

### Coralline Algae Zone

This zone is characterized by crustose coralline algae that actively produce carbonate substrate, including rhodoliths, or algal nodules. The Coralline Algae zone is consistent with that designated as the “Algal-Sponge zone” by Rezak et al. (1985), but includes additional habitat.

#### Algal Nodules

This zone extends from 45 m to over 90 m in depth and includes both the algal nodule habitat and rocky outcrops where coralline algal crusts cover a substantial percentage of the hard substrate. This is the largest reef-building zone by area in the Flower Garden Banks. Leafy algae are abundant in this zone to depths of at least 70 m. Algal nodules, or rhodoliths, are formed by species of coralline algae that lay down successive, concentric layers of carbonate around an initial “nucleus” (such as a rock fragment) to form irregular spheres 1 cm to over 20 cm in size. Between 50 m and 75 m, the nodules can cover 60–90% of the bottom (Minnery 1984) and can often occupy 100% of the sea floor in some areas (Fig. 6.17). Primary species include the coralline algae *Lithothamnium* sp., the squamariacean *Peyssonnelia* sp. and the encrusting foraminiferan *Gypsina plana*. Several species of hermatypic corals are scattered throughout the algal nodule zone, and can be locally abundant, including saucer shaped specimens of *Agaricia* spp. and *Leptoseris cucullata*. Leafy algae and sponges, most notably the toxic sponge *Neofibularia nolitangere*, are also common in this habitat.



Fig. 6.17. A field of algal nodules within the coralline algae zone. Coralline algae and encrusting sponges are noticeable components of these formations. Photograph taken by ROV mounted camera at 57 m (2202) depth (Photo credit: FGBNMS/NURC-UNCW)

### Coralline Algae Reefs

The Coralline Algae zone also includes deepwater coralline algal reefs, which are typically low-relief (1–2 m high), flat-topped rocky outcrops, ridges and patch reefs.

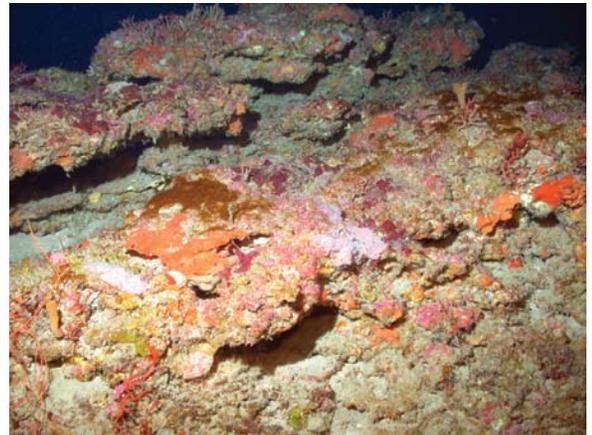


Fig. 6.18. Coralline algae patch reef habitat within the coralline algae zone, photographed at 81 m (2662). The ledge is encrusted with coralline algae, gorgonians (*Hypogorgia* sp., *Ellisella* sp.), antipatharians (*Stichopathes* sp.), and a mosaic of sponges (Photo credit: FGBNMS/NURC-UNCW)

While coralline algae is the dominant benthic group on these reefs, the rocky outcrops provide habitat for a variety of gorgonians, antipatharians, sponges and other organisms (Fig. 6.18). This zone corresponds with the area called “partly drowned reefs” by Bright and Pequegnat (1974) and Bright et al. (1985). Since the concept of “drowned reef” implies certain geological origins and temporal history, this terminology is not used here in relation to present-day biological communities. In fact, Bright et al. (1985) defined “partly drowned reefs” as reef structures below the depths of hermatypic corals, but within a depth range favoring crustose coralline algae. This is consistent with the concept as used in the present classification.

## *References*

- Bright TJ, Pequegnat LH (1974). Biota of the West Flower Garden Bank. Gulf Publishing Company, Houston, TX, 435 pp.
- Bright TJ, McGrail DW, Rezak R, Boland GS, Trippett AR (1985). The Flower Gardens: a compendium of information. OCS Studies/MMS 85-0024, Minerals Management Service, New Orleans, LA, 103 pp.
- Minnery GA (1984). Distribution, growth rates and diagenesis of coralline algal structures on the Flower Garden Banks, northwestern Gulf of Mexico. Dissertation, Texas A&M University, College Station, TX, 177 pp.
- Rezak R, Bright TJ, McGrail DW (1985). Reefs and banks of the northwestern Gulf of Mexico: their geolocial, biological and physical dynamics. Wiley, New York, 323 pp.