APPENDIX II

ILLUSTRATED QUICK REFERENCE GUIDE TO SPECIES PROHIBITED IN TEXAS

The following quick reference pages group fishes, invertebrates, and aquatic plants which are similar in appearance so that prohibited species can be identified with a minimal number of characters and can be quickly compared to other unprohibited species with which they may be confused. These guides are only for quick reference. Detailed text references should be consulted. Additionally, these species include only those specifically listed by Texas Parks and Wildlife Department; however, in several cases, comments on species covered under federal regulations are also noted. These groupings, which are sometimes rather artificial, include:

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EEL-LIKE FISHES WITHOUT JAWS

LAMPREYS

Prohibited
Pacific Lamprey Entosphenus tridentata
Sea Lamprey Petromyzon marinus
Silver Lamprey Ichthyomyzon unicuspis
Pouched Lamprey Geotria australis

Unprohibited
Chestnut Lamprey Ichthyomyzon castaneus
Southern Brook Lamprey Ichthyomyzon gagei

RESTRICTED LAMPREYS INCLUDE:
- Any with two dorsal fins
- Any with a deeply notched dorsal fin
- Any with two anterior central dental plates in mouth
- Any with two points and two prongs on the central dental plate
- Any with spatula-like teeth
- Any with single-pointed circumoral teeth
- Any with more than 54 muscle segments between the last gill opening and the vent (usually)
- Any without fringed papillae around mouth

NOTE
Larvae are often difficult or impossible to identify; if problems develop, contact TPWD Inland Fisheries Research staff at Heart of the Hills Research Station, Ingram, Texas
EEL-LIKE FISHES WITHOUT JAWS
LAMPREYS

Fringed and unfringed papillae

Anterior field teeth

Anterior central dental plate

Outer lateral teeth

Tongue teeth (lingual laminae)

Circumoral or inner lateral teeth

Posterior central dental plate

Posterior field teeth

Divided anterior dental plates

Lamprey mouth parts

Anterior dental plate set deep in mouth with two central cusps and two lateral prongs

Pouched Lamprey
Geotria australis

One central anterior dental plate

Innermost teeth with two points

Chewnut Lamprey
Ichthyomyzon castaneus

Southern Brook Lamprey
Ichthyomyzon gagei

Unfringed papillae

One central anterior dental plate

Fringed and unfringed papillae
STINGRAYS
SOUTH AMERICAN FRESHWATER STINGRAYS

Prohibited
South American Freshwater Stingrays

- Potamotrygon hystrix
- Potamotrygon motoro
- Potamotrygon reticulatus
- Potamotrygon signatula
- Paratrygon aerea
- Plesiorygon iwamae

Unprohibited

- Manta Mobulidae
- Eagle Ray Myliobatidae
- Butterfly Ray Gymnuridae
- Bluespotted Stingray Taeniura sp.
- Marine Stingrays Dasyatidae
- Himantura
- Dasyatis
- Round Stingrays Urolophidae

TAIL FINFOLDS
- Paratrygon
- Potamotrygon
- Plesiorygon

disk round but tail finfold distinct
BONY-TONGUE FISHES
ARAPAIMA

Prohibited
Arapaima Arapaima gigas
- concave
- no barbels
- dark gray to black
- short

Asian Arowana Scleropages formosus
(not prohibited under Texas regulations)
- short barbels
- short
- no red spots
- mother-of-pearl

unprohibited
African Bony-tongue Heterotis niloticus
- convex
- no barbels
- dark color
- long

Black Arowana Osteoglossum ferreirai
- long barbels
- long

Silver Arowana Osteoglossum bicirrhosum
- long barbels
- mother-of-pearl
- juvenile
- yolk sac
- long

Saratoga Scleropages leichardi
Gulf Saratoga Scleropages jardini
- short barbels
- red spots
- short
- red spots
- short
EEL-LIKE FISHES WITH JAWS
FRESHWATER EELS AND SWAMP EELS

Prohibited

Japanese Eel *Anguilla japonica*
- grooved maxillary tooth band
- vertebral 111-119
- preanal length 27% TL

Pacific Eel *Anguilla bicolor*
- dorsal and anal fins near-equal length

not mottled

Marbled Eel *Anguilla marmorata*
- mottled
- pectoral fins present
- two gill openings

Mottled Eel *Anguilla nebulosa*
- mottled
- lower jaw protrudes
- rayed fins

Swamp Eel *Monopterus albus*
- short, rayless dorsal fin
- one gill opening
- jaws near equal length
- no pectoral fins

Unprohibited

American Eel *Anguilla rostrata*
- no groove in maxillary tooth band
- vertebral 109-111
- preanal length 30% TL
- anal rayed

Conger Eel *Conger oceanicus*
- upper jaw protrudes
- two gill openings
- pectoral fins present
- long, rayed anal fin

Freshwater Moray Eel *Gymnothorax polyuranodon*
- very long dorsal fin with rays
- tubular nostrils
- two gill openings
- no pectoral fins
- long, rayed anal fin
EEL-LIKE FISHES WITH JAWS
ELECTRIC EEL

Prohibited

Electric Eel *Electrophorus electricus*
- Dark brown
- no dorsal fin
- pectoral fins present
- long anal fin

Unprohibited

Banded Knifefish *Gymnotus carapo*
- barred pattern
- no dorsal fin
- no caudal fin

Green Knifefish *Eigenmannia virescens*
- nearly transparent
- no caudal fin

South American Lungfish *Lepidosiren paradoxa*
- dorsal fin
- leg-like fins

American Eel *Anguilla rostrata*
- long dorsal fin

Clown Knifefish *Notopterus chitala*
- color patterns

African Knifefish *Papyrocranus afer*
- Aba Aba *Gymnarchus niloticus*
- long dorsal fin
- no anal fin

Freshwater Moray Eel *Gymnothorax polyuranodon*
- tubular nostrils
- no pelvic fins
- no pectoral fins
PIRANHAS

Prohibited

Black Piranha *Serrasalmus niger*
- lower jaw protrudes
- humeral spot

Spotted Piranha *Serrasalmus rhombeus*
- jaws near equal

Redbellied Piranha *Serrasalmus nattereri*
- humeral spot
- lower jaw protrudes
- red adult
- juvenile

Piranha *Serrasalmus*
- spots with crisp edges
- fins not full

Silver Dollars

- jaws equal

*Mylossoma*
- deepest centrally

*Myleus*
- long rays

Black Pacu *Colossoma macropomum*
- opercular spot
- red

Redbellied Pacu *Colossoma brachypomum*
- spots with obscure edges
- fins full

Pacu *Colossoma*
- upper lip straight
- two tooth rows

Wimple Piranha *Catoprion mento*
- rays long
- lower jaw
- strongly projects
DOURADOS AND RHAPHIODONTID CHARACOIDS

Prohibited

Dourado Salminus maxillosus
- adipose fin
- teeth conical or tricuspid; in two rows
- in warm water

Payara Hydrolycus scomberoides
- adipose fin
- fang-like teeth

Dourado Salminus hilarii
- adipose fin
- upper teeth multicusp; two rows in lower jaw
- three rows in upper jaw

Biara Rhaphidon vulpinus
- adipose fin
- caudal extension

Unprohibited

LL scales usually > 100, often > 150
- no fang-like teeth
- in cold water

Brook Trout Salvelinus fontinalis
- in cold water

Bryconid Characoid Brycon sp.
- no adipose fin

Bay Anchovy Anchoa mitchelli
- no fang-like teeth
- long upper lip
AFRICAN TIGER FISHES

Prohibited

African Tiger Fish
*Hydrocynus vittatus*
- no spiny dorsal fin
- adipose fin
- fang-like teeth
- silvery with black stripes

Unprohibited

Striped Bass
*Morone saxatilis*
- spiny dorsal fin
- silvery with black stripes

Rainbow Trout
*Oncorhynchus mykiss*
- sometimes silvery but never with black stripes
- adipose fin

Asian Tiger Fish
(Tripletail)
*Datnioides sp.*
- dark bars
- deep bodied
SOUTH AMERICAN TIGER FISHES

Prohibited

Trahira *Hoplias malabaricus*
- short, central dorsal fin
- no adipose fin
- no spine
- teeth

South American Tiger Fish *Erythrinus erythrinus*
- central pelvic fins
- short anal fin without spines

Aimara *Hoploerythrinus unitaeniatus*
- no bony plates
- long dorsal fin without spines

Snakehead *Ophiocephalus africanus*
- anterior pelvic fins
- long anal fin without spines

Unprohibited

Bowfin *Amia calva*
- long dorsal fin
- eye spot (optional)
- bony plates
- central pelvic fins
- short anal fin

Pike Cichlid *Crenicichla fasciatus*
- long dorsal fin with spines
- anterior pelvic fins
- short anal fin with spines

Pacific Fat Sleeper *Dormitator latifrons*
- spiny dorsal fin
- soft dorsal fin
- anterior pelvic fins
- short anal fin
ELONGATE PIKE-LIKE FISHES
PIKE CHARACOIDS

Prohibited
upper jaw flap

SOUTH AMERICAN SPECIES
posterior dorsal fin
Speckled Pike Characoid
Luciocharax maculata

Pike Characoid
Acestrorhynchus falcatus
adipose fin
forked caudal fin

Gar Characoid
Ctenolucius hujeta

AFRICAN SPECIES
adipose fin

Pike Characoid
Gavialocharax sp.

Pike Characoid
Mesoborus sp.

central dorsal fin
Pike Characoid
Phago sp.

Kafue Pike
Hepsetus odoe
forked caudal fin

Longnose Gar
Lepisosteus osseus
bony ganoid scales
posterior dorsal fin
no adipose fin

Atlantic Needlefish
Strongylura marina
posterior dorsal fin
no adipose fin

large scales
central pelvic fins
forked caudal fin

Unprohibited
Pike Cichlid
Crenicichla lepidota
long dorsal fin

Chain Pickerel
Esox niger
anterior pelvic fins
posterior dorsal fin
no adipose fin

round caudal fin
forked caudal fin
small scales
forked caudal fin
ELONGATE PIKE-LIKE FISHES
ASPS AND YELLOWCHEEK

Prohibited

Asp *Aspius aspius*
- LL scales 62-105
- branched anal rays 10-15

Asp-pike *Aspiolucis eocinus*
- LL scales 83-95
- branched anal rays 15

Chinese Asp *Pseudaspis leptocephalus*
- LL scales 91-102
- branched anal rays 8-9

Yellowcheek *Elopichthys bambusa*
- LL scales 105-110
- branched anal rays 10-13

Unprohibited

Colorado Squawfish *Ptychocheilus lucius*
- LL scales 76-97
- anal rays 9

Northern Squawfish *Ptychocheilus oregonensis*
- LL scales 64-79
- anal rays 8
ELONGATE PIKE-LIKE FISHES
SNAKEHEADS AND PIKEHEAD

Prohibited

Snakehead
*Channa asiatica*
- no spines
- long dorsal fin
- no pelvic fins
- long anal fin

Snakehead
*Ophiophtalus micropeltes*
- long dorsal fin
- anterior pelvic fins

Snakehead
*Ophiophtalus pleurophthalmus*
- no bony plate
- rounded caudal fin

Pikehead
*Luciocephalus pulcher*
- long rays
- notched anal fin margin

Unprohibited

Bowfin
*Amia calva*
- no spines
- long dorsal fin
- bony plate
- central pelvic fins

Pike Cichlid
*Crenicichla lenticulata*
- spines
- long dorsal fin
- anterior pelvic fins

Pike Cichlid
*Batrachops semifasciatus*
- spines
- long dorsal fin
- round caudal fin

Northern Pike
*Esox lucius*
- dorsal fin short
- caudal fin forked
- central pelvic fins
ELONGATE PIKE-LIKE FISHES
ZANDERS (EUROPEAN PIKE-PERCH) AND SOME NILE PERCHES

Prohibited

Zander
*Stizostedion lucioperca*
- spots
- divided dorsal fins
- faint bars
- bluish tint
- anterior pelvic fins

Volga Zander
*Stizostedion volgense*
- spots
- bars
- black webbing

Sea Zander
*Stizostedion marinus*
- black webbing

Slender Nile Perch
*Luciolates stappersi*
- very widely divided dorsal fins
- preopercle with serrated edge
- anal spines not long

Walleye
*Stizostedion vitreum*
- no well-defined spots
- black webbing
- faint bars

Sauger
*Stizostedion canadense*
- spots
- blotches
- pelvic fins anterior

Zingle
*Zingle zingle*
- dark blotches
- not connected
- slender

Northern Pike
*Esox lucius*
- no spiny dorsal fin
- very slender
- pelvic fins midbody

Unprohibited
LARGE ASIAN CARPS
GRASS CARP, BLACK CARP, BIGHEAD CARP, SILVER CARP

Prohibited
Black Carp *Mylotrephorus caurinus*  
no barbels
pectoral fins short
no spine
dorsal fin short
black

Grass Carp *Ctenopharyngodon idella*  
no barbels
pectoral fins short
no spine
dorsal fin short

Bighead Carp *Aristichthys nobilis*  
lower jaw
protrudes
eyes set low
pectoral fins long
no spine
scales small

Hybrid Grass Carp  
(Grass x Bighead Carps)  
dorsal fin short  
without spine

Unprohibited
Common Carp *Cyprinus carpio*  
long dorsal fin
spine
barbels and mouth
sucker-like

Goldfish *Carassius auratus*  
long dorsal fin
spine
barbels

Silver Carp *Hypothalmichthys molitrix*  
no barbels
no spine
scales small
# Large Asian Carps Identification Guide

## Chinese Carp Identification Guide: Texas Parks and Wildlife Department

Robert G. Howells, Heart of the Hills Research Station

<table>
<thead>
<tr>
<th>Species</th>
<th>Dorsal Fin Rays</th>
<th>Anal Fin Rays</th>
<th>Lateral Line</th>
<th>Rows Above LL</th>
<th>Rows Below LL</th>
<th>Gill Rakers</th>
<th>Pharyngeal Teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass carp</td>
<td>i-iii, 7-11</td>
<td>ii-iii, 7-11</td>
<td>36-45 large</td>
<td>6-7</td>
<td>4-5</td>
<td>12-15 short</td>
<td>2, 5-4, 1</td>
</tr>
<tr>
<td>Hybrid** grass carp</td>
<td>ii, 7-8</td>
<td>ii, 8-11</td>
<td>42-65 medium</td>
<td>8-13</td>
<td>6-10</td>
<td>18-23 medium</td>
<td>2, 4-4, 2</td>
</tr>
<tr>
<td>Black carp</td>
<td>iii, 7-8</td>
<td>iii, 8-9</td>
<td>39-45 large</td>
<td>6</td>
<td>4</td>
<td>19-21 short</td>
<td>5-4</td>
</tr>
<tr>
<td>Bighead carp</td>
<td>ii, 8 (107)</td>
<td>ii, 11-14 (167)</td>
<td>98-100 (to 1207) small</td>
<td>26-28</td>
<td>15-19</td>
<td>many, long, not connected</td>
<td>4-4</td>
</tr>
<tr>
<td>Silver carp</td>
<td>iii, 7 (8-10?)</td>
<td>ii-iii, 12-14 (13-177)</td>
<td>107-125 small (837)</td>
<td>28-33</td>
<td>16-28</td>
<td>many, long, connected in a single band</td>
<td>4-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Jaw Lengths</th>
<th>Pectoral Fin Length</th>
<th>Ventral Keel</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass carp</td>
<td>near equal, or upper jaw projects slightly</td>
<td>does not reach pelvic fins</td>
<td>none</td>
<td>olive above; silver below</td>
</tr>
<tr>
<td>Hybrid** grass carp</td>
<td>near equal, or lower jaw projects slightly</td>
<td>reaches to or beyond pelvic fins</td>
<td>present, pelvics to anal fin</td>
<td>olive above; silvery below</td>
</tr>
<tr>
<td>Black carp</td>
<td>near equal, or upper jaw projects slightly</td>
<td>does not reach pelvic fins</td>
<td>none</td>
<td>black</td>
</tr>
<tr>
<td>Bighead carp</td>
<td>lower jaw protrudes to anal fin</td>
<td>reaches beyond pelvic fins</td>
<td>present, scaled, pelvics</td>
<td>tan above; silvery below</td>
</tr>
<tr>
<td>Silver carp</td>
<td>near equal, or lower jaw projects</td>
<td>reaches beyond pelvic fins</td>
<td>present, unscaled (?), breast to anal fin</td>
<td>tan above; silvery below</td>
</tr>
</tbody>
</table>

** Hybrid grass carp = grass carp x bighead carp

? Data questionable or unclear
LARGE ASIAN CARPS
MUD CARP, SANDHKOL CARP, AND RELATED SPECIES, CATLA

Prohibited

Mud Carp *Cirrhinus molitorella*
- gill rakers short and conical
- dorsal fin relatively short
- lower lip thin or absent

Mrigala *Cirrhinus mrigala*
- no spine
- moderate size scales

Thynnichthysid Carp *Thynnichthys thynnoides*
- little or no upper lip
- barbels

Sandhkol Carp *Thynnichthys sandhkhol*
- tuna-shaped head
- subcompressed
- 16 - 19 dorsal fin rays

Catla *Catla catla*
- head broad
- mouth terminal
- no barbels
- heavy-bodied

Unprohibited

Goldfish *Carassius auratus*
- spine
- long dorsal fin

Bigmouth Buffalo *Ictiobus cyprinellus*
- no spines
- long dorsal fin (32 - 40 rays)
- deeper-bodied

Common Carp *Cyprinus carpio*
- spine
- long dorsal fin
- mouth sucker-like subterminal
- barbels
OLD WORLD BREAMS

Prohibited

Common Bream *Abramis brama*
- no spine
- deep-bodied
- long anal fin
- scaleless keel
- PT 5-5 or 6-5

Golden Shiner *Notemigonus crysoleucas*
- forked caudal fin
- PT 0.5-5.0
- scaleless keel
- anal fin not long

White Amur Bream *Parabramis pekinensis*
- PT in 3 rows
- long anal fin
- scaleless keel

Black Amur Bream *Megalobrama terminalis*
- PT in 3 rows
- deep-bodied
- scaleless keel

Unprohibited

Green Sunfish *Lepomis cyanellus*
- spiny dorsal fin
- anal spines
- caudal not deeply forked

Silver Bream *Blicca bjoerka*
- PT 2.5-5.2 or 3.5-5.2
- long anal fin
- deep-bodied
- scaleless keel
- anal fin long

Sea Bream *Archosargus rhomboidalis*
- spiny dorsal fin
- anal spines
OLD WORLD MINNOWS
OLD WORLD CHUBS, OLD WORLD DACE, IDE

Prohibited

European Dace *Leuciscus leuciscus*
- no bold color patterns
- PT in 2 rows
- no scaleless keel
- LL scales 45-55

European Chub *Leuciscus cephalus*
- LL scales 44-47
- PT in 2 rows
- dorsal fin unmarked
- no scaleless keel

Ide (Orfe) *Leuciscus idus*
- LL scales 55-63
- PT in 2 rows
- no scaleless keel

Southern Redbellied Dace *Phoxinus erythrogaster*
- black stripes
- red belly
- PT 0,5-5,0

Unprohibited

Note: American and European daces are in different genera

European Minnow *Phoxinus phoxinus*
- LL scales 67-95

Creek Chub *Semotilus atromaculatus*
- LL scales 47-65

Blacknose Dace *Rhinichthys atratus*
- LL scales 53-70
- PT 2,4-4,2
- reddish lateral stripe

Redside Dace *Clinostomus elongatus*
- LL scales 55-75
- PT 0,4-4,0
- reddish lateral stripe

Note: Minnows of the Genus *Leuciscus* are very similar to native minnows; consult text.
OLD WORLD MINNOWS
RUDD AND ROACH

Prohibited

Rudd *Scardinius erythrophthalmus*
- yellow-orange tint
- eye red
- gill rakers short
- PT 3,5-5,3 or 2,5-5,2
- fins red
- scaled keel
- dorsal fin with ii, 8-10 rays

Calamithra *Scardinius graecus*
- silvery-green
- gill rakers short
- PT 6-5, 5-5, or 6-6
- belly scaled (keel present or absent)
- fins yellow (or only red tinted)

Unprohibited

Golden Shiner *Notemigonus crysoleucas*
- greenish-gold
- eyes yellowish green
- gill rakers long and slender
- PT 0,5-5,0
- scaleless keel
- yellowish-green (reddish in large adults only)
- dorsal i-ii, 7-9 rays

Red Shiner *Cyprinella lutrensis*
- bluish-silver
- dark bars
- PT usually 0.4-4.0
- fins reddish in spawning males
- dorsal ii-ii, 7-8
GIANT BARBS

Prohibited

Mahseer Tor tor
- untoothed spine
- short dorsal fin

Putitor Mahseer Tor putitor
- copper-colored
- large scales

Mussallah Mahseer Tor musullah
- untoothed spine

Thai Mahseer Tor tambroides

Soro Mahseer Tor soro
- barbels

Note: Most pet-trade barbs are small with distinctive color patterns and barbels 0, 2, or 4

Unprohibited

Checkered Barb Capoeta oligolepis

Halfbanded Barb Capoeta semifasciolatus
- black bars

Rosy Barb Puntius conchonius
- rosy color

Tinfoil Barb Barbodes schwanefeldi
- bright silver
- spine

Tiger Barb Capoeta tetrazona
- bold pattern
- long dorsal fin

Common Carp Cyprinus carpio
- barbels
CATFISHES
WALKING CATFISHES AND AIRSAC CATFISHES

Prohibited
Walking Catfish Clarias sp.
- long dorsal fin
- not connected
Walking Catfish Heterobranchus sp.
- long anal fin
- adipose fin
Eel Catfish Gymnallabes sp.
- long, connected dorsal, anal, and caudal fins
Blind Walking Catfish Ueiglaniis sp.
- blind or nearly so
Airsac Catfish Heteropneustes sp.
- short anterior dorsal fin
- no adipose fin

Unprohibited
Eel-tail Catfish Neosilurus sp.
- short, anterior dorsal fin
- no adipose fin
Coral Catfish Plotosus sp.
- divided dorsal fins
Pimelodid Catfish Phreatobius sp.
- divided dorsal fins
Blue Catfish Ictalurus furcatus
- short anterior dorsal fin
- adipose fin
- anal and caudal fins not connected
- long anal fin
MARINE STONEFISHES

Prohibited

usually marine

large, vertical mouth

eyes set high

short dorsal spines and rays

Pectoral fins large

protectively colored warty skin

Stonefish Synanceia sp.

Unprohibited

Bullrout (Butterfly Cod)

*Notesthes robusta*

dorsal fins nearly divided

eyes on sides of head

mouth not vertical

Lionfish

*Pterois sp.*

marine

long fin spines

Sailback Scorpionfish

*Pataecus fronto*

high dorsal fin

Small pectoral fins

Ocellated Frogfish

*Antennarius ocellatus*

lure

three dorsal spines

leg-like fins
PERCH-LIKE FISHES
RUFFES AND SCHRAETZERS

Prohibited

Ruffe Gymnocephalus cernuus
brown with darker blotches
dorsals connected but notched

Don Ruffe Gymnocephalus acerinus
dorsals connected but notched

Schraetzer Gymnocephalus schraetzer
dorsals connected but notched

Unprohibited

Yellow Perch Perca flavescens
black webbing
divided or nearly so

Logperch Percina sp.
divided or nearly so

Walleye Stizostedion vitreum
black webbing
divided dorsal fins

Streber Zingle streber
white tip
widely divided

very slender
PERCH-LIKE FISHES
NILE PERCHES

Prohibited
Nile Perch *Lates niloticus*
scales ctenoid
no teeth on tongue

Lake Albert Nile Perch
*Lates macrophtalmus*
no LL in caudal fin
preopercle with single serrated edge

Bigeye Nile Perch
*Lates mariae*
juvenile
tooth patch on tongue

Barramundi
*Lates calcarifer*
juvenile
preopercle double edged with strong teeth

Sand Perch *Psammoperca sp.*
preopercle smooth edged

Sawedged Perch
*Nippon spinosus*
heavy spines on preopercle and opercle

Snook
*Centropomus undecimalis*

Largescale Fat Snook
*Centropomus mexicanus*
2nd-3rd spines very long

Unprohibited
Glassfish *Chanda sp.*
nearly transparent

Slender Nile Perch
*Luciulates stappersi*
dorsal fins broadly divided
anal spines not long
no LL in caudal fin

scales cycloid
small size
preopercle with double finely serrated edge

No heavy spines on preopercle or opercle
PERCH-LIKE FISHES

Prohibited

Hornet Tilapia
Tilapia buttikoferi
- white edge on black pelvic fins
- bold black and white bars (even in adults)
- caudal fin slightly indented

NOTE BAR PATTERNS

Unprohibited

AMERICAN CICHLIDS
- Convict Cichlid
  Cichlasoma nigrofasciatum
- Blue-eyed Cichlid
  Cichlasoma spilurum
- Chanchito
  Cichlasoma facetum
- 6 anal spines
- 9 anal spines
- > 4 anal spines

AFRICAN CICHLIDS
- Five-bar African Cichlid
  Lamprologus tetrocephalus
- 3 anal spines

FRONTOSA
- Cyphotilapia frontosa
- 3 anal spines
- 9-11 dorsal spines
- spot (if present) on posterior rays

JUVENILE TILAPIA
- LL scales 27-35
- LL broken
- caudal fin not deeply forked

JUVENILE SUNFISH
- Lepomis
- LL scales often > 40
- LL complete
- caudal fin forked
SEATROUTS AND CORVINAS

Prohibited
Orangemouth Corvina (OMC)
*Cynoscion xanthulus*
- 19-21 dorsal rays
- no spots
- tan body
- yellow throat
- 7-9 anal rays

Hybrid Corvina
(OMC x SST)
- 21-23 dorsal rays
- fin spots
- canine teeth

Shortfin Corvina
*Cynoscion parvipinnis*
- blue-gray
- 20-24 dorsal rays
- silvery below
- 9-11 anal rays

Weakfish
*Cynoscion regalis*
- adult
- olive-gray
- 7-11 anal rays
- S-shaped not centrally pointed

Totoaba
*Cynoscion macdonaldi*
- yellow inside mouth
- pointed
- 24-26 dorsal rays

Unprohibited
Spotted Seatrout (SST)
*Cynoscion nebulosus*
- juvenile pointed

Silver Seatrout
*Cynoscion nothus*
- 27-29 dorsal rays
- silvery below
- 9-12 anal rays
- scales not deciduous

Sand Seatrout
*Cynoscion arenarius*
- yellowish above
- 25-27 dorsal rays
- scales deciduous
- 11 anal rays

White Sea Bass
*Atractoscion nobilis*
- blue-gray
- canines small or absent
- 19-23 dorsal rays

8-10 anal rays
CRAYFISHES
TASMANIAN GIANT CRAYFISHES

Prohibited

Tasmanian Giant Crayfish
Astacopsis sp.

- Telson fully calcified
- First pair of swimmerettes lacking

Unprohibited

Australian Giant Crayfishes

Cherax sp.
Euastacus sp.

Telsons
- Transverse suture
- Membrane-like posterior edge
- Calcified

Australian Yabbie
Cherax destructor

Unrestricted crayfishes in the U.S. (cultured or wild) should have:
- Swimmerettes (pleopods) on the first abdominal segment (Northern Hemisphere species), or
- Membranous posterior end of telson.

Restricted Tasmanian giant crayfishes have:
- First pair of swimmerettes lacking, and
- Telson calcified its entire length.
**SHRIMPS**

**PENAEID SHRIMPS**

### Prohibited

**Mexican White Shrimp**
*Penaeus vannamei*

![Mexican White Shrimp]

### NOTE

Penaeid shrimps can be very difficult to identify. Consult more detailed descriptions in the text and seek expert advise.

Be cautious of penaeid shrimps
- with a spiny telson
- without exopodites on 5th legs
- with a high, triangular rostral crest
- larger than 8 inches in length
- with a bold black banding pattern
- with movable telson spines
- with fixed telson spines (in adults)
- with coxae of chelapeds armed (spined)
- with only a single ventral rostral tooth
- with dorsal carapace grooves crossing to form an "X" pattern

### Unprohibited

**White Shrimp**
*Penaeus setiferus*

**Brown Shrimp**
*Penaeus aztecs*

**Pink Shrimp**
*Penaeus duoraum*

**Grass Shrimp**
*Palaemonetes vulgaris*

**Cinnamon River Shrimp**
*Macrobrachium acanthurus*
CRABS
MITTEN CRAB

Prohibited

Mitten Crab *Eriocheir* sp.
- claws with mitten-like hair tufts
- no swimming legs

Unprohibited

Blue Crab *Callinectes sapidus*
- no mittens

Green Crab *Carcinus maenas*
- no mittens
- no swimming legs
- a few hairs but no mittens

Marsh Crab *Sesarma* sp.

White-fingered Mud Crab *Rithropanopeus harrisii*
SNAILS
GIANT RAMSHORN SNAIL

Prohibited

Giant Ramshorn Snail *Marisa* sp.

large to 1.5"

stripes (usually)

foot pale but with dark spots above

Operculum

Right-handed (dextral)

Unprohibited

Pond Snail *Stagnicola* sp.
Right-handed (dextral)

Pond Snail *Physella* sp.
Left-handed (sinistral)

NATIVE RAMSHORN SNAILS

*Planorbella* sp.
Left-handed (sinistral)

*Planorbula* ap.
Right-handed (dextral)
BIVALVE MOLLUSKS
ZEBRA MUSSELS

Prohibited

Zebra Mussel *Dreissena polymorpha*
- byssal threads
- flat side
- end views

Quagga Mussel *Dreissena bugensis*
- no flat side

Zebra Mussels inside beaks
- shelf-like structure
- secondary shelf

MYTILID MUSSELS

Blue Mussel *Mytilus edulis*
(also *Perna*)

Ribbed Mussel *Geukensia sp.*

Tulip Mussel *Modiolus sp.*

Unprohibited

Dark False Mussel *Mytilopsis leucaphaeata*
- usually unmarked brown
- no flat side
FLOATING AQUATIC PLANTS
FLOATING WATER HYACINTH, WATER LETTUCE,
GIANT DUCKWEED, SALVINIAS

Prohibited
Giant Salvinia
Salvinia molesta
leaves upright
to 2.5"
hairy leaves
> 2 roots
crease

Giant Duckweed
Spirodela oligorhiza
leaves 0.08-0.20"
green above, red below

Giant Duckweed
Spirodela polyrhiza
5-11 veins
2-4 veins

Common Duckweed
Lemna minor
yellow-green
1 root
filament-like roots

Ivy Duckweed
Lemna trisculca
no roots
< 0.04"

Unprohibited

Small Salvinia
Salvinia minima
0.4-0.8"
hairy, root-like leaves
fleshy leaves
to 3"
inflated stems

Salvinia oblongifolia

Water Fern
Azolla caroliniana
small 0.01-0.04"

Wolffiella
Wolffiella sp.
scale-like leaves

Water Fern
Azolla mexicana

Water Sprite
Ceratopteris sp.
light green

Floating Water Hyacinth
Eichhornia crassipes

Water Lettuce
Pistia stratiotes

10 veins parallel
hairy
fibrous, branched roots

veins not parallel
leaves not fleshy or hairy

2 roots

SUBMERGED AQUATIC PLANTS
WITH UNBRANCHED LEAVES
HYDRILLA, AFRICAN ELODEA, ROOTED WATER HYACINTH

Prohibited

Hydrilla *Hydrilla verticillata*
- strong teeth
- vein red
- teeth on lower mid-vein
- flower small
- leaves 0.4-0.8" usually 5/whorl

African Elodea *Lagarosiphon sp.*
- flower small
- leaves 0.6-0.8" curled

Rooted Water Hyacinth *Eichhornia azurea*
- 2-6"
- submerged leaves divided
- inflated stems
- stems not inflated

Unprohibited

Waterweed *Elodea sp.*
- flowers small
- leaves to 0.8" usually 3/whorl

Egeria *Egeria densa*
- fine teeth
- flowers larger
- no spines

Spiny Naiad *Najas marina*
- very spiny

Arrowhead *Sagittaria sp.*

Arrow-arum *Peltandra sp.*

Pickerelweed *Pontederia sp.*
SUBMERGED AQUATIC PLANTS
WITH BRANCHED LEAVES
EURASIAN WATERMILFOIL

Prohibited

**Eurasian Watermilfoil**
*Myriophyllum spicatum*

- leaves < 1.0"
- leaflets < 0.6"
- leaves thin
- whorls < 0.6" apart
- stem red

**Parrot Feather**
*Myriophyllum brasiliensis*

- flower cluster
- green
- thick leaves

Unprohibited

A. **Water Marigold**
*Megalodonta*

- leaves > 1.0"
- < 0.4" apart
- stem thick reddish

B. **Water Buttercup**
*Ranunculus*

- > 0.4" apart
- stem not thick

C. **Lake Cress**
*Neoeckelia sp.*

D. **Fanwort**
*Cabomba*

E. **Bladderwort**
*Utricularia*

F. **Hornwort**
*Ceratophyllum*

G. **Mermaid Weed**
*Proserpinaca*

H. **Watermilfoil**
*Myriophyllum*
EMERGENT PLANTS

ALLIGATORWEED

Prohibited

Alligatorweed *Alternanthera philoxeroides*

- stems
- solid above water
- submerged stems hollow
- leaves opposite
- terminal purple flower cluster
- small, white flower clusters

Unprohibited

- Waterwillow *Dianthera sp./Justicia sp.*
- elongate flower clusters
- Yellow Loosestrife *Lysaimahia sp.*
- open flower clusters
- Water Primrose *Ludwigia sp.*
- flowers in axils
- leaves red below
- elongate, terminal flower cluster

Purple Loosestrife *Lythrum salicaria*

Knotweed *Polygonum sp.*
SHOREZONE TREES AND SHRUBS
PAPERBARK (MELALEUCA)

Prohibited

Paperbark Melaleuca sp.
- white flower cluster
- veins parallel
- stems woody
- fruits on stems

Willow Salix sp.
- toothed leaf edge

Tupelo Nyssa sp

NONE HAVE PARALLEL LEAF VEINS

Willow Oak Quercus sp.

Mangrove Rhizophora sp.
- red flowers mid-stem

Bottlebrush Callistemon sp.

Unprohibited

Magnolia Magnolia sp.
AQUATIC GRASSES
TORPEDOGRASS

Torpedograss *Panicum repens*

- widely branching spiklets
- flower spike 2.8-4.7" tall
- spikelets 0.09-0.10" long
- dull green with purple tint
- blades flat or folded 0.08-0.25" wide
- stem to 28" tall

OTHER PANIC GRASSES

- spikelets shorter < 0.900"
- spikelets longer > 0.10"
- spikelets similar
- blades similar
- blades wider > 0.28"

Prohibited

Unprohibited

*Panicum dichotomum*  *Panicum commutatum*  *Panicum capillare*  *Panicum geminatum*
AQUATIC VINES
WATER SPINACH

Prohibited

Water Spinach (Aquatic Morning-glory)
Ipomoea aquatica

- pink
- note variable leaf shape
- stem not climbing or twining
- roots at nodes

Ivy-leaf Morning-glory
Ipomoea hederacea

- ivy-shaped
- twining
- roots
- flowers blue, purple, pink, etc.

Saltmarsh Morning-glory
Ipomoea sagittata

- arrowhead shaped
- reddish-purple
- roots

Domestic Morning-glory
Ipomoea purpurea

- twining
- roots

Unprohibited

Cypress Vine
Ipomoea quamoclit

- deeply cut
- red (rarely white)