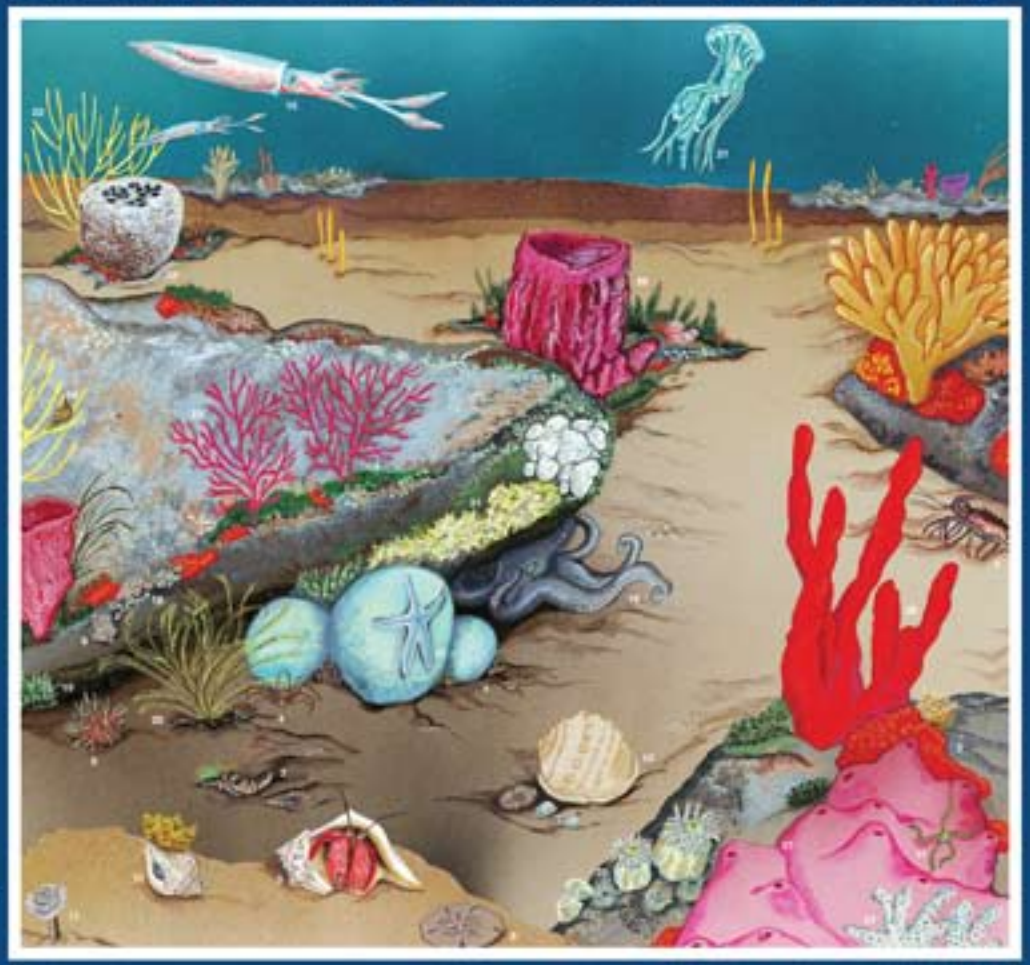
Invertebrates of the Reef



Residents of the Reef

Taxonomy of Representative Reef Invertebrates

CHORDATA

Animals with a notochord – (26,000 species)
1. Sea pork – *Aplidium stellatum*
2. Tunicate – *Symplegma rubra*

ARTHROPODA

Joint-legged animals – (922,000)
MALACOSTRACA: Lobsters, crabs, and shrimp
3. Giant hermit crab – *Petrochirus diogenes*
4. Arrow crab – *Stenorhynchus seticornis*
5. Spiny lobster – *Panulirus argus*
CIRRIPEDIA: Barnacles
6. Acorn barnacle – *Chthamalus fragilis*

ECHINODERMATA

Spiny-skinned animals – (6,000)
HOLOTHUROIDEA: Sea cucumbers
7. Common thyone – *Thyone briareus*
ECHINOIDEA: Sea urchins and sand dollars
8. Slate pencil urchin – *Eucidaris tribuloides*
9. Mitchell's sand shifter – *Encope michelini*
ASTEROIDEA: Sea stars
10. Gray sea star – *Luidia clathrata*
OPHIUROIDEA: Brittle or serpent stars
11. Spiny brittle star – *Ophiothrix angulata*

MOLLUSCA

Soft-bodied animals – (100,000)
GASTROPODA: snails and slugs
12. Banded tulip – *Fasciolaria lilium*
13. Emperor helmet – *Cassis madagascariensis*
PELECYPODA: clams, scallops, and oysters
14. Atlantic wing oyster – *Pteria colymbus*
CEPHALOPODA: Squids and octopods
15. Atlantic long finned squid – *Loligo pealei*
16. Common octopus – *Octopus vulgaris*

ANNELIDA

Segmented worms – (8,700)
POLYCHAETA: Fan, tube, and bristle worms
17. Fan worm – *Hypsicomus phaeotaenia*
18. Atlantic tube worm – *Hydroides uncinata*

BRYOZOA

Moss like animals –(4,000)
19. Bushy bugula – *Bugula turrita*

CNIDARIA

Animals with stinging cells – (9,000)
HYDROZOA: Hydroids
20. Feather hydroid – *Pennaria tiarella*
SCYPHOZOA: Sea jellies
21. Sea Nettle – *Chrysaora quinquecirrha*
ANTHOZOA: Corals and anemones
Octocorallia: Soft corals
22. Branched sea whip – *Leptogorgia virgulata*
23. Sea fan – *Gorgonia flagellum*
Zoantharia: Stony corals and anemones
24. Ivory bush coral – *Oculina arbuscula*
25. Armoured sea anemone – *Anthopleura carneola*

PORIFERA

Pore-bearing animals – (10,000)
26. Vase sponge – *Ircinia campana*
27. Chicken liver sponge – *Chondrilla nucula*
28. Red finger sponge – *Hemiasterella wallacei*
29. Loggerhead sponge – *Spheciospongia vesparia*
30. Finger sponge – *Aaptos aaptos*
31. Sulfur sponge – *Aplysilla sulphurea*

Reefs of the Southeast

The coastal waters between Cape Hatteras, North Carolina, and Cape Canaveral, Florida, lie above an ocean floor that is covered with loose sediments of sand, silt, and mud. Throughout this productive plain are scattered outcrops of limestone that provide reef habitats for diverse communities of marine plant and animal life. These rocky reef formations known as "hard bottom" or "live bottom" areas support a variety of sponges, corals, and other invertebrates. As a result, these areas attract many diverse species of marine fishes, reptiles, birds, and mammals. The Gray's Reef National Marine Sanctuary is one of the largest and most accessible live bottom reefs in the United States. Managed by the National Oceanic and Atmospheric Administration, Gray's Reef was designated a sanctuary in 1981 and is representative of this habitat type found throughout the marine environment of the southeast United States.

Artwork by Keith Schnebli,
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GRAY'S REEF NATIONAL MARINE SANCTUARY
HTTP://GRAYSREEF.NOAA.GOV

Reef Habitats

Community Structure within the Reef

WATERS ABOVE THE REEF

Planktonic (drifting) and nektonic (swimming) invertebrates are found in the waters above the reef. Planktonic species include large medusae such as the sea nettle and the cannonball jelly. Squid exemplify a nektonic species that actively pursue prey in these waters.

FLAT TOP RIDGE

Horizontal reef tops provide habitat for sessile, (attached) benthic (bottom dwelling) invertebrates which rely upon ocean currents for food, gas exchange, waste removal, and egg dispersal. Examples include hard corals, soft corals, sponges, and hydroids.

SCARPS

Little sediment accumulates on the vertical reef surfaces known as scarps. As a result, the bare substrate supports colonies of encrusting sponges and bryozoans. Barnacles, tunicates, and sea anemones are also found on these exposed surfaces.

LEDGES AND CREVICES

Both predators and prey seek out good hiding places within the reef. Diurnal (active at day) species find refuge within the reef during the night. Nocturnal (active at night) species seek to conceal themselves within the reef during the daylight hours. Lobsters, crabs, sea urchins, and octopods prefer this type of habitat.

SLOPES AND SANDY AREAS

Shifting sands and a lack of firm substrate preclude most sessile forms from settling along slopes and in sandy areas of the reef. Burrowing clams, mobile snails, sea stars, and burrowing polychaete worms are better adapted to life in these loose sediments.

FLAT BOTTOM TROUGHS

Among the rock rubble, coarse sands, and shell fragments of flat bottom troughs are found brittle stars, fan and tube worms, burrowing crustaceans, small crabs, and snails. This habitat is also preferred by certain burrowing echinoderms such as the sea cucumber.

The invertebrates of the reef have adapted to the specific resource characteristics of the habitats described above. This ability to adapt to different, specific resources helps to decrease competition for food and space among the residents of the reef, thus allowing for a greater diversity of species within the reef community.

For more information about Gray's Reef, contact:
NOAA/Gray's Reef National Marine Sanctuary