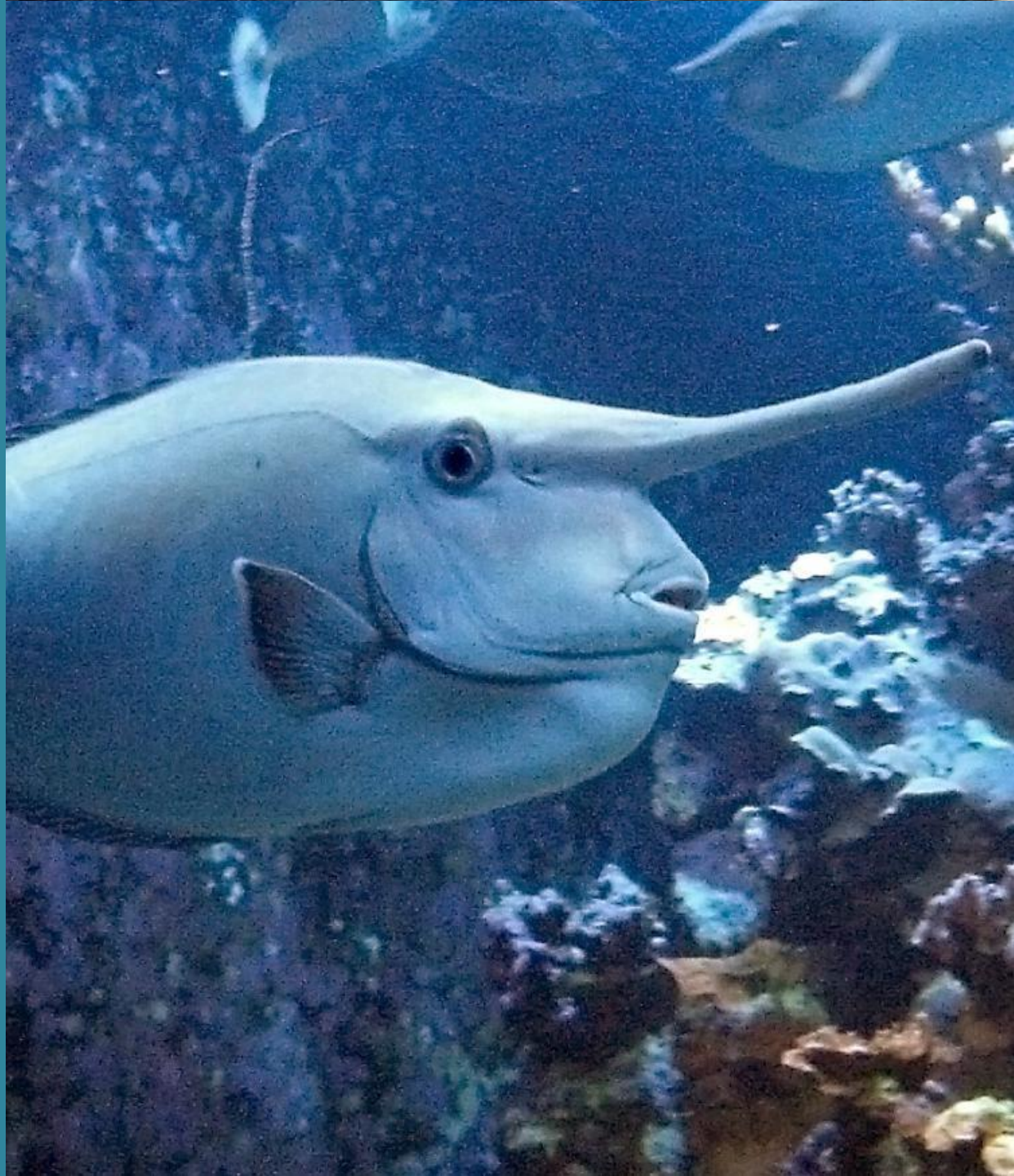
## Habitat

Coral reef

## Notes:

# KALA (UNICORN FISH)

- Named for the large horn on their forehead
- All HORNED species are regulated
- Kala have 2 spines on each side of their tail
- Typically caught with net, spear, pole/line

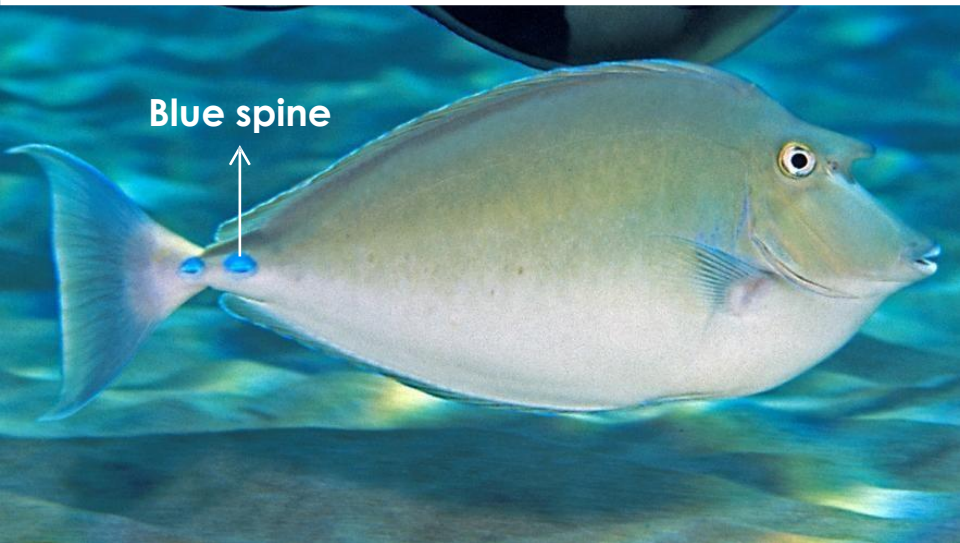




Kala

Bluespine Unicornfish/Tenguhagi

*Naso unicornis*



Blue spine

Kala lōlō

Paletail Unicornfish/Tsuma ri-tenguhagi

*Naso brevirostis*



Spots

White tail

Kala

Whitemargin Unicornfish

*Naso annulatus*



Long horn

State Rules

No Take – Kahekili KHFMA ONLY

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
14"	-	-	-	-

## Local Knowledge

'Ōlelo	Name Translation
<p><i>Mālama I ke kala ka i'a hi'u 'oi;</i>            What out for the kala, the fish with a sharp tail;            Referring to a sharp spine near the <i>kala's</i> tail, also a warning to beware of a person able to defend themselves</p>	<p><i>Kala</i> means rough, referring to its rough skin</p>

## Biology

Endemic?	Reproductive size (L50)	Max Length
No	14"	2 ft

## Ecology

Feeding	Habitat	Kumulipo
Algae, especially leafy varieties	Reef flat, outer reef	<p><i>Hanau ka Lā'īpala, hanau ke kala I ke kai la, holo Lā'īpala</i> (yellow tang) is born, <i>kala</i> is born</p>

## Notes:

'Opelu kala

Sleek Unicornfish

*Naso hexacanthus*



- Color can vary
- Found mainly in deeper (30-50ft) water
- Forms large schools
- Caught with spear, pole/line

Photo credit: Keeki Stender

**State Rules**

**No Take – Maui KHfMA Only**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
16"	-	-	-	-

**Local Knowledge****Name Translation**

*Kala* means rough, referring to its rough skin

**Biology**

Endemic?	Reproductive size (L50)	Max Length
No	16"	2.5 ft

**Ecology**

Feeding	Habitat
Plankton	Outer reef

**Notes:**



# UHU (PARROTFISH)

- Regulated species have parrot-like beaks and red/brown-colored females
- Sleep in bubbles (mucus shield) at night
- Can be heard scraping algae off coral, rocks
- Juveniles found in schools
- Females are red-colored (certain species brown), males are blue-colored
- Typically caught with spear

## Regulated



## Not regulated





Uhu 'ahu'ula (F), Uhu uliuli (M)

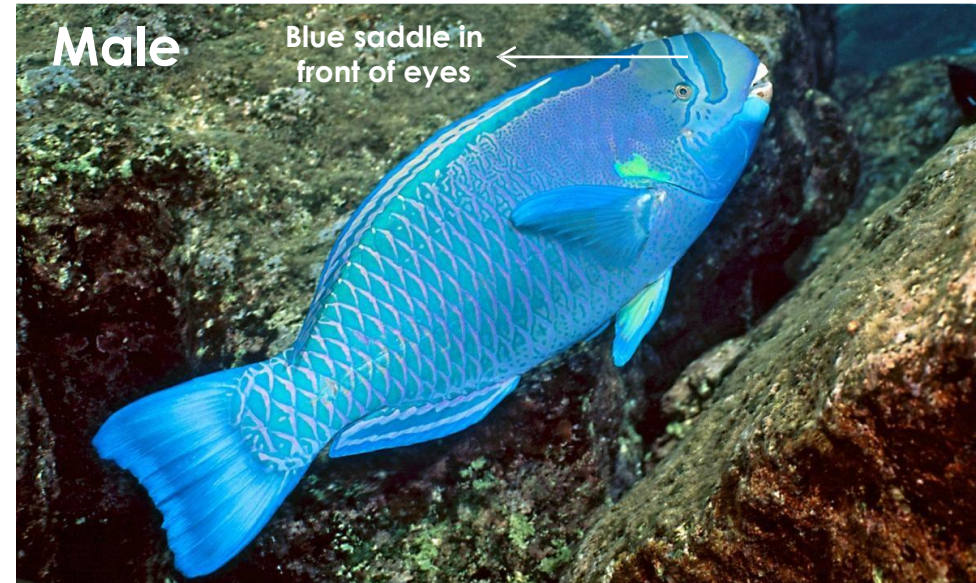
Spectacled Parrotfish

*Chlorurus perspicillatus*

Female



Male

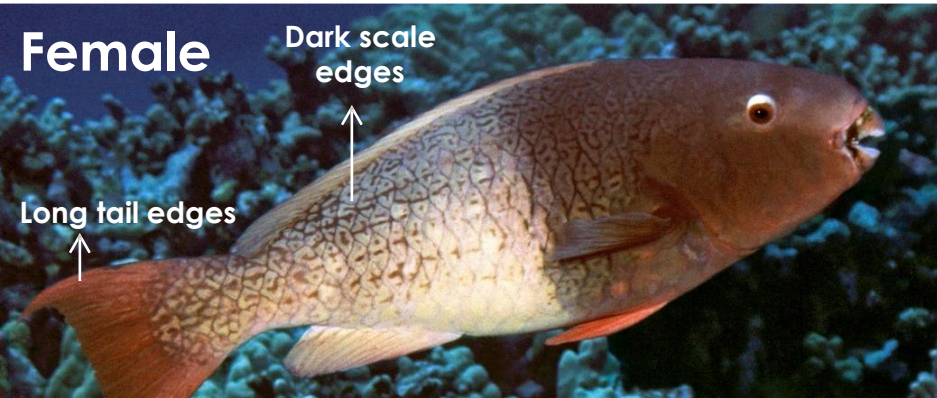


Uhu pālupaluka (F), Uhu 'ele'ele (M)

Redlip Parrotfish

*Scarus rubroviolaceus*

Female



Male



State Rules

No Take – Kahekili KHfMA ONLY

Minimum Size	Seasonal closures	Prohibited to take	Bag limit	Gear Restrictions	Permits and Licenses	Similar but not regulated species
12", 14" (Maui only)		Blue males (Maui only)	2 fish (Maui only)	-	-	-

Uhu

Bullethead Parrotfish/ Budai

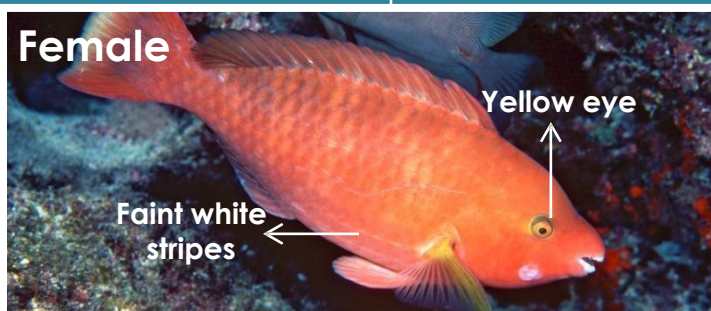
*Chlorurus spilurus*



Lauia

Regal Parrotfish

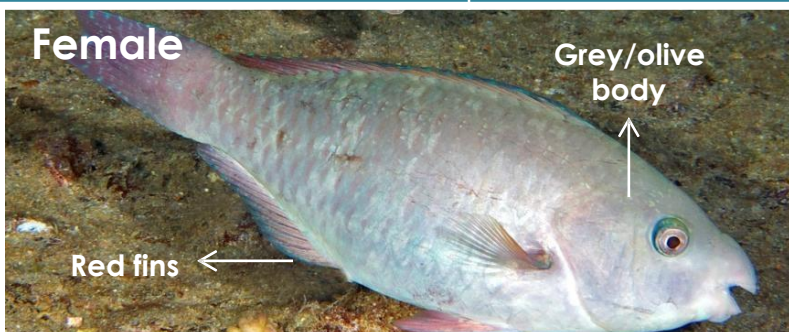
*Scarus dubius*



Uhu

Palenose Parrotfish/ Budai

*Scarus psittacus*



State Rules

No Take - Kahekili KHfMA ONLY

Minimum Size

Seasonal closures

Bag limit

Gear Restrictions

Permits and Licenses

12',  
10" (Maui only)

-

2 fish  
(Maui only)

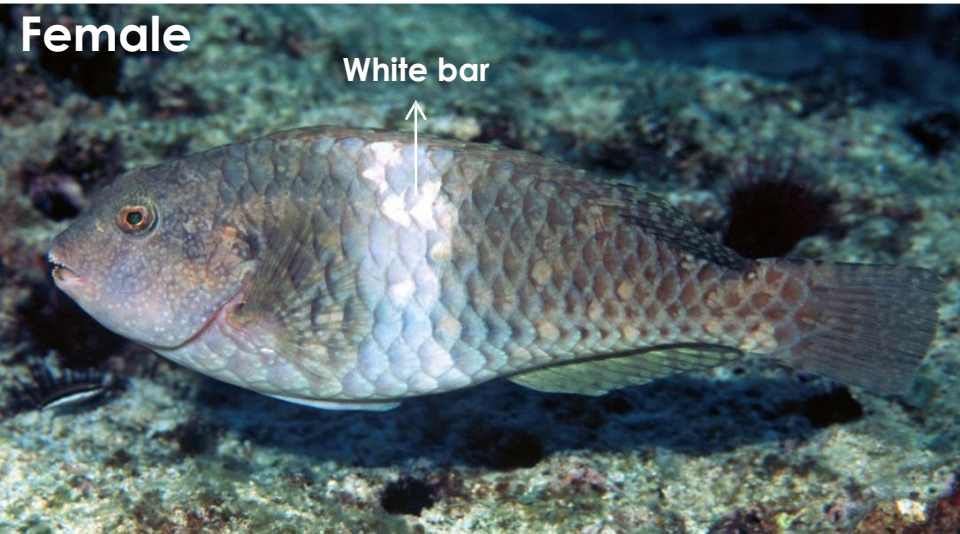
-

-

Yellowbar parrotfish

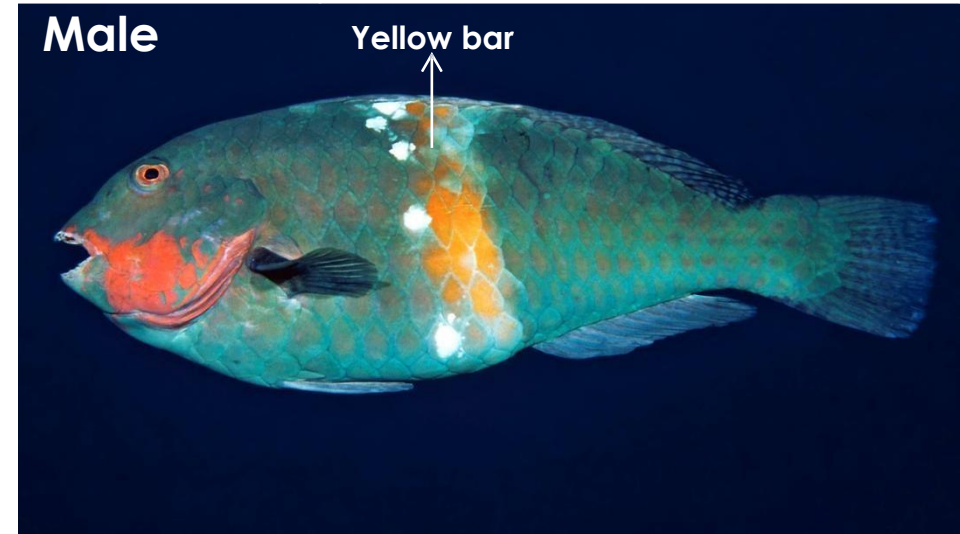
*Calotomus zonarchus*

Female



White bar

Male



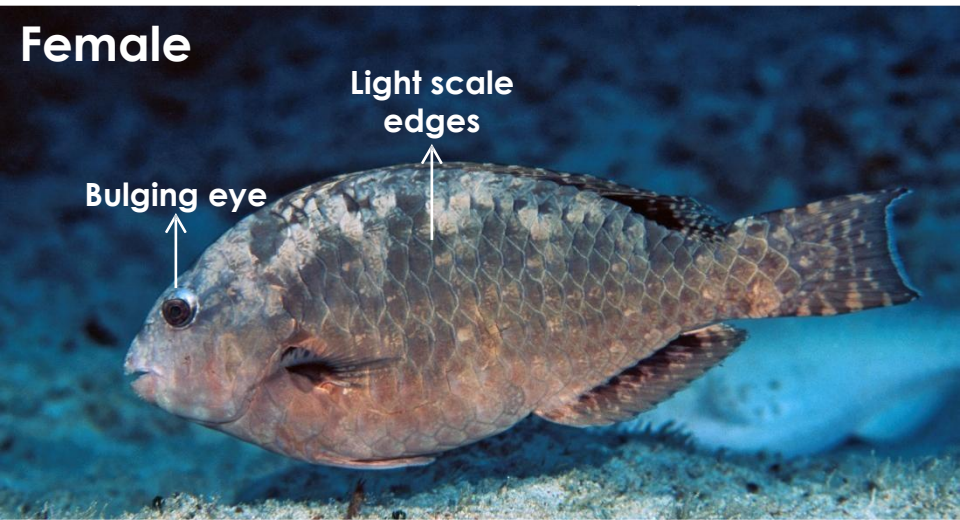
Yellow bar

Pōnahunuhu

Star-eye parrotfish

*Calotomus carolinus*

Female



Light scale edges

Bulging eye

Male



Pink lines around eye

Maui Rules Only

No Take - Kahekili KHfMA

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
10" (Maui only)	-	2 fish (Maui only)	-	-

## Local Knowledge

'Ōlelo	Name Translation
<p><i>Akāhi ho'i ku'u 'ono I ka uhu ka'alo I ku'u maka;</i> Now I long for the uhu fish that passes before my eyes; Said of handsome men, the uhu is bright, beautiful to look at, and tasty</p>	<p><i>Uhu</i> means persistent in going ahead willfully</p>

## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
Yes ( <i>Calotomus zonarchus</i> , <i>Scarus dubius</i> , <i>Chlorurus perspicillatus</i> )	May – Aug (Mo'omomi)	Varies by species, 8" – 12"	Varies, 1 – 2ft

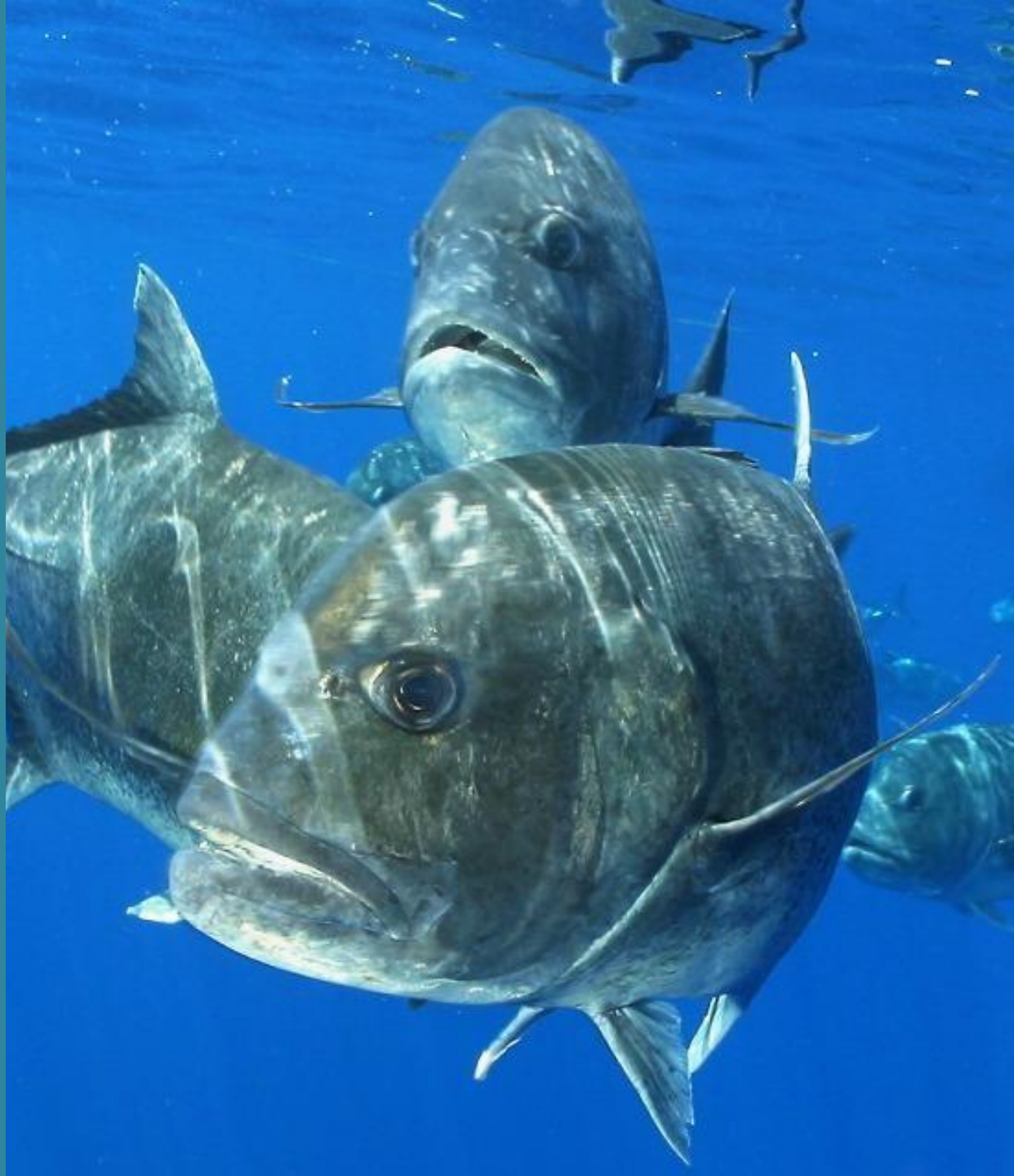
## Ecology

Feeding	Habitat
Algae, crustaceans	Reef flat, outer reef

## Notes:

# ULUA (JACKS)

- Ulua is the name for a family of fishes that includes several species
- The term ulua refers to adult fish, the term pāpio means smaller, juvenile ulua
- Can grow to be very large (5ft max)
- One of top predators on the reef
- Extremely popular gamefish, very good to eat
- Caught with pole/line from shore, spear







Ulua aukea

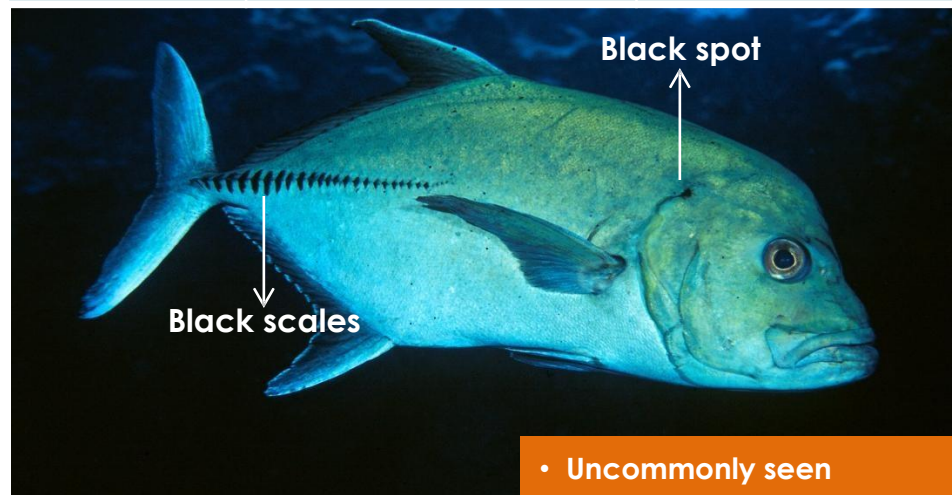
Giant trevally/white ulua/Ronin-aji

*Caranx ignobilis*

Ulua lā'uli

Black Trevally/ulua

*Caranx lugubris*



'Ōmilu

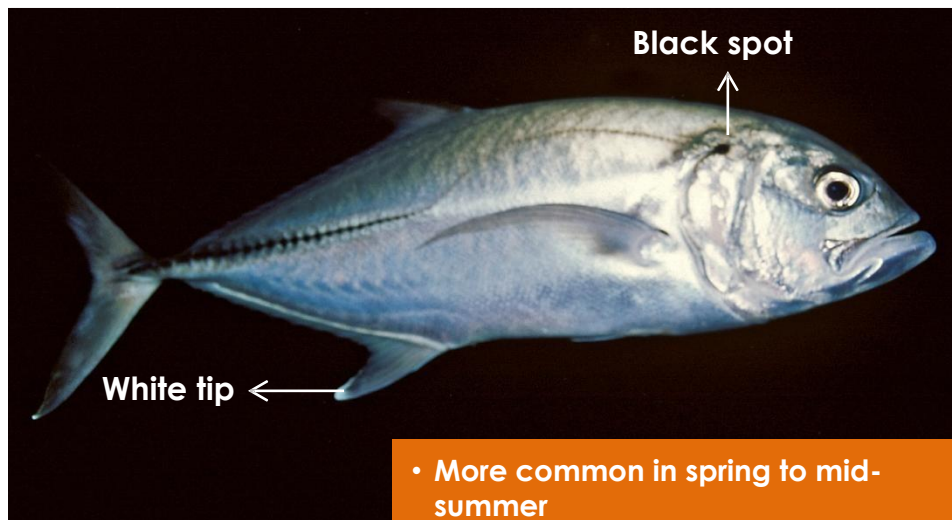
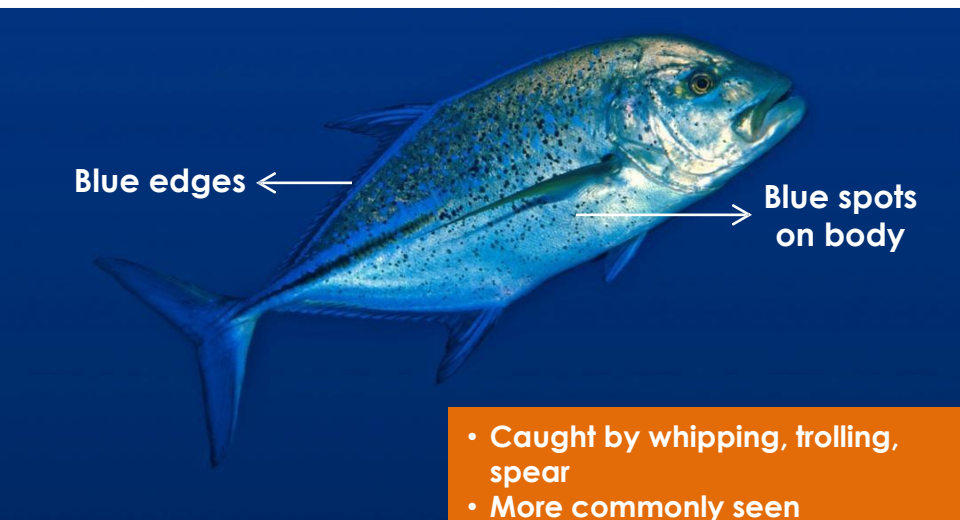
Bluefin trevally/kasumi-aji/hoshi ulua

*Caranx melampygus*

Ulua

Bigeye Jack/Pake ulua/Gingame-aji/menpachi ulua/sasa

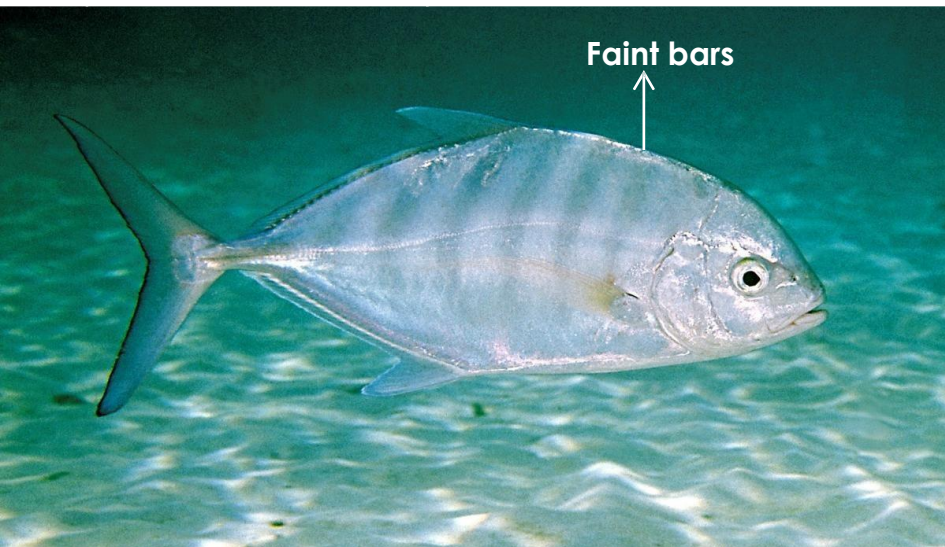
*Caranx sexfasciatus*



State Rules

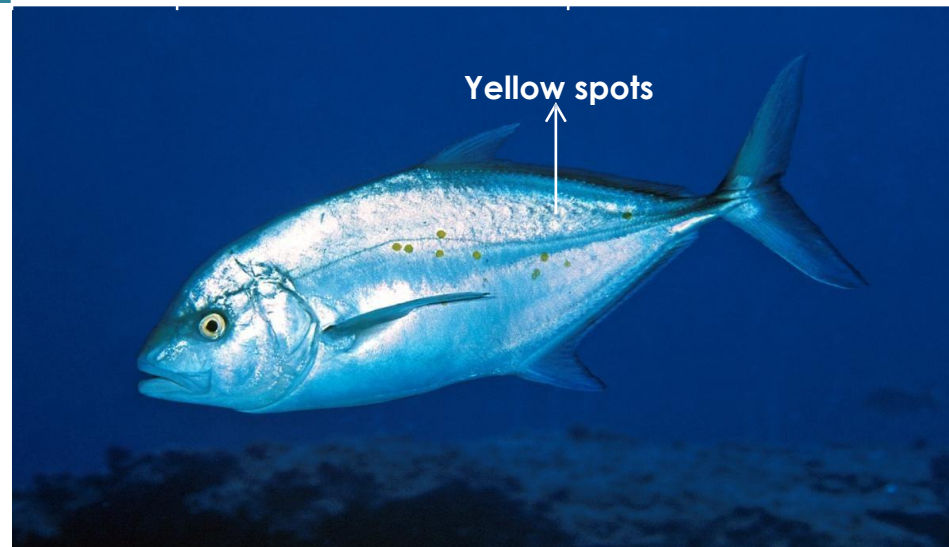
Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
Home: 10" Sale: 16"	-	20 (all species)	-	-

Barred Jack

*Carangoides ferdau*

Papa ulua

Yellowspot/Island Jack/papa

*Carangoides orthogrammus*

Horse Jack/White fin ulua

*Carangoides equula*

## State Rules

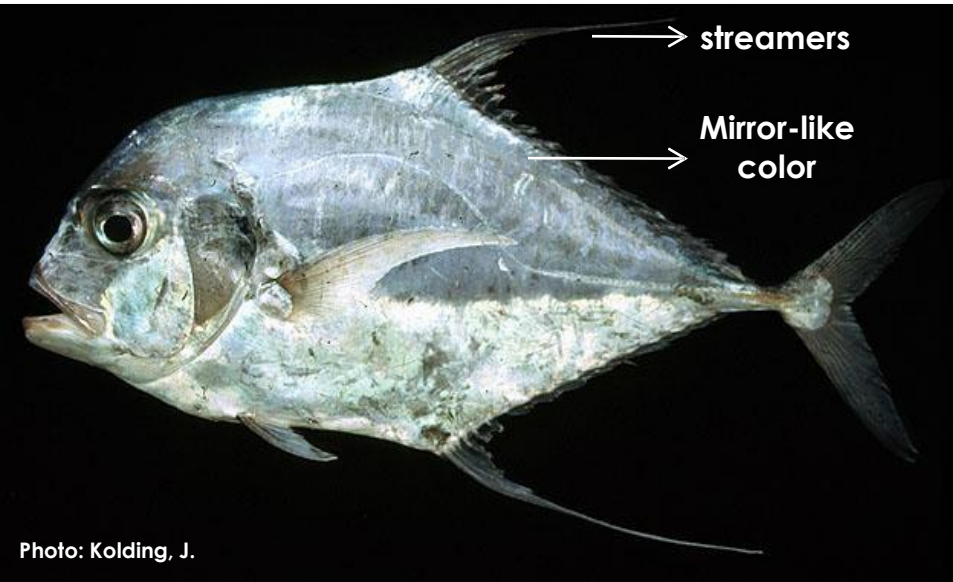
Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
Home: 10" Sale: 16"	-	20 (all species)	-	-

# Ulua – Not Regulated

Ulua kihikihi

Threadfin Jack/  
Kagami Ulua

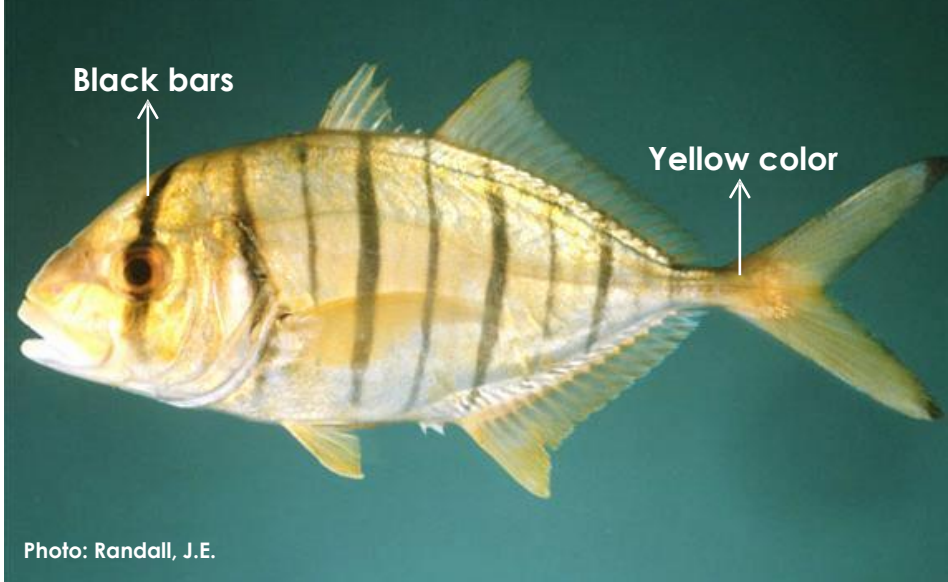
*Alectis ciliaris*



Ulua pa'opa'o

Yellow trevally

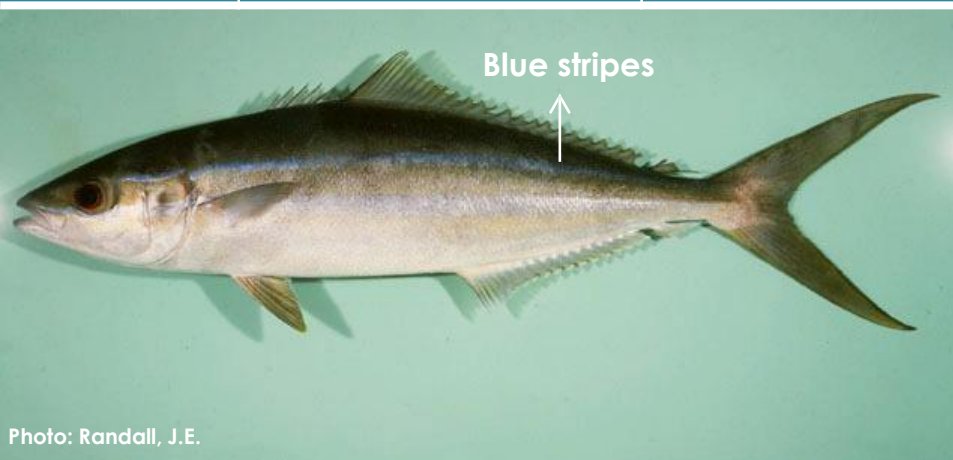
*Gnathanodon speciosus*



Kamanu

Rainbow Runner/  
Tsumu-buri

*Elagatis bipinnulata*



Kāhala

Amberjack/Kampachi

*Seriola dumerili*



## Local Knowledge

## 'Ōlelo

*Ka i'a kāohi aho o na kai uli*  
The fish of the deep that pulls the line taut

## Name Translation

*Ulua* also means 'man' or 'sweetheart', especially used in love songs

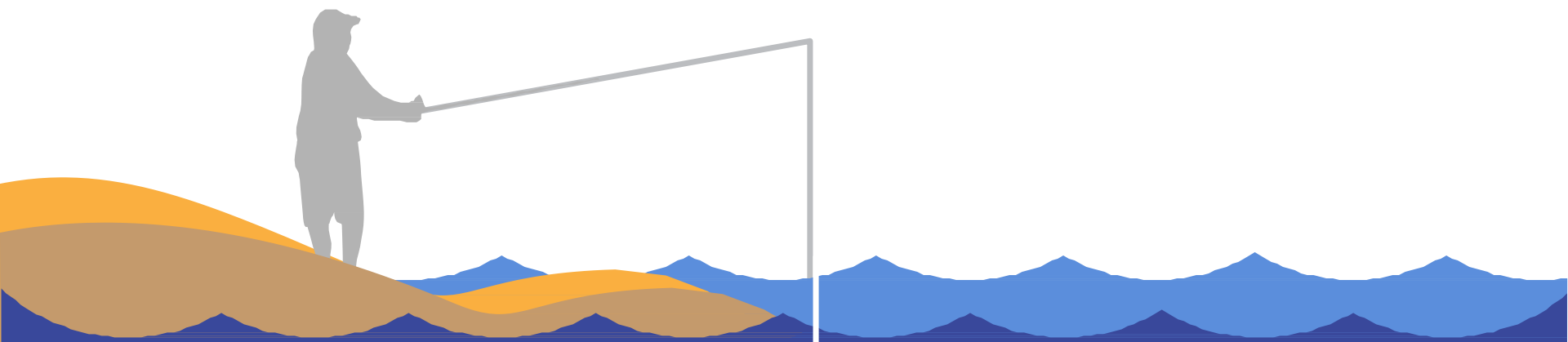
## Biology

Endemic?	Spawning Season	Reproductive size (L50)	Max Length
No	Jun – Aug (Mo'omomi) Jul – Aug (West Maui)	Varies by species Omilu: 14", Ulua aukea: 21-32"	5.5 ft, average: 3 ft

## Ecology

Feeding	Habitat	Kumulipo
Fish, octopus, crustaceans	Reef flat, outer reef	<i>Hanau ka Ulua, hanau ka Hahalau I ke kai la, holo Ulua are born, Hāhālua (manta rays) are born in the sea</i>

## Notes:



SECTION  
TWO

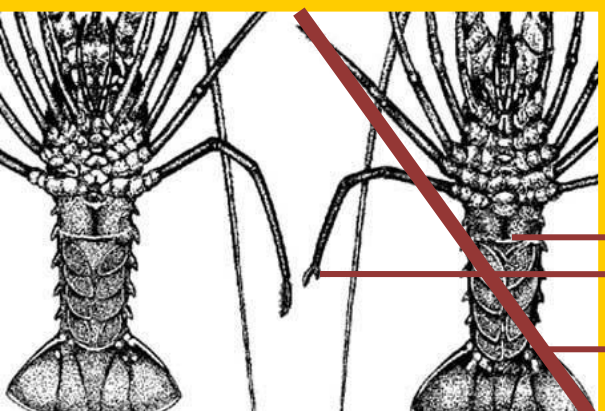
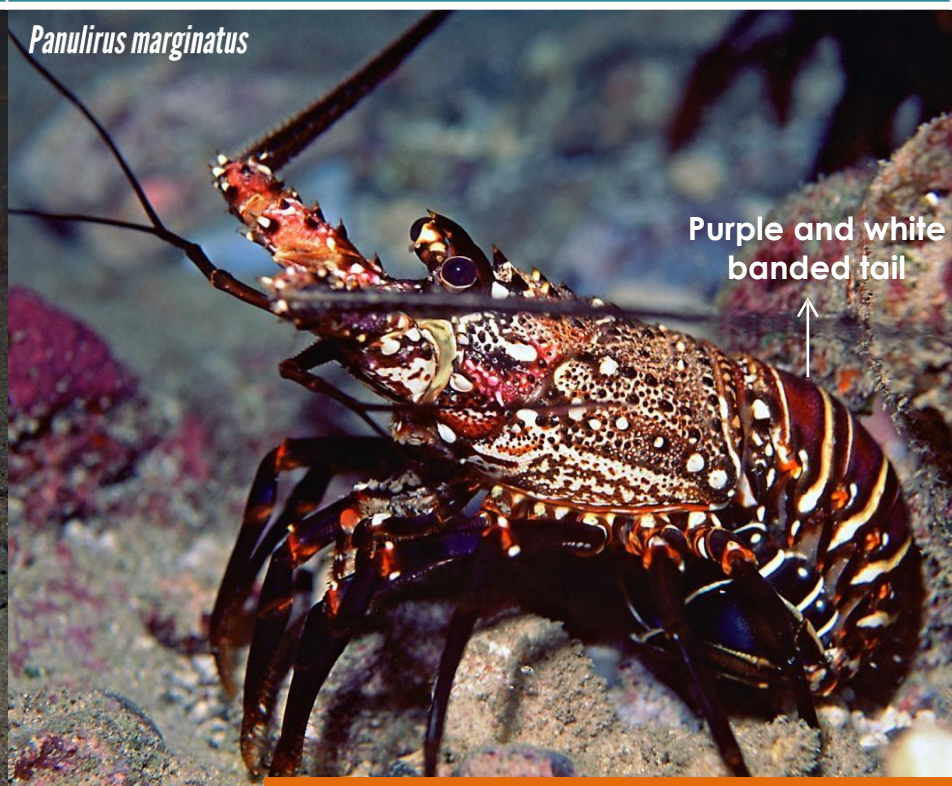
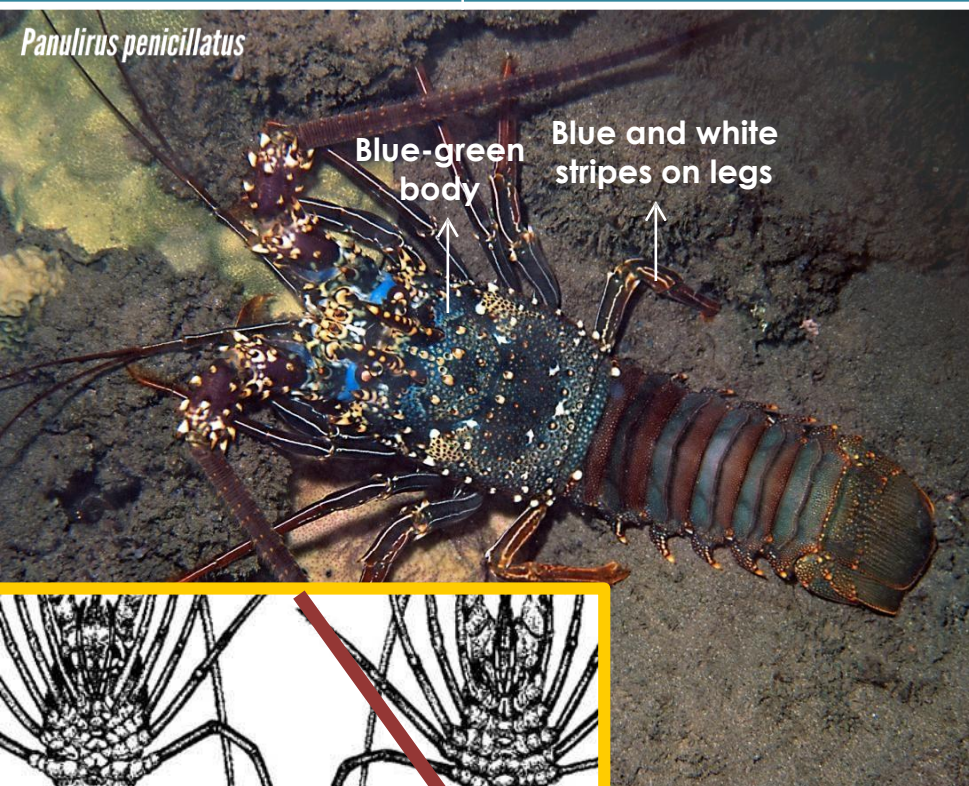
**KOLO**  
(INVERTEBRATE)



'Ula

Spiny Lobster/Isebi

*Panulirus penicillatu* and *Panulirus marginatus*



Male

Female

- Dark sperm plate
- Claw-shaped legs
- Large, overlapping 'Swimmerets'

- Found under ledges
- Nocturnal
- *Penicillatus* is common in shallow water, *marginatus* in deep water
- Popular to eat

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
3.25" (carapace length)	May - Aug	2 lobsters per day <b>(Ha'ena CBSFA only)</b>	No spearing, Whole only (not mutilated); No taking females By hand harvest only <b>(Ha'ena CBSFA only)</b>	-

## Local Knowledge

## 'Ōlelo

*He ula, he i'a noho I ka naele;*  
A lobster, the creature that stays in sea caves

## Name Translation

'Ula also means a flame, or to flame

## Biology

## Endemic?

Yes – only *Panulirus marginatus*

## Spawning Season

May – Aug, Nov - Dec

## Max Length

16"

## Ecology

## Feeding

Reef invertebrates

## Habitat

Reef flat, outer reef

## Notes:

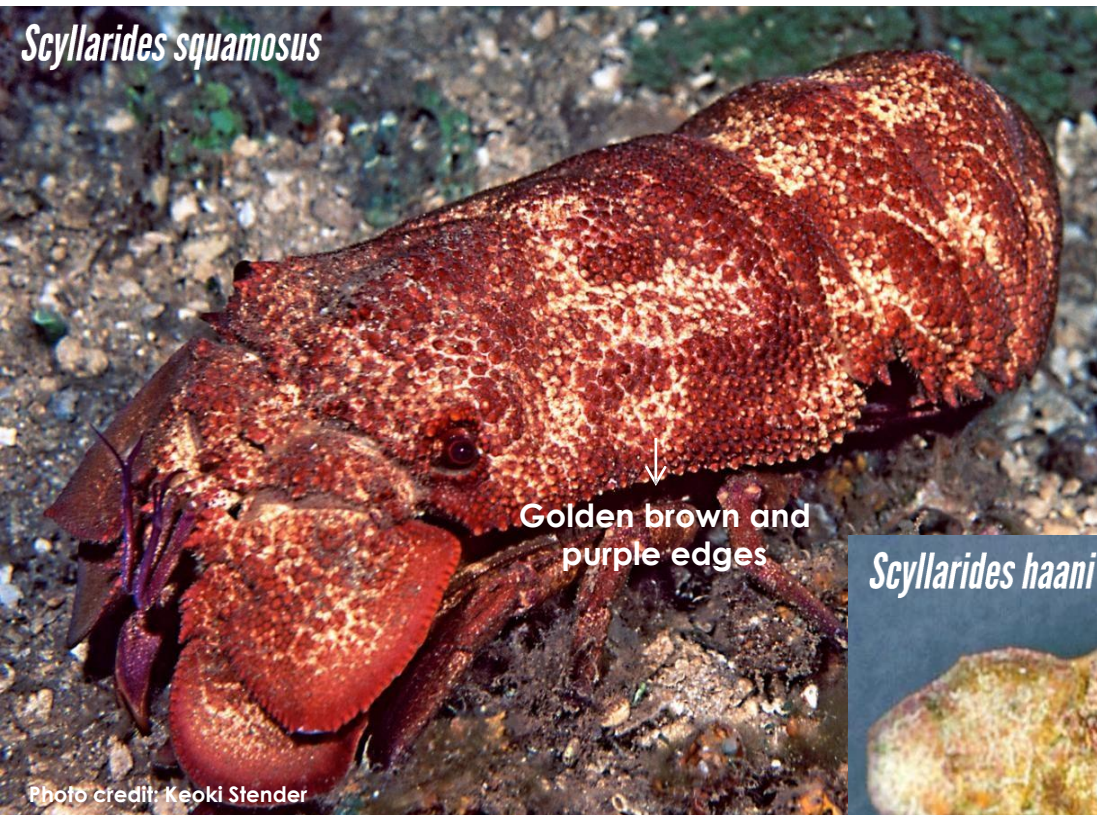


'Ula pāpapa

Slipper Lobster/Isebi

*Scyllarides squamosus*, *Scyllarides haani*

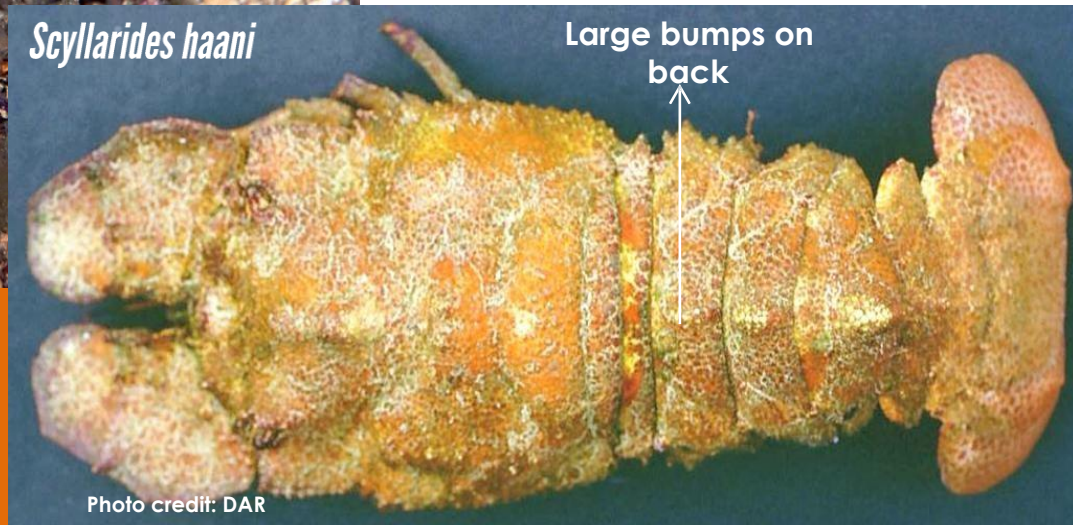
*Scyllarides squamosus*



Only regulated in Ha'ena CBSFA



*Scyllarides haani*



- Rare to see
- Nocturnal, found in dark caverns during the day
- Long, flat bodies

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
2.75" (tail width)	May - Aug	2 per day <b>(Ha'ena CBSFA only)</b>	No spearing, Whole only (not mutilated); No taking with eggs <b>Hand harvest only (Ha'ena CBSFA only)</b>	-

**Local Knowledge****Name Translation***Pāpapa* means low or flat**Biology****Endemic?**

No

**Spawning Season**

May - Aug

**Max Length**

~15 inches

**Ecology****Feeding**

Reef Invertebrates

**Habitat**

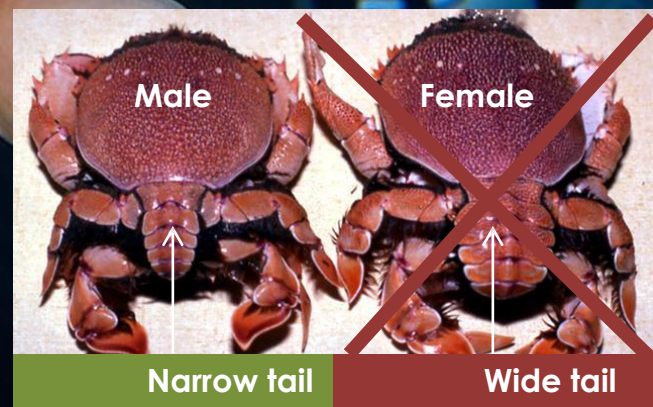
Surf zone to deeper water

**Notes:**

Pāpa'i kualoa

Kona crab/Ashi gani

*Ranina ranina*



- Uncommon in sandy areas
- Excellent eating
- Usually buried in sand, except for eyes

**State Rules**

Minimum Size	Closed Season	Bag limit	Gear Restrictions	Permits and Licenses
4" (carapace length)	May - Aug	-	No spearing, No taking females	-

## Local Knowledge

## Hawaiian 'Ōlelo

*Kekē ka niho a ka pāpa'i;*  
The crab exposes its teeth;  
Refers to a threat that is said, but never acted on

## Name Translation

*Pāpa'i* is a general name for crabs, also means small hut or shelter

## Biology

## Endemic?

No

## Spawning Season

May - Aug

## Maximum Size

9 inches (carapace length)

## Ecology

## Feeding

Small, bottom-dwelling fish

## Habitat

Sandy areas in outer reef

## Kumulipo

*Hanau ka Paka, hanau ka Pāpā i ke kai, holo*  
Eels are born, Crabs are born in the sea, swim

## Notes:



No take with eggs

Eggs

• Common in muddy sand and deep

Photo credit: Keoki Stender

Female crab with eggs, photo credit: Margaret Siple

State Rules				
Minimum Size	Seasonal closures	State Rule Bag limit	Gear Restrictions	Permits and Licenses
4" (carapace length or width)	-	-	No spearing, No taking with eggs	-

**Local Knowledge****Name Etymology**

*Kua honu* means a turtles back, it is also a pattern used in quilting

**Biology****Endemic?**

Yes – Hawaiian crabs are an endemic subspecies

**Maximum Size**

6 inches (carapace length)

**Ecology****Feeding**

Small reef invertebrates

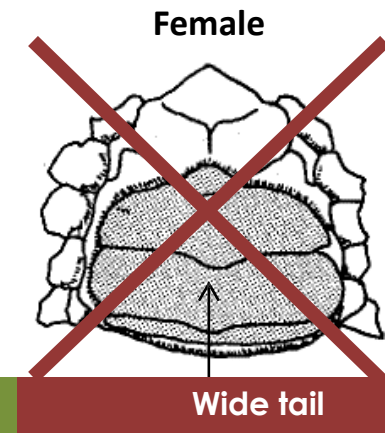
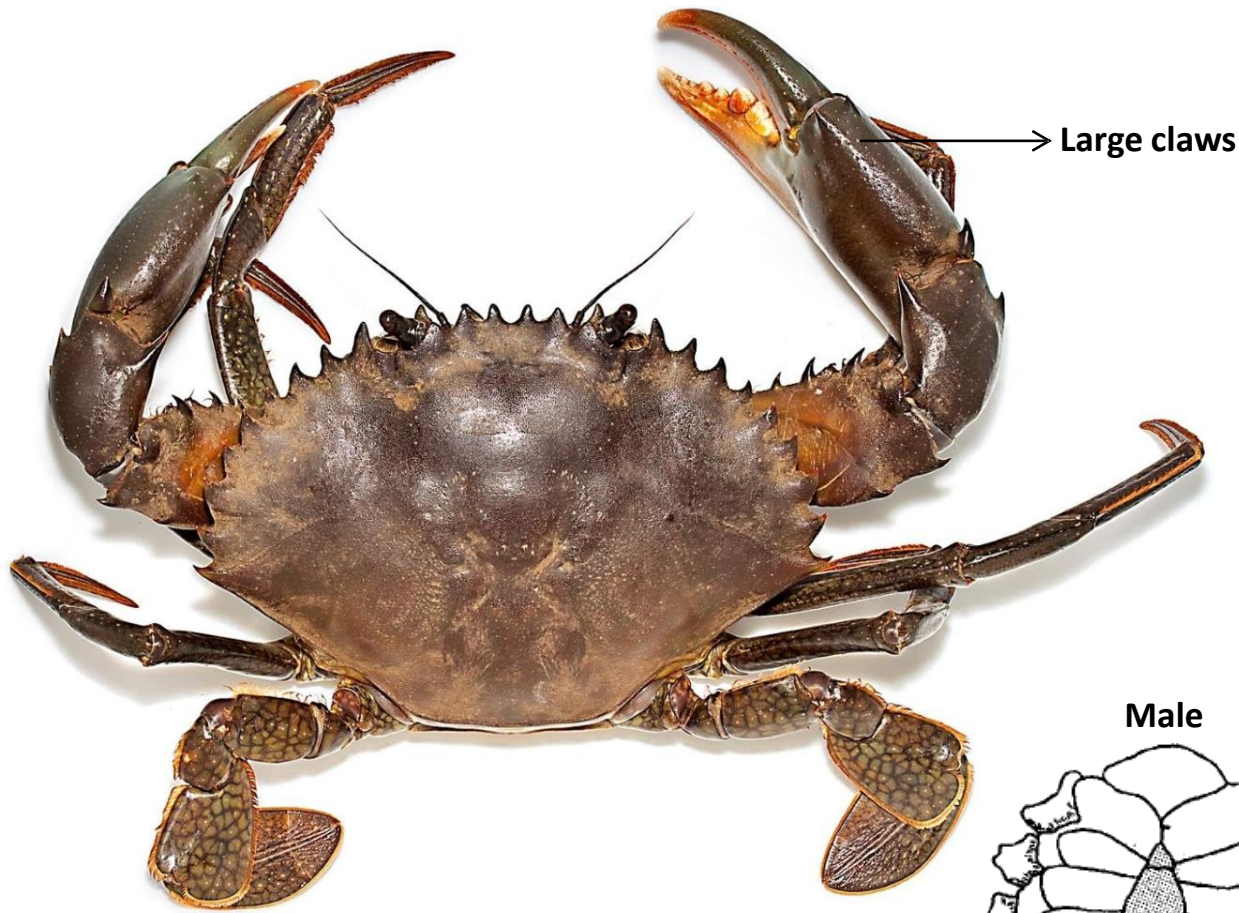
**Habitat**

Estuary, mud and sand areas

**Kumulipo**

*Hanau ka Paka, hanau ka Pāpā i ke kai, holo*  
Eels are born, Crabs are born in the sea, swim

**Notes:**



- Can grow very large
- Claws very powerful and painful

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
6" (width across back)	-	-	No spearing, No taking females	-

**Biology****Endemic?**

No – species introduced to Hawaii in 1926

**Spawning Season**

May - Aug

**Maximum Size**

Current state record is over 7lbs

**Ecology****Feeding**

Invertebrates

**Habitat**

Estuary, river mouths, mangrove areas

**Kumulipo***Hanau ka Paka, hanau ka Pāpā i ke kai, holo*  
Eels are born, Crabs are born in the sea, swim**Notes:**



He'e

Day/Night Octopus/Tako

*Octopus cyanea*, *Octopus ornatus*

*Octopus cyanea*



*Octopus orantus*



- Found hidden in small holes and crevices on reef flat
- Feeds on snails, lobster, fish

- Seen commonly at night
- Long arms with white dots

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
1lb	-	2 per day (Ha'ena CBSFA only)	Take only by <u>hand harvest</u> or with a <u>stick no more than two feet in length</u> only (Ha'ena CBSFA only)	-

He'e

Day/Night Octopus/Tako

*Octopus cyanea, Octopus ornatus*

**Local Knowledge**

**Hawaiian 'Ōlelo**

*Ka i'a mana nui;*  
The fish of many divided parts

**Name Translation**

*he'e* means to flee, slide, or melt

**Biology**

**Endemic?**

No

**Maximum Size**

~2.5 feet including arms

**Ecology**

**Feeding**

Snails, lobsters, small fish

**Habitat**

Reef flat, outer reef

**Connections**

*Hanau ka he'e noho i kai, Kia'i ia e ka walahe'e noho i uka He'e are born in the sea, guarded by the alahe'e on land Pua ke kō, ku ka he'e*

When the suger can tassels (late Oct/Nov), the he'e season is here

**Notes:**

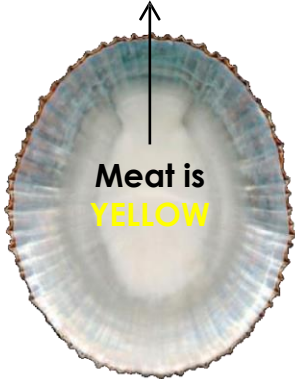
Large rounded rectangular area for notes.

Round shell



'Ōpihi ko'ele/Talc limpet/*Cellana talcosa*

White shell inside



Meat is **YELLOW**

Narrow rib between thicker ribs



'Ōpihi maka-ia-uli/Dark-foot limpet/*Cellana exarata*

Meat is **GREY**

Ribs extend past shell



'Ōpihi 'alinalina/Hawaiian limpet/*Cellana sandwicensis*

Meat is **YELLOW**

- Found in wave-washed, rocky, coastal areas
- Prized for eating
- Hawaiian limpet most common

State Rules

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
1.25" (shell diameter) 0.5" (meat diameter)	No harvest Present – Nov 30 <sup>th</sup> , 2017 <b>(Hā'ena 'Ōpihi Management Area ONLY)</b>	Beginning 12/1/2017 may take up to <b>20 total specimens combined</b> of 'ōpihi, kūpe`e, pipipi, and pūpū <b>(Hā'ena 'Ōpihi Management Area ONLY)</b>	-	-

## Local Knowledge

## Hawaiian 'Ōlelo

*He i'a make ka 'opihī;*  
 'Opihī is a fish of death;  
 'Opihī are found on rocks where the sea is rough

## Name Translation

'Opihī is also a design for tapa (fabric) and mats made of small triangles (like the shell of the 'opihī)

## Biology

## Endemic?

Yes (all 3 regulated species)

## Maximum Size

~2.5 inches (shell diameter)

## Ecology

## Feeding

Algae

## Habitat

Wave-washed rocky areas, tide pools

## Notes:



Photo credit: Keoki Stender

**Hā'ena CBSFA Rules Only – 'Ōpihi Management Area**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
	<p>No harvest of <u>live</u> pūpū shells Present – Nov 30<sup>th</sup>, 2017</p>	<p>Beginning 12/1/2017 may take up to <u>20 total LIVE specimens combined</u> of 'ōpihi, kūpe`e, pipipi, and pūpū within the <b>'Ōpihi Management Area ONLY</b></p>	<p>May take or possess <u>empty</u> pūpū shells at any time (except by scuba)</p>	





Horn-shaped shell

- Usually in deeper water
- Adults can be covered in algae
- Horn used to create trumpets

**West Hawaii Regional FMA ONLY**

Illegal to take, kill, possess, sell, or offer for sale

## Local Knowledge

### Name Translation

*Pū* is a general name for trumpets, or a wind instrument

## Biology

### Endemic?

No

### Maximum Size

~ 12 inches

## Ecology

### Feeding

Small invertebrates, including Crown-Of-Thorns-Starfish (COTS)

### Habitat

Coral Reef

## Notes:



Pū

Triton's Trumpet

*Charonia tritonis*



Spiral-shaped shell

- Tip of shell used to create trumpet known as pū
- Eats Crown-Of-Thorns-Starfish (COTS)

**West Hawaii Regional FMA ONLY**

Illegal to take, kill, possess, sell, or offer for sale

## Local Knowledge

### Name Translation

*Pū* is a general name for trumpets, or a wind instrument

## Biology

### Endemic?

No

### Maximum Size

16 inches

## Ecology

### Feeding

Small invertebrates, including Crown-Of-Thorns-Starfish (COTS)

### Habitat

Coral Reef

## Notes:

Wana

Sea Urchin

All species



*Echinometra mathaei*



*Echinothrix diadema*



*Heterocentrotus mamillatus*



*Tripneustes gratilla*

**Kahekili Herbivore Fisheries Management Area (KHfMA) ONLY**

Illegal injure, kill, possess, or remove any wana

**Ha'ena Community-Based Subsistence Fishing Area (CBSFA) ONLY**

Bag limit of **5 urchins per species per day**

## Local Knowledge

### Hawaiian 'Ōlelo

*Ka i'a hō'eha lima*  
The fish that can hurt the hands

### Name Etymology

*Wana* means sharp, spike

## Biology

### Endemic?

Yes - only *Actinocidaris thomasi* (Thomas' urchin), *Prionocidaris hawaiiensis* (Hawaiian thorny urchin), and *Acanthocidaris hastigera* (Spear urchin)

## Ecology

### Feeding

Algae

### Habitat

Wave-washed rocky areas, tide pools

## Notes:

Pipipi

Common nerite

*Nerita picea*



White top

Black shell

Photo credit: Keoki Stender

- Common in rocky or tide pool areas
- Boiled to eat as a snack
- Used to make lei pipipi

**Ha'ena CBSFA – 'Opihi Management Zone ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
-	<p>No harvest Present –            Nov 30<sup>th</sup>, 2017 (Ha'ena CBSFA – 'Opihi Management Zone ONLY)</p>	<p>Beginning 12/1/2017            may take up to <b>20 total specimens combined</b> of            `ōpihi, kūpe`e, pipipi, and pūpū  <u>(Hā'ena 'Opihi Management Area ONLY)</u></p>	-	-

## Local Knowledge

## Hawaiian 'Ōlelo

*Kokolo no o pipipi, o kalamoe me ālealea a ke alo o Kahuaimoana*  
Said of hangers-on who gather around an important person of favor

## Name Translation

*Pipipi* means small and close together

## Biology

## Endemic?

Yes - *Nerita picea*

## Maximum Size

~1/2 inch

## Ecology

## Feeding

Algae

## Habitat

Wave-washed rocky areas, tide pools

## Notes:

Kūpe'e

Polished nerite

*Nerita polita*



Photo credit: Keoki Stender

- Found under boulders or sand near the shoreline
- Boiled to eat as a snack
- Used to make lei pipipi

**Ha'ena CBSFA – 'Opihi Management Zone ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear Restrictions	Permits and Licenses
-	No harvest Present – Nov 30 <sup>th</sup> , 2017 (Ha'ena CBSFA – 'Opihi Management Zone ONLY)	Beginning 12/1/2017 may take up to <u>20 total specimens combined</u> of `ōpihi, kūpe`e, pipipi, and pūpū within the <u>Hā`ena 'Opihi Management Area ONLY</u>	-	-

## Local Knowledge

## Hawaiian 'Ōlelo

Ka i'a kīnohinohi pōhaku.  
The nerites that cling to the rocks in shallow water

## Name Etymology

*Kupe'e means sharp bracelet*

## Biology

## Endemic?

No

## Maximum Size

~3 cm

## Ecology

## Feeding

Algae

## Habitat

Wave-washed rocky areas, tide pools

## Notes:



# CORAL AND LIVE ROCK

- There are over 70 species of hard coral found in Hawai'i
- Coral is an animal, a coral colony is made of thousands of coral 'polyps'
- Coral polyps have algae living within their tissue called 'zooxanthellae', which gives them their color
- Live rock is any rock with marine life attached

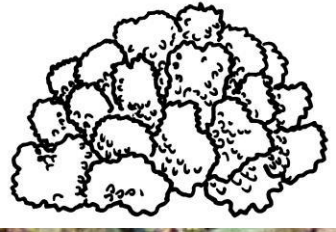




## Cauliflower Coral

Example: *Pocillopora meandrina*

Shape:



Cauliflower coral

Cauliflower coral

Photo credit: Keoki Stender

- Found on reefs with wave action
- Can be yellow, purple, green, pink, brown

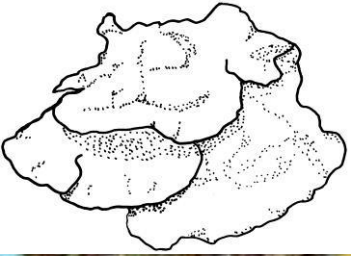
### State Rules

Unlawful to take, break, damage, or sell corals (dead or alive) Damage includes: sediments, pollutants, and vessel groundings

# Rice Coral

Examples: *Montipora patula*, *Montipora flabellata*

Shape:



*Montipora patula*

Rice coral



*Montipora flabellata*

Rice coral



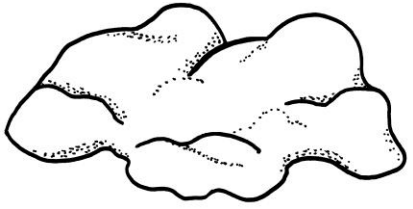
Photo credit: Keoki Stender

## State Rules

Unlawful to take, break, damage, or sell corals (dead or alive) Damage includes: sediments, pollutants, and vessel groundings

- Forms different shapes including sheets, plates
- Color of each species varies including orange, purple, brown

Shape:



Lobe coral

Photo credit: Keeki Stender

- Shape and color can vary
- Can be yellow, greenish yellow, brown

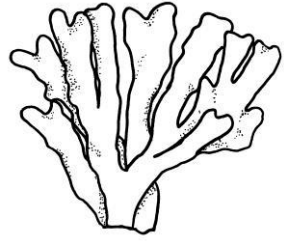
### State Rules

Unlawful to take, break, damage, or sell corals (dead or alive) Damage includes: sediments, pollutants, and vessel groundings

## Antler coral

*Example: Pocillopora eydouxi*

Shape:



Antler coral

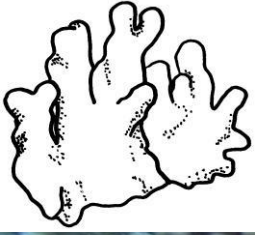
Photo credit: Keoki Stender

- Forms short branches
- Fish commonly live within coral

### State Rules

Unlawful to take, break, damage, or sell corals (dead or alive) Damage includes: sediments, pollutants, and vessel groundings

Shape:



Finger coral

Photo credit: Keoki Stender

- Common in areas protected from waves
- Finger-like branches

### State Rules

Unlawful to take, break, damage, or sell corals (dead or alive) Damage includes: sediments, pollutants, and vessel groundings

**Local Knowledge**

**Kumulipo**

*Hanau ka 'uku-ko'ako'a, hanau kana, he 'ako'ako'a, puka;*  
Born was the coral polyp, born was the coral, came forth

**Biology**

**Endemic?**

Yes (some species)

**Spawning Season**

various

**Ecology**

**Feeding**

Plankton, an algae called zooxanthellae also provides energy to the coral animal by living within its tissue

**Habitat**

Warm, clear, relatively shallow areas away from fresh water inputs

**Notes:**

Large rounded rectangular area for notes.





Live Rock

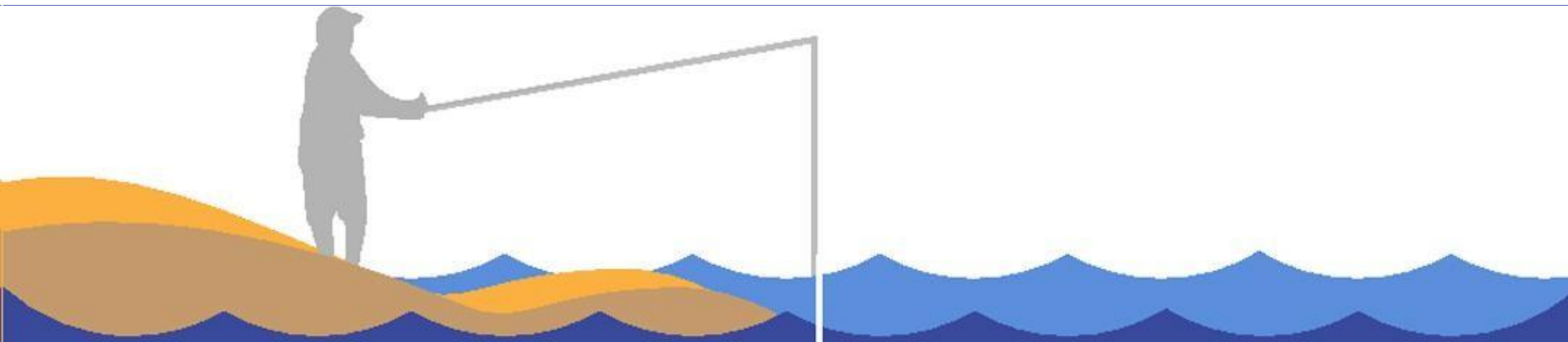


- Marine life can include small invertebrates, algae, Crustose Coralline Algae (CCA), sponges

Prohibited to take

Unlawful to take, break, damage, or sell live rocks  
Damage includes: sediments, pollutants, and vessel groundings





SECTION THREE

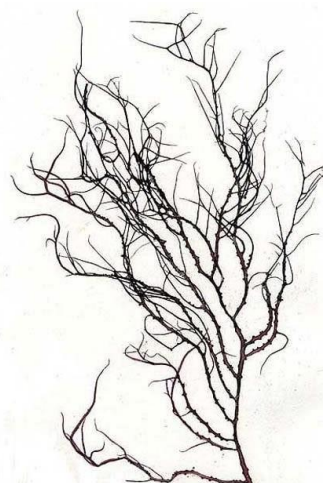
# LIMU

(ALGAE)



**NATIVE OGO**

*G. Parvispora* (ogo)



*G. coronopifolia*



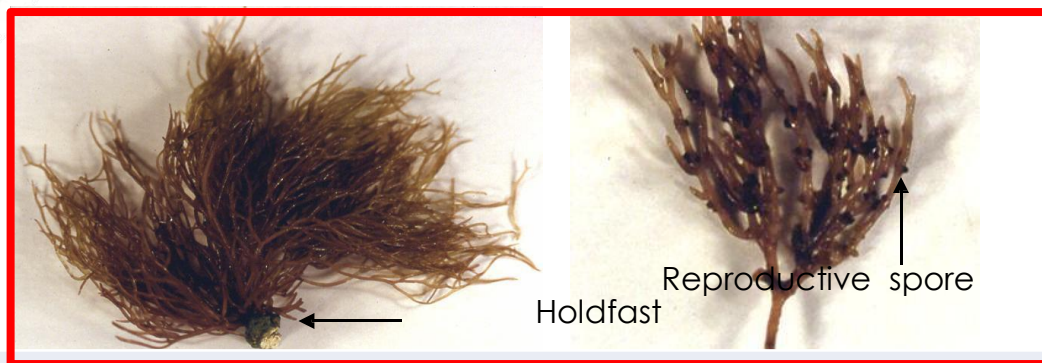
**INTRODUCED OGO**

*G. Salicornia* (gorilla ogo)

Jointed, wiry branches create a thick tangled mat on the reef



- Harvested from shallow, sandy reefs
- Y-branching arms
- Red to brown color



Reproductive spore  
Holdfast

Minimum Size	Seasonal closures	Bag limit	Restrictions	Permits and Licenses
-	-	1 lb (home consumption); 10 lb (with commercial marine license)	No take with holdfast attached; No take with reproductive spores <b>Hand harvest only</b> <b>Can only take native ogo for non-commercial use, can take introduced ogo for any</b>	-

**Local Knowledge**

**'Ōlelo**

*Ka i'a maewa I ke kai;*  
The fish (*limu/seaweed*) that sways in the sea

**Name Translation**

*Manaua* is also a variety of taro, *Mana* can mean branch or limb, *uea* means wire

**Biology**

**Endemic?**

Yes (*Gracillaria coronopifolia*, *Gracilaria parvispora*) *Gracilaria salicornia* is an introduced species, which is now invasive

**Ecology**

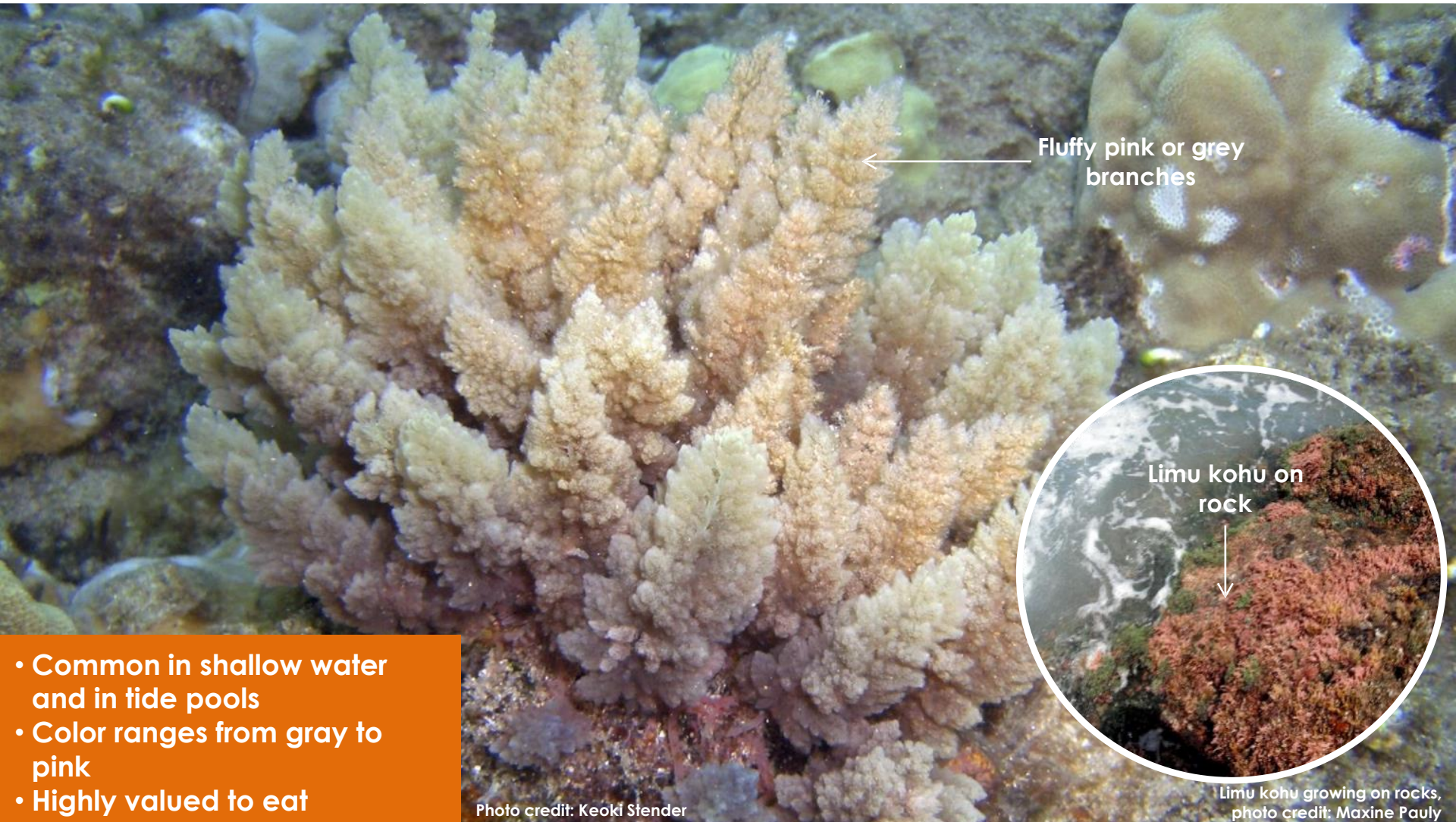
**Habitat**

Reef flat

**Kumulipo**

*Hanau ka Manaua noho i ke kai;*  
*Kia'i ia e ke Kalo-manaua noho i uka* The *manaua* was born and lived in the sea; guarded by the *kalo-manaua* living on land

**Notes:**



Fluffy pink or grey branches

Limu kohu on rock

- Common in shallow water and in tide pools
- Color ranges from gray to pink
- Highly valued to eat

Photo credit: Keoki Stender

Limu kohu growing on rocks, photo credit: Maxine Pauly

**Pūpūkea Marine Life Conservation District (MLCD) rules ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear restrictions	Permits and Licenses
-	-	2 lbs (combined total dried and squeezed)	Hand harvest only, do not remove holdfast	-

## Local Knowledge

## 'Ōlelo

*Ka i'a maewa I ke kai;*  
The fish (*limu/seaweed*) that sways in the sea

## Name Translation

*Manauēa* is also a variety of taro, *Mana* can mean branch or limb, *uea* means wire

## Biology

## Endemic?

Yes (*Gracillaria coronopifolia*, *Gracilaria parvispora*) *Gracilaria salicornia* is an introduced species, which is now invasive

## Ecology

## Habitat

Shallow water, wave-washed areas, tide pools

## Notes:



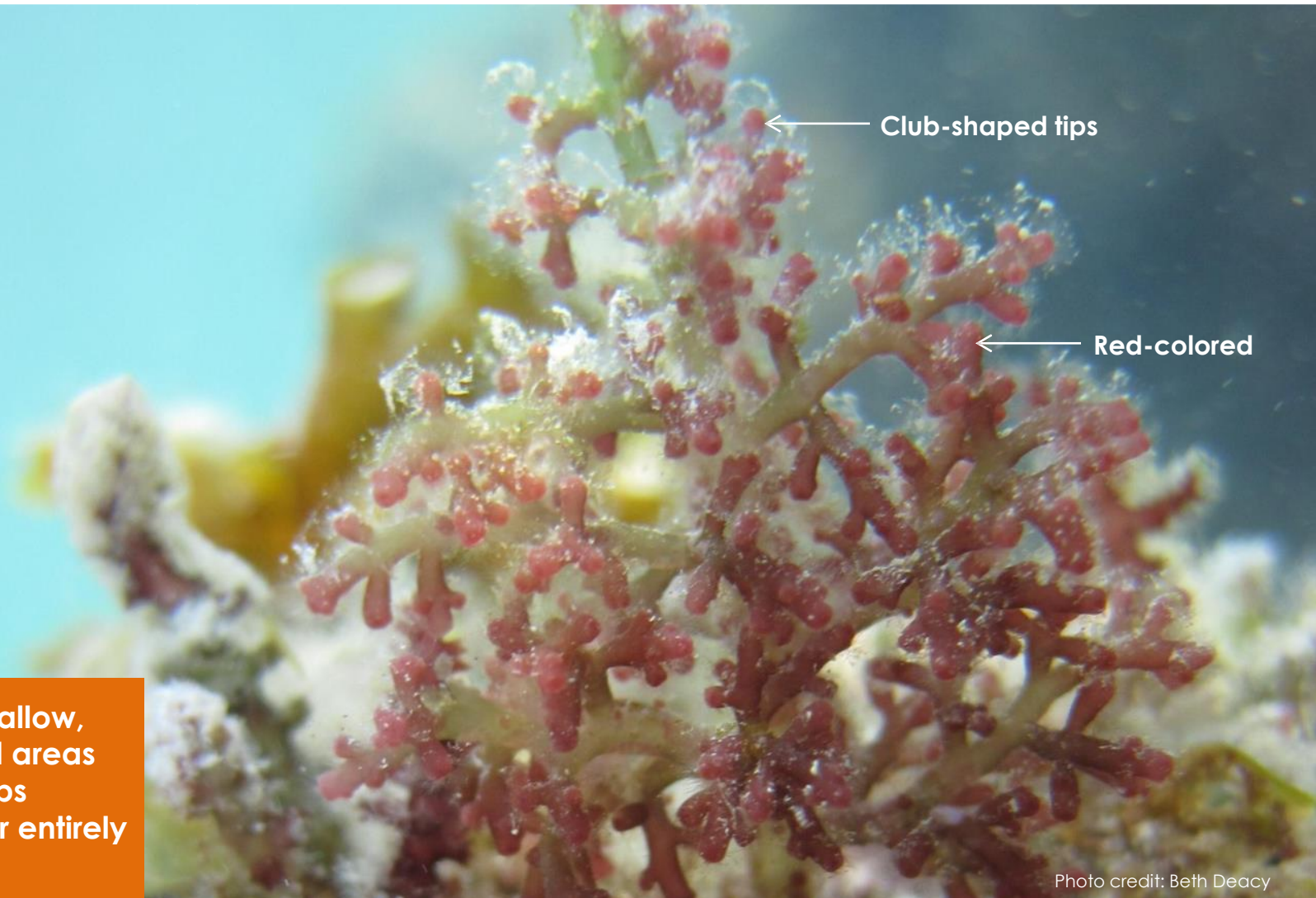


Photo credit: Beth Deacy

- Common in shallow, wave exposed areas
- Grows in clumps
- With red tips, or entirely red

**Pūpūkea Marine Life Conservation District (MLCD) rules ONLY**

Minimum Size	Seasonal closures	Bag limit	Gear restrictions	Permits and Licenses
-	-	2 lbs (combined total dried and squeezed)	Hand harvest only, do not remove holdfast	-

**Local Knowledge****Name Translation**

Pe'e can mean to hide, also coarse or thick

**Biology****Endemic?**

Yes (*Laurencia mcdermidae*)

**Ecology****Habitat**

Shallow water, wave-washed areas, tide pools

**Notes:**

# INTRODUCED LMU SPECIES

Prickly Seaweed

*Acanthophora spicifera*



Mudweed

*Avrainvillea amadelpha*



Smothering Seaweed

*Kappaphycus* or *Eucheuma* (any species)



Hookweed

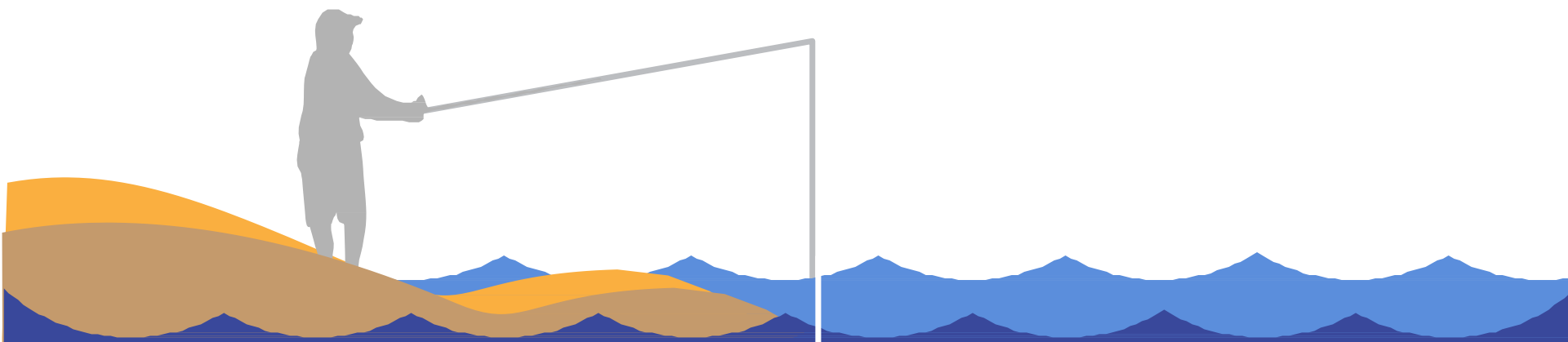
*Hypnea musciformis*



Hā'ena CBSFA Only Rules

Introduced/Invasive limu species may be collected for any purpose, incl. commercial.  
Hand harvest only.

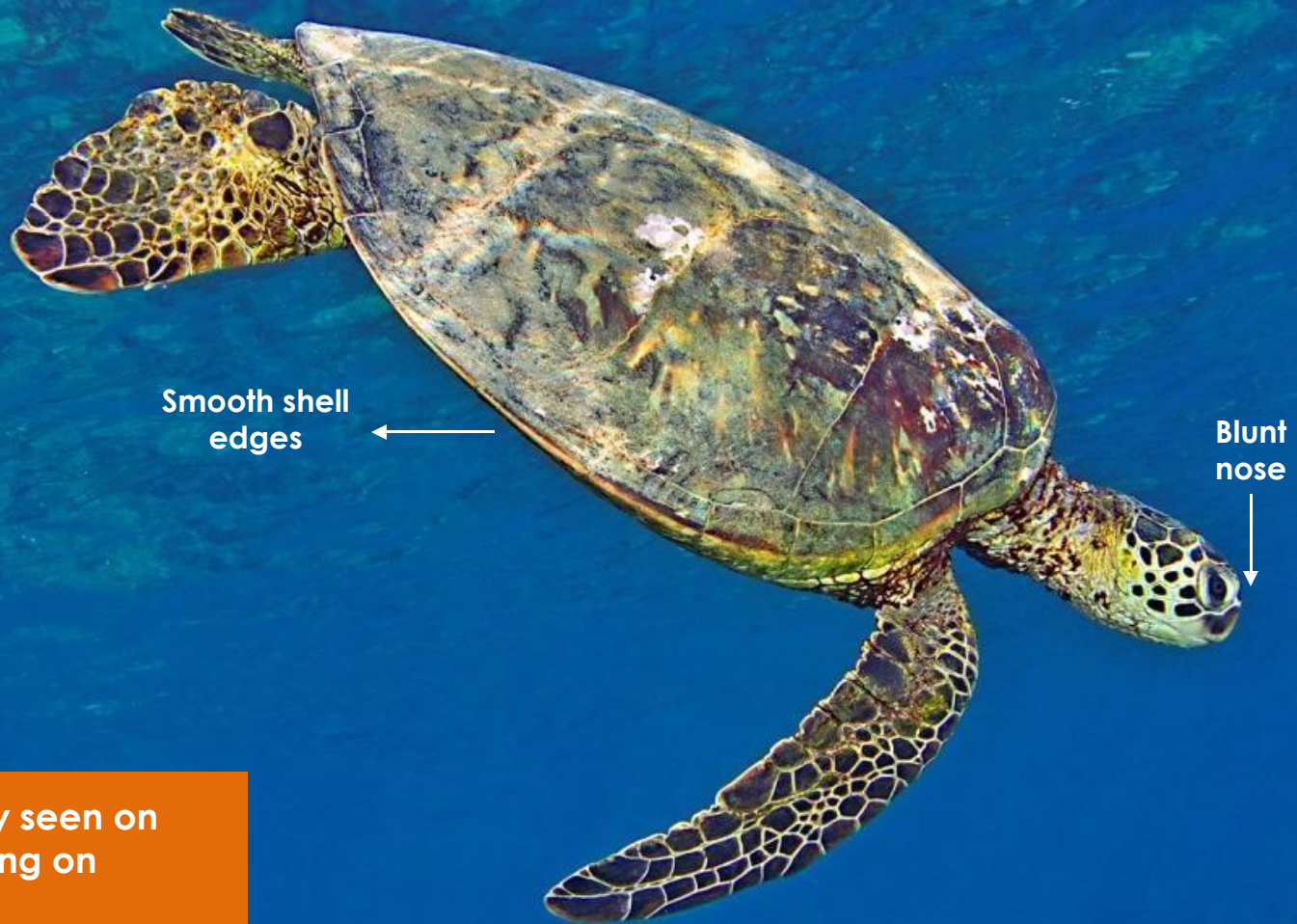




SECTION  
FOUR

# PROTECTED SPECIES





Smooth shell edges

Blunt nose

- Very commonly seen on reefs and basking on beaches
- Sometimes seen with Fibropapilloma tumors

Photo credit: Keoki Stender

**State Rules**

Federally protected under the Endangered Species Act (ESA) where it is listed as threatened  
No open season in state waters

*Honu'ea*

Hawksbill Turtle

*Eretmochelys imbricata*

Sharp  
beak-like  
jaw

Serrated,  
knife-like  
shell edges

- Known for its beautiful shell
- Nest on Hawaii Island and sometimes Maui
- Very rarely seen, endangered population in Hawaii

Photo credit: Keoki Stender

### State Rules

Federally protected under the Endangered Species Act (ESA) where it is listed as endangered  
No open season in state waters





## Local Knowledge

## Hawaiian 'Ōlelo

*He honu ka 'āina he mea pane'e wale;*  
Land is like a turtle, it moves on

## Name Translation

*Honu* is also the name of a woven mat design and a hula, which imitate the shapes and movements of the turtles;  
'ea is a reddish-brown color, as the color of the *honu'ea* shell

## Biology

## Endemic?

No

## Nesting Season

Summer, every 2-4 years

## Ecology

## Feeding

Honu: algae and seagrasses  
Honu'ea: sponges, stinging jellies, algae

## Habitat

Beaches (nesting, resting), open ocean, reef flats, outer reefs

## Kumulipo

*Hanau ka po ia honu kua nanaka; Kulia ka po ia 'ea kua neneke*  
The night gives birth to rough-backed turtles;  
The night produces horn-billed turtles

## Notes:

*Koholā*

Humpback whale

*Megaptera novaeangliae*

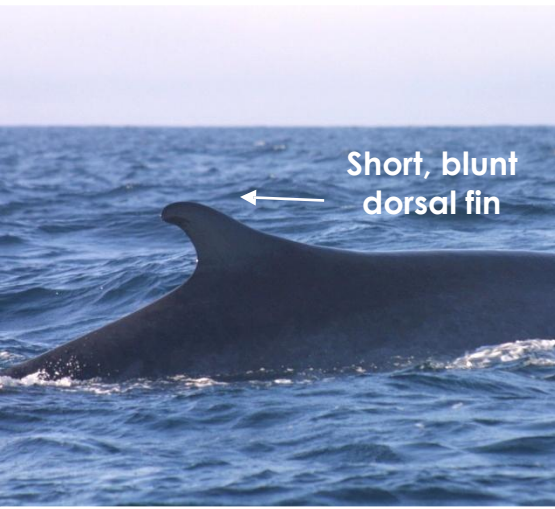


Photo credit: Keoki Stender



Photo: The Dolphin Institute  
NMFS permit #1071-1770-00

- Commonly seen in certain areas during winter months (Nov – Mar)
- Often seen at surface splashing, breaching

### State Rules

No take under State rules,  
Protected by Federal Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA)  
Must remain at least 100 yds away within Hawaiian Islands Humpback Whale National Marine Sanctuary waters

**Local Knowledge****Name Translation**

Koho is the tip of a paddle blade, lā is a fin

**Biology****Endemic?**

No

**Mating/Calving season**

Winter

**Ecology****Feeding**

Small fish, crustaceans

**Habitat**

deep ocean (migration), shallow water near reefs  
(calving),  
cold coastal waters (feeding)

**Notes:**

*'i lio-holo-i-ka-ua ua*

Hawaiian Monk Seal

*Monachus schauinslandi*



- Only seal species in Hawaii
- Rare to see resting on beaches or swimming close to shore
- Roughly 1,200 individuals remaining

Photo credit: Keoki Stender

Photo credit: James Watt

### State Rules

Illegal to molest, kill, capture, or possess at any time  
Protected under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA)

**Local Knowledge****Name Translation**

*'i lio* means dog  
literal translation is 'dog running through rough seas'

**Biology****Endemic?**

No

**Pupping Season**


Most during late March, early April, can be year-round

**Ecology****Feeding**

Fish and lobster

**Habitat**

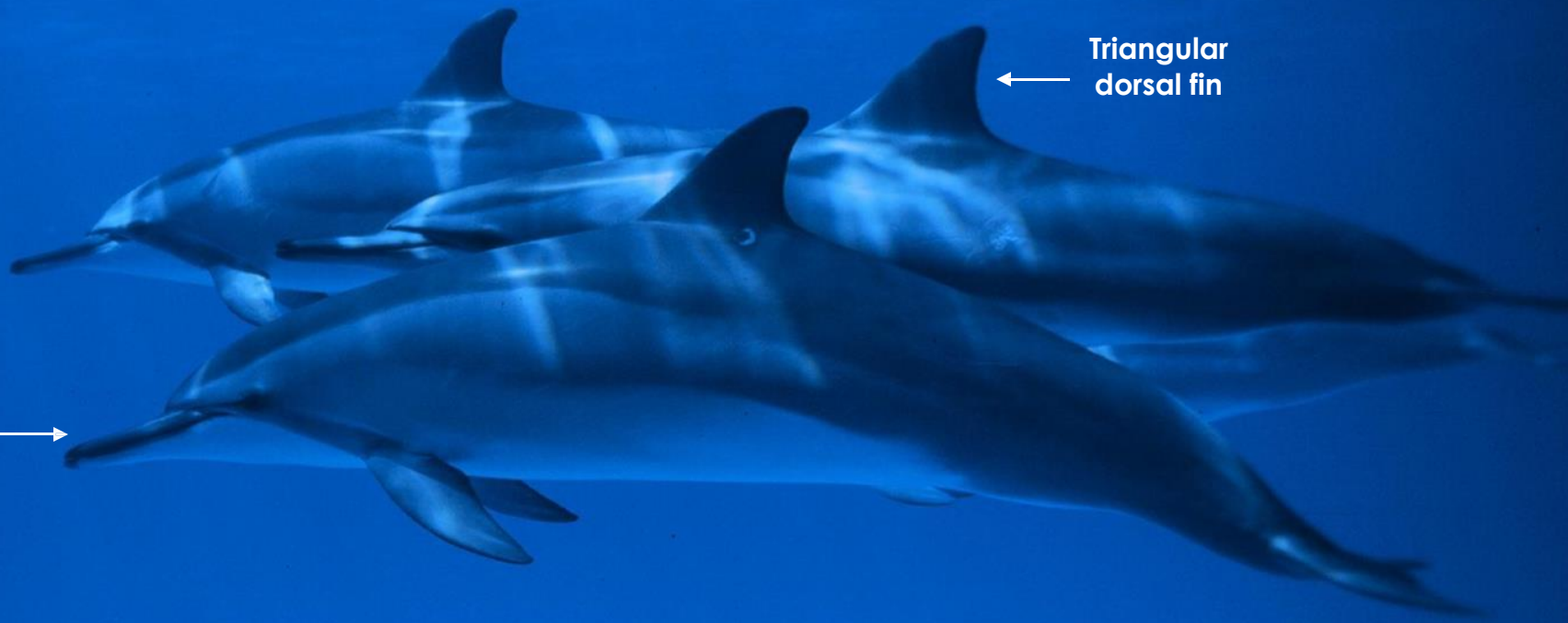
Sandy beaches, reef flat, outer reef, deep ocean

**Notes:**

*Nai'a*

Spinner Dolphin

*Stenella longirostris*



Long,  
narrow  
nose

Triangular  
dorsal fin



Dark and light  
grey banded  
coloring

Photo credit: James Watt

Photo credit: Keoki Stender

- Found in calm, sandy bays during the day and move to open water at night
- Often seen “spinning” at surface

**Prohibited**

No take under state rules,  
protected by Federal Marine Mammal Protection Act (MMPA)

## Local Knowledge

## Hawaiian 'Ōlelo

*It is the nai'a, he i'a lele*

It is the *nai'a*, the leaping fish. Said of one who jumps to conclusions.

## Biology

## Endemic?

No

## Mating/Calving Season

Year-round

## Ecology

## Ecosystem Role

## Habitat

## Kumulipo

Predator

Sandy bays during the day  
(resting),  
deep ocean at night (feeding)

*Hanau ka i'a, hanau ka Nai'a i ke kai la holo*  
Born is the fish, born is the *nai'a* in the sea swimming

## Notes:



*Manō lālākea*

Whitetip Reef Shark/Nemuribuka

*Triaenodon obesus*



*Manō kihikihi*

Scalloped Hammerhead Shark

*Sphyrna lewini*



*Manō*

Tiger shark/Itachizame

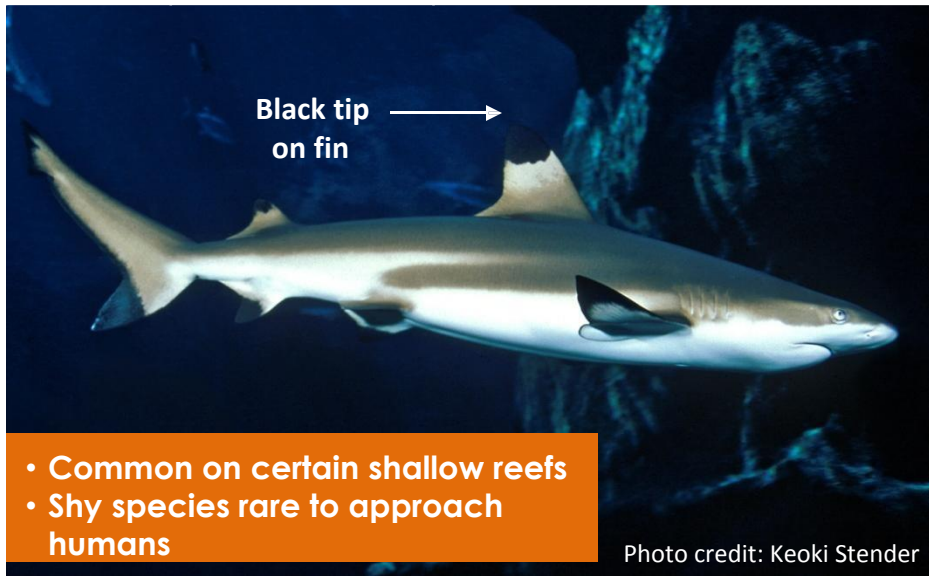
*Galeocerdo cuvier*



*Manō Paele*

Blacktip Reef Shark

*Carcharhinus melanopterus*



**State Rules**

Illegal to feed in state waters, Illegal to possess, sell, or trade shark (any species) FINS

**West Hawaii Regional Fishery Management Area (FMA)**

Illegal to take, kill, possess, sell, or offer for sale, ANY specimen of blacktip reef shark, whitetip reef shark, tiger shark

*Mano*

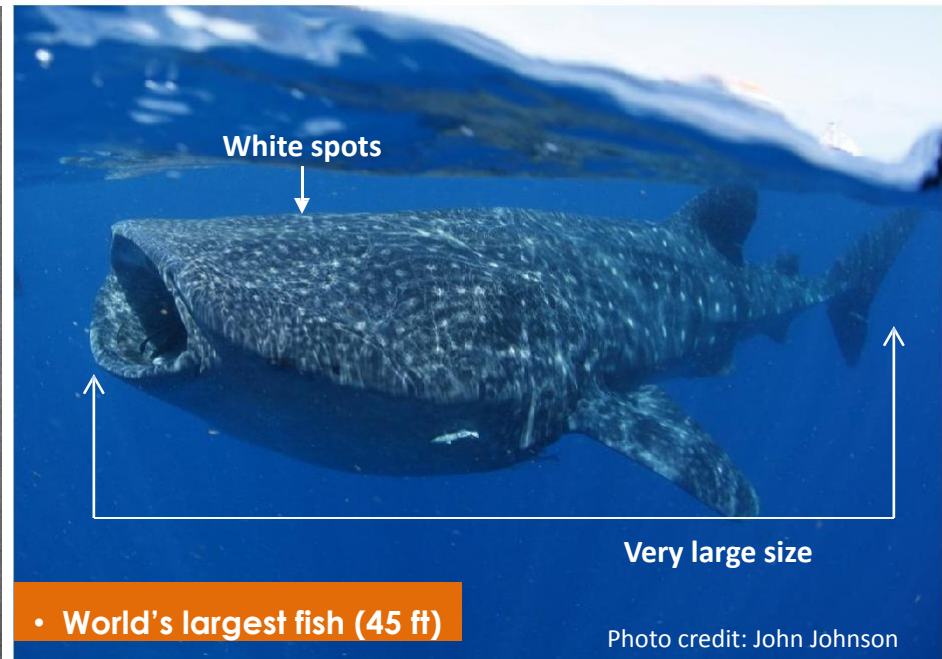
Gray reef shark

*Carcharhinus amblyrhynchos*

-

Whale Shark

*Rhincodon typus*



### State Rules

Illegal to feed in state waters, Illegal to possess, sell, or trade shark (any species) FINS

### West Hawaii Regional Fishery Management Area (FMA)

Illegal to take, kill, possess, sell, or offer for sale, ANY specimen of gray reef shark, whale shark



## Local Knowledge

## Hawaiian 'Ōlelo

*Pua ka wiliwili nanahu ka manō*  
 When the *wiliwili* tree blooms, the sharks bite  
 The *wiliwili* trees blooms during the shark mating season

## Name Translation

*Manō* was also used figuratively to mean a passionate lover

## Biology

## Endemic?

No

## Pupping Season

Varies by species, late summer/fall

## Max Length

Varies, 5 ft – 16 ft

## Ecology

## Feeding

Fish, sea turtles, birds, sharks, marine mammals,  
 plankton (whale sharks)

## Habitat

Reef flat, outer reef, deep ocean

## Notes:



Two lobes

- Common in certain coastal areas
- Feed at night on plankton
- Typical size can range from 6 – 12 ft

Photo credit: Keoki Stender

**State Rules**

Illegal to capture or kill

## Local Knowledge

### Name Translation

*Hāhālua* means two mouths or stalks, referring to the two appendages by its mouth

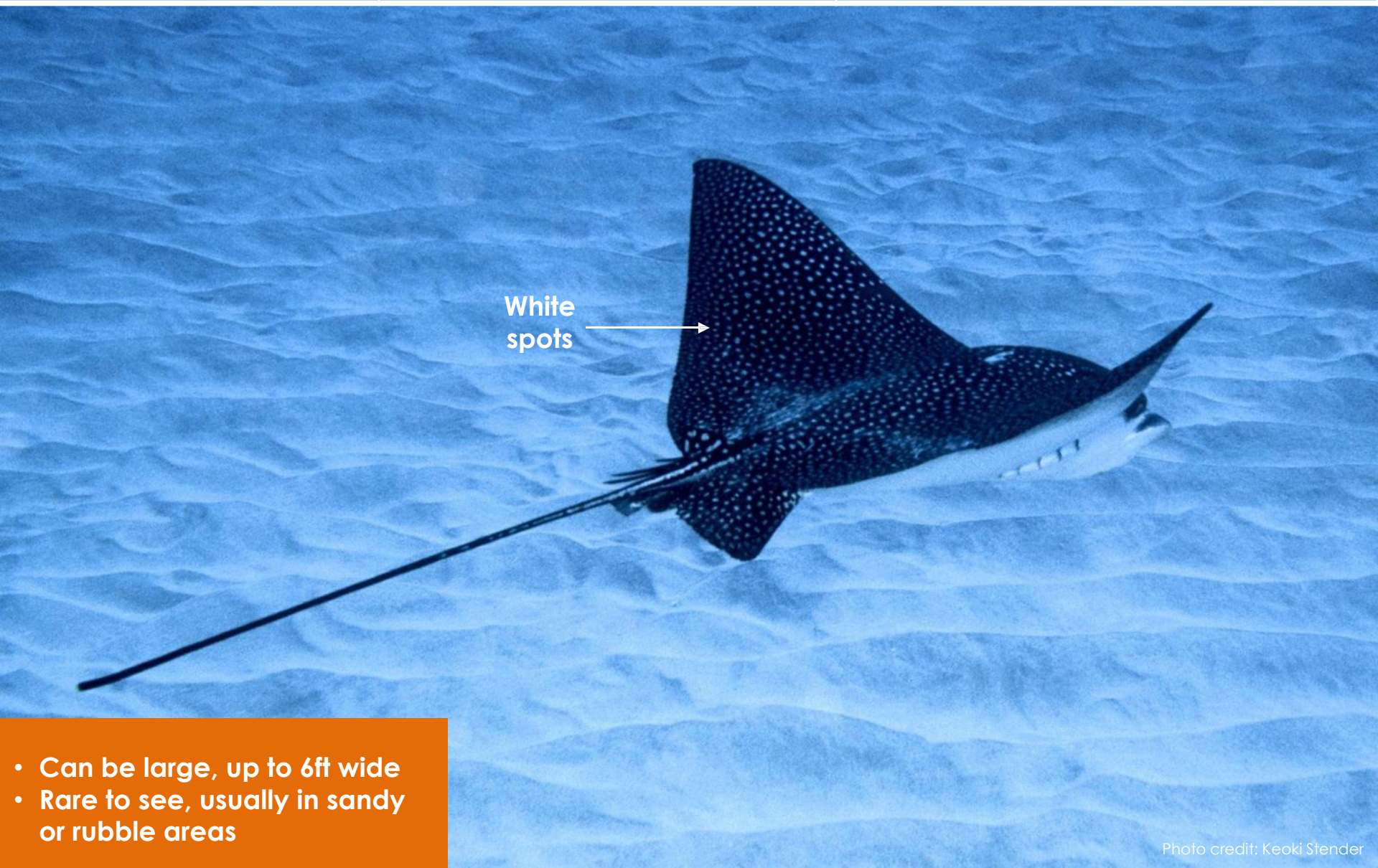
## Biology

Endemic?	Pupping Season	Max length
No	Give birth to one pup every two to three years	16 ft

## Ecology

Feeding	Habitat	Kumulipo
Plankton	Outer reef	<i>Hanau ka ulua, hanau ka Hāhālua i ke kai la holo</i> Born is the <i>ulua</i> , born is the <i>hāhālua</i> in the sea swimming

## Notes:



White spots →

- Can be large, up to 6ft wide
- Rare to see, usually in sandy or rubble areas

Photo credit: Keoki Stender

**West Hawaii Regional FMA ONLY**

Illegal to take, kill, possess, sell, or offer for sale

## Local Knowledge

### Name Translation

*Hihimanu* means lavish, magnificent, elegant.  
*Lupe* means kite  
*Pe'a* means bat

## Biology

### Endemic?

No

### Max length

6 ft

## Ecology

### Feeding

### Habitat

### Kumulipo

Marine snails, worms, octopuses,  
and fishes

Coastal waters

*Hanau ka Pe'a, hanau ka Lupe I ke kai la, holo*  
Eagle Rays are born, stingrays are born in the sea, swim

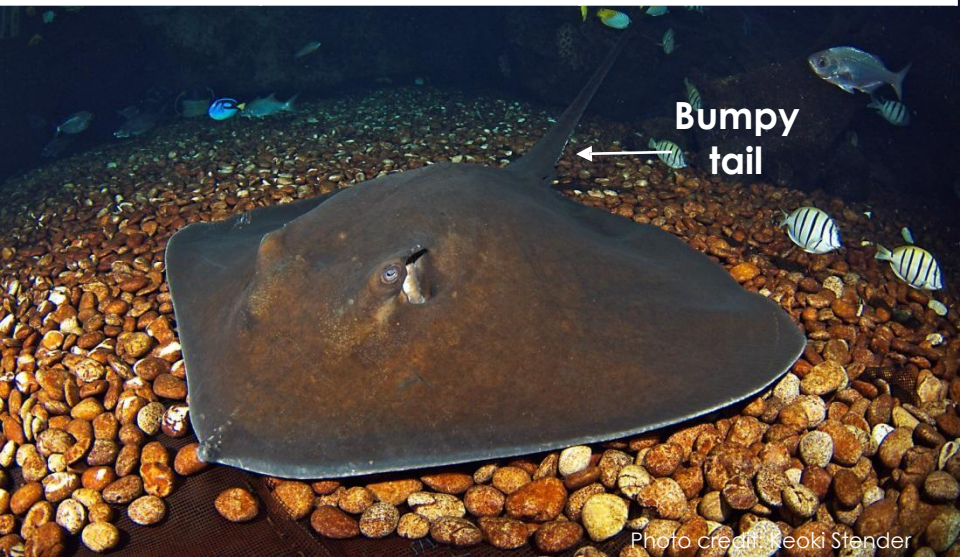
## Notes:



Lupe/Pe'a

Broad Stingray

*Dasyatis lata*



Lupe/Pe'a

Hawaiian Stingray

*Dasyatis hawaiiensis*



Lupe/Pe'a

Pelagic Stingray

*Pteroplatytrygon violacea*



- Uncommon to see, usually buried in sand, mud, or rubble
- Seen frequently in deeper water

West Hawaii Regional FMA ONLY

Illegal to take, kill, possess, sell, or offer for sale

## Local Knowledge

### Name Translation

*Hihimanu* means lavish, magnificent, elegant.

*Lupe* means kite

*Pe'a* means bat

## Biology

### Endemic?

Yes

### Max length

Approximately 3 ft

## Ecology

### Feeding

Crabs, shrimps living on the bottom

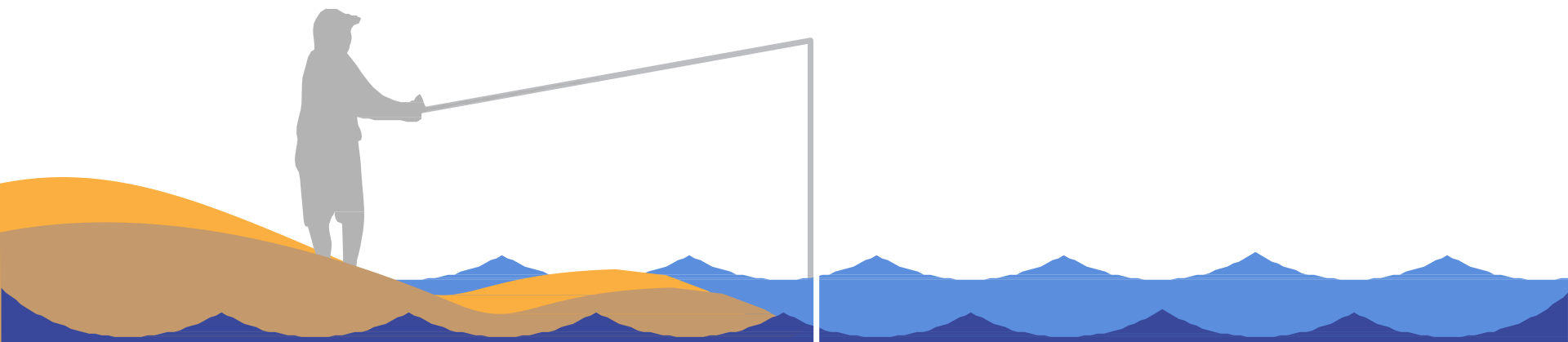
### Habitat

Sand, mud, rubble

### Kumulipo

*Hanau ka Pe'a, hanau ka Lupe I ke kai la, holo* Eagle  
Rays are born, stingrays are born in the sea, swim

## Notes:



SECTION  
FIVE

**MALAMA  
KAI**

A large sea turtle, likely a Hawaiian monk seal, is swimming in clear blue water above a coral reef. The turtle is oriented vertically, with its head pointing downwards and its tail pointing upwards. The water is a vibrant turquoise color, and the coral reef is visible in the background.

# MALAMA KAI

*Managing Ocean Resources*

## **What Marine Life Need**

- 1. Time to Reproduce
- 1. A Large Population
- 1. A Home Range

## **What We Can Manage**

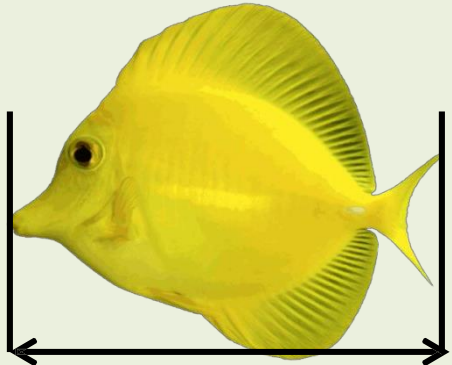
- 1. Minimum Size
- 1. Closed/Open Seasons
- 1. Bag Limits
- 1. Gear Restrictions
- 1. Permits
- 1. Marine Managed Areas (MMAs)

What is it?	Why?	Hawaiian Method	Example
The minimum size a species must be for a fisher to keep.	Time to Reproduce: So that marine life has had a chance to reproduce before being caught.	Kapu on certain species at stages in their life cycle	If a fisher catches a 8" kumu, they must release it

### How do I measure minimum size?



\*The straight-line distance from tip of snout to middle of trailing edge of tail



## SIZE MATTERS



A 12 inch ōmilu lays 49,000 eggs











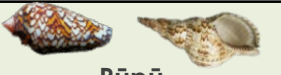
A 27 inch ōmilu lays 4,000,000 eggs (8 times as many!)



**Notes:**

A large, empty, light gray rounded rectangular box intended for taking notes. The box is positioned below the 'Notes:' label and occupies most of the page's width and height. It has rounded corners and a uniform light gray fill.

# Closed and Open Seasons

What is it?	Why?	Hawaiian Method	Example
The time of year when it is legal (open) or illegal (closed) to fish for certain species.	To protect animals during vulnerable life stages (usually spawning seasons) Or to allow for a rest period from human activities.	Kapu to restrict harvest during certain times	It is illegal to take 'ama'ama (mullet) between December and March

	Jan	Feb	Mar	Apr	May	July	Aug	Sep	Nov	Dec
 'Ama'ama (mullet)	Closed	Closed	Closed	Open	Open	Open	Open	Open	Open	Closed
 Moi	Open	Open	Open	Open	Open	Closed	Closed	Closed	Open	Open
 Ula (spiny lobster)	Open	Open	Open	Open	Open	Closed	Closed	Closed	Open	Open
 Ula papapa (slipper lobster)	Open	Open	Open	Open	Open	Closed	Closed	Closed	Open	Open
 Kona Crab	Open	Open	Open	Open	Open	Closed	Closed	Closed	Open	Open
 'Opelu (Waimea Bay only)	Closed	Closed	Closed	Open	Open	Open	Open	Open	Closed	Closed
 Akule (Waimea Bay only)	Closed	Closed	Closed	Open	Open	Open	Open	Open	Open	Open
 'Opahi, pipipi, kupe'e (Ha'ena CBSFA ONLY)	Closed	Closed	Closed	Open	Open	Open	Open	Open	Open	Open
 Pūpū (Ha'ena CBSFA ONLY)	Closed	Closed	Closed	Open	Open	Open	Open	Open	Open	Open

 Open
  Closed

**Notes:**

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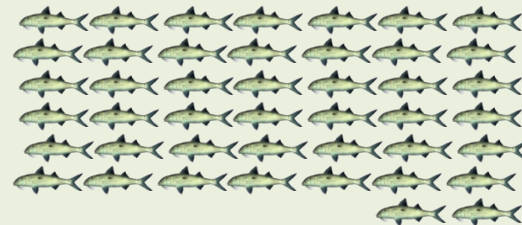


# Bag Limits

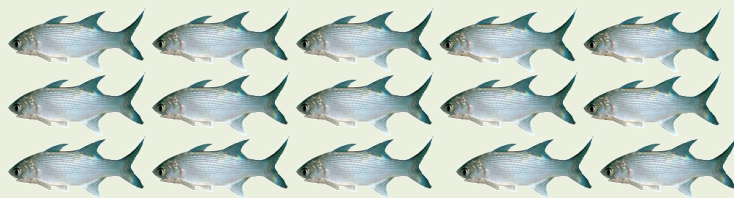
What is it?	Why?	Hawaiian Method	Example
The maximum amount of the species that fishers are allowed to keep per day.	So that a sustainable number of animals are left in the population.	Restraint, take only what you need	A fishermen can take no more than 15 <i>moi</i> per day.



20 *ulua* (total all species)



50 '*oama* (weke under 7")



15 *moi*



*Limu manauaea*:  
1 lb - home consumption  
10 lb - commercial with license



*Akule*: 200 lbs (for sale)



*Nehu*: 1 gallon (for home consumption)

## Maui Only



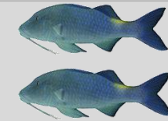
2 *uhu*



1 *kumu*



2 *munu*



2 *moano kea*

## West Hawaii Only



5 yellow tang

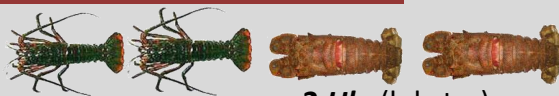


5 *kole* <4" (Aquarium Only)



10 *achilles tang* (Aquarium Only)

## Ha'ena CBSFA Only



2 *Ula* (lobster)



2 *He'e*



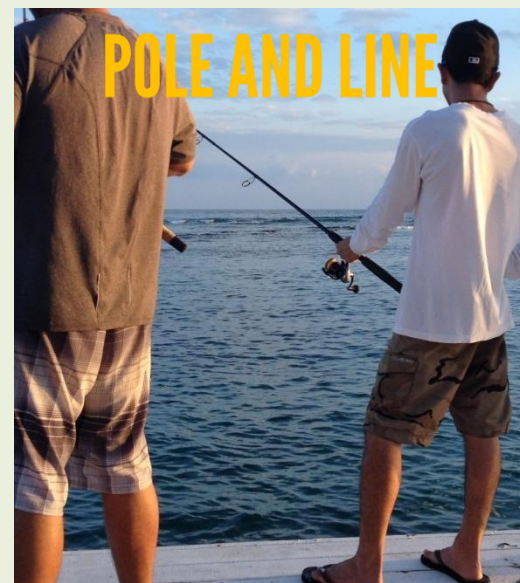
5 *wana* (urchins) per species

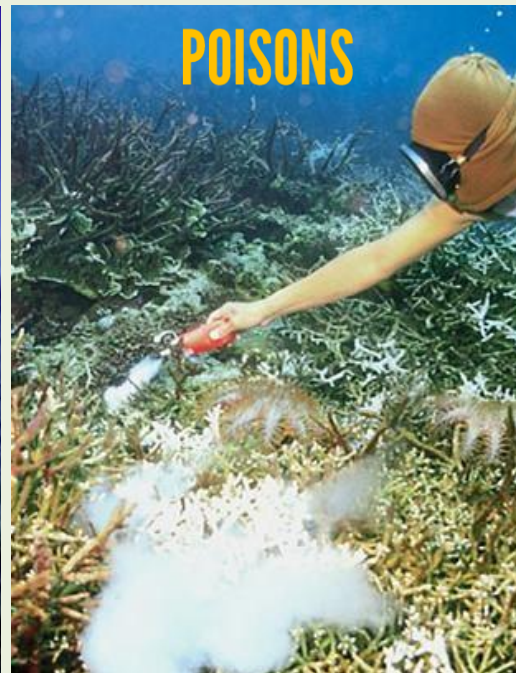
**Notes:**

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# Gear and Fishing Method Restrictions

Definition	Why?	Hawaiian Method	Example
Certain types of fishing methods or gear types that are illegal	To reduce catching certain species unintentionally, prevent over-take of juvenile fish, prevent damage to habitat	<i>Ali'i</i> restrictions on certain harvesting techniques	A throw net must have a mesh size of at least 2 inches.





# Throw Net



Measuring stretched mesh size



## State rules

Illegal to possess or sell nets with stretched mesh size of less than 2 inches  
Illegal to possess illegal size net in or near the water where fish may be taken

**Notes:**

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# Laynet

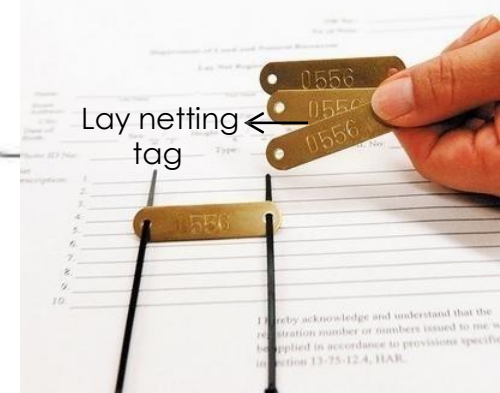
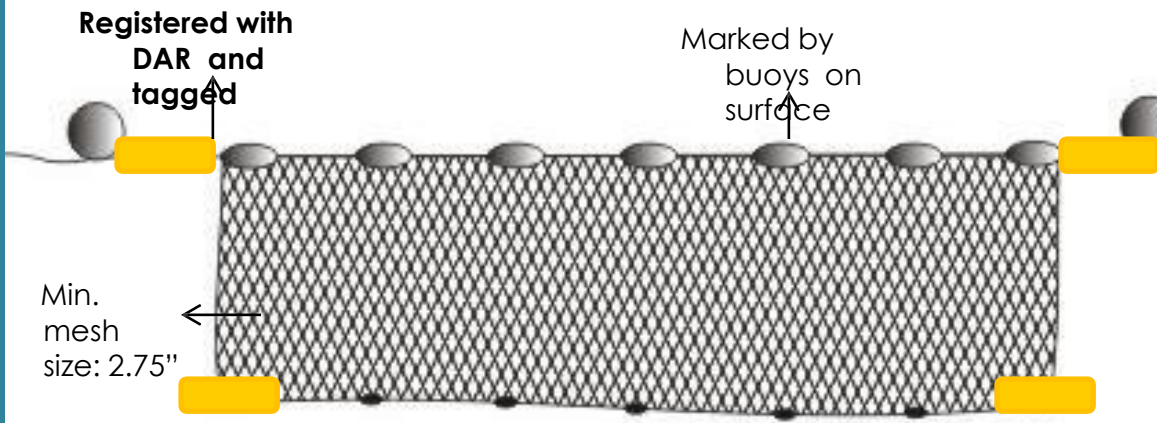


Photo credits: DLNR, Star Advertiser

## State Rules

Illegal method in certain areas, net must be registered and tagged by DAR, minimum mesh size = 2.75 inches  
Additional rules apply, please see DAR regulations book or [dlnr.hawaii.gov/dar](http://dlnr.hawaii.gov/dar)

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# Surround Net



Vessel must be less than 14 feet long

Net creates complete circle around school of fish

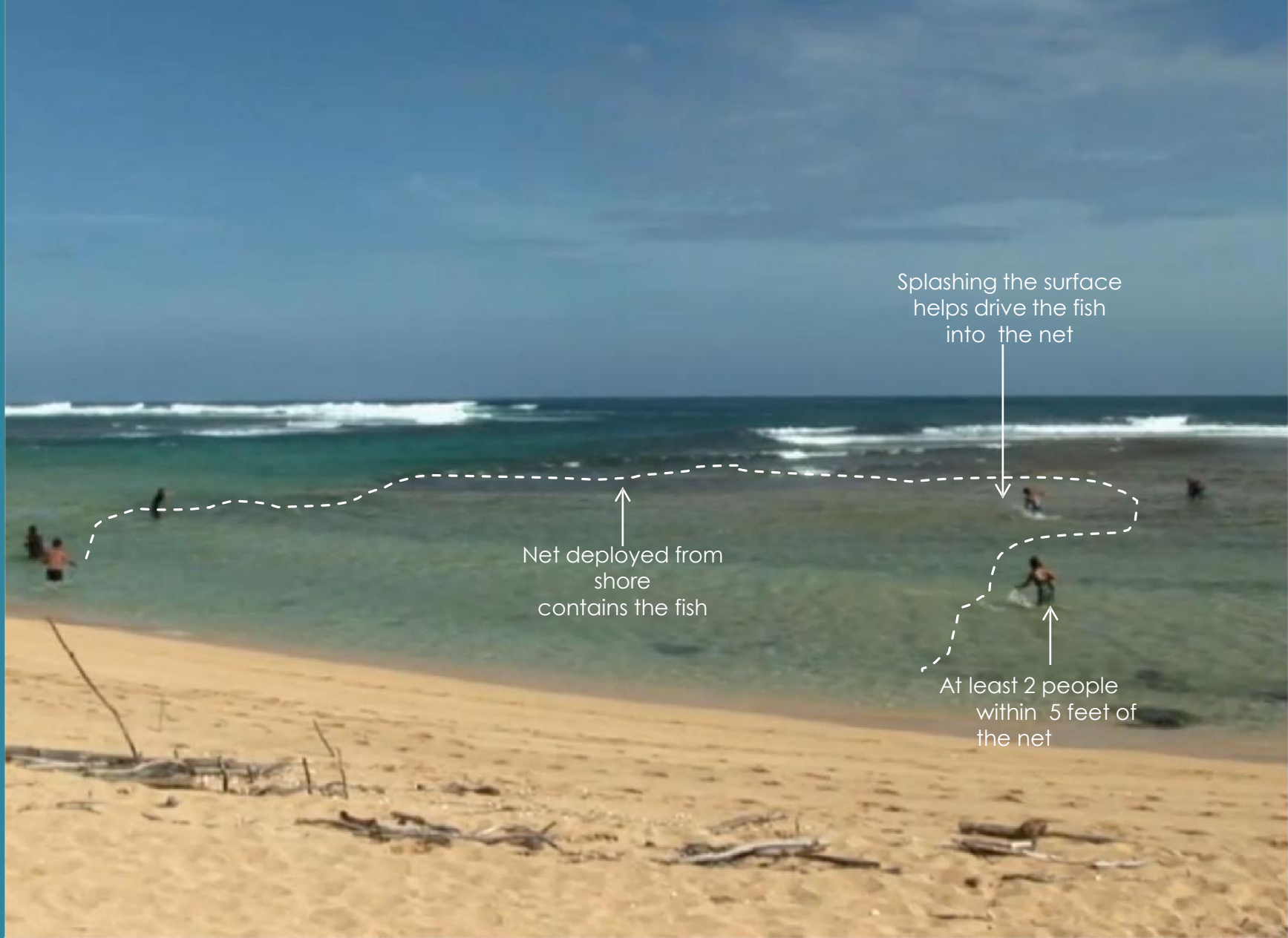
## Ha'ena CBSFA ONLY rules

Nets may only be deployed from the shore, or from a vessel less than 14 feet long, and provided further that at least 2 people must be within 5 feet of the net at all times while it is deployed

**Notes:**

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PA'I  
PA'I



Splashing the surface  
helps drive the fish  
into the net

Net deployed from  
shore  
contains the fish

At least 2 people  
within 5 feet of  
the net

### Ha'ena CBSFA ONLY rules

Nets may only be deployed from the shore, or from a vessel less than 14 feet long, and provided further that at least 2 people must be within 5 feet of the net at all times while it is deployed

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# Scoop Net



## State Rules

The net, including the handle may not exceed 3 feet in any dimension

## Ha'ena CBSFA ONLY rules

Can possess and use a scoop net between 6:00 a.m. and 6:00 p.m.,  
a scoop net may not be used to take greater than 3 specimens of marine life per day

**Notes:**

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# Pole and Line Fishing



Photo credit: Anne Rosinski

## Waimea Bay ONLY

May take and possess any finfish with hook-and-line from the shoreline, with not more than **2 poles per person** and **1 line per pole**, with no more than **2 hooks per line**

## Ha`ena CBSFA Rule Only

May possess and use up to **2 hook-and-lines** with up to **2 hooks per hook-and-line**

**Notes:**

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# Spear Diving



Photo credit: David Sakoda



**3-prong/  
Pole spear**



**Spear gun**



**Dive flag**

## State Rules

Spears are allowed for all fishes, not allowed for any crustacean (lobsters, crabs). Must mark position with a dive flag while diving in navigable waters, and may not surface more than 100 ft from dive flag (except in emergency). Spearfishers must follow all other fishing rules.

## West Hawaii Regional FMA ONLY

Illegal to engage in SCUBA spearfishing, possess both SCUBA gear and a spear at the same time, or possess SCUBA gear and any specimen of spear aquatic life at the same time

## State Rules/Hā'ena CBSFA Only Rules

May pole spear fish between 6:00am and 6:00pm, pole spear must be no greater than 8 feet in length

**Notes:**

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# Aquarium Collecting



## State Rules

Must have state Aquarium Permit, may use fine mesh nets (except thrownets), non-commercial aquarium collectors are limited to a combined total of 5 fish or aquatic life per person per day

## West Hawaii Regional FMA (including Puako-'Anaeho'omalu and Ka'upulehu Fisheries Replenishment Area)

Must have West Hawaii aquarium permit in addition to state permit; Collectors may only take certain 'white list' species, full list and restrictions available at Kona DAR office; Must register vessel with DLNR and display letters "AQ" on both sides; Fly stiffened flag with letter "A"; Display dive flag when divers are in the water; Illegal to possess aquarium collecting gear, or take or possess any specimen of aquatic life for aquarium purposes between sunset and sunrise, without a valid aquarium permit or in violation of its conditions, or while on a vessel that does not conform to registration requirements.

**Notes:**

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# Fish Feeding



## **Kahekili HFMA ONLY**

To feed or deliberately introduce any attractant, directly to or in the vicinity of any marine life, except while fishing for permitted marine life.

## **Puako Bay and Puako Reef FMA and Puako-'Anaeho'omalu - FRA**

Illegal to engage or attempt to engage in fish feeding

**Notes:**

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## Explosives



## Firearms



## Poisons



### State Rules

**Firearms:** Illegal to pursue, take, or kill any fish, crustacean, mollusk, turtle, or marine mammal with firearms, except tuna and billfish that have been gaffed, and sharks

**Explosives, electro-fishing devices, chemicals, poisons, and intoxicants:** Illegal to fish with, attempt with, or to possess on or near the shore where fish can be taken

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# Permits and License

Definition	Why?	Hawaiian Method	Example
Documents needed for certain ocean activities	To manage the number of people participating in activities that affect marine resources	<i>Ali'i</i> limits on who could harvest, use certain gear, fish certain areas and species	To collect coral for a research project, a person needs a Special Activity Permit



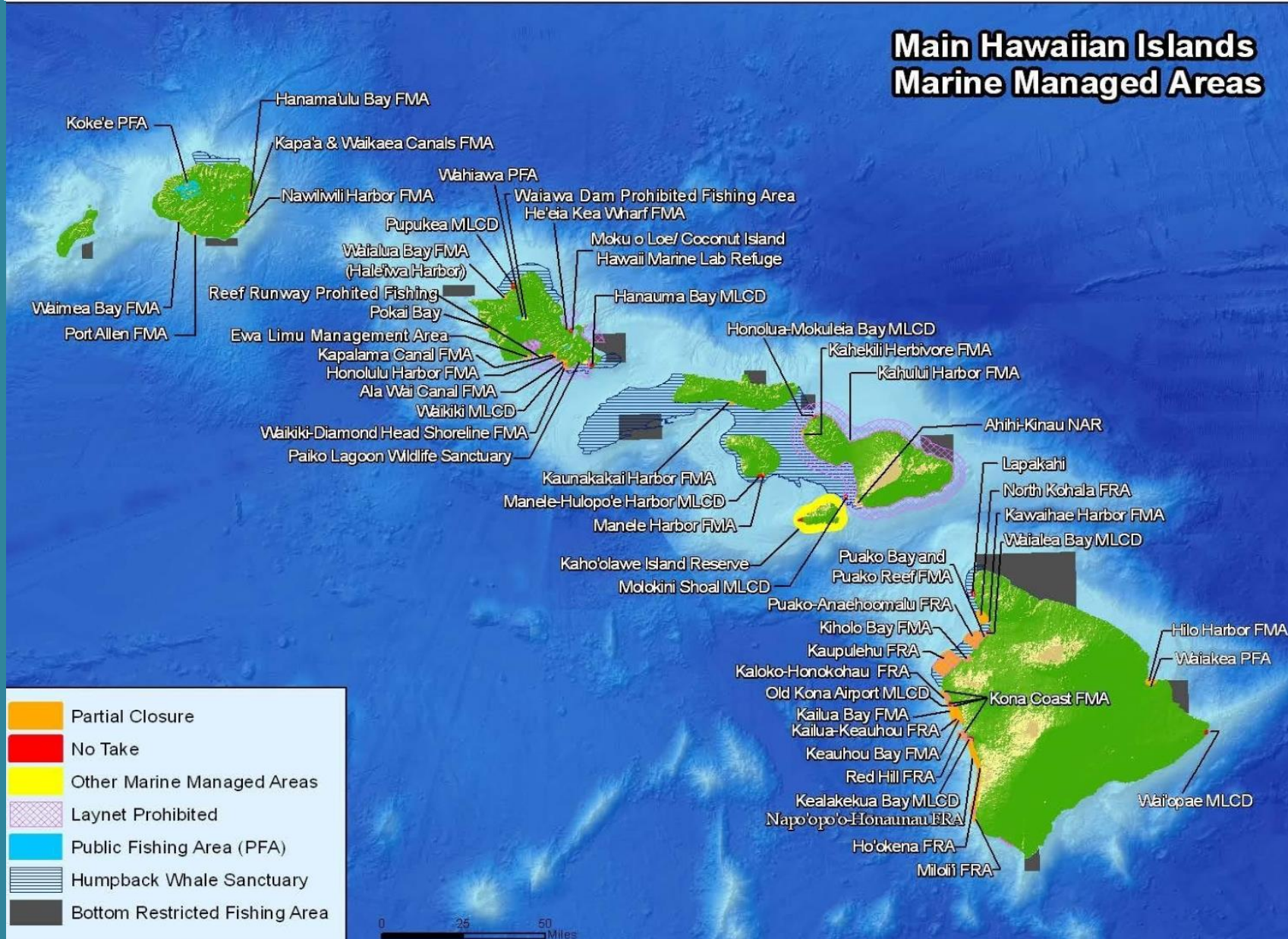
Relevant Permits and Licenses	Who needs this?	Cost	Where can I get one?
<b>Aquarium Permit</b>	Anyone person using fine mesh net to collect marine (or stream) life for an aquarium	None	Online or at DAR office
<b>Special Activity Permit</b>	Any individual associated with any research, educational, or management institution to collect aquatic life, or use certain fishing gear or methods, that are prohibited or restricted by regulations	None	At DAR office or by mail
<b>Commercial Marine License</b>	Anyone taking marine life for commercial purposes	Varies	Online or at DAR office
<b>Bait License</b>	Commercial fishers using a small mesh net to take certain bait species including nehu and 'lāo for use as live bait	\$50	Online or at DAR office

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# Marine Managed Areas (MMAs)

Definition	Why?	Example
An area of the ocean with specific rules	To protect or enhance the natural and cultural resources or to reduce conflict about the area	You cannot fish within the boundaries of the Pūpūkea MLCD



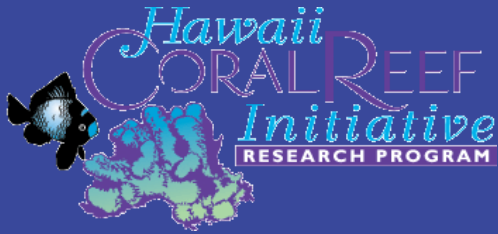
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