

SOUTH DAKOTA GAME, FISH AND PARKS

# GUIDE TO THE FISHES — OF SOUTH DAKOTA



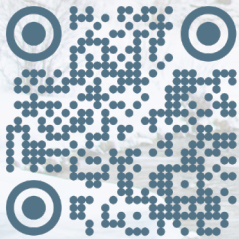
## AUTHORS

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**WANT TO LEARN HOW TO FISH?  
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WANT TO CHALLENGE YOURSELF WITH  
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# GUIDE TO THE FISHES OF SOUTH DAKOTA

**SECOND EDITION**

## **Introduction**

South Dakota is home to more than 100 fish species. Included in this guide are tips for identification, distribution maps, and brief life histories of many of these. Also included is a comprehensive listing of all known species in the state.

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and Katie Schlafke

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**In memory of David W. Willis**

March 7, 1955 – January 13, 2014



## RESOURCES

### Books and articles

1. Ashton, D. E and Dowd, E. M. 2006. Fragile legacy: rare animals of South Dakota, second edition. Report No. 91-04, South Dakota Game, Fish & Parks, Pierre, South Dakota.
2. Baxter, G. T. and Stone, M. D. 1995. Fishes of Wyoming. Wyoming Game and Fish Department, Cheyenne, Wyoming.
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9. Schalfke, K.E., M.D. Wagner, C.A. Pasbrig, B.D.S. Graeb, K.N.B. Graeb. (*in prep.*) Fishes of the Dakotas. Springer Publishing. New York.

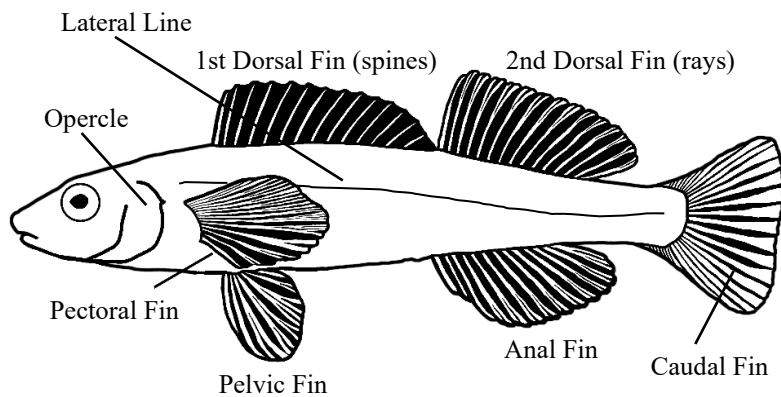
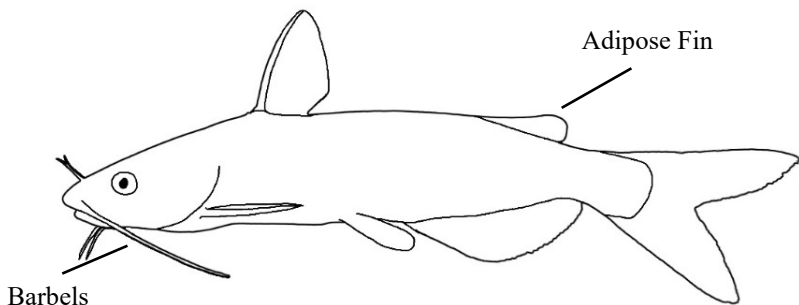
### Web resources

1. Fishing in South Dakota,  
<https://gfp.sd.gov/fish/>
2. Threatened & Endangered Species in South Dakota,  
<https://gfp.sd.gov/threatened-endangered/>
3. Rare Fishes of South Dakota,  
<https://gfp.sd.gov/rare-animals/>
4. Aquatic Invasive Species,  
<https://sdleastwanted.sd.gov/>
5. MinnAqua - Fishing Education, Division of Fish & Wildlife Outreach Section,  
<http://www.dnr.state.mn.us/minnaqua/index.html>
6. Fishes of Minnesota,  
[http://hatch.cehd.umn.edu/research/fish/fishes/natural\\_history.html](http://hatch.cehd.umn.edu/research/fish/fishes/natural_history.html)
7. North Dakota Fish Species,  
<https://gf.nd.gov/wildlife/id/fish>
8. Fishes of Iowa,  
<http://www.iowadnr.gov/fish/iafish/iafish.html>

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## EXTERNAL ANATOMY OF A FISH





## QUICK KEY TO IDENTIFYING FISHES

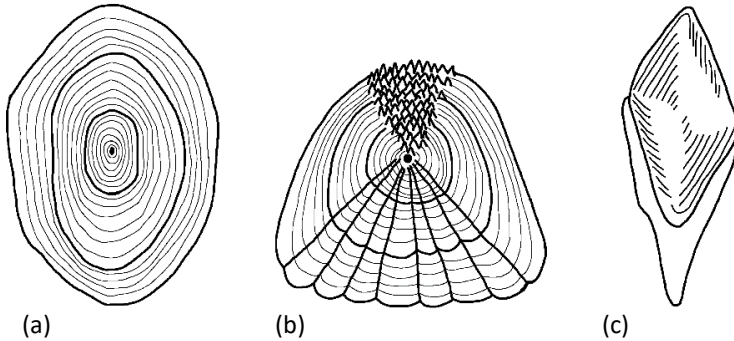
*Each of the following categories provides a quick means to rule out many common fishes to identify a specific fish. Each fish in the following species accounts is grouped within each of the categories described below.*

**HABITAT TYPE:** distinct types of fishes can be found in different types of habitats commonly distinguished by water temperature. The location from which the fish you wish to identify was collected can be an important clue to the type of fish.

1. **Cold-water habitat:** water body in which year-round temperature is usually below 65° F (18° C). In South Dakota, this includes high- elevation streams of the Black Hills, deep-water habitats in lakes and impoundments, and tailwater reaches of streams below dams that discharge water from the bottom of the water body.
2. **Cool-water habitat:** water body in which year-round temperature is usually below 75° F (24° C) and temperature fluctuation is minor. In South Dakota, this includes spring-fed streams that are in the Black Hills as well as spring-fed lakes and streams present throughout the state, including those along escarpments such as the Missouri River Bluffs, the Missouri Couteau, and the Prairie Couteau.
3. **Warm-water habitat:** water body in which temperature may fluctuate dramatically throughout the year and in which temperatures often exceed 75° F (24° C) during summer. Most water bodies of South Dakota.

**SCALE TYPE:** fishes with unique types of scales are readily distinguished from fish with more typical types.

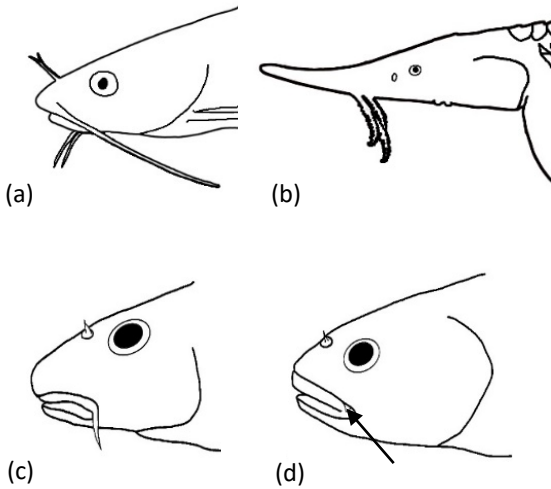
- a) **Large, shiny (silvery), deciduous (cycloid) scales:** fishes typically present in clear, open-water habitats such as lakes and cool-water streams may have this type of scale. These scales tend to be thin, flexible, with a smooth rounded edge. These scales are easily shed or rubbed off. Examples: Minnows, suckers, and salmon.
- b) **Small, colored, non-deciduous (ctenoid) scales:** most fishes have this type of scale. Color and size are highly variable within and among species. These scales tend to be thin, flexible, with comb-like protrusions (ctenii) at the exposed edge of the scale giving them a rough texture. Examples: Perch, Walleye, sunfishes, and more.
- c) **Scale armor (ganoid scales):** leathery, rectangular or diamond-shaped scales create a suit of armor that covers the entire or portion of the body. Examples: Shortnose Gar, sturgeon and Paddlefish. Ganoid scales can be found in small patches on the tail of sturgeons and Paddlefish. Additionally, sturgeon also have rows of large, sharp, bony scutes that run longitudinally along the body.
- d) **Scaleless (no visible scales):** fishes entirely lacking scales have a “smooth” skin. Examples: Lamprey and catfishes.



Scale types a) Deciduous scales (cycloid scales), b) Non-deciduous scales (ctenoid scales), and c) Scale armor (ganoid scales).

**BARBEL TYPE:** fishes with barbels are relatively easily distinguished from those without.

- a) **Long snout, mouth, and barbels on underside of head:**  
Examples: catfishes.
- b) **Long barbels only on underside of head:** Examples: sturgeons, Burbot.
- c) **Moderate-sized mouth barbels only:** barbels in the corner of the mouth (where the upper and lower jaws unite). Examples: Common Carp, Flathead Chub.
- d) **Inconspicuous mouth barbels:** in or near the corner of the mouth (where the upper and lower jaws unite), but difficult to see without magnification. Example: Creek Chub.
- e) **No barbels:** Most South Dakota fishes lack barbels.



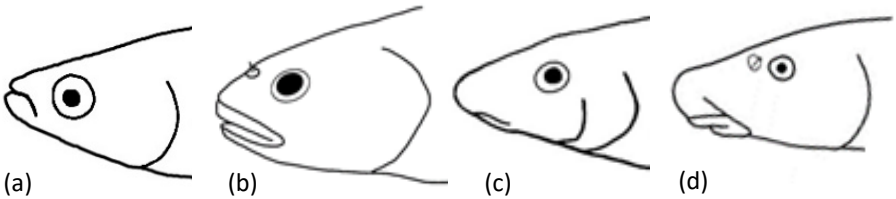
Barbel types a) Long snout, mouth and chin barbels, b) long chin barbels only, c) moderate sized mouth barbels only, and d) Inconspicuous mouth barbels.

**FIN DESCRIPTIONS:** (*refer to image on page 7*) many fishes have distinct types of fins.

1. **All fins without elongated bases, spines rarely present (weak and inconspicuous when present), adipose fin present in some cases:**  
See sub-categories below.
  - a. Short fin bases with small, inconspicuous thickened, spine-like leading ray at the front of the dorsal fin. Example: fathead minnow.
  - b. Short fin bases, no spines, adipose fin present: Examples: trout, salmon, smelt.
  - c. Short fin bases, no spines, no adipose fin: Most South Dakota fishes fit this description.
2. **Dorsal, anal, or tail (caudal) fins with elongated bases, sometimes in duplicate, adipose fin present in some cases:** some fins long as measured at their base (where the fin joins the body). See sub-categories below.
  - a. Elongate dorsal fin soft (no spines) or with only one spine: dorsal fin base composes most of the top (dorsal) surface of the fish and one stout spine may be present toward the front of the fin. Examples: Common Carp, buffalos, River Carpsucker.
  - b. Dorsal and sometimes anal fins with multiple spines toward snout and soft fin rays toward the tail: Dorsal fin sometimes in duplicate. Examples: bass, sunfishes, crappies, Logperch, Johnny Darter, Yellow Perch, Walleye, Sauger, Freshwater Drum.
  - c. Elongate anal fin, other fins short, all fins soft (no spines): anal fin base composes majority of distance between the pelvic and caudal fins. Examples: Gizzard Shad, Goldeye.
  - d. Elongate anal fin, other fins short, stout spines present on dorsal and pectoral fins, adipose fin present: Examples: most catfishes.
  - e. Elongate tail (caudal) fin more or less continuous with elongated dorsal and anal fins. Examples: American Eel, Burbot.
  - f. Elongate dorsal and anal fins, dorsal finlets with stout spines, stout spines also in pelvic and pectoral fins: Example: Brook Stickleback.

**MOUTH POSITION:** the direction (forward, upward, downward) in which the mouth points readily distinguish many types of fishes and is indicative of the location in which each species feeds, on average.

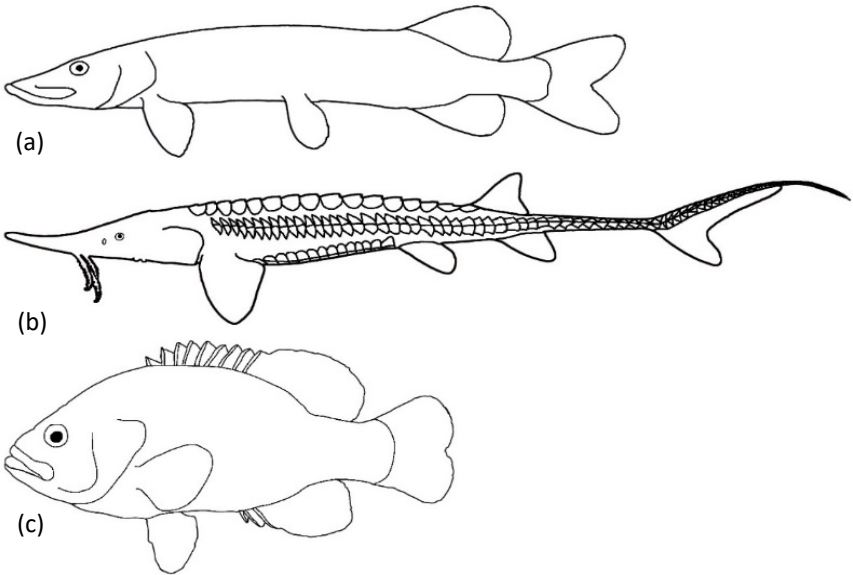
- a) **Upward-facing (superior) mouth:** mouth opening is directed to the top (dorsal) surface of the fish indicating a tendency to attack prey from below. Lower jaw extends forward beyond upper jaw. Examples: Flathead Catfish.
- b) **Forward-facing mouth without elongate snout (terminal):** mouth opening is near the tip of the snout. Most other South Dakota fishes fit this description.
- c) **Elongate upper jaw or snout with forward-facing mouth (subterminal):** upper jaw or snout extends forward, noticeably beyond lower jaw. Mouth opening faces forward. Examples: Paddlefish, Shortnose Gar, Gizzard Shad, Common Carp, Flathead Chub, Channel Catfish, Logperch, Johnny Darter, and Freshwater Drum.
- d) **Downward-facing (inferior) mouth:** mouth opening is directed to the bottom (ventral) surface of the fish indicating a tendency to attack prey from above. Snout usually extends well in front of mouth. Examples: sturgeons, Smallmouth Buffalo, River Carpsucker, Shorthead Redhorse, White Sucker, and Blue Sucker.



Mouth positions: a) superior, b) terminal, c) subterminal, and d) inferior.

**BODY SHAPE:** fish bodies may be tubular (round in cross-section), flattened on the bottom (ventral surface), or flattened from side to side (laterally).

- a) **Body more or less tubular:** body is roughly equal in depth and width. Many South Dakota fishes fit this description. Examples: Shortnose Gar, American Eel, Creek Chub, bullheads, pikes, Burbot, Johnny Darter, Logperch, Blue Sucker, Sauger, and Walleye.
- b) **Body shorter (shallower) than wide (ventrally flattened):** South Dakota fishes that fit this description tend to feed on organisms living on the bottom of a water body. Examples: sturgeons and Flathead Catfish.
- c) **Body taller (deeper) than wide (laterally flattened):** Many South Dakota fishes fit this description, but some species have much deeper, narrower bodies than others. Examples: Goldeye, Gizzard Shad, all carps, Common Shiner, Golden Shiner, River Carpsucker, buffalos, bass, sunfishes, and Freshwater Drum.



Body shape: a) Body more or less tubular, b) body shorter (shallower) than wide (ventrally flattened), and c) body taller (deeper) than wide (laterally compressed).

## GLOSSARY OF TERMS

**Algae:** a large and diverse group of organisms that, like plants, normally derive their energy from photosynthesis. The group includes diverse single-celled, colonial, and multi-celled forms. Algal blooms sometimes occur in unshaded water bodies, especially during summer, causing water to appear green.

**Aquatic Invasive Species (AIS):** species that are nonnative to South Dakota that are invasive and have negative effects to South Dakota waters, including: reducing native and game fish populations, impacting water quality and interfering with recreational boating.

**Barbel:** whisker-like projection found around the mouth of some fishes, sometimes on the chin, snout, or inconspicuously hidden in or near the corner of the mouth. (*refer to image on page 10*).

**Branchiostegal ray:** bony ray supporting (embedded within) the gill membranes in the throat region, behind the lower jaw.

**Candidate:** species proposed by the U.S. Fish and Wildlife Service for federal listing as an endangered or threatened species.

**Crustacean:** member of a large and diverse group of invertebrate, arthropod organisms that are important prey for fishes. Examples present in South Dakota are water fleas (*Daphnia*), scuds (amphipods), and crayfish.

**Deciduous:** dropping of a part that is no longer needed. In fishes, deciduous scales are easily shed or rubbed off from a fish during handling.

**Detritus:** non-living organic (not rock) material, including remains of plants, animals, and their waste products. Decaying detritus is an important source of energy in aquatic habitats. **Endangered:** a species in danger of extinction throughout all or a significant portion of its range.

**Escarpment:** a steep slope that results from erosion or faulting and separates two relatively level areas of differing elevations.

- Exotic:** species that are nonnative, they historically did not occur in South Dakota but were introduced by humans or migrated here from another state.
- Extirpated:** Species that are presumed extirpated are those that once existed in South Dakota, historical records only, but can no longer be found here.
- Fusiform:** having a spindle-like body shape that is wide in the middle and tapers at both ends.
- Impoundment:** water body created by blocking flowing water, usually by a dam.
- Insect:** member of a large and diverse group of invertebrates, arthropod organisms that are important prey for fishes. Examples present in South Dakota are larvae of mosquitoes, flies, and dragonflies.
- Invertebrate:** type of animal lacking a backbone.
- Keel:** a distinct ridge, usually on the belly of a deep-bodied fish.
- Larva:** early life stage of an animal that is distinct from juveniles and adults because larvae undergo metamorphosis, during which their appearance may change dramatically, in the transition to becoming a juvenile (resembles adult, but sexually immature) and adult (sexually mature) animal.
- Lateral line:** sense organ used to detect movement and vibration in water. Lateral lines are usually visible as a faint line (marked by a series of motion receptors called neuromasts) that extends along each side, from the vicinity of the gill covers to the base of the tail (caudal) fin (*refer to image on page 7*). However, not all fish have a lateral line.
- Mollusk:** member of a large and diverse group of invertebrate organisms that are prey for fishes adapted to crush their hard shells. Examples present in South Dakota are snails and clams.
- Nocturnal:** activity is largely restricted to nighttime.
- Omnivore:** animal that eats both plant and animal material.
- Operculum:** hard, bony “flap” (commonly called the opercle) that protects the gills and throat (*refer to image on page 7*).
- Otolith:** bony structure in the inner ear that is sensitive to gravity and linear acceleration, helping an animal maintain balance.
- Pond:** natural or constructed water body; typically, 10 acres or less.



- Plankton:** drifting organisms that inhabit open-water environments. Major types of plankton include bacteria, algae (phytoplankton) and invertebrate animals (zooplankton).
- Prey:** any animal eaten by another.
- Riffle:** shallow area of a river or stream where streamflow is relatively fast, the streambed is relatively rocky, and water is highly turbulent, often creating “white water.”
- Scale:** a small rigid plate that grows out of an animal’s skin to provide protection.
- Scute:** a relatively large, sharp, external bony structure.
- Serration:** a series or set of saw-like teeth or notches.
- Spawn:** reproductive event in which many types of fish reproduce via release of eggs and sperm into the environment. Species of Greatest Conservation Need (SGCN): species identified in South Dakota’s Wildlife Action Plan as threatened, endangered, or rare, this can include species that occupy unique or declining habitats.
- Spine:** bony, sharp structures incorporated into the bones of many types of fish as protection from predators. Spines are most common as part of fins but may occur on other bones such as the operculum (*refer to image on page 7*).
- Stunting:** when a population consists of individuals that grow slowly and often do not reach the maximum size typical for that species. Growth is restricted by high population density. Reduced predation and decreased food availability may help create stunted populations.
- Tailwater:** waters located immediately downstream from a hydraulic structure, such as a dam, bridge or culvert. Tailwaters may have relatively cold and stable water temperatures if their source is water from the bottom of an upstream impoundment, such as in Missouri River and western reservoirs.
- Threatened:** a species likely to become endangered in the foreseeable future.
- Tubercles:** hardened, often thorn like projections from the skin of the head, fins, and scales; present in adult male (sometimes female) fish during breeding season.
- Turbidity:** cloudiness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air.

# STURGEON (family Acipenseridae)

## Lake Sturgeon

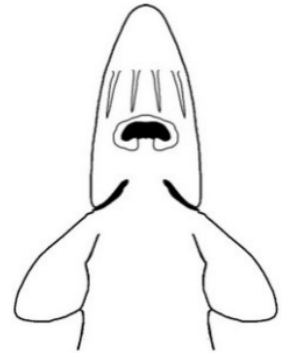
*Acipenser fulvescens*



Quick key characteristics: The Lake Sturgeon is found in large rivers and lake habitats. It is scaleless except for bony scutes arranged in distinct rows along the top and sides. It has long chin barbels, soft fins without elongated bases, a downward-facing mouth, and its body is flattened and widened on the bottom. Dorsal and anal fins are positioned near the tail.

Similar species in South Dakota: Shovelnose Sturgeon & Pallid Sturgeon

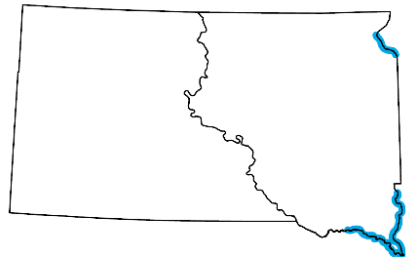
Identification: The combination of (1) bases of barbels without fringe, aligned in a single, straight row, (2) A small opening, the spiracle, is present between the eye and the upper corner of the gill cover (3) Five large, prominent rows of bony scutes on body and (4) adults commonly exceed 21 in. and 5 lbs. distinguishes the lake sturgeon from shovelnose sturgeon.



Range: The Lake Sturgeon is found within the Hudson Bay, Mississippi, and Missouri rivers. Also found within the Great Lakes area. Rare but present in free-flowing portions of the lower Missouri and Big Sioux rivers in South Dakota and Big Stone Lake where a collaborative effort between South Dakota GFP and the Minnesota DNR are working to stock and reintroduce Lake Sturgeon.

Items of interest:

- Illegal to possess.
- Feeds on bottom-dwelling organisms (snails, insects, crustaceans, small fish).
- Skeleton composed of cartilage.
- May reach over 6 ft. and 100 lbs.



## Pallid Sturgeon

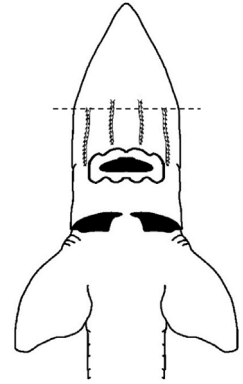
*Scaphirhynchus albus*



Quick key characteristics: The Pallid Sturgeon is found in riverine habitats. It is scaleless except for bony scutes arranged in distinct rows along the top and sides. It has long chin barbels, soft fins without elongated bases, a downward-facing mouth, and its body is flattened and widened on the bottom. Dorsal and anal fins are positioned near the tail.

Similar species in South Dakota: Shovelnose Sturgeon

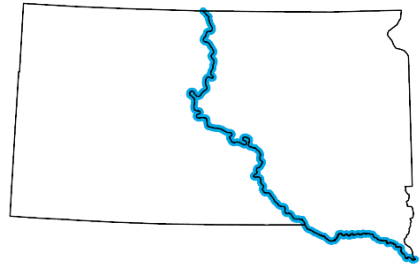
Identification: The combination of (1) bases of outer barbels usually behind (posterior to) inner barbels, (2) outer barbels twice as long as inner barbels, refer to barbel image at top of page, (3) bony scutes absent on belly, and (4) adults commonly exceed 21 in. and 5 lbs. distinguishes the Pallid Sturgeon from Shovelnose Sturgeon.



Range: The Pallid Sturgeon is almost entirely restricted to the mainstem Yellowstone and Missouri rivers and Mississippi River downstream from the Missouri River confluence. Rare but present in free-flowing portions of the Missouri River in South Dakota where it prefers strong currents.

Items of interest:

- Illegal to possess (it is a federally and state listed endangered species).
- Largest remnant populations are in Montana, the Dakotas, and Louisiana.
- Feeds on bottom-dwelling organisms (snails, insects, crustaceans, small fish).
- Skeleton composed of cartilage.
- May exceed 65 lbs.



# Shovelnose Sturgeon

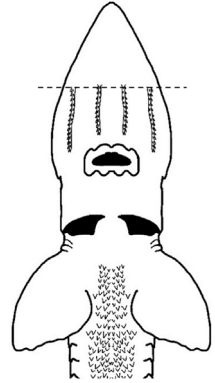
*Scaphirhynchus platyrhynchus*



Quick key characteristics: The Shovelnose Sturgeon is found in riverine habitats. It is scaleless except for bony scutes arranged in distinct rows along the top, sides, and belly. It has long chin barbels, soft fins without elongated bases, a downward-facing mouth, and its body is flattened and widened on the bottom. Dorsal and anal fins are positioned near the tail.

Similar species in South Dakota: Pallid Sturgeon

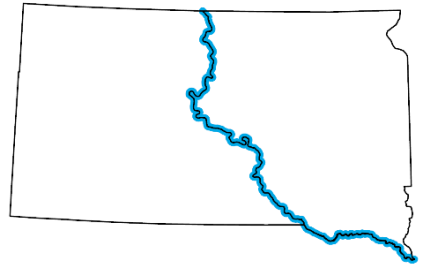
Identification: The combination of (1) bases of barbels aligned in a single, straight row, (2) all barbels similar in length, refer to barbel image at top of page, (3) bony scutes present on belly, refer to image at top of page, and (4) adults rarely exceed 21 in. and 5 lbs. distinguishes the Shovelnose Sturgeon from the Pallid Sturgeon.



Range: The Shovelnose Sturgeon is widespread among larger rivers of the Mississippi River basin. Present in impounded and free-flowing reaches of the Missouri River in South Dakota where it prefers fast currents.

Items of interest:

- Illegal to possess (it is a federally listed threatened species).
- Tolerant of turbid water.
- Feeds on bottom-dwelling organisms (snails, insects, crustaceans, small fish).
- Skeleton composed of cartilage.
- Rarely exceeds 5 lbs.



## **PADDLEFISH** (family Polyodontidae)

### **Paddlefish**

*Polyodon spathula*



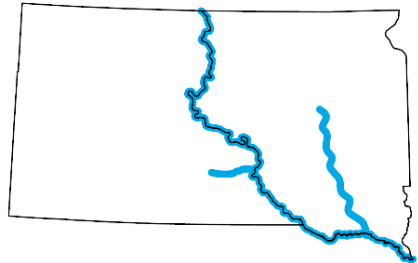
Quick key characteristics: The Paddlefish is found in habitats in rivers, impoundments, and lakes. It has soft fins without elongated bases, a forward-facing mouth with a wide gape and long, overhanging “paddle”- or “spoon”- shaped snout. Its body shape is tubular. Its snout and scaleless body earn it the informal name “spoonbill cat.” Dorsal and anal fins are positioned near the tail.

Similar species in South Dakota: none

Range: The Paddlefish is widespread throughout the Mississippi River basin and is also native to adjacent river basins that flow into the Gulf of Mexico and portions of the Great Lakes basin. Present in impounded and free-flowing reaches of the Missouri River in South Dakota.

Items of interest:

- Declining species due to destruction of habitat and overharvest in some parts of its range.
- Limited draw snagging and archery season below Gavins Point Dam and the Big Sioux River for residents and nonresidents during May and October.
- Limited draw snagging and archery season on Lake Francis Case for residents only during May.
- Dams can block spring spawning migrations.
- Feeds on plankton in open water.
- Skeleton composed of cartilage.
- May reach 60 in. and exceed 100 lbs.



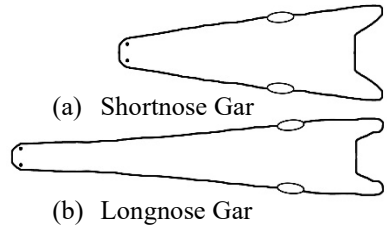
## **GAR** (family Lepisosteidae)

### **Shortnose Gar**

*Lepisosteus platostomus*



Quick key characteristics: The Shortnose Gar is found in cool and warm- water habitats. It has soft fins without elongated bases, a forward-facing mouth with an overhanging snout (armed with needle-like teeth), and its body shape is tubular. It in some ways resembles an alligator and is armored by leathery, diamond-shaped scales.



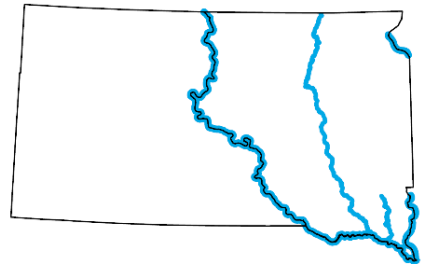
Similar species in South Dakota: Longnose Gar

Identification: Jaws shorter and broader than Longnose Gar. Narrowest point on jaw is more than one-tenth of total jaw length.

Range: The Shortnose Gar is native throughout the Mississippi River basin and portions of the Great Lakes basin. It is most common in quiet pools and backwaters in South Dakota, especially in association with submerged vegetation.

Items of interest:

- Feeds on insects, crustaceans, and fish.
- The bony mouths make hooking with conventional tackle difficult.
- Eggs are poisonous.
- Rarely exceed 30 in. and 5 lbs.



## MOONEYE (family Hiodontidae)

### Goldeye

*Hiodon alosoides*



Quick key characteristics: The Goldeye is found in cool and warm-water habitats. It has a soft, elongate anal fin and the dorsal fin is set far back on the body. It has a forward-facing mouth not overhung by its blunt snout, its body shape is laterally flattened, being much taller than wide, and it has large and shiny, deciduous scales.

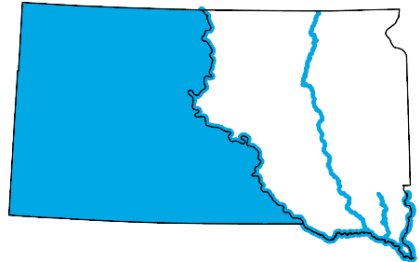
Similar species in South Dakota: Mooneye, Gizzard Shad, Skipjack Herring

Identification: The combination of (1) large, golden eyes, (2) large teeth on the tongue, (3) lack of scutes on the midline of the belly, and (4) lack of an elongated last dorsal fin ray distinguishes the Goldeye from herrings, such as gizzard shad. Insertion of the dorsal fin opposite or behind origin of the anal fin separates the Goldeye from the Mooneye.

Range: The Goldeye is widespread throughout North America east of the Rocky Mountains. In South Dakota, it is common throughout the Missouri River, and its major tributaries.

#### Items of interest:

- Tolerant of turbid water due to excellent vision.
- Prey for sport fish.
- Adults are readily angled and fight hard.
- Not prized as table fare in the USA, but popular in Canada when smoked.
- Feeds on plankton and larger crustaceans, insects, and small fish.
- Rarely reach 18 in. and 3 lbs.



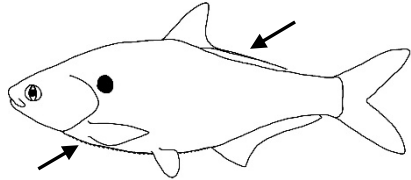
## HERRING (family Clupeidae)

### Gizzard Shad

*Dorosoma cepedianum*



Quick key characteristics: The Gizzard Shad is found in cool and warm- water habitats. It has a soft, elongate anal fin, a blunt snout that overhangs a forward-facing mouth, and its body shape is laterally flattened (much taller than wide). It has large and shiny, deciduous scales.



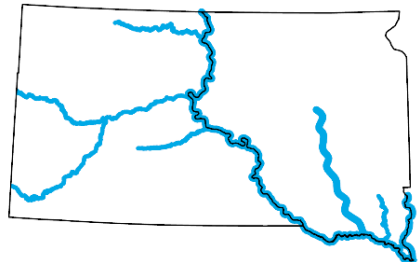
Similar species in South Dakota: Skipjack Herring, Alewife, Goldeye, Mooneye

Identification: The combination of (1) a blunt snout, (2) sharp, pointed scutes (keel) that create a “sawtooth” effect on the midline of the belly, (3) lateral line absent, and (4) elongation of the last (farthest backward) dorsal-fin ray separates this species from all others in the state.

Range: The Gizzard Shad is widespread throughout temperate, eastern North America. South Dakota is near its northern distributional limit, but the species inhabits all Missouri River reservoirs in South Dakota and has been introduced to several western impoundments. Spawning in spring usually occurs in flooded terrestrial vegetation.

Items of interest:

- Rarely caught by anglers, but important prey for many sport fish.
- Feeds on plankton and detritus.
- Commonly present in large schools.
- May reach 20 in. and over 2 lbs.
- Most die during winter in South Dakota due to cold water intolerance, but they are replenished through spawning efforts of the remaining adults.





## MINNOW (family Cyprinidae)

### Common Carp

*Cyprinus carpio*



Quick key characteristics: The Common Carp is found in cool- and warm- water habitats. It has large, brassy, or golden scales, an elongated dorsal fin with a stout, serrated spine as well as a stout, serrated spine on the anal fin. Superficially, it has a forward-facing mouth and pointed snout, but when protruded the mouth is downward facing. It has a pair of barbels that are readily visible in the corner of the mouth and its body is taller than wide.

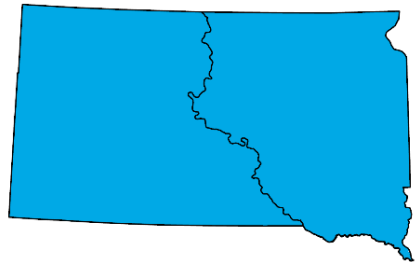
Similar species in South Dakota: Goldfish, buffalos, carpsuckers

Identification: The combination of (1) barbels, (2) stout, serrated dorsal and anal fin spines, and (3) highly protrusible mouth distinguishes Common Carp from similar South Dakota fishes.

Range: The Common Carp is native to Asia and has been introduced throughout the world as a food fish. It is widespread in South Dakota.

#### Items of interest:

- Highly tolerant of harsh and degraded environments.
- Successful in most freshwater habitats except cold-water streams and flashy, sand-bed rivers.
- Feeds on bottom ooze and associated algae and invertebrates.
- Can provide exciting angling on light tackle.
- Commonly exceed 25 in. and may exceed 50 lbs.



## Silver Carp

*Hypophthalmichthys molitrix*



Quick key characteristics: The Silver Carp is found in warm-water habitats. It has small, silvery scales, an elongated anal fin, and stout leading rays are present on the pectoral, dorsal, and anal fins. It has an upward-facing mouth and pointed snout and a scaleless keel on its belly that extends from the pectoral fin base to the anus. Its body is much taller than wide.

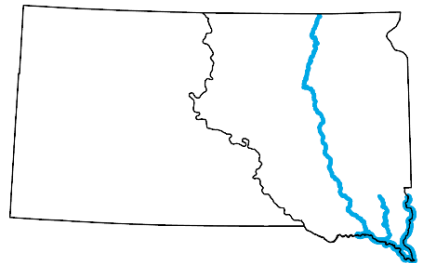
Similar species in South Dakota: Bighead Carp, Gizzard Shad

Identification: The combination of (1) upward-facing mouth, (2) eyes located low on the head (3) tip of the pectoral fin extends to the origin of the pelvic fin, and (4) scaleless belly keel that extends in front of the pelvic fins distinguish the Silver Carp from similar fishes in South Dakota.

Range: The Silver Carp is native to Asia and was imported to the USA to control algal blooms in aquaculture ponds. Wild populations established by escapees are expanding their range throughout the Mississippi River basin, typically occupying larger rivers, lakes, and impoundments. It is present in the Missouri River and tributaries downstream from Gavins Point Dam.

Items of interest:

- Passage of motorized boats causes individuals to leap into the air, sometimes endangering boaters.
- Feeds primarily by filtering phytoplankton (algae) from open water in schools, sometimes competing with native filter feeders such as Paddlefish, Bigmouth Buffalo, and freshwater mussels.
- Can exceed 75 lbs.



## Bighead Carp

*Hypophthalmichthys nobilis*



Quick key characteristics: The Bighead Carp is found in warm-water habitats. It has small, silvery scales, an elongated anal fin, and stout leading rays are present on the pectoral, dorsal, and anal fins. It has an upward-facing mouth and pointed snout and a scaleless keel on its belly that extends from the pelvic fin base to the anus. Its body is much taller than wide.

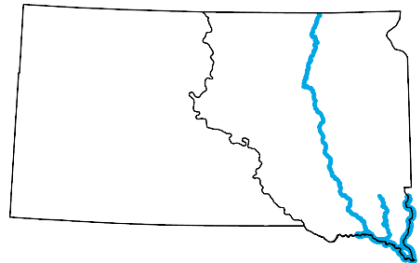
Similar species in South Dakota: Silver Carp, Gizzard Shad

Identification: The combination of (1) an upward-facing mouth, (2) eyes located low on the head, (3) elongate pectoral fins that extend past the insertion of the pelvic fins and (4) a short scaleless keel on belly (not reaching in front of pelvic fins) distinguishes the Bighead Carp from similar fishes in South Dakota.

Range: The Bighead Carp is native to Asia. Wild populations established by escapees are expanding their range throughout the Mississippi River basin, typically occupying larger rivers, lakes, and impoundments. It is present in the Missouri River and tributaries downstream from Gavins Point Dam.

Items of interest:

- Less likely to leap into the air in response to passage of motorized boats than the Silver Carp.
- Feeds primarily by filtering zooplankton from open water in schools, sometimes competing with native filter feeders such as paddlefish, bigmouth buffalo, and freshwater mussels.
- Can exceed 110 lbs.



## Common Shiner

*Luxilus cornutus*



Quick key characteristics: The Common Shiner is found in cool-water habitats. It has large, diamond-shaped, silvery scales that are taller than wide along the front portion of the lateral line and deciduous. Dark scales are scattered along the sides. Fins are soft with short bases. It has a forward-facing mouth and pointed snout and its body is taller than wide.

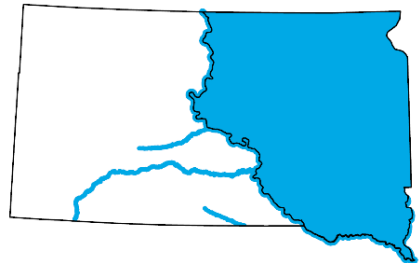
Similar species in South Dakota: other minnows

Identification: The combination of (1) tall, diamond-shaped, deciduous scales along sides, (2) concentrated pigment on some lateral scales causing some scales to appear to be missing on sides (3) a relatively deep body, and (4) relatively large eyes distinguish the Common Shiner from similar fishes in South Dakota.

Range: The Common Shiner is native to the Great Lakes, northern Mississippi River, and Red River of the North basins. In South Dakota, Common Shiners are common east of the Missouri River with limited distribution to the west.

Items of interest:

- Often present in multi-species schools.
- Feeds primarily on insects and crustaceans.
- Breeding males grow large tubercles on top of the head, on the snout, and in a single row along the edge of the lower jaw.
- Males often build spawning pits in gravel for females to deposit eggs.
- Many males may occupy a nest, which results in frequent fights.
- Can exceed 8 in.



## Golden Shiner

*Notemigonus crysoleucas*



Quick key characteristics: The Golden Shiner is found in cool- and warm- water habitats. It has large, olive- to golden-colored scales. Fins are soft with an elongated anal fin. Its mouth is slightly upward facing, and its snout is pointed. Its body is taller than wide.

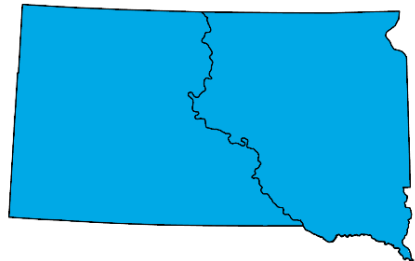
Similar species in South Dakota: other minnows, especially European Rudd

Identification: The combination of (1) an elongated anal fin, (2) a scaleless keel on the belly between the pelvic fins and anus, (3) a tall, thin body, and (4) lack of red coloration in lower fins distinguishes the Golden Shiner from similar minnows in South Dakota.

Range: The Golden Shiner is native to eastern North America, ranging northward into southern Canada. In South Dakota, it occupies vegetated wetlands, ponds, lakes, impoundments, and streams, which are more prevalent in the eastern part of the state.

Items of interest:

- Common prey for sport fish because it frequents open water.
- Feeds on plankton, insects, snails, and plants.
- Cultured for sale as live bait and for stocking into ponds.
- Largemouth bass eliminate golden shiners from ponds lacking abundant aquatic vegetation.
- Adults may reach 12 in.



## Emerald Shiner

*Notropis atherinoides*



Quick key characteristics: The Emerald Shiner is found in cool-water habitats. It has large, silvery, deciduous scales. Fins are soft with short bases, its mouth is forward-facing, and its snout is pointed. Its body is somewhat taller than wide, but less so compared to most minnows.

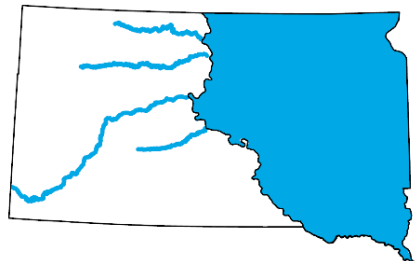
Similar species in South Dakota: other minnows, especially Carmine Shiner and Silverband Shiner

Identification: The combination of (1) a long, slender body, (2) dorsal fin set well behind (posterior) pelvic fins, (3) large, terminal mouth, and (4) large eye differentiates the Emerald Shiner from most other minnows in South Dakota. The Carmine Shiner is similar, but has a longer snout, faint, rosy coloration along the side and cheek, more rounded dorsal fin, and is restricted to streams of the Minnesota River drainage in far northeastern South Dakota. The Silverband Shiner is similar, but dorsal fin only slightly behind insertion of pelvic fins, is only known from the mainstem Missouri River.

Range: The Emerald Shiner is native to most of central North America between the Appalachian and Rocky Mountains, including rivers that flow into the Hudson Bay and Arctic Ocean. It is widespread in larger streams, rivers, impoundments, and lakes in South Dakota.

Items of interest:

- Common prey for sport fish because it often forms large schools and frequents open water.
- Feeds on plankton, insects, crustaceans, and algae.
- May exceed 6 in.



## Fathead Minnow

*Pimephales promelas*



Quick key characteristics: The Fathead Minnow is found in cool- and warm- water habitats. It has small scales that range in size with those toward the top of the head visibly smaller than those farther back. Lateral line incomplete. Fins are soft, short based, and have a short, thickened, leading ray of the dorsal fin. Its small mouth is forward-facing, and its rounded snout is blunt. Its body is somewhat taller than wide, but more tubular than most minnows.

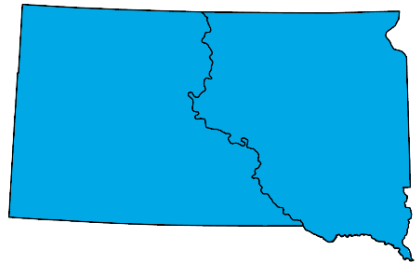
Similar species in South Dakota: other minnows, especially Bluntnose Minnow

Identification: The combination of (1) short, thickened, leading ray of the dorsal fin, refer to diagram at the top of the page, (2) blunt rounded snout, (3) many small “crowded” scales near the head, (4) incomplete lateral line, and (5) small forward-facing mouth not overhung by snout distinguishes Fathead Minnow from similar South Dakota fishes.

Range: The Fathead Minnow is native to central and northeastern North America. It is one of the most widespread and abundant fishes in South Dakota.

Items of interest:

- Cultured commercially and sold for use as live bait and prey for sport fish.
- Tolerant of degraded habitat and low dissolved oxygen in water, hardy in a minnow bucket.
- Feeds on plankton, insects, and crustaceans.
- Breeding males may have dark purple body rings and tubercles on the snout and lower jaw.
- Males defend breeding territories and guard their eggs placed on undersides of stones or in aquatic vegetation.
- May reach 3.5 in.



## Flathead Chub

*Platygobio gracilis*



Quick key characteristics: The Flathead Chub is found in cool- and warm- water habitats, primarily in larger streams and rivers. It has small, silver-gray scales and soft fins with short bases. Its large mouth is forward-facing and somewhat overhung by its snout. Its body is tubular, and it has a small barbel in the corner of the mouth.

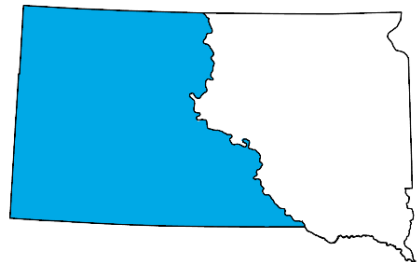
Similar species in South Dakota: other minnows, especially Silver Chub

Identification: The combination of (1) a broad, flattened, “wedge-shaped” head, (2) mouth barbel, and (3) long, pointed pectoral fins distinguishes the Flathead Chub from similar South Dakota fishes.

Range: The Flathead Chub is native to the plains of central North America from near the Gulf of Mexico to the Arctic Ocean. It is common in larger streams of western South Dakota, where it tolerates high turbidity, but was more widespread historically.

Items of interest:

- Abundant taste buds on barbels, throat, and lower fins help it locate prey.
- Feeds primarily on aquatic and terrestrial invertebrates.
- Likely important prey for riverine sport fish such as catfish and sauger and for species of concern such as Pallid Sturgeon.
- May exceed 10 in.



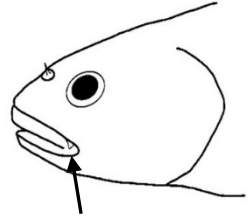


## Creek Chub

*Semotilus atromaculatus*



Quick key characteristics: The Creek Chub is found in cool-water habitats, primarily in smaller streams. It has small scales and soft fins with short bases. Its large mouth is forward-facing, not overhung by its snout. Its body is tubular and it has an inconspicuous barbel on the upper jaw, a short distance forward from the corner of the mouth.



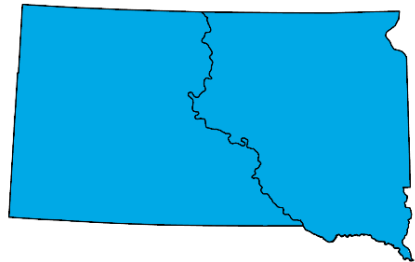
Similar species in South Dakota: other minnows, especially Lake Chub and Hornyhead Chub

Identification: The combination of (1) dark spot on the front dorsal fin base, (2) a small, “flap-like” barbel in the fold between the upper lip and jaw, refer to diagram at the top of the page, and (3) upper jaw extends beyond the front of the eye distinguishes the Creek Chub from similar South Dakota fishes.

Range: The Creek Chub is native to eastern North America. It is widely distributed throughout South Dakota, especially in small, clear-water streams.

Items of interest:

- Feeds primarily on insects, crustaceans, and small fish.
- Breeding males develop tubercles on the head, pectoral fins, caudal peduncle, and caudal (tail) fin, giving them the informal name “horned dace”.
- Breeding males may build and defend a nest in gravel.
- May be captured by angling.
- Preyed upon by sport fish and suitable for use as live bait.
- May reach 12 in.



## SUCKER (family Catostomidae)

### River Carpsucker

*Carpiodes carpio*



Quick key characteristics: The River Carpsucker is found in cool- and warm-water habitats. It has large, silver, or brassy scales and soft fins with an elongated dorsal fin. It has a relatively small, downward-facing mouth and blunt, over-hanging snout, and its body is taller than wide.

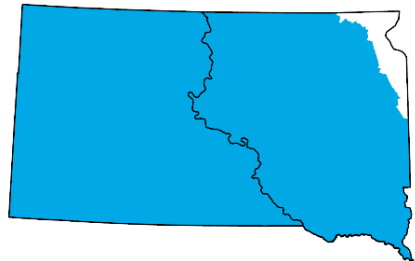
Similar species in South Dakota: Quillback and Highfin Carpsucker, buffalos, carps

Identification: The combination of (1) a “nipple-like” projection in the middle of the lower lip, refer to diagram at the top of the page, (2) upper jaw extending backward past the front of the eye, (3) lack of an elongated, front dorsal ray filament, (4) lack of mouth barbels, and (5) lack of stout, serrated fin spines distinguish adult River Carpsucker from other adult South Dakota fishes. However, small juveniles are very difficult to distinguish from juvenile Quillback and Highfin Carpsucker because the lip projection (in River Carpsucker) and elongated dorsal ray filaments (in other carpsuckers) are not well developed.

Range: The River Carpsucker is native to the Mississippi River basin and adjacent Gulf of Mexico river basins between the Appalachian Plateau and Rocky Mountains. It is widespread in South Dakota, especially in larger streams and impoundments where it tolerates relatively turbid water.

Items of interest:

- Often forms large schools in river pools.
- May migrate in schools between spawning areas in spring and wintering areas in fall.
- Feeds on algae and small invertebrates.
- May exceed 25 in. and 10 lbs.



## White Sucker

*Catostomus commersonii*



Quick key characteristics: The White Sucker is found in cool- and warm- water habitats. It has intermediate-sized, silver scales that are smaller toward the head than tail and soft fins with short bases. It has a relatively small, circular (when opened and protruded) downward-facing mouth, rounded snout that over-hangs the mouth only slightly, and its body is tubular in shape.

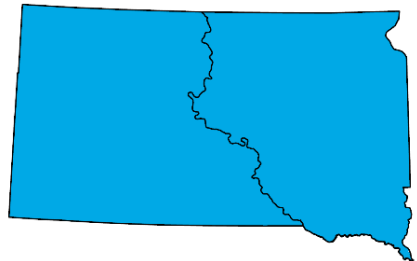
Similar species in South Dakota: redborses and Longnose Sucker

Identification: The combination of (1) a blunt, rounded snout, (2) scales of changing size from head to tail (scales intermediate in size compared to other tubular-shaped suckers, i.e., smaller than scales in redborses but larger than scales in Longnose Sucker and Mountain Sucker), and (3) relatively narrow lower lips whose back edges join to form an obtuse angle distinguishes the White Sucker from similar fishes in South Dakota.

Range: The White Sucker is native to northeastern North America east of the Rocky Mountains. It is widespread and abundant in South Dakota.

Items of interest:

- Important prey for sport fish, widely used as live bait for Northern Pike.
- Informally known as “chub minnow”.
- Feeds on algae, small crustaceans, and insects.
- Breeding males have prominent tubercles on lower fins.
- Schools migrate upstream to spawn in riffles.
- Rarely exceed 2 lbs.



## Blue Sucker

*Cyprinus elongatus*



Quick key characteristics: The Blue Sucker is found in cool- and warm- water habitats. It has a blueish-gray body with a sickle-shaped and elongate dorsal fin. It has a relatively small head, and its body is long with a shape that is intermediate between tubular and laterally compressed (taller than wide) body.

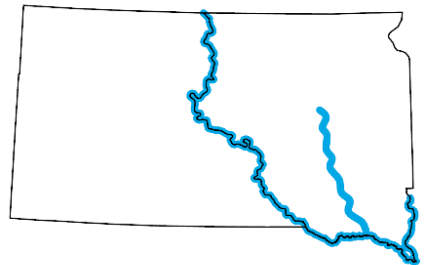
Similar species in South Dakota: redhorses, buffalos, and White Sucker

Identification: Blue Sucker in comparison with other suckers have a narrow head and an elongate dorsal fin base. Carpsuckers and buffaloes are deeper bodied with taller heads, larger scales, and shorter caudal peduncles.

Range: The Blue Sucker is native throughout the Mississippi and Missouri rivers. It is found throughout the Missouri river and its reservoirs in South Dakota, as well as the lower portions of the Big Sioux and James rivers.

Items of interest:

- Highly mobile species capable of migrating large distances.
- Negatively impacted by the damming of large rivers.
- Feeds on algae, insects, and aquatic invertebrates.
- Breeding adults have small tubercles on the head, body, and fins.
- Long lived (>50 years) and can exceed 40 inches.



## Bigmouth Buffalo

*Ictiobus cyprinellus*



Quick key characteristics: The Bigmouth Buffalo is found in cool- and warm-water habitats. It has large, bronze scales and soft fins with an elongated dorsal fin. It has a large, forward-facing mouth and blunt snout not overhanging mouth. Its body is taller than wide.

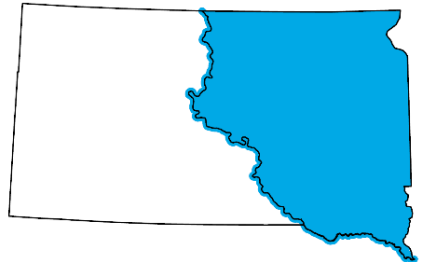
Similar species in South Dakota: other buffalos, carpsuckers, carps

Identification: The combination of (1) a large, forward-facing mouth with the tip of upper lip nearly level with the lower edge of the eye, (2) lack of barbels, and (3) lack of heavy, serrated fin spines distinguishes the Bigmouth Buffalo from similar fishes in South Dakota.

Range: The Bigmouth Buffalo is native to the Mississippi River basin and adjacent Gulf of Mexico river basin. In South Dakota, it occupies larger tributaries, impoundments, and free-flowing reaches of the Missouri River in eastern South Dakota and some glacial lakes.

Items of interest:

- Commercially harvested for market.
- Commonly found in schools at varying depths.
- Adults are filter feeders that strain zooplankton from open-water habitats.
- May reach 40 in. and 80 lbs.



## Smallmouth Buffalo

*Ictiobus bubalus*



Quick key characteristics: The Smallmouth Buffalo is found in cool- and warm-water habitats. It has large bronze or slate-olive scales and soft fins with an elongated dorsal fin. It has a relatively small, downward-facing mouth and blunt, over-hanging snout. Its body is taller than wide and highly arched giving it a “humped” profile.

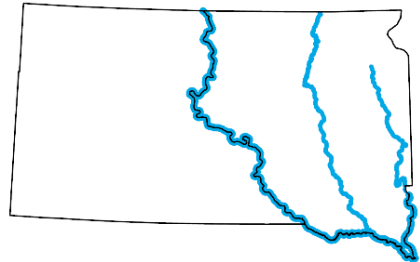
Similar species in South Dakota: other buffalos, carpsuckers, carps

Identification: The combination of (1) a small, downward-facing mouth with the tip of upper lip far below the lower margin of the eye, (2) lack of barbels, and (3) lack of heavy, serrated fin spines distinguishes the Smallmouth Buffalo from similar fishes in South Dakota.

Range: The Smallmouth Buffalo is native to most river basins that drain into the Gulf of Mexico, including the entire Mississippi River basin. In South Dakota, it is most common in the Missouri River, including impoundments, and in the James and Big Sioux rivers.

Items of interest:

- Commercially harvested for market.
- Commonly found in schools near the bottom of rivers, lakes, and impoundments.
- Feeds on bottom-dwelling invertebrates and detritus.
- May reach 38 in. and 40 lbs.



## Shorthead Redhorse

*Moxostoma macrolepidotum*



Quick key characteristics: The Shorthead Redhorse is found in cool- and warm-water habitats. It has large, silver scales and soft fins with short bases. The tail (caudal) fin is often pink or red in color. It has a relatively small, circular (when opened and protruded) downward-facing mouth, rounded snout that does not overhang the mouth. Its body is fusiform and somewhat laterally compressed (taller than wide), but more similar in shape to tube-shaped suckers than carpsuckers and buffalos.

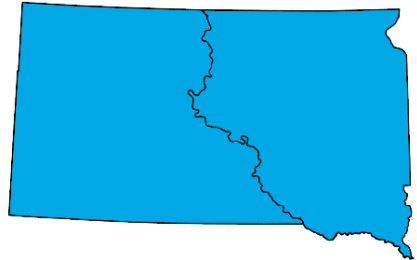
Similar species in South Dakota: other redhorses, suckers

Identification: The combination of (1) a red caudal fin, (2) large scales of similar size throughout body, and (3) relatively wide lower lips with rear margins that are nearly straight across differentiates the Shorthead Redhorse from similar fishes in South Dakota, refer to diagram at the top of the page.

Range: The Shorthead Redhorse is native to north-central North America. In South Dakota it is widespread, being most abundant in larger streams and rivers with gravel or rock bottoms.

Items of interest:

- Feeds on insects and crustaceans.
- Migrates upstream to gravelly riffles in the spring to spawn.
- Breeding males have tubercles most prominent on anal and tail (caudal) fins.
- May exceed 24 in. and reach 10 lbs.



## CATFISH (family Ictaluridae)

### Black Bullhead

*Ameiurus melas*



Quick key characteristics: The Black Bullhead is found in cool- and warm- water habitats. It is scaleless with an elongated anal fin, an adipose fin, and sharp spines on front edges of the dorsal and pectoral fins. It has a wide, frontward-facing mouth, with a rounded, snout. Its body shape is relatively tubular. It has prominent snout, mouth, and chin barbels.

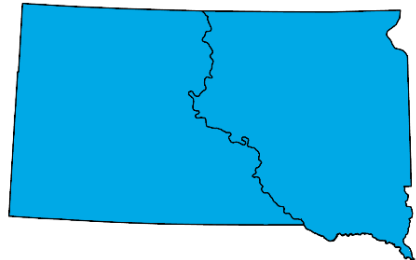
Similar species in South Dakota: other catfish, especially bullheads

Identification: The combination of (1) a rounded (not forked) tail (caudal) fin, (2) dark-colored (dark gray or black) chin barbels, (3) pectoral fin spines smooth on front (leading) edge but weakly serrated on back edge (the Brown and Yellow Bullhead have more prominent serrations), and (4) a relatively short anal fin with black coloration on membranes between fin rays distinguishes the Black Bullhead from similar fishes in South Dakota.

Range: The Black Bullhead is native to the southern portion of central North America (between the Rocky Mountains and Appalachian Plateau) extending north a short distance into Canada. It is widespread and abundant in South Dakota, particularly in standing-water habitats.

Items of interest:

- Feeds primarily on insects, crustaceans, and fish, also on plants.
- May reach high population densities that stunt growth.
- Breeding individuals guard their eggs and young.
- Different size-groups may form large schools.
- May exceed 16 in. and 2 lbs.





## Yellow Bullhead

*Ameiurus natalis*



Quick key characteristics: The Yellow Bullhead is found primarily in warm- water habitats. It is scaleless with an elongated anal fin, an adipose fin, and sharp, venomous spines on front edges of the dorsal and pectoral fins. It has a wide, frontward-facing mouth, with a rounded snout. Its body shape is relatively tubular and it has prominent snout, mouth, and chin barbels.

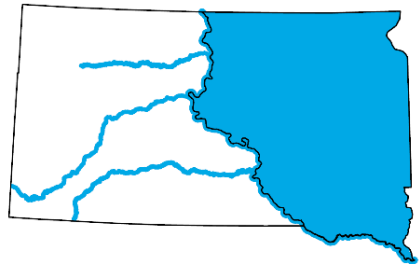
Similar species in South Dakota: other catfish, especially bullheads

Identification: The combination of (1) a rounded (not forked) tail (caudal) fin, (2) light-colored (white, cream, yellow) chin barbels, (3) pectoral fin spines with serrations on front (leading) and back edges, and (4) a relatively long anal fin lacking black coloration on membranes between fin rays distinguishes the Yellow Bullhead from similar fishes in South Dakota.

Range: The Yellow Bullhead is native to southeastern North America, extending into the Midwest and Great Plains. It is widespread in eastern South Dakota, but rare west of the Missouri River.

Items of interest:

- Feeds primarily on insects, crustaceans, and fish (live or dead), also on plants.
- Breeding individuals guard their eggs and young.
- Different size-groups may form large schools.
- May exceed 18 in. and 2 lbs.



## Channel Catfish

*Ictalurus punctatus*



Quick key characteristics: The Channel Catfish primarily is found in warm- water habitats. It is scaleless with an elongated anal fin, an adipose fin, and sharp spines on front edges of the dorsal and pectoral fins. It has a wide, forward-facing mouth, with a rounded, snout and over-hanging upper jaw. Its body shape is relatively tubular and it has prominent snout, mouth, and chin barbels.

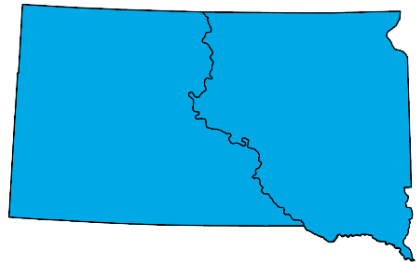
Similar species in South Dakota: other catfish

Identification: The combination of (1) a deeply forked tail (caudal) fin, (2) rounded anal fin, (3) presence of dark spots and a black caudal-fin margin (especially in young individuals), and (4) prominent serrations on the back edge of pectoral fin spines distinguishes the Channel Catfish from similar fishes in South Dakota.

Range: The Channel Catfish is native to river basins flowing into the Gulf of Mexico, including the Mississippi River, and portions of the Great Lakes basin. It is widespread in larger streams, lakes, and rivers of South Dakota, and is the predominant sport fish in turbid rivers where larger individuals occupy pools, especially those associated with logs and brush.

Items of interest:

- Feeds on insects, crustaceans, fish (live or dead), and detritus.
- May undertake migrations in spring to spawn in small streams.
- Breeding males may take on a darker, blue-black coloration, causing confusion with blue catfish.
- Breeding males guard their eggs and young.
- May exceed 47 in. and 55 lbs.



## Flathead Catfish

*Pylodictis olivaris*



Quick key characteristics: The Flathead Catfish is found primarily in warm- water habitats. It is scaleless with short fin bases, an adipose fin, and sharp spines on front edges of the dorsal and pectoral fins. It has a wide, frontward- facing mouth, with a relatively pointed, snout and protruding lower jaw. Its body shape is elongate, moderately ventrally flattened (body shallower than wide and it has prominent snout, mouth, and chin barbels).

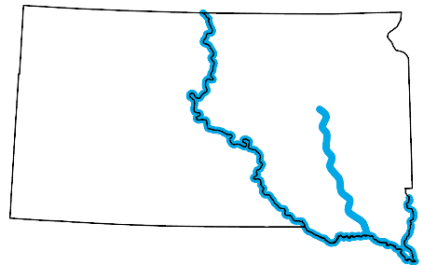
Similar species in South Dakota: other catfish

Identification: The combination of (1) a rounded (not forked) tail (caudal) fin, (2) short anal fin, (3) presence of a light-colored patch on the upper caudal fin, (4) dorsal and pectoral fin spines less than two-thirds maximum fin height, (5) a protruding lower jaw (except in very small individuals), and (6) a broad, flattened, “shovel-like” head distinguishes the Flathead Catfish from similar fishes in South Dakota.

Range: The Flathead Catfish is native to river basins that flow into the Gulf of Mexico, including the Mississippi River drainage. In South Dakota, it is largely restricted to the Missouri River and its larger tributaries in the southeast.

Items of interest:

- Harvested commercially and popular for sport in the southeastern USA.
- Feeds primarily on fish, but may also eat insects and crustaceans.
- Breeding males guard their eggs and young.
- Informally named “shovelhead cat,” “mud cat,” and “yellow cat”.
- May reach 60 in. and exceed 120 lbs.



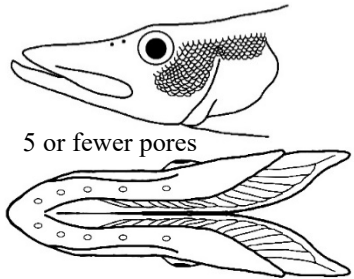
# PIKE (family Esocidae)

## Northern Pike

*Esox lucius*



Quick key characteristics: The Northern Pike is found in cold, cool and warm- water habitats. It has soft fins with short bases and dorsal and anal fins are set far back on the body. It has a forward-facing mouth with a characteristic “duckbill” shape and a pointed snout. The lower jaw protrudes beyond the upper with the jaws and other mouth bones bearing large teeth. Its body shape is tubular and it has small scales present on the head as well as on the body.



5 or fewer pores

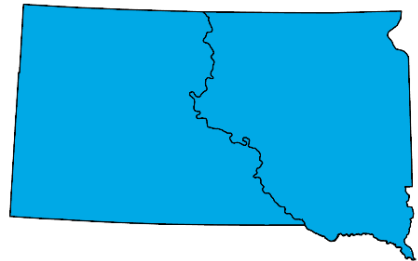
Similar species in South Dakota: Muskellunge, Tiger Muskellunge, Grass Pickerel

Identification: The combination of (1) light spots or wavy vertical bars on a dark background, (2) five or fewer sensory pores on lower jaw, (3) cheeks fully scaled, but lower operculum unscaled, and (4) 14 to 16 branchiostegal rays differentiates the Northern Pike from its relatives in South Dakota.

Range: The Northern Pike is native throughout the Northern Hemisphere. It is widespread in South Dakota, occupying lakes, rivers, streams, impoundments, and ponds.

Items of interest:

- Feeds on fish, insects, crustaceans, birds, and mammals.
- It is an ambush predator, often hiding in vegetation or submerged trees.
- Spawning occurs in early spring in flooded or submerged vegetation.
- Artificially hybridized with Muskellunge to create Tiger Muskellunge.
- May exceed 48 in. and 40 lbs.

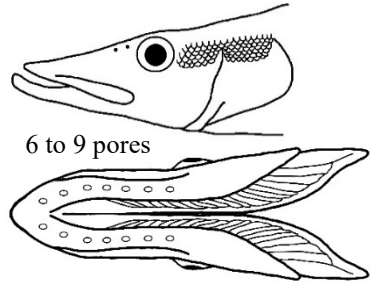


# Muskellunge

*Esox masquinongy*



Quick key characteristics: The Muskellunge is found in cool-water habitats. It has soft fins with short bases and dorsal and anal fins are set far back on the body. It has a forward-facing mouth with a characteristic “duckbill” shape and a pointed snout. The lower jaw protrudes beyond the upper with jaws and other mouth bones bearing large teeth. Its body shape is tubular and it has small scales that are present on the head and body.



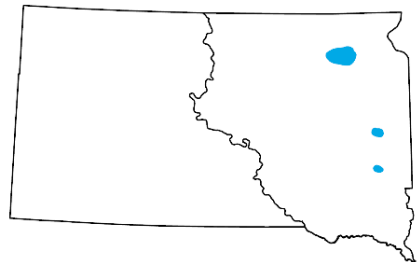
Similar species in South Dakota: Tiger Muskellunge, Northern Pike, Grass Pickerel

Identification: The combination of (1) dark vertical solid or broken bars on light background, (2) six or more sensory pores on lower jaw, (3) lower half of cheek and lower operculum unscaled, and (4) 17 to 19 branchiostegal rays differentiates the Muskellunge from its relatives in South Dakota.

Range: The Muskellunge is native to the Great Lakes, Red River of the North, Hudson River, and Mississippi River. It has been stocked into Lynn, Middle Lynn, and Amsden Lakes (Day Co.), West 81 Lake, East 81 Lake, Sinai, and Little Brush Lake (Brookings and Kingsbury Co.), and North Island Lake (McCook and Minnehaha Co.) in South Dakota.

Items of interest:

- Artificially hybridized with Northern Pike to create Tiger Muskellunge.
- It is an ambush predator, often hiding in vegetation or submerged trees.
- Spawning occurs in early spring in submerged vegetation.
- Known by anglers as the “fish of 10,000 casts”.
- May reach 60 in. and exceed 70 lbs.



## SMELT (family Osmeridae)

### Rainbow Smelt

*Osmerus mordax*



Quick key characteristics: The Rainbow Smelt is found in cold-water habitats. It has relatively large scales, soft fins with a somewhat elongate anal fin, and an adipose fin. It has a forward-facing mouth, a pointed, blunt snout, and although its body is taller than wide, it is relatively slender.

Similar species in South Dakota: Lake Whitefish, Cisco (Lake Herring), trout and salmon

Identification: The combination of (1) silvery coloration (sometimes with dark lateral stripe), (2) large teeth on jaw, tongue, and roof of the mouth, (3) protruding lower jaw, and (4) large mouth with upper jaw bone (maxillary) extending backward at least to a point below the pupil separates this species from others in South Dakota.

Range: The Rainbow Smelt is native to the Arctic, northern Atlantic and northern Pacific oceans, and also inhabits streams flowing into them. It was introduced into Lake Sakakawea, North Dakota, on the Missouri River as prey for cold-water sport fishes. It has since spread downstream into Lake Oahe, South Dakota. During high water events, Rainbow Smelt will wash through the dams further down the Missouri River but these fish do not persist. Rainbow Smelt have been stocked and have a self-sustaining population in Pactola Reservoir.

#### Items of interest:

- Prey for many species including Northern Pike, Chinook Salmon, Lake Trout, and Walleye.
- Feeds on crustaceans, insects, and small fishes.
- May form large schools and undertake spawning migrations.
- May reach 14 in.



## TROUT (family Salmonidae)

### Cutthroat Trout

*Oncorhynchus clarkii*



Quick key characteristics: The Cutthroat Trout is found in cold-water habitats. It has small scales, soft fins with short bases, including an adipose fin. It has a forward-facing mouth, and its body is taller than wide.

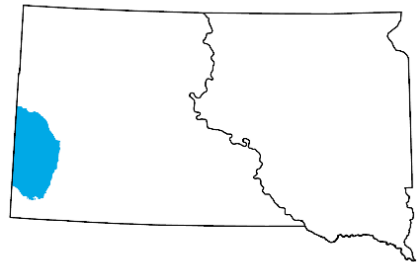
Similar species in South Dakota: other trout and salmon

Identification: The combination of (1) red-orange slash marks on each underside of the lower jaw (2) many, small, dark spots toward the posterior (tail) end of the body distinguishes Cutthroat Trout from other trout and salmon in South Dakota.

Range: The Cutthroat Trout is native to the Pacific coast and is native to the headwaters of the Missouri, Platte, Colorado, and Rio Grande rivers. In South Dakota, it has been stocked in the western part of the state, and streams and impoundments of the Black Hills. Cutthroat Trout are also used in put-and- take fisheries throughout South Dakota that do not persist.

Items of interest:

- Spawns in spring, but natural reproduction is limited in South Dakota, so most populations are maintained by stocking.
- Feeds primarily on insects and snails, but larger individuals may eat fish.
- Rainbow Trout can hybridize with Cutthroat Trout to produce “cutbows”.
- Can reach 20 in.



## Rainbow Trout

*Oncorhynchus mykiss*



Quick key characteristics: The Rainbow Trout is found in cold-water habitats. It has small scales, soft fins with short bases, including an adipose fin. It has a forward-facing mouth, a relatively blunt snout (compared to other trout), and its body is taller than wide.

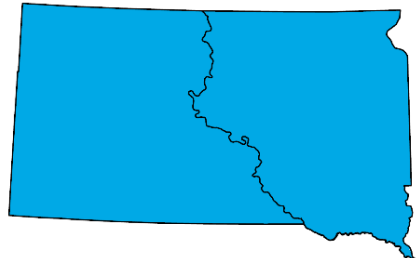
Similar species in South Dakota: other trout and salmon

Identification: The combination of (1) small, abundant dark spots distributed relatively evenly over a lighter background across the head, body, and fins, (2) tail (caudal) fin rounded (not pointed), (3) white margins on paired (pectoral, pelvic) fins, (4) white “gums” at the base of jaw teeth, (5) a relatively short anal fin, and (6) a pink or red lateral stripe distinguishes Rainbow Trout from other trout and salmon in South Dakota.

Range: The Rainbow Trout is native in Asian and North American rivers that empty into the northern Pacific Ocean and in some “closed” basins of western North America. It has been introduced into cold-water habitats worldwide. In South Dakota, it has been stocked in impoundments and tailwaters of the Missouri River, ponds in the western part of the state, and streams and impoundments of the Black Hills. Rainbow Trout are also used in put-and-take fisheries in urban areas throughout South Dakota.

Items of interest:

- Spawns in spring, but natural reproduction is limited in South Dakota, so most populations are maintained by stocking.
- Feeds primarily on insects and crustaceans, but larger individuals may eat fish.
- Can reach 24 in. in streams, but larger in rivers, lakes, or impoundments.





## Chinook Salmon

*Oncorhynchus tshawytscha*



Quick key characteristics: The Chinook Salmon is found in cold-water habitats. It has small scales, soft fins with a somewhat elongated anal fin, and an adipose fin. It has a forward-facing mouth, a relatively pointed snout, and its body is taller than wide. Breeding adults may be reddish brown or maroon.

Similar species in South Dakota: all trout

Identification: The combination of (1) a light-colored body with dark spots restricted mostly to the back and top of head, dorsal and caudal fins, (2) a pointed tail (caudal) fin, (3) a relatively long anal fin, and (4) black gums at the base of jaw teeth distinguishes Chinook Salmon from trout in South Dakota.

Range: The Chinook Salmon is native to the northern Pacific Ocean and normally spawns in freshwater habitat but spends 2-5 years at sea. The species was introduced to Lake Oahe where it is restricted to deep water in summer but ranges more widely in winter. During high water events, Chinook Salmon will wash through the dams further down the Missouri River, and have even been angled in Firesteel Creek, a James River tributary.

Items of interest:

- The Lake Oahe population is maintained by stocking.
- Feeds on insects, crustaceans, and fishes including Rainbow Smelt.
- Spawns in the fall in South Dakota.
- Largest individuals in Lake Oahe are over 30 lbs., but may reach 40 in. and exceed 100 lbs.



## Brown Trout

*Salmo trutta*



Quick key characteristics: The Brown Trout is found in cold-water habitats but can be found in warmer water than other trout species, sometimes tolerating temperatures exceeding 70°F. It has small scales, soft fins with short bases, including an adipose fin. It has a large, forward-facing mouth, a pointed snout, and its body is taller than wide.

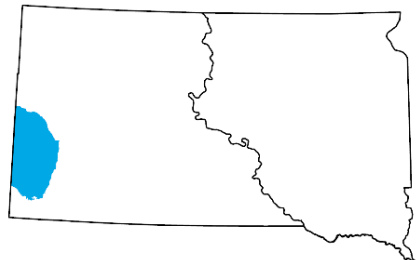
Similar species in South Dakota: other trout and salmon

Identification: Presence of black or maroon spots with lighter-colored halos and very few spots on the tail (caudal) fin distinguish Brown Trout from Rainbow Trout, Cutthroat Trout and salmon. Brown Trout have dark spots on a light background, whereas Brook Trout, Lake Trout, and Splake have light spots or vermiculations (worm-shaped markings) on a dark background.

Range: The Brown Trout is native to Europe, the Middle-East, and northern Africa. Populations have been established via introductions into cold-water habitats worldwide. South Dakota populations are primarily found in the Black Hills and are largely sustained by wild reproduction.

Items of interest:

- Feeds on insects, crustaceans, and fishes, consuming more fish on average than other trout.
- Spawns during fall.
- Artificially hybridized with Brook Trout to create Tiger Trout (stocked in Center Lake, Custer County).
- Can exceed 30 in.



## Brook Trout

*Salvelinus fontinalis*



Quick key characteristics: The Brook Trout is found in cold-water habitats. It has small scales, soft fins with short bases, including an adipose fin. It has a large, forward-facing mouth, a pointed snout, and its body is taller than wide.

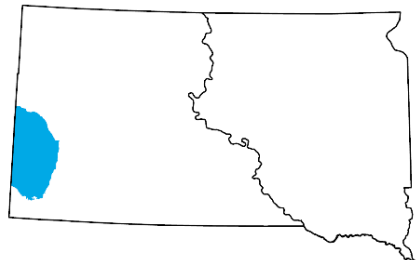
Similar species in South Dakota: other trout and salmon

Identification: The combination of (1) a dark greenish body with light markings including abundant spots (some spots may be red circled by blue) on the sides and “worm-shaped” vermiculations on the back, (2) paired fins (pectoral, pelvic) and anal fin with white edges, and (3) tail (caudal) fin more rounded than pointed distinguishes the Brook Trout from other trout and salmon of South Dakota. Spawning males may have maroon bellies, pelvic fins, and anal fin.

Range: The Brook Trout is native to northeastern North America including the Great Lakes and upper Mississippi River in Minnesota, Wisconsin, and Iowa. In South Dakota, it primarily inhabits small, headwater streams of the Black Hills, in part because it prefers colder water than other trout species found in the state.

Items of interest:

- The “panfish” of the trout family, it can reproduce at 4 in., high densities can stunt growth.
- Natural reproduction maintains populations in Black Hills streams.
- Feeds primarily on insects/crustaceans.
- Artificially hybridized with Lake Trout to create Splake (stocked in Deerfield Reservoir, Pennington Co.).
- Artificially hybridized with Brown Trout to create Tiger Trout (stocked in Center Lake, Custer Co.).
- Capable of exceeding 20 in.



## Lake Trout

*Salvelinus namaycush*



Quick key characteristics: The Lake Trout is found in cold-water habitats and often prefers deep water. It has small scales, soft fins with short bases, including an adipose fin. It has a large, forward-facing mouth, a pointed snout, and its body is taller than wide.

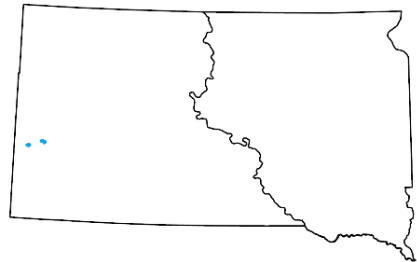
Similar species in South Dakota: other trout and salmon

Identification: The combination of (1) a dark gray-green body with abundant pale spots evenly distributed, (2) a relatively long, pointed tail (caudal) fin, lower fins sometimes with red or orange coloration and white edges, and relatively large jaw with teeth distinguishes the Lake Trout from other trout and salmon in South Dakota.

Range: The Lake Trout is native to most of northern North America north of the USA-Canada border and the Great Lakes. It has been introduced into Deerfield Reservoir, Pactola Reservoir, and Pactola Stilling Pond (Pennington County).

Items of interest:

- Spawns during fall.
- Feeds primarily on other fish and in some circumstances predation by Lake Trout affects other fish populations.
- Slow growing, but can reach 40 in. and 25 lbs., rarely exceeding 15 lbs. in South Dakota.



## COD (family Gadidae)

### Burbot

*Lota lota*



Quick key characteristics: The Burbot is found in cold- and cool-water habitats. It has soft fins (all separate), with two dorsal fins (one short, the other elongated), and elongated anal and tail (caudal) fins. Pelvic fins have an elongated second ray that forms a thin filament. It has a wide, forward-facing mouth, and its body shape is elongated and tubular. It appears scaleless, but has small scales embedded in its skin.

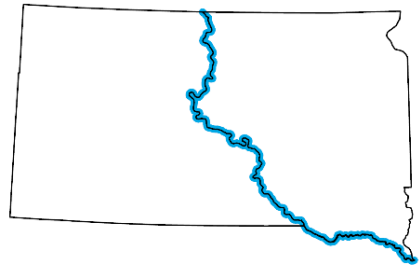
Similar species in South Dakota: American Eel, Silver Lamprey

Identification: The Burbot has a less elongate body than the American Eel and has a prominent chin barbel and pelvic fins. Presence of jaws and pectoral fins distinguish it from the Silver Lamprey.

Range: The Burbot is native throughout northern portions of the Northern Hemisphere. In South Dakota it is restricted to the Missouri River and its reservoirs.

Items of interest:

- Feeds primarily on insects, crustaceans, and fishes.
- Spawns in midwinter under ice cover.
- The only freshwater cod, popular as food (flesh is white and flaky).
- May exceed 30 in. and reach 24 lbs.



## STICKLEBACK (family Gasterosteidae)

### Brook Stickleback

*Culaea inconstans*



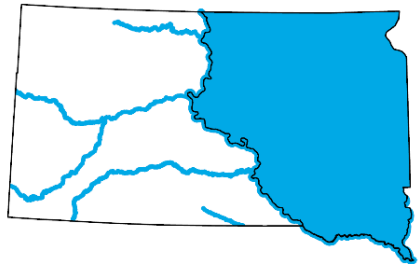
Quick key characteristics: The Brook Stickleback is found in cool-water habitats. It has soft, elongated dorsal and anal fins and stout spines associated with pelvic and anal fins and 4 to 6 dorsal spines. It has a small mouth that is upward-facing, with the lower jaw projecting in front of the upper. Its body is taller than wide, olive-colored, and scaleless, but armored with 30 to 36 small, bony plates along the lateral line.

Similar species in South Dakota: none

Range: The Brook Stickleback is native to north-central and northeastern North America. It is present throughout South Dakota, especially in vegetated, spring-fed waters, but is more widespread and abundant in the east.

Items of interest:

- Feeds primarily on small insects and crustaceans.
- Breeding males may be black with copper color on the fins, chin, throat, and belly.
- Males construct nests of plant material, which they defend from other males.
- Males provide considerable care for eggs and young larvae, including fanning with their fins and repositioning with their mouths.
- Rarely exceeds 3.5 in.



## TEMPERATE BASS (family Moronidae)

### White Bass

*Morone chrysops*



Quick key characteristics: The White Bass is found in cool- to warm-water habitats. Its scales are moderate in size and readily visible. It has two, separated and elongated dorsal fins, one (in front) with sharp spines instead of rays. It has one spine in the rear dorsal fin, one in each pelvic fin, and three in the anal fin. It also has a spine and serrations on the operculum. It has a large, forward-facing mouth, with a pointed snout and lower jaw projecting past the upper. Its body is taller than wide.

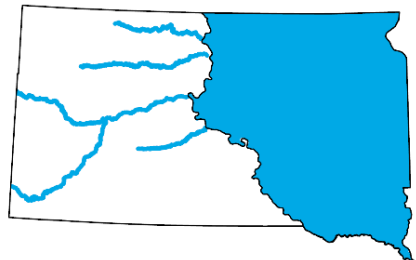
Similar species in South Dakota: other temperate bass, especially Striped Bass and Yellow Bass and Wiper (a purposeful hybrid between White Bass and Striped Bass)

Identification: The combination of (1) light olive to white coloration with 6 to 7 dark, horizontal stripes, (2) separated dorsal fins, (3) three anal fin spines, a relatively long anal fin with three spines of roughly equal “thickness”, humped profile between the snout and first dorsal fin, and (6) single tooth patch at base of tongue distinguishes the White Bass from similar fishes in South Dakota.

Range: The White Bass is native to river basins that drain into the Gulf of Mexico, including the Mississippi River basin. In South Dakota, it is present in the Missouri River, larger tributaries, and some glacial lakes.

Items of interest:

- Feeds primarily on fishes, insects, and crustaceans.
- Makes spring spawning runs to shallow shores of lakes, stream mouths, and sometimes farther upstream.
- Flesh is firm and white.
- May exceed 17 in. and 5 lbs.



## SUNFISH (family Centrarchidae)

### Rock Bass

*Ambloplites rupestris*



Quick key characteristics: The Rock Bass is found in cool- and warm- water habitats. Its scales are moderate in size and readily visible. It has two elongated dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has 5 to 7 spines in the elongated anal fin and one in each pelvic fin. It has a large, frontward-facing mouth, which extends backward to beyond the front margin of the eye, and a pointed snout with the lower jaw projecting past the upper. Its body is taller than wide.

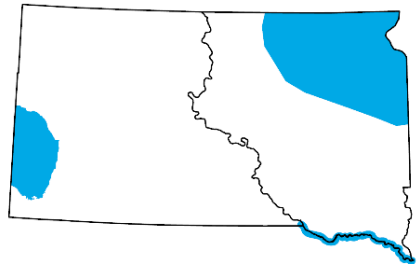
Similar species in South Dakota: sunfish

Identification: The combination of (1) a large, red eye, (2) five or more anal- fin spines, and (3) a bronze and dusky calico coloration distinguishes the Rock Bass from similar fishes in South Dakota.

Range: The Rock Bass is native to east-central North America. Native populations are present in northeastern South Dakota, lower Missouri River and introduced populations inhabit small impoundments in the Black Hills.

Items of interest:

- Feeds on insects, crustaceans, and small fishes.
- Males construct and defend nests and guard eggs and hatchlings.
- Capable of camouflage by changing color patterns to match surroundings.
- Easily captured by angling any time of day.
- May exceed 14 in. and reach 3 lbs.





## Green Sunfish

*Lepomis cyanellus*



Quick key characteristics: The Green Sunfish is found in cool- to warm- water habitats. Its scales are moderate in size and readily visible. It has two elongated dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has three spines in the anal fin and one in each pelvic fin. It has a large mouth facing slightly upward, which extends backward to the pupil of the eye. Its snout is pointed and its body is taller than wide.

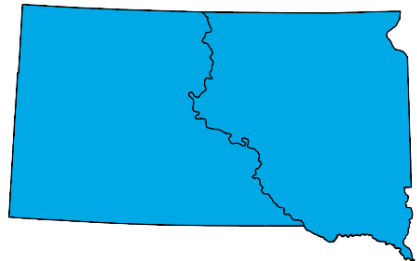
Similar species in South Dakota: other sunfish, Rock Bass

Identification: The combination of (1) a large mouth, (2) inflexible opercle flap (ear) lacking red coloration, (3) rounded pectoral fins, (4) black spot at rear base of second dorsal fin, and (5) olive-green coloration distinguishes the Green Sunfish from similar fishes in South Dakota.

Range: The Green Sunfish is native to central North America from the Great Lakes to the Gulf of Mexico. It is widespread and abundant throughout South Dakota, preferring wetlands, ponds, and small streams, but may be nonnative in western and northeastern river basins. It is relatively tolerant of degraded, turbid, and stagnant habitats.

Items of interest:

- Feeds on insects, crustaceans, and small fishes.
- May reach high population densities that stunt growth.
- Breeding males often have orange and white margins on fins.
- Males construct and defend nests and guard eggs and hatchlings.
- Often hybridize with other sunfish species.
- May exceed 10 in. - rarely exceed 1 lb.



## Pumpkinseed

*Lepomis gibbosus*



Quick key characteristics: The Pumpkinseed primarily is found in cool- and warm-water habitats. Its scales are moderate in size and readily visible. It has two elongated dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has three spines in the anal fin and one in each pelvic fin. It has a small, forward-facing mouth, which rarely extends backward to the front margin of the eye. Its snout is pointed and its body is much taller than wide.

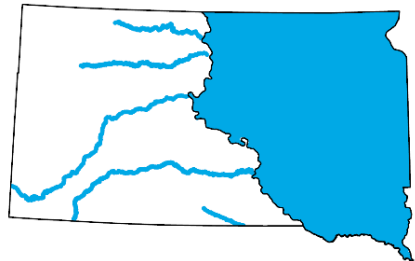
Similar species in South Dakota: other sunfish, Rock Bass

Identification: The combination of (1) a small mouth, (2) opercle flap (ear) with flexible tip and red spot, (3) long, pointed pectoral fins, and (4) a heavily spotted second (rear) dorsal fin distinguishes the Pumpkinseed from similar fishes in South Dakota.

Range: The Pumpkinseed is native to east-central North America. In South Dakota, it is native to waters of the Minnesota and Big Sioux rivers but has been introduced elsewhere. It is most common in shallow waters with abundant submerged vegetation.

Items of interest:

- Feeds on insects, crustaceans, snails, and small fishes.
- May reach high population densities that stunt growth.
- Breeding males may have a bright orange breast and pelvic fins.
- Males construct and defend nests and guard eggs and hatchlings.
- Often hybridizes with other species of sunfish.
- Rarely reach 9 in. or 1 lb.



## Bluegill

*Lepomis macrochirus*



Quick key characteristics: The bluegill is found in cool- to warm-water habitats. Its scales are moderate in size and readily visible. It has two elongated dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has three spines in the anal fin and one in each pelvic fin. It has a small, forward-facing mouth, which rarely extends backward as far as the front margin of the eye. Its snout is pointed, and its body is much taller than wide.

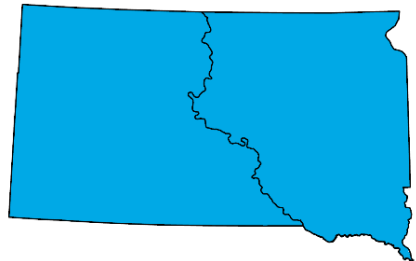
Similar species in South Dakota: other sunfish, Rock Bass

Identification: The combination of (1) a small mouth, (2) very flexible, black opercle flap (ear), (3) long, pointed pectoral fins, (4) black spot near rear base of second dorsal fin, and (5) vertical bars on body distinguishes the Bluegill from similar fishes in South Dakota.

Range: The Bluegill is native to southeastern North America, north to the Great Lakes and west to the Great Plains. In South Dakota, it is native to waters of the Minnesota and Big Sioux rivers but has been introduced across the state. It is often abundant in ponds, lakes, and impoundments.

Items of interest:

- Feeds on plankton, insects, crustaceans, and small fishes.
- May reach high population densities that stunt growth.
- Breeding males may have an orange or rust-colored breasts and bluish sheen elsewhere.
- Males construct and defend nests and guard eggs and hatchlings.
- Often hybridizes with other species of sunfish.
- May reach 11 in. and exceed 2 lbs.



## Smallmouth Bass

*Micropterus dolomieu*



Quick key characteristics: The Smallmouth Bass is found in cool- and warm- water habitats. Its scales are moderate in size. It has two dorsal fins (not well separated), one (in front) with sharp spines instead of rays. It has one spine in each pelvic fin, and three in the anal fin. It has a large, forward-facing mouth that rarely extends beyond the rear margin of the eye, and a pointed snout with the lower jaw projecting past the upper. Its body is taller than wide.

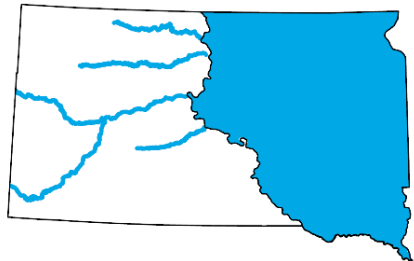
Similar species in South Dakota: Largemouth Bass

Identification: The combination of (1) a mouth not reaching beyond the rear margin of the eye, (2) 9 to 16 vertical bars along the side, (3) poorly separated dorsal fins, (4) smaller cheek scales, and (5) sleek dorsal profile between the snout and first dorsal fin distinguishes the Smallmouth Bass from the Largemouth Bass.

Range: The Smallmouth Bass is native to the southern Great Lakes and northeastern Mississippi River basin. In South Dakota, it is native to waters of the Minnesota River, but has been widely introduced elsewhere. It prefers rocky, clear-water habitats of lakes, impoundments, and small to medium-sized streams.

Items of interest:

- Feeds primarily on fish, crustaceans, and insects.
- Males construct nests and guard the eggs and hatchlings.
- Young-of-year have three distinct vertical bands on the tail (caudal) fin.
- Popular sport fish that preys on smaller fishes, insects, and crayfishes.
- May exceed 23 in. and 6 lbs.



## Largemouth Bass

*Micropterus salmoides*



**Quick key characteristics:** The Largemouth Bass is found in primarily warm- water habitats. Its scales are moderate in size. It has two, nearly separated dorsal fins, one (in front) with sharp spines instead of rays. It has one spine in each pelvic fin, and three in the anal fin. It has a very large, frontward-facing mouth, which extends beyond the rear margin of the eye in larger individuals, and a pointed snout and lower jaw projecting past the upper. Its body is taller than wide.

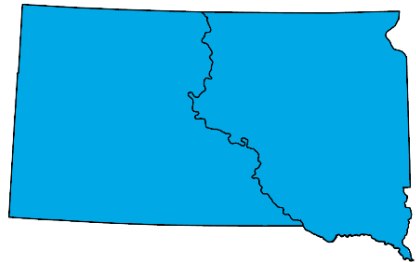
Similar species in South Dakota: Smallmouth Bass

**Identification:** The combination of (1) a mouth extending beyond the rear margin of the eye, (2) a dark lateral (horizontal) stripe, (3) nearly separated dorsal fins, (4) larger cheek scales, and (5) a humped dorsal profile between the snout and first dorsal fin distinguishes the Largemouth Bass from the Smallmouth Bass.

**Range:** The Largemouth Bass is native to southeastern North America, north to the Great Lakes and west to the Great Plains. In South Dakota, it is native to waters of the Minnesota and Big Sioux rivers, but has been widely introduced elsewhere. It is often abundant in ponds, lakes, and impoundments, particularly when protected from wind and containing submerged vegetation.

Items of interest:

- Feeds primarily on fish, crustaceans, and insects.
- Males construct nests and guard the eggs and hatchlings.
- Young-of-year have two distinct vertical bands on the tail (caudal) fin.
- Very popular sport fish and predator on insects, crayfish, and fishes.
- May exceed 24 in. and 9 lbs.



## White Crappie

*Pomoxis annularis*



Quick key characteristics: The White Crappie is found in cool- to warm- water habitats. Its scales are moderate in size and readily visible. It has two dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has six spines in the anal fin and one in each pelvic fin, a large, upward-facing mouth that extends backward as far as the pupil of the eye, its snout is pointed, and its body is much taller than wide.

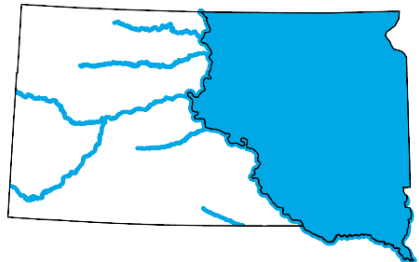
Similar species in South Dakota: Black Crappie

Identification: A shorter dorsal fin with six or fewer spines and presence of dark vertical bars on sides distinguish the White Crappie from the Black Crappie.

Range: The White Crappie is native to river basins that flow into the Gulf of Mexico and the southern Great Lakes. In South Dakota, it is native to waters of the Minnesota and Big Sioux rivers but has been widely introduced elsewhere. It is often abundant in ponds, lakes, and impoundments and somewhat tolerant of turbidity and warmer water.

Items of interest:

- Feeds on plankton, crustaceans, insects, and fishes.
- May reach high population densities that stunt growth, especially in absence of larger predators.
- Males construct nests and guard the eggs and hatchlings.
- Breeding males may be relatively dark in coloration, resembling Black Crappie.
- Can exceed 15 in. and 3 lbs.



## Black Crappie

*Pomoxis nigromaculatus*



Quick key characteristics: The Black Crappie is found in cool- and warm- water habitats. Its scales are moderate in size and readily visible. It has two dorsal fins that are joined and appear as one, one (in front) with sharp spines instead of rays. It has 6 to 7 spines in the anal fin and one in each pelvic fin, a large, upward-facing mouth that extends backward as far as the pupil of the eye, its snout is pointed, and its body is much taller than wide.

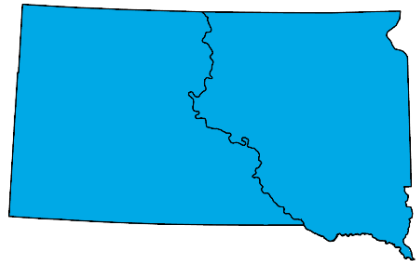
Similar species in South Dakota: White Crappie

Identification: A longer dorsal fin with seven or more spines and mottled pattern of dark blotches (not arranged into vertical bars) on sides distinguish the black crappie from the White Crappie.

Range: The Black Crappie is native to southeastern North America, north to the Great Lakes and west to the Great Plains. In South Dakota, it is native to waters of the Minnesota and Big Sioux rivers but has been widely introduced elsewhere. It is often abundant in ponds, lakes, and impoundments, but intolerant of turbidity and warmer water.

Items of interest:

- Feeds on plankton, crustaceans, insects, and fishes.
- May reach high population densities that stunt growth, especially in absence of larger predators.
- Males construct nests and guard the eggs and hatchlings.
- Popular sport fish.
- Can exceed 15 in. and 3 lbs.



## **PERCH** (family Percidae)

### **Yellow Perch**

*Perca flavescens*



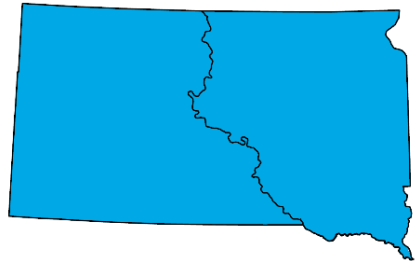
Quick key characteristics: The Yellow Perch is found in primarily cool- water habitats. Its scales are moderate in size and readily visible. It has two separated and elongated dorsal fins, one (in front) with sharp spines instead of rays. Its second dorsal fin and anal fin each have two spines. Its pelvic fins may be orange or red. It has a large, forward-facing mouth that extends backward to the pupil of the eye and a pointed snout. Its body is taller than wide and greenish-yellow, with 6 to 7 dark vertical stripes extending across the back, reaching to the lower sides.

Similar species in South Dakota: none

Range: The Yellow Perch is native to northeastern North America. In South Dakota, it is native in river basins northeast of the Missouri River, but widely introduced elsewhere.

Items of interest:

- Feeds primarily on crustaceans, insects, mollusks, and small fishes.
- Eggs are contained in tubular, “accordion-like” strands, usually deposited over submerged vegetation or brush.
- Popular sport fish.
- May exceed 15 in. and 2 lbs.





## Sauger

*Sander canadensis*



Quick key characteristics: The Sauger is found in primarily cool-water habitats. Its scales are moderate in size and readily visible. It has two, separated and elongated dorsal fins, one (in front) with sharp spines instead of rays. Its second dorsal fin has one spine and the anal fin has two. It has a large, forward-facing mouth that extends backward to near the rear margin of the pupil of the eye, large jaw teeth, and a pointed snout. Its body is tubular.

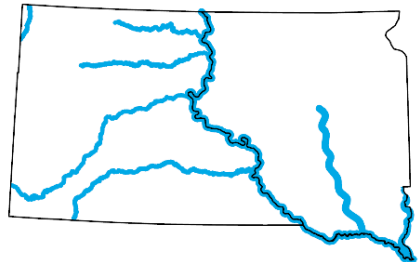
Similar species in South Dakota: Walleye

Identification: The combination of (1) a slender body, (2) rows of dark spots on first dorsal fin, (3) two dark bands on second dorsal fin (which is relatively short), and (4) cheek with scales help distinguish the Sauger from Walleye. However, these species may hybridize in nature, making visual identification impossible.

Range: The Sauger is native to central North America. It is widespread in South Dakota, primarily in larger rivers and lakes, and relatively abundant (compared to Walleye) in swifter and more turbid water.

Items of interest:

- Feeds primarily on fishes, insects, and crustaceans.
- May undergo extensive upstream spawning migrations during spring to find suitable riffles with clean gravel in larger streams or may congregate on wind-swept beaches of Impoundments.
- Avoids bright light due to sensitive eyes, well adapted for feeding in deep or turbid water or during the dark of night.
- May exceed 30 in. and 10 lbs.



## Walleye

*Sander vitreus*



Quick key characteristics: The Walleye is found in primarily cool-water habitats. Its scales are moderate in size and readily visible. It has two, separated and elongated dorsal fins, one (in front) with sharp spines instead of rays. Its second dorsal fin has one spine and the anal fin has two. It has a large, forward-facing mouth that extends backward to near the rear margin of the large eyes, large jaw teeth, and a pointed snout. Its body is tubular.

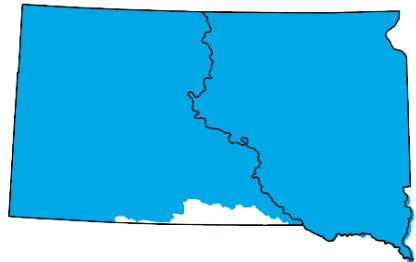
Similar species in South Dakota: Sauger

Identification: The combination of (1) a deeper, heavier body, (2) a large black spot isolated near the rear base of the first dorsal fin (not widespread and abundant on both dorsal fins), (3) lower lobe of tail (caudal) fin and lower anal fin milky white, and (4) cheek without scales help distinguish the Walleye from Sauger. However, these species may hybridize in nature, making visual identification impossible.

Range: The Walleye is native to northeastern North America from near the Arctic Circle to the Gulf of Mexico. There is some debate as to whether the Walleye is native throughout South Dakota, but we believe (with little doubt) that it is. However, the species is widely stocked to enhance sport fisheries.

Items of interest:

- Feeds primarily on fishes, insects, and crustaceans.
- May undergo extensive spring spawning migrations to beaches or into streams in search of areas with clean gravel.
- Avoids bright light due to sensitive eyes, well adapted for feeding in deep or turbid water or during the dark of night.
- May exceed 30 in. and reach 15 lbs.



## **DRUM** (family Sciaenidae)

### **Freshwater Drum**

*Aplodinotus grunniens*



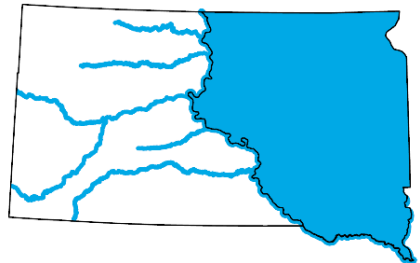
Quick key characteristics: The Freshwater Drum is found in cool- to warm- water habitats. Its scales are moderate in size and readily visible. It has two, unseparated (but distinct), elongated dorsal fins, one (in front) with sharp spines instead of rays. It has one spine in the rear dorsal fin, one in each pelvic fin, and two in the anal fin. It has a moderately large, downward- facing mouth, with a blunt, over-hanging snout and the upper jaw extends backward to the pupil of the eye. Its body is much taller than wide and the back is highly arched between the head and front dorsal fin.

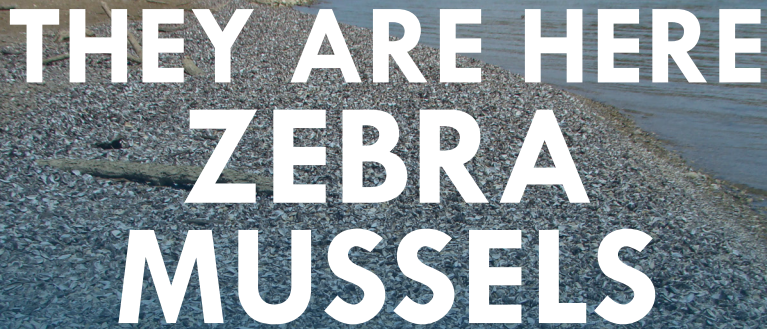
Similar species in South Dakota: none

Range: The Freshwater Drum is native to river basins that flow into the Gulf of Mexico, as well as southern portions of the Great Lakes and Red River of the North basins. In South Dakota, it is primarily known from eastern river basins, Missouri River, and its impoundments. However, it has been sampled in the western major tributaries of the Missouri River. It primarily occupies larger rivers, lakes, and impoundments and is tolerant of turbidity.

Items of interest:

- Feeds on insects, crayfish, mollusks, and small fishes.
- Named for its “drumming” or “grunting” noises, produced during spawning by specialized muscles that vibrate against the swim (gas) bladder.
- Fished commercially in other states.
- May exceed 39 in. and 36 lbs.





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- » **DAMAGE MOTORS AND INCREASE MAINTENANCE COSTS** for boaters.
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- » **INCREASE TOXIC BLUE-GREEN ALGAE BLOOMS** by preferentially consuming green algae.
- » **FOUL THE TASTE AND SMELL OF DRINKING WATER.**
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# AIS FISH



**EUROPEAN RUDD**

**SNAKEHEAD**

**COMMON CARP**

**GRASS CARP**

**BLACK CARP**

**SILVER CARP/BIGHEAD CARP**

**WESTERN MOSQUITOFISH**

**ROUND GOBY**

**WHITE PERCH**

These species can directly and indirectly compete with game fish for food, space and cover. Jumping silver carp can injure boaters or water skiers.

# AIS INVERTEBRATES



**ZEBRA MUSSEL**

**QUAGGA MUSSEL**

**RUSTY CRAYFISH**

**ASIAN CLAM**

**NEW ZEALAND MUDSNAIL**

**RED-RIMMED MELANIA**

**RED SWAMP CRAYFISH**

**SPINY WATER FLEA**

Many of these species remove large amounts of plankton which is then unavailable as food for young game fish. They also cause extensive economic damages by clogging pipes and equipment for drinking water, irrigation, and power production. They may also foul the taste and smell of water supplies and increase toxic blue-green algae blooms.

# AIS PLANTS



**BRITTLE NAIAD**

**DIDYMO**

**COMMON REED**

**CURLYLEAF PONDWEED**

**FLOWERING RUSH**

**EURASIAN WATER MILFOIL**

**PURPLE LOOSESTRIFE**

**STARRY STONEWORT**

These species can form dense mats which allows them to out-compete native plants and also limits boating and fishing.

## FISH SPECIES FOUND IN SOUTH DAKOTA

<b>FE</b>	Federally Endangered
<b>SE</b>	State Endangered
<b>FT</b>	Federally Threatened
<b>ST</b>	State Threatened
<b>C</b>	Candidate Species for federal listing
<b>SGCN</b>	Species of Greatest Conservation Need
<b>EX</b>	Non-native, exotic
<b>AIS</b>	Aquatic Invasive Species
<b>SX</b>	Presumed extirpated

Species	SD Native	SD Status
<b>PETROMYZONTIDAE: Lamprey</b>		
Silver Lamprey <i>Ichthyomyzon unicuspis</i>	Yes	
<b>ACIPENSERIDAE: Sturgeon</b>		
Lake Sturgeon <i>Acipenser fulvescens</i>	Yes	
Pallid Sturgeon <i>Scaphirhynchus albus</i>	Yes	FE, SE, SGCN
Shovelnose Sturgeon <i>Scaphirhynchus platyrhynchus</i>	Yes	FT, SGCN
<b>POLYODONTIDAE: Paddlefish</b>		
Paddlefish <i>Polyodon spathula</i>	Yes	
<b>LEPISOSTEIDAE: Gar</b>		
Longnose Gar <i>Lepisosteus osseus</i>	Yes	
Shortnose Gar <i>Lepisosteus platostomus</i>	Yes	
<b>HIODONTIDAE: Mooneye</b>		
Goldeye <i>Hiodon alosoides</i>	Yes	
Mooneye <i>Hiodon tergisus</i>	Yes	

Species	SD Native	SD Status
<b>ANGUILLIDAE: Eel</b>		
American Eel <i>Anguilla rostrata</i>	Yes	
<b>CLUPEIDAE: Herring</b>		
Skipjack Herring <i>Alosa chrysochloris</i>	Yes	
Alewife <i>Alosa pseudoharengus</i>	No	EX
Gizzard Shad <i>Dorosoma cepedianum</i>	Yes	
Threadfin Shad <i>Dorosoma petenense</i>	No	EX
<b>CYPRINIDAE: Minnow</b>		
Central Stoneroller <i>Campostoma anomalum</i>	Yes	
Goldfish <i>Carassius auratus</i>	No	EX
Northern Redbelly Dace <i>Chrosomus eos</i>	Yes	ST, SGCN
Southern Redbelly Dace <i>Chrosomus erythrogaster</i>	Yes	SGCN
Finescale Dace <i>Chrosomus neogaeus</i>	Yes	SE, SGCN
Lake Chub <i>Couesius plumbeus</i>	Yes	SGCN
Grass Carp <i>Ctenopharyngodon idella</i>	No	EX, AIS
Red Shiner <i>Cyprinella lutrensis</i>	Yes	
Spotfin Shiner <i>Cyprinella spiloptera</i>	No	EX
Common Carp <i>Cyprinus carpio</i>	No	EX, AIS
Western Silvery Minnow <i>Hybognathus argyritis</i>	Yes	
Brassy Minnow <i>Hybognathus hankinsoni</i>	Yes	
Plains Minnow <i>Hybognathus placitus</i>	Yes	
Silver Carp <i>Hypophthalmichthys molitrix</i>	No	EX, AIS
Bighead Carp <i>Hypophthalmichthys nobilis</i>	No	EX, AIS
Common Shiner <i>Luxilus cornutus</i>	Yes	
Sturgeon Chub <i>Macrhybopsis gelida</i>	Yes	C, ST, SGCN
Shoal Chub <i>Macrhybopsis hyostoma</i>	Yes	
Sicklefin Chub <i>Macrhybopsis meeki</i>	Yes	C, SE, SGCN
Silver Chub <i>Macrhybopsis storeriana</i>	Yes	
Northern Pearl Dace <i>Margariscus nachtriebi</i>	Yes	ST, SGCN
Hornyhead Chub <i>Nocomis biguttatus</i>	Yes	SGCN
Golden Shiner <i>Notemigonus crysoleucas</i>	Yes	

Species	SD Native	SD Status
<b>CYPRINIDAE: Minnow (continued)</b>		
Emerald Shiner <i>Notropis atherinoides</i>	Yes	
River Shiner <i>Notropis blennioides</i>	Yes	
Bigmouth Shiner <i>Notropis dorsalis</i>	Yes	
Blacknose Shiner <i>Notropis heterolepis</i>	Yes	SE, SGCN
Spottail Shiner <i>Notropis hudsonius</i>	Yes	
Carmine Shiner <i>Notropis percobromus</i>	Yes	SGCN
Silverband Shiner <i>Notropis shumardi</i>	Yes	
Sand Shiner <i>Notropis stramineus</i>	Yes	
Topeka Shiner <i>Notropis topeka</i>	Yes	FE, SGCN
Suckermouth Minnow <i>Phenacobius mirabilis</i>	Yes	
Bluntnose Minnow <i>Pimephales notatus</i>	Yes	
Fathead Minnow <i>Pimephales promelas</i>	Yes	
Flathead Chub <i>Platygobio gracilis</i>	Yes	
Western Blacknose Dace <i>Rhinichthys obtusus</i>	Yes	
Longnose Dace <i>Rhinichthys cataractae</i>	Yes	
Rudd <i>Scardinius erythrophthalmus</i>	No	EX, AIS
Creek Chub <i>Semotilus atromaculatus</i>	Yes	
<b>CATOSTOMIDAE: Sucker</b>		
River Carpsucker <i>Carpionodes carpio</i>	Yes	
Quillback <i>Carpionodes cyprinus</i>	Yes	
Highfin Carpsucker <i>Carpionodes velifer</i>	Yes	
Longnose Sucker <i>Catostomus catostomus</i>	Yes	ST, SGCN
White Sucker <i>Catostomus commersonii</i>	Yes	
Mountain Sucker <i>Pantosteus jordani</i>	Yes	SGCN
Blue Sucker <i>Cycleptus elongatus</i>	Yes	SGCN
Smallmouth Buffalo <i>Ictiobus bubalus</i>	Yes	
Bigmouth Buffalo <i>Ictiobus cyprinellus</i>	Yes	
Black Buffalo <i>Ictiobus niger</i>	Yes	SX
Silver Redhorse <i>Moxostoma anisurum</i>	Yes	



Species	SD Native	SD Status
<b>CATOSTOMIDAE: Sucker (continued)</b>		
River Redhorse <i>Moxostoma carinatum</i>	Yes	
Golden Redhorse <i>Moxostoma erythrurum</i>	Yes	
Shorthead Redhorse <i>Moxostoma macrolepidotum</i>	Yes	
Greater Redhorse <i>Moxostoma valenciennesi</i>	Yes	
<b>ICTALURIDAE: Catfish</b>		
Black Bullhead <i>Ameiurus melas</i>	Yes	
Yellow Bullhead <i>Ameiurus natalis</i>	Yes	
Brown Bullhead <i>Ameiurus nebulosus</i>	Yes	
Blue Catfish <i>Ictalurus furcatus</i>	Yes	
Channel Catfish <i>Ictalurus punctatus</i>	Yes	
Stonecat <i>Noturus flavus</i>	Yes	
Tadpole Madtom <i>Noturus gyrinus</i>	Yes	
Flathead Catfish <i>Pylodictis olivaris</i>	Yes	
<b>OSMERIDAE: Smelt</b>		
Rainbow Smelt <i>Osmerus mordax</i>	No	EX
<b>SALMONIDAE: Salmon, Trout &amp; Char</b>		
Cisco <i>Coregonus artedi</i>	No	EX
Lake Whitefish <i>Coregonus clupeaformis</i>	No	EX
Cutthroat Trout <i>Oncorhynchus clarkii</i>	No	EX
Rainbow Trout <i>Oncorhynchus mykiss</i>	No	EX
Chinook Salmon <i>Oncorhynchus tshawytscha</i>	No	EX
Atlantic Salmon <i>Salmo salar</i>	No	EX
Brown Trout <i>Salmo trutta</i>	No	EX
Brook Trout <i>Salvelinus fontinalis</i>	No	EX
Lake Trout <i>Salvelinus namaycush</i>	No	EX
<b>ESOCIDAE: Pike and Mudminnow</b>		
Grass Pickerel <i>Esox americanus</i>	Yes	
Northern Pike <i>Esox lucius</i>	Yes	
Muskellunge <i>Esox masquinongy</i>	No	EX
Central Mudminnow <i>Umbra limi</i>	Yes	SGCN

Species	SD Native	SD Status
<b>PERCOPSIDAE: Trout-perch</b>		
Trout-perch <i>Percopsis omiscomaycus</i>	Yes	SGCN
<b>GADIDAE: Cod</b>		
Burbot <i>Lota lota</i>	Yes	
<b>FUNDULIDAE: Topminnow and Killifish</b>		
Banded Killifish <i>Fundulus diaphanus</i>	Yes	SE, SGCN
Northern Plains Killifish <i>Fundulus kansae</i>	Yes	
Plains Topminnow <i>Fundulus sciadicus</i>	Yes	
<b>GASTEROSTEIDAE: Stickleback</b>		
Brook Stickleback <i>Culaea inconstans</i>	Yes	
<b>MORONIDAE: Temperate Bass</b>		
White Bass <i>Morone chrysops</i>	Yes	
Yellow Bass <i>Morone mississippiensis</i>	No	EX
<b>CENTRARCHIDAE: Sunfish</b>		
Rock Bass <i>Ambloplites rupestris</i>	Yes	
Green Sunfish <i>Lepomis cyanellus</i>	Yes	
Pumpkinseed <i>Lepomis gibbosus</i>	Yes	
Orangespotted Sunfish <i>Lepomis humilis</i>	Yes	
Bluegill <i>Lepomis macrochirus</i>	Yes	
Redear Sunfish <i>Lepomis microlophus</i>	No	EX
Smallmouth Bass <i>Micropterus dolomieu</i>	Yes	
Largemouth Bass <i>Micropterus salmoides</i>	Yes	
White Crappie <i>Pomoxis annularis</i>	Yes	
Black Crappie <i>Pomoxis nigromaculatus</i>	Yes	
<b>PERCIDAE: Perch and Darter</b>		
Iowa Darter <i>Etheostoma exile</i>	Yes	
Johnny Darter <i>Etheostoma nigrum</i>	Yes	
Yellow Perch <i>Perca flavescens</i>	Yes	
Logperch <i>Percina caprodes</i>	Yes	SGCN
Blackside Darter <i>Percina maculate</i>	Yes	SGCN
Slenderhead Darter <i>Percina phoxocephala</i>	Yes	

Species	SD Native	SD Status
<b>PERCIDAE: Perch and Darter (continued)</b>		
Sauger <i>Sander canadensis</i>	Yes	
Walleye <i>Sander vitreus</i>	Yes	
<b>SCIANIDAE: Drum</b>		
Freshwater Drum <i>Aplodinotus grunniens</i>	Yes	
<b>CICHILDAE: Cichlid</b>		
Jack Dempsey <i>Rocio octofasciata</i>	No	EX

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