

South Carolina
**fish consumption
advisories**

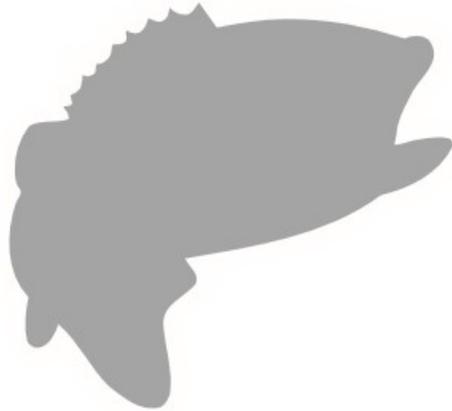
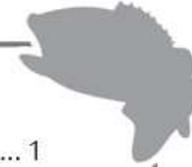


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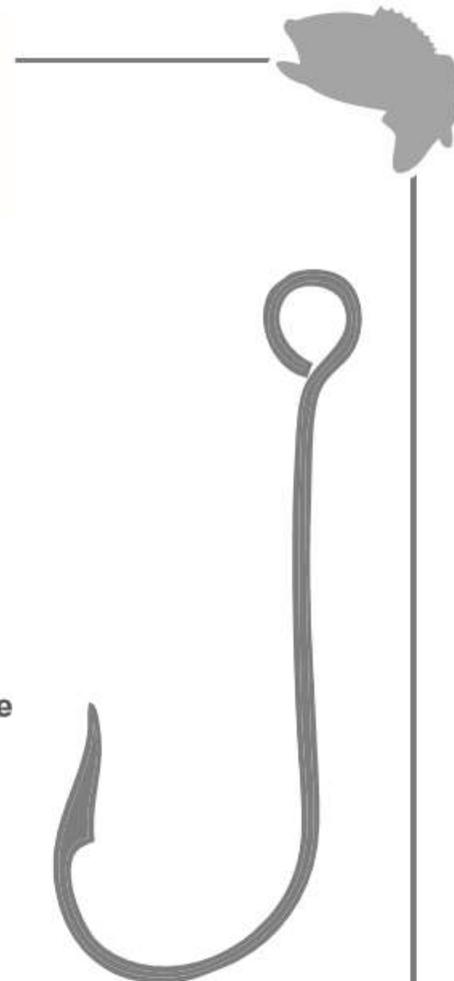
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Fish Smart! Eat Smart! It's for your health.

Fishing is a fun, relaxing outdoor activity, and fish are a good source of protein, vitamins and minerals. **Whether you are fishing to enjoy the outdoors, spend time with family, or catch dinner, you should always be safe about the fish you eat.** The South Carolina Department of Health and Environmental Control (DHEC) is working to help you fish smart and eat smart.

Some fish caught in South Carolina may not be safe to eat because they contain harmful levels of some chemicals.

This does not mean that you have to stop eating fish. The advisories in this booklet tell you where you should limit the amount of fish you eat. The advisories also tell you where it is safe to eat as much fish as you like.



Statewide Advice for At-Risk Women and Children*



These at-risk groups should follow the advice listed below. All other groups should follow the advice given in the advisory tables.

Advice for at-risk groups:

- Eat only one meal a week of freshwater fish caught from a waterbody without an advisory.
- Do NOT eat any freshwater fish from waterbodies with an advisory (includes those listed in this booklet with an advisory for one meal a week, one meal a month, and do not eat any).
- Do NOT eat any king mackerel, shark, swordfish, tilefish, or cobia.

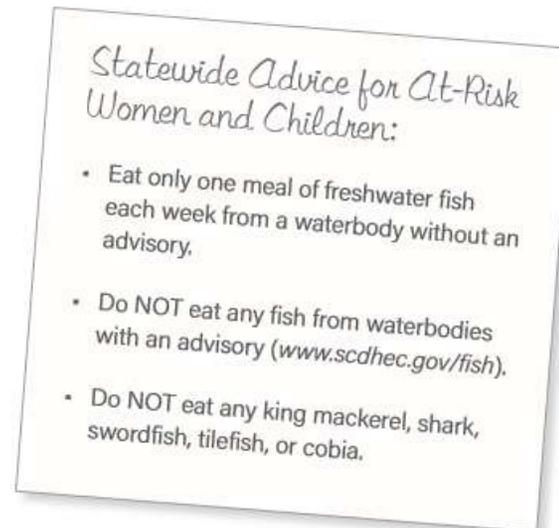
*These at-risk groups include:

- Babies
- Children under 14
- Women who are nursing
- Women who are pregnant
- Women who plan to become pregnant

Why are these groups at a greater risk?

- Because their bodies, brains and nervous systems are still developing, infants and small children are at a greater risk.
- Contaminants, like mercury, can build up in our bodies if too much are being consumed.
- Health problems can occur when there are too many harmful chemicals in the body.

To find out more, visit the Environmental Protection Agency's website at www.epa.gov/ost/fish or go to the Food and Drug Administration's website at www.fda.gov/Food/FoodbornellnessContaminants/BuyStoreServeSafeFood/ucm110591.htm



FAQs About Smart Fishing and Your Health

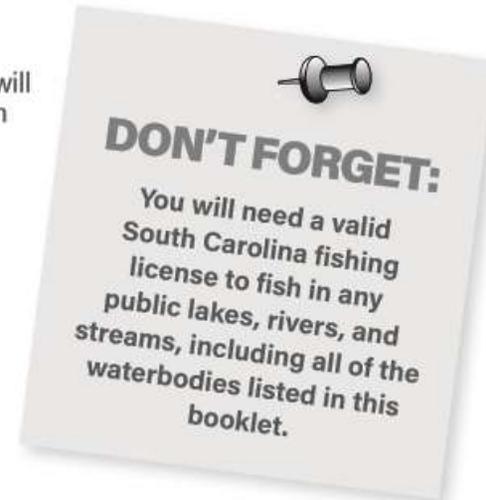


Why should I eat fish?

- It's low in fat and contains omega-3 fatty acids (which boosts heart health)
- It's a great source of protein, vitamins, and minerals
- Eating fish regularly can reduce your chances of having a stroke or heart attack
- *To get all the benefits, you should eat fish at least two meals each week, but remember to choose the right types of fish to eat*
- **NOTE: Breeding and frying fish may decrease health benefits**

What is an advisory?

- An advisory will list a lake, stream, or river in South Carolina. Then, it will tell you the **type of fish** and the **amount of fish** that is safe to eat from that waterbody.
- **If a waterbody or type of fish is not listed in the tables, it means that DHEC has not issued any consumption advice.**
- Here are the reasons why DHEC may not issue an advisory:
 - + The waterbody may not have been sampled.
 - + There may not be enough data.
 - + The waterbody is privately owned.
- Advisories help you decide:
 - + Where to fish
 - + Which fish to keep
 - + How much fish to eat
- **No Advisories** – some lakes, streams, and rivers in South Carolina that have been tested do not have advisories.





How does DHEC determine if a waterbody should have an advisory?

- DHEC tests fish from South Carolina's lakes, rivers, streams, estuaries, and offshore waters. Saltwater fish samples are collected by the South Carolina Department of Natural Resources (DNR) and DHEC.
- All samples are tested for chemicals to see if any of the fish are contaminated.
- DHEC looks closely at the data, then issues fish consumption advisories where contaminated fish have been found.

Why do we have advisories?

DHEC issues advisories to help you understand if the fish you catch are safe to eat.

Are fish consumption advisories only issued in South Carolina?

South Carolina is not alone. All states issue fish consumption advisories. To look at other states' advisories, go to <http://water.epa.gov/scitech/swguidance/fishshellfish/fishadvisories/general.cfm#tabs-4>.

Why are some fish not safe to eat?



Harmful chemicals are released into the environment through emissions, burning of trash, etc.



These contaminants fall to earth when it rains and are washed into lakes, rivers and streams.



When you eat these fish, the contaminants may get into your body, too.



Contaminants get into fish through the plants and animals they eat.



General yardstick:

Older and larger fish have eaten more and have been in the water longer, so there may be more contaminants in their bodies.



What are the main contaminants in South Carolina water bodies?

- Mercury
- PCBs
- Radioisotopes (found in the Savannah River in very small amounts)

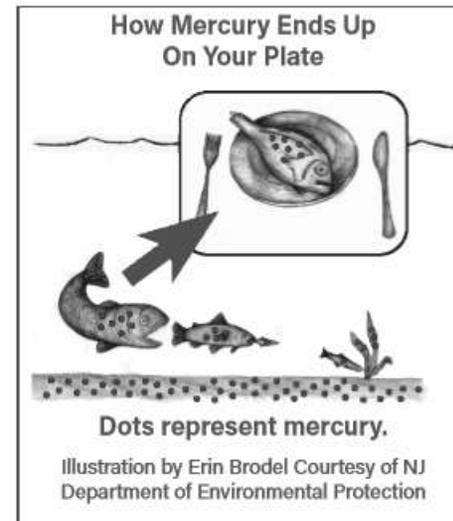
What do I need to know about mercury?

- Mercury in the environment comes from natural sources and from pollution.
- The largest sources of pollution stem from decades of burning fossil fuel (like coal) and waste.
- Mercury builds up in the tissue or muscle of the fish (the part that we eat).
- It can also build up in *our* tissues when we eat fish contaminated with mercury.
- The risk is only in eating the fish, which means you can still enjoy water activities like swimming, boating, and other water recreation.
- Our risk from mercury depends on how much and how often we eat certain types of fish.
- Mercury in fish is an issue for the whole nation, not just South Carolina.

Health notes for adults:

- Too much consumption of fish with high levels of mercury may lead to heart disease in adults.
- Health effects of mercury in adults can usually be corrected if a person stops eating fish that contain high levels of mercury.
- If you are concerned about the amount of mercury in your body, see your doctor.

South Carolina's Fish Consumption Advisories are mostly due to mercury. To learn more about mercury, visit www.scdhec.gov/mercury





What do I need to know about PCBs?

- PCB stands for polychlorinated biphenyls.
- They are man-made compounds that were banned in 1976.
- PCBs were often used as fluids for electrical transformers and products like cutting oils and carbonless copy paper.
- They remain a problem today because they do not break down easily in the environment.
- PCBs build up over time in the fatty parts of the fish.
- PCBs can also build up in our bodies.
- By cleaning or cooking fish to reduce fat, you can reduce the amount of PCBs you eat.
- See Page 10 for tips on how to clean and cook fish to reduce PCBs.
- You should still follow the advice of this book even if you clean and cook the fish the right way.

What are the health effects of PCBs in my body?

If pregnant women eat fish containing PCBs, their babies may suffer from:

- Lower birth weight
- Smaller infant head size
- Premature births
- Developmental problems and learning disabilities

What do I need to know about radioisotopes?

- Radioisotopes are radioactive forms of an element.
- They occur naturally or can be man-made.
- Some fish found in the Savannah River may contain radioisotopes, cesium-137 and strontium-90.
- Levels of radioisotopes found in these fish in South Carolina are low and have decreased over time.
- If you follow the fish advisory advice for the Savannah River, **the added health risk from these elements is very low.**

Smart Fishing Tip: Catch and Release

If you want to enjoy the fun of fishing, but don't want the health risks from eating contaminated fish, catch and release fishing is an option. Catch and release lets you have the experience of fishing without killing fish. When you catch and release, follow these guidelines:

- Release fish quickly-while it is still in the water, if possible. Be sure you have the necessary tools (needlenose pliers) nearby.
- When a hook gets caught deep inside a fish, do not tear out the hook. Instead, cut the leader or the line and leave the hook in the fish. This will increase the chance that the fish lives.
- **Do not play the fish to exhaustion**, particularly if water temperatures are very high.

For more information about catch and release, visit www.dnr.sc.gov or read the South Carolina Rules and Regulations for Fishing, Hunting, and Wildlife Management Areas, available wherever fishing licenses are sold.

How can I reduce the health risks from contaminated fish?

You can reduce the health risks from any type of fish by following these tips:

- Do not eat more fish than the advisory recommends.
- Eat fish from lakes and rivers that do not have advisories.
- Keep and eat the smaller fish and let the bigger ones go.
- Eat different types of fish instead of just one type.
- Clean and cook your fish the right way (this helps reduce PCBs).
- Enjoy fishing by catching and releasing fish instead of eating them.

What do I need to know about shellfish in South Carolina to stay safe?

- DHEC regularly tests the salt waters containing shellfish beds for bacteria.
- If health standards are not met, or if conditions have changed to make the shellfish unsafe, DHEC will close the shellfish bed.
- A closed shellfish bed means that it is unsafe to eat and illegal to collect the shellfish in that area.
- Testing ensures that the oysters, clams and mussels you collect and eat in S.C. salt waters are safe.

What about fish that I buy instead of catch?

- The FDA and the EPA have issued a national mercury advisory for fish that you buy.
- The advisory includes fresh, frozen and canned fish that you buy at a store or restaurant.
- EPA and FDA advise for women and children in the at-risk group to:
 - ✦ Not eat shark, swordfish, king mackerel, tilefish, or cobia.
 - ✦ Eat up to 12 ounces (two average meals) a week of a variety of fish and shellfish that are lower in mercury.
 - ✦ Check local advisories in your state for fish caught by family and friends.
- Follow the same advice when feeding fish and shellfish to young children, only serve them a smaller portion.



Need More Info?

- For more information on DHEC's Shellfish program, visit www.scdhec.gov/shellfish.
- For shellfish closure updates, call 1-800-285-1618.



Need more info about store-bought fish?

- Visit the FDA's website at: www.fda.gov/Food/ResourcesForYou/Consumers/ucm077331.htm
- Or call the FDA's toll-free information line at 1-888-SAFEFOOD
- Visit the EPA's website at: www.epa.gov/ost/fish

Does DHEC post signs on waterbodies that have fish consumption advisories?

- Yes, DHEC does post signs on the public boat landings that serve as access points to the waterbody under advisory.

What if a waterbody does not have a sign at its access point?

Here are reasons why there may not be a sign at the access point to a waterbody:

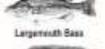
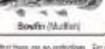
- There is no advisory
- The waterbody has not been tested
- The sign has been vandalized or damaged

Always refer to DHEC's Fish Consumption Advisory website (www.scdhec.gov/fish) or this booklet for the most accurate information on whether a waterbody is under advisory.

Where can I get more information about topics discussed in this booklet?

- For the S.C. Fish Consumption Advisory website, go to www.scdhec.gov/fish
- You can also call DHEC's toll-free number at 1-888-849-7241
- To learn more about mercury, visit www.scdhec.gov/mercury
- For more information on fishing and South Carolina's rules and regulations for fishing and boating, visit DNR's website at www.dnr.sc.gov
- Visit <http://dnr.sc.gov/aquaticed/> for information on a free fishing program for kids

EDISTO RIVER:
ENTIRE RIVER TO WILLTOWN BLUFF

1 Meal a Week	1 Meal a Month	DO NOT EAT ANY
1 Consists of 16 Servings	1 Consists of 48oz	NO COMB NADA
 Some Pan Fish/Bream (Crappie), Redhead and Rock Bass, Striped, Wormhead, Black Crappie	 Blue Catfish	 Channel Catfish  Flathead Catfish  Pike  Largemouth Bass  Bowfin (Mudfish)

If a type of fish is not listed above, it means that there may not be enough data to provide advice or that there are no restrictions. For more information call 1-888-849-7241 or go to www.scdhec.gov/fish.

Changes in advisory status will be posted on the website as soon as they are available. For more information call 1-888-849-7241 or visit www.scdhec.gov/fish.

Understanding the Advisories



How to find an advisory

Zoom to the area and click on the waterbody for advisory information or search by waterbody name.

- + Open the Advisory Table link for a complete index of waterbodies. If there is a specific waterbody you are looking for, use the search button to type in the waterbody name and zoom into the waterbody location.

Eating fish from waterbodies under advisory**

***See Page 2 - Additional Advice for At-Risk Women and Children*

• Portion sizes

- + Advisories are based on one meal of fish
- + One meal of fish = one-half pound or eight ounces of raw fish
- + Eight ounces of raw fish = about the size of two decks of playing cards

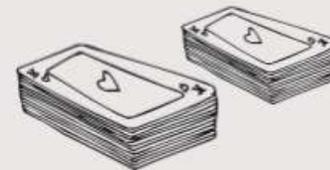
• Spacing your consumption

When eating fish from waterbodies under advisory, you should space out your meals based on the advice given.

- + **One meal a week** = you may eat eight ounces of fish once in that week
- + **One meal a month** = you may eat eight ounces of fish once in that month
- + **No Restrictions** = this means that you can eat that type of fish in that waterbody as often as you like

What does one meal of fish look like?

Eight ounces of raw fish is about the size of two decks of cards.





- **Example**

- + Blue catfish in the Edisto River have an advisory for one meal per month.
- + So if you eat a meal of blue catfish from the Edisto River, you should not eat any more fish under a mercury advisory for the rest of that month.

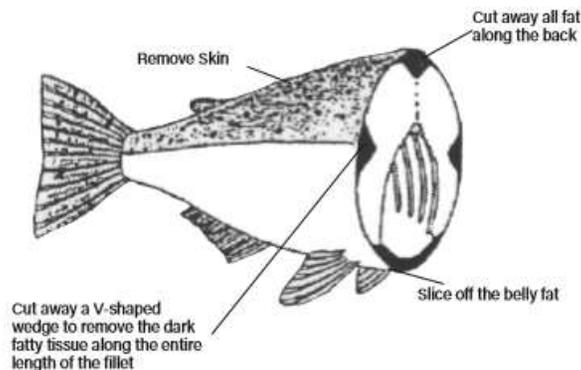
- **More clarification...**

- + This includes: other fish from the Edisto River as well as anywhere else with an advisory.
- + Bluegill and black crappie from the Edisto River, largemouth bass from Lake Jocassee and bowfin (mudfish) in the Congaree River all have advisories. To follow the advice correctly, you would not eat any of these fish in the same month that you ate the blue catfish from the Edisto River.

Cleaning and cooking fish to reduce PCBs

You can reduce your exposure to PCBs by the way you prepare the fish. PCBs are found in the fatty parts of fish. By cleaning or cooking fish to reduce fat, you can also reduce the amount of contaminants you eat.

- **Remove the head and all the guts.**
- **Remove the skin and trim all fat from the areas shown in the picture.**
- **Don't panfry or deep fry. Broil, bake, poach, or boil your fish so the fatty juices drip away.**
- **Don't eat or use any of the cooking liquids.**



How You Can Reduce PCBs When Consuming Contaminated Fish

- Eat leaner fish such as yellow perch, sunfish and crappie.
- Follow the directions for properly cleaning and cooking fish.
- Eat smaller fish.



The information provided in the table below is general guidance for mercury contamination. DHEC may have advisories for other contaminants such as PCBs or for fish that may fall in the “Mercury Usually Lower” category. For detailed information, please refer to the waterbody and species of concern in the bulletin.

Mercury Usually Higher	Mercury Usually Lower
Canned White Tuna (Albacore)	Canned Light Tuna (Non-Albacore)
Bowfin (Mudfish)	Shrimp
Catfish	Salmon
Largemouth Bass	Mahi-mahi (Dolphinfish)
Shark	Flounder
King Mackerel	Speckled Trout (Spotted Sea Trout)
Swordfish	Bluegill and Other Sunfishes
Tilefish	Lobster

To identify the different types of fish in South Carolina, go to Pages 13-15.



Did you know?

Fish store PCBs and mercury in different parts of their bodies.

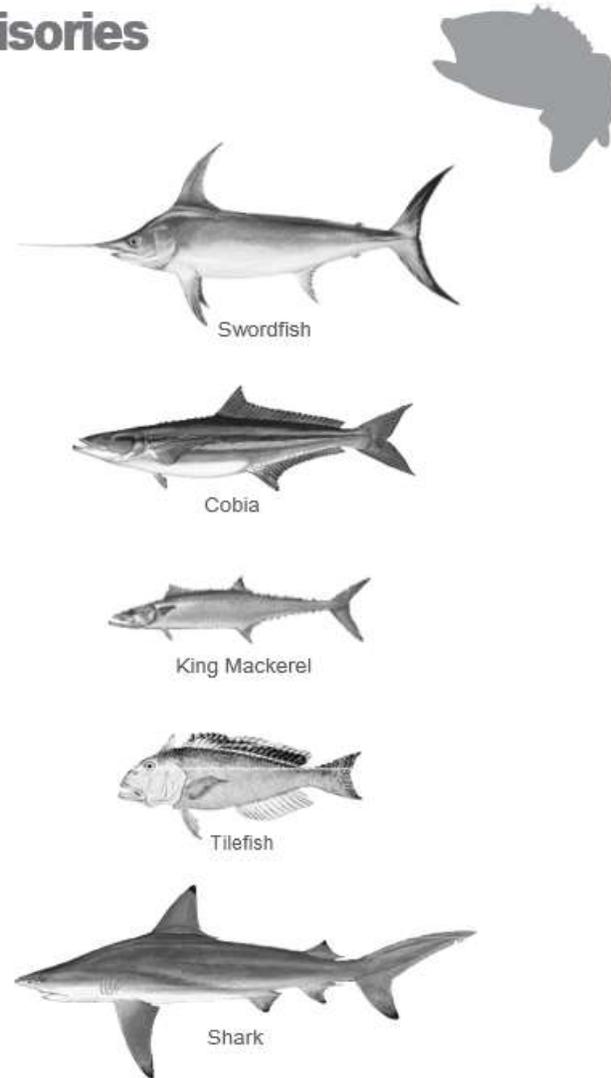
PCBs	MERCURY
Stored in the fat PCBs remain in the body for long periods of time--may take several years to be fully removed from the body.	Stored in the muscle May take up to a year to be completely removed from the body, assuming no more mercury is being ingested.
Trimming the fat off the fish can reduce the amount of PCBs by 50 percent.	Trimming the fat will not reduce the amount of mercury since it is found in the protein (meat) of the fish.
It's better to boil, bake or grill. Broiling and frying are not the best ways to reduce PCBs.	Cooking methods will not remove mercury contaminants.
Larger fish have greater amounts of PCBs in them due to age and diet.	Larger fish have greater amounts of mercury in them due to age and diet.

Estuarine and Marine Waters with Advisories

• For additional advice for at-risk women and children—see Page 2

DHEC Advice for Estuarine and Marine Waters	
SPECIES OF FISH	ADVISORY
King Mackerel* over 39 inches	DO NOT EAT ANY
Shark*	DO NOT EAT ANY
Cobia*	1 meal a month
Swordfish*	1 meal a month
King Mackerel* 33-39 inches	1 meal a week
Tilefish*	1 meal a week
Flounder	No Restrictions
King Mackerel* less than 33 inches	No Restrictions
Mahi-mahi (Dolphinfish)	No Restrictions
Red Drum	No Restrictions
Spanish Mackerel	No Restrictions
Spot	No Restrictions
Spotted Sea Trout	No Restrictions
Weakfish	No Restrictions

*The EPA and FDA advise women who are or may become pregnant, nursing mothers, and children under 14 not to eat any king mackerel, shark, swordfish or tilefish. DHEC also suggests that these at-risk groups avoid cobia.



Identifying Common South Carolina Fish



Fishing is a great way to relax and spend time with family and friends. If you plan to keep what you catch, make sure you can positively identify your fish. This not only helps make sure it meets size and catch regulations, it can also keep you healthy. Use these images to help positively identify your catch.



Black Crappie



Bowfin
(Mudfish)



Channel Catfish



King Mackerel



Blue Catfish



Brown Trout



Flathead Catfish



Largemouth Bass



Bluegill



Chain Pickerel
(Jack Fish)



Hybrid Bass



Mullet



Smallmouth Bass



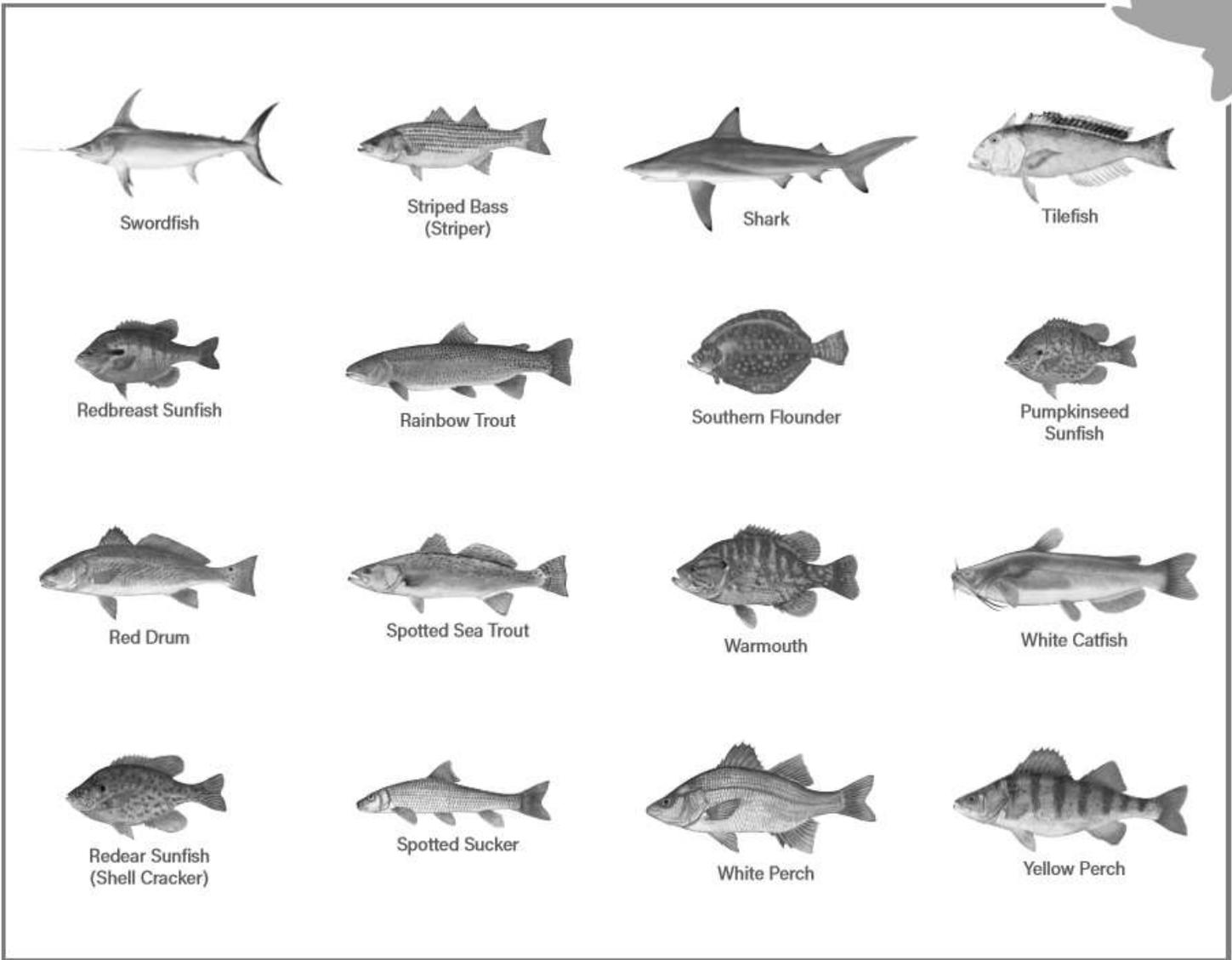
White Bass



Cobia



Spotted Bass



For More Information:



MyFiSH: Mercury in Fish and Small-Pond Health

If you enjoy catching and eating fish from a small private pond or community lake, there's now a tool to help you estimate the amount of fish that can be safely consumed. Learn more at: www.scdhec.gov/myfish.

South Carolina Fish Consumption Advisories and Information

S.C. Department of Health
and Environmental Control
2600 Bull Street
Columbia, S.C. 29201
1 (888) 849-7241 (toll-free)
www.scdhec.gov/fish

South Carolina Fishing and Boating Rules and Regulations

S.C. Department of Natural Resources
P.O. Box 167
Columbia, S.C. 29202
(803) 734-3886
www.dnr.sc.gov

National Fish Consumption Advisories

Food and Drug Administration and
Environmental Protection Agency
1 (888) SAFE-FOOD (toll-free)
www.fda.gov/Food/PopularTopics/ucm341987.htm
www.epa.gov/ost/fish

Georgia Fish Consumption Advisories

GA Department of Natural Resources
2 Martin Luther King, Jr. Drive, S.E., Suite 1152
Atlanta, GA 30334-9000
(404) 463-4929
www.gaepd.org/Documents/fish_guide.html

Fish Advisory Hotline
1 (888) 849-7241 (toll-free)

Fish Advisory Website
www.scdhec.gov/fish

