

SAN DIEGO OCEANS FOUNDATION

REEF-Selected Species (Southern California)

Program Partner:



Level 1 (All new REEF members)

Level 2 (Beginning Surveyor)

80% on Most Common Fishes Quiz (20 species)

2 REEF surveys

Level 3 (Advanced Surveyor)

80% on Most Common Fishes Quiz (50 species)

25 REEF surveys

Level 4 (Expert Surveyor)

90% on Most Common Fishes Quiz (60 species)

35 REEF surveys

Level 5 (Expert Surveyor)

95% on Most Common Fishes Quiz (100 species)

50 REEF surveys

DAMSELFISH

005 Blacksmith

006 Garibaldi

FLATFISH

021 California Halibut

022 C-O Sole

026 Speckled Sanddab

369 Unidentified Flatfish

GOBY

107 Blackeye Goby

108 Bluebanded Goby

112 Zebra Goby

GREENLING

029 Kelp Greenling

030 Lingcod

032 Painted Greenling

KELPFISH / BLENNY

232 Crevice Kelpfish

010 Giant Kelpfish

011 Island Kelpfish

328 Spotted Kelpfish

333 Striped Kelpfish

* 016 Sarcastic Fringehead

ROCKFISH

045 Black Rockfish

046 Black & Yellow Rockfish

044 Blue Rockfish

047 Bocaccio

048 Brown Rockfish

051 China Rockfish

052 Copper Rockfish

053 Gopher Rockfish

054 Grass Rockfish

055 Kelp Rockfish

056 Olive Rockfish

062 Treefish

063 Vermilion Rockfish

065 Yellowtail Rockfish

353 Juvenile (YOY) Rockfish

- Unidentified

RONQUIL

379 Bluebanded Ronquil

111 Stripefin Ronquil

SCULPIN

069 Cabezon

071 Coralline Sculpin

076 Red Irish Lord

304 Scalyhead Sculpin

079 Snubnose Sculpin

081 Unidentified Sculpin

SEA BASS

001 Barred Sand Bass

003 Kelp Bass

SEA CHUB

035 Halfmoon

036 Opaleye

SHARK

086 Horn Shark

087 Leopard Shark

SILVERSIDE

097 Jacksmelt

337 Topsmelt

SURFPERCH

114 Black Surfperch

116 Kelp Surfperch

117 Pile Perch

118 Rainbow Surfperch

120 Rubberlip Surfperch

122 Shiner Surfperch

123 Striped Surfperch

124 Walleye Surfperch

125 White Surfperch

WRASSE

127 California Sheephead

129 Rock Wrasse

128 Señorita

OTHER

082 Bat Ray

070 California Scorpionfish

096 Jack Mackerel

* 092 Shovelnose Guitarfish

099 Ocean Whitefish

130 Unidentified Pipefish

285 Pygmy Poacher

039 Sargo

138 Tubesnout

* 007 California Moray

Covered in Level 2

* Not on original species list

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To be covered in Level 3

* Not on original species list

Greenling

- Blue, irregular spots outlined in dark red/brown on head and fore-body
- Male: olive, brown, gray or blue-gray body
 - » pair of cirri above eyes
- Female: bluish-white, pale cream, light brown or gray with speckled with red-brown to gold spots

Size: 10-18 inches

Kelp Greenling **x**

Hexagrammos decagrammus



Kelp Blenny

(note on *Gibbonsia sp*)

- Very similar and difficult to identify
- Color Varies widely (usually matches habitat)
- Dorsal fin higher at front and rear (soft-rayed part elevated)
- Note
 - » number and location of eyespots or “ocelli” (when present)
 - » the spacing between soft rays in the dorsal fin and scales on the caudal fin (magnification needed)



Crevice/Spotted/Striped Kelpfish



Kelp Blenny

Island Kelpfish

Alloclinus holderi

- Key Feature: bent, flexible tips on first few spines
- Fore-dorsal fin same height as soft dorsal
- Pale, rounded blotch extends onto cheek from lower rear quarter of eye



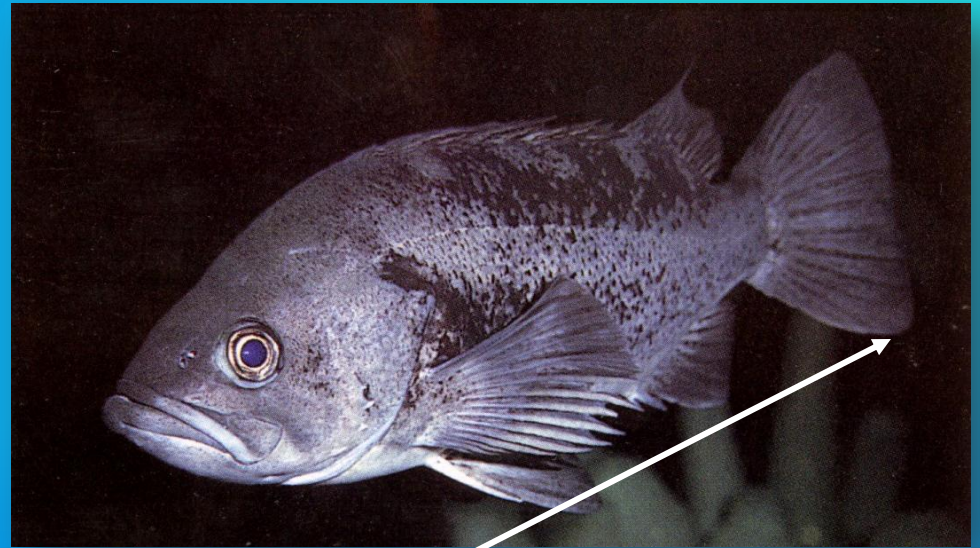
Size: 2-3 ½ inches
Max: 4 inches



Rockfish

Black Rockfish *x* *Sebastes melanops*

- Mottled and blotched body with black to blue-black to gray
- Lower jaw projects and extends to the eye
- Small knob at tip of lower jaw
- Rear edge of anal fin rounded



Size: 8-18 inches
Max: 2 ft

Rockfish

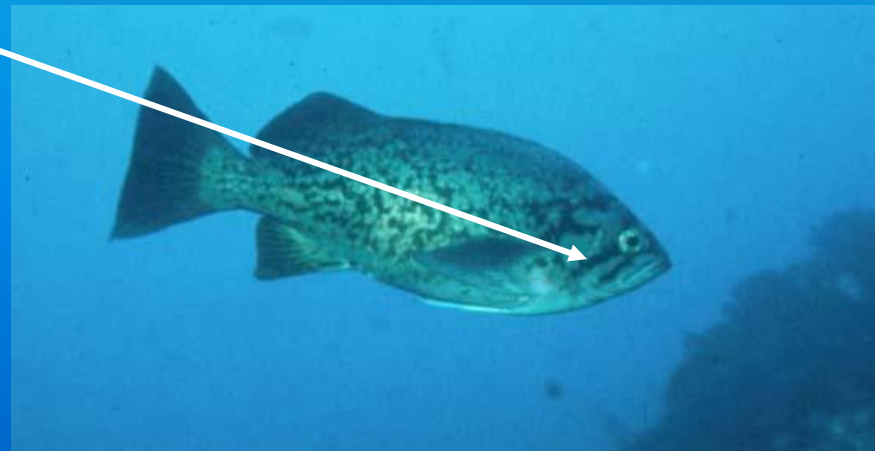
- Mottled blue-black to bright blue
- Key feature: 2-4 dark bands curve around front of head
- Sloping band from eye to the pectoral fin

Size: 8-18 inches

Max: 21 inches

Blue Rockfish **x**

Sebastes mystinus

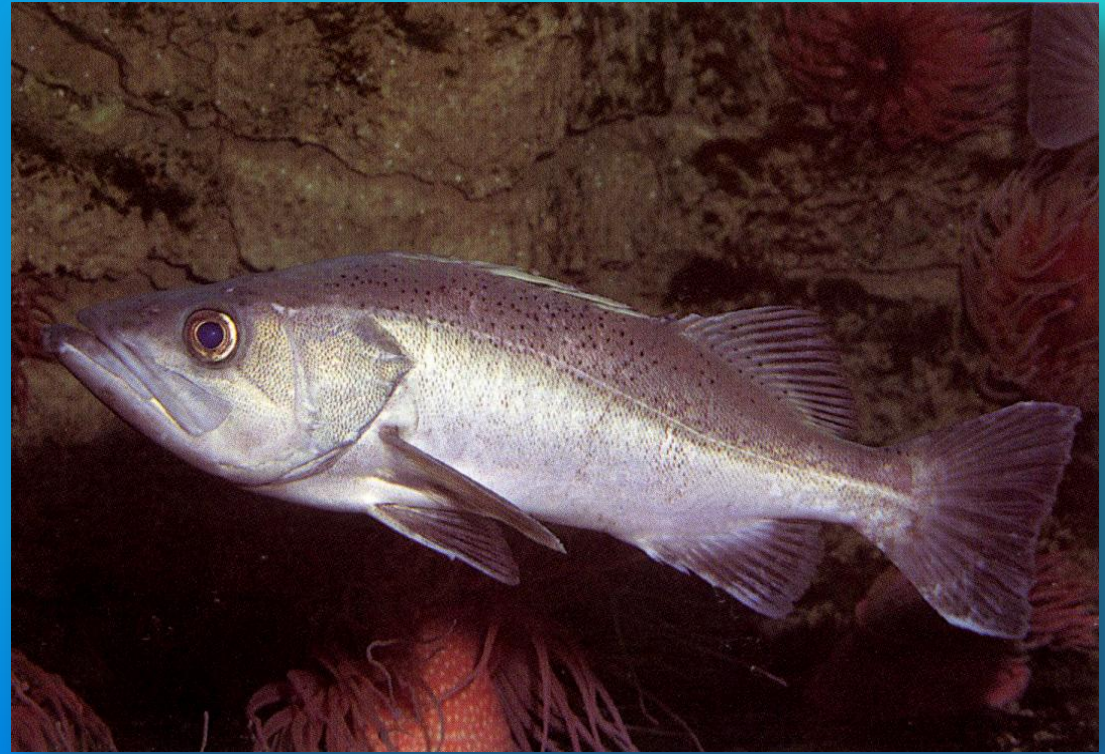


Rockfish

Bocaccio **x**

Sebastes paucispinis

- Large, upturned mouth with projecting lower jaw
- Upper jaw extends past eye
- Dark gray, silvery or olive with silver belly



Size: 8-29 inches
Max: 3 ft

Rockfish

- Yellow speckles on head and body
- Yellow stripe from fore-dorsal fin (runs along lateral line)
- Body color ranges from bluish to black

China Rockfish **x**
Sebastes nebulosus



Size: 8-14 inches
Max: 17 inches

Rockfish

- Key feature: wide, whitish/pink stripe runs along rear of lateral line
- 2 or 3 prominent dark bands (often bordered with yellow)
 - » slopes downward from eye (distinguishes from Calico Rockfish)
- Patches of copper, yellow, or orange over pale under color
- Yellow bar behind eye

Size: 10-16 inches

Max: 22 ½ inches

Copper Rockfish x

Sebastes caurinus

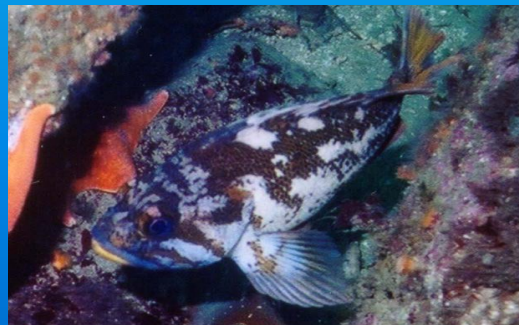


Rockfish

- Several small, white and reddish tan blotches
- Pale blotch extends onto back from 3rd to 4th dorsal spines (where spiny and soft dorsals meet)
- Often lurks in caves/dark recesses

Gopher Rockfish

Sebastes carnatus



Size: 6-12 inches
Max: 15 ½ inches

Age: 33

Rockfish

- Head and back mottled with dark blotches
- Stout, chunky body
- Short, heavy fore-dorsal spines
- Key Feature: dark colored pectoral, dorsal and tail fins
- No blotch on gill cover
- Typically found in shallower water (<30ft)
- Inhabits areas with abundant plant growth

Grass Rockfish *Sebastes rastrelliger*



Size: 8-16 inches

Max: 22 inches

Rockfish

Kelp Rockfish

Sebastes atrovirens

- No distinctive markings
- Mottled tan, brown, or greenish brown
- Found drifting in kelp beds, shaded areas or resting on bottom kelp
- Unafraid and does not move away from divers
- Most commonly sighted rockfish in Southern CA



Size: 6-14 inches

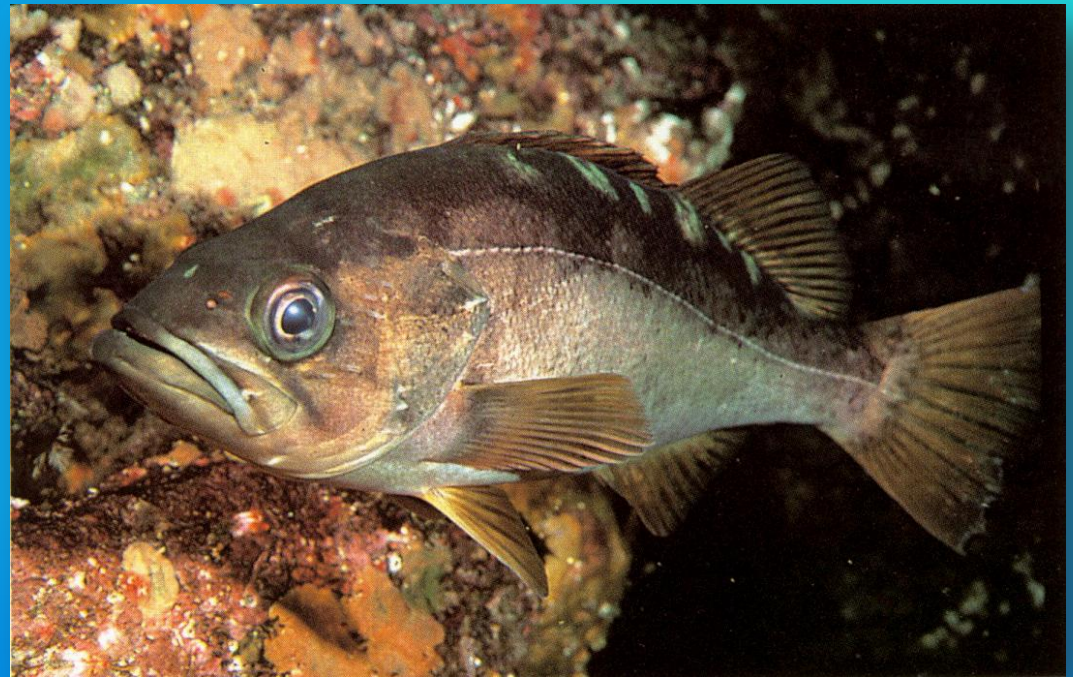
Max: 16 $\frac{3}{4}$ inches

Rockfish

Olive Rockfish **x**

Sebastes serranoides

- Key Feature: several large pale spots below dorsal fin
- Mottled shades of greenish brown
- Lighter color below obvious lateral line
- Fins greenish brown to dusky yellow
- Rare north of Point Conception



Size: 10-20 inches
Max: 2 ft

Rockfish

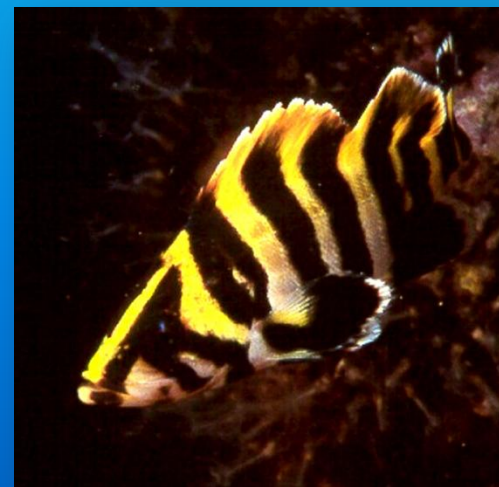
- Key Feature: 5-6 wide, black to dark olive body bars across back and base of tail
- Bars can occasionally double
- 2 dark bands angle from eye toward pectoral fin
- Pink Lips
- Can be bright to dusky yellow

Size: 6-14 inches

Max: 16 inches

Treefish

Sebastes serriceps



Rockfish

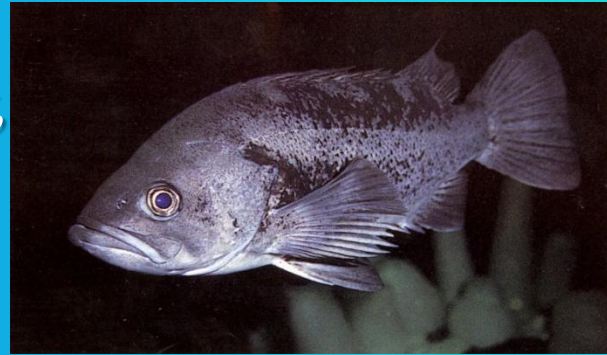
Juvenile (YOY) Rockfish
Young-of-the-Year
Any species



- Juvenile or “Young of the Year” (YOY)
- Usually less than 5 cm
- Virtually impossible to distinguish!



Kelp Blenny,
Giant
Kelpfish



Rockfish,
Black
Rockfish



Rockfish,
Kelp
Rockfish



Rockfish,
Gopher
Rockfish



Rockfish,
Copper
Rockfish



Rockfish,
Black and
Yellow
Rockfish



Rockfish,
Blue
Rockfish



Rockfish,
Treefish



Kelp Blenny,
Crevice
Kelpfish



Rockfish,
Vermilion
Rockfish



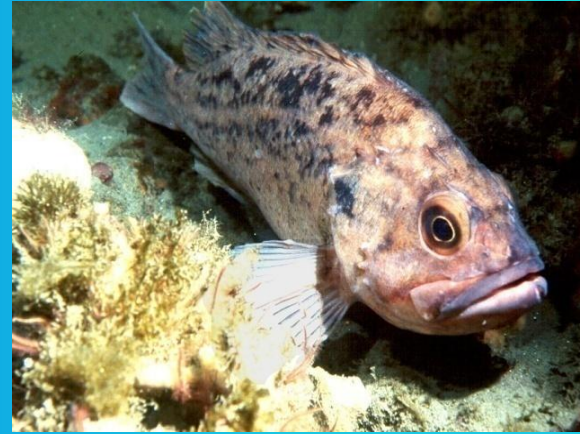
Rockfish,
YOY



Rockfish,
Grass
Rockfish



Kelp
Blenny,
Island
Kelpfish



Rockfish,
Brown
Rockfish



Rockfish,
China
Rockfish



Kelp Blenny,
Spotted
Kelpfish



Rockfish,
Bocaccio



Rockfish,
Olive
Rockfish

Ronquil

- Key Feature: long, continuous dorsal fin and high lateral line
- Anal fin blue and yellow striped
- 2 rows of prominent white squares on sides
 - » can make spots disappear to blend in
- Edge of anal fin black for males and white for females
- Note: Marked as RARE!

Bluebanded

DFG - Smooth Ronquil
Rathbunella hypoplecta



Size: 3-5 inches
Max: 8 inches

Ronquil

Stripefin/Undescribed Ronquil x

DFG - Rough Ronquil

Rathbunella alleni



Note: Marked as RARE

Sculpin

- Key Feature: elongated snout
- Orange-ish area below lateral line
- Darts from perch to perch

Size: 2-4 inches
Max: 5 ½ inches

Coralline Sculpin ~~x~~

Artedius corallinus



Sculpin

- Continuous dorsal fin notched after 3rd spine AND between spiny and soft dorsal
- Mottled color (red, pink, brown and white)
- Usually 4 saddle bars on back

Red Irish Lord **x**
Hemilepidotus hemilepidotus



Size: 8-16 inches
Max: 20 inches

Sculpin

- Dark marking encircles a red spot
- Broad band of scales between dorsal fin and lateral line
- Mottled color in earth tone shades

Size: 2-3 inches
Max: 4 inches

Scalyhead ~~x~~
Artedius harringtoni

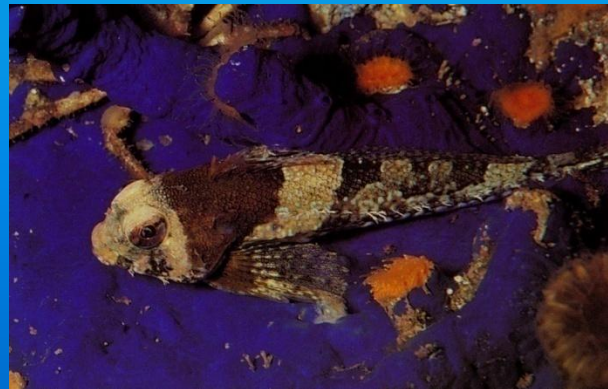


Sculpin

- Broad band of scales between dorsal fin and lateral line
- Key Feature: blunt snout

Snubnose Sculpin

Orthonopias triacis



Size: 2-3 inches; Max: 4 inches

unidentified sculpin



Roughback Sculpin
Chitonotus pugetensis

Shark

Leopard Shark *Triakis semifasciata*

- Elongated, gray body
- Key Feature: series of dark saddle blotches along length of body
 - » becomes pale w/ age
- Short, blunt snout
- Aggregate in very shallow water
- 4-29 pups per litter; live birth



Size: 2-5 ½ ft
Max: 7 ft

Deepest: 91 m



Sculpin,
Coralline
Sculpin



Ronquil,
Stripefin
Ronquil



Sculpin,
Snubnose
Sculpin



Sculpin,
Unidentified
Sculpin



Shark,
Leopard
Shark



Sculpin,
Cabezón



Sculpin,
Red Irish
Lord



Sculpin,
Scalyhead
Sculpin



Ronquil,
Blue
Banded
Ronquil

Surfperch

Kelp Surfperch *Brachyistius frenatus*

- Key Feature: dark areas on scales align to form dusky stripes above lateral line
- Head concave above eyes
- Pointed snout with lower jaw jutting upward
- Smallest of the perches
- Found in kelp forests

Size: 3 ½ - 7 inches

Max: 8 inches



Surfperch

Shiner Surfperch *Cymatogaster aggregata*

- Thin, bright silver body
- Narrow, football-shaped profile
- Several dusky bars on back
- Black spots on scales form thin stripes on sides
- Usually 2-3 yellow bars on sides

Size: 3-6 inches
Max: 7 inches



Surfperch

- Thin, football-shaped profile
- Silver body with shades of gray to olive
- Narrow, iridescent-blue stripes
(separated by wider orange or copper stripes)

Size: 5-12 inches

Max: 15 inches

Striped Surfperch x

Embiotoca lateralis



Surfperch

- Thin, football-shaped profile
- Silver body, often with blue or green tints
- May display dusky bars and black edging on tail and anal fins
- Wide, black edge on ventral fin

Walleye Surfperch *Hyperprosopon argenteum*

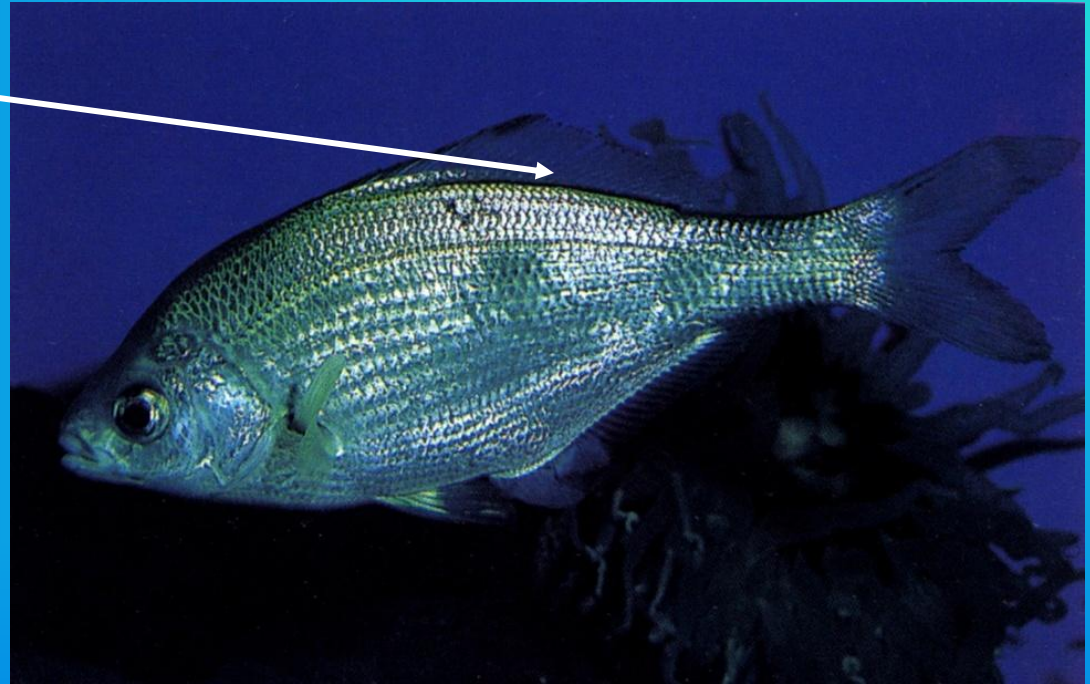


Size: 5-9 inches
Max: 1 ft

Surfperch

- Black line on base of dorsal fin
- Deeply forked tail (often with dusky edge)
- Swim in large schools

White Surfperch *Phanerodon furcatus*



Size: 4-7 inches
Max: 12 ½ inches



Surfperch,
White
Surfperch



Surfperch,
Kelp
Surfperch



Surfperch,
Black
Surfperch



Surfperch,
Rainbow
Surfperch



Surfperch,
Rubberlip
Surfperch



Surfperch,
Striped
Surfperch



Surfperch,
Walleye
Surfperch



Surfperch,
Shiner
Surfperch



Surfperch,
Pile Perch

Other: Eagle Ray

- Large, blunt head
- Whip-like tail
- Long pectoral fins (“wings”), nearly forming equilateral triangles
- Body gray, brown, olive or black; white underside
- Dig large trenches to feed
- Long, venom injecting barb at base of tail
- Mate annually (spring/summer)
 - » 9-12 month gestation; 2-10 pups/litter

Bat Ray

Myliobatis californica



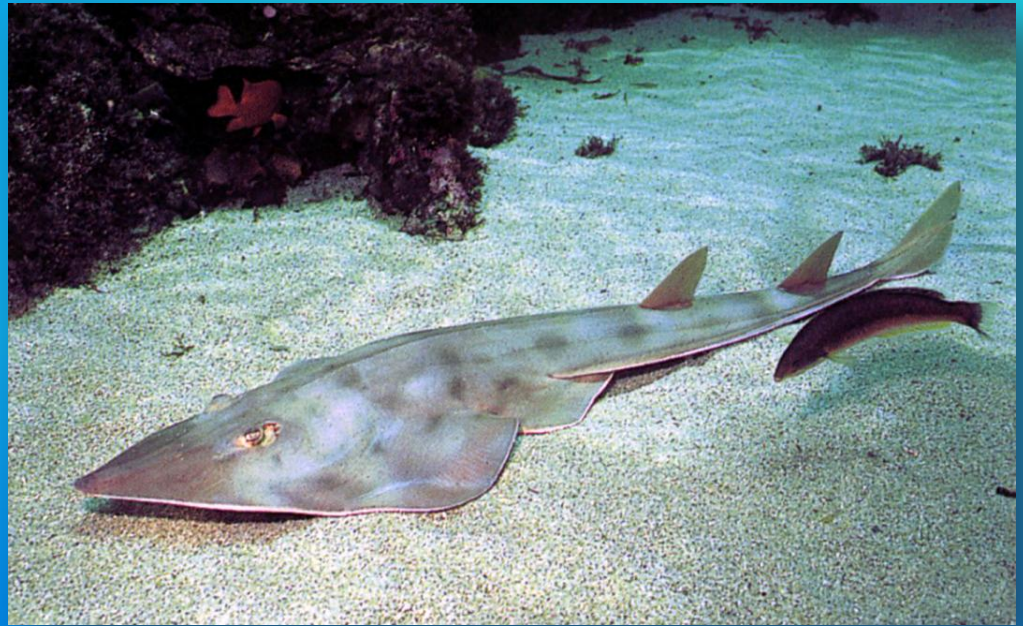
Size: 2-6 ft
Max: 6 ft

Other: Guitarfish

- Key Feature:
long, V-shaped head
- Single row of spines
down back and tail
- Brown, yellow-brown,
or gray (may be lightly
blotched and mottled)
- Flattened, relatively
narrow disc; long,
thick tail base with 2 dorsal fins
- Rests on sand/mud bottoms (partially/completely buried)

Shovelnose guitarfish

Rhinobatos productus



Other: Tilefish

Ocean Whitefish

Caulolatilus princeps

- Key Feature: long, continuous dorsal fin
- Yellow borders on tail
- Yellow streak in center of pectoral fin
- Dorsal body is silver to brown (white belly)
- Found alone or in large groups above rocky areas with some sand and kelp



Size: 8-15 inches
Max: 1 ½ ft

Other: Poacher

- Covered with armor-like plates
- Key Feature: 2 small spines on snout
- 2 indentations on upper rear of head
- Olive or gray with dark blotches
- Rare in S. California

Pygmy Poacher

Odontopyxis trispinosa



Size: 2-3 inches
Max: 4 inches

Other: Tubesnout

- Silver, brown or translucent
- Frequently with iridescent-gold, green or blue sheen
- Thin, elongated body with long snout and small mouth
- Form schools in kelp forest

Tubesnout **x**
Aulorhynchus flavidus



Size: 3-6 inches

Max: 7 inches

Other: Moray

CA Moray Eel *Gymnothorax mordax*

- Key Feature:
 - no pectoral fins
- Light/dark brown to green (often mottled)
- Numerous, sharp teeth
- Inhabit rocky reefs
- Found in caves, sand/mud bottoms (partially/completely buried)



Size: 2-4 ft
Max: 5 ft



Pipefish,
Unidentified
Pipefish



Tubesnout,
Tubesnout



Guitarfish,
Shovelnose
Guitarfish



Jack,
Jack
Mackerel



Poacher,
Pygmy
Poacher



Moray,
California
Moray Eel



Grunt,
Sargo



Tilefish,
Ocean
Whitefish



Eagle Ray,
Bat ray

Quick Review



Scorpionfish,
California
Scorpionfish



Sea Chub,
Opaleye



Wrasse,
Señorita



Surfperch,
Rainbow
Surfperch



Flatfish,
CA Halibut



Rockfish,
Black and
Yellow
Rockfish



Rockfish,
Kelp
Rockfish



Rockfish,
Gopher
Rockfish



Surfperch,
Black
Surfperch



Sculpin,
Unidentified
Sculpin



Kelpfish /
Blenny,
Island
Kelpfish



Moray,
California
Moray Eel



Greenling,
Lingcod



Wrasse,
(Male) CA
Sheephead



Grunt,
Sargo



Surfperch,
White
Surfperch



Surfperch,
Rubberlip
Surfperch



Eagle Ray,
Bat Ray



Rockfish,
Copper
Rockfish



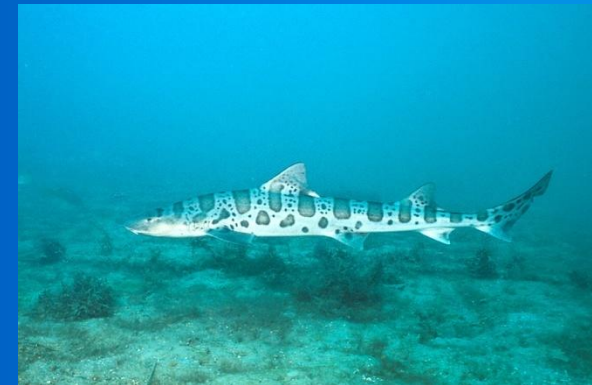
Ronquil,
Stripefin
Ronquil



Wrasse,
(Male)
Rock
Wrasse



Kelpfish /
Blenny,
Spotted
Kelpfish



Shark,
Leopard
Shark



Rockfish,
Black
Rockfish



Guitarfish,
Shovelnose
Guitarfish



Rockfish,
Treefish



Surfperch,
Kelp
Surfperch



Sculpin,
Coralline
Sculpin



Wrasse,
(Juv) CA
Sheephead



Kelpfish /
Blenny,
Sarcastic
Fringehead



Goby,
Zebra goby



Tubesnout,
Tubesnout



Wrasse,
(Female)
Rock
Wrasse



Wrasse,
(Female)
CA
Sheephead



Rockfish,
YOY



Jack,
Jack
Mackerel



Kelpfish /
Blenny,
Crevice
Kelpfish



Goby,
Blackeye
Goby



Sculpin,
Scalyhead
Sculpin



Tilefish,
Ocean
Whitefish



Rockfish,
Blue
Rockfish



Kelpfish /
Blenny,
Striped
Kelpfish

diver.net



Surfperch,
Striped
Surfperch



Sculpin,
Red Irish
Lord



Goby,
Blue-
banded
Goby



Ronquil,
Blue-
banded
Ronquil



Rockfish,
Grass
Rockfish



Rockfish,
Vermilion
Rockfish



Sea Bass,
Kelp Bass



Sea Bass,
Barred
Sandbass



Sea Chub,
Halfmoon



Damsel fish,
Blacksmith



Flatfish,
C-O Sole



Damsel fish,
Garibaldi



Sculpin,
Snubnose
Sculpin



Shark,
Horn Shark



Rockfish,
China
Rockfish



Sculpin,
Cabezon



Rockfish,
Bocaccio



Greenling,
Kelp
Greenling



Surfperch,
Walleye
Surfperch



Flatfish,
Unidentified
Flatfish



Rockfish,
Olive
Rockfish



Surfperch,
Shiner
Surfperch



Surfperch,
Pile Perch



Silverside,
Jacksnelt/
Topsmelt



Pipefish,
Unidentified
Pipefish



Greenling,
Painted
Greenling



Rockfish,
Brown
Rockfish



Flatfish,
Speckled
Sanddab



Poacher,
Pygmy
Poacher



Kelpfish /
Blenny,
Giant
Kelpfish

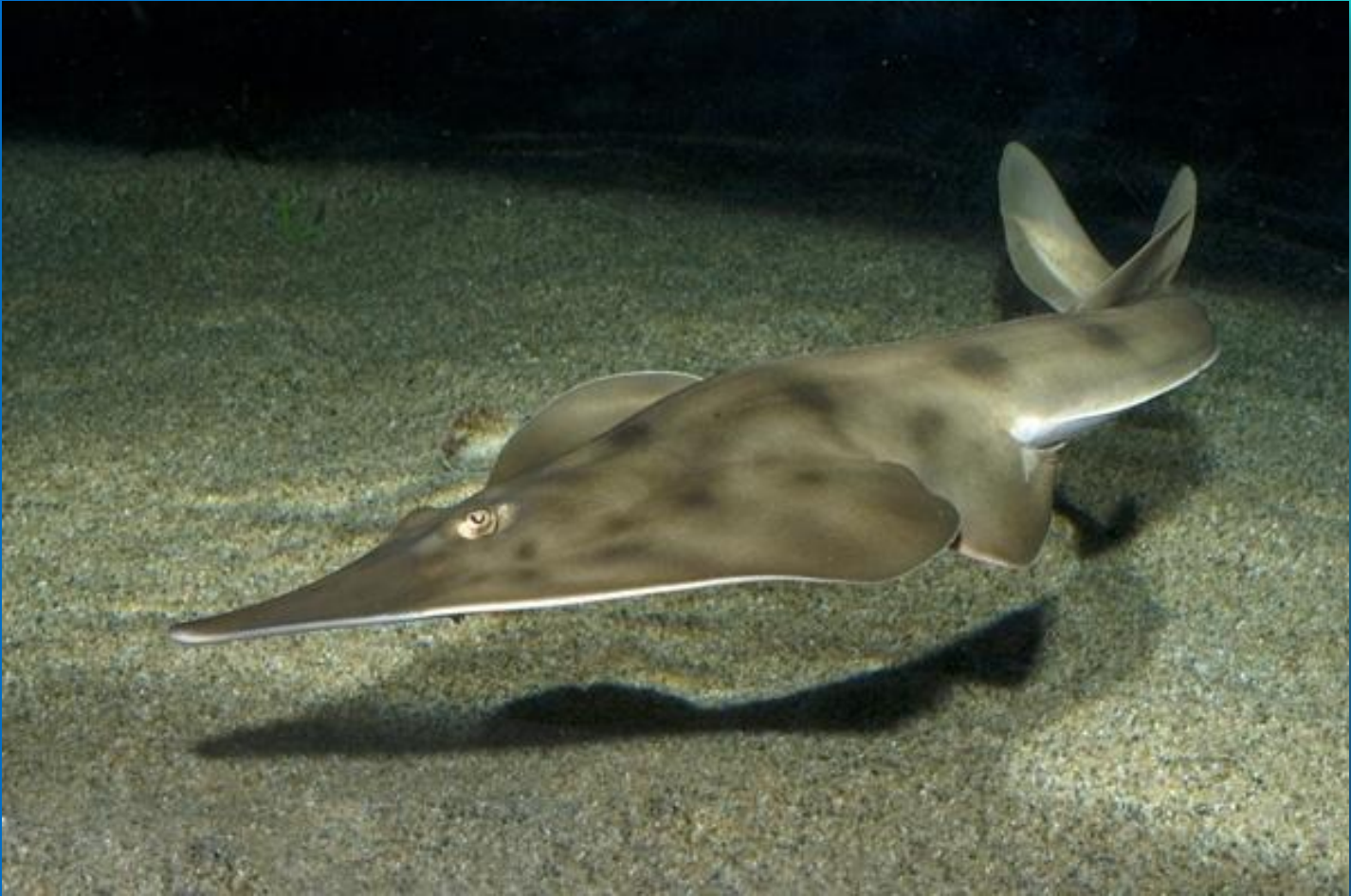
Questions?

Test time!

1



2



3



4



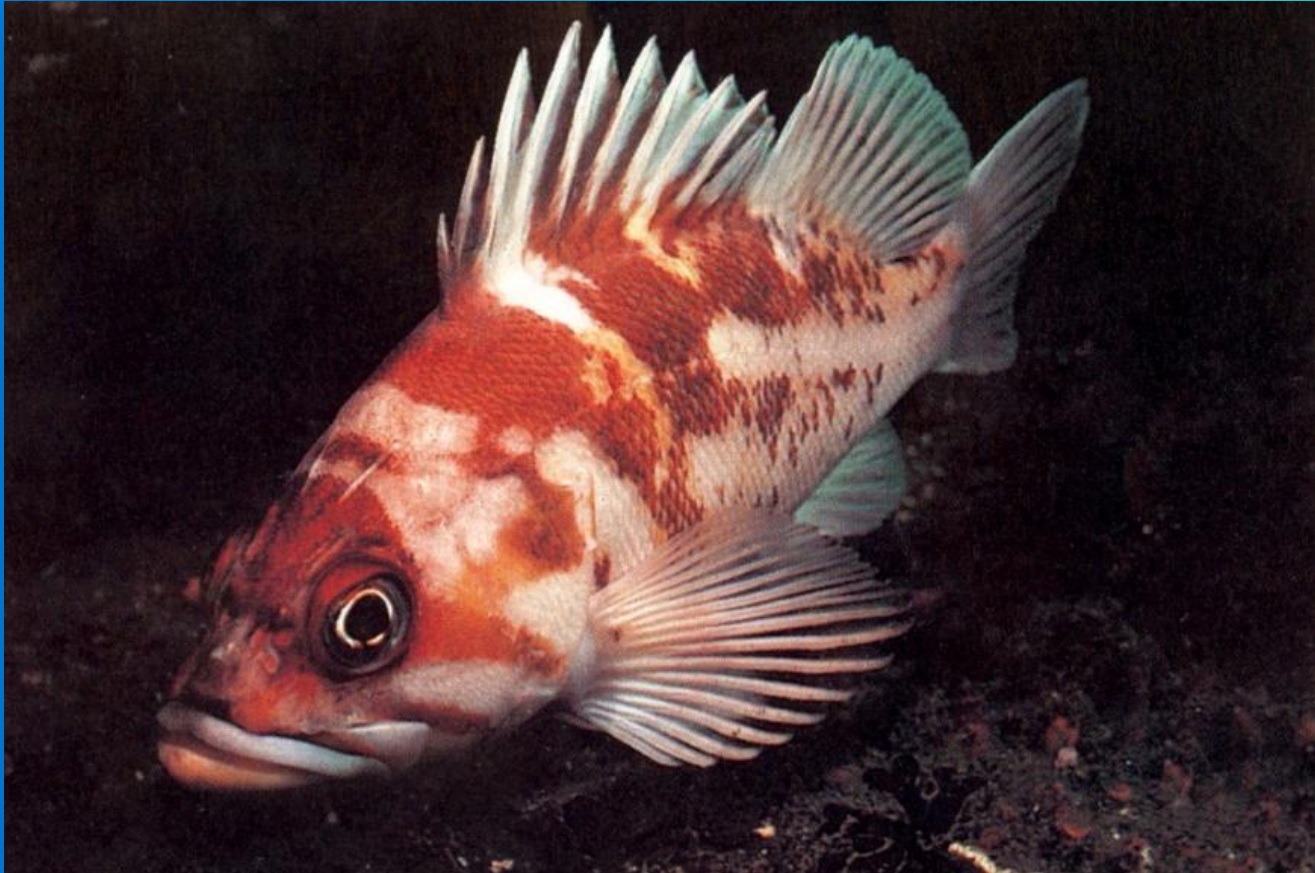
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6



7



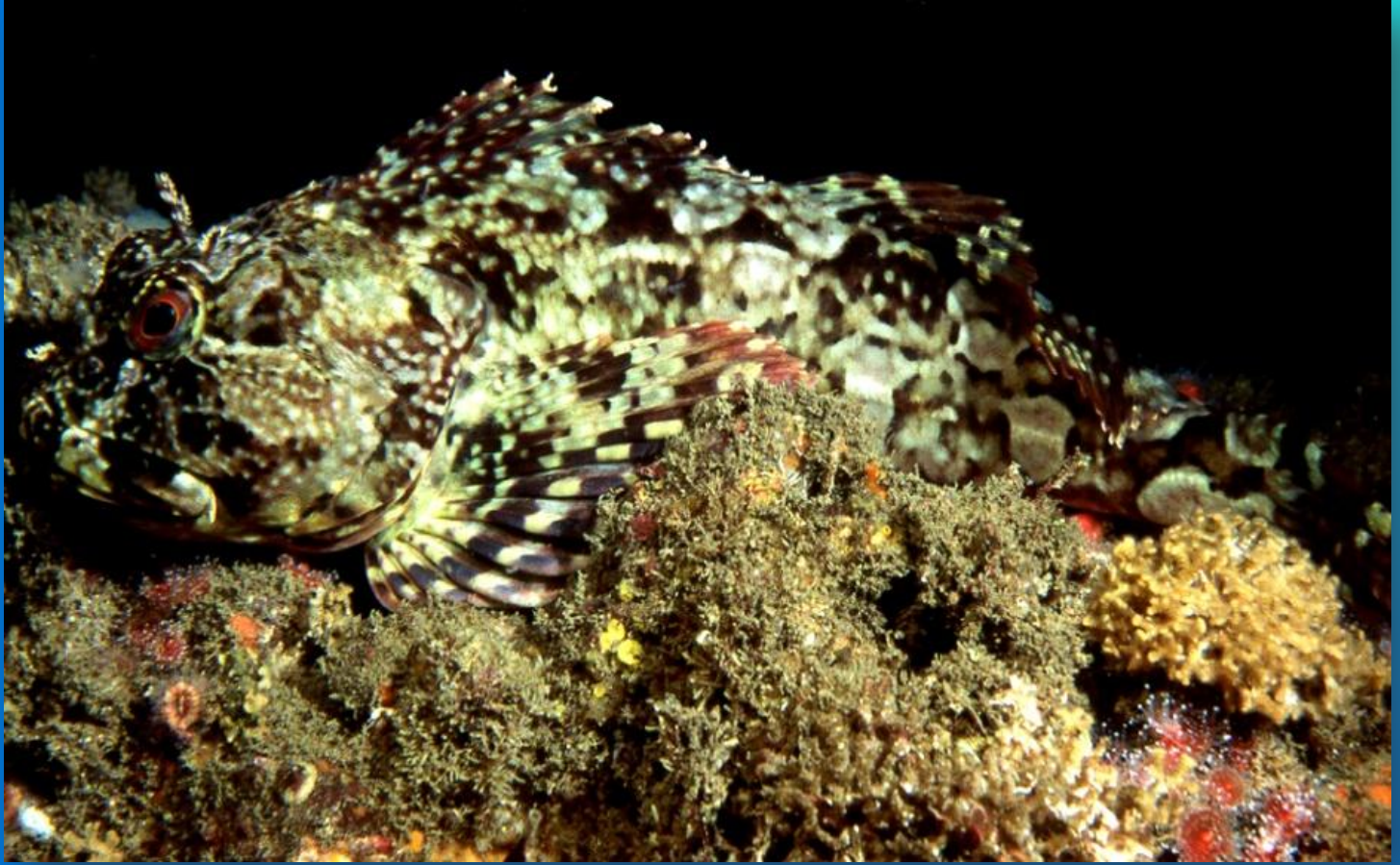
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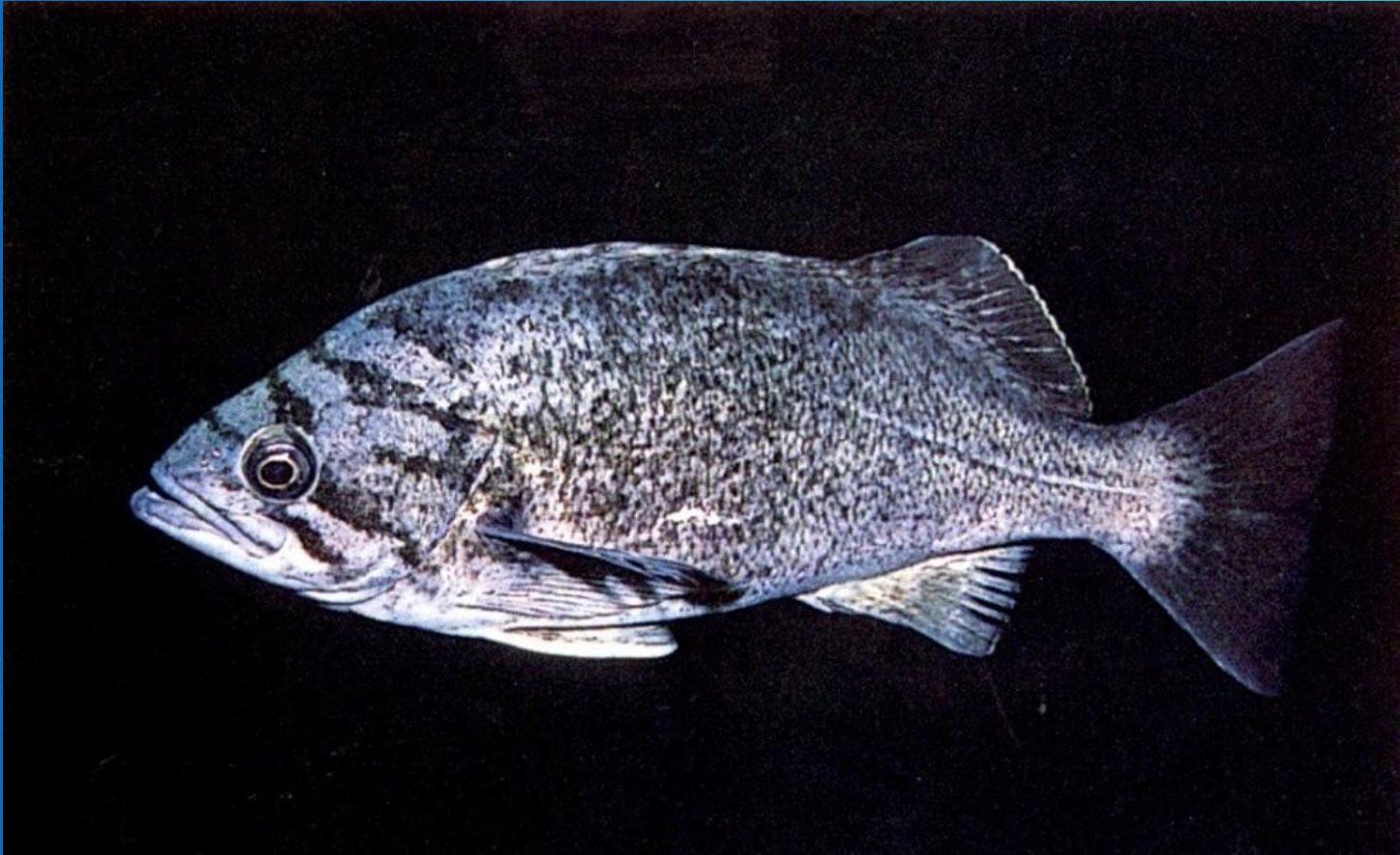
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11



12



13



14



15



16



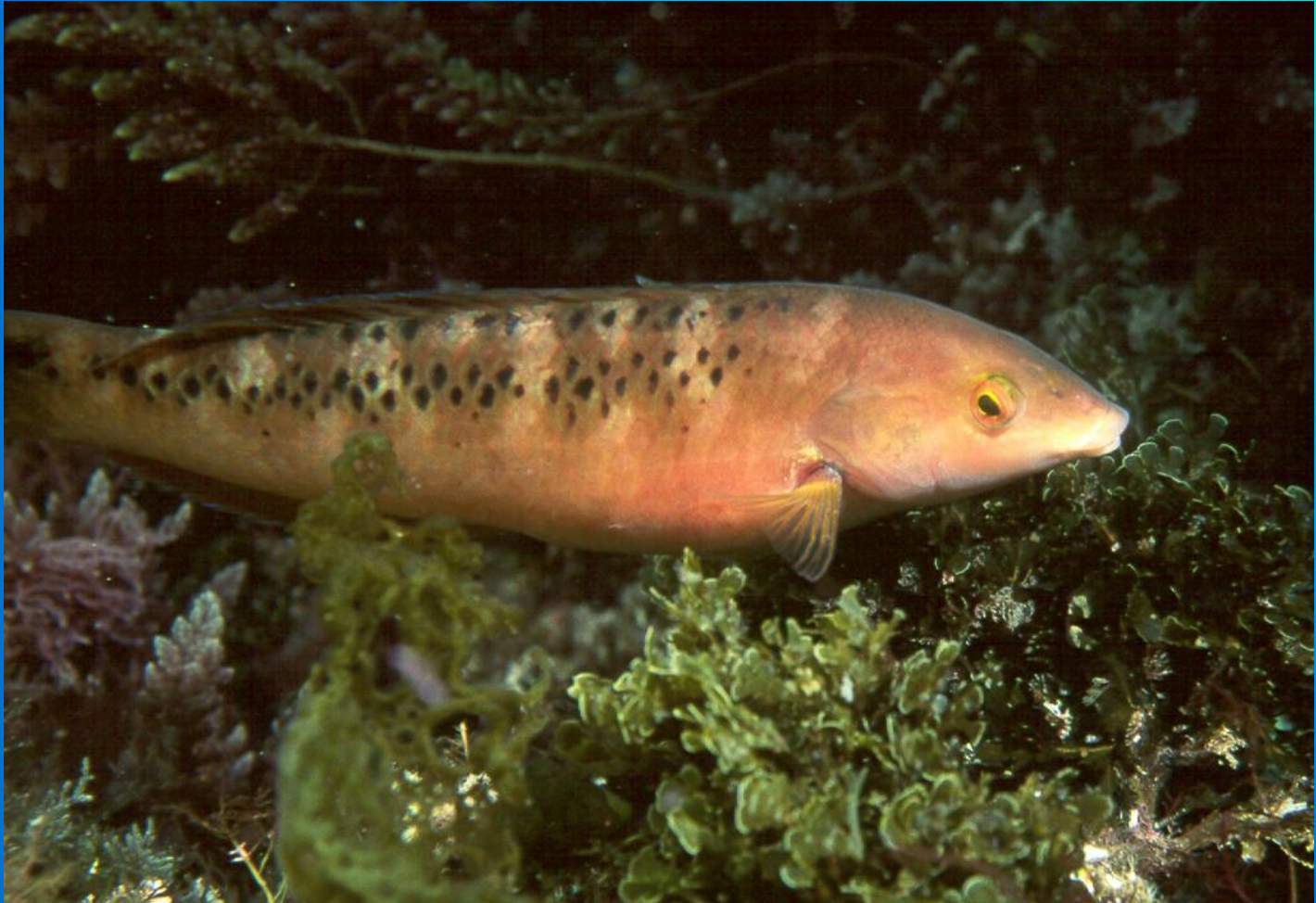
17



18



19



20



21



22



23



24



25



26



27



28



29



30



Bonus



Time to Grade your Test!

- Please trade papers with your neighbor -

Surfperch

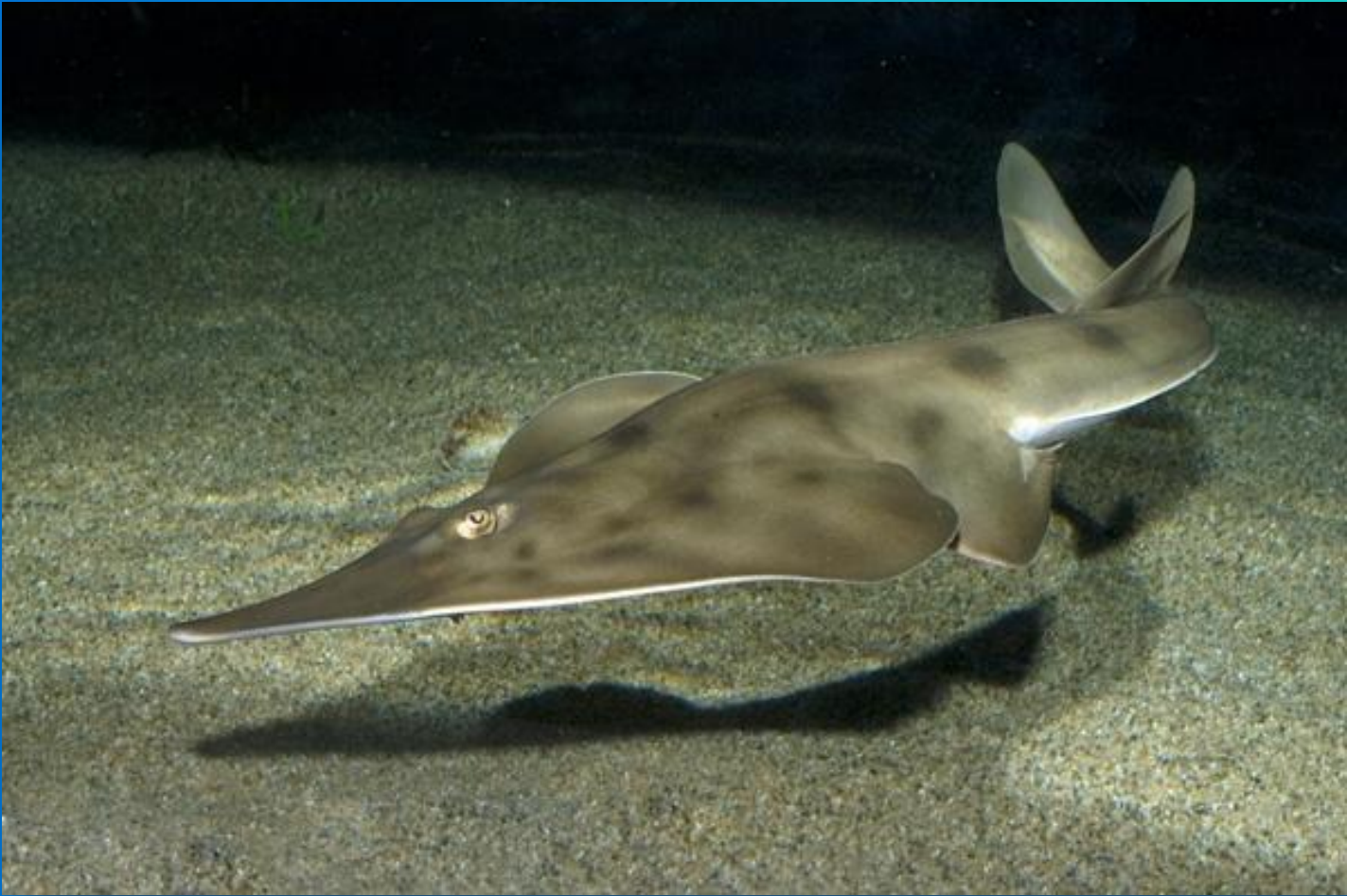
1



Kelp Surfperch
Brachyistius frenatus

Guitarfish

2



Shovelnose Guitarfish
Rhinobatos productus

Surfperch

3



Pile Perch
Rhacochilus vacca

Kelpfish/Blenny 4



Sarcastic Fringehead
Neoclinus blanchardi

Rockfish

5



Juvenile (YOY) Rockfish
Young-of-the-Year
Any species

Surfperch

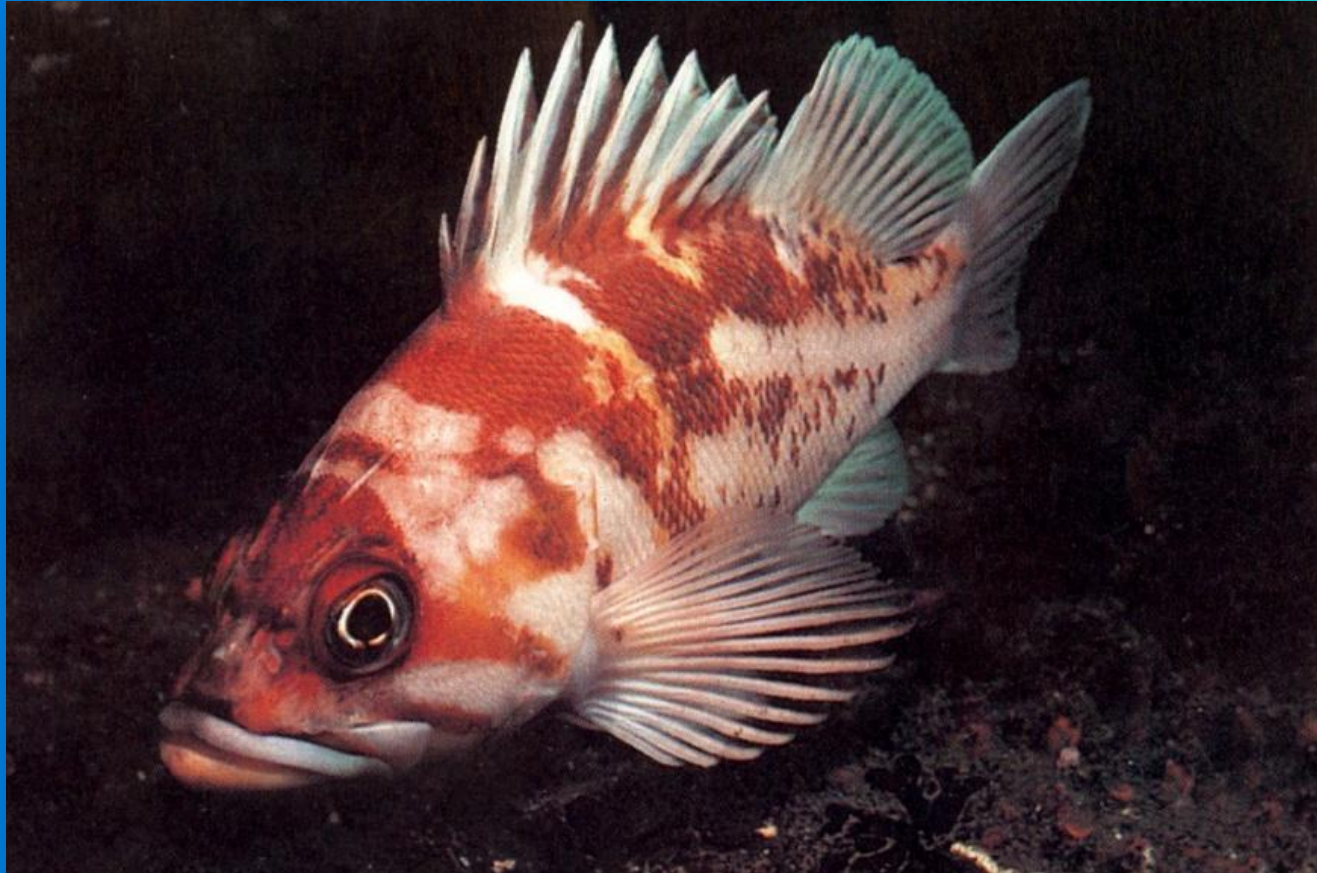
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Striped Surfperch
Embiotoca lateralis

Rockfish

7



Copper Rockfish
Sebastes caurinus

Rockfish

8



Kelp Rockfish
Sebastes atrovirens

Tilefish

9



Ocean Whitefish
Caulolatilus princeps

Sculpin

10



Cabezon

Scorpaenichthys marmoratus

Sea Chub

11

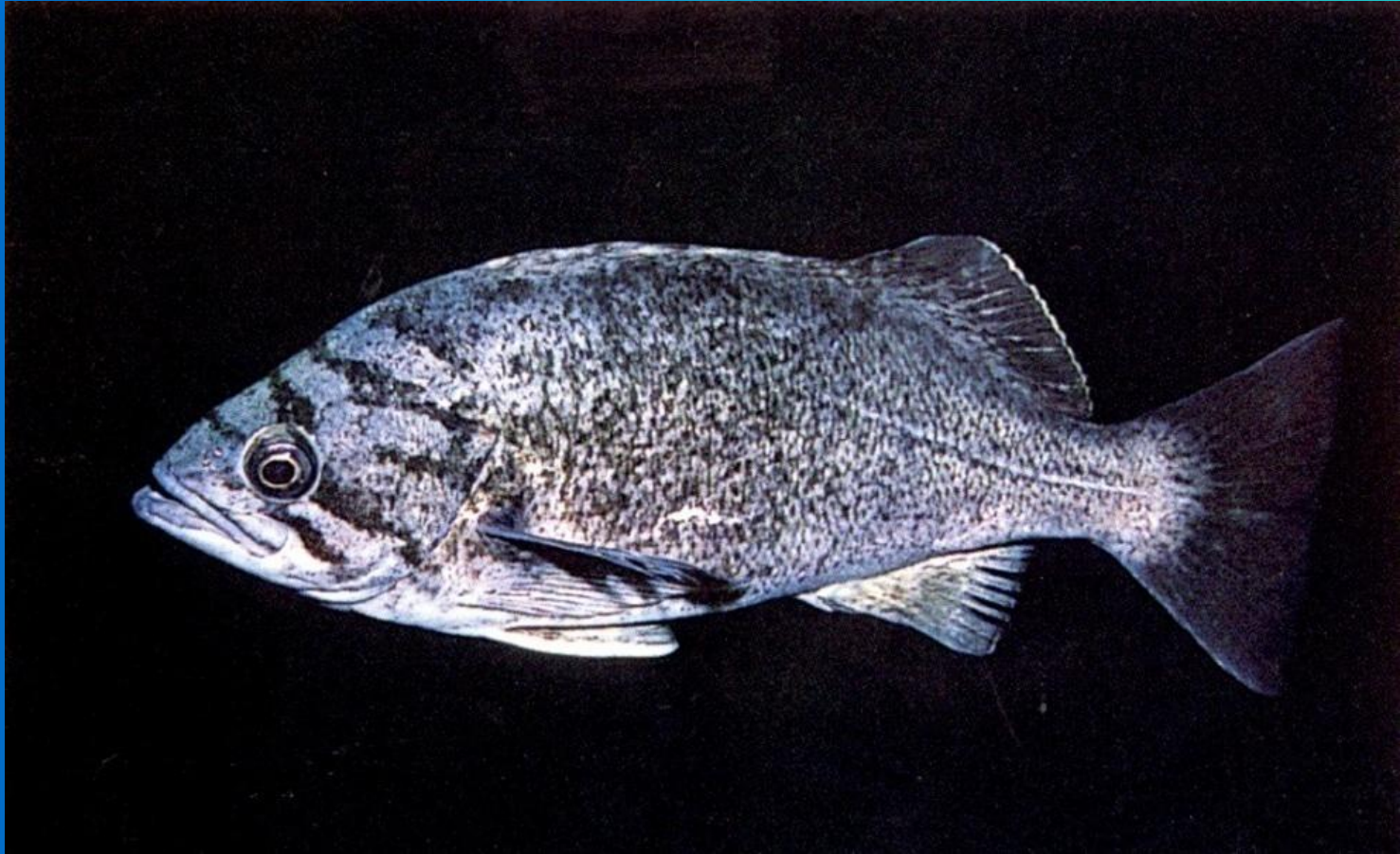


Halfmoon

Medialuna californiensis

Rockfish

12



Blue Rockfish
Sebastes mystinus

Damselfish

13



Garibaldi

Hypsypops rubicundus

Rockfish

14



Gopher Rockfish
Sebastes carnatus

Goby

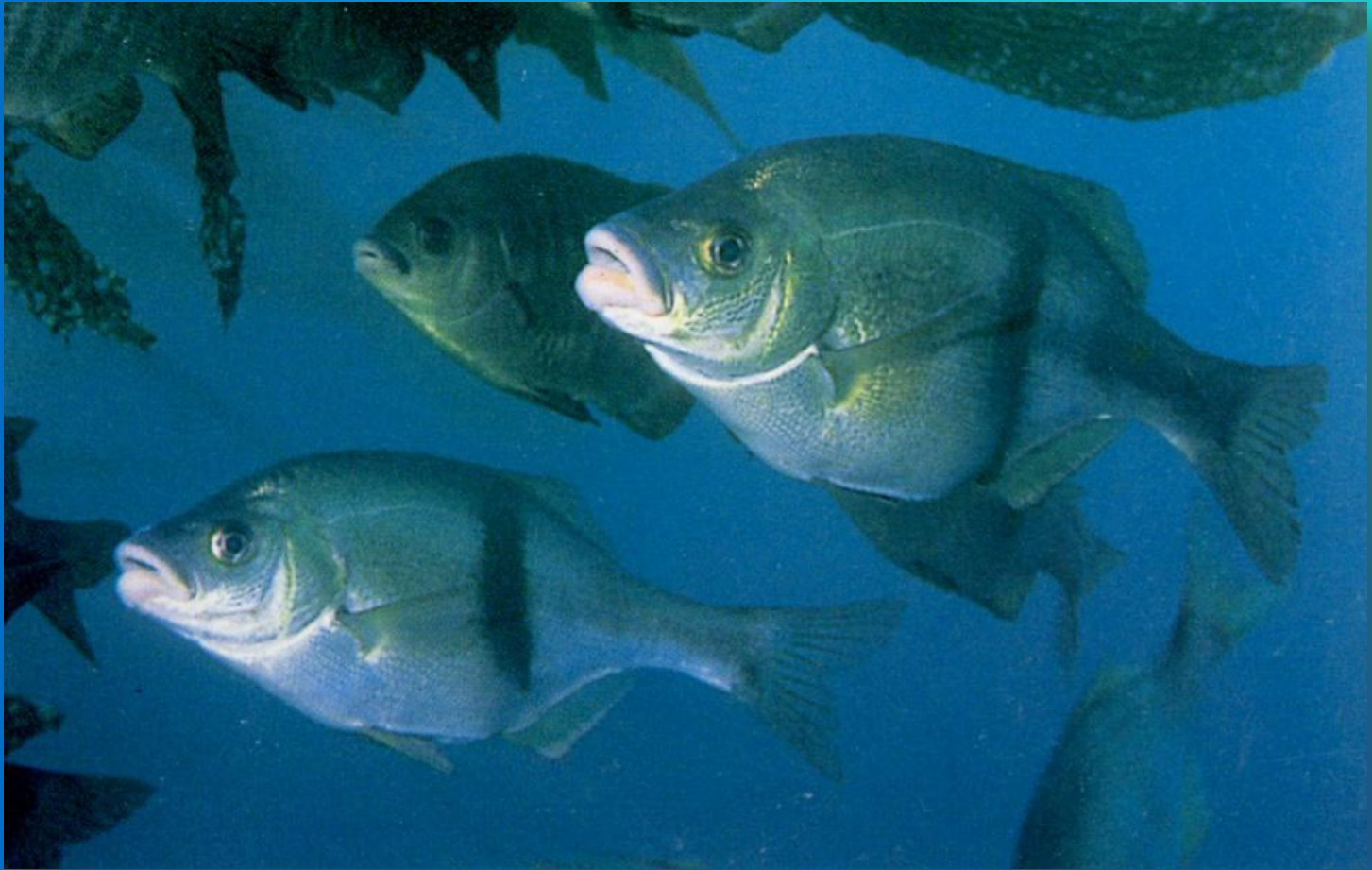
15

Zebra Goby
Lythrypnus zebra



Surfperch

16



Rubberlip Surfperch
Rhacochilus toxotes

Rockfish

17

Treefish
Sebastes serriceps



Shark

18

Leopard Shark
Triakis semifasciata



Wrasse

19



Rock Wrasse

Halichoeres semicinctus

Sculpin

20



Coralline Sculpin

Arteidius corallinus

Wrasse

21



California Sheephead
Semicossyphus pulcher

Rockfish

22

Grass Rockfish
Sebastes rastrelliger



Eagle Ray

23

Bat Ray
Myliobatis californica



Kelpfish/Blenny ₂₄



Island Kelpfish
Alloclinus holderi

Sculpin

25



Roughback Sculpin
Chitonotus pugetensis

Unidentified Sculpin

Goby

26

Blue-banded Goby
Lythrypnus dalli



Shark

27

Horn Shark
Heterodontus francisci



Sculpin

28



Snubnose

Orthonopias triacis

Moray

29

CA Moray Eel
Gymnothorax mordax



Flatfish

30



California Halibut
Paralichthys californicus

Ray

Bonus



Thornback Ray
Raja clavata

Congratulations!

You've just finished Level 3 Fish ID...

If you got 80% (48/60) or higher on your quiz, you are officially a Level 3 REEF surveyor!

Now - just get out, dive, submit more surveys and come back for Level 4!!



Level 1 (All new REEF members)

Level 2 (Beginning Surveyor)

80% on Most Common Fishes Quiz (20 species)

2 REEF surveys

Level 3 (Advanced Surveyor)

80% on Most Common Fishes Quiz (50 species)

25 REEF surveys

Level 4 (Expert Surveyor)

90% on Most Common Fishes Quiz (60 species)

35 REEF surveys

Level 5 (Expert Surveyor)

95% on Most Common Fishes Quiz (100 species)

50 REEF surveys