



Artificial Habitats in FKNMS

Florida Keys National Marine Sanctuary: Marine Zoning and Regulatory Review

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Overview

- FKNMS authority & regulation
- Permitting overview
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- Management plan activities
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- Challenges & opportunities for artificial habitat permitting in FKNMS



FKNMS authority & regulation

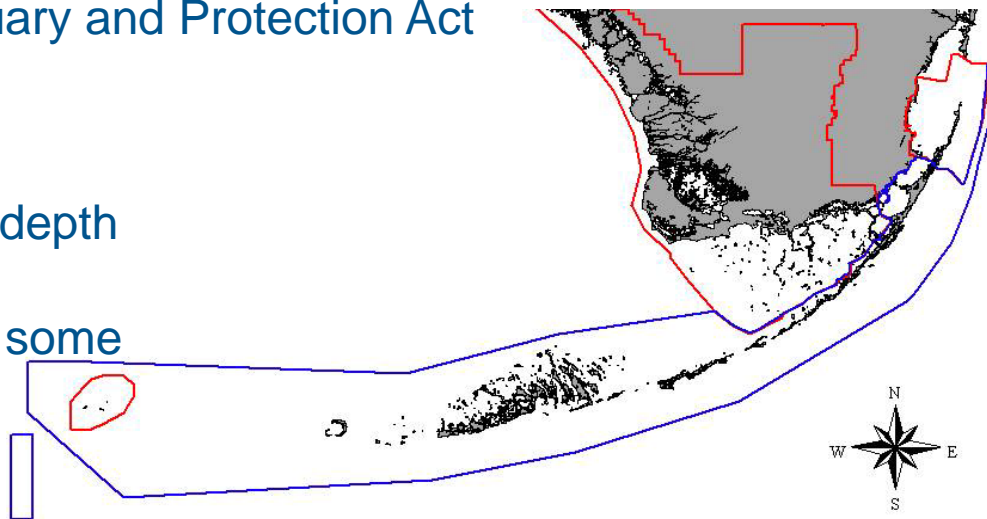
National Marine Sanctuaries Act (16 USC § 1431 *et seq.*) ~ 1972

- Sec. 301(b)(3) “to support, promote, and coordinate scientific research on, and monitoring of, the resources of these marine areas, especially long-term monitoring and research of these areas;”
- Sec. 301(b)(9) “to maintain, restore, and enhance living resources by providing places for species that depend upon these marine areas to survive and propagate.”

Florida Keys National Marine Sanctuary and Protection Act (PL 101-605) ~ 1990

FKNMS jurisdiction

- Mean high water line → 300' depth contour (Atlantic Ocean)
- All waters of Monroe County, some of Dade County



FKNMS authority & regulation

FKNMS regulations 15 CFR 922 Subpart P ~ July 1, 1997



- 922.163(a)(2) – prohibits removing, injuring, touching, or taking coral
- 922.163(a)(3) – prohibits altering or placing any item on the seabed
- 922.163(a)(4) – prohibits discharge of materials
- 922.163(a)(11) – prohibits use of explosives
- 922.164(a) – Area to be avoided (ATBA) prohibits ships >50m length from operating in certain areas

Permitting overview

Permitting regulations 922.166; authorization regulations 922.49

Permit types are general, maritime heritage, special use, and authorization

General permit categories (922.166(a)(2))

- Further research or monitoring of sanctuary resources
- Further educational value of the sanctuary
- Further natural or historical resource value of the sanctuary
- Further salvage and recovery operations for air or marine casualties
- Assist in managing the sanctuary
- Otherwise further sanctuary purposes, including facilitating multiple use of the sanctuary, if compatible with resource protection



Permitting overview

Regulatory review criteria (922.166(a)(3))

- Applicant professionally qualified;
- Applicant has adequate financial resources;
- Duration of activity is no longer than necessary;
- Methods are appropriate in relation to impact on resources;
- Activity conducted compatibly with primary objective of resource protection, considering if it will enhance or diminish sanctuary resources, and indirect, secondary, or cumulative effects and duration;
- Activity must be conducted in the sanctuary;
- End value of the activity furthers sanctuary goals and purposes and outweighs adverse impacts.

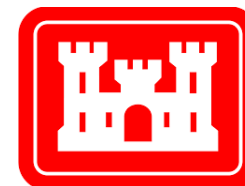
Projects in zones must be consistent with purposes of zone

No specific pre-application requirements

Consultations & agency coordination



- Army Corps of Engineers
- US Fish & Wildlife Service
- US Coast Guard
- US Environmental Protection Agency
- NOAA
 - Habitat Conservation Division
 - Protected Resources Division
- Florida Department of Environmental Protection / South Florida Water Management District
- Florida Fish and Wildlife Conservation Commission
- Municipalities, Monroe County
- National Environmental Policy Act (NEPA) – Environmental Assessment / Environmental Impact Statement
 - Executive orders (invasive species, coral reef protection)
 - Magnuson Stevens Act
 - Coastal Zone Management Act
 - Endangered Species Act
 - National Historic Preservation Act



Standard permit requirements

Research & education projects: removal; report of data/findings

Large vessels

- cleaning certification
- tow & sink plan (including explosives use)
- stability analysis
- biological monitoring & reporting
- socioeconomic monitoring & reporting
- stability/post-storm assessments
- contingency plans for sinking & post-deployment
- financial assurances/bonding to ensure all are implemented



Management plan activities



Strategy W.36 (3) – Monitor use patterns on existing artificial and natural reefs surrounding sites for sinking new artificial reefs.

Strategy F.7 (1) – Investigate impacts of artificial reefs on fish and invertebrate populations for long-term management including location, size, and materials.

Strategy F.7 (2) – Monitor and evaluate habitat modification caused by the installation of artificial reefs.

Public input

Typically occurs through local sponsor / municipality that is proposing project (e.g., chambers of commerce, artificial reef associations, dive businesses)

NEPA process may include scoping meetings, public comment opportunities



Artificial habitats in FKNMS

Project	Year & location
Ocean Freeze (Scott Maison Chaite)	1998 ~ offshore Pacific Reef & Biscayne National Park
Adolphus Busch	1998 ~ west of Looe Key
Spiegel Grove	2002 ~ between French and Grecian Reefs, Key Largo
Vandenberg	2009 ~ offshore Key West
Research projects	various ~ 14 permits issued
Educational projects	various ~ 4 permits issued

Total FKNMS artificial habitats (pre- and post-1997) = **62**

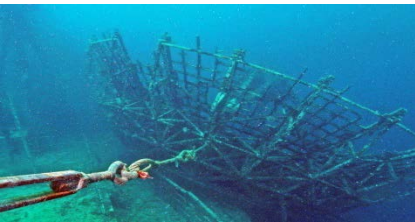
FWC Artificial Reefs list – <http://myfwc.com/media/131585/reefs.pdf>

Challenges & opportunities

- Proposals do not fall within one of the permit types/categories
- Proposals do not meet regulatory review criteria, notably why it must occur within the sanctuary
- Diverse scope of requests

reef balls ● underwater memorials ● statuary/sculpture gardens ● fish attraction devices (FADs) ● debris disposal ● underwater hotels ● scuttled vessels

- Unanticipated issues during deployment (e.g., Ocean Freeze, Spiegel Grove)
- Poor compliance with permit terms and conditions
 - Lack of funding to complete required monitoring
 - Lack of funding to address contingencies/unknowns
 - Changing roles/responsibilities of permit holder
 - “Walk away” from project once installed



Challenges & opportunities

- Lack of scientific studies on key FKNMS management questions
- FKNMS reefs are not substrate-limited
 - Multiple issues affecting corals: predation, reproductive barriers, larval dispersal limitations, settlement cues, growth and survival
- Fish populations similar to natural reefs but overall species richness lower; limited/no biomass data; no fish tracking data
 - http://www.reef.org/reef_files/monitoring/SpiegelGrove_5year_report.pdf
 - http://www.reef.org/reef_files/Vandenberg2011.pdf
- No data on invertebrate populations
- Dive charter business increases, but does not necessarily reduce pressure on natural reefs
 - <http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/bms.pdf>
 - <http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/vandenbergreport.pdf>
- Invasive species expansion, e.g., *Tubastraea* coral
 - http://archive.rubicon-foundation.org/xmlui/bitstream/handle/123456789/10236/AAUS_2009_229-37.pdf?sequence=1



Opportunities to conduct research & assess trends using many existing artificial habitats

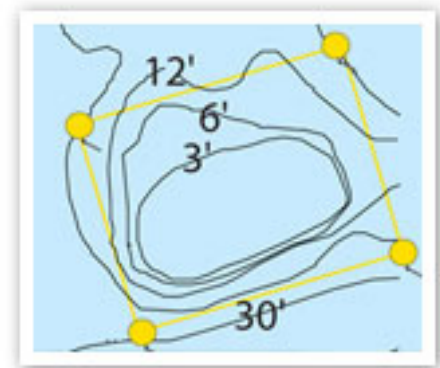
For more information:

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Visit our website at floridakeys.noaa.gov

Regulatory Review process:
<http://floridakeys.noaa.gov/review/welcome.html>

Contact your Sanctuary Advisory Council Member:
<http://floridakeys.noaa.gov/sac/members.html?s=sac>



MARINE ZONING &
REGULATORY REVIEW