

MONROE COUNTY MARINA SITING PLAN



**Prepared for:
Monroe County**

**By:
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LIST OF ABBREVIATIONS

ACCC	Area of Critical County Concern
BOCC	Board of County Commissioners
CFR	Code of Federal Regulations
CUES	Catanese Center for Urban and Environmental Solutions
DCA	Florida Department of Community Affairs
DEO	Florida Department of Economic Opportunity
DEP	Florida Department of Environmental Protection
DRI	Development of Regional Impact
FAC	Florida Administrative Code
FKNMS	Florida Keys National Marine Sanctuary
FNAI	Florida Natural Areas Inventory
FR	Federal Register
FS	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Florida Fish and Wildlife Research Institute
FWS	U.S. Fish and Wildlife Service
GIS	Geographic Information System
IDO	Interim Development Ordinance
INBS	Index Nesting Beach Survey
LDR	Land Development Regulation
MMSP	Marine Management Strategic Plan
NOAA	National Oceanic and Atmospheric Administration
OFW	Outstanding Florida Water
SFRPC	South Florida Regional Planning Council
SNBS	Statewide Nesting Beach Survey
SPGP	State Programmatic General Permit
USACE	U.S. Army Corps of Engineers
WWPMP	Working Waterfronts Preservation Master Plan

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I. MONROE COUNTY MARINA SITING PLAN

The Monroe County Marina Siting Plan and the appendices within are supporting documents aimed to guide the sound development of marinas throughout unincorporated Monroe County. The Plan serves as the data and analysis for Comprehensive Plan Policy 212.3.2 (adopted by County Ordinance #[Placeholder]) which identifies the requirements of Marina Siting Criteria.

Please note, this Plan applies to unincorporated Monroe County only and shall not supersede, preempt, or nullify applicable federal, State, or municipal rules, regulations, or requirements that apply. Compliance with the provisions of this Plan does not imply approval of other permitting requirements.

A. BACKGROUND

In 2004, the Monroe County Board of County Commissioners (BOCC) acknowledged the urgent need to address the loss of both recreational and commercial “working waterfronts” since the Florida Keys had experienced the conversion of waterfront marine facilities and their associated businesses and employment to non-water dependent uses and privatization of waterfront, thereby reducing public water access. The BOCC adopted Interim Development Ordinance (IDO) No. 017-2005 in July 2005, imposing a moratorium on the conversion of marine facilities to non-water dependent uses. Concurrently, the BOCC directed the County’s Marine Resources Department (Department) to prepare a countywide Marina Siting Plan to fulfill the requirements of the Monroe County 2010 Comprehensive Plan (previously Comprehensive Plan Policy 212.4.1)¹.

¹ Prior to County Ordinance #[Placeholder], Comprehensive Plan Policy 212.4.1 read “New marinas have three (3) or more slips shall be prohibited until: 1. a marina survey is completed; and 2. marina siting criteria are adopted by Monroe County and approved by DER, DNR, and ACOE”.

In 2005, the BOCC further addressed the need to preserve working waterfronts by contracting with the South Florida Regional Planning Council (SFRPC) to prepare a Monroe County Marine Management Strategic Plan (MMSP) for unincorporated Monroe County. The MMSP provides a comprehensive strategy with proposed action steps for protecting and preserving the County's working waterfronts. The Final Report of the MMSP was submitted to the County in January 2006. The findings of the report were accepted by the BOCC on March 15, 2006.² While the action steps of the MSSP were not initially implemented, the principles described in the report provide strategic guidance for addressing working waterfront preservation and set the path for future policy development.

In June 2006, the BOCC directed the County to extend the IDO and adopt amendments to the Comprehensive Plan and Land Development Regulations (LDRs) to help preserve working waterfronts. As part of the IDO extension and as a follow-up to the MMSP, Monroe County retained the SFRPC for a second project phase, to be known as the Working Waterfronts Preservation Master Plan (WWPMP)³. The WWPMP was designed to enhance the understanding of existing water dependent uses, and included: 1) an updated marine facilities database (last generated in 1993), 2) amendments to the Comprehensive Plan for working waterfront preservation, and 3) development of a Marina Siting Plan (to be adopted into the comprehensive plan by reference). Transmittal of the comprehensive plan amendment and Marina Siting Plan were approved by the BOCC on September 19, 2007. The Florida Department of Community Affairs (DCA, now known as the Department of Economic Opportunity, or DEO) review of the amendment and Marina Siting Plan resulted in issuance of an Objections, Recommendations, and Comments Report (ORC). The ORC cited numerous objections to the comprehensive plan amendment and determined that the Marina Siting Plan was found to have incomplete and inaccurate data.

² The Monroe County Marine Management Strategic Plan is available online at <http://www.sfrpc.com/mcmmmsp.htm>.

³ The Monroe County Working Waterfronts Preservation Master Plan is available online at <http://www.sfrpc.org/data/MCWorkWater/WorkingWaterfrontsPreservationMasterPlanFinal.pdf>.

Over the following several years, redevelopment and resulting conversion of working waterfronts became less of an issue due to economic decline. This reworking of the Marina Siting Plan and comprehensive plan amendment would focus on satisfying existing comprehensive plan requirements which place a moratorium on new marina development until full utilization of marinas occurs within five miles of proposed marina sites and marina siting criteria are adopted. In 2012, the County contracted the SFRPC to rework the proposed Marina Siting Plan, conduct a Needs Analysis for new marinas (see page 16), and develop Marina Siting Criteria to be adopted through a new comprehensive plan amendment. The Marina Siting Plan serves as the data and analysis to support the Marina Siting Criteria.

B. INTRODUCTION TO MARINA SITING IN MONROE COUNTY

In January 1983, the Governor’s Blue Ribbon Marina Committee issued its final report with recommended criteria that formed the basis for future policies regarding marina siting. The Monroe County 2010 Comprehensive Plan contains Goals, Objectives, and Policies that have or which incorporated many of the committee’s recommendations. For example, prior to County Ordinance #[Placeholder], Policy 212.4.3 of the Comprehensive Plan included the following caveat:

In general, marinas will be located in areas where maximum physical advantages exist and where no unreasonable or excessive impacts are foreseen on marine resources. Marina construction will not involve destruction of any significant marine wetlands or seagrass beds.

The policy directed the County to adopt criteria for new or expanding marina facilities with three or more slips to address the following criteria:

1. benthic vegetation and faunal assemblages;
2. adequacy of circulation and tidal flushing;
3. access to deep water through existing channels of adequate depth;
4. impact of boats on crocodiles, manatees, and turtles;
5. minimal shoreline modification;
6. quality and size of upland areas and degree of alteration necessary; and

7. propeller dredging problem areas.

The above criteria are consistent with the Florida Keys Marina and Dock Siting Policies and Criteria set forth in Section 18-21.0041, Florida Administrative Code (FAC), regarding Sovereignty Submerged Lands Management.

To date, Florida counties that have adopted marina siting plans have been required to do so under a 1989 Executive Order of the Governor and Cabinet entitled *Recommendations to Improve Boating Safety and Manatee Protection for Florida Waterways: Interim Boating Facility Expansion Policy and County MPPs*. While Monroe County is not among those required by law to prepare a manatee protection plan, which includes a boat facility siting element, the necessity of preparing marina siting criteria has been mandated by the Comprehensive Plan, to enhance the sound development and effective management of shoreline uses countywide.

Current Comprehensive Plan Objective 212.4 and related Policies direct marina development to demonstrate a public need for new facilities; comply with existing marine resource constraints (Marina Siting Criteria); and to meet various County and State code and/or rules. Site suitability for new marina development is based on these guidelines and, to the extent data currently exist; the Marina Siting Criteria have been mapped using Geographic Information System (GIS) techniques to visually demonstrate potential areas for suitability in unincorporated Monroe County (see Appendix E).

C. REGULATORY ENVIRONMENT

1. Jurisdiction

It is important to note at the outset that the marina siting guidance in this Plan applies to unincorporated Monroe County only, and shall not supersede, preempt or nullify applicable federal, State or municipal rules, regulations or requirements that apply. Any entity intending to develop or renovate a marina within a municipality's boundaries must

consult that municipality's comprehensive plan and land development regulations. It is the applicant's responsibility to obtain the necessary permits from all applicable State and federal regulatory agencies. Compliance with the provisions of this Plan does not imply approval of other permitting requirements.

The complex set of local, State, and federal laws and regulations guiding land development and natural resource protection in Monroe County provides an extensive framework that has resulted in limiting marina development and expansion in many areas of the County. For example, the Marina Site Suitability Maps accompanying this Plan in Appendix E visually demonstrate those areas that may be deemed unsuitable for marina siting or expansion based on the existing regulatory framework. The major mechanisms in place that affect marina development in the Keys is provided immediately below in parts 2 through 4 (see Appendix A for a more complete listing of federal and State permit requirements). This is followed by specific regulatory authority that addresses the Marina Siting Criteria identified in the Comprehensive Plan and which forms the basis for the Suitability Maps in Appendix E.

2. Federal Regulation

The U.S. Congress enacted the Florida Keys National Marine Sanctuary (FKNMS) and Protection Act in 1990. Under this Act and the implementing regulations, the National Oceanic and Atmospheric Administration (NOAA) established five types of marine zoning to assist resource users in the Keys: (1) Wildlife Management Areas, (2) Ecological Reserves, (3) Sanctuary Preservation Areas, (4) Existing Management Areas, and (5) Special-use Areas. The geographic boundaries of these areas are delineated on the map in Appendix B and specified in 15 Code of Federal Regulations (CFR) Sections 922.160-922.168. *Wildlife Management Areas* are designed to protect endangered or threatened species while providing opportunities for public use with water use restrictions that include "no-access buffer" zones, "no-motor" zones, "idle speed only/no wake" zones, and "closed" zones. *Ecological Reserves* protect areas that represent the full range of diversity of resources and habitats found throughout the sanctuary by limiting consumptive activities but continuing to allow activities that are compatible with resource

protection. *Sanctuary Preservation Areas* are designed to enhance the reproductive capabilities of renewable resources by reducing user conflicts in high use areas. *Existing Management Areas* delineate the existing jurisdictional authority of other agencies (i.e., State parks, aquatic preserves, sanctuaries, and other restricted areas) and may require additional regulations or restrictions to adequately protect resources. *Special-use Areas* are set aside for scientific research and educational purposes, restoration, monitoring, or to establish areas that confine or restrict activities, such as personal watercraft operations.

The U.S. Fish and Wildlife Service (FWS) of the U.S. Department of the Interior administers a number of national wildlife refuges in Monroe County, including the National Key Deer, Key West, Great White Heron, and Crocodile Lake National Wildlife Refuges. These areas offer a variety of recreational and other uses, and public entry may be prohibited by law in certain places.

Mainland Monroe County consists primarily of lands within Everglades National Park, which is under the jurisdiction of the National Park Service, a branch of the U.S. Department of the Interior. Because of this federal jurisdiction, the Monroe County Marina Siting Plan applies to the Florida Keys portion of the County and not to the Everglades National Park area. There is only one Everglades in the world:

Everglades National Park is the largest subtropical wilderness in the United States. The area boasts rare and endangered species, such as the American crocodile, Florida panther, and West Indian manatee. It has been designated an International Biosphere Reserve, a World Heritage Site, and a Wetland of International Importance, in recognition of its significance to all the people of the world. The open waters of Florida Bay and the Ten Thousand Islands represent roughly one-third of the park's total acreage. Boats are the perfect way to explore some of the more remote areas of the park (Source: www.nps.gov/ever/index.htm).

At the federal level, marinas and other boating facilities are also regulated by various laws, which include:

- Rivers and Harbors Act of 1899
- Fish and Wildlife Coordination Act of 1958

- Wild and Scenic Rivers Act of 1968
- National Environmental Policy Act of 1969
- Clean Water Act of 1972
- Marine Protection, Research and Sanctuaries Act of 1972
- Coastal Zone Management Act of 1972
- Marine Mammal Protection Act of 1972
- Endangered Species Act of 1973
- Magnuson-Stevens Act (Essential Fish Habitat) of 1996

The primary federal agency responsible for issuing permits for marina facilities is the U.S. Army Corps of Engineers (USACE). Federal permits for marine facilities will require either an individual permit (single family dock permit) or a joint permit filed with both the USACE and the Florida Department of Environmental Protection (DEP). In many cases, the USACE will also require a dredge and fill permit application, especially for large marina facilities. In an attempt to streamline the permitting process, the 2005 Florida Legislature enacted House Bill 989, which created subsection 373.118(4), FS, directing DEP to adopt by rule one or more general permits to authorize local governments to construct, maintain and operate public marina facilities and public boat ramps. To date, the rules implementing this law for marina facilities have not been developed.

3. State Regulation

Monroe County was declared an Area of Critical State Concern in 1975 (Chapter 380.05, FS) to ensure the long-term sustainability of the Keys. Issues such as protecting the natural environment and character of the Keys were major concerns. Also, the declaration was intended to address concerns for affordable housing, to maintain adequate public facilities, to support a sound economic base, to protect property rights, and to require adequate emergency planning and post-disaster planning to ensure public safety. As required by State law, Monroe County prepared the 2010 Comprehensive Plan to address these concerns, but after a series of legal challenges, the County was ordered to initiate a five-year work program to make planning improvements and a Florida Keys Carrying Capacity Study to assess the ability of the Keys' ecosystem to protect against the impacts of additional land development activities. The Florida Department of Economic Opportunity (DEO) has jurisdiction to review all local development projects in

Monroe County and to review and approve amendments to the Comprehensive Plan and Land Development Regulations (LDRs).

At the State level, boating and marina activities are regulated by several different State agencies through a variety of laws and codes. The following is a listing of the major laws under which marina facilities are currently regulated (also see Appendix A):

- Chapter 164, FS: Intergovernmental Programs
- Chapter 253, FS: State Lands
- Chapter 258, FS: Aquatic Preserves
- Chapter 373, Parts I and IV, FS: Water Resources Act
- Chapter 379, Part II, FS: Marine Turtle Protection Act and Florida Manatee Sanctuary Act
- Chapter 376, FS: Pollutant Discharge Prevention and Removal
- Chapter 380, FS: Land and Water Management
- Chapter 403, FS: Environmental Control

Among other requirements, these laws provide that the construction or modification of marina facilities calls for an Environmental Resource Permit to be submitted to the State of Florida. Together, DEP and the appropriate Water Management District review permit applications, depending upon the type of project proposed. Environmental Resource Permitting rules and regulations are contained within Chapter 62-300, 40E-40, and 40E-4.091, FAC. Moreover, Florida Keys Marina and Dock Siting Policies and Criteria are specifically described in Section 18-21.0041, FAC, regarding Sovereignty Submerged Lands Management. Significant provisions are excerpted in Section II.A.1., below.

In addition, Section 163.3178(6), FS, which is implemented by DEO, directs Florida's coastal counties to establish marina siting criteria in the Coastal Management Element of those counties that have adopted a marina siting plan as part of the comprehensive plan. Previously, Section 380.0651, FS, had defined the threshold at which new or expanded marinas would be reviewed as Developments of Regional Impact (DRIs), subject to certain exemptions if a local government had adopted a boat facility siting plan or policy as part of its comprehensive plan. However, the 2006 Florida Legislature enacted House Bill 683, which amended Section 380.06(24)(k), FS. This provision currently states:

“Waterport and marina development, including dry storage facilities, are exempt from this section” (i.e., the DRI review process).

4. County Regulation

The Monroe County 2010 Comprehensive Plan, Code of Ordinances, and accompanying LDRs have a number of policies and requirements in place to address both boat facility siting and the protection of natural resources. As these requirements relate to the marina siting criteria and potential site suitability evaluation process described in this Plan, they are discussed in greater detail in Section II.A.2., below. The Future Land Use Plan as well as land use districts (zoning code) delineate a number of areas specifically for water dependent uses, such as those related to recreational and commercial working waterfronts (see Appendix C).

Monroe County has taken steps to complement specific federal and State regulations. Similar to the boating restrictions found in the Florida Keys National Marine Sanctuary, the County has adopted “Boat Restricted Zones” in various areas countywide (see Sections 26-69, *et seq.*, Monroe County Code). In addition, the County has identified a number of Areas of Critical County Concern (ACCC). These places, which include Big Pine Key, North Key Largo, and Ohio Key, have been determined to have special planning and regulatory needs (see Sections 106-1, *et seq.*, Monroe County Code). The Technical Document accompanying the Future Land Use element of the Monroe County 2010 Comprehensive Plan describes the extensive planning initiatives undertaken for these areas and the rationale for creating and designating them as Areas of Critical County Concern.

Monroe County developed the “Tier System” to guide the future development of land that is in private ownership and remains vacant today. The Tiers are categorized into three levels: (1) Conservation, Restoration, and Protection; (2) Transition, Reduce Sprawl; and (3) Redevelopment and Infill Development. Maps depicting Tier designations are used to overlay onto current zoning maps to determine appropriate use and intensity of future development or redevelopment. Tiers will also be used as part of

Monroe County's 20-year land acquisition program. Tier I land will be the most aggressively pursued due to its environmentally sensitive designation. These areas will be set aside for conservation, restoration, and protection and are often found adjacent to existing publicly owned lands and/or high quality habitat. Tier II land consists of subdivisions that are less than 50 percent built out, lacking necessary infrastructure, or contain less than four acres of isolated environmentally sensitive land. Tier III land is greater than 50 percent built out, presently equipped with infrastructure, or currently planned for development.

Finally, major planning efforts have been made throughout unincorporated Monroe County to work in conjunction with other planning mechanisms currently in place, such as the Livable CommuniKeys Planning Program, which focuses on addressing local community needs through individual Master Plans (Comprehensive Plan Objective 101.20). Livable CommuniKeys Plans are now completed for Stock Island/Key Haven, Big Pine and No Name Keys, Tavernier Creek to Mile Marker 97, Key Largo, and the Lower Keys. The incorporated areas of the County have been engaging in similar planning initiatives, such as the Marina Siting Plan for the City of Marathon and related activities in Islamorada and the City of Key West. Having the benefit of extensive community involvement, these plans often provide recommendations on the desired development level of boating facilities and the County's recreational and commercial working waterfronts.

II. MARINA FACILITY SITING

A. GENERAL REQUIREMENTS

A marina siting plan provides information and guides marina development through siting criteria, maps or a combination of both, as is the case with this particular Plan. It is based on collection and analysis of data on marina uses, natural resources and recreation issues. Such a plan is usually manifested through a set of goals, objectives, and policies adopted in a local government comprehensive land use plan and implemented through local ordinances, including land development regulations.

This section identifies existing legal requirements for marina siting in Monroe County. Because the mainland portion of the County consists largely of Everglades National Park, as noted earlier, this Plan addresses marina siting in the Florida Keys Area of Critical State Concern only. The critical factor or criterion in marina siting and expansion in the Keys is water depth. Highlighted in this section are a number of State and County regulations defining the threshold for various types of boating facilities as minus four feet mean low water. This depth is based on considerations of light penetration for seagrass growth as well as minimizing impacts to seagrass, an essential habitat resource in the Keys and elsewhere around the State of Florida.

Additional guidance on marina siting can be found in FWC's *Boat Facility Siting Guide* (FWC 2000), FWC's *Florida Boating Access Facilities Inventory and Economic Study* (FWC 2009), and the Department of Community Affairs (DCA) manual, *Preparing a Boating Facility Siting Plan: Best Management Practices for Marina Siting* (DCA 2003).

This section is followed by the specific Marina Siting Criteria that have been incorporated in Comprehensive Plan Policy 212.3.2, and provides the basis for the maps that portray potential Site Suitability (see Appendix E).

1. State Regulations

As noted above, Section 18-21.0041, FAC, sets forth State of Florida regulations implemented by DEP and which specifically address Florida Keys Marina and Dock Siting Policies and Criteria:

2. No docking facilities shall be approved which require either dredging or filling to provide access by canal, channel, road, or any other means. This restriction shall also apply to widening or deepening any existing canal or channel, but not to regular maintenance dredging of existing canals, basins, or channels, providing such maintenance does not exceed currently acceptable water depths.
3. Water depths requirements. Docking facilities shall only be approved in locations having adequate water depths in the boat mooring, turning basin, access channels and other such areas to accommodate the proposed boat use.
 - a. A minimum water depth of -4 (minus four) feet mean low water shall be required.
 - b. Greater depths shall be required for those facilities designed for, or capable of, accommodating boats having greater than a 3 (three) foot draft, so that a minimum of one foot of clearance is provided between the deepest draft of a vessel and the bottom.
10. No application to lease State owned sovereignty submerged lands for the purpose of providing multi-slip docking facilities shall be considered for approval unless there are no benthic communities present where the boat mooring area, turning basins, mooring piles or other structures are to be located, excepting any main access docks required to cross benthic communities to reach acceptable areas. This shall not preclude them from applying for consent to use State owned submerged lands for the purpose of using the minimum amount necessary to obtain reasonable ingress and egress.

Recognizing that the natural water bodies of the Keys and Monroe County are an “irreplaceable asset which requires special protection,” Section 62-312.430, FAC, specifies permitting requirements for marinas in the County. These DEP rules relate to dredge and fill activities in those waters of the Keys (Sections 62-312.400 through 62.312.460, FAC) designated as Outstanding Florida Waters (OFW), excluding all artificial water bodies, as identified in Section 62-302.700, FAC, and are in addition to regulations relating to environmental resource permit and grandfathered dredge and fill permit applications under Part IV of Chapter 373, FS. Section 373.414(1), F.S., specifically speaks to the importance of recognizing that activities in OFW are required

to meet higher water quality standards in the permitting process. (Note that ‘artificial water bodies’ include any water body created by dredging, excavation, or by the filling in of its boundaries, including canals, and borrow pits or waters resulting from rock mining activities.)

Section 62-312.430, FAC, provides the DEP permit requirements for marinas:

Marinas shall be evaluated on the following criteria. For the purpose of this Part a marina shall be defined as a dockage facility providing ten or more wet storage slips or providing commercial marine products or services.

- (1) Fueling facilities shall have automatic shutoff valves.
- (2) Fuel storage or pumping facilities shall not be located on over-water structures.
- (3) Spill containment equipment shall be located on site sufficient to prevent the discharge of pollutants into State waters beyond the marina boundary. Personnel trained in the use of the containment equipment shall be in attendance during all operating hours. At any time such personnel are not in attendance, fuel facilities shall be adequately secured to prevent use.
- (4) Sewage pumpout facilities shall be provided.
- (5) Water depths at the specific mooring sites shall not be less than four feet mean low water.
- (6) The applicant shall affirmatively demonstrate to the Department that adequate depths exist for ingress and egress of boats to the mooring sites and in no case shall the depths of the access area be less than the minimum depth specified in subsection (5).
- (7) Proposed construction techniques shall protect the viability of a seagrass bed community or other biological communities as listed in paragraph 62-312.410(1)(a), F.A.C.
- (8) Boat mooring sites shall not be located over a seagrass bed community or coral reef regardless of water depth.

The minus four foot mean low water depth threshold is again specified as in the State sovereignty submerged lands rule under Section 18-21.0041, FAC (also excerpted above).

2. Existing Monroe County Policies and Regulations

This section excerpts a number of existing provisions in the Monroe County 2010 Comprehensive Plan Policies and Code of Ordinances applicable to marina siting issues and specifications.

Monroe County Comprehensive Plan Policy 212.5.2 – [S]iting of single family docks, boat ramps, and boat slips on manmade water bodies shall require minus four (-4) feet mean low water (MLW) depths at the terminal end. These structures must have continuous access to open water at depths of minus four (-4) feet (MLW) or greater over a channel width of twenty (20) feet, or access to open water via marked, federally and State approved navigation channels.

1. Docking facilities may be developed on any shoreline if there is a mean low water (MLW) depth of at least minus four (-4) feet at the terminal end of the docking facility, and continuous access to open water, or
2. Docking facilities may be developed on the shoreline of lots in a subdivision if the docking facility is located in a channel or canal or basin that connects five or more contiguous lots which was dredged before 1986, and if there is a mean low water (MLW) depth of at least minus four (-4) feet at the terminal end of the docking facility.

Policy 212.5.3 – The minimum water depth requirement at the mooring site shall be minus four (-4) feet mean low water.

Policy 212.5.4 – The following restrictions shall apply to all structures built over or adjacent to water (including but not limited to boat docks, fishing piers, swimming piers and observation decks):

1. The maximum permitted length of docks shall be commensurate with the shoreline width of the land parcel at which the dock is located, subject to a maximum length of 100 feet from the mean low water line;
2. The length of docks shall not exceed ten (10) percent of the width of the waterbody as measured laterally across the waterbody....

Monroe County Code Section 118-10(4) – *Mangroves, Wetlands, and Submerged Lands.* All structures developed, used or occupied on land classified as mangroves, wetlands, or submerged lands (all types and all levels of quality) shall be designed, located, and constructed such that:

- (a) Generally: Only docks and docking facilities, boat ramps, ...boat shelters ... shall be permitted on or over mangroves, wetlands, and submerged lands, subject to the specific restrictions of this subsection. These restrictions shall not apply to disturbed wetlands... lawfully converted into uplands through filling.
- (b) Protection of circulation patterns. Shoreline structures shall be designed to protect tidal flushing and circulation patterns.
- (c) Dredging. The following restrictions shall apply to dredging activities:
 1. No new dredging shall be allowed in the county except as specified for boat ramps in section 118-12(1) (shoreline setback, boat ramps);
 2. No maintenance dredging shall be permitted within areas vegetated with seagrass beds or characterized by hard bottom communities except for maintenance dredging in public navigation channels;

3. In order to facilitate establishment of bottom vegetation, maintenance dredging in artificial waterways shall not exceed depths greater than six (6) feet at mean low water (MLW). This policy does not apply to the entrance channels into Key West Harbor and Safe Harbor.
4. All dredged spoil materials shall be placed on permitted upland sites designed and located to prevent runoff of spoil material into wetlands or surface waters.
5. All dredge activities require approvals by the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers prior to issuance of a county permit.

Monroe County Code Sections 26.33 through 26.40 – County Mooring Fields. [M]ooring fields shall be managed so as to eliminate abandoned and derelict vessels, ensure compliance with the Clean Vessel Act, minimize benthic damage, and provide a safe, secure harbor for transient and long-term recreational vessels.

Of particular importance is **Monroe County Code Section 118-12**, which sets forth the shoreline setback regulations for different types of structures. Because many of these requirements and restrictions are applicable to specific marina siting criteria, they are described further in II.B, below.

B. COMPREHENSIVE PLAN MARINA SITING CRITERIA POLICY

This section describes the criteria to be considered in finding suitable locations for development of new marinas in Monroe County. Please see the complete policy language in the Comprehensive Plan (Policy 212.4.2).

In summary, the Monroe County Marina Siting Criteria (described in full in Appendix F) require that the following criteria shall be met for the proposed site to minimize or avoid impacts of development on natural and other significant resources:

1. Benthic Vegetation and Hardbottom Communities
2. Adequacy of Circulation and Tidal Flushing
3. Adequate Water Depth and Access
4. Minimal Shoreline Modification

5. Quality of Upland Areas and Degree of Alteration
6. Propeller Dredging Problem Areas
7. Impact of Boats o Florida Manatee, American Crocodile, and Sea Turtles
8. Other Significant Resources

The adopted criteria are defined below with further explanation and related references to existing regulations. An initial County Needs Analysis was conducted in order to gain a snapshot of need through baseline data (based on 2006 and 2009 aerial imagery). However, the Monroe County Attorney recommended the County not proceed with siting criteria tied to the needs analysis, based upon the following concerns:

The proposal does not seem to be based on data and analysis. These requirements originated in the adopted 2010 Comprehensive Plan. No data and analysis has been found in that document or in relevant regulatory documents to support the mileage restriction or a full utilization threshold. Further, without data to support and defend the 5 miles and a specific utilization threshold, showing that there is a direct or cumulative indirect effect when marinas are within 5 miles of each other, no matter which coast they are on, there may be a substantive due process problem. If a person is willing to comply with all the regulations that govern marinas, it appears that the siting within 5 miles using a percentage utilization criterion is without a rational basis and may be arbitrary and capricious.

1. Benthic Vegetation and Hardbottom Communities

“Siting of marinas in areas of seagrass or hardbottom (including hard and soft corals) should be avoided. Boat mooring sites (slips or docks) shall not be located over a seagrass bed community or hardbottom community regardless of water depth. No impacts to seagrass beds or hardbottom communities should result from the construction or use of new marina development.”

The Florida Keys are characterized by vast areas of subtropical nearshore benthic communities of seagrass beds and hardbottom systems. The federal regulations governing the Florida Keys National Marine Sanctuary define ‘seagrass’ as “any species of marine angiosperms (flowering plants) that inhabit portions of the seabed in the Sanctuary. Those species include, but are not limited to: *Thalassia testudinum* (turtle grass); *Syringodium filiforme* (manatee grass); *Halodule wrightii* (shoal grass); *Halophila decipiens* (paddle grass), *H. engelmannii* (star grass), *H. johnsonii* (tape grass); and

Ruppia maritima (ditch-grass). In addition, the term ‘hardbottom’ refers to “a submerged marine community comprised of organisms attached to exposed solid rock substrate. Hardbottom is the substrate to which corals may attach but does not include the corals themselves.” (15CFR922.162(a).)

Seagrasses are presently threatened throughout Florida by water quality degradation, physical damage from boat propellers, shading from moored vessels or docks, dredging and filling projects, and muck sediment deposition. Hence, protection of benthic resources is a primary consideration in developing marina siting criteria.

Seagrass beds represent essential components of both the marine environment and the economy of a coastal state such as Florida. Seagrass leaves help maintain water clarity by trapping fine sediments and particles; their rhizomes and root systems stabilize bottom sediments. Seagrass communities provide food and shelter for numerous marine organisms, including the Florida manatee. Because more than 70 percent of Florida’s recreational and commercial fish, shellfish, and crustacean species spend part of their lives in seagrass communities, the environmental and economic values provided by seagrasses are substantial⁴. Hardbottom communities are valuable nursery areas for many faunal assemblages and invertebrates and fishes of both the patch reef and seagrass communities, providing microhabitats for many juvenile fishes.

The benthic vegetation and hardbottoms occurring in Monroe County are described in greater detail in such documents as the Conservation and Coastal Management Element (with accompanying Technical Documents) of the Monroe County 2010 Comprehensive Plan, and the Florida Keys National Marine Sanctuary Management Plan (with environmental impact statement), among others.

SITING: The presence of benthic vegetation and hardbottom communities will have to be determined on a site-specific basis as projects are submitted for permit approval.

⁴ *Conserving Florida’s Seagrass Resources: Developing a Coordinated Statewide Management Program* (FWC 2003). Available online at <http://myfwc.com/research/habitat/seagrasses/publications/conserving-fl-seagrass-resources/>.

2. Adequacy of Circulation and Tidal Flushing

“The proposed marina site shall exhibit adequate circulation and tidal flushing. The waterway upon which the marina is proposed to be sited shall meet or exceed State water quality standards, and must currently have “Good” water quality as indicated in the County’s most current canal inventory and assessment data. New marina development shall not adversely impact the quality of water during construction or use.”

a. Water Quality

Water quality has been a major concern in the Florida Keys at the federal, State, and local levels. The scope of the issue ranges from water quality impacts due to regional and mainland development to local efforts to replace septic tanks with central sewage treatment facilities. Marina-generated water quality impacts have prompted two main efforts: provision of sewage pump-out and treatment for live-aboards and cruisers, and proper treatment and disposal of site-generated stormwater and wastes. The design and location of water bodies in which marinas are developed may also influence the level of water quality problems that may ensue. In general, the policy is to encourage the development of new marinas or modifications of existing marinas at sites with good tidal flushing and turnover rates (i.e., adequate circulation). Note also that Section 18-21.0041(b)6., FAC, states that marina development in the Florida Keys shall be encouraged to locate in already developed or disturbed areas.

In Monroe County, as has been noted, new dredging is restricted by existing regulations and creation of new water bodies for marinas is prohibited. This prohibition also applies to the deepening of existing water bodies (Section 18.21.0041(1)(b)2, FAC). Therefore, the current configuration of waterways, boat basins, and available natural deep water sites cannot be physically altered in ways that could potentially result in water quality degradation.

It has already been mentioned that Section 62-302.700, FAC, prohibits the degradation of water quality in such Outstanding Florida Waters as those of the Florida Keys (Section

62-302.700(9)(i)13.c, FAC). This includes all waters except artificial water bodies, such as canals. Waters within the OFW are afforded the highest level of water quality protection at the State level. One federal law that affects marinas and mooring fields is the creation of the Florida Keys No Discharge Zone, in effect since June 2002. This law prohibits the discharge of sewage from all vessels into State waters within the Florida Keys National Marine Sanctuary, whether the sewage is treated or not (see also, Monroe Code Section 26-1 and 26-6). Monroe County has adopted some requirements for live-aboards regarding sanitation and sewage disposal. In addition, the DEP has established the Clean Marina program statewide, and marinas in the Keys that are not already certified under this program may decide to consider applying for certification. This will result in improved water quality in areas surrounding the marina.

This siting criterion mainly applies to manmade channels and residential canals in unincorporated Monroe County. MACTEC Engineering and Consulting, Inc. prepared a report entitled *Monroe County Residential Canal Inventory and Assessment* (MACTEC Report), in 2003, to address water quality issues in the canals, and wide-ranging recommendations for water quality improvement were presented. Potential sites for marinas and boat ramps will be evaluated for these impacts pursuant to the Marina Siting Criteria. Monroe County Code Section 118-10(4)b provides that shoreline structures must be designed to protect circulation patterns and tidal flushing (see also Section 118-10 regarding environmental design criteria for specific habitats). Any potential changes that may result from a project must meet with County approval.

b. Stormwater

Monroe County adopted a stormwater ordinance in the early 1990s. New development must comply with this ordinance. During construction, some canals and boat basins were dug fairly deep but not designed to flush back out to open water. These so-called “dead end canals” collect pollutants derived from stormwater runoff, septic tanks, and other debris. Most canals are perpendicular to the shoreline and, depending on location, serve as a natural trap for floating vegetation, which sinks and decays on the bottom, resulting in an anoxic condition. Dredging to create new water bodies and access is prohibited;

hence, water body design is not a major concern in siting new marinas (Section 18.21.0041(1)(b)2, FAC).

SITING: The adequacy of circulation and water quality will have to be determined on a site-specific basis as projects are submitted for permit approval.

3. Adequate Water Depth and Access

“There shall be a minimum of four (4) foot of water depth at mean low water at the marina site (including the mooring slips, turning basin, and access channels), and the water depth shall be continuous to open water over a channel width of twenty (20) feet. Water depth shall be adequate for the proposed vessel use such that there be a minimum of one (1) foot clearance between the deepest draft of the vessel and the bottom at mean low water. Greater water depths shall be required for those facilities proposed for accommodating vessels having greater than a three (3) foot draft. Sites shall not require dredging or filling to provide access.”

Section 922.163(a)(3)(v) of 15 CFR Ch. IX (NOAA regulations governing the FKNMS) prohibits drilling into, dredging (including prop-dredging), constructing or placing structures and/or material on the seabed of the Sanctuary except as an incidental result of certain activities, which include the construction and repair of legally authorized docks, piers, or marinas with fewer than 10 slips.

Monroe County Code Subsections 118-12(l) and (m) provide additional regulations for boat ramps and docking facilities relevant to this criterion. Section 18-21.0041, FAC, Sovereignty Submerged Lands Management, outlines the Florida Keys Marina and Dock Siting Policies and Criteria.

SITING: The adequacy of water depth and access will have to be determined on a site-specific basis as projects are submitted for permit approval.

4. Minimal Shoreline Modification

Marinas shall not be sited adjacent to unaltered shorelines as defined in Sec. 101-1 of the Land Development Code. Minimal modification to the shoreline shall be permitted per County Land Development Code Section 118-1, 118-12(m), and (o).

A shoreline, as defined by the County Land Development Code, is the interface between land and water, extending seaward of the mean high water to include fringing mangroves and adjacent shelf, and may include a transitional zone landward of mean high water (MHW). Unaltered shorelines are generally located along natural nondredged waterways and open waters. Only minimal shoreline modification should be allowed. See Section 118-10, Environmental design criteria for specific habitat types.

SITING: The extent of shoreline modification necessary will have to be determined on a site-specific basis as projects are submitted for permit approval.

5. Quality of Upland Areas and Degree of Alteration Necessary

Marinas shall not be sited on lands designated as Tier I or Tier III-A, if clearing is proposed. Marina development shall not adversely impact the upland area of, or adjacent to, a proposed marina site. Additionally, marinas shall not be permitted on offshore islands or on units of the Coastal Barrier Resources System (CBRS).

The Monroe County Tier System (Future Land Use Element of the Comprehensive Plan) rates the environmental sensitivity of a parcel of land, its potential for development, and prioritizes lands for public acquisition to assist with allocating and awarding development permits to appropriate areas. The Tier System applies to all areas outside of mainland Monroe, excluding the Ocean Reef planned development. The Tier System includes:

Tier 0: assigned to right-of-ways, some submerged lands and mapping errors, and property in Ocean Reef.

Tier I: assigned to Natural Areas, may contain threatened or endangered species, and have minimal existing development or infrastructure. These lands can be publicly acquired and restored for conservation and environmental resource protection.

Tier II: assigned only to Big Pine Key and No Name Keys in the Lower Keys Planning Area, containing lands that have some environmentally sensitive lands but can be developed.

Tier III: assigned as Infill Areas and represents the majority of developable acreage in the County.

Tier III-A: assigned as Special Protection Areas, lands that have one acre or more of native upland habitats.

Monroe County contains over 200 offshore islands not connected to US-1 or other roads or bridges. These islands are composed of sediment and characterized by environmentally sensitive lands containing mangrove forests, salt marsh, buttonwood wetlands, salt ponds and freshwater wetlands; home to endangered and threatened species habitats; and their associated submerged lands support seagrass beds. Federal, State and local regulation limit development on offshore islands.

The Coastal Barrier Resources Act of 1982 established the Coastal Barrier Resources System (CBRS) which discourages development on coastal barrier islands. Monroe County Comprehensive Plan Objectives 102.8, 209.3, 215.2 and related policies discourage public and private development in the CBRS.

SITING: The quality of upland areas and degree of alteration necessary will have to be determined on a site-specific basis as projects are submitted for permit approval.

6. Propeller Dredging Problem Areas

Siting of marinas in areas of seagrass propeller scarring should be avoided. Marinas shall not be located adjacent to areas of severe seagrass scarring, based on the most current data available from the Florida Fish and Wildlife Research Institute.

Propeller damage is the most common type of direct human impact upon seagrass beds in the Florida Keys. Boat propellers and large ships have damaged over 30,000 acres of seagrass in Monroe County according to the FWC's *Florida Manatee Management Plan*

(2007, page 148). According to the Monroe County Updated Technical Document to the Conservation and Coastal Management Element (2012), propeller damage is the single largest threat to seagrasses, occurring when recreational boaters take watercraft and jet skis through shallows, cutting through seagrass beds and shallow sediments. Damage from a single propeller scar recovers slowly, if at all.

Monroe County Comprehensive Plan Objective 203.6 and related policies direct the County to coordinate development and implementation programs and regulation to protect the living marine resources of the Florida Keys with federal, State and local authorities. Policy 203.4.5 directs the County to develop and implement a boating impacts management program which shall address the problem of propeller damage to seagrasses and Policy 203.3.5 directs the County to reduce seagrass propeller scarring from boating impacts through identifying problem areas, establishing criteria and priorities for identifying channels and shallows to be markers through coordination with NOAA and FWC.

SITING: The presence of propeller dredging problem areas will have to be determined on a site-specific basis as projects are submitted for permit approval.

7. Impact of Boats on Florida Manatee, American Crocodile, and Sea Turtles

Marinas shall be sited so as to prevent impacts to the Florida Manatee, American Crocodile, and marine turtles and protect their habitat by avoiding areas of known American Crocodile range, areas with high watercraft Florida Manatee mortality, or areas that include a beach known to be used for marine turtle nesting. Site characteristics can be assessed using current data from the Florida Fish and Wildlife Conservation Commission.

The Monroe County 2010 Comprehensive Plan contains objectives and policies related to crocodiles, manatees, and turtles. The following excerpts provide specific information on each of these macrofaunal species.

Objective 207.8 – Monroe County shall implement activities to prohibit the destruction of the Florida manatee (*Trichechus manatus*), American Crocodile (*Crocodylus acutus*), and marine turtles, as well as to protect the habitat of these species. Species of marine turtles to be protected shall include the Atlantic Loggerhead Turtle (*Caretta caretta*), Leatherback Turtle (*Dermochelys coriacea*), Atlantic Hawksbill Turtle (*Eretmochelys imbricata*), Green Turtle (*Chelonia mydas*), and any other marine turtle using Monroe County beaches as nesting habitat.

Policy 207.8.3 – By January 4, 1998, Monroe County shall develop and implement a boating impacts management program for protection of marine turtles and manatees (see Objective 203.6 and related policies).

Policy 207.8.6 – By January 4, 1998, Monroe County shall adopt a turtle protection ordinance. Regulations of this ordinance shall apply to existing and new development and shall generally accomplish the following:

1. prohibit activities disruptive to marine turtles;
2. establish standards for preventing interior lighting from illuminating nesting areas during nesting season;
3. establish standards for mechanical beach cleaning;
4. and protect marine turtle from predation.

Policy 207.8.7 – Monroe County shall protect marine turtles, crocodiles, and alligators from land development activities. Regulations shall generally accomplish the following:

1. restrict existing and prohibit new beachfront outdoor lighting in the vicinity of nesting areas;
2. prohibit structures within fifty (50) feet of the crest of the beach/berm for any beach which is known to serve as an active nesting area;
3. establish general standards for coastal construction in the vicinity of active nesting areas; and
4. require removal of invasive exotic vegetation from development sites in beach/berms as a condition of development approval for adjacent uplands.

a. Crocodiles

In 1975 the American crocodile was listed under the federal Endangered Species Act, when estimates of nesting females ranged from only 10 to 20 in a small area in northeastern Florida Bay; however today the species is in recovery with more than 100 nestings reported annually. Its federal listing has been downgraded to threatened in the State of Florida.

Much of the remaining crocodile habitat in South Florida has been acquired by federal, State, and county agencies and is protected from development. The U.S. Fish and Wildlife Service in coordination with Monroe County (pursuant to Comprehensive Plan Objective 103.2 and Policy 103.2.6) created Crocodile Lake National Wildlife Refuge in 1980, encompassing more than 5,000 acres and covering a significant part of North Key Largo off Card Sound Road on the Gulf of Mexico side. Administered by the National Key Deer Refuge, the refuge is currently closed to general public use due to the sensitivity of the six federally threatened and endangered species inhabiting the refuge. These protected areas should allow the crocodile population to expand and may provide additional nesting opportunities. Besides the American crocodile, this area is critical habitat for the Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*), Key Largo wood rat (*Neotoma floridana smalli*), Eastern indigo snake (*Drymarchon corais couperi*), Stock Island tree snail (*Orthalicus reses*), and Schaus' swallowtail butterfly (*Heraclides aristodemus ponceanus*).

Crocodiles are now observed throughout most of their historical range in Florida, including Biscayne Bay, Key Largo, and Florida Bay. Nests have occasionally been spotted on the southwest coast and Marco Island.

At this writing, research has not uncovered a database of documented impacts of boats on crocodiles. Instead, statistics are kept with respect to impacts of automobiles on crocodiles, according to information provided by such sources as FWC and FWS.

b. Manatees

Manatees, Florida's State marine mammal since 1975, are members of the scientific Order Sirenia, large air-breathing aquatic mammals that inhabit both fresh- and salt-water areas, including oceans, estuaries, rivers, canals, and dredged channels. The Florida manatee (*Trichechus manatus latirostris*) has long been observed along the eastern seaboard of the United States from Florida to Georgia (FWS 2001). Recognized as an integral part of Florida's ecology for millions of years, this "sea cow" has evolved from

four-footed land mammals more than 60 million years ago. Their 45 million-year-old fossils have been found in the State.

Manatees are protected by the Florida Manatee Sanctuary Act and federally protected by the Marine Mammal Protection and Endangered Species Act. To determine the presence and abundance of this federally listed endangered species (listed as threatened in Florida), synoptic surveys of the State's manatee population are legislatively mandated (Section 379.2433, FS). Surveys are performed annually by FWC during the winter to coincide with the passage of major cold fronts, periods when manatees gather at various warm water refugia around the State. Counts are generally performed on the same two days per year throughout Florida from fixed-wing aircraft to survey manatees in places and at times when they are most concentrated. The number and dates of surveys may vary from year to year depending on weather conditions. No surveys were conducted in 1993, 1994, and 2008 because of the lack of strong winter cold fronts (FWS 2001a). Water clarity/visibility, weather conditions, and time of day significantly affect observations of manatees during these surveys. As such, it remains unknown what percentage of the total manatee population is actually counted in the synoptic surveys.

Survey results (1991-2011) are indicated in Table 1. The Monroe County and Florida totals listed in the table represent the highest single count for each year synoptic surveys were flown. Location data from the synoptic surveys was mapped using the Spatial Analyst extension of ArcGIS® (Environmental Systems Research Institute, Inc.) to generate the surface density of manatees within the waterways of Monroe County. Data reveal that manatees are primarily found in mainland Monroe (Everglades National Park) and along the bayside of Key Largo. Synoptic surveys show manatees as far south as Marathon, but in small numbers. Aerial surveys to determine manatee abundance and distribution are presently only flown in the Upper Keys because manatee use of the Lower Keys does not seem to justify aerial surveys at this time. Areas of relatively low abundance (among areas surveyed) include Marathon, Long Key, Lower Matecumbe Key, and Upper Matecumbe Key. Large numbers of manatees have been found to congregate in the estuaries where the Everglades meet Florida Bay.

Table 1. Number of Manatees Sighted During Synoptic Surveys 1991 - 2011			
Survey Year	Monroe County Total	Florida Total	Percentage
1991	94	1,478	6.4%
1992	114	1,844	6.2%
1995	102	1,823	5.6%
1996	104	2,630	4.0%
1997	160	2,241	7.1%
1998	90	2,018	4.5%
1999	101	2,360	4.3%
2000	126	2,223	4.8%
2001	118	3,300	3.6%
2002	29	1,758	1.6%
2003	216	3,127	6.9%
2004	80	2,505	3.2%
2005	240	3,143	7.6%
2006	249	3,113	8.0%
2007	189	2,817	6.7%
2009	181	3,802	4.7%
2010	110	5,077	2.2%
2011	119	4,843	2.5%

Source: FWC-FWRI.

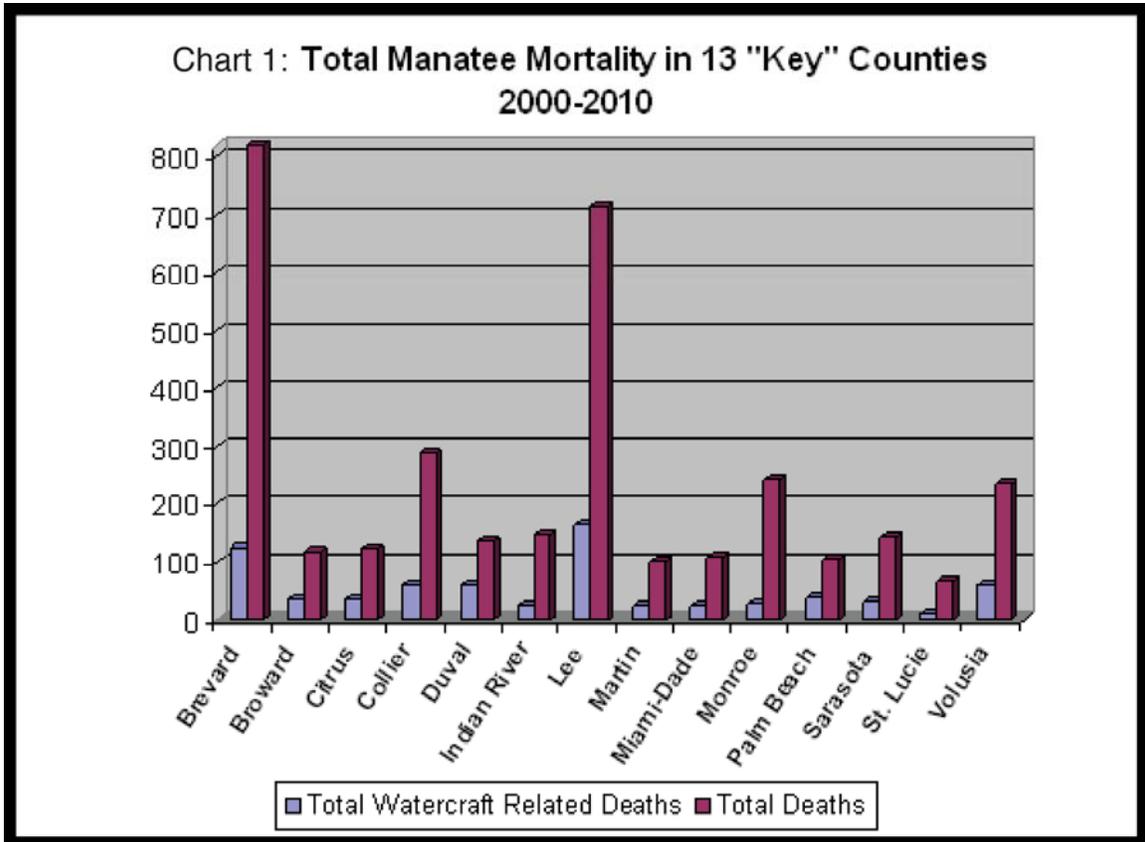
In Florida, there has been a clear increase in the number of manatee deaths over the last quarter-century (FWS 2001a). Manatees are subjected to a variety of threats, both human and non-human related. Red tide, disease, and cold stress are among the natural causes of mortality. Human activities affect manatees both directly and indirectly. Watercraft strikes, entanglement in or ingestion of fishing line and gear, poaching, and crushing in water control structures are among the direct impacts. Indirect impacts result from activities that degrade manatee habitat, such as dredging, water quality degradation resulting from coastal development, loss of warm water refugia, and propeller scarring of seagrass beds. This section describes the causes and spatial distribution of mortalities documented within Monroe County.

Information on manatee mortality is derived from FWC’s manatee salvage and rescue program, which has recorded information on the location, time of year, and cause of manatee deaths since April 1974. Mortalities are assigned by FWC to one of nine categories:

- Category 1: Watercraft-related
- Category 2: Floodgate/canal lock
- Category 3: Other human-related
- Category 4: Perinatal (dependent calf)
- Category 5: Cold stress
- Category 6: Other Natural
- Category 7: Carcass verified but not recovered
- Category 8: Undetermined (too decomposed)
- Category 9: Other undetermined

The information presented in this section is derived from data collected by FWC between 2000 and 2010 (available from <http://www.myfwc.com>). Within that timeframe, there have been 4,220 manatee mortalities statewide; Monroe County accounts for 243 (5.7%) of these deaths. During the same timeframe, 910 confirmed watercraft-related manatee mortalities have occurred statewide; 27 (3%) of which occurred in Monroe County. It is recognized that the use of mortality data as a screening criterion is limited. Some manatees whose deaths have been assigned to “undetermined” may also have been struck by boats, so the percentage of watercraft-related deaths may be conservative. In addition, manatee mortalities record the site of carcass recovery, which may not be the site of injury, and therefore data may be skewed by mortalities that occurred in Miami-Dade and/or Collier counties. A manatee struck and killed by a boat may drift a significant distance before its carcass is recovered. Additionally, a manatee hit by a boat may not die immediately and may swim some distance before it succumbs to the injury. Nonetheless, carcass recovery locations represent the best available information for estimating the general area of the County where manatees have an increased probability of being mortally wounded by a boat collision. Graph 2 shows all manatee mortality in Monroe County in comparison with Florida’s 13 “key” counties required to prepare Manatee Protection Plans.

Mainland Monroe and the surrounding area accounted for 80 percent of the total manatee mortality countywide; the Keys made up the remaining 20 percent.



The mortality total for Monroe County is based on reported deaths of manatees in the Florida Keys, excluding mainland Monroe County. Source: FWC-FWRI.

While Monroe County is not considered to be an important manatee area and is not required to have a Manatee Protection Plan, protective measures are in place that provide for the health and safety of manatees. The FWC provides information signs to homeowners to post along canals indicating the need to boat safely in the presence of manatees. The Florida Keys National Marine Sanctuary has established kiosks at boat ramps and marinas throughout the Keys that provide a variety of boating and environmental information, including the need to watch for manatees. Moreover, various agencies have created boating restricted areas that either exclude boats or require boaters to operate at idle or slow speed.

Monroe County has provided the greatest protection to both manatees and humans through a variety of measures. The Monroe County Boating Impacts Management Plan (1992) describes criteria for improved channel marking and the creation of boating regulatory zones. These measures were designed to ensure that boaters operate safely and are restricted when operating near environmentally sensitive areas. Channel marking was further developed in the Channel Marking Master Plan for the Florida Keys (1998). Both channel marking and boating regulatory zones were implemented by the County throughout the 1990s with the establishment of over 400 channel markers and the designation of 20 boating regulatory zones. While initially created for human life and safety, the zones (all permitted by FWC) have the direct effect of protecting manatees as well. Boating regulatory zones include idle speed and slow speed zones, in addition to areas that require engines to be turned off or where vessels are excluded altogether. The FKNMS also provided protection with federal regulations requiring vessels to operate at idle speed within 300 feet of all residential shorelines. Additional idle speed zones have been created by Monroe County that apply to all man-made canals, harbors, and boat basins. The Village of Islamorada has installed regulatory buoys surrounding the islands within its jurisdiction requiring vessels to operate at idle speed within 300 feet of shore. The cities of Key Colony Beach and Key West have implemented idle speed zones as well. Enforcement officers with the Monroe County Sheriff's Office, FKNMS, FWC, FWS, and Everglades National Park are authorized to enforce the regulations of the numerous boating regulatory zones described above.

FWC released its *Florida Manatee Management Plan* in December 2007. The Upper Keys area of Monroe County (north of Marathon) has been identified in this plan as one area of the State that is a possible candidate for the evaluation of new manatee protection speed zones (p. 41). The following factors will be considered when the FWC begins the process of prioritizing the need for review of areas for new zones:

- There is an identified manatee risk from watercraft impacts that requires immediate attention.
- There are no zones or only limited zones in place and the area could benefit from a review to ensure protection of manatees and their habitat. [Note that Monroe

County does have a variety of protective measures in place, as described in the immediately preceding section.]

- Manatee and boating data have been collected recently and are available to use in the analysis.
- The Boating and Waterways Section (BWS) is considering the need for boating safety zones in a county. In these cases, consideration of manatee zones (where appropriate) at the same time could result in increased agency efficiencies.
- A county requests new manatee zones and provides a detailed rationale and discussion supporting its request. For example, counties may request zone reviews to facilitate coastal development permits that add boat traffic to an area.

New manatee protection speed zones could be established in the Upper Keys, but this action is dependent upon the collection of both boating data and new or additional manatee data, according to the plan. Emphasis is also placed on the significant seagrass habitat in the Keys: “Almost half of the State’s seagrass beds are located in the Florida Keys, with Monroe County having the most seagrass scarring (30,050 acres)” (p.150). Manatees are among the many species that forage upon seagrass, and it is thought that manatee protection speed zones can have the added benefit of safeguarding seagrass beds, as well as reducing the potential for manatee/boat interaction.

c. Turtles

Marine turtles are protected under a number of local, State, and federal laws and regulations. For example, the State of Florida, through the FWC, coordinates the Statewide Nesting Beach Survey (SNBS) program under a 1979 cooperative agreement between FWC and FWS. This initiative is aimed at implementing the State’s responsibilities under the Florida Marine Turtle Protection Act and the federal Recovery Plans for five species of threatened or endangered marine turtle – loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp’s ridley (*Lepidochelys kempii*).

Monroe County currently provides for specific protection of marine turtles, especially with respect to nesting activities (Policy 212.2.1). Monroe County Code Section 118-12(k) provides for the restoration of suitable turtle nesting habitat and also prohibits the

permitting of bulkheads, seawalls, riprap, and other shoreline hardening structures in beach areas known (or with potential) to be marine turtle nesting sites. Section 118-12(p) specifies setback requirements for development near nesting sites (e.g., maximum total setback of 100 feet from mean high water; see also Section 9.5-348(c)(5) regarding environmental design criteria for marine turtle beaches), in addition to mandating certain habitat restoration activities.

The County's sea turtle protection ordinance, Sections 13-114 through 12-210, Monroe County Code, places restrictions on outdoor and indoor artificial lighting that apply to all development on or near nesting beaches. These requirements also apply to marina development, including outdoor and waterfront lighting. For Florida's Model Lighting Ordinance for Marine Turtle Protection, see 62B-55, FAC.

In addition, Section 12-115, Monroe County Code, which implements Comprehensive Plan Policy 212.2.1 and Policy 212.2.3 regarding shoreline setbacks, provides the following:

(b) *Prohibiting storage or placement of any material in the nesting area.* The storage or placement of any material such as but not limited to construction material, rip-rap, trash and debris, mulch or other organic material, landscaping material, fill, vehicles, or boats, that has potential to impede movement of hatchlings or adults between ocean and nesting areas, or that may cover existing nests or nesting sites is strictly prohibited.

(c) *Development.* All development shall be set back a minimum of fifty (50) feet from any area which serves as an active or potential nesting area for marine turtles. The fifty (50) foot setback will be measured from the landward toe of the most landward beach berm or from fifty (50) feet landward of mean high water (MHW), whichever results in the smaller total setback. The maximum total setback shall be one hundred (100) feet from MHW.

Park use is subject to certain restrictions also:

Policy 1201.11.3 – Park management plans shall be designed so as to avoid and/or mitigate adverse impacts of park use upon sensitive natural resources. Such areas include, but are not limited to the following:

1. high quality undisturbed pineland and hammock vegetation;
2. documented habitat of species designated as rare or endangered by the State and federal governments;

3. undisturbed beach/berm (particularly turtle nesting beaches);
4. undisturbed mangrove, salt marsh, buttonwood and freshwater wetlands.

Public use shall be directed away from or minimized in such areas through controlled access and limitations on permitted activities.

Three species of marine turtle, the loggerhead, the green, and the leatherback, which routinely nest on Florida beaches, are the primary focus of the SNBS in Monroe County. For example, the Great White Heron National Wildlife Refuge, which stretches north of Marathon to north of Key West on the Gulf side and covers nearly 124,000 acres of islands and marine environment accessible only by boat (i.e., “the Backcountry”), provides habitat for loggerhead, green, leatherback, and Kemp’s ridley turtles. Moreover, the Key West National Wildlife Refuge, which encompasses 2,019 acres of land on 26 islands and more than 300 square miles of open water, has both loggerhead and green turtle nests and is also said to serve as the only breeding site in the United States for the endangered hawksbill turtle. Another program, the Index Nesting Beach Survey (INBS) created in 1989, has coordinated detailed sea turtle nesting trend monitoring in conjunction with the SNBS. Approximately 30 percent of Florida’s SNBS beach length is surveyed under INBS criteria.

Information on distribution, abundance, and seasonality of sea turtle nesting sites is collected by a statewide network of permit holders, including volunteers, academics, consultants, private conservation groups, and local, State, and federal agency personnel. Survey results are analyzed to evaluate and help reduce impacts to turtles and their nesting and foraging habitats from such human activities as recreation, coastal construction, and beach renourishment. Based on this data, recommendations for enhanced protection and land acquisition can be made. Lighting, debris, and nesting beach protection are the primary issues upon which public education efforts are centered. Current programs are focused on the loggerhead, as approximately 90 percent of the world’s largest loggerhead nesting population occurs in Florida, while leatherback and green turtle nesting populations are regionally significant. Green turtles and leatherbacks have overlapping but different nesting seasons and are not fully represented in the data.

SITING: The impacts of boats on the Florida Manatee, American Crocodile, and Sea Turtles will have to be determined on a site-specific basis as projects are submitted for permit approval.

8. Other Significant Resources

No adverse impact shall be permitted on archaeological or historic resources/sites.

Monroe County has 649 documented archeological sites and 369 ship wreck sites. Fifty-nine sites are registered on the National Register of Historic Places and the State's Florida Master Site File has identified 391 historic sites, 222 of which are housing. The County has also designated three segments of the Overseas Railroad Bridge as historic landmarks and include the Long Key, Bahia Honda and Seven Mile railroad bridges.

Although the Monroe County 2010 Comprehensive Plan maintains a comprehensive inventory of archaeological and historic resource sites for reference, County Policy 103.2.11 notes that no building permit or development approval be issued until an archaeological/historical review of the proposed development site is performed.

SITING: The presence of archaeological or historic resources or sites will have to be determined on a site-specific basis as projects are submitted for permit approval.

C. EVALUATING MARINA FACILITIES AND SITE SUITABILITY

In general terms, if one examines all aspects of habitat preservation, permit regulation, educational initiatives, and law enforcement activity already in place in Monroe County, it becomes readily apparent that multiple layers of protection currently exist with regard to preserving the County's unique and valuable natural resources. It has been said that this results in restrictions on the level of new development and redevelopment that could occur countywide. Much of the land in the Keys with potential for boating facilities of

some kind has already been developed with those uses. New development and redevelopment must meet stringent regulatory standards for approval. It is anticipated that very few new marinas will be proposed in the future. Moreover, the trend for redevelopment or expansion of existing facilities may center on reconfiguration of existing slips and changes in use rather than the addition of slips, again due to such factors as physical constraints and existing regulatory limitations.

1. Boating Facilities in Monroe County

Figures 1 through 7 in Appendix D show the average densities of marine facilities and boat ramps in Monroe County. Appendix D also contains Figure 8, outlining the incorporated areas of Monroe County. Figures 9 through 11 highlight the generalized marine facility locations in unincorporated portions of Monroe County by region (Upper, Middle, and Lower Keys).

The Marine Facilities Inventory that was collected as part of the WWPMP (2007) identified a total of 545 facilities in both unincorporated and incorporated Monroe County. The inventory lists facilities including but not limited to marinas, boatyards, boat ramps, fish houses, public parks and research centers.

2. Site Suitability

The Marina Siting Plan identifies in detail the siting criteria for new marinas with three (3) or more slips in Section B1-B8 for consistency with Policy 212.4.2 of the Monroe County Comprehensive Plan. Proposed new marinas will be required to meet specified criteria to minimize impacts on natural resources. To the extent data currently exists, the criteria have been mapped using Geographic Information System (GIS) techniques in Appendix E, Marina Siting Plan Maps, indicating areas countywide that may or may not be suitable for marina development. The Plan does not affect single-family docks with fewer than three (3) slips or existing multi-slip facilities unless they are expanding.

It should be noted that the development of the Monroe County Marina Siting Criteria identified and described in this Plan was vetted through the Florida Department of

Economic Opportunity, the Florida Fish and Wildlife Conservation Commission, and the Florida Department of Environmental Protection. These criteria serve as the basis for the Suitability Maps in Appendix E, which are intended to be used for illustrative purposes only. Land use designations and future land use categories, among other factors, are also considered during permit review processes.

a. Screening

It is important to reiterate that the marina siting guidance in this document applies to unincorporated Monroe County only, and shall not supersede, preempt or nullify applicable federal, State or municipal rules, regulations or requirements that apply. Any entity intending to develop or renovate a marina within a municipality’s boundaries must consult that municipality’s comprehensive plan and land development regulations. Compliance with the provisions of this document does not imply approval of other permitting requirements.

The approach recommended in this Plan is criteria-based. Applications for new marinas will be reviewed on a site-specific basis upon provision and review of site-specific data. This Plan is a technical resource intended to satisfy State-agency concerns about natural resource protection. Potential applicants are strongly encouraged to meet with County staff early in the process to resolve any questions prior to the development of any plans or projects.

b. Policy

New marine facilities shall meet all of the criteria described in this Plan, as adopted by Comprehensive Plan Policy 212.4.2. Applicants for new facilities must provide documentation to Monroe County Growth Management Division describing how each site will satisfy siting criteria. Please note, the provisions of this Plan shall not preempt or nullify any other applicable federal, State or local regulations that apply.

c. Mitigation

Section 62-312.450, FAC, sets forth the mitigation provisions under DEP's dredge and fill requirements related to permitting a marina in the Keys:

Notwithstanding any of the prohibitions contained in this rule, the Department shall consider mitigation pursuant to Section 373.414(1)(b), F.S., and applicable Department rules to determine whether the project may otherwise be permissible. In any application for mitigation, the applicant shall demonstrate before issuance of any permit for the construction of the intended project that the proposed mitigation will be effective. Mitigation shall not be permitted where it appears after due considerations that construction of the intended project will cause irreplaceable damage to the site.

Monroe County 2010 Comprehensive Plan Policy 212.5.4 states:

A variance procedure, separate from that set forth in the current Land Development Regulations Section 9.5-523, shall be included in the Land Development Regulations to allow the minimum relaxation of the above restrictions, which is necessary to provide the upland owner reasonable access to adjacent waters for recreational use. That variance procedure shall incorporate, among other criteria, requirements that such structures not be inconsistent with community character, not interfere with public recreational uses in or on adjacent waters, and pose no navigational or safety hazard.

It should be noted that the Florida Department of Environmental Protection uses the Uniform Mitigation Assessment Method (UMAM; see Section 62-345, FAC), which provides a standardized procedure for assessing the functions provided by wetlands and other surface waters. This procedure can also be used to determine the amount by which those functions are reduced by a proposed impact and the amount of mitigation needed to offset the anticipated loss. However, UMAM does not assess whether the adverse impact meets other criteria for issuance of a permit, or the extent to which such impacts may be approved.

In Florida, the general standard is that a project may request a possible variance if a pressing need is demonstrated and if the facility is used by the general public. If a variance is requested and the project does not meet submerged aquatic vegetation/seagrass requirements then adequate mitigation and restoration of seagrass is required after minimization. If adequate minimization is not possible or mitigation is not expected to be successful, the variance shall be denied.

In addition, Monroe County Code Section 118-8 describes the relationship between mitigation standards and the County's environmental land management and restoration fund.

Mention should also be made of Big Pine Key and No Name Key (of which roughly 70 percent is in public ownership with 66 percent managed for conservation). The Habitat Conservation Plan for the Florida Key Deer and other protected species serves as the basis for a mitigation plan with respect to incidental take permits.

D. CONCLUSION

It has been noted that a complex set of local, State, and federal laws and regulations currently exists to guide land development and natural resource protection in Monroe County. This extensive framework has resulted in limiting marina siting and expansion in many areas. The Marina Siting Plan has compiled the legal authority upon which siting decisions are initially based due to constraints of water depth and protected status of environmentally sensitive habitats. Further direction is provided by the 2010 Comprehensive Plan, requiring that new marinas with three (3) or more slips shall be prohibited until the following marina siting criteria shall be met to minimize or avoid impacts of development on natural and other significant resources:

1. Benthic Vegetation and Hardbottom Communities
2. Adequacy of Circulation and Tidal Flushing
3. Adequate Water Depth and Access
4. Minimal Shoreline Modification
5. Quality of Upland Areas and Degree of Alteration
6. Propeller Dredging Problem Areas
7. Impact of Boats on Florida Manatee, American Crocodile, and Sea Turtles
8. Other Significant Resources

Site suitability is based on these criteria and, to the extent data currently exist, the criteria have been mapped countywide using Geographic Information Software (GIS). Please refer to Appendix E for more details on the datasets used to map the criteria and to view the suitability maps. New marina facilities will be required to meet the criteria outlined in this Plan to minimize impacts on natural resources. Restrictions will be greatest in areas of highest risk to resources and least in areas of lowest risk. The Plan does not affect single-family docks with fewer than three (3) slips or existing multi-slip facilities unless they are expanding.

Finally, an analysis of the components of this Plan – including a literature review of siting criteria in the State of Florida, the collection and updating of data, and the identification of significant natural resources in the Keys – suggests that marina development in the near future will be guided towards existing marina redevelopment and/or expansion over development of new marinas.

E. RECOMMENDATIONS

The recommendations highlighted in this section are additional steps that Monroe County may take to protect, preserve, and enhance public water access and boating-related uses. Additional, detailed recommendations can be found on pages 38-54 of the Final Report of the Monroe County Marine Management Strategic Plan (available online at www.sfrpc.com/mcmmsp.htm).

During implementation of this Marina Siting Plan, it may be most economical and practical for the County to focus on expansions of and/or modifications to facilities located within the existing commercial nodes or clusters of water dependent marine-related uses throughout the Keys. This recommendation is consistent with the requirement of Section 18-21.0041(b)6., FAC, that marina development in the Florida Keys shall be encouraged to locate in already developed or disturbed areas.

The County could consider and support efforts to link public water access points and/or commercial nodes of boating-related uses throughout the Keys using a variety of economic and commercial activities (e.g., shoreline restaurants and attractions, boat tours, boardwalks, ecotours) and transportation modes (e.g., bus, water taxis, bicycles, boats). Public/private partnerships could be created to implement this recommendation. In addition, residents and visitors should be made aware of these access points through improvements in signage and information about public transportation to these destinations, which may offer a mix of uses. This approach is consistent with the Stock Island and Key Haven Livable CommuniKeys Master Plan as well.

The County could proactively plan for future opportunities for new public recreational and educational experiences on public lands, causeways, and public parks abutting the shoreline. Public lands include local, State, and federal access points. A countywide bond issue could be used as a source of funding to improve existing County parks and public boat ramps to enhance recreational boating access. In addition, infrastructure in these areas should accommodate existing and future public needs. The County may consider the recommendations suggested in DEP's Recreational Boating Access in Florida State Parks study be implemented, in Monroe County (January 2006; available online at www.dep.state.fl.us/parks/planning/forms/boating%20report%2012-20-05.pdf).

In furtherance of assessing boater needs, the County may decide to update its countywide boat use and traffic pattern study to gather additional information on user needs and travel routes (points of origin and destination). Such a study should describe the volume and types of boats, seasonal variations of boating patterns, and the types and distribution of boating activities. The study could include partnering with the Florida Department of Transportation to estimate the volume of trailerable boats entering Monroe County to help characterize boat use and the capacity of the Keys to accommodate and provide services to boaters in general. In addition, the findings and recommendations of FWC's Florida Boating Access Facilities Inventory and Economic Study are another resource the

County can utilize for baseline data of boating facilities and their (August 2009; available online at [www.myfwc.com/media/1162720/About Econ BAFI Full 09.pdf](http://www.myfwc.com/media/1162720/About_Econ_BAFI_Full_09.pdf)).

The County should consider following up on the recommendations of the Livable CommuniKeys plans as they relate to and are consistent with this Marina Siting Plan. For example, the Livable CommuniKeys Plan for Tavernier Creek to Mile Marker 97 recommends prohibiting the permitting of new marinas in the planning area, while encouraging the redevelopment of existing marinas. This CommuniKeys Plan also recommends improving and expanding existing water access, providing additional shoreline access for residents, and protecting the existing water related and water dependent uses (e.g., marinas, restaurants, commercial fishing), while allowing rebuilding in the footprint if these uses are destroyed. Moreover, the specific recommendations of the master plan for Stock Island and Key Haven could be implemented in conjunction with this Marina Siting Plan.

Finally, additional initiatives should be made to foster intergovernmental coordination among stakeholders representing all local, State, and federal agencies, along with other entities, involved in managing and protecting the Keys' unique natural resources, while guiding the future development of Monroe County. Improved communication at all levels should help ensure sound decision-making in the effort to balance competing needs of current and future water access, while preserving valuable natural resources for the enjoyment of current and future generations.

LITERATURE REVIEWED

- CERP (Comprehensive Everglades Restoration Plan) Interagency Manatee Task Force. 2004. Manatee Suitability Survey in the Everglades Region of the Central and Southern Florida Project. November 2004. 26 pp. + appendices.
- CH2M Hill, Curtis & Kimball Co., John C. Martin Associates, *et al.*, Port of Palm Beach Master Plan 2005-2015 (in press).
- Code of Federal Regulations (various sections). Available online at www.gpoaccess.gov/cfr/index.html.
- Colorado Herpetological Society. "Fish and Wildlife Service Proposes the American Crocodile in Florida be Downlisted from Endangered to Threatened" in *The Cold Blooded News* – The Newsletter of the Colorado Herpetological Society (Vol. 32, No. 6; June 2005). Available online at <http://coloherp.org/cb-news/Vol-32/cbn-0506/FlaCrocs.php>.
- Etheridge, K., G.B. Rathbun, J.A. Powell, and I.J. Kochman. 1985. Consumption of Aquatic Plants by the West Indian manatee. *Journal of Aquatic Plant Management* 23:21-25.
- Final Biological Status Review of the Florida Manatee (*Trichechus manatus latirostris*). 2002. Report by the Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute.
- Florida Administrative Code (various sections). Available online at <https://www.flrules.org>.
- Florida Department of Community Affairs. 2003. *Preparing a Boating Facility Siting Plan: Best Management Practices for Marina Siting*. 98 pp. Available online at www.dca.state.fl.us/FDCP/DCP/marinasiting/MarinaGuide.pdf.
- Florida Department of Environmental Protection. 2006. Recreational Boating Access in Florida State Parks. 54 pp. Available online at www.dep.state.fl.us/Parks/planning/forms/boating%20report%2012-20-05.pdf.
- Florida Department of Environmental Protection. Clean Marina Program. Available online at www.dep.state.fl.us/law/clean/marina/default.htm.
- Florida Department of Highway Safety and Motor Vehicles. 1996-1998, 2000-2006 Vessel Registration Statistics. Available online at <http://www.hsmv.state.fl.us/html/safety.html> and www.hsmv.state.fl.us/dmv/vslfacts.html.
- Florida Department of Natural Resources. 1989. Recommendations to Improve Boating Safety and Manatee Protection for Florida Waterways. Final Report presented at the request of the Governor and Cabinet. Available online at <http://myfwc.com/manatee/documents/1989%20Recommendations.pdf>.

- Florida Fish and Wildlife Conservation Commission. 2007. Draft 2 – Florida Manatee Management Plan *Trichechus manatus latirostris*. 259 pp. Available online at http://myfwc.com/manatee/MMP_Draft2_4-12-07.pdf.
- Florida Fish and Wildlife Conservation Commission. 2006. Florida's Endangered and Threatened Species Management and Conservation Plan – FY 2005-2006 Progress Report. 90 pp. Available online at <http://myfwc.com/imperiledspecies/pdf/Endangered-Threatened-Species-Mgmt-Plan-FY-2005-2006.pdf>.
- Florida Fish and Wildlife Conservation Commission. Manatee Synoptic Surveys, 1991-2006. Available online at http://research.myfwc.com/features/view_article.asp?id=15246.
- Florida Fish and Wildlife Conservation Commission. Manatee mortality database, 1977-2006. Available online at http://research.myfwc.com/features/category_sub.asp?id=2241.
- Florida Fish and Wildlife Conservation Commission Division of Habitat and Species Conservation, Imperiled Species Management Section. June 2004. Draft: Manatee Protection Plan Guidelines.
- Florida Fish and Wildlife Conservation Commission. Marine Turtle Research Program. Available online at http://research.myfwc.com/features/category_main.asp?id=1289.
- Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management. 2000. Boat Facility Siting Guide. Available online at www.dca.state.fl.us/fdcp/dcp/marinasiting/Boatsite0800.pdf.
- Florida Fish and Wildlife Conservation Commission. 2003. Addendum to the 2002 Final Biological Status Review of the Florida Manatee (*Trichechus manatus latirostris*).
- Florida Fish and Wildlife Conservation Commission. 2003. Conserving Florida's Seagrass Resources: Developing a Coordinated Statewide Management Program. 59 pp. Available online at http://research.myfwc.com/features/view_article.asp?id=23185.
- Florida Fish and Wildlife Conservation Commission, Imperiled Species Management Section (formerly the Bureau of Protected Species Management). November 2000. Attachment K – Manatee Protection Plan Guidelines. Available online at <http://myfwc.com/manatee/documents/Attachment%20K.pdf>.
- Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute. 2000. Atlas of Marine Resources, R.O. Flamm, L.I. Ward, and M. White, eds., Version 1.3.
- Florida Fish and Wildlife Research Institute. 2006. Information available online at www.floridamarine.org/features/view_article.asp?id=15246.
- Florida Fish and Wildlife Research Institute. 2005. FWC Conducts Biological Status Review of the Florida Manatee Available on the web at: www.floridamarine.org/features/view_article.asp?id=19173.
- Florida Keys National Marine Sanctuary. Available online at http://floridakeys.noaa.gov/resource_protection/welcome.html.

- Florida Keys National Marine Sanctuary Final Management Plan. Available online <http://floridakeys.noaa.gov/regs/5yearreview/welcome.html>.
- Florida Statutes (various sections). Available online at www.leg.state.fl.us/Statutes.
- Four Gates Co. 2005. City of Marathon Marina Siting Plan. Available online at www.ci.marathon.fl.us/common/modules/documentcenter2/documentview.asp?DID=1655.
- Haddad, K.D. 2002. Final Biological Status Review for the Florida Manatee (*Trichechus manatus latirostris*). Florida Fish and Wildlife Conservation Commission, Florida.
- Hartman, D.S. 1979. Ecology and behavior of the manatee (*Trichechus manatus*) in Florida. The American Society of Mammalogists, Special Publication No. 5. 153 pp.
- Husar, S.L. 1977. The West Indian manatee (*Trichechus manatus*). U.S. Fish and Wildlife Service Report 7. U.S. Government Printing Office, Washington D.C. 22 pp.
- Irvine, A.B. 1983. Manatee metabolism and its influence on distribution in Florida. *Biological Conservation* 25:315-334.
- Langtimm, C.A. and C.A. Beck. 2001. Lower Survival Probabilities for Adult Florida Manatees in Years with Intense Coastal Storms. *Ecological Applications*. 13(1), 2003, pp. 257-268.
- Ledder, D.A. 1986. Food habits of the West Indian manatee, *Trichechus manatus latirostris*, in South Florida, M.S. thesis, University of Miami, Coral Gables. 114 pp.
- Lefebvre, L.W., B.B. Ackerman, K.M. Portier, and K.H. Pollock. 1995. Aerial Survey as a Technique for Estimating Trends in Manatee Population Size – Problems and Prospects. Pages 63-74 *In*: T.J. O’Shea, B.B. Ackerman, and H.F. Percival (eds.). *Population Biology of the Florida Manatee*. National Biological Service, Information and Technology Report No. 1. Washington, DC.
- Lefebvre, L.W., M. Marmontel, J.P. Reid, G.B. Rathbun and D.P. Domning. 2001. Status and Biogeography of the West Indian Manatee. *Biogeography of the West Indies Patterns and Perspectives* Second Edition. CRC Press. Boca Raton.
- Lefebvre, L.W., J.P. Reid, W.J. Kenworthy, and J.A. Powell. 2000. Characterizing Manatee Habitat Use and Seagrass Grazing in Florida and Puerto Rico: Implications for Conservation and Management. *Pacific Conservation Biology* 5(4):289-298.
- Lefebvre, L.W., T.J. O’Shea. Florida Manatees. <http://biology.usgs.gov/s+t/frame/m4044.htm>.
- Limpus, Colin J., K. J. Currie and J. Haines. 2003. Marine Wildlife Stranding and Mortality Database Annual Report 2002. Queensland Government Environmental Protection Agency. Volume 2003 Number 1.
- MACTEC Engineering and Consulting, Inc. 2003. Monroe County Residential Canal Inventory and Assessment. Final Report. Volumes 1 and 2.
- Manatee Population Status Working Group, 2001. Appendix A and D: Recommendation of Population Benchmarks to Help Measure Recovery. Florida Manatee Recovery Plan,

(*Trichechus manatus latirostris*), Third Revision. U.S. Fish and Wildlife Service. Atlanta, Georgia. 144pp. + appendices.

- Marmontel, M., S.R. Humphrey, and T.J. O'Shea. 1997. Population Viability Analysis of the Florida Manatee (*Trichechus manatus latirostris*), 1976-1991. *Conservation Biology*. 11(2):467-481.
- Monroe County. 2006. Habitat Conservation Plan for Florida Key Deer (*Odocoileus virginianus clavium*) and other Protected Species on Big Pine Key and No Name Key, Monroe County, Florida. 86 pp. Available online at http://monroecofl.virtualltownhall.net/Pages/MonroeCoFL_Planning/pdfs/BPK%20HCP%20Final%202006.
- Monroe County Code. Available online at www.municode.com/resources/gateway.asp?sid=9&pid=11270.
- Monroe County 2010 Comprehensive Plan. Technical and Policy Documents. Available online at http://monroecofl.virtualltownhall.net/Pages/MonroeCoFL_Growth/CompPlan2010/index.
- Monroe County Planning and Environmental Resources Department. 2006. Master Plan for the Development of Stock Island and Key Haven (Livable CommuniKeys Master Plan). 54 pp.
- Monroe County Planning and Environmental Resources Department. 2004. Master Plan for Future Development of Big Pine and No Name Key (Livable CommuniKeys Master Plan). 93 pp.
- Monroe County Planning and Environmental Resources Department. 2004. Master Plan for the Tavernier Creek Bridge to Mile Marker 97 (Livable CommuniKeys Master Plan). 35 pp.
- National Park Service. Everglades. Available online at www.nps.gov/ever/index.htm.
- North Carolina Waterfront Access Study Committee. 2007. Final Report. 54 pp. Available online at www.ncseagrant.org/index.cfm?fuseaction=page&filename=waterfronts.html.
- Pittman, Craig. February 2004. Fury Over a Gentle Giant. *Smithsonian*.
- Reynolds III, J.E. and D.K. Odell. 1991. Manatees and Dugongs. Facts On File. Inc. New York, NY. ISBN 0-8160-2436-7. 192 pp.
- Runge, Michael. Atlantic Coast Manatee Population Study. Available online at http://northflorida.fws.gov/Manatee/Documents/MMPARules/FinalEIS/Appendices/AppI_ITModelFEISApproval.
- South Florida Regional Planning Council and Florida Atlantic University. 2006. Monroe County Marine Management Strategic Plan. Available online at www.sfrpc.com/mcmmsp.htm.
- U.S. Army Corps of Engineers. Manatee Key. Available online at www.saj.usace.army.mil/permit/Endangered_Species/Manatee%20Update%20Aug%202005/contents_updAug05.htm. This website also includes the FWC-FWS "Interim II" Process for Evaluating New Watercraft Access in Florida (see

www.saj.usace.army.mil/permit/Endangered_Species/Manatee%20Update%20Aug%202005/Manatee%20Key_Interim%20II/Interim%20II%202005.pdf).

- U.S. Fish and Wildlife Service. 2007. Endangered and Threatened Wildlife and Plants; Reclassification of the American Crocodile Distinct Population Segment in Florida From Endangered to Threatened. Available online at www.epa.gov/fedrgstr/EPA-SPECIES/2007/March/Day-20/e5037.htm.
- U.S. Fish and Wildlife Service. Florida Keys National Wildlife Refuges – National Key Deer, Key West, Great White Heron, Crocodile Lake. Available online at www.fws.gov/southeast/pubs/nkdgen.pdf.
- U.S. Fish and Wildlife Service. 2001a. Florida Manatee Recovery Plan, (*Trichechus manatus latirostris*), Third Revision. Atlanta, Georgia. 144 pp. + appendices.
- U.S. Fish and Wildlife Service. 2001b. Florida Manatee Recovery Accomplishments 2001 Annual Report. Jacksonville, Florida.
- U.S. Fish and Wildlife Service. 1996. Florida Manatee Recovery Plan, (*Trichechus manatus latirostris*), Second Revision. U.S. Fish and Wildlife Service, Atlanta, GA. 160 pp.
- U.S. Fish and Wildlife Service. 1989. Florida Manatee (*Trichechus manatus latirostris*) Recovery Plan. Prepared by the Florida Manatee Recovery Team for the U.S. Fish and Wildlife Service, Atlanta, Georgia. 98pp.
- Van Meter, Victoria Brook. 2001. The Florida Manatee. Originally written for Florida Power and Light. Available online at www.floridaconservation.org/psm/manatee/manatee%20booklet.pdf.
- Wallace Roberts and Todd, LLC. 2005. Final Report Stock Island Harbor Preservation/Redevelopment and Intra-Island Corridor Enhancement Plan. This Harbor Plan is considered Volume 2 of the Stock Island and Key Haven Livable CommuniKeys Master Plan.
- Worthy, Graham A.J. 2000. When is it too cold for a manatee? Save the Manatee Club, The Manatee Zone, p.4.
- Other Florida County Manatee Protection Plans were also reviewed and are available online at http://myfwc.com/manatee/mpp/mpp_links.htm.

APPENDICES

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APPENDIX A

SELECTED PERMIT REQUIREMENTS

62-312.430, FAC, Permitting Requirements for Marinas

Marinas shall be evaluated on the following criteria. For the purpose of this Part a marina shall be defined as a dockage facility providing ten or more wet storage slips or providing commercial marine products or services.

(1) Fueling facilities shall have automatic shutoff valves.

(2) Fuel storage or pumping facilities shall not be located on over-water structures.

(3) Spill containment equipment shall be located on site sufficient to prevent the discharge of pollutants into state waters beyond the marina boundary. Personnel trained in the use of the containment equipment shall be in attendance during all operating hours. At any time such personnel are not in attendance, fuel facilities shall be adequately secured to prevent use.

(4) Sewage pumpout facilities shall be provided.

(5) Water depths at the specific mooring sites shall not be less than four feet mean low water.

(6) The applicant shall affirmatively demonstrate to the Department that adequate depths exist for ingress and egress of boats to the mooring sites and in no case shall the depths of the access area be less than the minimum depth specified in subsection (5).

(7) Proposed construction techniques shall protect the viability of a seagrass bed community or other biological communities as listed in paragraph 62-312.410(1)(a), F.A.C.

(8) Boat mooring sites shall not be located over a seagrass bed community or coral reef regardless of water depth.

Specific Authority 373.414(11)-(16), 373.4145, 403.805(1) FS. Law Implemented 373.409, 373.413, 373.414(9), (11), (12)(a), (13), (14), (15), (16), 373.4145, 373.416, 373.418, 403.061 FS. History—New 6-8-88, Formerly 17-12.430, 17-312.430, Amended 10-3-95.

18-21.0041, FAC, Florida Keys Marina and Dock Siting Policies and Criteria

(1) These policies and criteria shall be applied to all applications for leases, easements or consent to use sovereignty submerged lands in Monroe County for multi-slip docking facilities. The following General Policies and Specific Criteria shall be used in developing recommendations to approve, approve with conditions or deny the use of state owned sovereignty submerged lands for multi-slip docking facilities.

(a) General Policies – special attention and consideration shall be given to the following:

1. The proximity to and potential adverse impacts on any rare, threatened or endangered species, or species of special concern, or their habitat, or on any portion of the entire Florida Reef Tract and other corals, including but not limited to those in the John Pennekamp Coral Reef State Park, Key Largo National Marine Sanctuary, Looe Key National Marine Sanctuary, and Everglades National Park; and

2. Eliminating any adverse impacts on wetland or submerged vegetation or benthic communities; and

3. Requiring adequate tidal flushing and/or circulation; and

4. Maintaining or enhancing water quality at levels within or above State water quality standards; and

5. Requiring adequate water depths to avoid dredging and other bottom disturbance; and

6. Requiring consistency and conformity with local government land use plans, zoning, and other land use or development regulations; and

7. Requiring consistency and conformity with Chapters 27F-8, 27F-9, 27F-10, 27F-11, 27F-12, 27F-13, and 27F-15, F.A.C., as amended, “Principles for Guiding Development in the Florida Keys Area of Critical State Concern.” Should any of these provisions conflict with the Sovereignty Lands Management Rules, the Board shall advise staff which provision shall take precedence.

(b) Specific Criteria.

1. There shall be a moratorium on the approval of all leases of state owned submerged lands for multi-slip docking facilities from Tea Table Channel north to the Monroe County Line. This moratorium shall be maintained until rules are adopted for the currently proposed Florida Keys-Monroe County Aquatic Preserve or the revised Monroe County Comprehensive Plan with marina siting policies is adopted, whichever occurs first.

2. No docking facilities shall be approved which require either dredging or filling to provide access by canal, channel, road, or any other means. This restriction shall also apply to widening or deepening any existing canal or channel, but not to regular maintenance dredging of existing canals, basins, or channels, providing such maintenance does not exceed currently acceptable water depths.

3. Water depths requirements. Docking facilities shall only be approved in locations having adequate water depths in the boat mooring, turning basin, access channels and other such areas to accommodate the proposed boat use.

a. A minimum water depth of -4 (minus four) feet mean low water shall be required.

b. Greater depths shall be required for those facilities designed for, or capable of, accommodating boats having greater than a 3 (three) foot draft, so that a minimum of one foot of clearance is provided between the deepest draft of a vessel and the bottom.

c. These depth requirements shall also apply to the area between the proposed facility and any natural or other navigation channel, inlet or deep water. Where necessary, marking of navigational channels shall be required. At the Board's discretion, the conditions of the lease may stipulate the number, lengths, drafts and types of vessels to be moored in a facility.

4. Requirements for the size of the dock.

a. No dock shall be approved if its length exceeds 500 feet, unless the Board determines that it is not contrary to the public interest.

b. No dock shall be approved if its length preempts in excess of 20% (percent) of the width of the affected waterbody.

c. No dock for the use of a private residence, which is not subject to obtaining a lease, shall exceed four (4) feet in width. Such a dock may have a terminal platform the total area of which shall not exceed 160 feet, and the width of which shall not exceed eight (8) feet.

5. A specific lease condition for any new or expanded docking facility for 10 or more boats will be that the lessee shall maintain water quality standards as provided by Chapter 403, F.S. To assure compliance, the lessee shall maintain a water quality monitoring program approved by the Department of Environmental Protection. Water quality data will be periodically reviewed by the Department of Environmental Protection. In the event that water quality violations occur and water quality standards provided by Chapter 403, F.S., are not maintained, the lessee will be given written notice to correct the problem. Such notice shall require any problems or violations to be corrected within 120 days, or less in the case of severe violations, or demonstrate to the Board's satisfaction that the violations are caused by other than the docking facility, or associated activities on the adjacent riparian uplands, including stormwater runoff. If the lessee is the cause of the violations, and does not correct the problem within the specified time, then the lease shall be subject to cancellation by the Board with the resultant removal of the docking facility and other structures within the lease area.

6. In reviewing applications for new docking facilities or expansions to existing facilities, attention shall be given to identifying ways to improve, mitigate or restore adverse environmental impacts caused by previous activities. This may include filling in over dredged areas in order to make them a depth acceptable for propagation of benthic biota, restoring wetland or submerged vegetation, improving circulation, installing sewage pump-out facilities, or marking navigational channels. Such mitigation or restoration may be required as a condition of approval for new or expanded facilities. Marina development shall be encouraged to locate in already developed or disturbed areas.

7. In addition to the threshold specified by paragraph 18-21.005(1)(b), F.A.C., all applicants proposing docking facilities designed to moor 10 (ten) or more boats shall be required to obtain a lease.

8. All applicants will be required to provide documentation to show that there is an economic demand for the

number of boat slips requested, if the number requested is not consistent with the Department's Projections of Marina Needs for Monroe County.

9. No application to lease state owned sovereignty submerged lands for the purpose of providing multi-slip docking facilities shall be considered for approval unless there are no benthic communities present where the boat mooring area, turning basins, mooring piles or other structures are to be located, excepting any main access docks required to cross benthic communities to reach acceptable areas. This shall not preclude them from applying for consent to use state owned submerged lands for the purpose of using the minimum amount necessary to obtain reasonable ingress and egress.

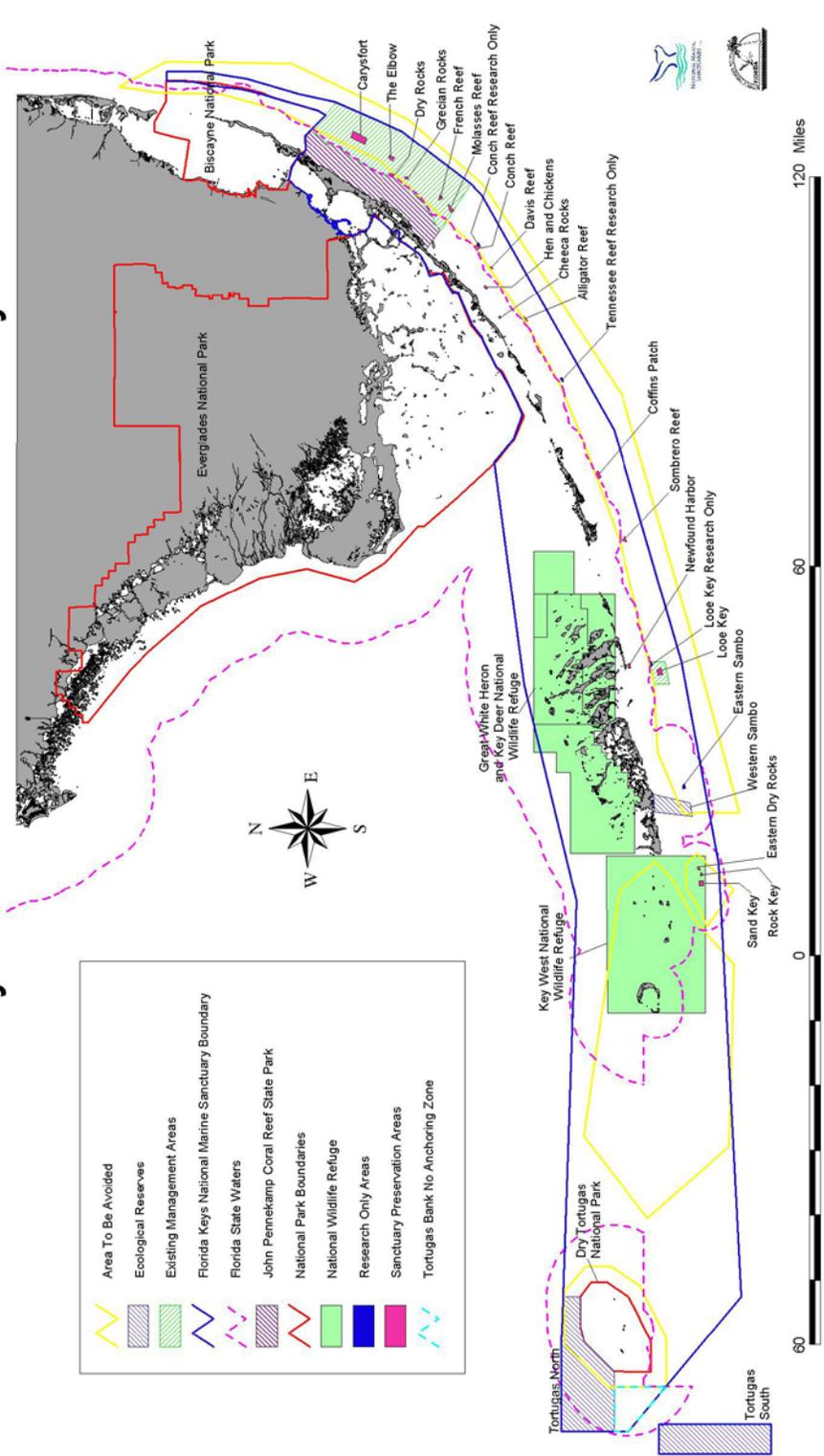
10. The Board may grant special consideration to the approval of leases or other consent to use state lands for projects which are approved by the Department of Community Affairs which are for the purpose of furthering the commercial fishing village or commercial fishing enterprise zone concept.

Specific Authority 253.03(7) FS. Law Implemented 253.03 FS. History—New 2-25-85, Formerly 16Q-21.041, 16Q-21.0041.

APPENDIX B

FLORIDA KEYS NATIONAL MARINE SANCTUARY MAP

Florida Keys National Marine Sanctuary



created by Kevin Korch
11/13/01

APPENDIX C

MONROE COUNTY ZONING AND LAND USE

Policy 101.4.21

Monroe County hereby adopts the following density and intensity standards for the future land use categories, which are shown on the Future Land Use Map and described in Policies 101.4.1 through 101.4.17].

[See chart below, which reflects current standards adopted through County Ordinance #032-2012]

Future Land Use Densities and Intensities			
Future Land Use Category And Corresponding Zoning	Allocated Density ^(b) (per acre)	Maximum Net Density ^{(a)(b)(i)} (per buildable acre)	Maximum Intensity (floor area ratio)
Agriculture (A) ^(b) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.20-0.25
Airport (AD) (AD zoning)	0 du 0 rooms/spaces	N/A N/A	0.10
Conservation (C) (CD zoning)	0 du 0 rooms/spaces	N/A N/A	0.05
Education (E) ^(b) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.30
Industrial (I) (I and MI zoning)	1 du 0 rooms/spaces	2 du N/A	0.25-0.60
Institutional (INS) ^(b) (no directly corresponding zoning)	0 du 3-15 rooms/spaces	N/A 6-24 rooms/spaces	0.25-0.40
Mainland Native (MN) (MN zoning)	0.01 du 0 rooms/spaces	N/A N/A	0.10
Military (M) (MF zoning)	6 du 10 rooms/spaces	12 du 20 rooms/spaces	0.30-0.50
Mixed Use/Commercial (MC) ^{(e)(i)} (SC, UC, DR, RV, MU and MI zoning)	1-6 du 5-15 rooms/spaces 1 du (MI zoning)	2 -18 du 10-25 rooms/spaces 2 du (MI zoning)	0.10-0.45 (SC, UC, DR, RV, and MU zoning) 0.30-0.60 (MI zoning)
Mixed Use/Commercial Fishing (MCF) ^(e) (CFA, CFV ^(c) , CFSD zoning)	Approx. 3-8 du 0 rooms/spaces	12 du 0 rooms/spaces	0.25-0.40
Public Facilities (PF) ^(b) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.10-0.30
Public Buildings/Grounds (PB) ^(b) (no directly corresponding zoning)	0 du 0 rooms/spaces	N/A N/A	0.10-0.30
Recreation (R) (PR zoning)	0.25 du 2 rooms/spaces	N/A N/A	0.20
Residential Conservation (RC) (OS and NA zoning)	0-0.25 du 0 rooms/spaces	N/A N/A	0-0.10
Residential Low (RL) (SS ^(d) , SR, and SR-L zoning)	0.25-0.50 du 0 rooms/spaces	5 du N/A	0.20-0.25
Residential Medium (RM) (IS zoning)	approx. 0.5-8 du (1 du/lot) 0 rooms/spaces	N/A N/A	0
Residential High (RH) (IS-D ^(e) , URM ^(e) , and UR ^(f) zoning)	approx. 3-16 du (1-2 du/lot) 10 rooms/spaces	12 du 20 rooms/spaces	0

Notes:

- (a) "N/A" means that maximum net density bonuses shall not be available.
- (b) The allocated densities for submerged lands, salt ponds, freshwater ponds, and mangroves shall be 0 and the maximum net densities bonuses shall not be available.
- (c) The allocated density for CFV zoning shall be 1 dwelling unit per lot and the maximum net density bonuses shall not be available.
- (d) Maximum net density bonuses shall not be available to the SS district.
- (e) The allocated density for IS-D and URM zoning shall be 2 and 1 dwelling units per lot, respectively and the maximum net density bonuses shall not be available.
- (f) The maximum net density for the UR district shall be 25 for units where all units are designated as affordable housing.
- (g) For properties consisting of hammocks, pinelands or disturbed wetlands within the Mixed Use/ Commercial and Mixed Use/ Commercial Fishing land use categories, the floor area ratio shall be 0.10 and the maximum net residential density bonuses not apply.
- (h) Uses under the categories of Agriculture, Education, Institutional, Public Facilities, and Public Buildings and Uses, which have no directly corresponding zoning, may be incorporated into new or existing zoning districts as appropriate.
- (i) The Maximum Net Density is the maximum density allowable with the use of TDRs.
- (j) A mixture of uses shall be maintained for parcels designated as MI zoning district that are within the MC future land use category. Working waterfront and water dependent uses, such as marina, fish house/market, boat repair, boat building, boat storage, or other similar uses, shall comprise a minimum of 35% of the upland area of the property, pursuant to Policy 101.4.5.

In addition, Monroe County has the following zoning designations in place to help implement the 2010 Comprehensive Plan. For further information see Section 130-27 through 130-50, Monroe County Code.

Urban Commercial District (UC) designates areas for high-intensity commercial uses intended to serve retail sales and service, professional services and resort activity needs at a regional or multiple planning area scale. This district should be established at discrete nodes along U.S. 1 and should be designed to serve the needs of both residents and visitors.

Urban Residential District (UR) provides areas appropriate for high-density residential uses designed and intended for occupancy by persons gainfully employed in the Florida Keys and creates areas to provide for vacation rental use of detached dwellings, duplexes, and multifamily dwellings. This district should be established at or near employment centers.

Urban Residential Mobile Home District (URM) recognizes the existence of established mobile home parks and subdivisions, but does not create new such areas, and provides for such areas to serve as a reservoir of affordable and moderate-cost housing in Monroe County.

Urban residential Mobile Home-Limited District (URML-L) recognizes the existence of parks and subdivisions which consist exclusively, or almost exclusively, of mobile homes, but does not create new such areas, in order to permit property owners in such areas to replace or establish mobile homes below base flood elevation as authorized by certified federal regulations.

Suburban Commercial District (SC) establishes areas for commercial uses designed and intended primarily to serve the needs of the immediate planning area in which they are located. The district should be established at locations convenient and accessible to residential areas without use of U.S. 1.

Suburban Residential District (SR) establishes areas of low to medium density residential uses characterized primarily by single-family detached dwellings.

Suburban Residential District – Limited (SRL) establishes areas of exclusive low to medium density residential uses.

Sparsely Settled Residential District (SS) establishes areas of low density residential development where the predominant character is native or open space lands.

Native Area District (NA) establishes areas that are undisturbed, with the exception of existing solid waste facilities, and because of their sensitive environmental character should be preserved in their natural state.

Mainland Native District (MN) protects the undeveloped and environmentally sensitive character of lands within Monroe County that are located on the mainland of the Florida Peninsula

Offshore Island District (OS) establishes areas that are not connected to U.S. 1 as protected areas, served by cisterns, generators, and other self-contained facilities.

Improved Subdivision District (IS) accommodates the legally vested residential development rights of the owners of lots in subdivisions that were lawfully established and improved prior to the adoption of this chapter. For the purpose of this section, improved lots are those which are served by a dedicated and accepted existing road of porous or non porous material, that have a Florida Keys Aqueduct Authority approved potable water supply, and that have sufficient uplands to accommodate the proposed use in accordance with the required setbacks. This district is not intended to be used for new land use districts of this classification within the county.

Destination Resort District (DR) establishes areas suitable for the development of planned tourist centers providing on-site residential, recreational, commercial, and entertainment facilities of a sufficient magnitude to attract visitors and tourists for tenancies of three or more days. Destination resorts are contemplated to contain (1) single-family homes as of right, or (2) one or more resort hotels as the principal use, to utilize the water-related natural resources of the Keys, and to be located on sites of at least ten gross acres where the location and character of the site and the development itself and amenities are such that off-site impacts will be reduced.

Recreational Vehicle District (RV) establishes areas suitable for the development of destination resorts for recreational vehicles. This district contemplates developments that provide on-site recreational, commercial, and resort facilities.

Commercial Fishing Area District (CFA) establishes areas suitable for uses which are essential to the commercial fishing industry, including sales and service of fishing equipment and supplies, seafood processing, fishing equipment manufacture and treatment, boat storage, and residential uses.

Commercial Fishing Village District (CFV) establishes areas where limited commercial fishing activities, including the mooring of boats, the non-mechanized off-loading of catches, the storage of a limited number of traps, and residential uses, can be integrated.

Commercial Fishing Special District (CFS) establishes areas where various aspects of commercial fishing have been traditionally carried out while prohibiting the establishment of additional commercial fishing uses which are inconsistent with the natural environment, immediate vicinity, or community character of the area.

Mixed Use District (MU) establishes or conserves areas of mixed uses, including commercial fishing, resorts, residential, institutional, and commercial uses, and preserves these as areas representative of the character, economy, and culture of the Florida Keys.

Industrial District (I) establishes areas that are suitable for the development of industrial and manufacturing warehousing and distribution uses.

Maritime Industries District (MI) establishes and conserves areas suitable for maritime uses such as ship building, ship repair, and other water-dependent manufacturing and service uses.

Military Facilities District (MF) establishes areas for military facilities and installations and ensures to the maximum extent allowed by federal law, that all development activity within such areas is consistent with the Monroe County Comprehensive Plan.

Airport District (AD) prohibits the development of residential, educational, or other uses which are characterized by the regular presence of large numbers of people within the hazard areas of civil and military airports.

Park and Refuge District (PR) establishes and protects areas like parks, recreational areas and wildlife refuges.

Conservation District (CD) provides an area acquired for conservation purposes or subject to deed restrictions limiting the use of the property for conservation purposes.

Figure 1. Monroe County Marine Facility Density

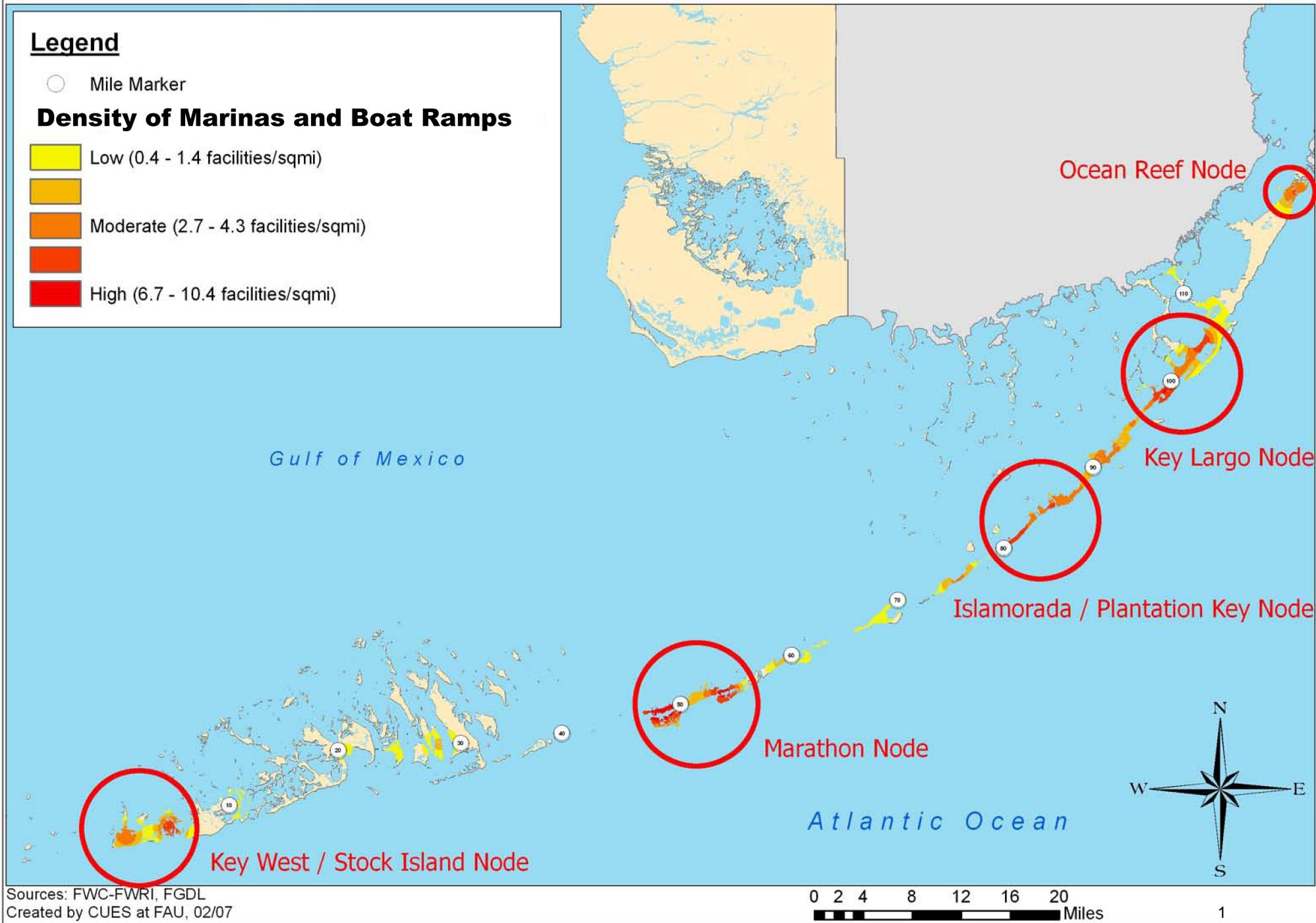


Figure 2. Upper Keys Marine Facility Density

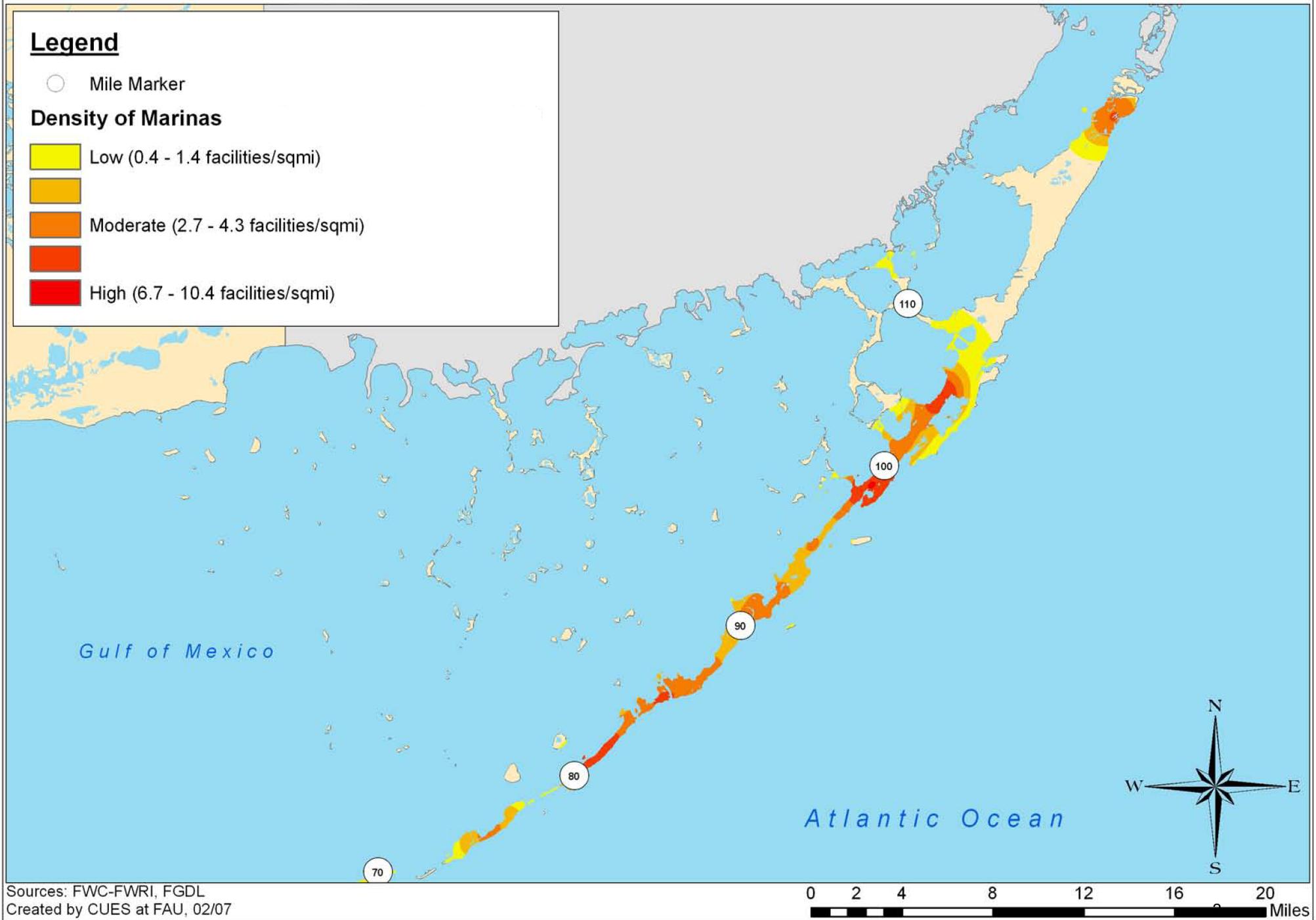


Figure 3. Upper Keys Boat Ramp Density

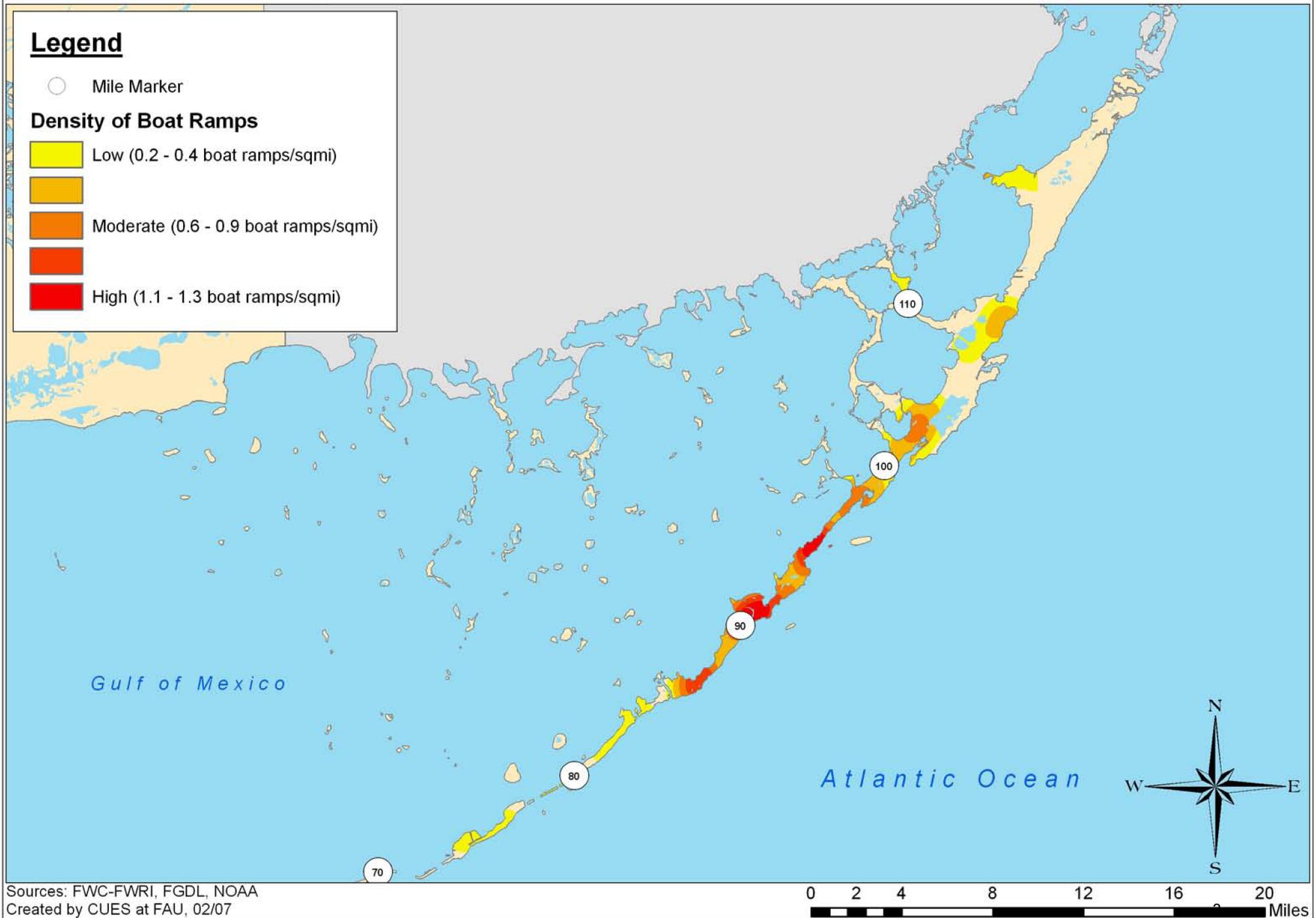


Figure 4. Middle Keys Marine Facility Density

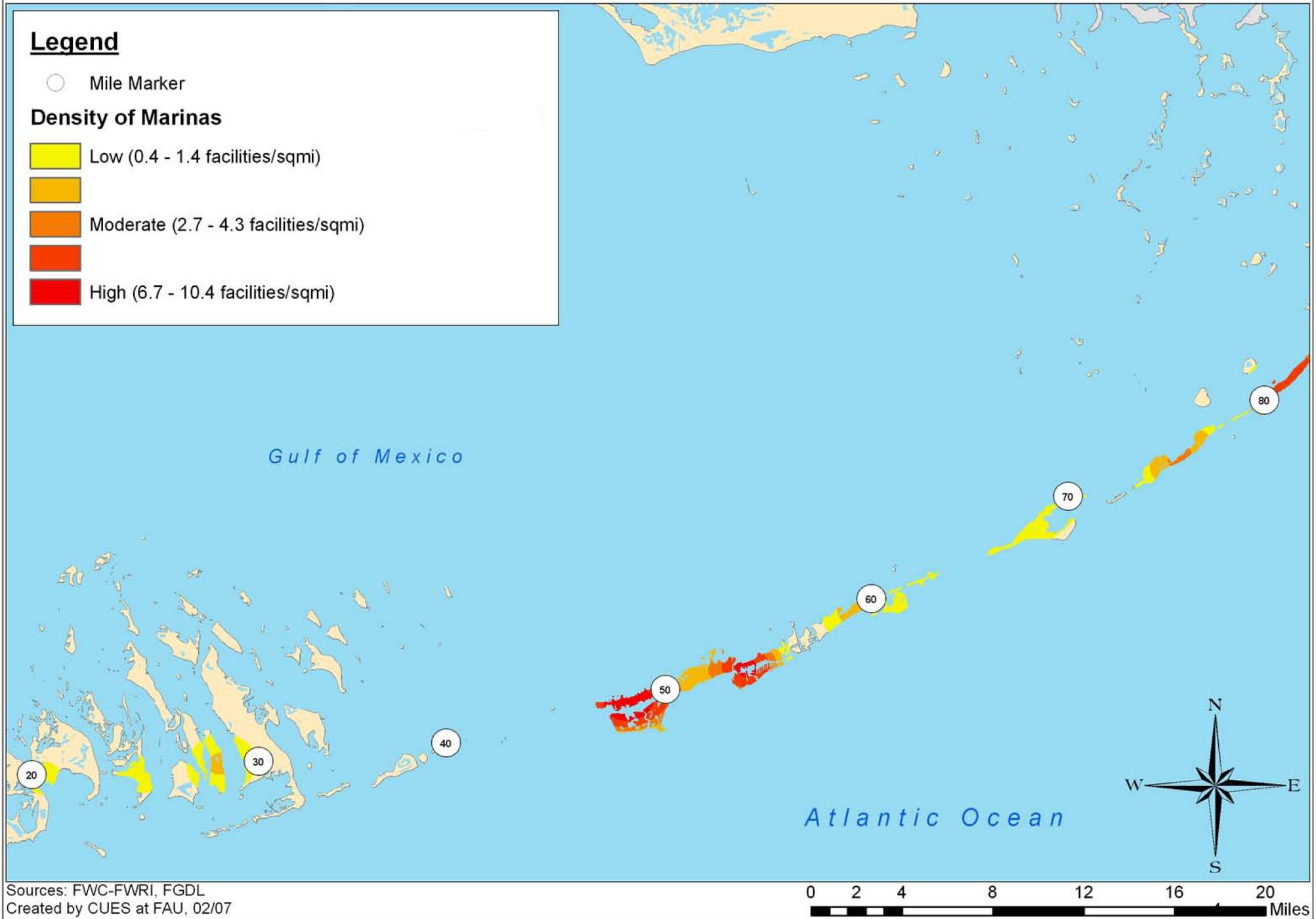


Figure 5. Middle Keys Boat Ramp Density



Figure 6. Lower Keys Marine Facility Density

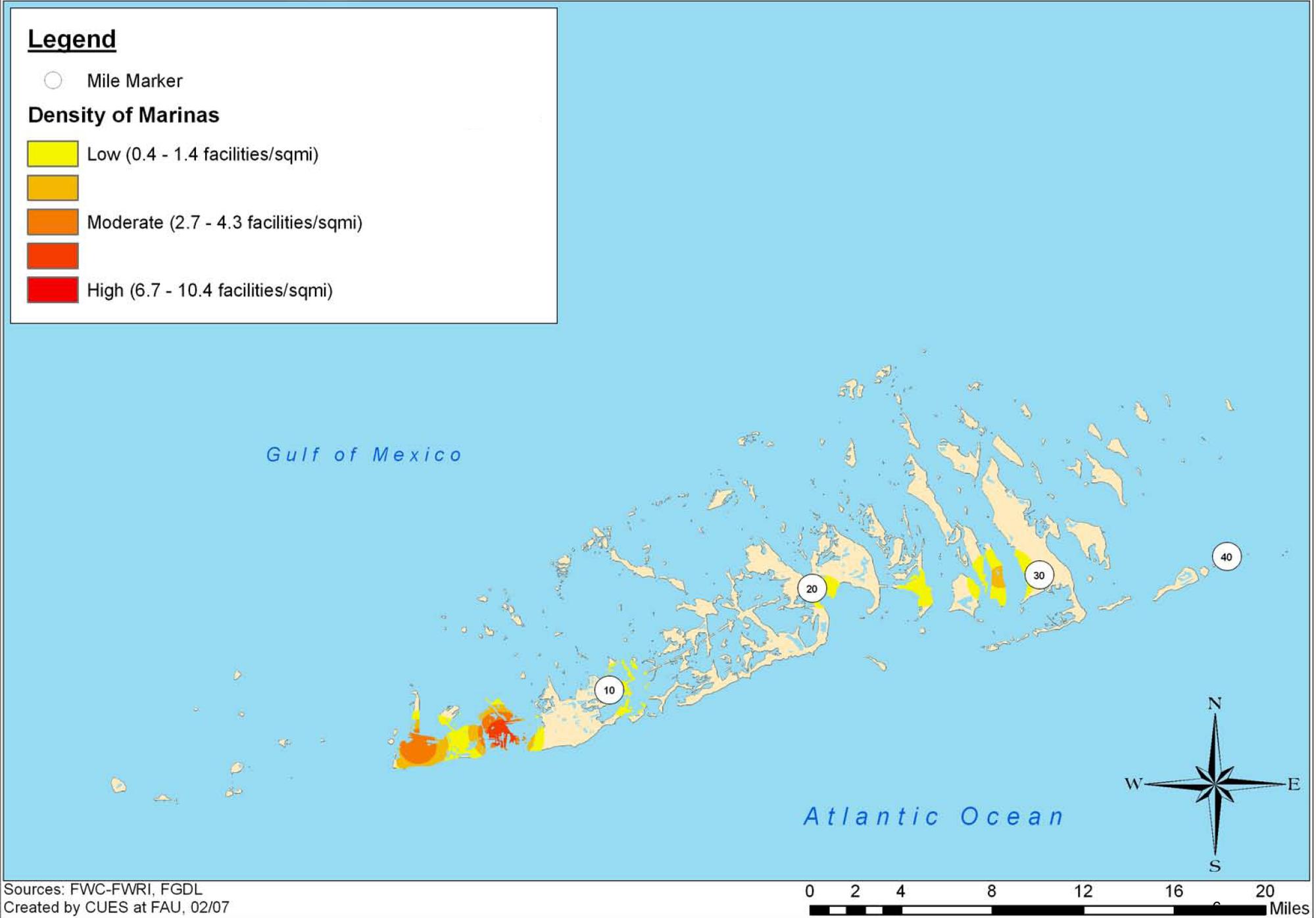


Figure 7. Lower Keys Boat Ramp Density

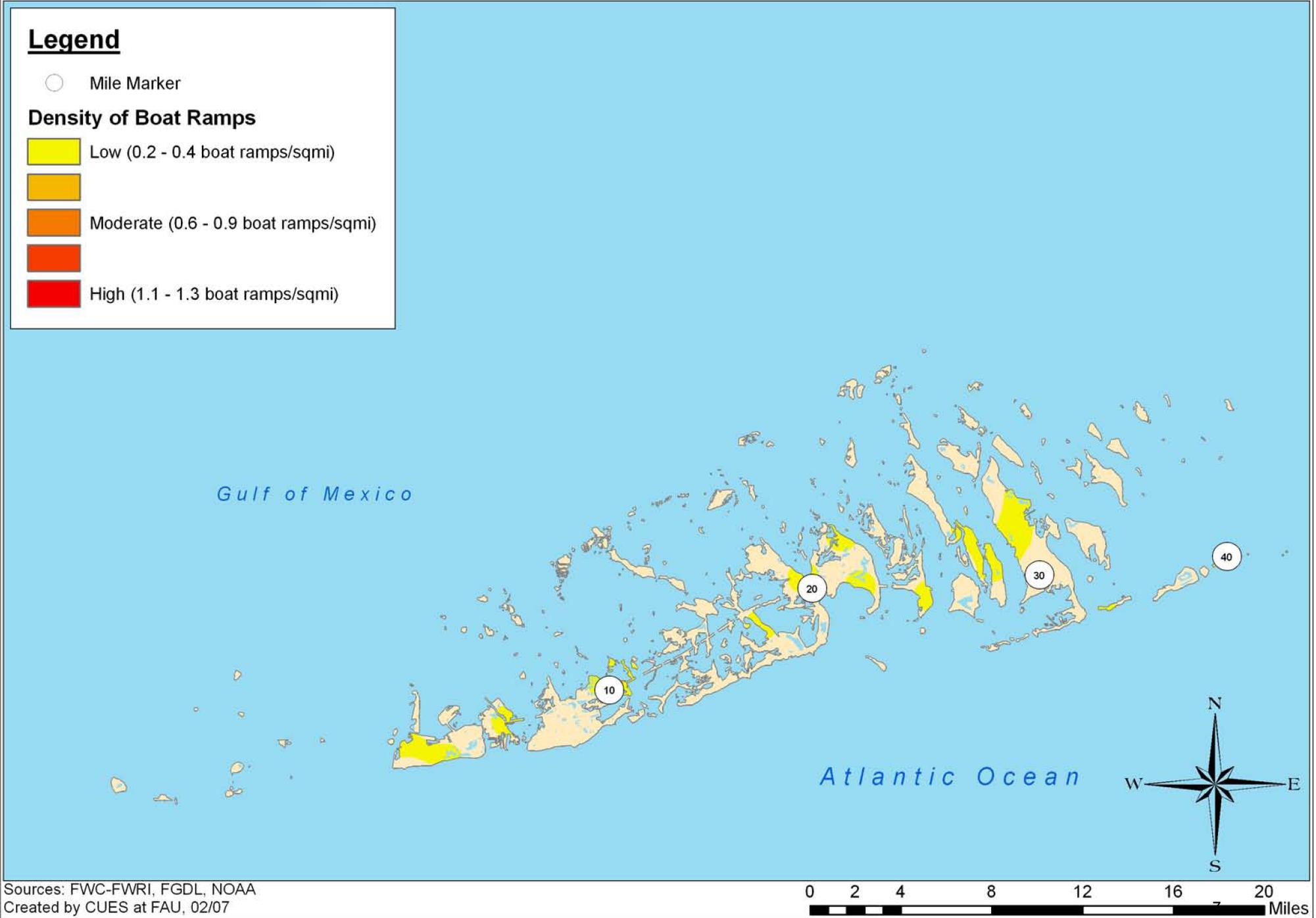


Figure 8. Incorporated Areas in Monroe County

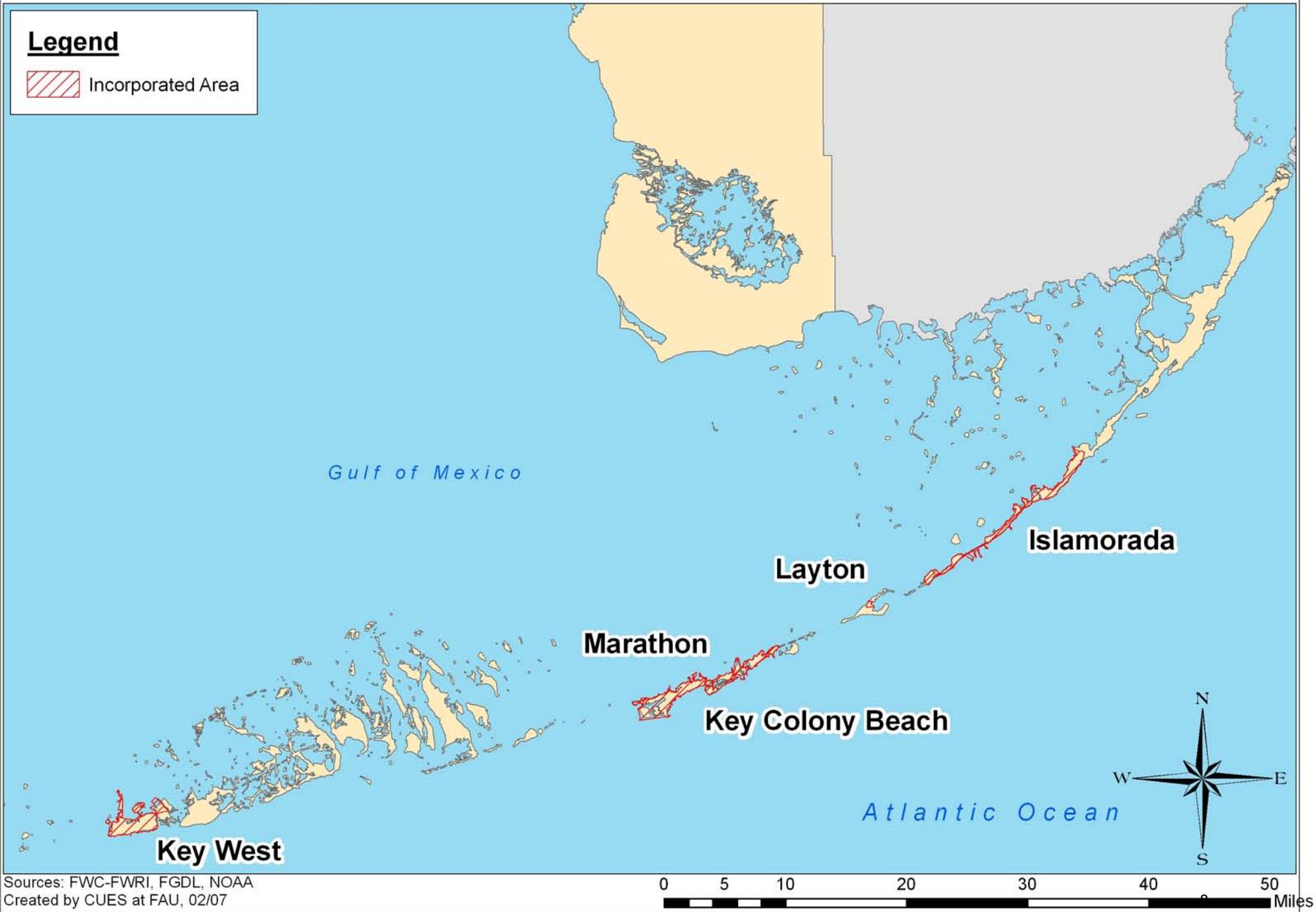


Figure 9. Marine Facilities - Unincorporated Upper Keys

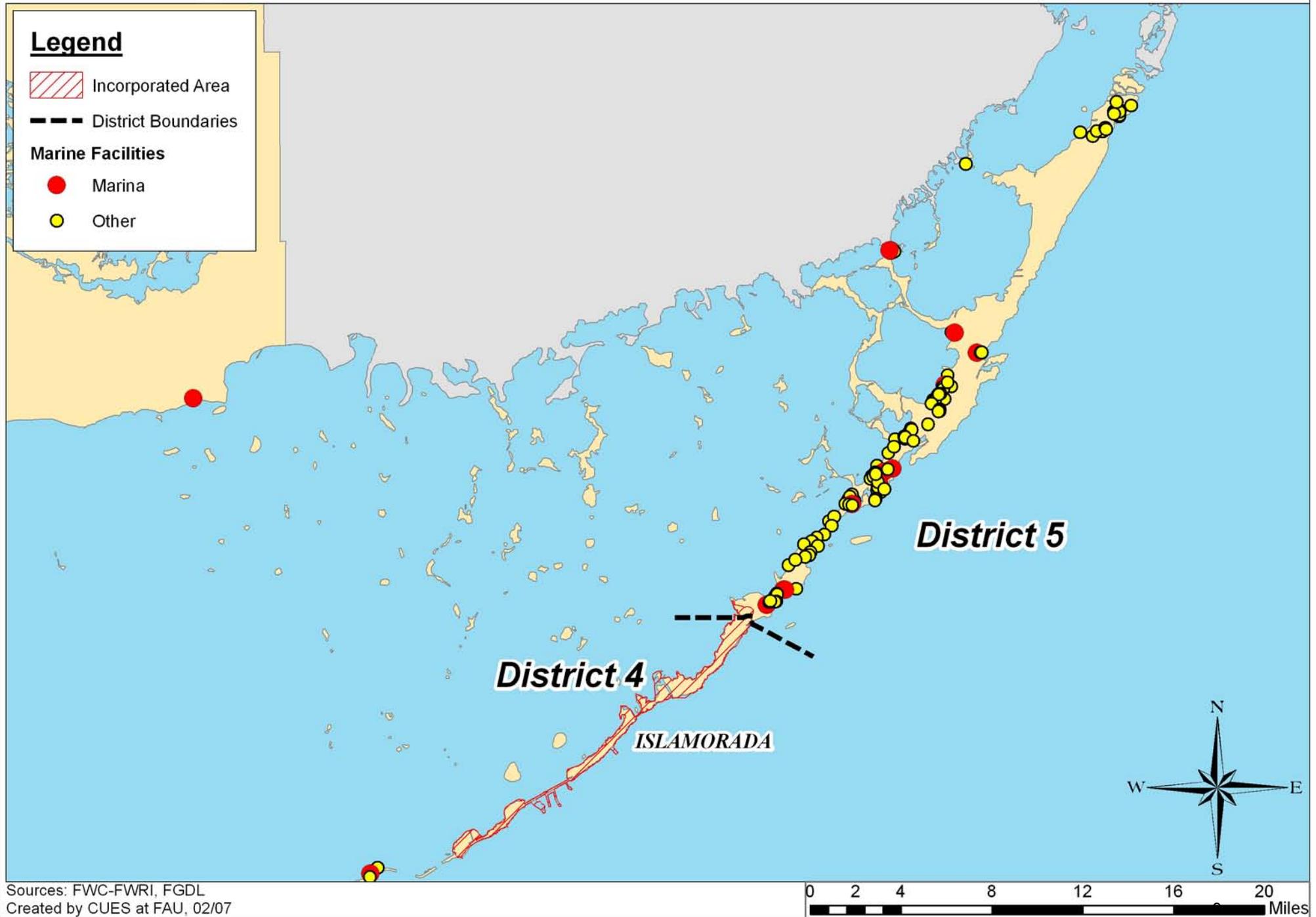


Figure 10. Marine Facilities - Unincorporated Middle Keys

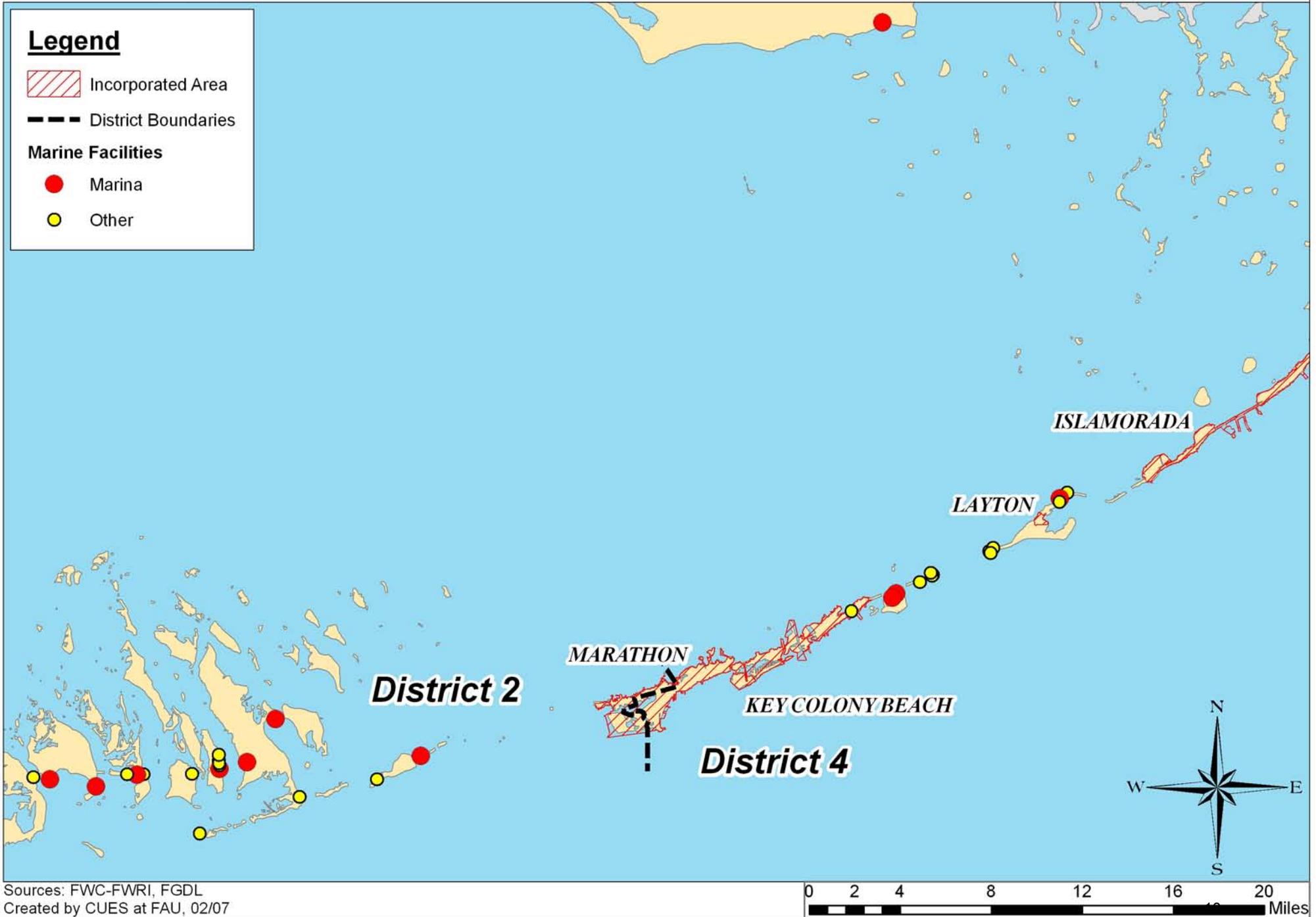
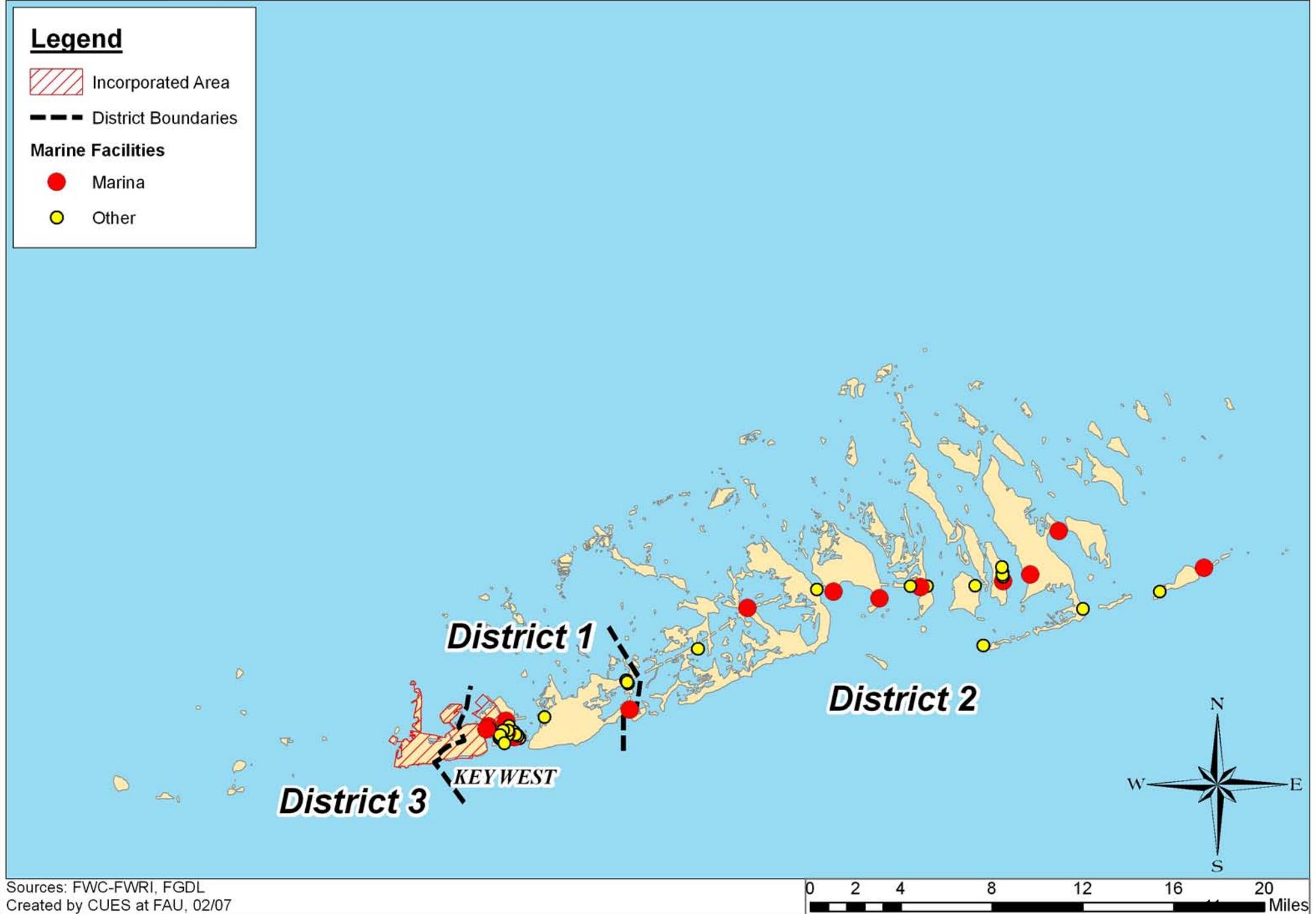


Figure 11. Marine Facilities - Unincorporated Lower Keys



APPENDIX E

MARINA SITE SUITABILITY MAPS

Appendix E is divided into the following two sections:

E-1 : Suitability Maps Group A

E-2 : Suitability Maps Group B

Each section contains three (3) maps, dividing the County by the Upper Keys (Mile Markers 112 to 80), Middle Keys (Mile Markers 80 to 40) and Lower Keys (Mile Markers 40 to 0).

Suitability Maps Groups A and B show potential areas for suitability of marina development to the extent data currently exists. The Marina Siting Criteria discussed within this Plan and adopted by Policy 212.4.2 was used for the basis of mapping suitability. Due to data constraints, not all of the criteria could be mapped. *Please note:* the Suitability Maps are for visual purposes only. An applicant for new marina development shall be responsible for providing existing physical and environmental site condition data specific to the proposed site to demonstrate that the site meets all marina siting criteria.

The Table below identifies for each Marina Siting Criteria the potential or existing data sources, availability and which Group (A or B) the criterion is displayed in the Suitability Maps. The maps have been broken into groups for visual purposes.

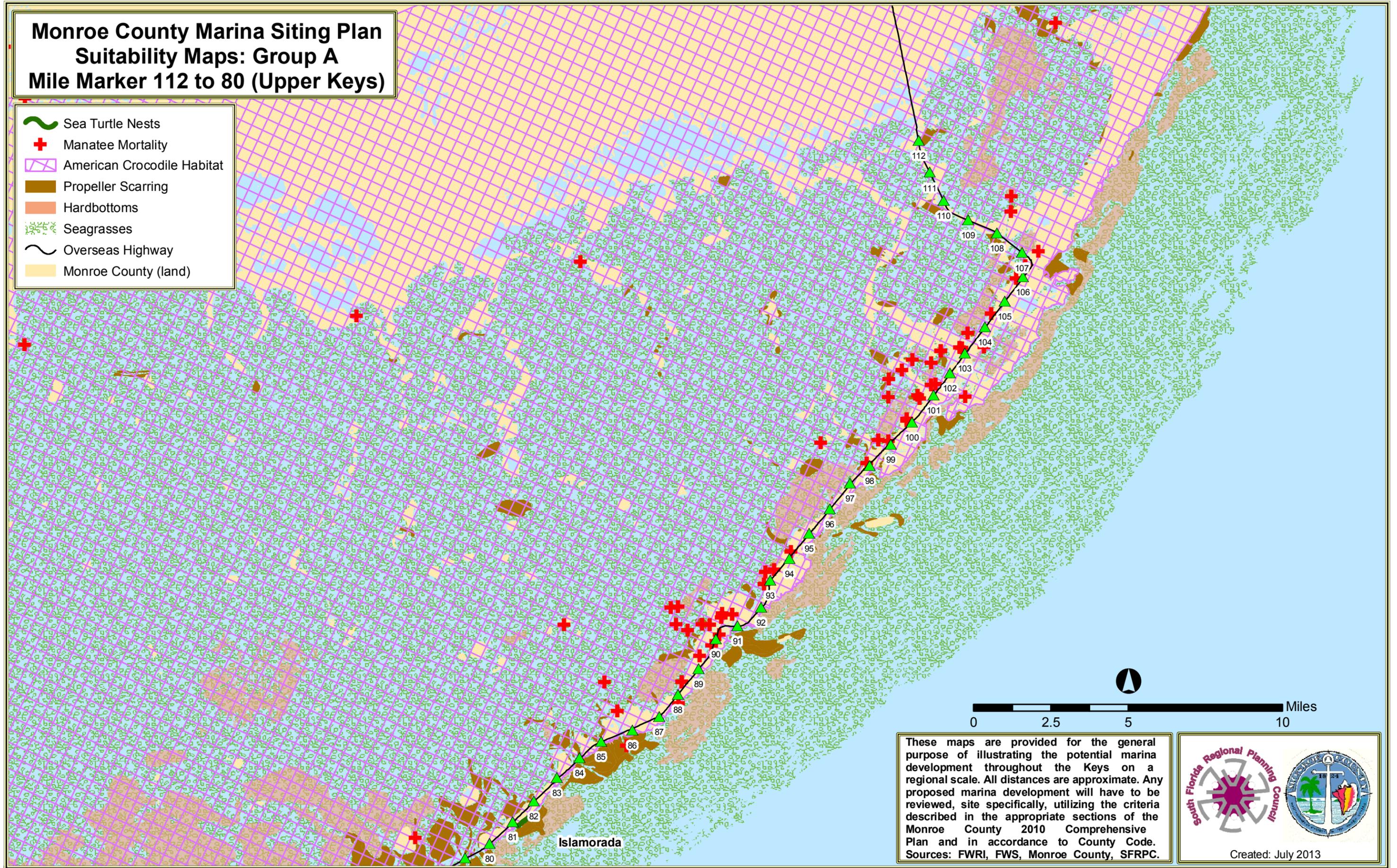
Marina Siting Criteria		GIS Data Layers (and Source)	Appendix Group
1	Benthic Vegetation and Hardbottom Communities: <i>avoid seagrasses and hardbottoms.</i>	A. Seagrasses (FWC) B. Hardbottoms (FWC)	Group A
2	Adequacy of Circulation and Tidal Flushing: <i>water quality shall meet/exceed State standards and have "good" water quality per the County's canal inventory and assessment data.</i>	Monroe County Canal Inventory and Assessment Data (Monroe County)	Group B
3	Adequate Water Depth and Access: <i>minimum of four foot of water depth at mean low water and continuous to open water.</i>	Bathymetry (N/A)	N/A
4	Minimal Shoreline Modification: <i>no marinas adjacent to unaltered shorelines.</i>	Environmental Sensitivity Index, or altered shorelines* (NOAA)	Group B
5	Quality of Upland Areas and Degree of Alteration Necessary: <i>no marinas on lands designated Tier I or Tier III-A, offshore islands, or the Coastal Barrier Resources System (CBRS).</i>	A. Tier 1 and III-A Lands B. Offshore Islands C. Coastal Barrier Resources System (all from Monroe County)	Group B
6	Propeller Dredging Problem Areas: <i>avoid seagrass propeller scarring areas.</i>	Seagrass Propeller Scarring (Monroe County)	Group A

Marina Siting Criteria		GIS Data Layers (and Source)	Appendix Group
7	Impacts of Boats on Florida Manatee, American Crocodile, and Sea Turtles: <i>prevent impacts to these marine animals in known American Crocodile range, areas with high watercraft Florida Manatee mortality.</i>	A. American Crocodile Range (FWS) B. High Watercraft Manatee Mortality Areas (FWC) C. Beaches Known for Marine Turtle Nesting (FWC)	Group A
8	Other Significant Resources: <i>no adverse impacts to archaeological or historic resources/sites.</i>	Archaeological or Historic Resource List (N/A)	N/A

*In an effort to keep the maps visually pleasing, the altered shorelines have been displayed instead of unaltered. Altered shorelines have potential for marina development.
 FWC: Florida Fish and Wildlife Commission
 NOAA: National Oceanic and Atmospheric Administration
 FWS: United States Fish and Wildlife Service
 N/A: Not Available
 For questions regarding a specific dataset, please contact the data source identified in the Table.

**Monroe County Marina Siting Plan
Suitability Maps: Group A
Mile Marker 112 to 80 (Upper Keys)**

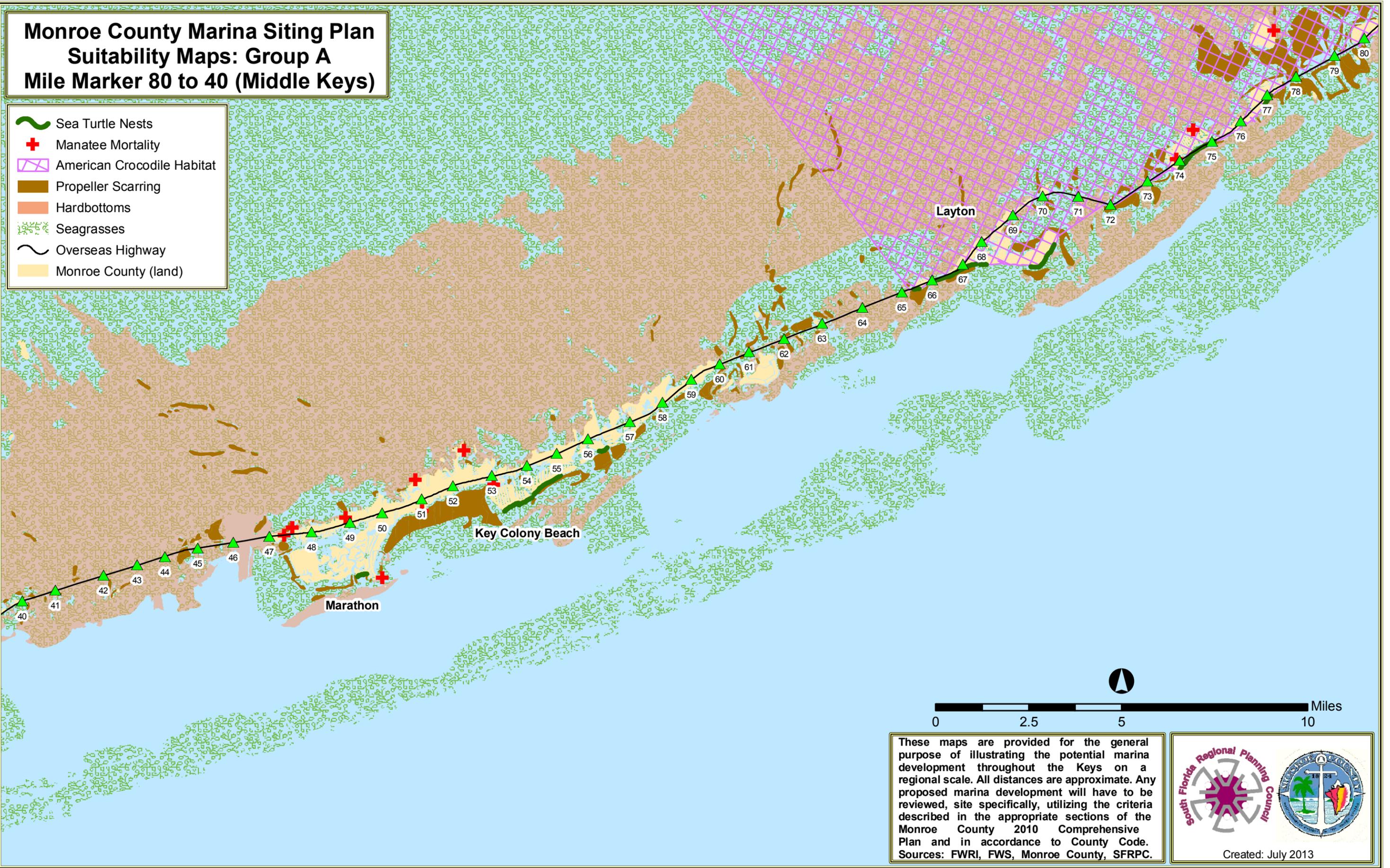
-  Sea Turtle Nests
-  Manatee Mortality
-  American Crocodile Habitat
-  Propeller Scarring
-  Hardbottoms
-  Seagrasses
-  Overseas Highway
-  Monroe County (land)



These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.



Created: July 2013

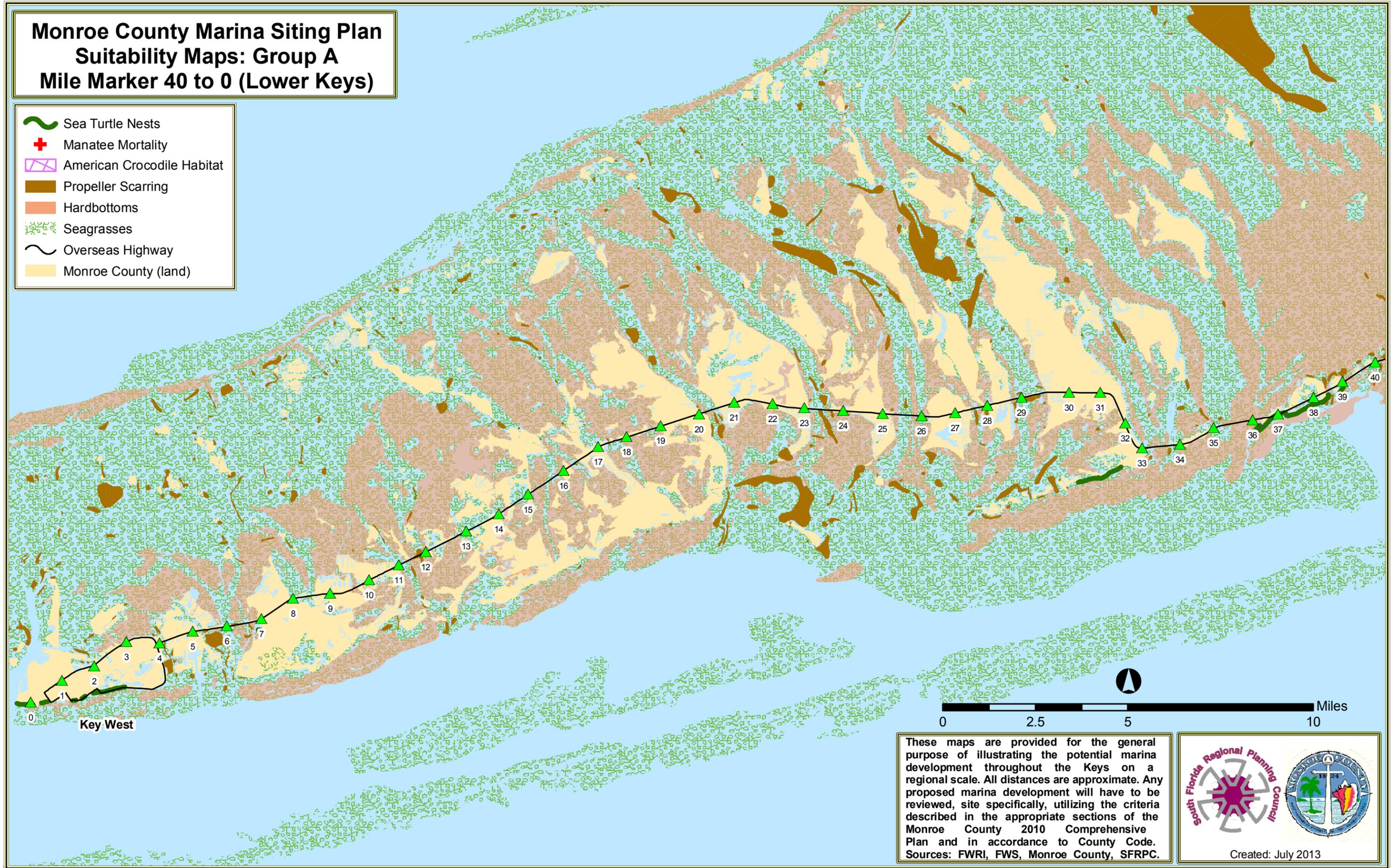


These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.



**Monroe County Marina Siting Plan
Suitability Maps: Group A
Mile Marker 40 to 0 (Lower Keys)**

-  Sea Turtle Nests
-  Manatee Mortality
-  American Crocodile Habitat
-  Propeller Scarring
-  Hardbottoms
-  Seagrasses
-  Overseas Highway
-  Monroe County (land)



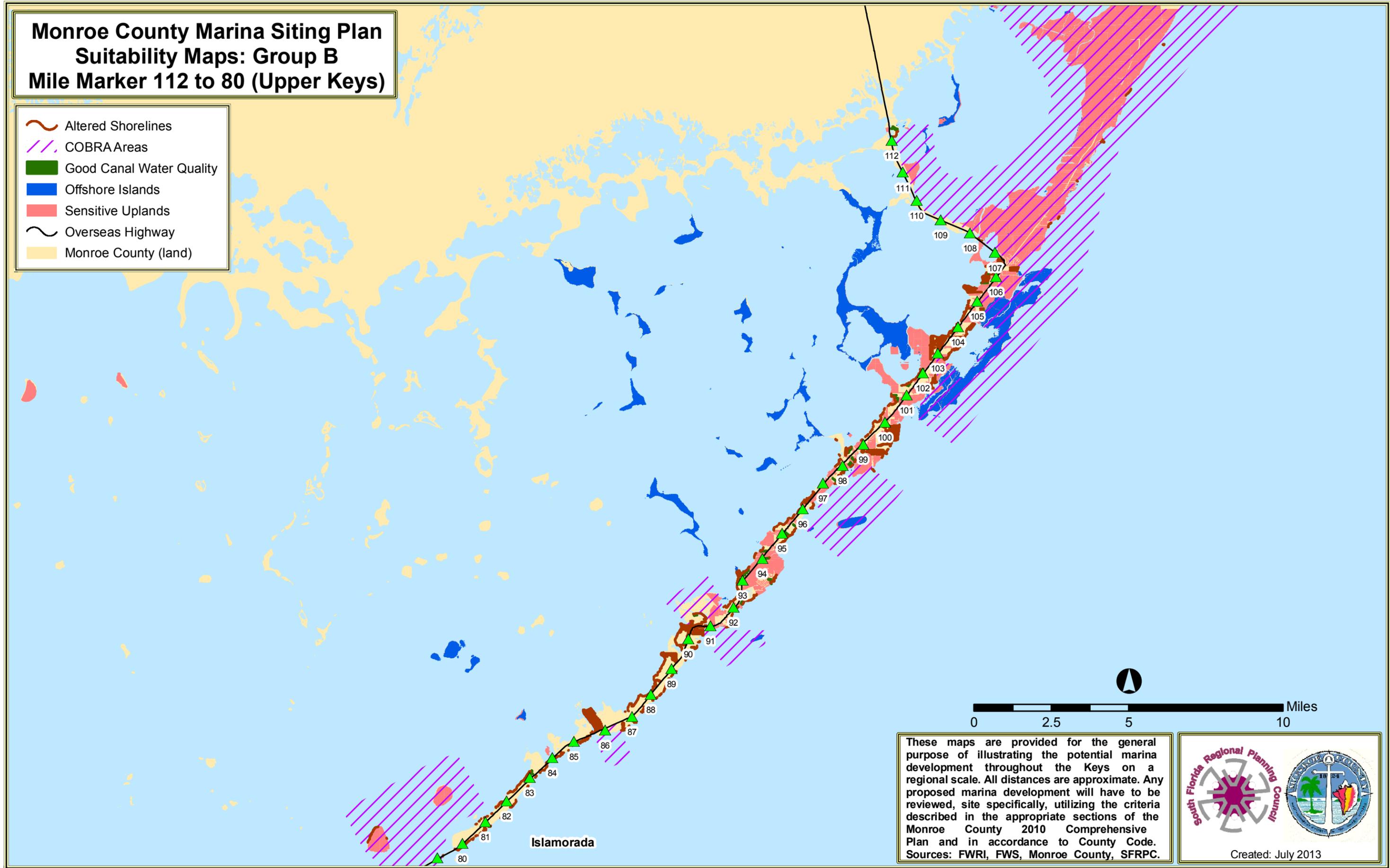
These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.



Created: July 2013

**Monroe County Marina Siting Plan
Suitability Maps: Group B
Mile Marker 112 to 80 (Upper Keys)**

-  Altered Shorelines
-  COBRA Areas
-  Good Canal Water Quality
-  Offshore Islands
-  Sensitive Uplands
-  Overseas Highway
-  Monroe County (land)



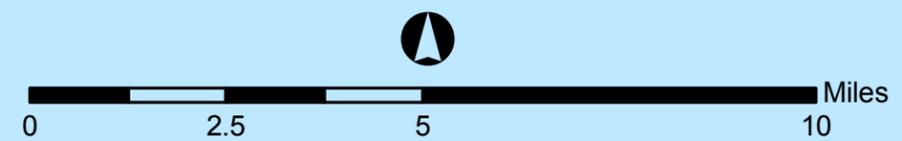
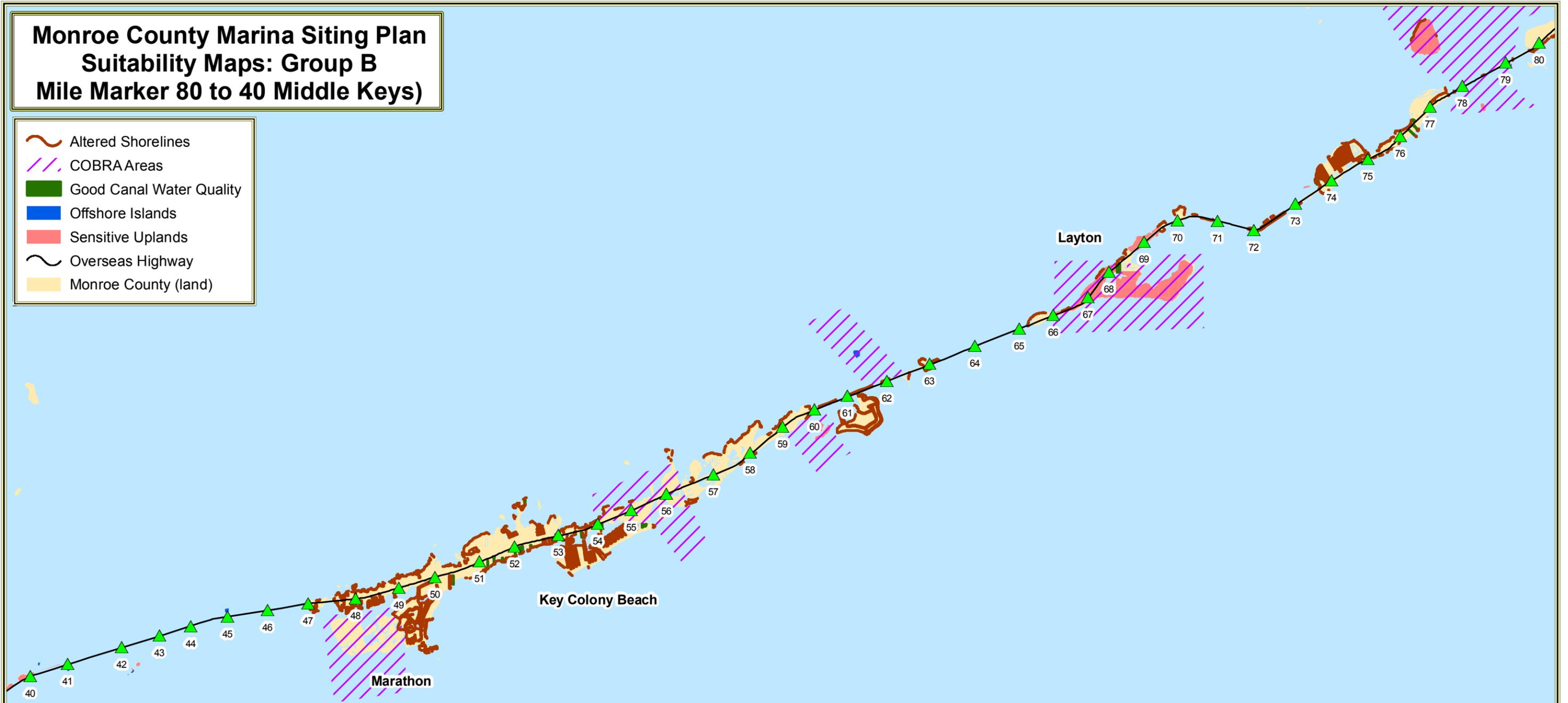
These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.



Created: July 2013

**Monroe County Marina Siting Plan
Suitability Maps: Group B
Mile Marker 80 to 40 Middle Keys)**

-  Altered Shorelines
-  COBRA Areas
-  Good Canal Water Quality
-  Offshore Islands
-  Sensitive Uplands
-  Overseas Highway
-  Monroe County (land)

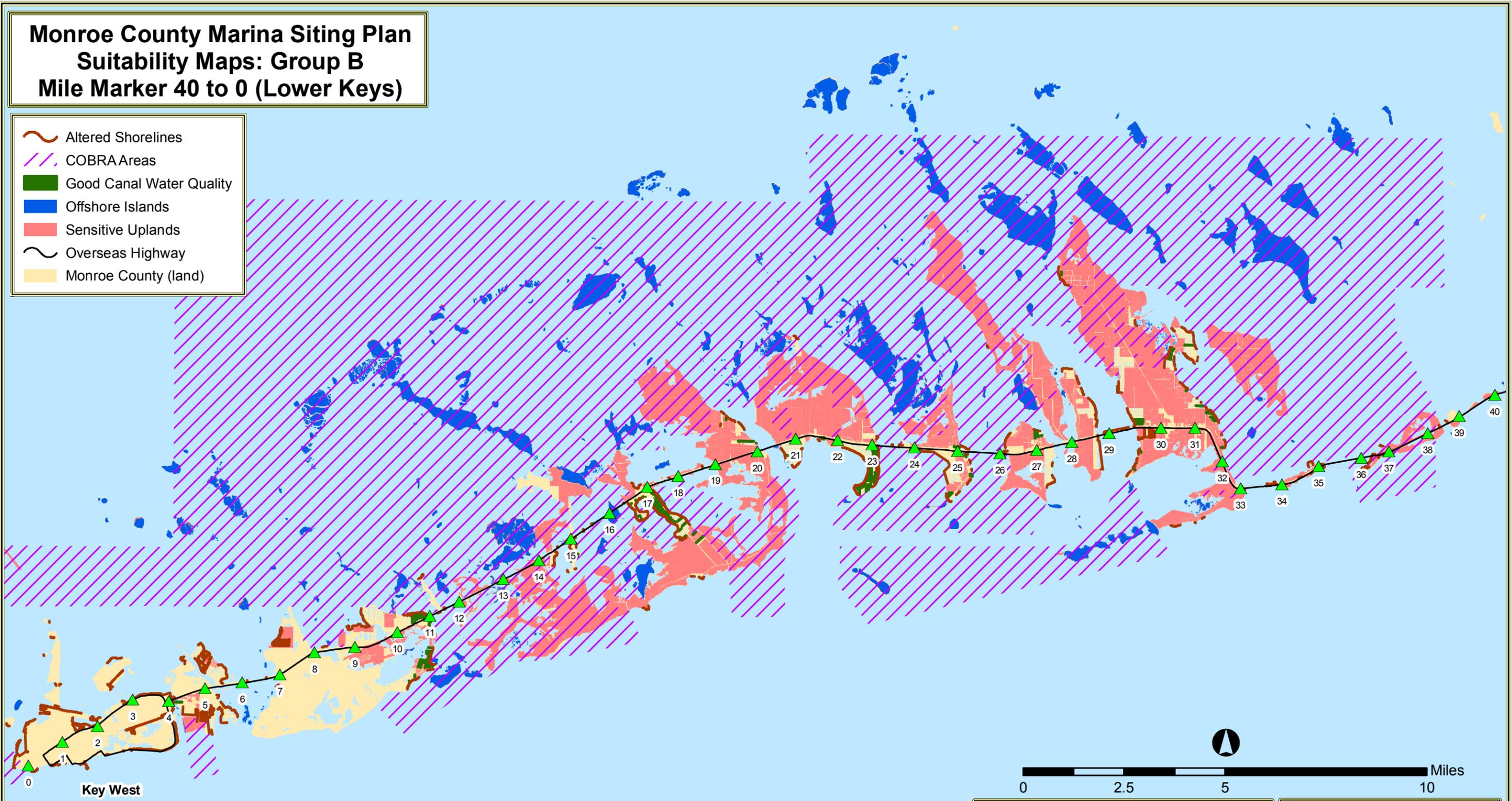


These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.

Created: July 2013

**Monroe County Marina Siting Plan
Suitability Maps: Group B
Mile Marker 40 to 0 (Lower Keys)**

-  Altered Shorelines
-  COBRA Areas
-  Good Canal Water Quality
-  Offshore Islands
-  Sensitive Uplands
-  Overseas Highway
-  Monroe County (land)



These maps are provided for the general purpose of illustrating the potential marina development throughout the Keys on a regional scale. All distances are approximate. Any proposed marina development will have to be reviewed, site specifically, utilizing the criteria described in the appropriate sections of the Monroe County 2010 Comprehensive Plan and in accordance to County Code. Sources: FWRI, FWS, Monroe County, SFRPC.

Created: July 2013

APPENDIX F

RECOMMENDED MARINA SITING CRITERIA FOR MONROE COUNTY

The Marina Siting Criteria contained herein and set forth in the *Marina Siting Plan* address the minimum planning requirements for Chapter 163.3178(6) of the Florida Statutes (Coastal Management) and Chapter 18-21.0041 of the Florida Administrative Code (Florida Keys Marina and Dock Siting Policies and Criteria). The criteria shall not supersede, preempt, or nullify applicable federal, state, or municipal rules, regulations or requirements that apply.

The *Marina Siting Plan (MSP)* contains the Data and Analysis for Policy 212.4.2 of the Comprehensive Plan. The MSP details the unique environmental concerns, regulations related to marina siting, and the application process for new marina development in unincorporated Monroe County. Suitability maps included in the Marina Siting Plan are provided for the general purpose of illustrating marina development potential throughout the Keys on a regional scale. Any proposal for marina development must meet the below requirements, which shall apply to the specific proposed marina site.

The development of new marina facilities shall be located in areas where maximum physical advantages exist and where no unreasonable or significant impacts are foreseen on marine resources. These conditions described above shall be met if the proposed marina meets, and is consistent with, the criteria below.

Proposed new marina facilities shall meet the following requirements:

The following criteria shall be met for the proposed marina site to minimize or avoid impacts of development on natural resources and other significant resources:

- a. *Benthic Vegetation and Hardbottom Communities.* Siting of marinas in areas of seagrass or hardbottom (including hard and soft corals) should be avoided. Boat mooring sites (slips or docks) shall not be located over a seagrass bed community or hardbottom community regardless of water depth. No impacts to seagrass beds or hardbottom communities should result from the construction or use of new marina development.
- b. *Adequacy of Circulation and Tidal Flushing.* The proposed marina site shall exhibit adequate circulation and tidal flushing. The waterway upon which the marina is proposed to be sited shall meet or exceed State water quality standards, and must currently have “Good” water quality as indicated in the County’s most current canal inventory and assessment data. New marina development shall not adversely impact the quality of water during construction or use.
- c. *Adequate Water Depth and Access.* There shall be a minimum of four (4) foot of water depth at mean low water at the marina site (including the mooring slips, turning basin, and access channels), and the water depth shall be continuous to open water over a channel width of twenty (20) feet. Water depth shall be adequate for the proposed vessel

use such that there be a minimum of one (1) foot clearance between the deepest draft of the vessel and the bottom at mean low water. Greater water depths shall be required for those facilities proposed for accommodating vessels having greater than a three (3) foot draft. Sites shall not require dredging or filling to provide access.

- d. *Minimal Shoreline Modification.* Marinas shall not be sited adjacent to unaltered shorelines as defined in Sec. 101-1 of the Land Development Code. Minimal modification to the shoreline shall be permitted per County Land Development Code Section 118-1, 118-12(m), and (o).
- e. *Quality of Upland Areas and Degree of Alteration Necessary.* Marinas shall not be sited on lands designated as Tier I or Tier III-A, if clearing is proposed. Marina development shall not adversely impact the upland area of, or adjacent to, a proposed marina site. Additionally, marinas shall not be permitted on offshore islands or on units of the Coastal Barrier Resources System (CBRS).
- f. *Propeller Dredging Problem Areas.* Siting of marinas in areas of seagrass propeller scarring should be avoided. Marinas shall not be located adjacent to areas of severe seagrass scarring, based on the most current data available from the Florida Fish and Wildlife Research Institute.
- g. *Impact of Boats on Florida Manatee, American Crocodile, and Sea Turtles.* Marinas shall be sited so as to prevent impacts to the Florida Manatee, American Crocodile, and marine turtles and protect their habitat by avoiding areas of known American Crocodile range, areas with high watercraft Florida Manatee mortality, or areas that include a beach known to be used for marine turtle nesting. Site characteristics can be assessed using current data from the Florida Fish and Wildlife Conservation Commission.
- h. *Other Significant Resources.* No adverse impact shall be permitted on archaeological or historic resources/sites.

An applicant for new marina development shall be responsible for providing existing physical and environmental site condition data specific to the proposed site to demonstrate that the site meets the marina siting criteria described above.