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Fish Adaptations Sheet

Adaptation	Survival Benefit	Minnesota Fish
Body shape		
Laterally compressed	Swims through plants easily	 <p>©MN DNR, C. Iverson Bluegill, other sunfish</p>
Torpedo-shaped	Swims fast to chase prey, or swims easily in fast-moving water	 <p>©MN DNR, C. Iverson Trout, Coho salmon, northern pike, muskellunge</p>
Flat-bottom	Hugs the bottom, finds food on bottom	 <p>©MN DNR, C. Iverson Catfish, bullhead, sucker</p>
Coloration		
Horizontal stripes	Camouflage breaks up outline of body against horizontal parts of underwater plants, brush piles, and fallen trees	 <p>©MN DNR, C. Iverson White or striped bass, largemouth bass</p>
Vertical stripes	Camouflaged; can hide in vegetation, blending in with vertical plants	 <p>©MN DNR, C. Iverson Muskellunge, perch, smallmouth bass, sunfish</p>

continued


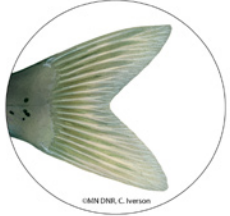



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Coloration (continued)		
Mottled coloration	Blends in with rocks and gravel (camouflage)	 <p>©MNDNR, C. Iverson</p> <p>Brook trout, northern pike, young sturgeon, northern hog sucker</p>
Dark topside	Camouflaged; difficult to see from above; blends in with dark lake or river bottom of lake or river underneath	 <p>©MNDNR, C. Iverson</p> <p>Bluegill, black crappie, catfish, sturgeon, carp</p>
Light-colored underside	Camouflaged; difficult to see from below; blends in with light sky overhead	 <p>©MNDNR, C. Iverson</p> <p>Many minnows, yellow perch, walleye, catfish</p>
Fairly uniform, no bold markings	Swims in open water	 <p>©MNDNR, C. Iverson</p> <p>Gizzard shad, lake whitefish</p>
Fins		
Large dorsal fin with sharp spines	Fish appears larger; more stability for a short, wide body shape; sharp spines make the fish more difficult to swallow	 <p>©MNDNR, C. Iverson</p> <p>Bass, bluegill, yellow perch</p>




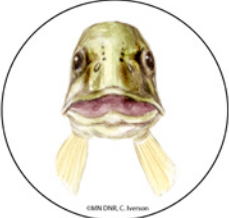
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Adaptation	Survival Benefit	Minnesota Fish
Fins (continued)		
Small dorsal fin	Swims faster; greater ease of movement in fast currents	 <p>©MN DNR, C. Iverson</p> <p>Trout, northern pike, muskellunge</p>
Deeply-forked tail fin	Produces less drag; fast swimmer	 <p>©MN DNR, C. Iverson</p> <p>Channel catfish</p>
Rounded tail fin	Effective acceleration and maneuvering ability; inefficient for prolonged continuous swimming	 <p>©MN DNR, C. Iverson</p> <p>Yellow bullhead</p>
Mouth		
Ventral (located under the head)	Feeds at the bottom; “vacuums” or roots around for food from the bottom	 <p>©MN DNR, C. Iverson</p> <p>Sturgeon, sucker, carp</p>
Extended upper jaw	Funnels clouds of plankton toward mouth	 <p>©MN DNR, C. Iverson</p> <p>Paddlefish</p>

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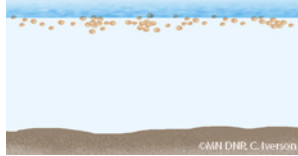
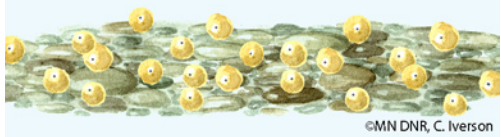
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Mouth (continued)		
Protruding lower jaw/ mouth points upwards	Feeds on prey it sees above on surface	 <p>Banded killifish</p>
Duckbill-shaped mouth	Grasps prey	 <p>Northern pike, muskellunge</p>
Barbels (whiskers)	Locates food on bottom; senses or tastes food in murky water	 <p>Catfish, bullheads, sturgeon, carp</p>
Extremely large mouth	Surrounds prey	Largemouth bass
Strong jaws and teeth	Help it catch, hold, and eat prey	Walleye, northern pike, muskellunge, gar
No teeth	Eats plankton (tiny organisms floating in water)	Paddlefish
Eyes		
Eyes forward on front of head	Good depth perception helps determine distance to prey	 <p>Northern pike, muskellunge</p>

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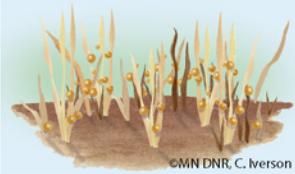



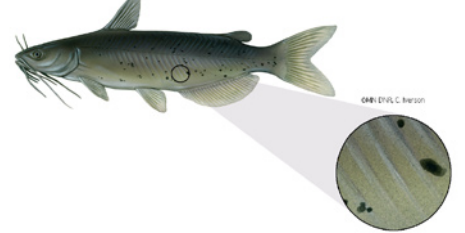
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Adaptation	Survival Benefit	Minnesota Fish
Eyes (continued)		
Eyes on sides of head	Can see predators coming from many directions; can see all the way around (except directly behind itself)	 <p>Bluegill, other sunfish</p>
Small eyes	Murky, dark, deep-water fish or bottom feeder. (Doesn't depend on sight to find food.)	 <p>Catfish, bullhead, sturgeon</p>
Large eyes	Depends on sight to locate food. Large eyes take in more light.	 <p>Walleye, sauger, yellow perch, bass</p>
Reproductive Behavior		
Broadcast spawning and eggs float	Some eggs will survive because large numbers are produced and released	 <p>White bass, freshwater drum</p>
Eggs released in rocks or gravel on bottom	Cover and protection from waves, currents and predators	 <p>Walleye</p>

continued

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Adaptation	Survival Benefit	Minnesota Fish
Reproductive Behavior (continued)		
Attaching eggs to vegetation	Eggs don't float away or get carried away in currents, cover and protection, suspended above muddy bottom	 <p style="text-align: right; font-size: small;">©MN DNR, C. Iverson</p> <p>Yellow perch, northern pike, carp</p>
Fish sweep out depression on bottom (nest or redd) with tails	<p>Nests protected by adults</p> <p>Redds protect eggs from currents in gravel depressions</p>	 <p style="text-align: right; font-size: small;">©MN DNR, C. Iverson</p> <p>Nests: green sunfish, smallmouth bass, creek chub</p> <p>Redds: brook trout, salmon</p>
Scales		
Large scales	Provide protection or a defense strategy	 <p style="text-align: right; font-size: small;">©MN DNR, C. Iverson</p> <p>Carp, sunfish, sucker</p>
Small scales	More streamlined; allows for less drag, greater maneuverability, and speed	 <p style="text-align: right; font-size: small;">©MN DNR, C. Iverson</p> <p>Trout, northern pike, burbot</p>
No scales	Allows for greater maneuverability in fast-moving water; allows catfish skin to have taste buds to sense or taste food in murky water	 <p style="text-align: right; font-size: small;">©MN DNR, C. Iverson</p> <p>Catfish, bullheads, sculpin</p>