Coastal Lifestyle for Clean Water

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ACE Basin NERR, SCDNR

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Course Series:

- Living with Water
- The Land Water Connection
- Tidelands, Water & Beach: Regulations & Rebuilding
- Coastal Lifestyle for Clean Water
- Understanding Property with Freshwater Wetlands

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South Carolina Coastal Information Network

https://www.sccoastalinfo.org/

Instruction and Information Provided By:

- S.C. Sea Grant Consortium
- SC Department of Natural Resources
- ACE Basin National Estuarine Research Reserve
- Clemson University
- Coastal Carolina University
- North Inlet-Winyah Bay National Estuarine Research Reserve
- SC Department of Environmental Services

Agenda
Coastal Lifestyle for Clean Water

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- Overview: Why This Matters
- Coastal Life Support: The Saltmarsh and Tidal Creek Ecosystem
- Coastal Lifestyle for Clean Water Guide
  - Aquatic Life and Wildlife
    - Tool: SC Watershed Atlas
  - Recreation
    - Tools: SC Beach Guide, Swim Guide
  - Seafood
    - Tools: SC Fish Consumption Advisory App, SCDNR Shellfish Mapper

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Objectives
Coastal Lifestyle for Clean Water

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- Understand how clean water and a healthy saltmarsh supports favorite coastal lifestyle activities
- Understand how to use online tools to investigate water quality in communities
- Provide clients with resources and tips to stay safe and healthy while living the coastal lifestyle
- Encourage clients to reduce sources of water pollution, especially bacteria

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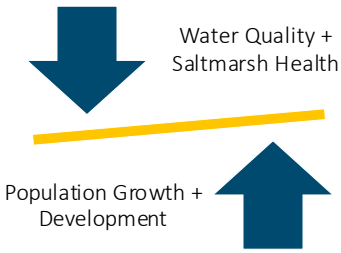
South Carolina's coast is a great place to live.

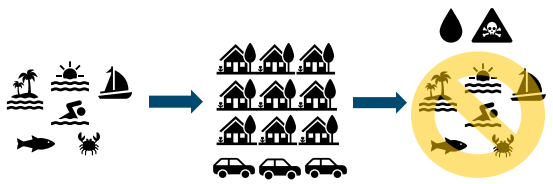
Our Coastal Lifestyle…
8
Boating, fishing, birding, and more.

9
Clean water & a healthy saltmarsh support our coastal lifestyle.

10


Water Quality +
Saltmarsh Health
Population Growth +
Development

11



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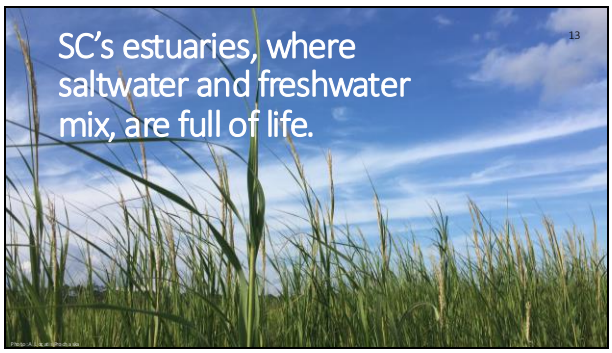
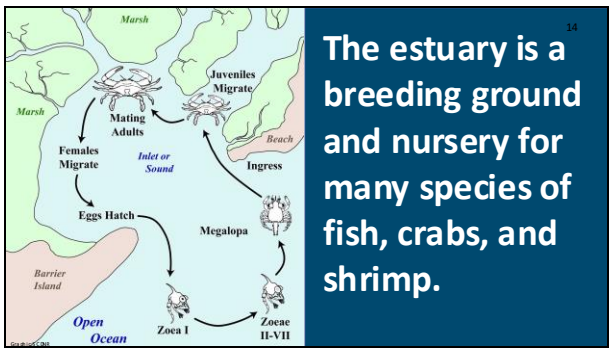
Coastal Life Support: The Saltmarsh and Tidal Creek Ecosystem


SC's estuaries, where saltwater and freshwater mix, are full of life.
13


Marsh
Juveniles Migrate
Marsh
Mating Adults
Beach
Females Migrate
Inlet or Sound
Ingress
Eggs Hatch
Megalopa
Barrier Island
Open Ocean
Zoea I
Zoeae II-VII
The estuary is a breeding ground and nursery for many species of fish, crabs, and shrimp.
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Tides matter.
15

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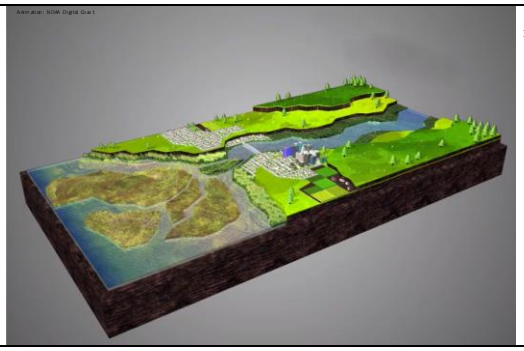
How does a marsh get dirty?

https://coast.noaa.gov/elearning/estuaries/



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How does a marsh get clean?

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Oysters + Marsh Grass + Pluff Mud = Filter and trap pollutants

Tides = Flush excess nutrients

How much pollution can the marsh handle?

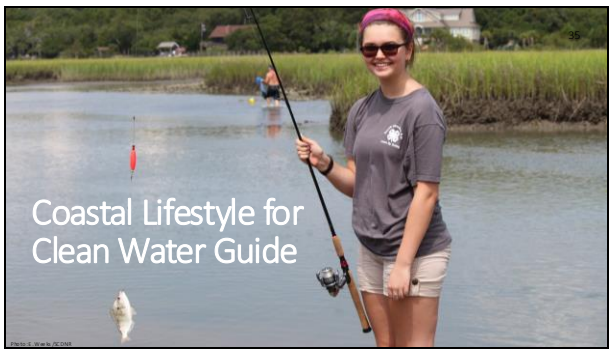
20

SCDES has a water quality monitoring program for that.

There are practical steps residents can take to reduce pollution and protect creeks and salt marshes.

There are practical steps residents can take to reduce personal risks from pollution.

Residents can also help protect wildlife that live in creeks and saltmarshes.



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Aquatic Life Water Quality Indicators

- Dissolved Oxygen
- pH
- Turbidity
- Nutrients
- Heavy Metals
- Temperature
- Salinity

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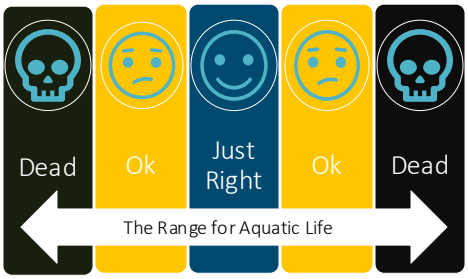

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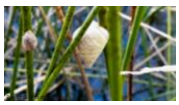
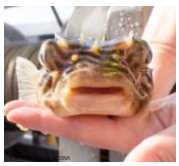


Clean water supports lots of life.



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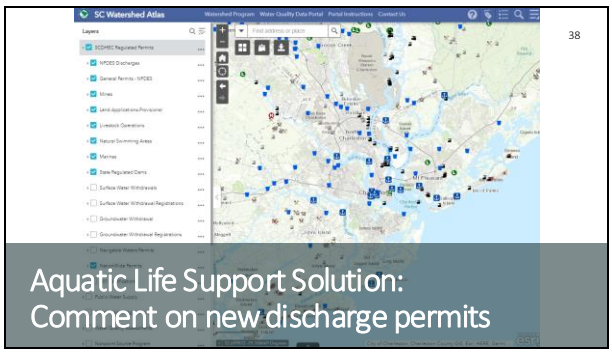
Threat: development activities can result in water pollution.


SC Watershed Atlas
38
Aquatic Life Support Solution:
Comment on new discharge permits

Aquatic Life Support Solution:
Properly maintain construction sites

Aquatic Life
Support Solution
Reduce polluted runoff from lawns and neighborhoods
Take the Land Water Connection course!
40

Aquatic Life Support Solution: Recycle oyster shells.

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Video © Waterkeeper Alliance, Inc.

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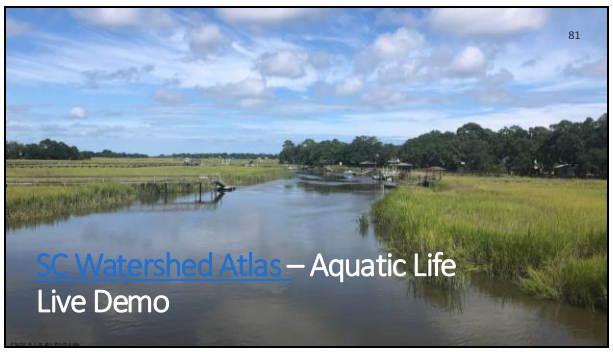

Practice Time! SC Watershed Atlas

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https://gis.des.sc.gov/watersheds/
Google "SC Watershed Atlas"

Suggested layers to check out:

SCDES Regulated Permits – any sublayer
Water Quality Assessments - 2018 Use Support and Trends sublayer, Impaired Waters – 303(d)2018
Nat'l Watershed Boundaries – any sublayer

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SCDES chemical spill, oil spill and fish kill hotline: 1-888-481-0125

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File a pollution complaint with local SCDES Environmental Affairs Office

https://des.sc.gov/about-scdes/locations/scdes-local-offices

Threat: Litter and Microplastics

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Solution:
Report littering
1-800-922-5431

SCDNR Tips App

We must live responsibly to ensure good homes for animals and people.
FRONT BEACH
LIGHTS OUT
FOR SEA TURTLES
PER ORD 31-08
ENF CODE 151-48
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ALLIGATORS
MAY LIVE HERE
BE GATOR SAFE:
Do Not Approach, Feed or Harass Alligators
Warning: It is UNLAWFUL to feed alligators!
REMEMBER
A FED GATOR IS A DEAD GATOR!
Don't feed gators, geese, or other wildlife.

68
Alligators will be your neighbors.

67
Birds need space to nest, rest, and eat.

66
Coastal SC is a birding hotspot.

70
Treat dolphins and other marine mammals with respect.

Coastal Lifestyle: Wildlife Checklist for New Residents

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- Attend a public program with SCDNR
- Visit the South Carolina Aquarium
- Volunteer with a turtle patrol
- Go birding with SC Audubon
- Never feed wildlife
- Give wildlife plenty of space
- Participate in the annual Beach Sweep/River Sweep cleanup

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10 Minute Break

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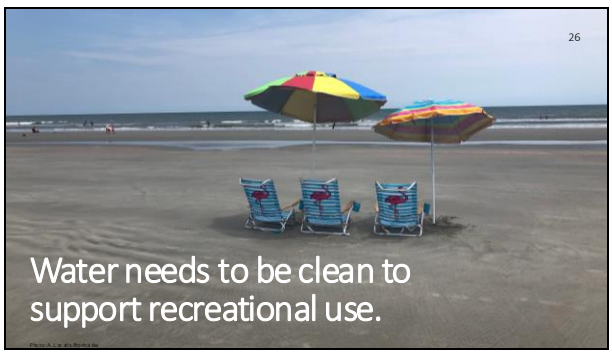

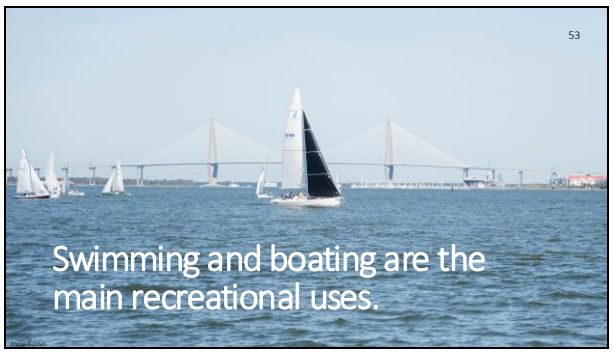

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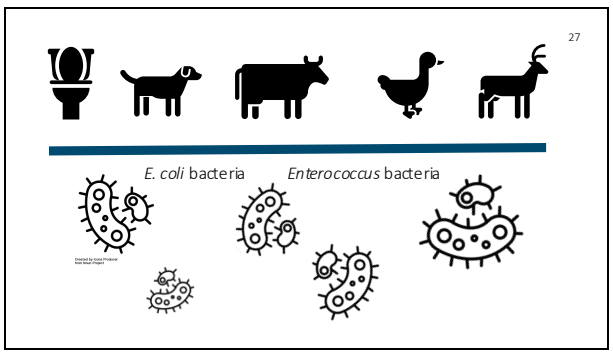
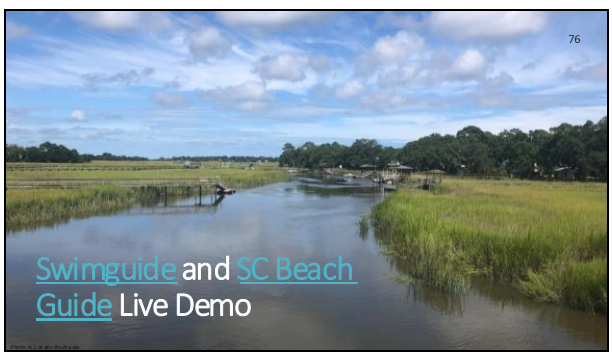
Threat: bacteria in water where you swim can make you sick.



Solutions: Reduce Bacteria

- Pick up after pets.
- Maintain vegetated areas between livestock and waterways.
- Maintain septic systems.
- Dispose of waste properly when boating.

44



Practice Time!
Swimming/Recreational Use

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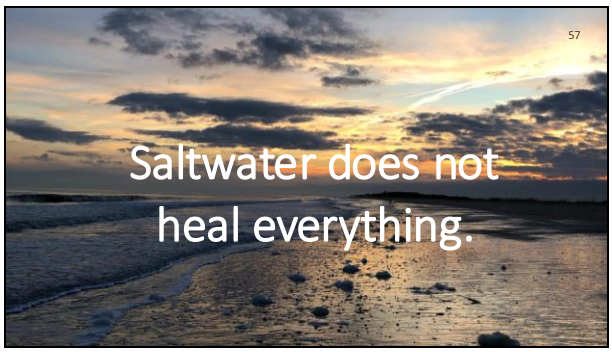
Swim Guide:
https://www.theswimguide.org/find/
Google "Swim Guide"

SC Beach Guide:
https://gis.des.sc.gov/beachaccess/
Google "SC Beach Guide"



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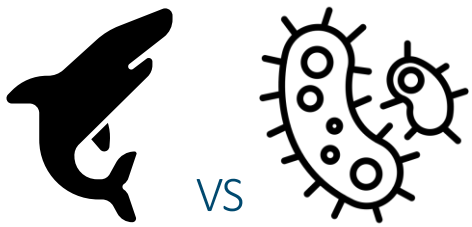

130 shark attacks worldwide in 2018

80,000 cases of vibriosis annually in the US

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Threat: irresponsible boaters pollute and destroy marsh habitat

60

Boater Solutions: Clean Vessels

Larger boats – use pumpouts

Smaller boats – clean waste bags

South Carolina CLEAN MARINA

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Boater Solutions: Slow Down

Obey no wake zones

Don't wake oyster reefs

Watch out for manatees and sea turtles

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Report boating, fishing or hunting violations. Operation Game Thief hotline: 1-800-922-5431

Coastal Lifestyle: Recreation Checklist for New Residents

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- Register your boat with SCDNR
- Review the Handbook! Of SC Boating Laws and Responsibilities
- Take a boater education course
- Study the tides in your area
- Watch your wake – slow down to protect oysters, people, property and wildlife
- Find your local nautical chart
- Check for swim advisories at your favorite beach
- Decide on a boat waste disposal strategy

30

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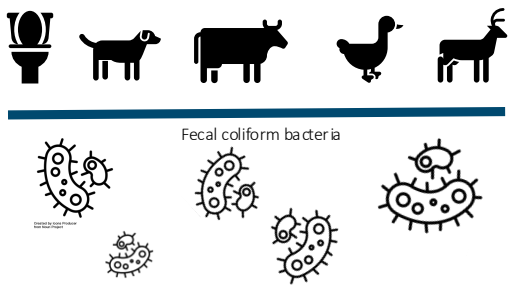
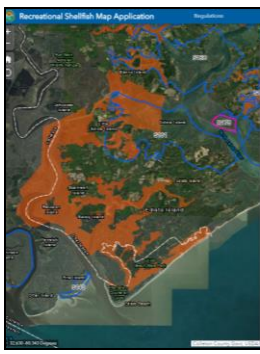
Threat: bacteria in shellfish can make you sick

31





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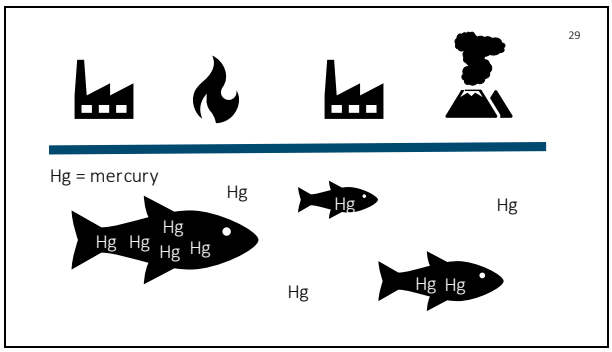
Shellfish Solutions: Rules and Regs

- Get a saltwater fishing license
- Harvest in designated areas
- Harvest during shellfish season (colder months) only
- Watch out for emergency closures after rain events

https://scdnrmaps.arcgis.com/apps/webappviewer/index.html?id=cbef2c2ad9449b87dd25c7117ad865

Water needs to be clean to support fish consumption.


29
Hg = mercury
Hg
Hg
Hg
Hg
Hg
Hg
Hg
Hg
Hg
Hg

45
Threat: pollutants in fish can be harmful if eaten

Fish Solutions: Rules and Regs

Follow fish consumption advisories.

Check for advisories in you favorite fishing areas

Remember that advisories are different for different groups of people.

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SC Fish Consumption Advisory APP and SCDNR Shellfish Mapper Live Demo

Practice Time! Seafood Consumption

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South Carolina Fish Consumption Advisory App
https://gis.dhec.sc.gov/gisportal/apps/webappviewer/index.html?id=c71943bc743b4ca196e0ef0406b1d7ab

SCDNR Recreational Shellfish Map Application
https://scdnrmaps.arcgis.com/apps/webappviewer/index.html?id=cbef2c2a0f9449fa87dd25c7117ad865

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Threat: overharvesting

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Avoid overharvesting

- Get a saltwater fishing license
- Obey size and catch limits
- Learn proper catch and release techniques
- Recycle your oyster shells
- Check out the SC Aquarium's Good Catch program

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Get involved!

- Report any tagged fish you catch to the Marine Game Fish Tagging Program
- Attend a Family Fishing Clinic
- Become a certified DNR Fishing Instructor

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Threat: loss of the marsh itself

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Protect the Marsh

Install living shorelines (with recycled oyster shells)

Slow down in no wake zones

Make room for marsh migration

Coastal Lifestyle: Seafood Checklist for New Residents

- Buy a saltwater fishing license
- Get a copy of official fishing regulations
- Grab a fish ruler from your local tackle shop
- Check for fish consumption advisories
- Report any tagged fish you catch
- Locate shellfish harvest grounds
- Recycle your oyster shells

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Case Study: May River

Is this creek suitable for:
Swimming - ?? Probably

Fish Consumption – Follow Advisories

Shellfish Harvesting – Approved shellfish grounds nearby

Aquatic Life – Some issues, but OK

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What can be done to improve water quality in your area?

Summary
Coastal Lifestyle for Clean Water

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- Our coastal lifestyle is supported by clean water and a healthy saltmarsh
- Rapid development, population growth and careless people can threaten our coastal lifestyle
- SCDES monitors water quality to catch problems as they arise
- All coastal residents can follow rules, regs and advisories to stay safe and healthy
- All coastal residents can help keep water clean, especially by reducing bacteria and litter
- Use the SC Watershed Atlas and other online tools to explore water quality in your community

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For more information and course materials

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South Carolina Coastal
Information Network
https://www.sccoastalinfo.org/

Instructor

Olivia Greenslit
greenslito@dnr.sc.gov

Please let us know how we can improve this course and the series.

Calling the Coast Home

Complete the course evaluation here

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