

NEW YORK STATE  
**Conservationist**

for  
**KIDS!**



**MEET THE  
SEA!**

Welcome  
to

NEW YORK STATE

# Conservationist

for  
Kids!

Want to receive  
**Conservationist  
for Kids**  
at home?

Byron Young

## In this issue:

Many fascinating animals and plants live in New York's marine waters—our estuaries and the Atlantic Ocean. Keeping their home healthy is important, for them and for us.

Find us at  
[www.dec.ny.gov/education/40248.html](http://www.dec.ny.gov/education/40248.html)

Contact us at  
**Conservationist for Kids**  
625 Broadway  
Albany, NY 12233-4500

or e-mail us at  
[cforkids@gw.dec.state.ny.us](mailto:cforkids@gw.dec.state.ny.us)

## Subscribe to **Conservationist magazine!**

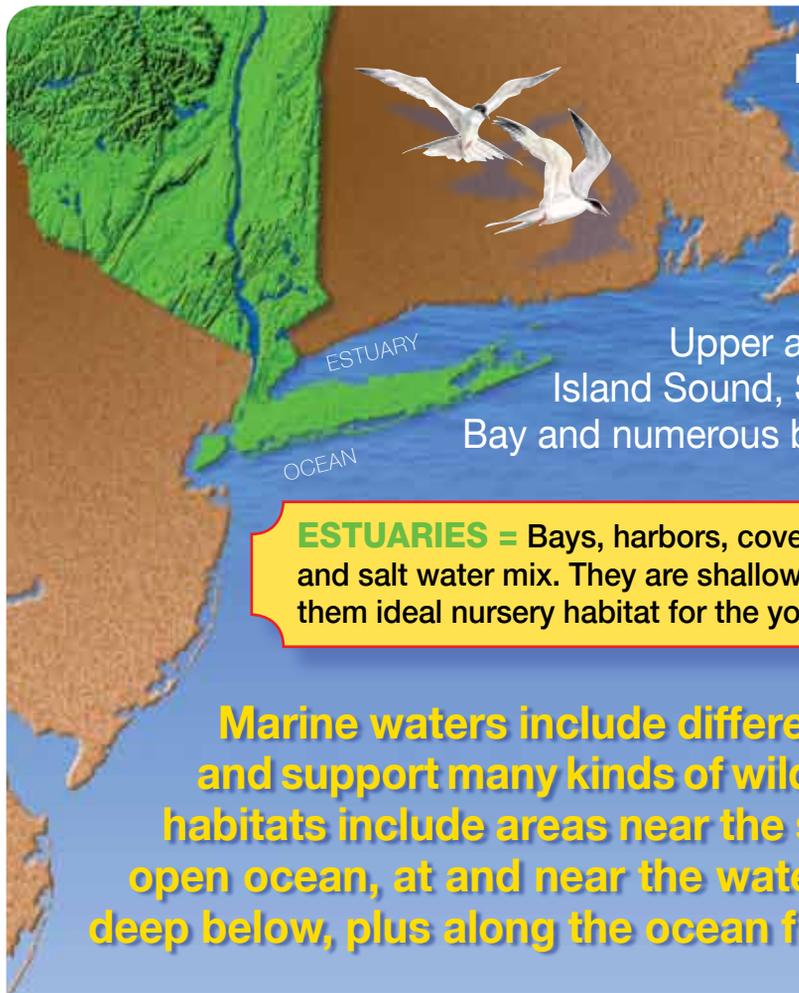
You'll get six issues of the award-winning **Conservationist** magazine each year, plus **Conservationist for Kids** in the October, February and April issues. Call **1-800-678-6399** to subscribe.



Visit [www.dec.ny.gov](http://www.dec.ny.gov) for information about the outdoors.

Check out DEC's online newsletter for families, *Outdoor Discovery*. Every two weeks, readers receive articles about nature with fun activities for kids, plus lists of upcoming events at nature centers near you.

Go to [www.dec.ny.gov/public/43355.html](http://www.dec.ny.gov/public/43355.html) to sign up and have it e-mailed directly to you.



In addition to the Atlantic Ocean, our marine waters include **estuaries** where salt water mixes with fresh water coming from the land. New York's estuaries include the Hudson River, Upper and Lower New York Harbor, Long Island Sound, South Shore Estuary Reserve, Peconic Bay and numerous bays along the Long Island shoreline.

**ESTUARIES** = Bays, harbors, coves, marshes, and river mouths where fresh and salt water mix. They are shallow and sheltered from ocean waves, making them ideal nursery habitat for the young of many different species of animals.

Marine waters include different **habitats** and support many kinds of wildlife. Marine habitats include areas near the shore, in the open ocean, at and near the water's surface, deep below, plus along the ocean floor.

**HABITAT** = Home...a place where wildlife finds the food, water, shelter and space required for survival.

### New York's marine waters are home to many kinds of animals and plants:

- **FISH** (striped bass, flounder, sharks and sea horses)
- **CRUSTACEANS** (crabs, lobsters, shrimp and barnacles)
- **MOLLUSKS** (mussels, clams, scallops and squid)
- **REPTILES** (sea turtles)
- **MAMMALS** (whales, seals, and porpoises)
- **BIRDS** (gulls, osprey, herons and ducks)
- **PLANKTON**
- **ALGAE, SEAWEED AND SEAGRASS**
- **And many, many more.**



**SEAWATER** contains about 3.5% salt. That's about four ounces of salt per gallon. Estuaries have less salt, since their waters are diluted by the incoming fresh water.



**PLANKTON** are microscopic free-floating aquatic animals (zooplankton) and plants (phytoplankton).

# WHAT'S HERE?



**Makos** are one of the fastest sharks, swimming at about 30 miles per hour, with short bursts up to 45 miles per hour.



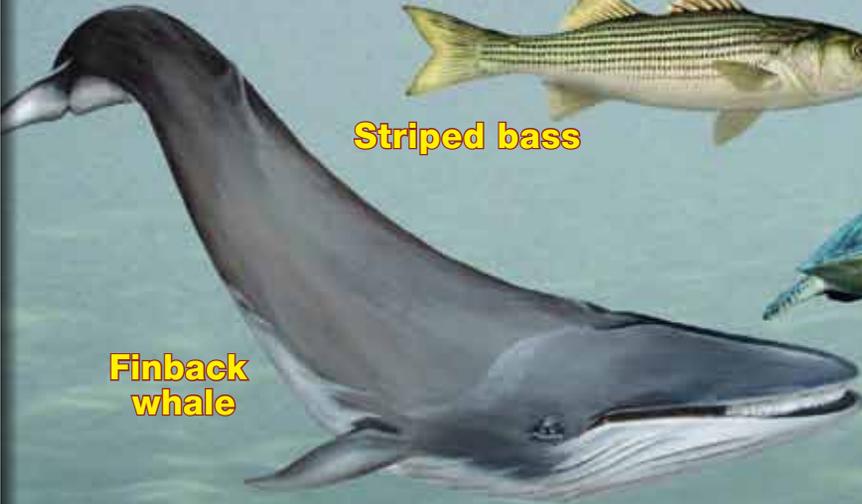
**Lion's mane jellyfish**



**Striped bass**



**Green sea turtle**



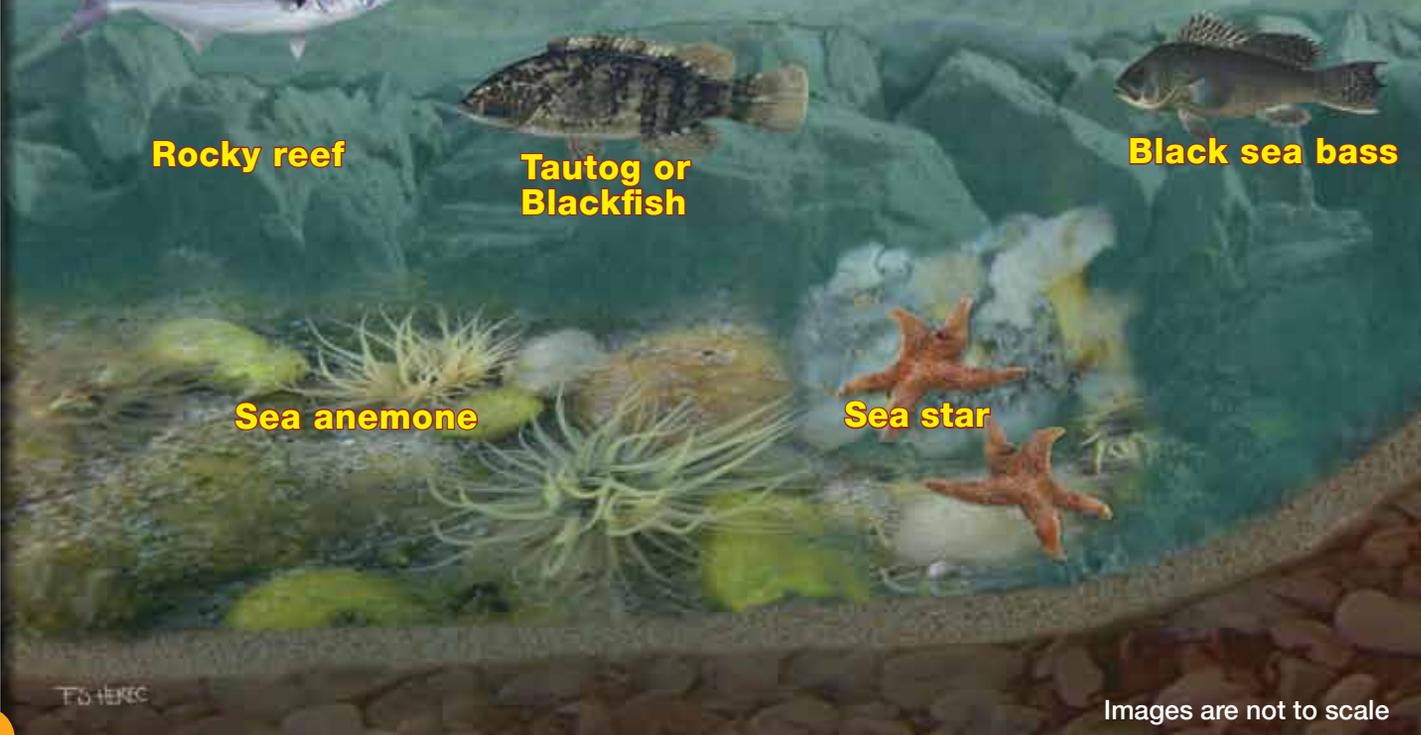
**Finback whale**



Gulf stream ocean currents sometimes carry tropical animals, such as **Spotfin butterfly fish**, into New York's waters.



**Bluefish**



**Rocky reef**



**Tautog or Blackfish**



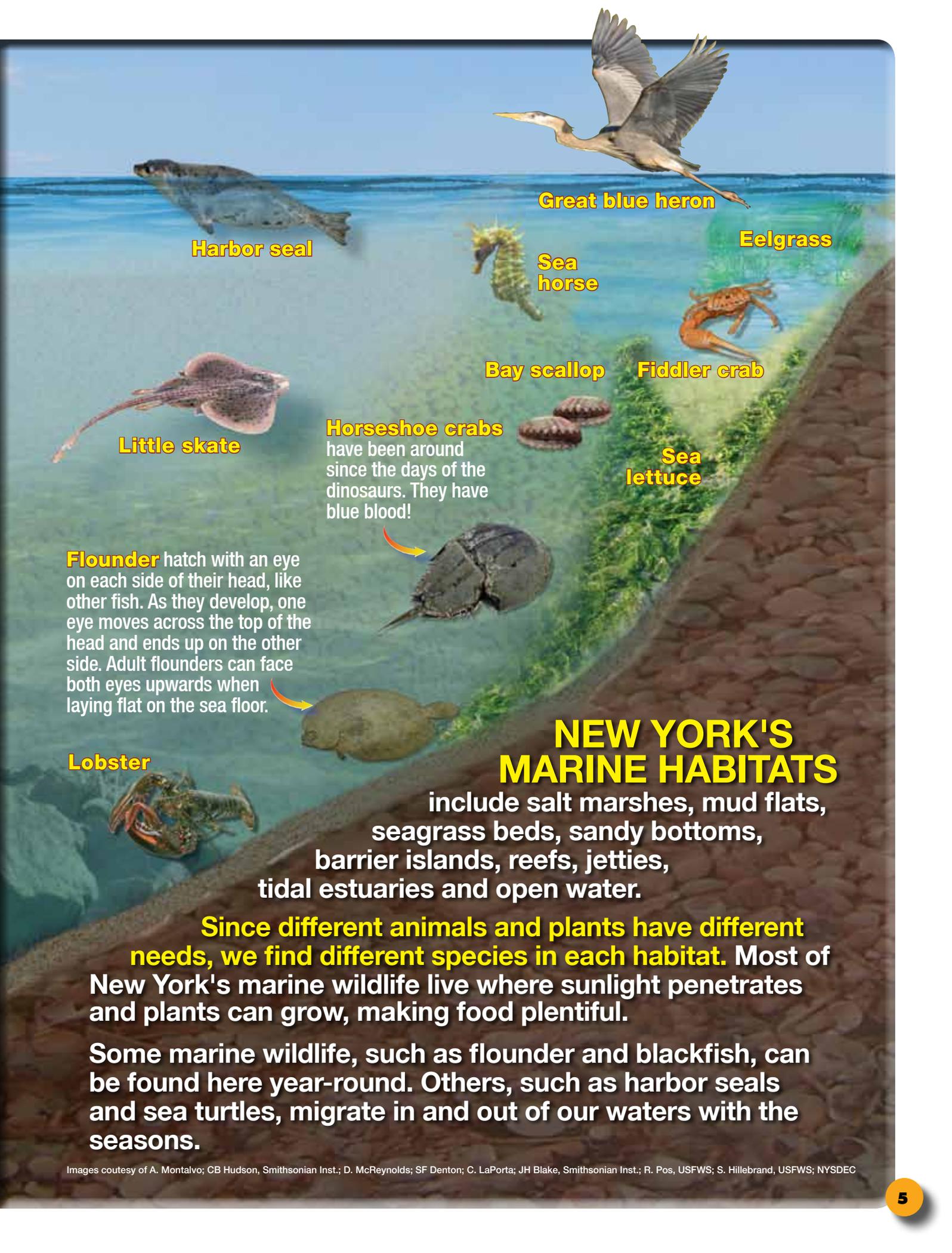
**Black sea bass**



**Sea anemone**



**Sea star**



**Harbor seal**

**Great blue heron**

**Eelgrass**

**Sea horse**

**Bay scallop**

**Fiddler crab**

**Little skate**

**Horseshoe crabs** have been around since the days of the dinosaurs. They have blue blood!

**Sea lettuce**

**Flounder** hatch with an eye on each side of their head, like other fish. As they develop, one eye moves across the top of the head and ends up on the other side. Adult flounders can face both eyes upwards when laying flat on the sea floor.

**Lobster**

## **NEW YORK'S MARINE HABITATS**

include salt marshes, mud flats, seagrass beds, sandy bottoms, barrier islands, reefs, jetties, tidal estuaries and open water.

**Since different animals and plants have different needs, we find different species in each habitat.** Most of New York's marine wildlife live where sunlight penetrates and plants can grow, making food plentiful.

Some marine wildlife, such as flounder and blackfish, can be found here year-round. Others, such as harbor seals and sea turtles, migrate in and out of our waters with the seasons.

Images courtesy of A. Montalvo; CB Hudson, Smithsonian Inst.; D. McReynolds; SF Denton; C. LaPorta; JH Blake, Smithsonian Inst.; R. Pos, USFWS; S. Hillebrand, USFWS; NYSDEC

# People **DEPEND UPON** and **ENJOY** our marine waters in many ways:

**Food:** We eat fish, shellfish, and seaweeds. The New York State Department of Environmental Conservation inspects and certifies many kinds of fish and shellfish to make sure they are safe for people to eat.

**Recreation:** Many people participate in boating, fishing, swimming, wildlife viewing, picnicking and sightseeing on and near the ocean.

**Transportation:** Huge cargo ships carry goods around the world. Smaller ships carry people from place to place.

**Climate:** Ocean currents affect our climate. For those living close to coastal waters, winters aren't as cold and summers aren't as hot compared to their inland neighbors.

**Oxygen Production:** Phytoplankton—the microscopic plants in the upper level of the ocean—produce their own food through photosynthesis, as land-based plants do. During this process, they release the oxygen we depend upon.



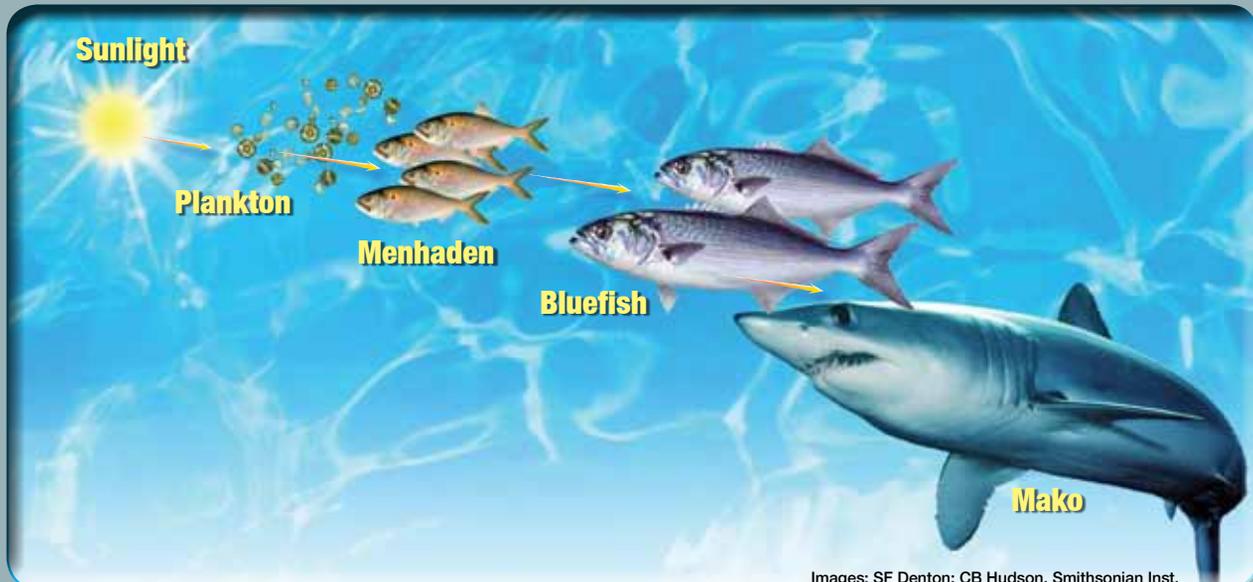
Carl Lobue

**More than 50% of the oxygen in our atmosphere is produced in the world's oceans.**

## A New York Marine Food Chain

**Animals get energy from the food they eat.**

**A food chain shows how energy flows from one organism to the next.**



Images: SF Denton; CB Hudson, Smithsonian Inst.

**Where do people fit? We eat everything in this food chain, except plankton and sunlight.**

Though plankton may not be important to people at first glance, it's essential in marine ecosystems that we depend upon. It's the foundation of the food chain—food for many different animals.

Phytoplankton (plants) are a major producer of oxygen worldwide.

# WHAT YOU CAN DO!

All of New York's watersheds eventually drain to the ocean, as water travels in rivers, lakes and surface water (runoff). What gets into the water eventually reaches beaches, estuaries and oceans. To keep our estuaries and oceans healthy, we need to keep our local waters healthy.

## Put litter in its place.

When litter is blown or washed into waterways, it can be carried to beaches and marine habitats. Hungry marine animals sometimes mistake trash floating in the water for food. If they eat it, they may starve or choke. Animals may also become tangled in marine trash.

## Scoop the poop.

Pick up after your pet so its waste doesn't end up in the water. Polluted waters are unhealthy for wildlife. We wouldn't want to swim in them, and food from these waters might be unsafe for us to eat.

## Control your catch.

The New York State Department of Environmental Conservation regulates fishing seasons and limits how many and what size of different species of fish and shellfish may be caught and kept. These rules ensure that there will always be plenty of these animals around.

## REDUCE THE USE OF

pesticides, fertilizers, and cleaning solutions. Rain can wash it off roads, driveways and parking lots and into the ocean, where it pollutes the water.

## The Riverhead Foundation for Marine Preservation and Research

helps marine mammals and sea turtles found in distress on New York's marine beaches and in our waters. Whenever possible, stranded and injured animals are rehabilitated and returned to the wild, sometimes with devices that track their movement after release. Go to [www.riverheadfoundation.org](http://www.riverheadfoundation.org) to check out the stories of some of these animals. Learn about their rescue and rehabilitation and how to report stranded marine wildlife you may find.



Chris LaPorta

## For More Information:

*Earth's Oceans* by Lesley McFadzean (Discovery Education, Sydney, Australia, 2011)

*A Field Guide to North Atlantic Wildlife* by Noble Proctor and Patrick Lynch (Yale University Press, New Haven, CT, 2005)

*The Magic School Bus on the Ocean Floor* by Joanna Cole (Scholastic Inc., New York, 1992)

*The Naturalist's Guide to the Atlantic Seashore* by Scott Shumway (Falcon Guides, Guilford, CT, 2008)

*Oceans* by Andy Williams (Crabtree Publishing Company, New York, 2002)

[www.dec.ny.gov/animals/201.html](http://www.dec.ny.gov/animals/201.html) DEC's Marine Life web page

[www.dec.ny.gov/pubs/4791.html](http://www.dec.ny.gov/pubs/4791.html) DEC's Color Brochures and Posters of NY Natural Resources web page

[www.epa.gov/students](http://www.epa.gov/students) EPA's "Students for the Environment"

[www.estuaries.gov](http://www.estuaries.gov) NOAA's educational site for the National Estuarine Research Reserve System (NERRS)

[www.nmfs.noaa.gov/pr/education/kids.htm](http://www.nmfs.noaa.gov/pr/education/kids.htm) NOAA Fisheries' Office of Protected Resources For Kids web page

# The **OUTSIDE** Page

## Go exploring.

Grab binoculars and a field guide, and explore along the shoreline, or get on a boat and head out on the water. Whale watching is fun; a number of tours are offered from Long Island. Can't get to the ocean? Visit an aquarium to see and learn about sea life.

## World Oceans Day



takes place on June 8 each year. Wear a blue shirt and have at least two facts to share about why protecting our oceans is important.

Visit [worldoceansday.org](http://worldoceansday.org) to learn more.



Jaime Van Dyke

## Organize a litter pick-up party.

Because litter can travel far on the wind and in the water, picking up trash locally helps the ocean, no matter where you live. Organize a group of friends and neighbors to clean up litter in your neighborhood. Consider what path water flowing from your neighborhood follows to reach the ocean—from ditch to river to ocean. How far does it travel?

## International Coastal Cleanup Day and National Estuaries Day

both take place each year in September. You don't have to be on or near the ocean to participate in these programs. Events include litter pick-up, nature tours, and more. Go to [www.estuaries.gov](http://www.estuaries.gov) and look for National Estuaries Day.

Learn more at [www.keepeceansclean.org](http://www.keepeceansclean.org) and "Surf Your Watershed" at <http://cfpub.epa.gov/surf/locate/index.cfm>

### NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

New York State *CONSERVATIONIST FOR KIDS* Volume 5, Number 2, Winter 2012

Andrew M. Cuomo, Governor of New York State

#### DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Joe Martens, Commissioner

Michael Bopp, Director, Office of Public Affairs

Laurel K. Remus, Director, Division of Public Affairs and Education

#### DIVISION OF PUBLIC AFFAIRS AND EDUCATION

Ann Harrison, Bureau Chief, Environmental Education

Gina Jack, Environmental Educator

Frank Herec, Art Director



Special thanks to DEC's Bureau of Marine Resources and NY Sea Grant

# New York State Department of Environmental Conservation

Division of Public Affairs and Education – *Conservationist for Kids*

625 Broadway, 2<sup>nd</sup> Floor, Albany, NY 12233-4500

[www.dec.ny.gov](http://www.dec.ny.gov)



Joe Martens  
Commissioner

## Conservationist for Kids

Supplement for Classroom Teachers – Meet the Sea

### Marine Environments

Marine waters are fascinating to explore, whether by the water, at an aquarium, or through books and videos. They are also fragile environments that we depend upon for food, biodiversity, recreation, and transportation. New York State is home to a variety of marine habitats, each supporting different wildlife and plants. No matter where we live in New York State, we each affect the health of our ocean and the marine habitats within it, and we all benefit from its resources.

This issue of *Conservationist for Kids* (C4K) introduces readers to the marine waters of New York State, from the habitats and wildlife they support, to the ways in which we make use of the resource. When we understand and appreciate what is in our own backyard, we are more likely to understand why it needs to be protected, and how we can contribute to its care.

### This Issue's "Outside Page"

The activities on the Outside Page (page 8) of this issue of C4K provide ways in which students can contribute to keeping marine environments clean and healthy. While some of the activities are best completed with family and friends or community groups, World Oceans Day is well suited as a classroom or school-wide activity.

### Teacher Workshops

For teachers who have participated in a Project WILD, Project WILD Aquatic or Project WET workshop, the activities listed below complement the winter 2012 issue of C4K. Visit [www.dec.ny.gov/education/1913.html](http://www.dec.ny.gov/education/1913.html) for information about workshops and about how to obtain curriculum and activity guides.

**Project WILD:** What's That Habitat? (*see aquatic extension*)

**Project WILD Aquatic:** Are You Me?, Marsh Munchers, Water We Eating?, Plastic Jellyfish, Wetland Metaphors

**Project WET:** Salt Marsh Players, Water Works, Wish Book

**Project WET 2.0:** Ocean Habitats, There is No Away

### Do you have an interactive white board in your classroom?

If you use a SMART Board or similar interactive white board or projection system in your classroom, consider downloading a PDF of C4K and using it in your classroom, along with the printed copies enclosed in this mailing. This issue and all of our back issues are available at [www.dec.ny.gov/education/40248.html](http://www.dec.ny.gov/education/40248.html)

*Conservationist for Kids* (C4K) and an accompanying teacher supplement are distributed to public school fourth-grade classes three times each school year (fall, winter and spring). If you would like to be added or removed from the distribution list, if your contact information needs to be changed, or if you have questions or comments, please e-mail the editor at [cforkids@gw.dec.state.ny.us](mailto:cforkids@gw.dec.state.ny.us)

Printable activity sheets and links to other resources are on DEC's website. You will also find back issues of C4K and the activity sheets and teacher supplements associated with each of them. Visit [www.dec.ny.gov/education/40248.html](http://www.dec.ny.gov/education/40248.html)

Subscribers to our e-mail list receive messages from the editor about the magazine, plus supplementary materials for educators who use the magazine in classrooms and non-traditional settings. Subscribers also receive information about resources and notification of training opportunities for connecting youth to the outdoors and to environmental issues. Visit [http://lists.dec.state.ny.us/mailman/listinfo/conservationist\\_for\\_kids](http://lists.dec.state.ny.us/mailman/listinfo/conservationist_for_kids) to subscribe to our e-mail list.

# Supplemental Activities for the Classroom

## Who am I?

Have students “become” marine animals and write stories about their lives in the first-person to share with the class. Without stating what animals they are, the stories should include where the animals live, what they eat, which predators they need to watch for, how they move, how big they are, and a fun fact about each animal. Fun facts might be things like a sea star grows back lost arms, and a jellyfish uses its tentacles to sting prey. Each story should end with the question, “Who am I?” After a story has been shared, the other students in the class must guess which marine animal is being described.

## Marine Mobile

Working in pairs or small groups, have students construct a mobile illustrating one marine habitat. Each group should do a different habitat so that many habitats can be depicted in the classroom. Plants, animals and significant features can all be included. For example, a rocky reef mobile may include rocks, sea anemone, sea stars, and a variety of fish. Students may draw their own images or use images from magazines and online sources. *Alternate mobile:* Instead of a habitat mobile, make it a food chain, starting with the sun and including the plants and animals within a marine food chain. Overlapping food chains can be joined together to form a food web.

## Marine Word Search

Review your marine vocabulary! Go to [www.dec.ny.gov/education/80451.html](http://www.dec.ny.gov/education/80451.html) to download a PDF of our marine animal word search.

## Resources

*Diving Into Oceans* ed. Judy Braus (Ranger Rick’s Nature Scope, National Wildlife Federation, Washington, DC, 1997)

“Seals: Winter Visitors to New York Waters” by Eileen Gerle (*Conservationist*, December 1999)

“New York’s Estuaries” by Steve Stanne (*Conservationist*, August 2003)

“Whales of New York” by Eileen Stegemann and Bill Fonda (*Conservationist*, August 2010)

[www.dec.ny.gov/docs/administration\\_pdf/0810whalesofny.pdf](http://www.dec.ny.gov/docs/administration_pdf/0810whalesofny.pdf)

“Giants at Our Feet: New York’s Horseshoe Crabs” by Lee Roscoe and Eileen Stegemann (*Conservationist*, June 2011)

[www.dec.ny.gov/docs/administration\\_pdf/0611horseshoecrab.pdf](http://www.dec.ny.gov/docs/administration_pdf/0611horseshoecrab.pdf)

“Seahorses: Long Island’s Fish Oddities” by Christopher Paparo (*Conservationist*, August 2011)

[www.dec.ny.gov/docs/administration\\_pdf/0811seahorses.pdf](http://www.dec.ny.gov/docs/administration_pdf/0811seahorses.pdf)

[www.dec.ny.gov/animals/201.html](http://www.dec.ny.gov/animals/201.html) DEC’s Marine Life web page

[www.dec.ny.gov/pubs/4791.html](http://www.dec.ny.gov/pubs/4791.html) DEC’s Color Brochures and Posters of NY Natural Resources web page

[www.dec.ny.gov/lands/5102.html](http://www.dec.ny.gov/lands/5102.html) DEC’s Hudson River Estuary Program “Teaching About the Hudson River”

<http://water.epa.gov/learn/> EPA’s water-education resources for teachers and students

[www.epa.gov/bioindicators/aquatic/marine.html](http://www.epa.gov/bioindicators/aquatic/marine.html) EPA’s Marine Ecosystems web page

[www.estuaries.gov](http://www.estuaries.gov) NOAA’s Estuary Education web site

[www.nmfs.noaa.gov/pr/education/kids.htm](http://www.nmfs.noaa.gov/pr/education/kids.htm) NOAA Fisheries’ Office of Protected Resources For Kids web page

[www.education.noaa.gov/Marine\\_Life/](http://www.education.noaa.gov/Marine_Life/) NOAA’s Education Resources on Marine Life

<http://oceanservice.noaa.gov/education/welcome.html> NOAA’s National Ocean Service Education web site

[www.seagrant.sunysb.edu/articles/t/education-youth-education-a-sampling-of-resources-for-teachers-and-students](http://www.seagrant.sunysb.edu/articles/t/education-youth-education-a-sampling-of-resources-for-teachers-and-students)

New York Sea Grant’s resources for teachers and students

[www.nysmea.org](http://www.nysmea.org) New York State Marine Education Association

[www.riverheadfoundation.org/](http://www.riverheadfoundation.org/) Riverhead Foundation for Marine Preservation and Research

<http://cresli.org/> Coastal Research and Education Society of Long Island

<http://longislandsoundstudy.net/get-involved/teaching-resources/> Long Island Sound Study (curriculum for teaching about Long Island Sound in the classroom or by the shore)

[www.coexploration.org/oceanliteracy](http://www.coexploration.org/oceanliteracy) Ocean Literacy

[www.vims.edu/bridge](http://www.vims.edu/bridge) The Bridge, marine education resources

[www.marine-ed.org](http://www.marine-ed.org) National Marine Educators Association

**Online Videos:** [www.dec.ny.gov/dectv/dectv65.html](http://www.dec.ny.gov/dectv/dectv65.html) DEC-TV “Fishing for Bluefish”

[www.dec.ny.gov/dectv/dectv90.html](http://www.dec.ny.gov/dectv/dectv90.html) DEC-TV “I Fish NY”

[www.dec.ny.gov/dectv/dectv87.html](http://www.dec.ny.gov/dectv/dectv87.html) DEC-TV “Urban Fishing in New York”