

A KEY TO COMMON FISHES OF TEXAS *
(Figure page 42)

- | | |
|---|----|
| 1. Jaws present; mouth not an open sucking disc; gill openings less than 7 | 2 |
| Jaws absent; mouth an open sucking disc; gill openings 7 | |
| Petromyzontidae (Lampreys) (Page 9) | |
| 2. Eyes on the same side of the head | 3 |
| Eyes on opposite sides of the head | 5 |
| 3. One or both pectoral fins absent | 4 |
| Both pectorals present | |
| Bothidae (Lefteye Flounders) (Page 9) | |
| 4. Eyes on the right side of the head | |
| Soleidae (Soles) (Page 9) | |
| Eyes on the left side of the head | |
| Cynoglossidae (Tongue Fishes) (Page 10) | |
| 5. Pectoral fin present; pelvic fin present or absent | 6 |
| Pectoral and pelvic fins absent | |
| Muraenidae (Moray Eels) (Page 10) | |
| 6. Pelvic fins absent | 7 |
| Pelvic fins present | 16 |
| 7. Dorsal or combined dorsal and caudal more than 1/2 the length of the fish and the body depth is much less than 1/2 the standard length | 8 |
| Dorsal much less than 1/2 the standard length, if more, then body depth more than 1/2 the standard length | 11 |
| 8. Body not flattened laterally, not ribbon-like | 9 |
| Body flattened laterally, ribbon-like | |
| Trichiuridae (Cutlass Fishes) (Page 10) | |
| 9. Posterior nostrils located above upper lip, at or above eye level | 10 |
| Posterior nostrils located on upper lip below eye level usually on a flattened tube | |
| Ophichthidae (Snake Eels) (Page 10) | |
| 10. Lower jaw projects beyond upper jaw | |
| Anguillidae (Freshwater Eels) (Page 10) | |
| Lower jaw does not project beyond upper jaw | |
| Moringuidae (Conger Eels) (Page 10) | |

*Threatened or endangered species

11. Dorsal fin single and without spines 12
Dorsal single or double but with spines
Balistidae (Leatherjackets) (Page 10)
12. Snout and body normal; length less than 6 times depth 13
Snout and body elongate; length more than 6 times depth
Syngnathidae (Sea Horses and Pipe Fishes)
(Page 11)
13. Body not covered with many large 2 or 3 rooted spines 14
Body covered with many hard 2 or 3 rooted spines
Diodontidae (Porcupine Fishes) (Page 11)
14. Body not encased in a hard shell of fused scales 15
Body encased in a hard shell of fused scales
Ostraciidae (Box Fishes) (Page 11)
15. Body deep, flattened laterally; teeth not enlarged
incisors
Stromateidae (Butterfishes) (Page 12)
Body globose to fusiform; teeth enlarged and incisor-like
Tetraodontidae (Puffers) (Page 12)
16. With 5 pair of gill openings, operculum absent 17
Openings to the gills a single pair, operculum present 27
17. Snout blunt, not elongated into a saw-like projection 18
Snout elongated into a saw-like projection
Pristidae (Sawfishes) (Page 12)
18. The gill slits extend dorsal to the pectoral fins; body
fusiform 19
Body greatly flattened; gill slits are on the under
surface of the body 23
19. Anal fin present 20
Anal fin absent
Squalidae (Dogfish Sharks) (Page 12)
20. First dorsal fin is located in front of the pelvic fins 21
First dorsal fin is over or behind the pelvics
Orectolobidae (Carpet-Sharks) (Page 12)
21. Head is not expanded laterally into a hammer or
kidney-shape 22
Head is expanded laterally into a hammer or kidney-shape
Sphyrnidae (Hammerhead Sharks) (Page 12)
22. Last gill slit is located over the pectoral fins
Carcharhinidae (Requiem Sharks) (Page 12)
Last gill slit is in front of the pectorals
Odontaspidae (Sand Tigers) (Page 13)

23. One or 2 dorsal fins present; caudal fin often present 24
 Dorsal fin absent; caudal fin usually absent
Dasyatidae (Stingrays) (Page 13)
24. A serrated caudal spine absent; caudal fin usually present 25
 A serrated caudal spine present; caudal fin absent
Myliobatidae (Eagle Rays) (Page 13)
25. Width of body disc usually more than 1/2 the total length of fish; space between the 2 dorsal fins usually less than the length of the base of the anterior dorsal 26
 Width of body disc much less than 1/2 the total length of the fish; space between the 2 dorsal fins much more than the length of the base of the anterior dorsal
Rhinobatidae (Guitar Fish) (Page 13)
26. Anterior end of head broadly rounded
Torpedinidae (Electric Rays) (Page 13)
 Anterior end of head pointed
Rajidae (Skates) (Page 14)
27. Gill openings behind the pectoral fins 28
 Gill openings in front of the pectorals 29
28. Mouth large and located at the end of the head (terminal); body not greatly depressed
Antennariidae (Frogfishes) (Page 14)
 Mouth small and located under the head (inferior); body greatly depressed
Ogcocephalidae (Batfishes) (Page 14)
29. Caudal fin heterocercal 30
 Caudal homocercal 33
30. Mouth below a projection of the head (inferior) 31
 Mouth at the end of the head (terminal) 32
31. Body smooth, no obvious scales or plates
Polydontidae (Paddlefishes) (Page 14)
 Body rough with several bony plates
Acipenseridae (Sturgeons) (Page 14)
32. Scales cycloid and rounded; a bony plate (gular) between the halves of the lower jaw
Amiidae (Bowfins) (Page 14)
 Scales ganoid and diamond-shaped; no gular plate
Lepisosteidae (Gars) (Page 14)
33. A flat elongate sucking disc with transverse ridges absent from the top of the head 34
 A flat elongate sucking disc present on top of the head
Echeneidae (Remoras) (Page 14)

34. Anus located posterior to pelvic fins, at rear of abdomen Anus anterior to the pelvics, under the head Aphredoderidae (Pirate Perches) (Page 14)	35
35. With an adipose fin behind the dorsal fin Adipose fin absent	36 40
36. Body naked; head with 4 to 8 barbels Body scaled; barbels absent	37 38
37. Posterior nostril without a barbel Ariidae (Sea Catfishes) (Page 15) Posterior nostril with a barbel Ictaluridae (Bullhead Catfishes) (Page 15)	
38. With more than 50 lateral line scales With less than 50 lateral line scales Characidae (Characins) (Page 15)	39
39. Pelvic fin origin located anterior to dorsal fin origin Synodontidae (Lizard Fishes) (Page 16) Pelvic origin posterior to dorsal origin Salmonidae (Trouts) (Page 16)	
40. One or both jaws produced into a needle-like beak Snout not needle-like	41 42
41. Both jaws produced into a needle-like beak Belonidae (Needlefish) (Page 16) Only the lower jaw is produced into a beak Exocoetidae (Flying Fishes) (Page 16)	
42. Without a ventral sucking disc formed from the united pelvic fins With a ventral sucking disc formed from the united pelvics Gobiidae (Gobies) (Page 16)	43
43. A ventral sucking disc formed from skin absent; fish not tadpole like A ventral sucking disc formed of skin present; fish small and tadpole-like Gobiesocidae (Clingfishes) (Page 17)	44
44. Pelvic fins jugular, the origin or insertion completely anterior to the pectoral origin Pelvic origin under or behind the pectoral origin	45 50
45. Usually without scales, if present, pelvic fins inserted anterior to eyes With scales; pelvics inserted posterior to eyes	46 48
46. Pelvic fins inserted posterior to the eyes Pelvics inserted below or anterior to the eyes Ophidiidae (Cusk-eels) (Page 17)	47

47. Dorsal fin inserted anterior to pelvic fins
 Blenniidae (Combtooth Blennies) (Page 17)
 Dorsal inserted posterior to pelvics
 Batrachoididae (Toadfishes) (Page 18)
48. Mouth terminal (at end of head); eyes located on sides of head 49
 Mouth vertical (on top of head); eyes directed upward and
 located on top of head
 Uranoscopidae (Stargazers) (Page 18)
49. Dorsal fin with spines
 Clinidae (Clinids) (Page 18)
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 Ophidiidae (Cusk-eels) (Page 17)
50. Pelvic fins abdominal (inserted posterior to the midpoint
 of the longest pectoral rays) 51
 Pelvic fins thoracic (inserted anterior to the midpoint of
 the longest pectoral rays) 63
51. With 2 dorsal fins 52
 With a single dorsal fin 54
52. Lateral line absent or incomplete; gill rakers long 53
 Lateral line present; gill rakers absent
 Sphyraenidae (Barracudas) (Page 18)
53. With 2 or 3 anal spines; standard length less than 4 times
 body depth
 Mugilidae (Mulletts) (Page 18)
 With 1 anal spine; standard length more than 4 times body
 depth
 Atherinidae (Silversides) (Page 18)
54. An enlarged bone (gular plate) is absent from between the
 two bones of the lower jaw 55
 Bony gular plate is present
 Elopidae (Tarpons) (Page 19)
55. Pectoral fin not greatly elongated, does not extend beyond
 anal opening 56
 Pectoral greatly elongated, extending beyond anal opening
 Exocoetidae (Flying Fishes) (Page 16)
56. The upper jaw extends, at most, to just behind the eyes 57
 The upper jaw extends beyond the posterior margin of the
 preopercle
 Engraulidae (Anchovies) (Page 19)
57. Head scaleless 58
 Head partly or completely scaled 61

58. Branchiostegal membranes free from isthmus 59
 Branchiostegal membranes united to isthmus 60
59. Lateral line absent; scales along midline of belly usually
 formed into a knife-like or saw-like keel
Clupeidae (Herrings) (Page 19)
 Lateral line present; belly scales normal
Hiodontidae (Mooneyes) (Page 20)
60. Distance from anal origin to caudal base less than 1/2
 distance from dorsal origin to caudal base, barbels
 absent
Catostomidae (Suckers) (Page 20)
 Distance from anal origin to caudal base more than 1/2
 distance from dorsal origin to caudal base; if not,
 barbels present
Cyprinidae (Carps and Minnows) (Page 21)
61. Snout not shaped like a duck's bill, lateral line absent or
 very incomplete 62
 Snout like a duck's bill, lateral line present
Esocidae (Pikes) (Page 27)
62. Third anal ray branched (first ray more than 1/2 length of
 third ray); usually 8 or more branched anal rays
Cyprinodontidae (Killifishes) (Page 27)
 Third anal ray unbranched (first ray less than 1/2 length
 of third ray); less than 8 branched anal rays
Poeciliidae (Livebearers) (Page 28)
63. Pectoral fins with separate, enlarged, finger-like rays 64
 Pectoral fins entire 65
64. Pectoral fins with 3 separate finger-like rays
Triglidae (Searobins) (Page 29)
 Pectoral fins with 8 separate finger-like rays
Polynemidae (Threadfins) (Page 29)
65. A series of separate finlets absent from behind the dorsal
 and anal fins; if they appear to be present, the anal
 spines are not connected to the anal rays by a
 membrane 66
 With a series of separate finlets behind the dorsal and
 anal; anal spines connected to anal rays by a
 membrane
Scombridae (Mackerels) (Page 29)
66. Cheek without a bony ridge and spines under the eye 67
 Cheek with a bony suborbital ridge
Scorpaenidae (Scorpionfishes) (Page 30)

67. Dorsal usually with spines and the origin is posterior to the eyes 68
Dorsal of soft rays and with its origin on the head over the eyes
Coryphaenidae (Dolphins) (Page 30)
68. With 1 pair of external nares (nostrils) 69
With 2 pair of external nares 70
69. Lateral line interrupted near dorsal termination; caudal rounded
Cichlidae (Cichlids) (Page 30)
Lateral line ends near dorsal termination; caudal forked
Pomacentridae (Damsel Fishes) (Page 31)
70. More than 3/4 of the soft dorsal and anal covered with scales; body depth more than 1/2 the standard length 71
Less than 1/2 of the soft dorsal and anal covered with scales; if more, the body depth is less than 1/2 the standard length 73
71. With 1 dorsal fin; body not marked with vertical bars 72
With 2 dorsal fins; body marked with vertical bars
Ephippidae (Spade Fishes) (Page 30)
72. Preopercle with a sharp spine
Pomacanthidae (Angelfishes) (Page 30)
Preopercle smooth
Chaetodontidae (Butterflyfishes) (Page 30)
73. Anterior teeth absent or conical 74
Anterior teeth broad and flat, incisor-like
Sparidae (Porgies) (Page 30)
74. Body compressed or fusiform; some of spinous dorsal connected by membranes or connected to soft dorsal 75
Body fusiform and no spines of dorsal connected by membranes
Rachycentridae (Cobias) (Page 31)
75. Scales not readily visible or absent; anal rays more than 15 and anal spines usually not connected to anal rays 76
Scales large and obvious, or if absent, anal rays less than 15 and anal spines connected to anal rays by a membrane 77
76. Lateral line straight and scutes absent from posterior part of lateral line; preopercle strongly serrate
Pomatomidae (Bluefish) (Page 31)
Lateral line elevated at pectoral level and posterior part often with bony scutes; preopercle usually smooth
Carangidae (Jacks) (Page 31)

77. Barbels, if present, their length is less than twice
the diameter of the eye 78
With a pair of barbels that are longer than 3 times the
diameter of the eye
Mullidae (Goatfishes) (Page 32)
78. Mouth not greatly protractile, cannot be extended out
and down 1/2 the length of the head 79
Mouth is greatly protractile, can be extended out and
down 1/2 the length of the head
Gerreidae (Mojarras) (Page 32)
79. Anal spines 1 or 2 80
Anal spines none or 3 or more 81
80. The posterior nostril is dorsal to the anterior nostril;
the lateral line does not extend onto the caudal fin
Percidae (Perches) (Page 33)
The posterior nostril is horizontal or lower than the
anterior nostril; the lateral line extends to near the
tip of the central caudal ray
Sciaenidae (Drum) (Page 35)
81. Anal spines absent 82
Anal spines present 83
82. Dorsal spines 6 or more
Eleotridae (Sleepers) (Page 36)
Dorsal spines 2 or 3
Grammistidae (Soapfishes) (Page 36)
83. With 1 dorsal, or if 2, the lateral line does not extend
to the tip of the middle caudal ray 84
With 2 dorsals; lateral line extends to the tip of the
middle caudal ray
Centropomidae (Snooks) (Page 37)
84. The longest dorsal and anal rays do not extend to the base
of the caudal fin 85
The longest dorsal and anal rays extend beyond the base of
the caudal rays
Lobotidae (Tripletails) (Page 37)
85. The opercle ends in a sharp spine or spines 86
The opercle does not end in a sharp spine 87
86. Dorsal fins separated, or if narrowly united, second dorsal
spine longer than ninth
Percichthyidae (Temperate Basses) (Page 37)
Dorsals broadly united and ninth dorsal spine longer than
second
Serranidae (Sea Basses) (Page 37)

87. Preopercle smooth or slightly serrate 88
Preopercle serrate, toothed 89

88. The first 4 anterior teeth in both jaws, at least 10
times larger than the other teeth

Labridae (Wrasses) (Page 38)

All teeth in both jaws approximately equal in size

Centrarchidae (Sunfishes) (Page 38)

89. Vomerine teeth present; a small patch of teeth present
on the tongue

Lutjanidae (Snappers) (Page 40)

Teeth absent from vomer and tongue

Haemulidae (Grunts) (Page 40)

PETROMYZONTIDAE

1. Length of oral disc measures less than 16 times in total
length

Ichthyomyzon castaneus (Chestnut Lamprey)

Length of oral disc more than 16 times in total length

Ichthyomyzon gagei (Southern Brook Lamprey)

BOTHIDAE

1. Pigmented side of body with 3 or 4 dark spots surrounded by
light areas (ocelli) 2

Spots, if present, are not eye-like 3

2. With 4 ocelli

Ancylopsetta quadrocellata (Ocellated Flounder)

With 3 ocelli

Paralichthys albigutta (Gulf Flounder)

3. Lateral line almost straight anteriorly, the longest
pectoral ray can touch the lateral line above
the pectoral fin base 4

Lateral line with a loop above the pectoral fin, the longest
pectoral ray does not reach the lateral line above the
pectoral fin base

Paralichthys lethostigma (Southern Flounder)

4. Length of eye greater than distance from left eye to tip of
lower jaw; corner of mouth extends beyond anterior
margin of eye

Etropus crossotus (Fringed Flounder)

Length of eye less than distance from left eye to tip of
lower jaw; corner of mouth extends beyond anterior
margin of eye

Citharichthys spilopterus (Bay Whiff)

SOLEIDAE

1. Upper eye is anterior to lower eye; scales present 2
Both eyes in line; scales absent

Gymnachirus texae (Fringed Sole)

2. Pectoral fin present on eyed side
Archirus lineatus (Lined Sole)
 Pectoral fin absent on eyed side
Trinectes maculatus (Hogchoker)

CYNOGLOSSIDAE

One species: Symphurus plagiusa (Blackcheek Tonguefish)

MURAENIDAE

1. Sides of body with white spots; inside of mouth not purple
Gymnothorax nigromarginatus (Blackedge Moray)
 Sides of body lack white spots; inside of mouth purple
Gymnothorax vicinus (Purplemouth moray)

TRICHIURIDAE

One species: Trichiurus lepturus (Atlantic Cutlassfish)

OPHICHTHIDAE

1. Caudal fin absent 2
 Caudal fin present
Myrophis punctatus (Speckled Worm Eel)
2. Body with black spots 3
 Body unspotted
Ophichthus gomesi (Shrimp Eel)
3. Dark spots as large as or larger than snout length 4
 Dark spots much smaller than snout length
Echiophis punctifer (Stippled Spoon-nosed Eel)
4. Dark spots only as large as snout length
Echiophis mordax (Snapper Eel)
 Dark spots as large as or larger than snout length + eye length
Echiophis intertinctus (Spotted spoon-nosed Eel)

ANGUILLIDAE

One species: Anguilla rostrata (American Eel)

MORINGUIDAE

One species: Neoconger mucronatus (Ridged Eel)

BALISTIDAE

1. First dorsal with 3 spines 2
 First dorsal with less than 3 spines 3
2. With one or two enlarged plates behind the gill opening
Balistes capriscus (Gray Triggerfish)
 Area behind gill opening with normal sized scales
Canthidermis sufflamen (Ocean Triggerfish)
3. Anal rays 35 or more 4
 Anal rays less than 35 5

- 4. Anal rays less than 42
Aluterus schoepfi (Orange Filefish)
- Anal rays more than 42
Aluterus scriptus (Scrawled Filefish)
- 5. Dorsal and anal fin rays usually more than 30
Monacanthus hispidus (Planehead Filefish)
- Dorsal and anal rays usually less than 30
Monacanthus setifer (Pygmy Filefish)

SYNGNATHIDAE

- 1. Caudal fin absent; head axis at an angle to that of body 2
 Caudal fin present; head axis in line with that of body 3
- 2. Dorsal rays more than 15; snout length (eye to tip of head) more than twice eye diameter
Hippocampus erectus (Lined Seahorse)
- Dorsal rays less than 15; snout length equal to eye diameter
Hippocampus zosterae (Dwarf Seahorse)
- 3. Snout (eye to tip of head) short, less than 1/2 tip of snout to opercle slit distance (head length) 4
 Snout long, more than 1/2 head length 5
- 4. Trunk or body rings 18 or more
Syngnathus fuscus (Northern Pipefish)
- Trunk rings less than 18
Syngnathus scovelli (Gulf Pipefish)
- 5. Trunk rings less than 19 6
 Trunk rings 19 or more
Syngnathus louisianae (Chain Pipefish)
- 6. One trunk ring and 6 or 7 caudal rings covered by dorsal fin
Syngnathus floridae (Dusky Pipefish)
- One trunk ring and 9 caudal rings covered by dorsal
Syngnathus pelagicus (Sargassum Pipefish)

DIODONTIDAE

- 1. Spines short and immovable; body striped
Chilomycterus schoepfi (Striped Burrfish)
- Spines long, thin and moveable; body spotted
Diodon hystrix (Porcupinefish)

OSTRACIIDAE

- 1. With a forward projecting spine in front of each eye
Lactophrys quadricornis (Scrawled Cowfish)
- No spines in front of eyes
Lactophrys triqueter (Smooth Trunkfish)

STROMATEIDAE

1. Body depth more than 70 percent of standard length; a row of pores below dorsal absent
Peprilus alepidotus (Harvest Fish)
Body depth less than 70 percent standard length; a row of pores below dorsal present
Peprilus burti (Butterfish)

TETRAODONTIDAE

1. Dorsal and anal fins with 6-9 rays 2
Dorsal and anal fins with 12-15 rays
Lagocephalus laevigatus (Smooth Puffer)
2. Caudal without distinct dark and light bars, usually with a dark bar between the eyes
Sphoeroides parvus (Least Puffer)
Caudal with distinct dark and light bars, dark interorbital bar absent
Sphoeroides spengleri (Bandtail Puffer)

PRISTIDAE

1. Caudal with a lower lobe
Pristis perotteti (Largetooth Sawfish)
Caudal without a lower lobe
Pristis pectinatus (Smalltooth Sawfish)

SQUALIDAE

One species: Squalus cubensis (Cuban Dogfish)

ORECTOLOBIDAE

One species: Ginglymostoma cirratum (Nurse Shark)

SPHYRNIDAE

1. Head hammer-shaped, notched between the nostrils 2
Head spade-shaped, not notched between the nostrils
Sphyrna tiburo (Bonnethead)
2. Head with a central notch mid-way between the eyes 3
Head with two lateral notches between the eyes
Sphyrna zygaena (Smooth Hammerhead)
3. Teeth serrate
Sphyrna mokarran (Great Hammerhead)
Teeth smooth
Sphyrna lewini (Scalloped Shark)

CARCHARHINIDAE

1. Spiracles absent behind the eyes 2
Spiracles present
Galeocerdo cuvieri (Tiger Shark)
2. Cusps of teeth smooth 3
Cusps of teeth serrate 5

3. Second dorsal less than 1/2 as long as first dorsal;
snout pointed 4
Second dorsal 3/4 as long as first, snout rounded
Negaprion brevirostris (Lemon Shark)
4. Gill slits 1/2 as long as base of first dorsal; teeth
set vertically in jaws
Carcharhinus isodon (Fine Tooth Shark)
Gill slits 1/4 as long as base of first dorsal; teeth
set obliquely in jaws
Rhizoprionodon terraenovae (A. Sharpnose Shark)
5. Midline of back (dorsum) between the fins without a
low ridge 6
Midline of back with a low ridge
Carcharhinus falciformis (Silky Shark)
6. Mid-ventral snout length in front of line connecting
the outer ends of the nostrils more than 1/2
the distance between the inner end of the nostril 7
Mid-ventral snout length less than 1/2 the distance
between the inner end of the nostrils
Carcharhinus leucas (Bull Shark)
7. Eye diameter less than 6 in snout length
Carcharhinus limbatus (Blacktip Shark)
Eye diameter more than 6 in snout length
Carcharhinus brevipinna (Spinner Shark)

ODONTASPIDIDAE

One species: Odontaspis taurus (Sand Tiger)

DASYATIDAE

1. Tail longer than body length; caudal spine present 2
Tail much shorter than body; caudal spine absent
Gymnura micrura (Smooth Butterfly Ray)
2. Anterior margin of disc concave, its outer corner rounded
Dasyatis sabina (Atlantic Stingray)
Anterior margin of disc straight, outer corner subangular
Dasyatis americana (Southern Stingray)

MYLIOBATIDAE

1. Rostrum with 2 lobes; color uniform, no white spots
Rhinoptera bonasus (Cownose Ray)
Rostrum rounded; color brown with white spots
Aetobatus narinari (Spotted Eagle Ray)

RHINOBATIDAE

One species: Rhinobatos lentiginosus (Atlantic Guitarfish)

TORPEDINIDAE

One species: Narcine brasiliensis (Lesser Electric Ray)

RAJIDAE

1. With a single row of enlarged spines on the dorsum anterior to the pelvic origin; 2 eye-like spots present on the upper surface

Raja texana (Rounded Skate)

- With 3 rows of enlarged spines on the dorsum anterior to the pelvic origin; ocelli absent

Raja garmani (Rosette Skate)

ANTENNARIIDAE

- One species: Histrio histrio (Sargassum fish)

OGCOCEPHALIDAE

- One species: Ogcocephalus radiatus (Polka-dot Batfish)

POLYODONTIDAE

- One species: Polyodon spathula (Paddle fish)*

ACIPENSERIDAE

- One species: Scaphirhynchus platorhynchus*
(Shovelnose Sturgeon)

AMIIDAE

- One species: Amia calva (Bowfin)

LEPISOSTEIDAE

1. Head length (tip of snout to rear of operculum) contained 3 times or more in standard length 2
Head length contained less than 3 times in standard length

Lepisosteus osseus (Longnose Gar)

2. Body and fins with, at most, a few large dark spots; spots usually not present on paired fins 3

Body and all fins with many large round dark spots

Lepisosteus oculatus (Spotted Gar)

3. With 2 rows of large teeth in both jaws

Lepisosteus spatula (Alligator Gar)

With a single row of large teeth in both jaws; rows of smaller teeth may be present

Lepisosteus platostomus (Shortnose Gar)

ECHENEIDAE

1. Body depth measures 11-12 times in standard length; pectorals pointed

Echeneis naucrates (Sharksucker)

Body depth 5-7 in standard length; pectorals rounded

Remora remora (Remora)

APHREDODERIDAE

- One species: Aphredoderus sayanus (Pirate Perch)

ARIIDAE

1. Lower jaw with 2 flattened barbels
Bagre marinus (Gafftopsail Catfish)
Lower jaw with 4 rounded barbels
Arius felis (Hardhead)

ICTALURIDAE

1. Eyes present; skin pigmented 2
Eyes absent; skin without pigment 9
2. Adipose fin free from caudal fin 3
Adipose joined to caudal fin or separated only by a shallow notch 8
3. Caudal fin deeply forked 4
Caudal fin rounded or shallowly emarginated 6
4. Anal rays less than 30 5
Anal rays 30 or more
Ictalurus furcatus (Blue Catfish)
5. Anal rays 23-25, restricted to head waters of Edward's Plateau streams and Mexico
Ictalurus lupus (Headwater Catfish)
Anal rays 24-26, distributed throughout Texas
Ictalurus punctatus (Channel Catfish)
6. Anal rays more than 16; band of premaxillary teeth without a lateral backward extension 7
Anal rays less than 16; band of premaxillary teeth with a lateral backward extension
Pylodictis olivaris (Flathead Catfish)
7. Chin barbels dark; caudal fin square or slightly emarginated; anal rays less than 24
Ictalurus melas (Black Bullhead)
Chin barbels white; caudal fin rounded; anal rays 24 or more
Ictalurus natalis (Yellow Bullhead)
8. Upper jaw protrudes beyond the lower jaw
Noturus nocturnus (Freckled Madtom)
Jaws nearly equal
Noturus gyrinus (Tadpole Madtom)
9. No teeth on jaws
Trogloglanis pattersoni (Toothless Blindcat)*
Teeth present
Satan eurystomus (Wide-mouthed Blindcat)*

CHARACIDAE

- One species: Astyanax mexicanus (Mexican Tetra)

SYNODONTIDAE

One species: Synodus foetens (Inshore Lizardfish)

SALMONIDAE

1. Caudal fin with at least 25 dark spots
Salmo gairdneri (Rainbow Trout)
Caudal fin with no or less than 25 dark spots
Salmo trutta (Brown Trout)

BELONIDAE

One species: Strongylura marina (Atlantic Needlefish)

EXOCOETIDAE

1. Lower jaw 3 times or more longer than upper jaw
Hyporhamphus unifasciatus (Halfbeak)
Jaws almost equal
Hirundichthyes roundeleti (Blackwing Flyingfish)

GOBEIIDAE

1. Body naked 2
Body scaled 3
2. Lateral bars interrupted by a series of mid-lateral dark dots; pelvic fins nearly reach anus
Gobiosoma robustum (Code Goby)
Lateral bars not interrupted; pelvic fins reach only 1/2 distance to anus
Gobiosoma bosci (Naked Goby)
3. Second dorsal rays 15-16; anal rays 16-17 4
Second dorsal rays 10-14; anal rays 9-15 5
4. Dorsal fins united; standard length more than 7 times depth
Gobioides broussoneti (Violet Goby)
Dorsal fins separate; standard length less than 5 times depth
Microgobius gulosus (Clown Goby)
5. All rays of pectoral united by membranes 6
Upper pectoral rays not united by membranes
Bathygobius soporator (Prillfin Goby)
6. Dorsal spines 6 7
Dorsal spines 7
Bollmannia communis (Ragged Goby)
7. Upper margin of opercle with a patch of scales 8
Upper margin of opercle scaleless 9

8. Pelvics nearly reach anal origin; with less than 50 scale rows
Evorthodus lyricus (Lyre Goby)
 Pelvics extend 2/3 distance to anal origin; with more than 60 scale rows
Gobionellus hastatus (Sharptail Goby)
9. Predorsal area naked; dark shoulder spot present
Gobionellus boleosoma (Darter Goby)
 Predorsal area with reduced scales; dark shoulder spot absent
Gobionellus shufeldti (Freshwater Goby)

GOBIESOCIDAE

One species: Gobiesox strumosus (Skilletfish)

OPHIDIIDAE

1. Pelvic fin origin below or in front of eyes 2
 Pelvic fin origin behind eyes
Brotula barbata (Bearded Brotula)
2. Snout without a decurved hook at its tip 3
 Snout with a decurved hook at its tip
Lepophidium graellsii (Blackedge Cusk-eel)
3. Body without stripes
Ophidion holbrookii (Holbrook's Cusk-eel)
 Body with 3 or 4 longitudinal stripes
Ophidion welshi (Crested Cusk-eel)

BLENNIIDAE

1. Branchiostegal membrane free from isthmus 2
 Branchiostegal membrane fused to isthmus 3
2. With a median row of fleshy projections (cirri) between the dorsal fin and back of eyes
Scartella cristata (Molly Miller)
 Cirri present between the eyes only; no median row between base of dorsal and back of eyes
Parablennius marmoreus (Seaweed Blenny)
3. Cirri present between the eyes 4
 Cirri absent from between the eyes
Chasmodes bosquianus (Striped Blenny)
4. Supraorbital cirrus branched and feather-like; no enlarged canine teeth on back part of jaws
Hypsoblennius hentzi (Feather Blenny)
 Supraorbital cirrus unbranched; enlarged canine teeth present in back of jaws
Hyppleurochilus geminatus (Crested Blenny)

BATRACHOIDIDAE

1. Dorsal spines 2; sides and ventral surface with
button-like photophores
Porichthys plectrodon (Atlantic Midshipman)
Dorsal spines 3; photophores absent
Opsanus beta (Gulf Toadfish)

URANOSCOPIDAE

- One species: Astroscopus y-graecum (Southern Stargazer)

CLINIDAE

- One species: Labrisomus nuchipinnis (Hairy Blenny)

SPHYRAENIDAE

1. With more than 100 lateral line scales 2
With less than 100 lateral line scales
Sphyraena barracuda (Great Barracuda)
2. Spinous dorsal over or in front of pelvic origin;
lateral line scales more than 115
Sphyraena borealis (Northern Sennet)
Spinous dorsal behind pelvic origin; lateral line
scales less than 115
Sphyraena guachancho (Guaguanche)

MUGILIDAE

1. Eye with a transparent cover containing a central hole
(adipose eyelid); corner of mouth reaches at most
to anterior margin of eye 2
Adipose eyelid absent; corner of mouth reaches eye pupil
Agonostomus monticola (Mountain Mullet)
2. Anal spines III, anal rays 8 in adults (II and 9 in
juveniles)
Mugil cephalus (Striped Mullet)
Anal spines III, anal rays 9 in adults (II and 10 in
juveniles)
Mugil curema (White Mullet)

ATHERINIDAE

1. Scales smooth; dark spots along back not in rows 2
Scales serrated; rows of spots along back
Membras martinica (Rough Silverside)
2. Upper jaw rounded or with a broad point when viewed
from above; lateral scales less than 50 3
Upper jaw sharply pointed when viewed from above;
lateral scales more than 50
Labidesthes sicculus (Brook Silverside)
3. Gas bladder extends beyond the third anal ray 4
Gas bladder does not extend beyond the third anal ray
Menidia peninsulae (Tidewater Silversides)

4. Rays of second dorsal usually 8 or less
Menidia clarkhubbsi (Hubbs' Silverside)
 Rays of second dorsal usually more than 8
Menidia beryllina (Inland Silverside)

ELOPIDAE

1. Last ray of dorsal greatly elongated, lateral scale rows less than 50
Megalops atlanticus (Tarpon)
 Last ray of dorsal not greatly elongated, lateral scales more than 100
Elops saurus (Lady fish)

ENGRAULIDAE

1. Posterior part of maxilla pointed and extending to or beyond mandible 2
 Rear of maxilla square or round not extending to mandible
Anchoviella perfasciata (Flat Anchovy)
 2. Anal fin origin under or behind dorsal fin termination 3
 Anal origin under dorsal origin
Anchoa mitchilli (Bay Anchovy)
 3. Eye diameter greater than snout length
Anchoa hepsetus (Striped Anchovy)
 Snout length greater than eye diameter
Anchoa nasuta (Longnose Anchovy)

CLUPEIDAE

1. Belly serrate; pelvics inserted near dorsal origin 2
 Belly not serrate; pelvics inserted behind dorsal base
Etrumeus teres (Round Herring)
 2. Last ray of dorsal much longer than other rays 3
 Last ray of dorsal equal to or shorter than other rays 5
 3. With a median ridge in front of the dorsal over which the scales do not pass 4
 Back uniformly scaled in front of dorsal
Opisthonema oglinum (Atlantic Thread Herring)
 4. Inner ventral margin of upper jaw with a distinct notch; with more than 50 lateral scales
Dorosoma cepedianum (Gizzard Shad)
 Distinct notch missing from corner of upper jaw; with less than 50 lateral scales
Dorosoma petenense (Threadfin Shad)
 5. Edge of shoulder girdle under opercle smooth; not lobed 6
 Edge of shoulder girdle with 2 notches
Harengula jaguana (Scaled Sardine)

6. Preopercle with radiating lines; scale rows less than 55
Brevoortia patronus (Gulf Menhaden)
 Preopercle without radiating lines; scale rows more than 55
Brevoortia gunteri (Finescale Menhaden)

HIODONTIDAE

One species: Hiodon alosoides (Goldeye)

CATOSTOMIDAE

1. Dorsal fin with more than 20 rays 2
 Dorsal fin with less than 20 rays 6
2. Lateral line scales less than 45; distance from eye to edge of opercle more than twice the distance from eye to tip of snout 3
 Lateral line scales more than 45; postorbital-postopercular distance equal to preorbital distance
Cycleptus elongatus (Blue Sucker)*
3. Distance from eye to middle of posterior margin of preopercle less than distance from eye to upper end of gill cleft; central region of lower lip swollen; subopercle rounded at pectoral base 4
 Eye to preopercle distance almost equal to or greater than eye to gill cleft distance; middle of lower lip not swollen; subopercle angled at base of pectoral fin
Carpiodes carpio (River Carpsucker)
4. Mouth horizontal with anterior end of upper lip far below eye level 5
 Mouth oblique with anterior end of upper lip near eye level
Ictiobus cyprinellus (Bigmouthed Buffalo)
5. Body depth more than 3 in standard length; head thickness more than 5 in standard length
Ictiobus niger (Black Buffalo)
 Body depth less than 3 in standard length; head thickness less than 5 in standard length
Ictiobus bubalus (Smallmouthed Buffalo)
6. Lateral scales without central black dots forming a series of dashes along the sides of the fish 7
 Lateral scales with central black dots forming a series of dashes along the sides of the fish
Minytrema melanops (Spotted Sucker)
7. Lateral line absent 8
 Lateral line present 9

8. Lateral scales 34-38
Erimyzon sucetta (Lake Chubsucker)
 Lateral scales 39-41
Erimyzon oblongus (Creek Chubsucker)*
9. Lower caudal lobe not black; posterior margin of lower lip forms an oblique angle at the center and contains a deep central groove
Moxostoma congestum (Gray Redhorse)
 Lower caudal lobe black; posterior margin of lower lip straight and without a deep median groove
Moxostoma poecilurum (Blacktail Redhorse)

CYPRINIDAE

1. Dorsal fin with more than 15 rays 2
 Dorsal fin with less than 12 rays 3
2. Upper jaw with 2 barbels
Cyprinus carpio (Common Carp)
 Barbels absent
Carassius auratus (Goldfish)
3. With an inner cartilaginous ridge separated from lower lip by a groove 4
 Cartilaginous ridge absent 5
4. Lateral line scales more than 60; lower jaw length greater than eye diameter
Campostoma ornatum (Mexican Stoneroller)*
 Lateral line scales fewer than 60; lower jaw length less than eye diameter
Campostoma anomalum (Central Stoneroller)
5. Upper lip is separated from snout by a groove 6
 Upper lip is connected to snout by a bridge of tissue (frenum)
Rhinichthys cartaractae (Longnose Dace)
6. Abdomen behind pelvics scaled 7
 Abdomen behind pelvics with a fleshy keel over which scales do not pass
Notemigonus crysoleucas (Golden Shiner)
7. Mouth not ventral and sucker-like; fleshy side lobes absent 8
 Mouth ventral and sucker-like with fleshy side lobes
Phenacobius mirabilis (Suckermouth Minnow)
8. A small barbel is present in the groove near the corner of the mouth at the end of the maxilla (may be hidden) 9
 Maxillary barbel absent 12

9. Anterior part of dorsal without a black spot 10
 Anterior part of dorsal with a black spot
Semotilus atromaculatus (Creek Chub)
10. Barbel is shorter than eye pupil 11
 Barbel is longer than eye pupil
Hybopsis aestivalis (Speckled Chub)
11. Eye diameter greater than snout length; corner of
 mouth barely reaches eye
Hybopsis storeriana (Silver Chub)
 Eye diameter less than snout length, mouth reaches
 beyond middle of eye
Hybopsis gracilia (Flathead Chub)
12. Predorsal scales crowded, 1/2 the size of lateral
 line scales; anal fin with 7 rays 13
 Predorsal scales not crowded, or, if so, then with 9
 or more anal rays 14
13. Caudal spot separated from longitudinal stripe by a
 clear space
Pimephales vigilax (Bullhead Minnow)
 Caudal spot united with longitudinal stripe
Pimephales promelas (Fathead Minnow)
14. Intestine tightly looped in body cavity and over
 twice the length of the fish 15
 Intestine forms an S-shape and is only as long as
 the fish 19
15. With a dark lateral band extending onto the snout 16
 Dark lateral band absent 17
16. Lateral line scales 31-36; mouth reaches lens of eye
Dionda diaboli (Devil's River Minnow)*
 Lateral line scales 35-41; mouth does not reach eye
Dionda episcopa (Roundnose Minnow)
17. With 1 mid-dorsal stripe 18
 With 3 mid-dorsal stripes
Hybognathus hayi (Cypress Minnow)
18. Eye diameter 1/2 snout length
Hybognathus placitus (Plains Minnow)
 Eye diameter more than 1/2 snout length
Hybognathus nuchalis (Silvery Minnow)
19. Mouth either oblique or horizontal and usually more
 than 1/2 snout length; teeth in inner row 4-4 20
 Mouth almost vertical and 1/2 or less snout length;
 teeth in inner row 5-5
Notropis emiliae (Pugnose Minnow)

20. Lateral line absent or incomplete, stopping after 10-25 scales 21
Lateral line more or less complete 23
21. Dark spots (melanophores) present between rays of dorsal fin (do not confuse with melanophores along rays); predorsal scales less than 20 22
Melanophores absent from membranes between rays of dorsal fin; predorsal scales more than 20
Notropis fumeus (2,4-4,2) (Ribbon Shiner)
22. Body depth measures less than 4 in standard length, lateral line absent
Notropis hubbsi (2,4-4,2) (Bluehead Shiner)*
Body depth measures more than 4 in standard length; lateral line present but incomplete
Notropis maculatus (4-4) (Taillight Shiner)
23. Without scattered giant melanophores (dark spots) above lateral line 24
With scattered giant melanophores, some almost as large as eye pupil, above lateral line
Notropis chihuahua (4-4) (Chihuahua Shiner)*
24. Last dorsal fin ray 1/2 or more length of longest ray; melanophores present in membranes between rays of dorsal fin (do not confuse with melanophores along rays) 25
Last dorsal ray less than 1/2 longest ray; interradi- al melanophores usually absent 27
25. Without a large black caudal spot as large as eye 26
With a large black caudal spot as large as eye
Notropis venustus (1,4-4,1) or (4-4)
(Blacktail Shiner)
26. A black median stripe extends from tip of lower jaw beyond eyes to isthmus
Notropis proserpinus (4-4)
(Proserpine Shiner)*
Black median stripe, if present, extends only to level of eyes
Notropis lutrensis (4-4) (Red Shiner)
27. Interradi- al melanophores absent from dorsal 28
Interradi- al melanophores present in dorsal
Notropis umbratilis (2,4-4,2) (Redfin Shiner)
28. Body depth measures more than 3-1/2 in standard length 29
Body depth less than 3-1/2 in standard length
Notropis cornutus (2,4-4,2) (Common Shiner)

29. Lateral line touches lateral stripe posteriorly near posterior origin of anal fin and touches center of stripe near hypural plate; with 9 or more anal rays 30
 Lateral line touches lateral stripe nearer anterior origin of anal fin and center of stripe long before hypural region; anal rays usually less than 9 if the lateral line position is questionable 31
30. Dark stripe behind dorsal 3 to 5 chromatophores wide; predorsal scales 18 or more
Notropis oxyrhynchus (2,4-4,2)
 (Sharpnose Shiner)
 Dark stripe behind dorsal poorly developed, 1 or 2 chromatophores wide; predorsal scales less than 18
Notropis jemezianus (1,2,4-4,2,1)
 (Rio Grande Shiner)
31. Anal fin with a total of 10 or more long segmented rays (count last 2 that arise from same position as one) 32
 Anal rays 9 or less 36
32. Pigment present on caudal peduncle at base of anal fin 33
 Pigment absent from base of anal fin
Notropis jemezianus (1,2,4-4,2,1)
 (Rio Grande Shiner)
33. Mouth oblique, point of upper jaw above level of lower margin of eye pupil; standard length more than 5 times body depth 34
 Mouth horizontal; point of upper jaw below level of lower margin of eye pupil; standard length less than 5 times body depth
Notropis simus (1,4-4,1) (Bluntnose Shiner)*
34. Predorsal scales not crowded, less than 25 35
 Predorsal scales crowded, more than 25
Notropis umbratilis (2,4-4,2) (Ribbon Shiner)
35. Lateral stripe light and not present on snout in front of eye; snout length equal to or more than eye diameter
Notropis atherinoides (2,4-4,2) (Emerald Shiner)
 Lateral stripe dark and present on snout in front of eye; snout length less than eye diameter
Notropis fumeus (2,4-4,2) (Ribbon Shiner)
36. Anal with 9 long segmented rays (count last 2 that arise from same position as one) 37
 Anal rays 8 or less 38

37. Body depth more than 3 times eye diameter; anterior margin of dorsal fin insertion located over anterior margin of pelvic fin insertion
Notropis shumardi (1,4-4,1) (Silverband Shiner)
 Body depth less than 3 times eye diameter; dorsal insertion behind pelvic fin insertion
Notropis amabilis (1,2,4-4,2,1) (Texas Shiner)
38. Anal with 8 long segmented rays (count last 2 that arise from same position as one) 39
 Anal with 6 or 7 long segmented rays 45
39. Lateral stripe black and extends through eye and around snout; a caudal spot usually present 40
 Lateral stripe light and does not extend through eye and around snout; caudal spot usually absent 42
40. Mouth moderate size, oblique, extending to eye level; caudal spot present 41
 Mouth very small, horizontal, and does not reach eye level; caudal spot absent
Notropis amnis (1,4-4,1) (Pallid Shiner)
41. Body depth measures more than 5 in standard length; interradiation melanophores present
Notropis maculatus (4-4) (Taillight Shiner)
 Body depth measures less than 5 in standard length; interradiation melanophores absent
Notropis chalybaeus (2,4-4,2)
 (Ironcolor Shiner)
42. Anterior lateral line scales, when measured in place, more than 3 times higher than wide; anterior dorsal origin behind pelvic origin 43
 Anterior lateral line scales less than 3 times higher than wide; anterior dorsal origin over or in front of pelvic origin 44
43. Chromatophores in front of dorsal not arranged into 1 to 3 lines; continuation of lateral line canal under eye not developed
Notropis buchanani (4-4) (Ghost Shiner)
 Predorsal chromatophores arranged in 1 to 3 lines; infraorbital canal developed and complete
Notropis volucellus (4-4) (Mimic Shiner)
44. Mouth horizontal, completely below level of lower margin of eye; eye diameter greater than snout length
Notropis buchanani (4-4) (Ghost Shiner)
 Mouth oblique, the anterior tip above the lower rim of the eye; eye diameter equal to or greater than snout length
Notropis shumardi (1,4-4,1) (Silverband Shiner)

45. Interradial melanophores absent; membranes between
2 halves of lower jaw not blackened (except
breeding males of some species) 46
Interradial melanophores present; membranes between
halves of lower jaw blackened
Notropis proserpinus (4-4) (Proserpine Shiner)*
46. Lateral band extends onto operculum, through the eye
and around snout 47
Lateral band, if dark, does not extend onto head 48
47. Lateral band present on tip of lower jaw; an area
devoid of pigment present on sides above lateral
band
Notropis texanus (1,2,4-4,2,1) (Weed Shiner)
Lateral band does not touch chin; sides pigmented to
lateral band
Notropis atrocaudalis (4-4) (Blackspot Shiner)
48. Lateral line pores without heavy concentrations of
pigment on either side, if so, only anterior ones
are lightly pigmented; eye diameter equal to or
smaller than snout length 49
Lateral line pores with heavy concentrations of pigment
appearing as a series of dashes for over 1/2
length of fish; eye diameter larger than snout
length
Notropis stramineus (4-4) (Sand Shiner)
49. A caudal spot, separated from lateral stripe, present
on base of caudal fin 50
Caudal spot, if present, is on caudal peduncle and is
a continuation of lateral stripe 52
50. Predorsal scales 15 or more; mouth almost horizontal 51
Predorsal scales less than 15; mouth oblique
Notropis braytoni (4-4) (Tamaulipas Shiner)
51. Corner of mouth does not reach anterior margin of eye;
open mouth (gape) not greater than eye diameter
Notropis buccula (4-4) (Smalleye Shiner)
Corner of mouth reaches anterior eye margin; gape
greater than eye diameter
Notropis bairdi (4-4) (Red River Shiner)
52. Upper lip above lower margin of eye; mouth oblique 53
Upper lip below lower margin of eye; mouth almost
horizontal
Notropis sabiniae (4-4) (Sabine Shiner)
53. Snout pointed; dorsal stripe of 3 faint lines
Notropis potteri (2,4-4,2) (Chub Shiner)
Snout blunt; dorsal stripe dark and conspicuous
Notropis blennius (1,2,4-4,2,1) (River Shiner)

ESOCIDAE

1. Entire opercle scaled 2
Lower 1/2 of opercle unscaled
Esox lucius (Northern Pike)
2. Branchiostegal rays less than 14; lateral scales
less than 115
Esox americanus (Grass Pickerel)
Branchiostegal rays 14 or more; lateral scales more
than 115
Esox niger (Chain Pickerel)

CYPRINODONTIDAE

1. Standard length usually less than 3 times body depth;
gill membrane joined to shoulder just above
base of pectoral (do not rip) 2
Standard length usually more than 3 times body depth;
gill membrane joined to shoulder far above base
of pectoral 8
2. Belly and/or breast partly to completely naked 3
Belly and breast completely scaled 4
3. Abdomen and breast completely naked
Cyprinodon rubrofluviatilis
(Red River Pupfish)
Abdomen usually with patches of scales behind or just
in front of pelvics
Cyprinodon pecosensis (Pecos Pupfish)*
4. Breast scales more than 15 from pelvic origin to
isthmus; teeth incisor-like and with 3 cusps 5
Breast scales 15 or less; teeth conical
Adinia xenica (Diamond Killifish)
5. Scale above pectoral base (humeral) not more than
twice as large as adjacent body scales; gill
rakers less than 23 6
Humeral scale twice as large as adjacent body
scales; gill rakers 23 or more
Cyprinodon variegatus (Sheepshead Minnow)
6. Scales in lateral series (along sides of body) 26 or
more; base of caudal without a light crescent figure
in males 7
Lateral scale rows usually 25 or less; base of caudal
with a light crescent figure in males
Cyprinodon bovinus (Leon Springs Pupfish)*
7. Gill rakers 19 or more
Cyprinodon elegans (Commanche Springs Pupfish)*
Gill rakers 18 or less
Cyprinodon eximius (Conchos Pupfish)*

8. Sides with a broad black stripe 9
 Sides without a broad black stripe; spots or
 vertical bars may be present 10
9. Conspicuous black dots, larger than those on dorsal
 fin, present above lateral stripe; predorsal
 stripe(s) of fine dots absent
Fundulus olivaceus (Blackspotted Topminnow)
 Dark dots, if present not larger than those on dorsal
 fin; predorsal stripe(s) of fine dots present
Fundulus notatus (Blackstripe Topminnow)
10. With fewer than 50 lateral scale rows 11
 With more than 50 lateral scale rows
Fundulus zebrinus (Plains Killifish)
11. Dorsal fin origin nearer to caudal base than to back
 of eye 12
 Dorsal fin origin nearer back of eye than to caudal base
Lucania parva (Rainwater Killifish)
12. Dorsal origin inserted behind the anal origin 13
 Dorsal origin over or in front of anal origin 15
13. Dorsal rays 8 or 9; male without a dark bar below
 the eye 14
 Dorsal rays 7; male with a dark bar below the eye
Fundulus notti (Starhead Topminnow)
14. Anal rays 11 or more; body with large dark spots
Fundulus jenkinsi (Saltmarsh Topminnow)
 Anal rays less than 11; body with crossbars or
 pearl-like spots
Fundulus chrysotus (Golden Topminnow)
15. Snout length less than 1.5 times eye diameter;
 dark spot and/or vertical bar absent from base
 of caudal fin 16
 Snout length more than 1.5 times eye diameter;
 dark spot present on last vertical bar on
 caudal peduncle
Fundulus similis (Longnose Killifish)
16. Predorsal stripe absent or not reaching back of head
Fundulus grandis (Gulf Killifish)
 Predorsal stripe reaches back of head
Fundulus pulvereus (Bayou Killifish)

POECILLIDAE

1. More than 10 dorsal rays; origin of dorsal fin
 anterior to the origin of the anal fin 2
 Less than 9 dorsal rays, usually 6; origin of dorsal fin
 posterior to the origin of anal fin
Gambusia affinis (Mosquito Fish)

Not included in this key are several species of Gambusia that are found in very restricted localities:

- G. amistadensis (Amistad Gambusia)
- G. gaigei (Big Bend Gambusia)*
- G. geiseri (Largespring Gambusia)
- G. georgei (San Marcos Gambusia)*
- G. heterochir (Clear Creek Gambusia)*
- G. nobilis (Pecos Gambusia)*
- G. senilis (Blotched Gambusia)*

2. Dark spots on scales obscure diamond shape of the color pattern; dorsal rays 12 or more

Poecilia latipinna (Sailfin Molly)

- No conspicuous dark spots; diamond shape color pattern evident; 12 or less rays in the dorsal fin

Poecilia formosa (Amazon Molly)

TRIGLIDAE

1. Dark leopard-like spots absent from the body, soft dorsal, anal, and caudal fins

2

Body, soft dorsal, anal and caudal with many dark leopard-like spots

Prionotus scitulus (Leopard Searobin)

2. Lateral line scales more than 85; 2 diagonal black bars absent from sides under soft dorsal

3

Lateral line scales less than 85; 2 diagonal black bars present under soft dorsal

Prionotus tribulus (Bighead Searobin)

3. Posterior part of spinous dorsal with a darkened area or definite spot; lateral line scales usually less than 105

Prionotus rubio (Blackfin Searobin)

Posterior part of spinous dorsal without a darkened area; lateral line scales usually more than 105

Prionotus salmonicolor (Blackwing Searobin)

POLYNEMIDAE

One species: Polydactylus octonemus
(Atlantic Threadfin)

SCOMBRIDAE

1. Lateral line gently decurved below soft dorsal but nearer to dorsal than to anal fin

2

Lateral line sharply decurved below soft dorsal but nearer to anal than to dorsal

Scomberomorus cavalla (King Mackerel)

2. Pectorals scaled; sides of body with spots and 1 or 2 stripes

Scomberomorus regalis (Cero)

Pectorals not scaled; sides with spots only

Scomberomorus maculatus (Spanish Mackerel)

SCORPAENIDAE

1. Preorbital with 3 or 4 spines
Scorpaena plumieri (Spotted Scorpionfish)
Preorbital with 1 or 2 spines
Scorpaena calcarata (Smoothhead Scorpionfish)

CORYPHAENIDAE

One species: Coryphaena hippurus (Dolphin)

CICHLIDAE

1. With 3 anal spines 2
With more than 3 anal spines
Cichlasoma cyanoguttatum (Rio Grande Cichlid)
2. Sides with 7 or fewer irregular dark bars
Tilapia mossambica (Mozambique Tilapia)
Sides with more than 7 dark bars
Tilapia aurea (Blue Tilapia)

POMACENTRIDAE

1. Preopercle serrate; body without wide vertical bars 2
Preopercle smooth; body with wide vertical bars
Abudefduf saxatilis (Sergeant Major)
2. Anal rays extend well beyond base of caudal rays 3
Anal rays extend only to base of caudal rays
Pomacentrus fuscus (Dusky Damselfish)
3. Lower row of cheek scales does not extend to margin of
preopercle; dark spot usually absent from dorsal
surface of caudal peduncle
Pomacentrus leucostictus (Beaugregory)
Lower row of cheek scales extends to margin of preopercle;
dark caudal spot often present
Pomacentrus variabilis (Cocoa Damselfish)

EPHIPPIDAE

One species: Chaetodipterus faber (Atlantic Spadefish)

POMACANTHIDAE

One species Holocanthus bermudensis (Blue Angelfish)

CHAETODONTIDAE

1. With a dark spot at base of soft dorsal
Chaetodon ocellatus (Spotfin Butterfly Fish)
Dark spot absent
Chaetodon sedentarius (Reef Butterfly Fish)

SPARIDAE

1. A broad black saddle absent from caudal peduncle;
sides with vertical bars 2
Broad black saddle is the only mark present
Diplodus holbrooki (Spottail Pinfish)

2. Lateral line scales more than 60; dark shoulder spot present
Lagodon rhomboides (Pinfish)
 Lateral line scales less than 60; dark shoulder spot absent
Archosargus probatocephalus (Sheepshead)

RACHYCENTRIDAE

One species: Rachycentron canadum (Cobia)

POMATOMIDAE

One species: Pomatomus saltatrix (Bluefish)

CARANGIDAE

1. Posterior part of lateral line with 10 or more spinous scutes 2
 Posterior part of lateral line with less than 10 or no spinous scutes 6
2. Anterior spinous scutes smaller than posterior ones and less than 5 times higher than wide 3
 Anterior spinous scutes the same size or larger than posterior ones and more than 5 times higher than wide
Trachurus lathami (Rough Scad)
3. Some teeth at tips of jaws much larger than others; larger individuals with 2 extra keels on caudal peduncle 4
 All teeth of similar size, larger individuals lack 2 extra keels on caudal peduncle
Hemicaranx amblyrhynchos (Bluntnose Jack)
4. Lateral line spiny scutes, from caudal peduncle to arch of lateral line, less than 44; anal rays less than 19 5
 Lateral line spiny scutes more than 44; anal rays 19 or more
Caranx crysos (Blue Runner)
5. Chest with, at most, a small patch of scales in front of the pelvics
Caranx hippos (Crevalle Jack)
 Chest fully scaled
Caranx latus (Horse-eye Jack)
6. Soft dorsal and anal not scalloped and not appearing as a series of finlets 7
 Soft dorsal and anal margin scalloped appearing as a series of separate finlets joined by membranes
Oligoplites saurus (Leatherjacket)
7. Standard length less than 3 times the depth 8
 Standard length more than 3 times the depth
Seriola dumerili (Greater Amberjack)

8. Standard length twice or less the body depth; tip of upper jaw below the level of the lower rim of eye
Standard length more than twice the body depth; tip of upper jaw above the level of the lower rim of eye
Chloroscombrus chrysurus (Bumper) 9
9. Distance from tip of upper jaw to anterior margin of eye (snout length) more than twice eye diameter; pectoral fin extends well beyond beginning of soft anal
Snout length less than twice eye diameter; pectoral fin extends, at most, to beginning of soft anal 10
11
10. Anterior dorsal and anal rays greatly elongate, their tips extending beyond tip of last rays of dorsal and anal
Selene vomer (Lookdown)
Anterior dorsal and anal rays only slightly longer than adjacent rays
Selene setapinnis (Atlantic Moonfish)
11. Dorsal rays less than 22; anal rays less than 19; fins often red in life
Dorsal rays more than 22; anal rays more than 19; fins yellow in life 12
Trachinotus carolinus (Florida Pompano)
12. Without vertical stripes on body
Trachinotus falcatus (Permit)
With vertical stripes on body
Trachinotus goodei (Palometa)

MULLIDAE

1. Sides with a series of 3 large spots
Pseudupeneus maculatus (Spotted Goatfish)
Three large spots absent
Upeneus parvus (Dwarf Goatfish)

GERRIDAE

1. Anal spines 3
Anal spines 2 2
Eucinostomus lefroyi (Mottled Mojarra)
2. Premaxillary groove on top of head not crossed by a row of scales just behind nostrils
Premaxillary groove crossed by a row of scales just behind nostrils 3
Eucinostomus gula (Silver Jenny)
3. Standard length less than 2.5 times body depth; sides of body with thin vertical bars
Gerres cinereus (Yellowfin Mojarra)
Standard length more than 2.5 times body depth; sides lack thin vertical bars but may be mottled
Eucinostomus argenteus (Spotfin Mojarra)

PERCIDAE

- | | |
|---|----|
| 1. Preopercle serrate and maxilla extends to or beyond middle of eye | 2 |
| Preopercle smooth or, if serrate, maxilla does not extend to middle of eye | 4 |
| 2. Sides without crossbars; jaws with large pointed teeth | 3 |
| Sides with crossbars; jaws without large pointed teeth
<u>Perca flavescens</u> (Yellow Perch) | |
| 3. Spinous dorsal with a large posterior spot | |
| <u>Stizostedion vitreum</u> (Walleye) | |
| Dark spot absent from posterior part of spinous dorsal
<u>Stizostedion canadense</u> (Sauger) | |
| 4. Standard length more than 7 times depth | 5 |
| Standard length less than 7 times depth | 6 |
| 5. Lateral blotches longer than high | |
| <u>Ammocrypta clara</u> (Western Sand Darter)* | |
| Lateral blotches higher than long
<u>Ammocrypta vivax</u> (Scaly Sand Darter) | |
| 6. Midline of belly between pelvics and anus either naked or with a row of enlarged jagged edged scales | 7 |
| Midline of belly between pelvics and anus with scales like those on the sides | 11 |
| 7. Snout extends beyond upper lip; with more than 78 lateral line scales | 8 |
| Snout does not extend beyond upper lip; with less than 78 lateral line scales | 9 |
| 8. Scales present on the breast; vertical bars narrow on sides and encircle caudal peduncle | |
| <u>Percina macrolepidia</u> (Big Scaled Logperch) | |
| Scales absent from breast; vertical bars broad and do not encircle caudal peduncle
<u>Percina carbonaria</u> (Logperch) | |
| 9. Upper lip joined to snout by a bridge of tissue (frenum); with more than 60 lateral line scales | 10 |
| Upper lip separated from snout by a deep groove; lateral line scales less than 60
<u>Percina shumardi</u> (River Darter) | |
| 10. Caudal base with 3 vertical spots; membranes of spinous dorsal pigmented 1/2 way out fin | |
| <u>Percina sciera</u> (Dusky Darter) | |
| Caudal base with a single spot; base of spinous dorsal not pigmented
<u>Percina maculata</u> (Blackside Darter)* | |

11. Lateral line absent or with not more than 10 pored scales 12
 Lateral line present and with more than 10 pored scales 13
12. With 1 anal spine
 Etheostoma fonticola (Fountain Darter)*
 With 2 anal spines
 Etheostoma proeliare (Cypress Darter)
13. Upper lip joined to snout by a bridge of tissue (frenum); 2 anal spines 14
 Frenum absent; 1 anal spine
 Etheosotoma chlorosomum (Bluntnose Darter)
14. The lateral line extends beyond posterior margin of anal 15
 The lateral line does not extend beyond posterior margin of anal 18
15. Gill membranes broadly united across isthmus forming an obtuse angle at their juncture 16
 Gill membranes not broadly united across isthmus, overlapping and forming an acute angle 17
16. The longest pectoral fin rays extend to or beyond anus
 Etheostoma histrio (Harlequin Darter)
 The longest pectoral ray extends 1/2 the distance to anus
 Etheostoma parvipinne (Goldstripe Darter)
17. A dark enlarged humeral scale present just behind opercle flap at the upper base of pectoral; lateral line scales usually more than 53
 Etheostoma radiosum (Orangebelly Darter)
 A dark enlarged humeral scale absent; lateral line scales usually less than 53
 Etheostoma asprigene (Mud Darter)
18. With 3 or fewer scales between anterior dorsal base and lateral line; body depth often 5 or more in standard length 19
 With 4 or more scales between anterior dorsal base and lateral line; body depth less than 5 in standard length 20
19. Head naked; second dorsal almost twice the height of the first
 Etheostoma gracile (Slough Darter)
 Back of head scaled; height of first dorsal almost equal to the second
 Etheostoma fusiforme (Swamp Darter)

20. Opercle naked; more than 50 lateral scales 21
 Opercle heavily scaled; fewer than 50 lateral scales
Etheostoma grahami (Rio Grande Darter)*
21. Lateral line canal that crosses back of head at
 level of opercular slit (supratemporal canal)
 with a single pore at middorsal line; longest
 pectoral rays extend well beyond middle of first
 dorsal
Etheostoma spectabile (Orangethroat Darter)
 Supratemporal canal interrupted at middorsal line and
 with a pore to either side of middorsal line.
 Longest pectoral rays extend, at most, to middle
 of dorsal fin
Etheostoma lepidum (Greenthroat Darter)
- SCIAENIDAE**
1. With a pair of enlarged canines at tip of upper jaw;
 lower jaw longer than upper 2
 Enlarged canines absent, jaws equal or upper longer
 than lower 4
2. Sides and back without dark spots 3
 Sides and back with round dark spots
Cynoscion nebulosus (Spotted Seatrout)
3. Anal rays 10 or more
Cynoscion arenarius (Sand Seatrout)
 Anal rays less than 10
Cynoscion nothus (Silver Seatrout)
4. Soft dorsal with less than 36 rays 5
 Soft dorsal with more than 36 rays
Equetus umbrosus (Cubbyu)
5. Eye-like spots (ocelli) absent from the caudal base 6
 One or more ocelli present on caudal base
Sciaenops ocellatus (Red Drum)
6. With a single large barbel at tip of lower jaw 7
 Barbels absent or more than one 10
7. Preopercle not serrate; body without 7 or more thin
 vertical bars 8
 Preopercle serrate; body with 7 or more thin vertical
 bars
Umbrina coroides (Sand Drum)
8. Pectoral rays long, reaching to or beyond tip of
 pelvic rays 9
 Pectoral rays short, not reaching tips of pelvic rays
Menticirrhus littoralis (Gulf Kingfish)

9. Second dorsal spine only slightly longer than other spines; anal rays usually 7
Menticirrhus americanus (Southern Kingfish)
 Second dorsal spine twice the length of others; anal rays usually 8
Menticirrhus saxatilis (Northern Kingfish)
10. Lower jaw with no or less than 10 minute barbels 11
 Lower jaw with more than 10 large obvious barbels
Pogonias cromis (Black Drum)
11. Without a round dark spot above pectoral at anterior end of lateral line; anal rays 10 or less 12
 With a round dark shoulder spot above pectoral at anterior end of lateral line; anal rays more than 10
Leiostomus xanthurus (Spot)
12. Anterior tip of upper jaw well below lower rim of orbit; dorsal rays 28 or more 13
 Anterior tip of upper jaw at or above lower rim of orbit; dorsal rays less than 28 14
13. Preopercle strongly serrate, with large spines; 6-8 minute barbels may be present on lower jaw
Micropogonias undulatus (Atlantic Croaker)
 Preopercle smooth; barbels absent
Aplodinotus grunniens (Freshwater Drum)
14. Sides without dark vertical bars; anal rays 7 or more 15
 Sides with dark vertical bars; anal rays less than 7
Larimus fasciatus (Banded Drum)
15. Anal rays 7 or 8; Caudal fin very pointed in center
Stellifer lanceolatus (Star Drum)
 Anal rays 10; Caudal fin almost square
Bairdiella chrysoura (Silver Perch)

ELEOTRIDAE

1. Corner of jaw extends beyond middle of eye; lateral scales more than 40 2
 Corner of jaw extends, at most, to anterior edge of eye; lateral scales less than 40
Dormitator maculatus (Fat Sleeper)
2. Preopercle with a small, ventral pointed spine; tail pointed
Eleotris pisonis (Spinycheek Sleeper)
 Preopercle without a small spine; tail squared
Gobiomorus dormitor (Bigmouth Sleeper)

GRAMMISTIDAE

- One species: Rypticus maculatus (Whitespotted Soapfish)

CENTROPOMIDAE

One species: Centropomus undecimalis (Snook)

LOBOTIDAE

One species: Lobotes surinamensis (Tripletail)

PERCICHTHYIDAE

1. Dorsal fins separated; anal fin with 11 or more soft rays; with teeth on base of tongue 2

Dorsal fins united; anal with 10 or less soft rays; no teeth on base of tongue

Morone mississippiensis (Yellow Bass)

2. Depth of body more than 1/3 standard length; teeth on base of tongue in a single patch

Morone chrysops (White Bass)

Depth of body less than 1/3 standard length, teeth on base of tongue in 2 parallel patches

Morone saxatilis (Striped Bass)

SERRANIDAE

1. Anal rays 7; dorsal spines 10 2

Anal rays 8 or more; dorsal spines usually 11 3

2. Dorsal with 11 soft rays; caudal of adult 3 lobed, back with several dark bars

Centropristis philadelphica (Rock Sea Bass)

Dorsal with 13 soft rays; caudal squared; dark bars absent from back

Serranus subligarius (Belted Sandfish)

3. Anal rays 10 or 11; caudal concave 4

Anal rays 8 or 9; caudal convex 5

4. Total gill rakers on first arch more than 40; sides with faint horizontal bars

Mycteroperca rubra (Comb Grouper)

Total gill rakers on first arch less than 40; sides with or without spots or blotches

Mycteroperca microlepis (Gag)

5. Some dorsal spines as long or longer than the anterior dorsal rays 6

All dorsal spines shorter than the anterior dorsal rays

Epinephelus itajara (Jewfish)

6. Head, body and fins with numerous, round, orange-brown spots; dorsal spines 11

Epinephelus adscensionis (Rock Hind)

Fish uniform black or brown; spots, if present, are white; dorsal spines 10

Epinephelus nigritus (Warsaw Grouper)

LABRIDAE

1. With a dark triangular spot immediately behind each eye; anterior lateral-line scales with 1 pore
Halichoeres caudalis (Painted Wrasse)
Spot, if present, located on the opercular flap; anterior lateral-line scales with more than 1 pore
Halichoeres bivittatus (Slippery Dick)

CENTRARCHIDAE

1. Lateral line present 2
Lateral line absent
Elassoma zonatum (Banded Pygmy Sunfish)
2. Anal spines 3 3
Anal spines 5 or more 16
3. Body depth measures 3 times or more in standard length; lateral line scales more than 55 4
Body depth measures less than 3 times in standard length; lateral line scales less than 55 7
4. Ninth dorsal spine (last spine of first dorsal) more than 1/3 the length of the longest dorsal spine; posterior margin of maxilla extends only to posterior margin of orbit in adults 5
Ninth dorsal spine less than 1/3 the length of the longest dorsal spine; posterior margin of maxilla of adults extends beyond orbit
Micropterus salmoides (Largemouth Bass)
5. Dorsal rays usually 12 or 13; scale rows from anus to lateral line counted diagonally upward 16 or less 6
Dorsal rays 13-15; scale rows below lateral line more than 16
Micropterus dolomieu (Smallmouth Bass)
6. Lateral stripe distinct, not separated into vertical bars that extend to the lateral line for most of its length; spot at base of caudal darker than rest of lateral stripe
Micropterus punctulatus (Spotted Bass)
Lateral stripe indistinct, separated into vertical bars that extend to the lateral line for most of its length; caudal spot usually absent except in very small individuals and hybrids
Micropterus treculi (Guadalupe Bass)
7. Three or more dark stripes are not present entering back of eye (fade in older fish) 8
Three or more dark stripes enter posterior margin of the orbit
Lepomis gulosus (Warmouth)

8. Lateral line complete, extends to base of caudal fin 9
 Lateral line incomplete, interrupted or terminates at
 posterior end of soft dorsal
Lepomis symmetricus (Bantam Sunfish)
9. Length of pectoral fin will measure 3.75 times or more
 in standard length; pectoral fin usually not
 reaching anus 10
 Length of pectoral fin measures 3.5 times or less in
 standard length; pectoral fin usually reaches
 anus 14
10. Dark spot absent from posterior end of soft dorsal or,
 if present, gill rakers on first arch less than
 1/2 length of first anal spine 11
 Dark spot present in posterior end of soft dorsal; gill
 rakers on first arch more than 1/2 length of first
 anal spine
Lepomis cyanellus (Green Sunfish)
11. Opercle extends into opercular membrane as a thin,
 flexible, fimbriate (with finger-like
 projections) lobe 12
 Opercle stiff to its margin in the opercular membrane,
 not flexible or fimbriate
Lepomis punctatus (Spotted Sunfish)
12. Lateral line scales less than 44; width of dark of
 opercular flap (ear) more than 1/2 width of eye
 and does not extend to ear margin 13
 Lateral line scales more than 44; width of dark of ear
 1/2 or less eye width and extends to edge of ear
Lepomis auritus (Redbreast Sunfish)
13. Head with many dark worm-like markings; cheek scales,
 counted diagonally from lower margin of orbit to
 curve of preopercle, more than 5
Lepomis megalotis (Longear Sunfish)
 Many worm-like markings absent from head; cheek scales
 3-5
Lepomis marginatus (Dollar Sunfish)
14. A dark spot is absent from the posterior part of dorsal;
 lateral line scales less than 40 15
 A dark spot is usually present in the posterior part of
 dorsal; lateral line scales 40 or more
Lepomis macrochirus (Bluegill)
15. Length of each gill raker on first arch not more than
 twice the width of its base; with 10 or more anal
 rays
Lepomis microlophus (Redear Sunfish)
 Length of each gill raker on first arch more than 3 times
 width of its base; with 9 or fewer anal rays
Lepomis humilis (Orangespotted Sunfish)

16. With less than 8 anal spines 17
 With 8 anal spines
Centrarchus macropterus (Flier)
17. With less than 11 dorsal spines 18
 With 11 or more dorsal spines
Ambloplites rupestris (Rock Bass)
18. Least distance from eye to dorsal equal to or less than
 length of dorsal base
Pomoxis nigromaculatus (Black Crappie)
 Least distance from eye to dorsal greater than length of
 dorsal base
Pomoxis annularis (White Crappie)
- LUTJANIDAE**
1. Dorsal spines 10 2
 Dorsal spines 12
Rhomboplites aurorubens (Vermillion Snapper)
2. Dorsal rays 14, rarely 13; a dark spot, on the sides
 below the soft dorsal origin, is present only in some
 young fish 3
 Dorsal rays 12, rarely 13; a dark spot is present on the
 sides below the soft dorsal origin in all sizes
Lutjanus synagris (Lane Snapper)
3. Anal fin rounded in the middle; anal rays 7 or 8
Lutjanus griseus (Gray Snapper)
 Anal fin pointed in the middle; anal rays 9
Lutjanus campechanus (Red Snapper)
- HAEMULIDAE**
1. Soft dorsal and anal scaled only at their bases 2
 Soft dorsal and anal densely scaled to their margins
Haemulon aurolineatum (Tomtate)
2. Sides striped, blotched or plain; preopercle finely
 serrate, no points directed forward 3
 Sides with 8 evenly spaced dark bars; preopercle
 strongly serrate, the points on the lower margin
 directed forward
Conodon nobilis (Barred Grunt)
3. Second anal spine greatly enlarged and thickened, longer
 than longest anal ray 4
 Second anal spine not greatly enlarged, shorter than most
 anal rays
Orthopristis chrysoptera (Pigfish)

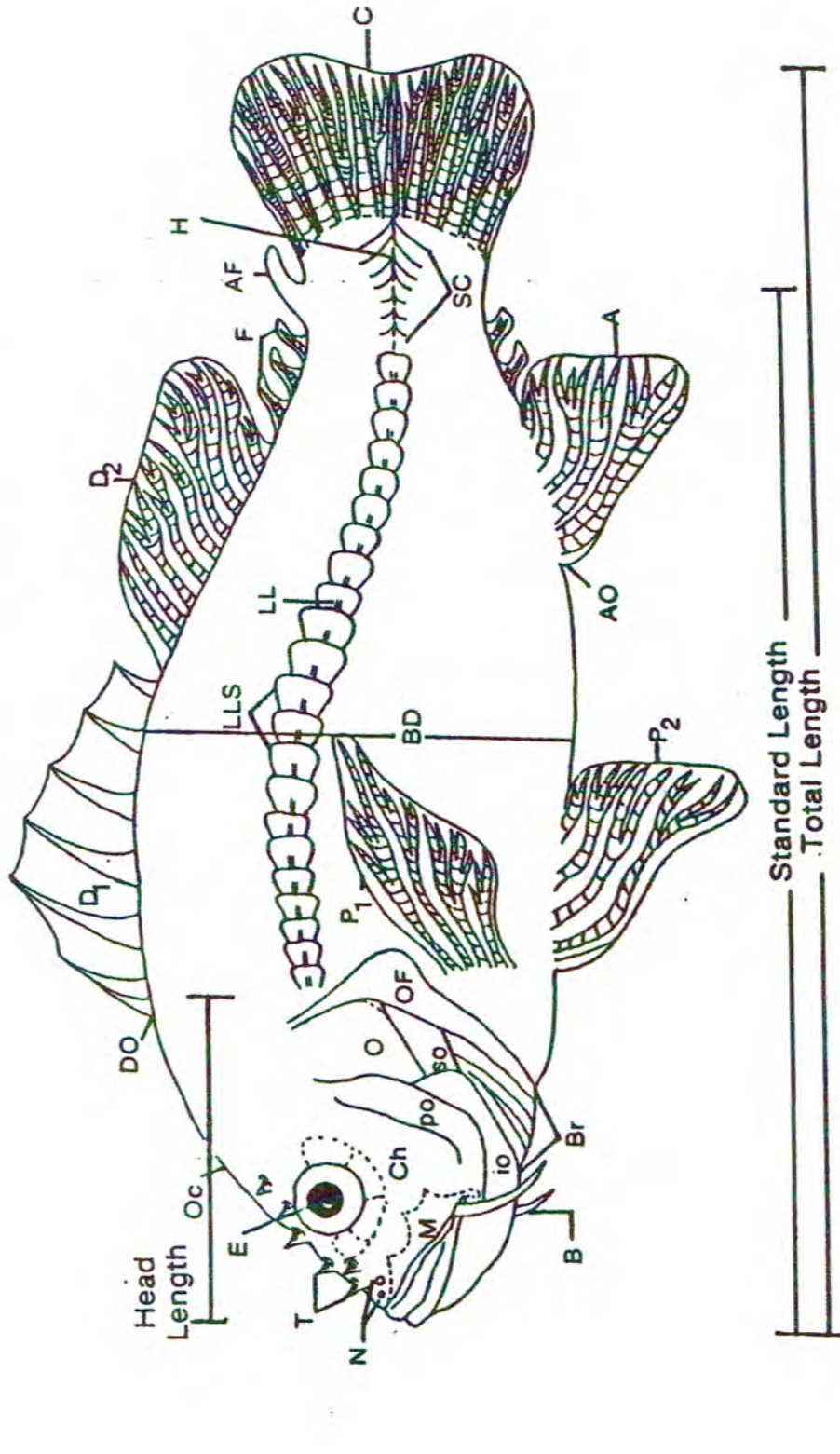
4. With a dark diagonal bar extending from the top of the head through the eye; anal rays 9 or more

Anisotremus virginicus (Porkfish)

Dark diagonal bar absent; anal rays 8 or less

Pomadasys crocro (Burro Grunt)

FIGURE 1: Fish Characteristics



- | | | |
|---------------------------------|------------------------------|-------------------------------|
| A - Anal Fin | D ₂ - Soft Dorsal | N - Nostrils |
| AF - Adipose Fin | DO - Dorsal Origin | O - Opercle |
| AO - Anal Origin | E - Eye | Oc - Occiput |
| B - Barbel | F - Finlet | OF - Opercular Flap |
| BD - Body Depth | H - Hypural Plate | P ₁ - Pectoral Fin |
| Br - Branchiostegals | io - Interopercle | P ₂ - Pelvic Fin |
| C - Caudal Fin | LL - Lateral Line | po - Preopercle |
| Ch - Cheek | LLS - Lateral Line Scales | SC - Spiny Scutes |
| D ₁ - Spinous Dorsal | M - Maxillary | So - subopercle |
| | | T - Breeding Tubercles |