

Figure 1. *Acropora cervicornis* and *A. palmata* surveyed for presence-absence, colony density, colony size, and colony condition in the upper Keys region of the Florida Keys National Marine Sanctuary during August 1-18, 2006.



Figure 2. Survey locations for *Acropora cervicornis* and *A. palmata* in the upper Keys region of the Florida Keys National Marine Sanctuary during August 1-18, 2006.

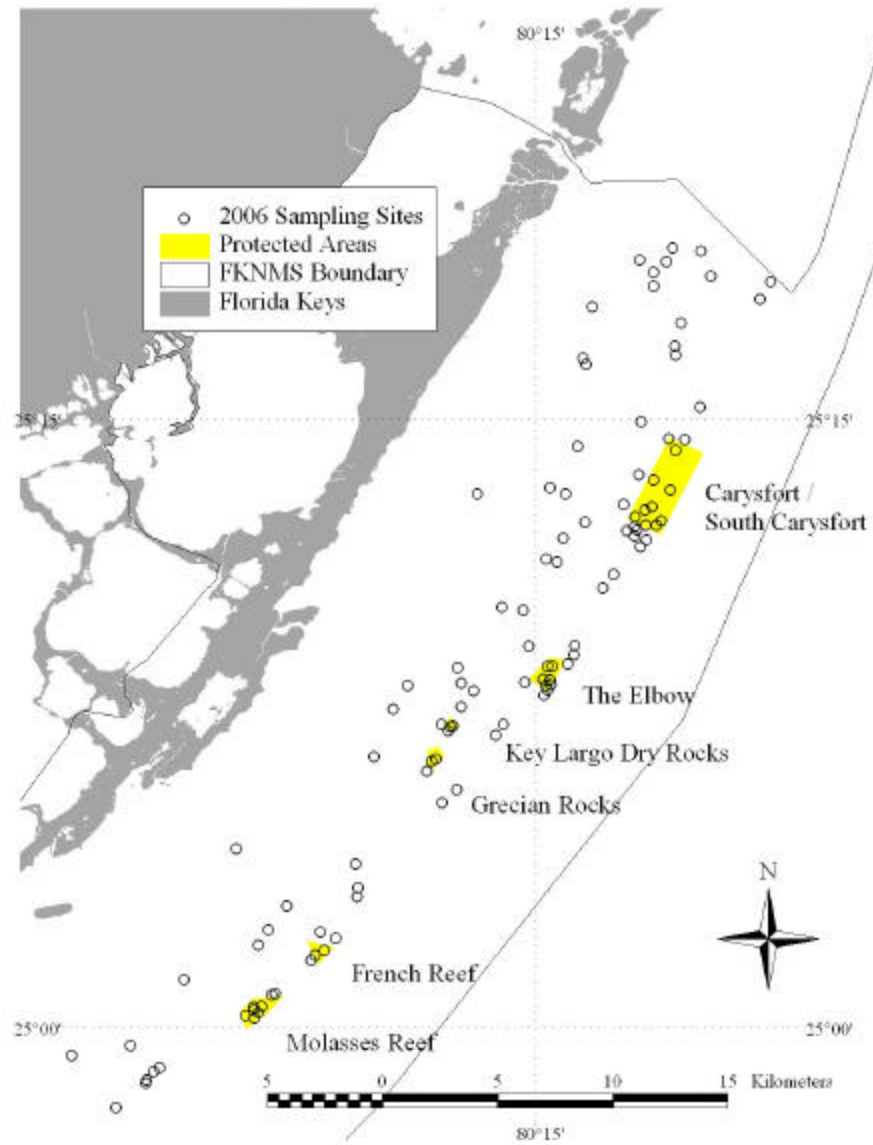


Figure 3. Survey locations for *Acropora cervicornis* and *A. palmata* in the upper Keys region of the FKNMS from the southern boundary of Biscayne National Park to the southern boundary of Carysfort/South Carysfort Sanctuary Preservation Area.

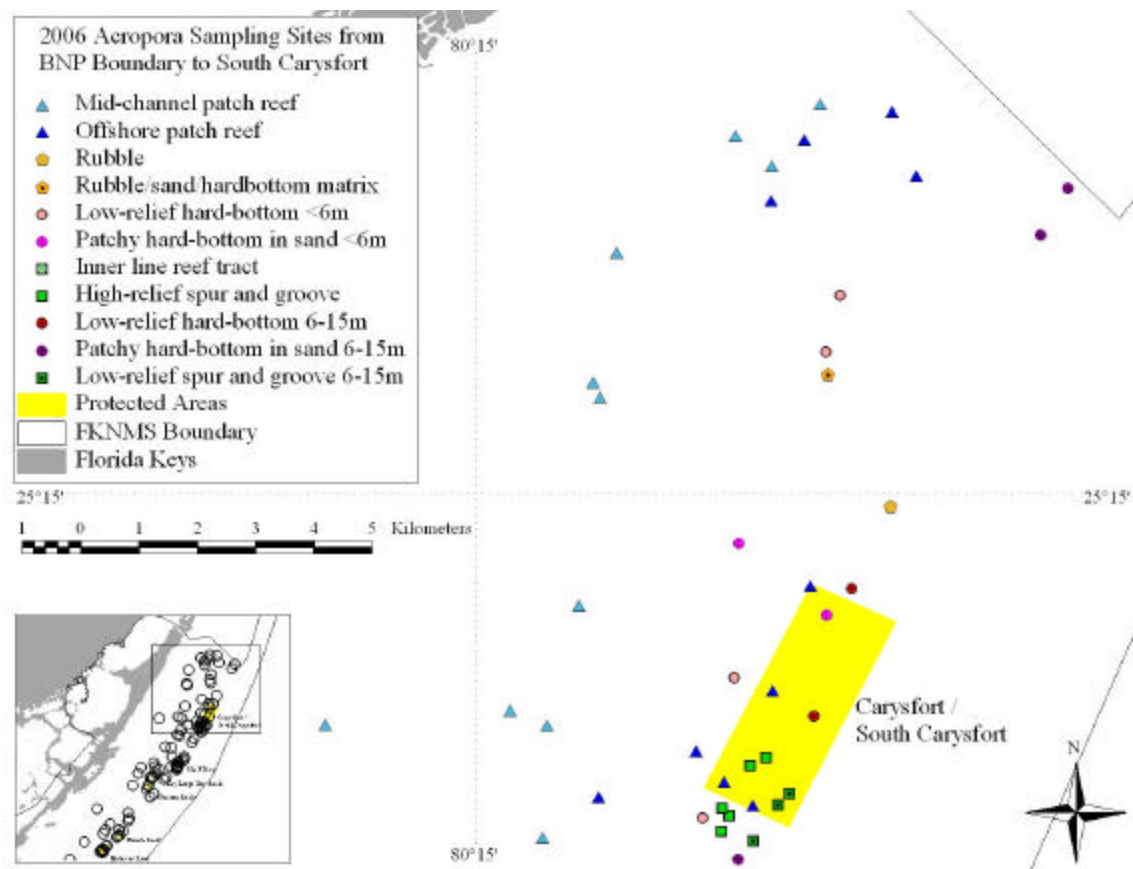


Figure 4. Survey locations for *Acropora cervicornis* and *A. palmata* in the upper Keys region of the FKNMS from northeast of Elbow Reef Sanctuary Preservation Area to southwest of the Grecian Rocks Sanctuary Preservation Area.

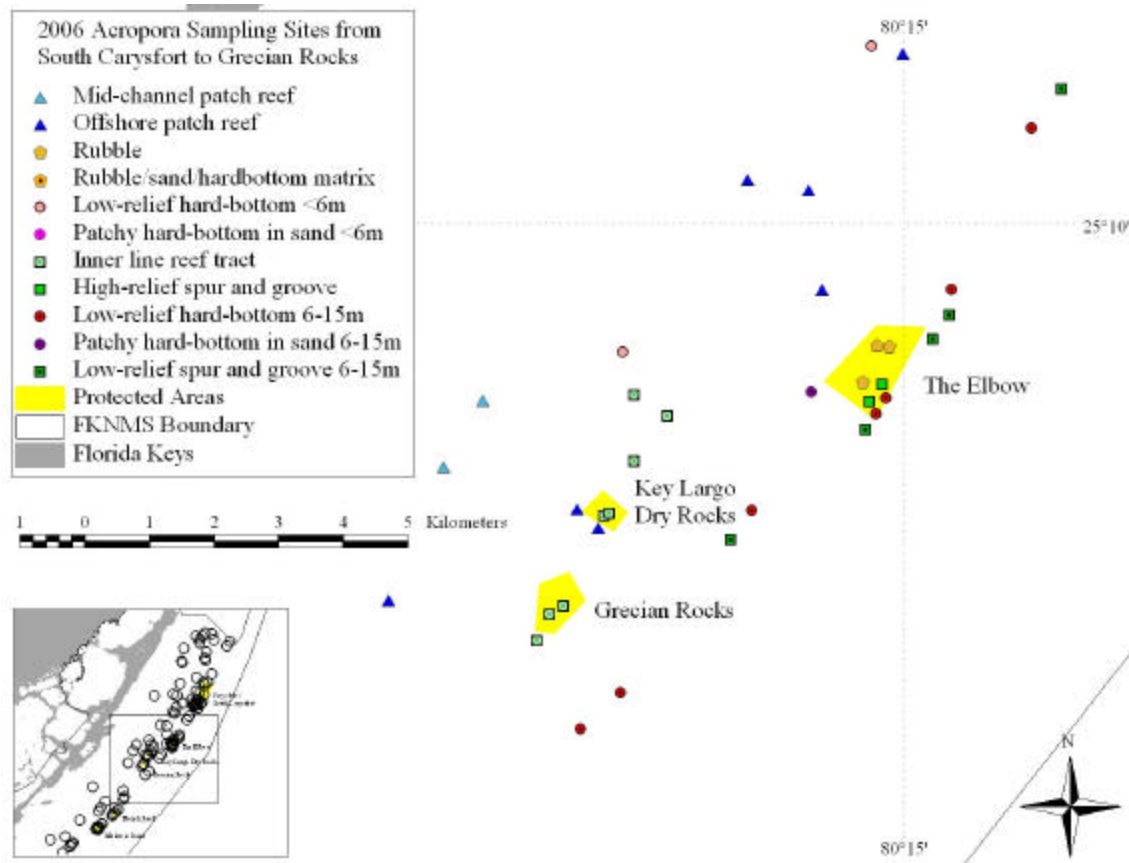


Figure 5. Survey locations for *Acropora cervicornis* and *A. palmata* in the upper Keys region of the FKNMS from Dixie Shoal to southwest of Pickles Reef.

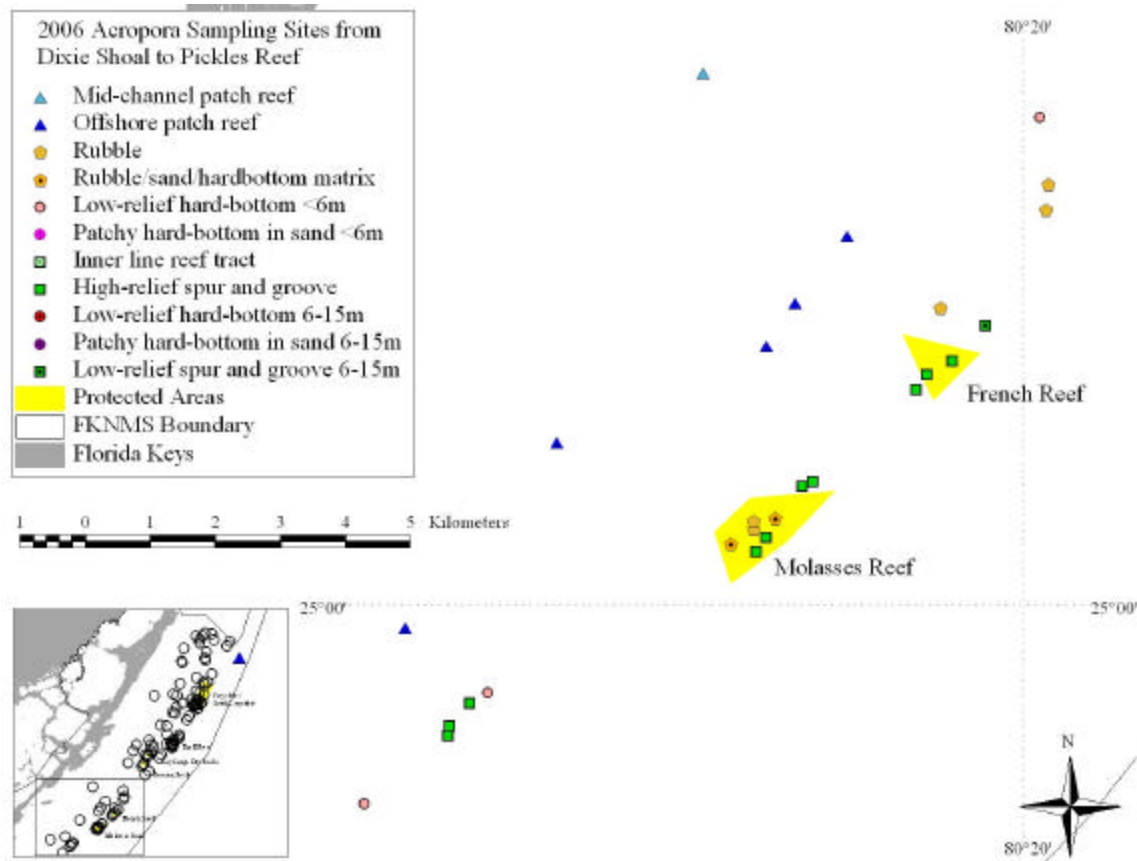


Figure 6. Patch reef, rubble, and shallow low-relief habitats surveyed for *Acropora* spp. in the upper Keys region of the Florida Keys National Marine Sanctuary during August 1-18, 2006.

Mid-channel patch reef
Site #10, Basin Hill Shoals, 2.1-3.6 m
25° 15.859'N, 80° 14.737'W



Offshore patch reef
Site #23, White Banks, 4.5-6.3 m
25° 02.258'N, 80° 22.404'W



Reef rubble
Site #91, Elbow Reef SPA, 3.6-5.1 m
25° 08.793'N, 80° 15.522'W



Patchy hard-bottom (< 6 m)
Site #81, Carysfort Reef SPA, 5.7-6.0 m
25° 13.843'N, 80° 12.635'W



Shallow (< 6 m) low-relief hard-bottom
Site #20, South of Carysfort SPA, 3-3.9 m
25° 11.966'N, 80° 13.787'W



Hard-bottom/sand/rubble matrix
Site #108, Molasses Reef SPA, 3-3.9 m
25° 00.831'N, 80° 22.329'W



Figure 7. Offshore coral reef and hard-bottom habitat types surveyed for *Acropora* spp. in the upper Keys region of the Florida Keys National Marine Sanctuary during August 1-18, 2006.

Inner line reef tract spur and groove
Site #98, Key Largo Dry Rocks, 1.2-2.7 m
25° 07.399'N, 80° 17.856'W



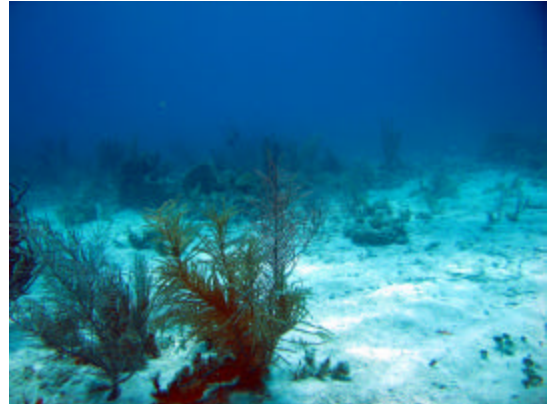
Inner line reef tract spur and groove
Site #97, Key Largo Dry Rocks, 1.2-3.6 m
25° 07.380'N, 80° 17.897'W



High-relief spur and groove, 2.1-3.3 m
Site #106, Molasses Reef SPA
25° 00.675'N, 80° 22.404'W



Patchy hard-bottom, 9.3-9.9 m
Site #61, South of BNP Boundary
25° 17.373'N, 80° 10.660'W



Low-relief hard-bottom, 8.7-9.3 m
Site #56, Offshore of Grecian Rocks SPA
25° 05.905'N, 80° 17.762'W

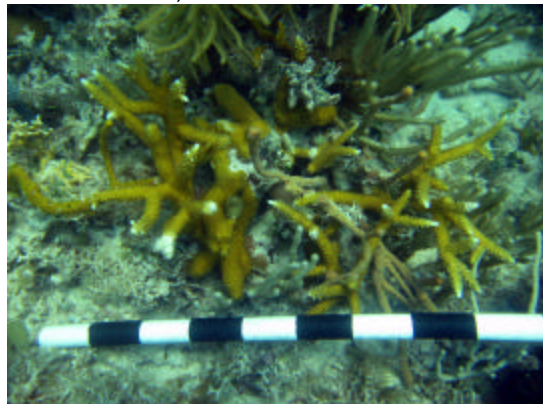


Low-relief spur and groove, 13.2-15.0 m
Site #86, Carysfort Reef SPA
25° 12.087'N, 80° 13.088'W



Figure 8. *Acropora cervicornis* in hard-bottom and coral reef habitats in the upper Keys region of the Florida Keys National Marine Sanctuary observed during August 1-18, 2006.

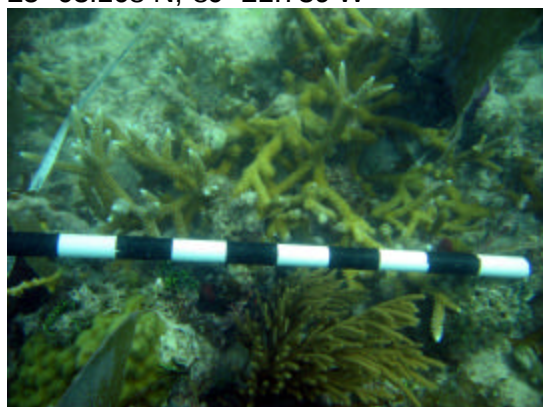
Mid-channel patch reef, 2.1-3.6 m
Site #10, Basin Hill Shoals
25° 15.859'N, 80° 14.737'W



Mid-channel patch reef, 4.8-6.6 m
Site #15, Inshore of Turtle Reef
25° 18.578'N, 80° 12.699'W



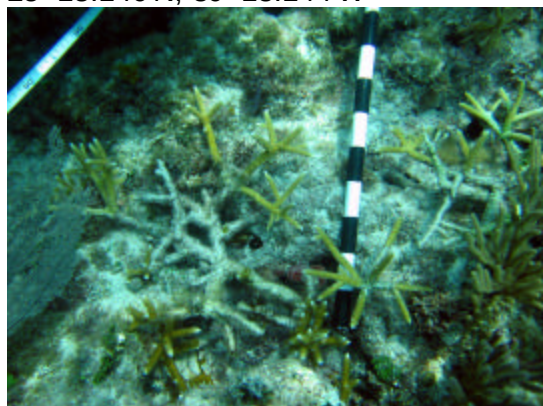
Offshore patch reef, 2.1-2.7 m
Site #26, Mosquito Bank
25° 03.168'N, 80° 21.739'W



Offshore patch reef, 2.4-3.6 m
Site #47, Inshore of Carysfort Reef SPA
25° 12.157'N, 80° 14.751'W



Offshore patch reef, 3.9-5.7 m
Site #83, Western Carysfort Reef SPA
25° 13.140'N, 80° 13.144'W



Inner line reef tract, 2.4-4.8 m
Site #75, North Dry Rocks
25° 07.833'N, 80° 17.650'W



Figure 9. Staghorn coral (*Acropora cervicornis*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from the southern boundary of Biscayne National Park to the southern boundary of Carysfort/South Carysfort SPA.

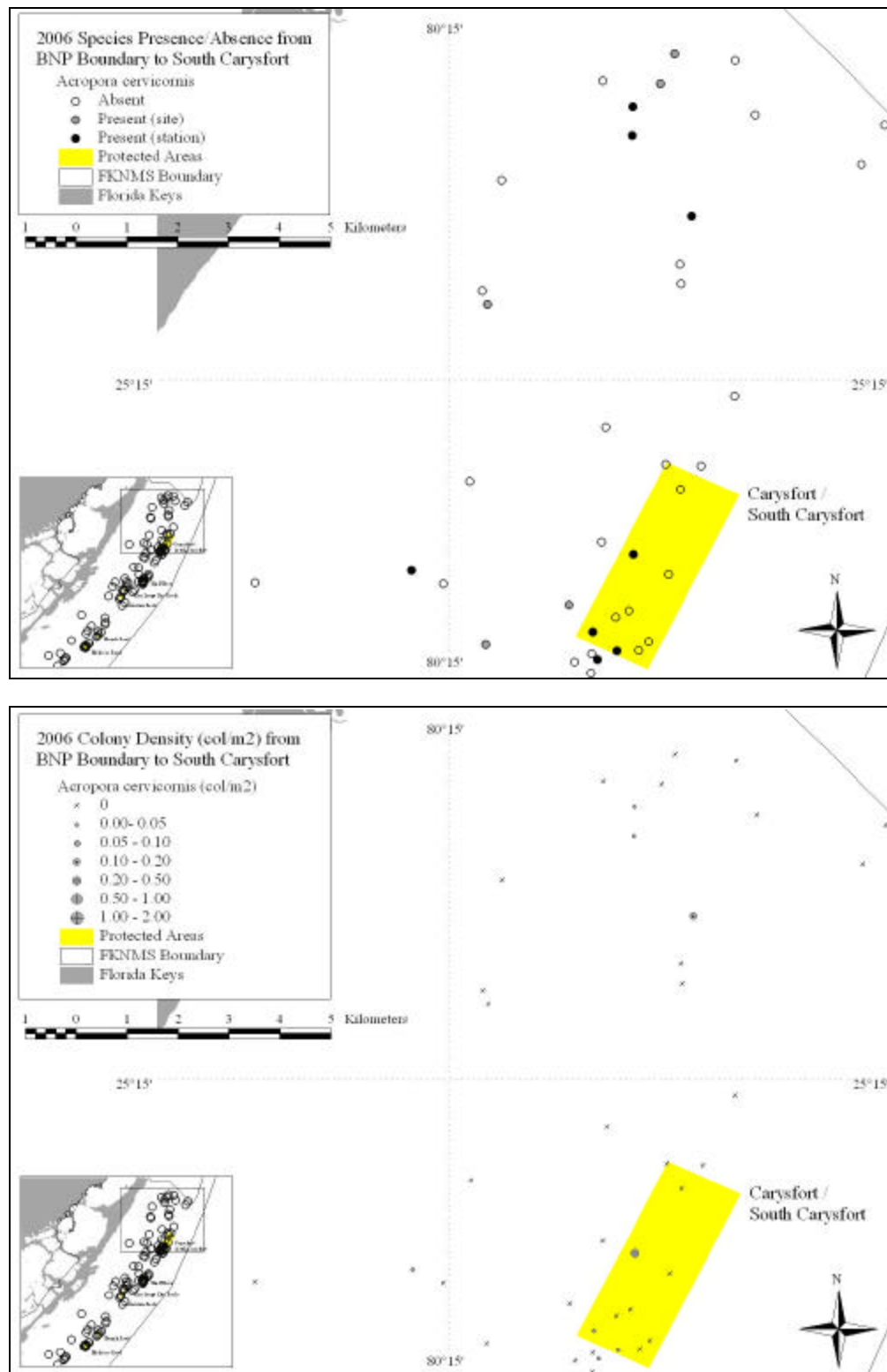


Figure 10. Staghorn coral (*Acropora cervicornis*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from northeast of Elbow Reef SPA to southwest of Grecian Rocks SPA.

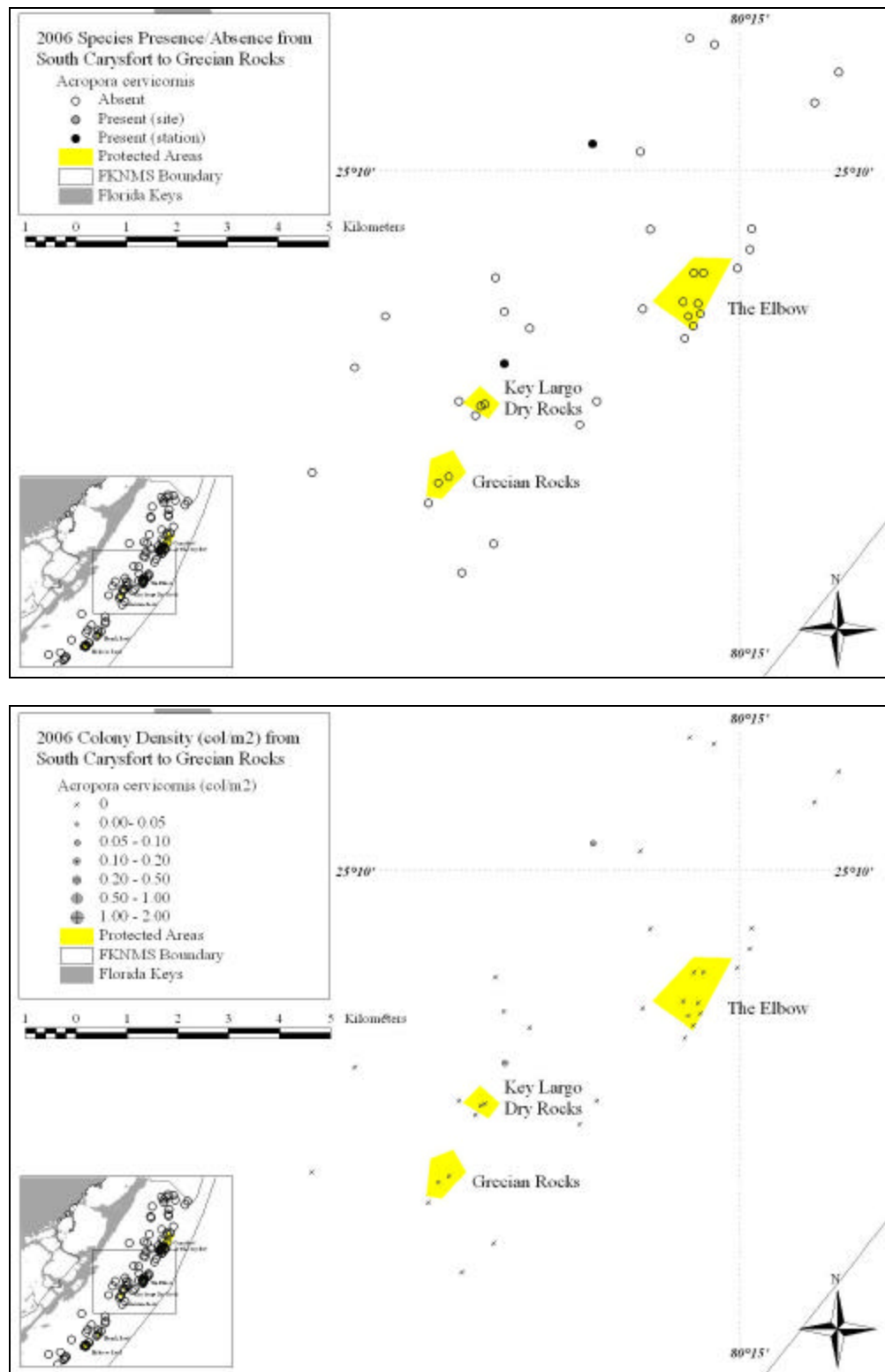


Figure 11. Staghorn coral (*Acropora cervicornis*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from Dixie Shoal to southwest of Pickles Reef.

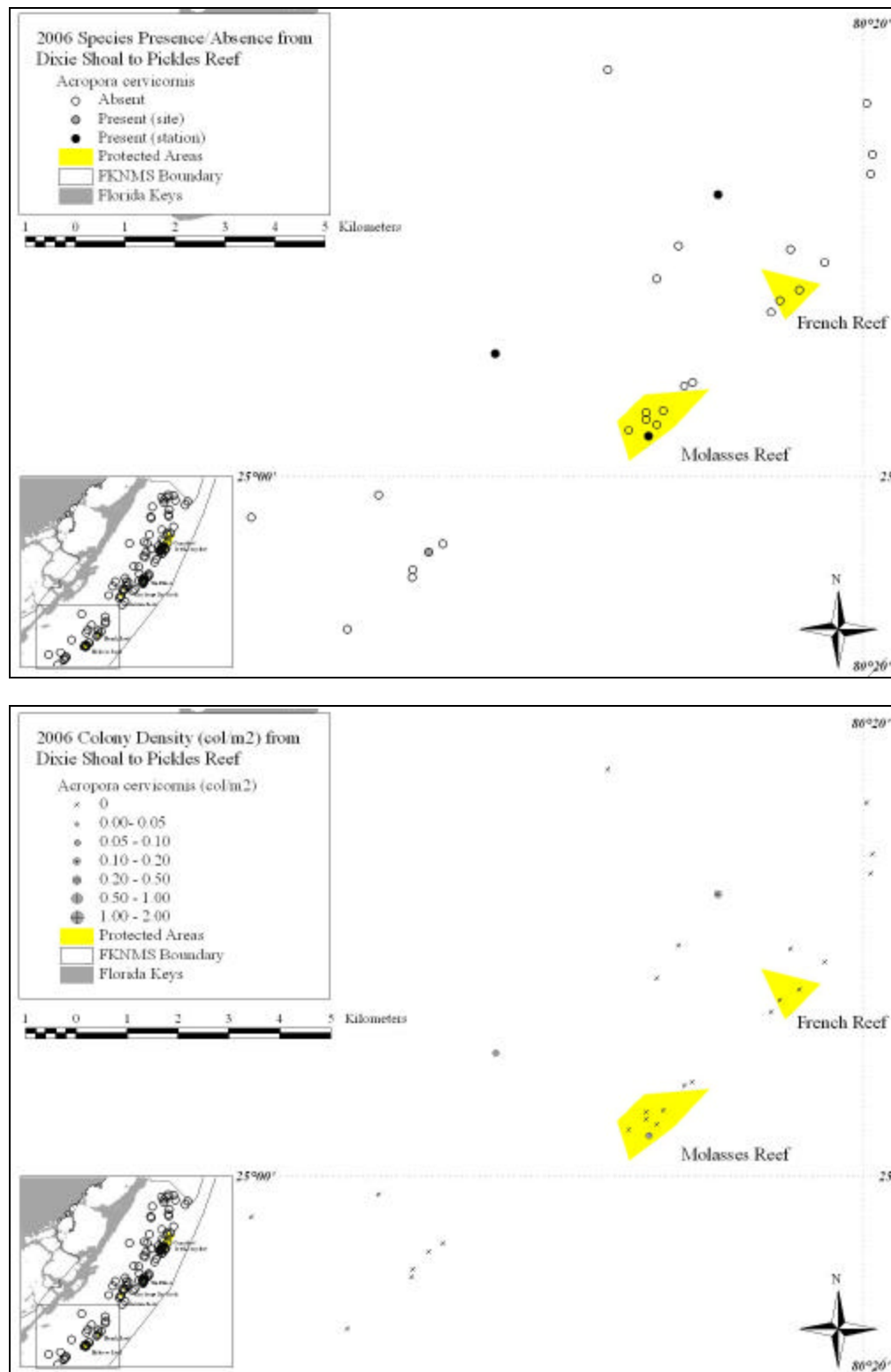


Figure 12. Size distribution of *Acropora cervicornis* and *A. palmata* colony surface area from all habitat types sampled in the upper Keys region of the Florida Keys National Marine Sanctuary during August 2006. Colonies were defined as patches of continuous live tissue.

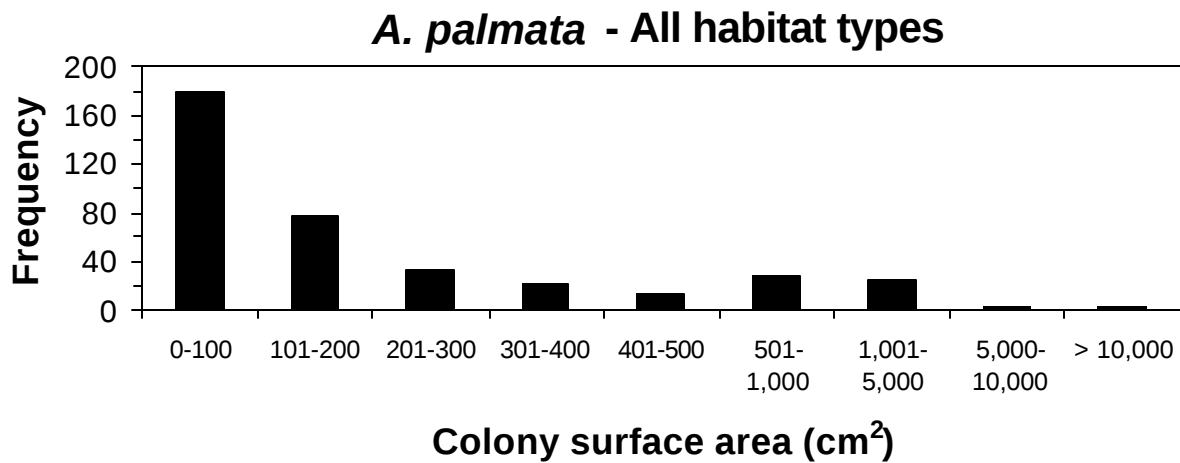
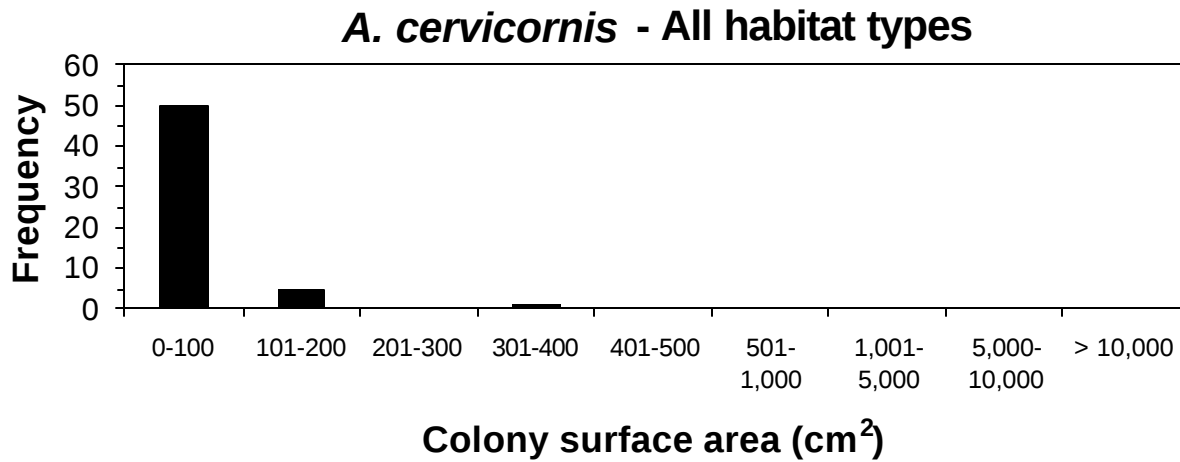


Figure 13. *Acropora palmata* in hard-bottom and coral reef habitats in the upper Keys region of the Florida Keys National Marine Sanctuary observed during August 1-18, 2006.

Offshore patch reef, 3.9-5.4 m
Site #28, NW of Elbow Reef SPA
25° 09.262'N, 80° 16.084'W



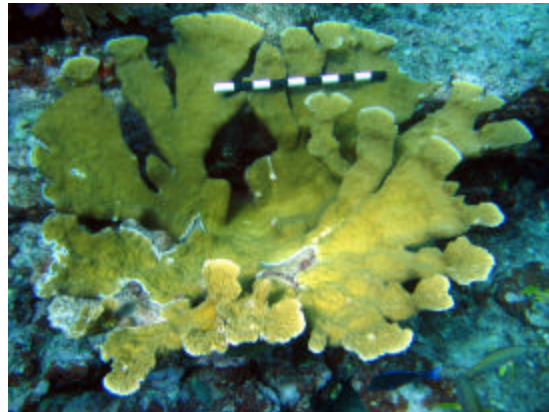
Low-relief hard-bottom, 2.7-3.6 m
Site #53, South of Turtle Rocks mooring
25° 16.3814'N, 80° 12.511'W



High-relief spur and groove, 3.6-5.4 m
Site #39, Sand Island
25° 01.099'N, 80° 22.104'W



High-relief spur and groove, 3.6-6.0 m
Site #89, Elbow Reef SPA
25° 08.333'N, 80° 15.686'W



High-relief spur and groove, 1.2-1.8 m
Site #79, South Carysfort Reef SPA
25° 12.523'N, 80° 13.195'W



Inner line reef tract, 0.6-1.5 m
Site #100, Grecian Rocks SPA
25° 06.559'N, 80° 18.353'W

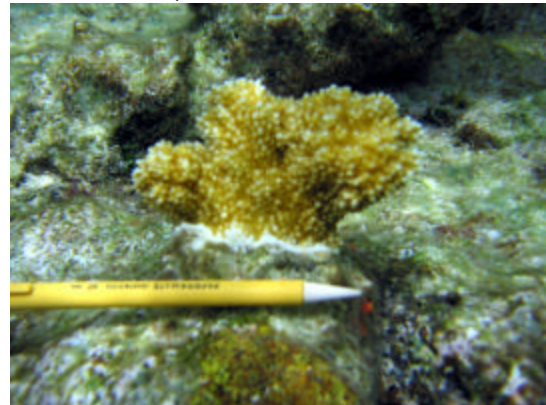


Figure 14. Elkhorn coral (*Acropora palmata*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from the southern boundary of Biscayne National Park to the southern boundary of Carysfort/South Carysfort SPA.

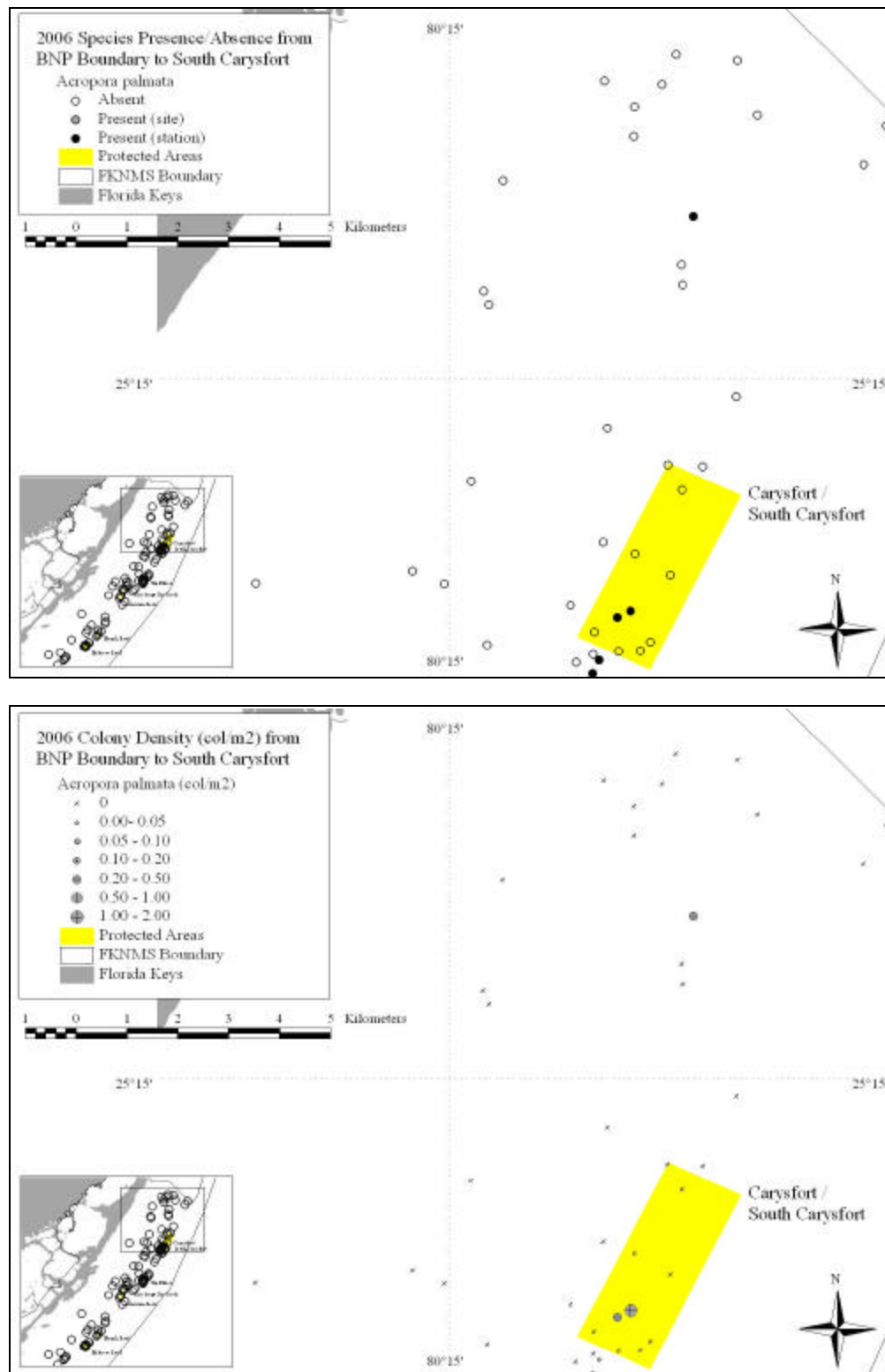


Figure 15. Elkhorn coral (*Acropora palmata*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from northeast of Elbow Reef SPA to southwest of Grecian Rocks SPA.

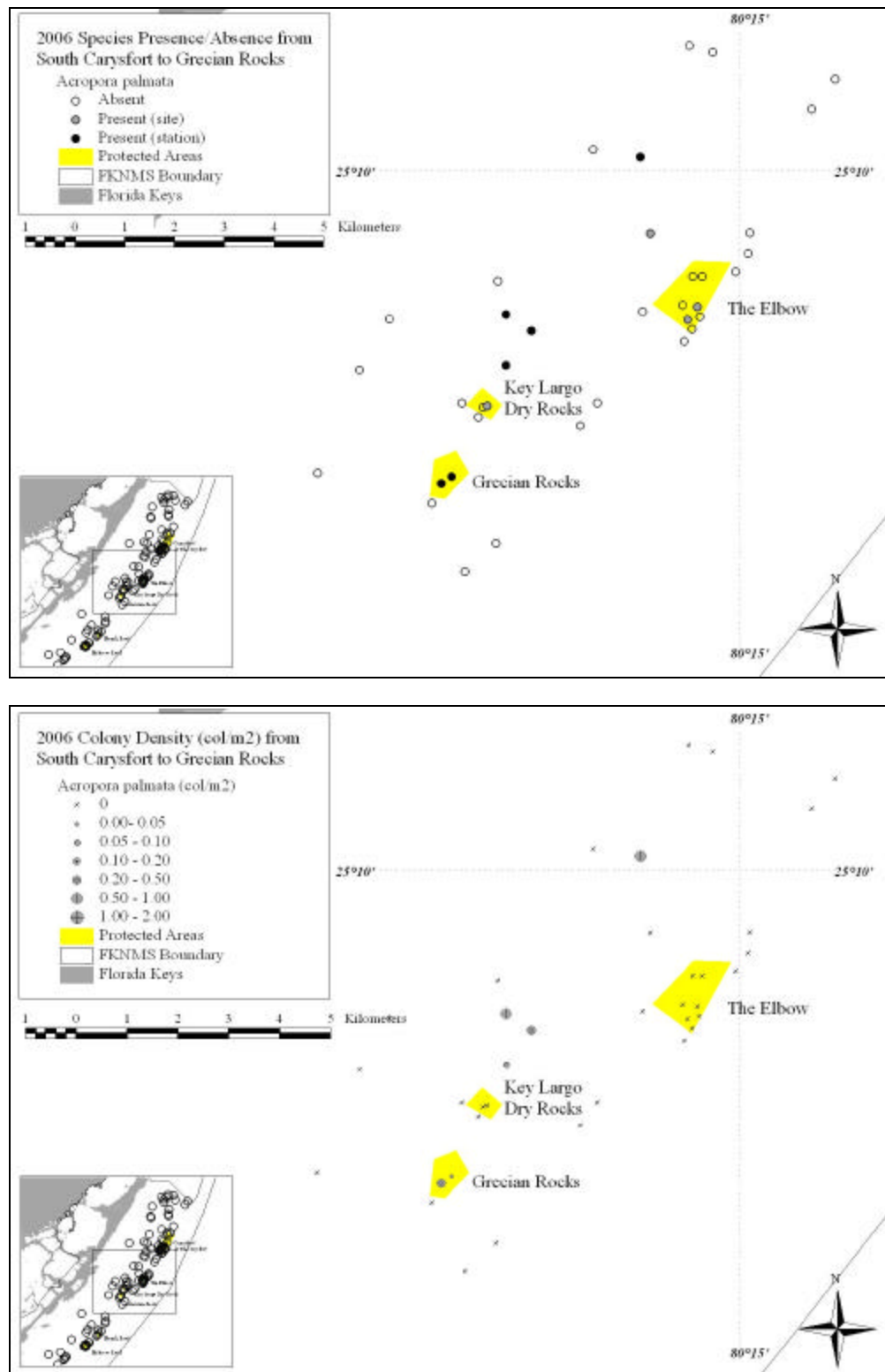


Figure 16. Elkhorn coral (*Acropora palmata*) presence-absence (top) and colony density (no. of colonies/m²) (bottom) in the upper keys region of the FKNMS from Dixie Shoal to southwest of Pickles Reef.

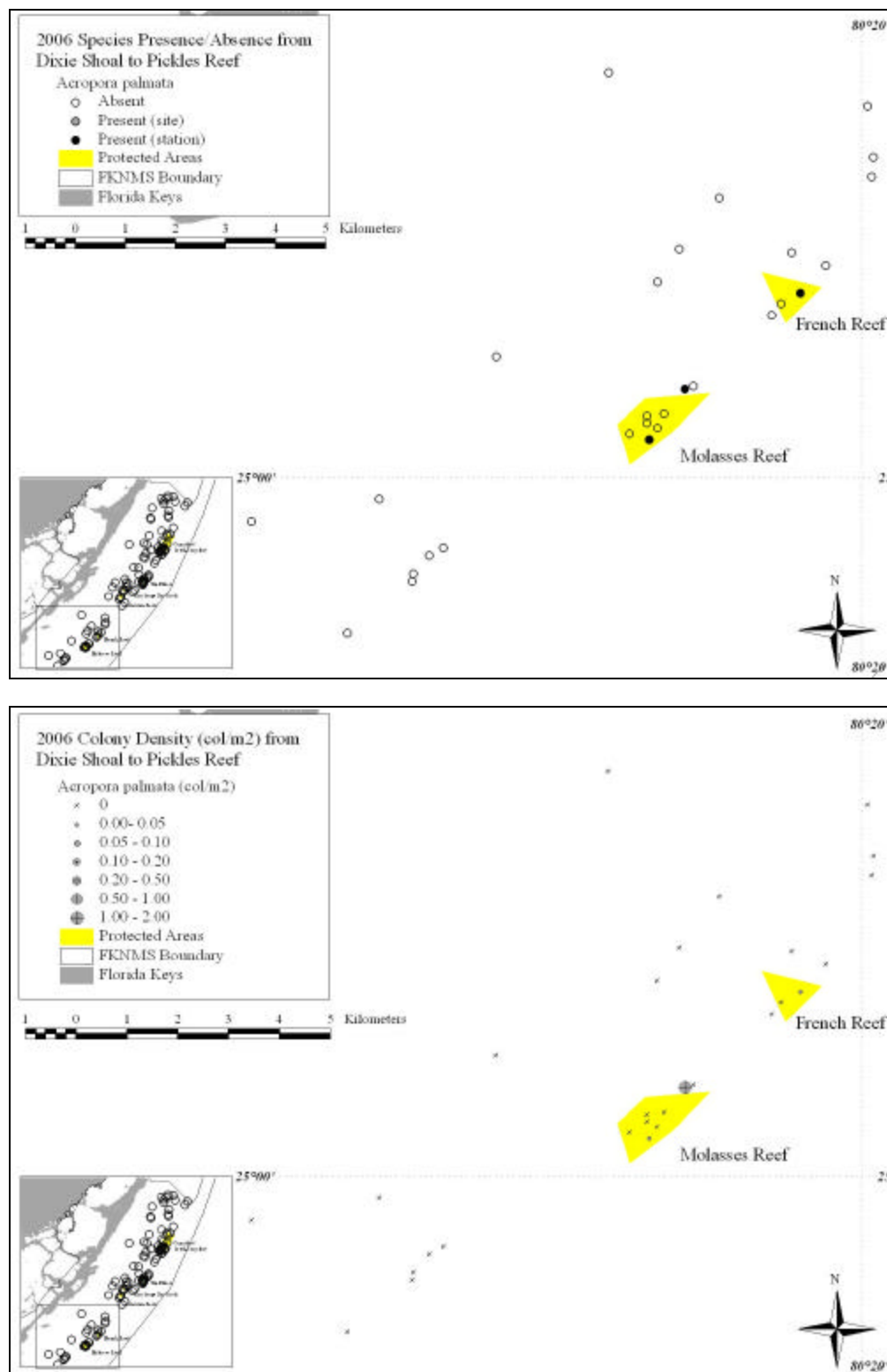
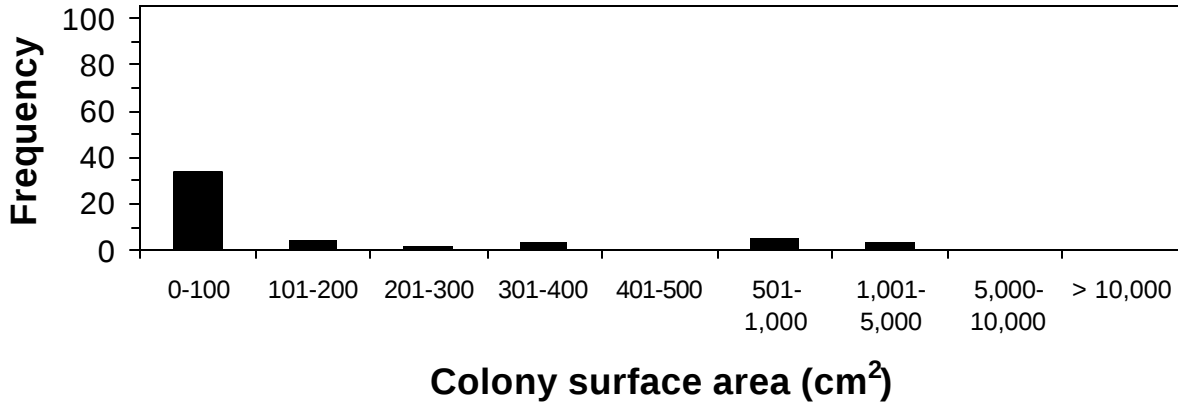
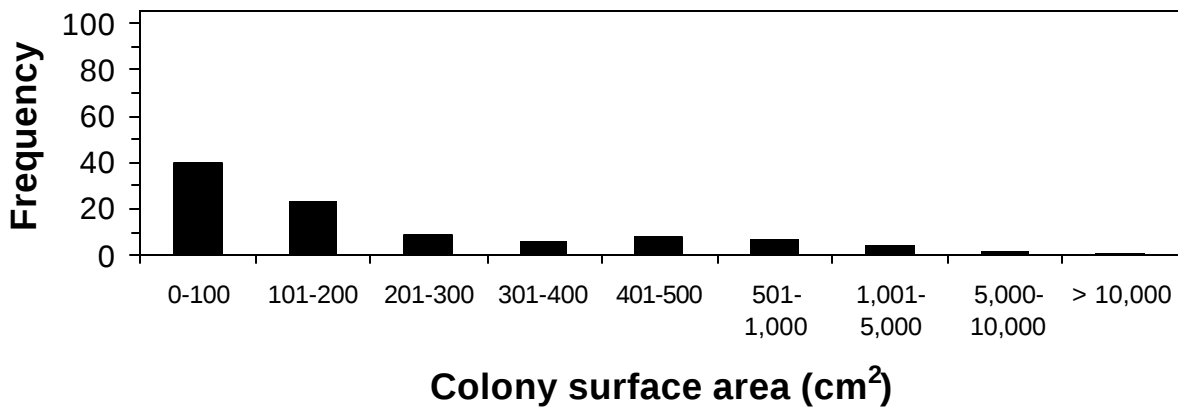


Figure 17. *Acropora palmata* size distribution on offshore patch reef, inner line reef tract, and high-relief spur and groove in the upper Keys region of the Florida Keys National Marine Sanctuary during August 2006. Colonies were defined as patches of continuous live tissue.

***A. palmata* - Offshore patch reefs**



***A. palmata* - Inner line spur and groove**



***A. palmata* - High-relief spur and groove**

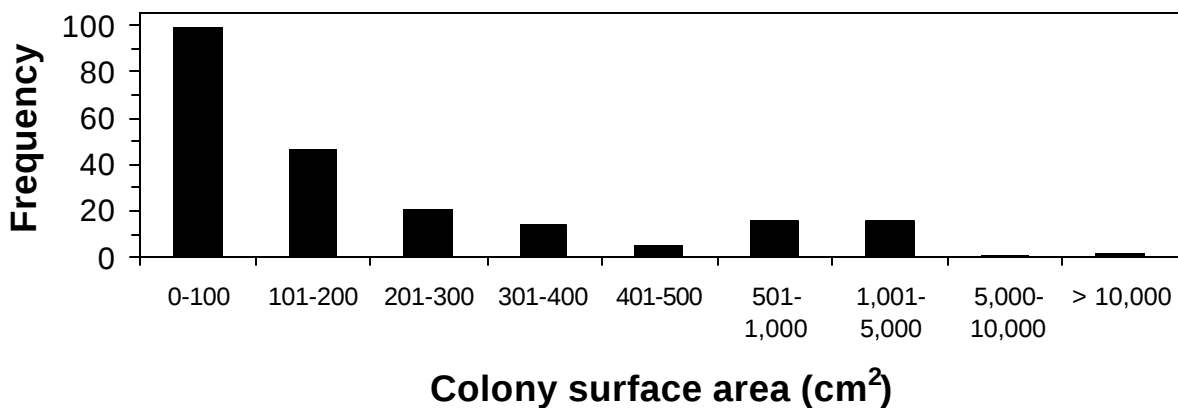
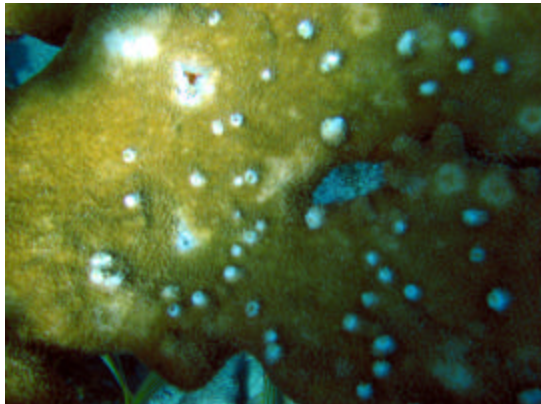


Figure 18. Impacts to *Acropora cervicornis* and *A. palmata*.

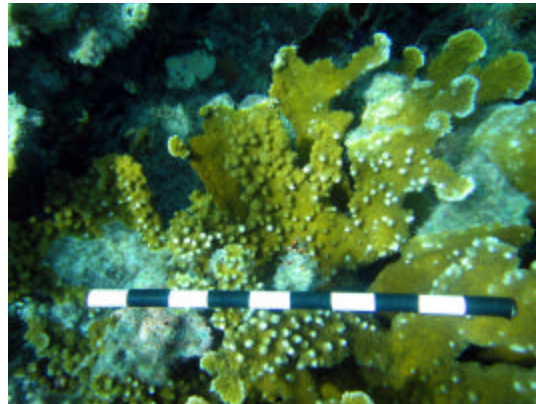
Damselfish bites

Site #105, Molasses Reef SPA, 3.6-5.7 m
25° 00.553'N, 80° 22.488'W



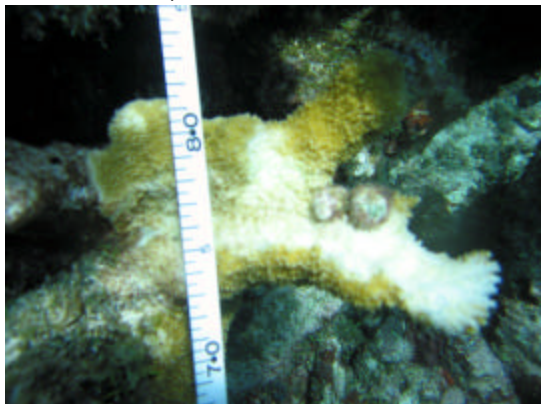
Damselfish bites

Site #241, Horseshoe Reef, 2.7-5.4 m
25° 08.386'N, 80° 17.650'W



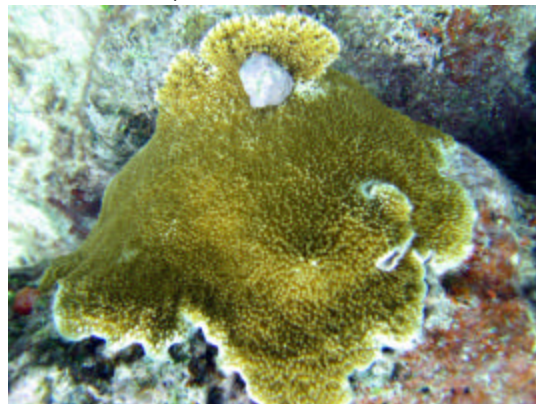
Snail predation (*Coralliophila*)

Site #29, NW of Elbow Reef, 1.5-3.3 m
25° 10.090'N, 80° 16.196'W



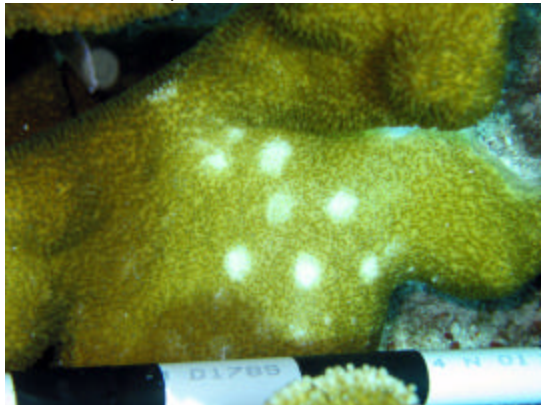
Snail predation (*Coralliophila*)

Site #99, Grecian Rocks SPA, 1.2-2.4 m
25° 06.627'N, 80° 18.239'W



Snail predation?

Site #99, Grecian Rocks SPA, 1.2-2.4 m
25° 06.627'N, 80° 18.239'W



Lobster trap rope entanglement

Site #79, S. Carysfort Reef, 1.2-1.8 m
25° 12.523'N, 80° 13.195'W



Figure 19. Urchin species surveyed for density and size distribution in the upper Keys region of the Florida Keys National Marine Sanctuary during August 1-18, 2006. Not shown are *Echinometra lucunter* (rock boring urchin) and *Tripneustes ventricosus*.

Diadema antillarum



Juvenile *Diadema antillarum*



Echinometra viridis



Eucidaris tribuloides



Figure 20. Size distribution of the urchins *Diadema antillarum*, *Echinometra viridis*, and *Eucidaris tribuloides* in the upper Keys region of the Florida Keys National Marine Sanctuary measured during August 2006 at 65 hard-bottom and coral reef sites.

