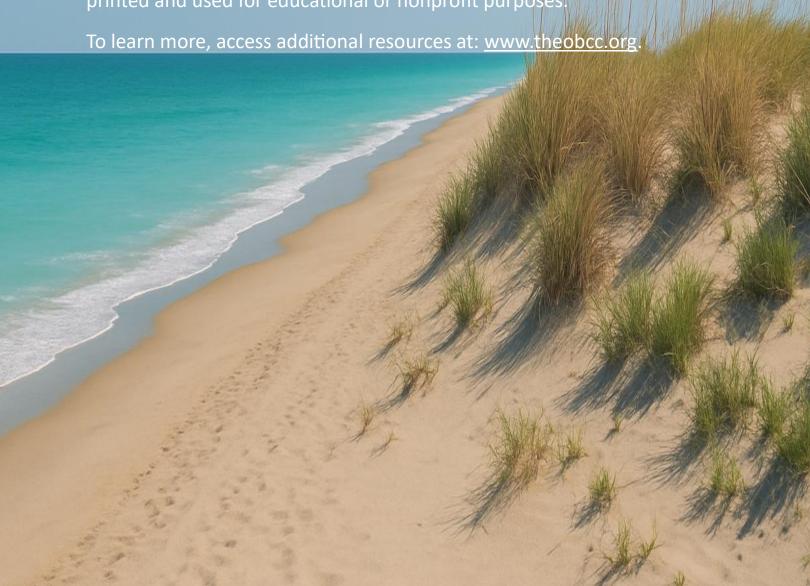


Forward

This pamphlet was created by the Outer Banks Coastal Conservation (OBCC), a nonprofit organization whose mission is to foster environmental stewardship and a deeper connection to the Outer Banks of North Carolina through outreach, education, and conservation efforts.

We believe that small stories can spark big change. That is why we have made this book available as a free resource for parents, teachers, and community members.

All materials in this pamphlet may be freely downloaded, shared, printed and used for educational or nonprofit purposes.



Shells: Part of the Ecosystem



Know the Laws and Local Rules

Before collecting, check local regulations:

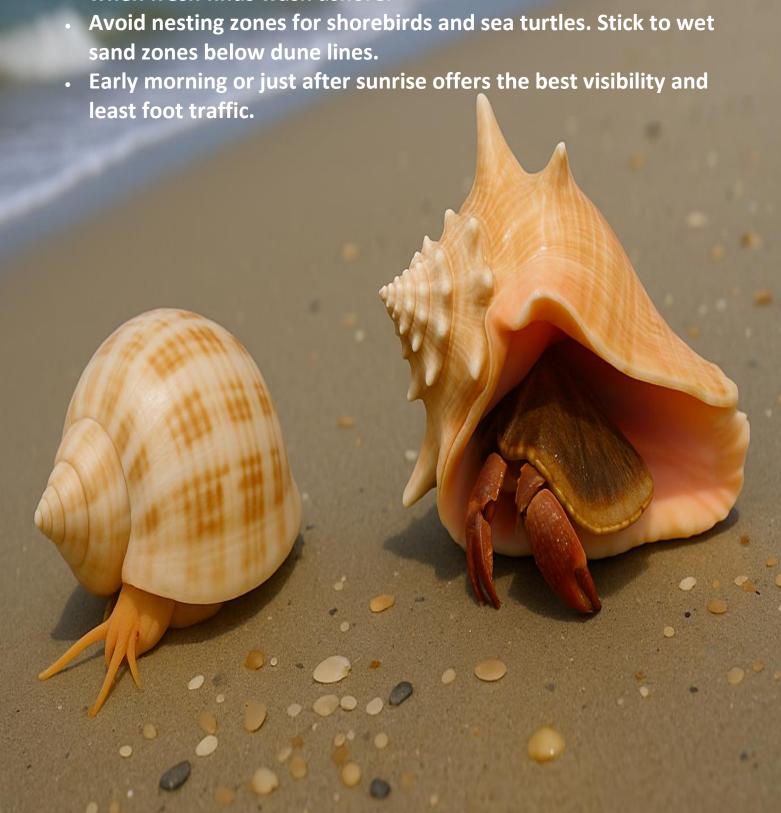
- National Seashores (like Cape Hatteras) often prohibit collecting live shells, coral, or sand dollars.
- North Carolina law protects certain species, such as Queen Conch and Scotch Bonnet when alive.
- Limits may apply to quantities or areas (especially near wildlife refuges).

When in doubt — photograph, do not pocket.

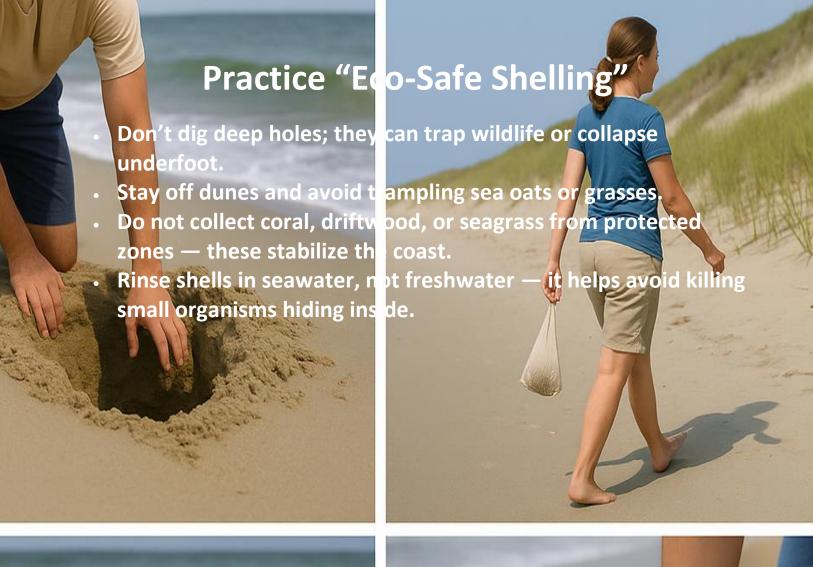




 Low tide is the best time for shelling — especially after storms, when fresh finds wash ashore.

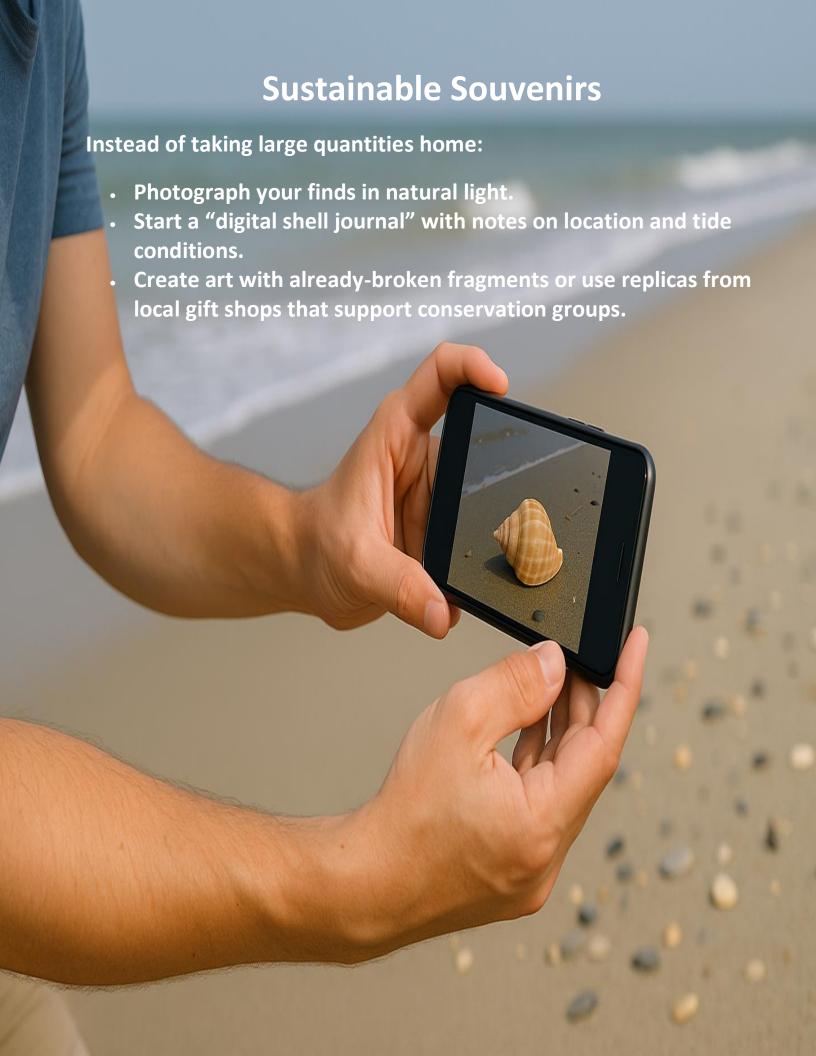
















Outer Banks Shell Facts

Shell Diversity: The Outer Banks' unique mix of ocean and sound habitats means you can find over 100 shell species, from coquinas and whelks to moon snails and scallops. Cape Hatteras is especially known for large knobbed whelks and colorful scallop shells after storms.

Natural Role of Shells

- Empty shells become homes for hermit crabs and anchors for seagrass.
- Broken shells help build dunes and reduce beach erosion.
- Over time, shells break down into calcium carbonate, replenishing sand and stabilizing coastlines.

Shell Formation: Shells are made from calcium carbonate secreted by marine mollusks. Each grows in layers, forming ridges and spirals that reveal the animal's age and habitat conditions.

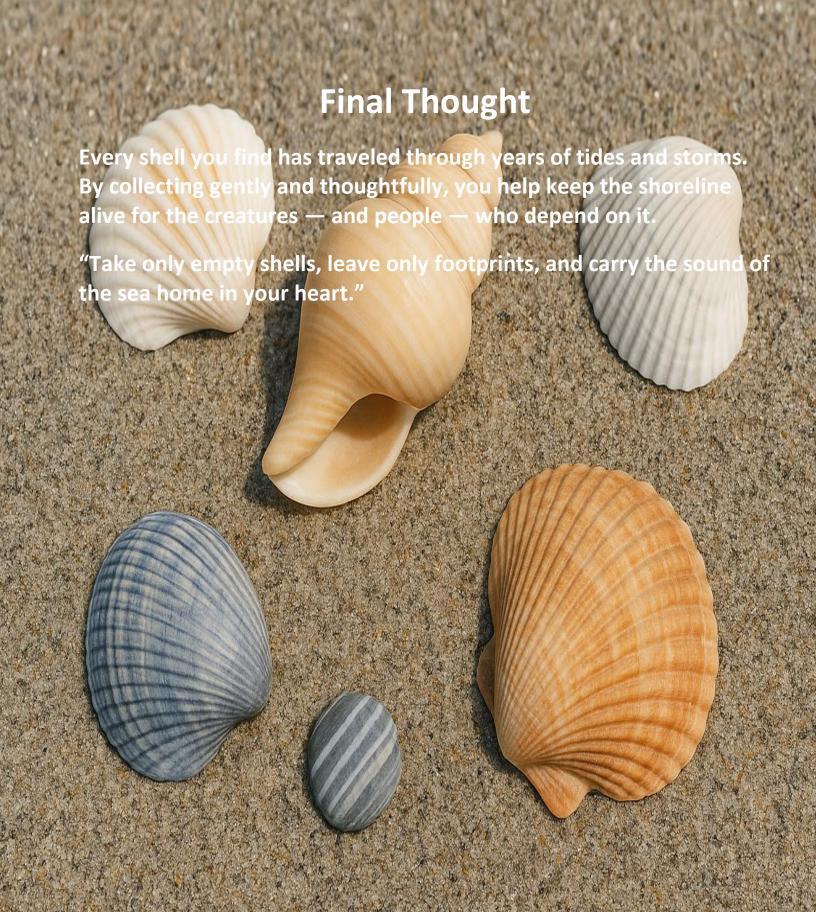
Rare Finds: The Scotch Bonnet, North Carolina's state shell, is prized for its checkered pattern—but it's protected when alive. Other occasional treasures include lettered olives, whelk egg cases, and sand dollars (which are often alive—so return them if fuzzy or moving).

When and Where to Look: Best shelling is at low tide, especially after nor'easters or tropical storms when new shells wash ashore. The southern beaches of Ocracoke, Hatteras, and Pea Island are top spots for natural shell deposits.

Conservation Reminder: Removing too many shells can impact shoreline ecosystems. Each shell left behind provides shelter, nutrients, and protection for countless organisms — from algae and worms to crabs and shorebirds.

Local Programs:

- NC Coastal Federation Oyster Projects: Help rebuild reefs and restore habitat in Pamlico Sound.
- Citizen Science: You can log shell species sightings on iNaturalist or local beach monitoring programs.



Did You Know?

- The Outer Banks are one of the best shelling spots on the U.S.

 East Coast strong currents and shifting sands reveal new shells almost every day.
- Empty shells don't go to waste they become homes for hermit crabs, attach points for algae, and even nesting materials for shorebirds.
- Broken shells help build dunes! Over time, crushed fragments mix with sand and sea oats to form natural coastal barriers.
- A Scotch Bonnet, North Carolina's state shell, can take up to 5
 years to reach full size and live ones are protected by law.
- Coquinas, tiny rainbow-colored clams found near the waterline, burrow back into the sand within seconds when waves roll in.
- Oyster shells are recycled to create new reefs that filter water and protect shorelines from erosion.
- Every shell you find has been shaped by years of waves, storms, and tides some may have traveled hundreds of miles before reaching your feet.
- Leaving even one live shell behind helps preserve the balance of the beach ecosystem, ensuring future generations can enjoy the same natural treasures.

References

Audubon North Carolina. (2023). Shorebird nesting and protection programs along the Outer Banks. https://nc.audubon.org

Cape Hatteras National Seashore. (2024). *Collecting regulations and wildlife protection guidelines*. National Park Service. https://www.nps.gov/caha

North Carolina Coastal Federation. (2024). *Oyster reef restoration and shell recycling programs*. https://www.nccoast.org

North Carolina Division of Marine Fisheries. (2023). *Shellfish management and conservation laws*. https://deq.nc.gov/about/divisions/marine-fisheries

Peterson, C. H., & Bishop, M. J. (2005). Assessing the environmental impacts of beach nourishment. *BioScience*, *55*(10), 887–896. https://doi.org/10.1641/0006-3568(2005)055[0887:ATEIOB]2.0.CO;2

Puckett, B. J., & Eggleston, D. B. (2016). Oyster demographic rates and population dynamics on intertidal reefs: Implications for restoration. *Marine Ecology Progress Series*, *547*, 145–161. https://doi.org/10.3354/meps11658

U.S. Fish and Wildlife Service. (2024). Endangered and threatened species of North Carolina coastal habitats. https://www.fws.gov

Waters, M. N., & Murphy, L. A. (2019). Beachcombing responsibly: The ecological value of leaving shells behind. *Journal of Coastal Ecology*, 36(4), 227–234.

Wright, D. J., & Finkl, C. W. (2021). Coastal environments and management: Understanding coastal ecosystems. CRC Press.