

Keys-Wide Mooring Field System

Preliminary Planning Document

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Monroe County Department of Marine Resources

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Overview

The Monroe County Department of Marine Resources is responding to the variety of negative impacts generated in crowded Keys anchorages. These impacts include seagrass damage from ground tackle, lack of space for transient vessels, abandoned and derelict vessels, sunken vessels, marine debris, and most importantly the illegal discharge of sewage.

In 2001 Monroe County successfully implemented a mooring field in Boot Key Harbor as a means of managing anchorage related boating impacts. An ordinance was approved by the Board of County Commissioners authorizing the regulation of boating activities within that mooring field, as well as future County mooring fields. Also in 2001 the Board gave approval for the Department of Marine Resources to apply for grants to fund the implementation of moorings and associated pump-out facilities for a Keys-wide system of mooring fields. The Department of Marine Resources generated a 'Project Proposal for a Keys-Wide Mooring System' which accompanied a Coastal Impact Assistance Program grant. The proposal outlined the extensive planning process involved to achieve a successful mooring field system.

This 'Preliminary Planning Document' (document) is the first document generated from the initial planning process. Each of the anchorage sites that were previously determined to be problem areas was visited and a site evaluation was conducted. The following sections describe the findings of those site visits, possible recommendations, and priority levels. This document is intended to be a starting point in the planning process. Each of the problem sites should be revisited with representatives of coordinating state and federal agencies to further review the situations and determine specific goals for each site, and the mechanisms to achieve those goals.

Objectives

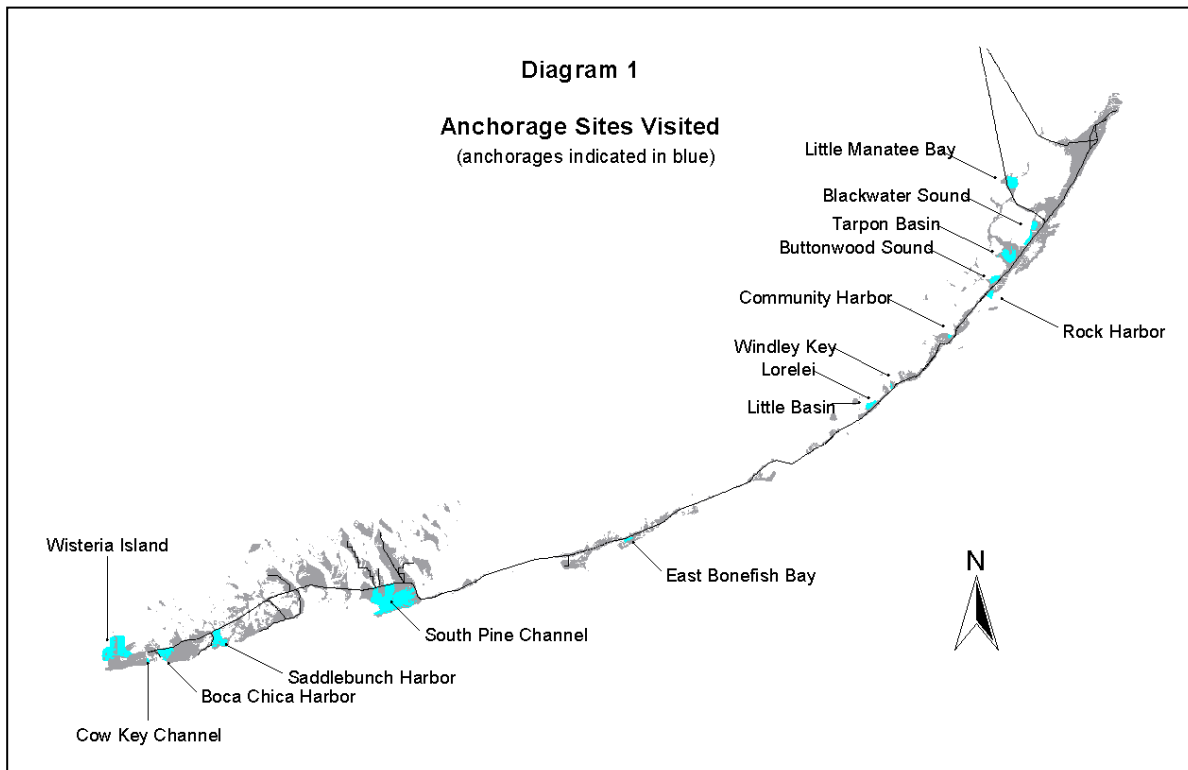
It is important that the objectives of the Keys-wide mooring field system concept are clear from the start, and that all coordinating agencies agree on the goals. The following objectives have been identified:

- 1) Eliminate abandoned and derelict vessels in anchorage areas
- 2) Provide anchorage space and minimal services for transient vessels
- 3) Reduce benthic damage caused by ground tackle in anchorage areas
- 4) Eliminate the unlawful discharge of sewage into the water column

Managed mooring fields have been acknowledged by Monroe County and the Department of Environmental Protection as a mechanism, or strategy, by which these objectives can be achieved. The appropriate disposal of vessel sewage is a major priority for this program.

Anchorage Site Evaluations

Each of the anchorage sites, identified in prior studies, was visited for a preliminary site evaluation by the County Marine Resources Planner between 12 March and 23 April 2002 (Diagram 1). A variety of site data was collected, including: physical and biological data (depth, seagrass, etc.), cultural data (types of boats and boaters), and logistical data (where boaters access land, availability of pumpouts, etc.) An 'Anchorage Site Evaluation Form' was generated for each site using the collected data. The following fifteen evaluation forms are compiled in geographic order from the upper Keys to the lower Keys.



ANCHORAGE SITE EVALUATION FORM

Date: March 12, 2002

General Information

Region of Keys: Upper Keys
Specific Location: Little Manatee Bay
Current Anchorage Population: Only 3 vessels; 2 sail, 1 power
Type of Vessels in Anchorage: Typical long-term liveaboards
Water Depth: 4-5'
Benthic Environment: Sparse seagrass
Bottom Type: Soft bottom
Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): none identified
Pumpout Facility (if any): none
Parking Facilities (if any): none identified
Any County Facilities or Land? No
Other Facilities (if any): Manatee Marina is the primary facility in the vicinity

Site Overview

General Condition/Situation: Very few boats anchored. Does not appear to be any significant problem. The several boats may be storage boats. They may use the marina for access (difficult to ascertain).
Preliminary Recommendations: Leave as is. No apparent problems.
Priority Level: Low

ANCHORAGE SITE EVALUATION FORM

Date: March 13, 2002

General Information

Region of Keys: Upper Keys
Specific Location: Blackwater Sound
Current Anchorage Population: Five Boats
Type of Vessels in Anchorage: Both sail and power in good condition
Water Depth: 6-8'
Benthic Environment: Sparse seagrass
Bottom Type: Soft bottom
Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): Caribbean Club and possibly Bayside Marine
Pumpout Facility (if any): None
Parking Facilities (if any): Possibly at Caribbean Club and Bayside Marine
Any County Facilities or Land? No
Other Facilities (if any): None

Site Overview

General Condition/Situation: On the south side of Stelrecht Pt. There are several vessels anchored adjacent to the Caribbean Club where they pay for dinghy dockage (may also use facilities at Bayside Marine). Closer to the point were several higher end vessels, probably friends of shorefront owners. This does not appear to be a real anchorage, transient or otherwise.

Preliminary Recommendations: This site does not appear to be a heavily used anchorage and there are no significant problems.

Priority Level: Low

ANCHORAGE SITE EVALUATION FORM

Date: March 13, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Tarpon Basin

Current Anchorage Population: Seven boats

Type of Vessels in Anchorage: Mostly sail; good condition; probably transients

Water Depth: 6-8'

Benthic Environment: Sparse seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): None apparent; most of the vessels are far from shore

Pumpout Facility (if any): None

Parking Facilities (if any): None apparent

Any County Facilities or Land? No

Other Facilities (if any): None

Site Overview

General Condition/Situation: There were several vessels along the eastern shoreline as well as the southwestern shoreline. Most were fairly far from shore, indicating that they are not landing anywhere. Most likely they are all transients.

Preliminary Recommendations: This site does not appear to be a heavily used anchorage and there are no significant problems.

Priority Level: Low

ANCHORAGE SITE EVALUATION FORM

Date: March 13, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Buttonwood Sound (Sunset Cove) around mm100

Current Anchorage Population: Approximately 25 boats

Type of Vessels in Anchorage: Both power and (mostly) sailboats; typical long-term liveaboards as well as storage boats; many in poor condition; numerous derelict vessels.

Water Depth: 6-8'

Benthic Environment: Moderate seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): Most of the liveaboards access land at the end of Bay View Drive, which is apparently County property. On the west side of the dead end is Marina Del Mar Bayside. There is a small jetty and fill area where liveaboards tie up their dinghies. There is also a dirt ramp. The resort apparently allows the liveaboards to tie up there and walk on the property (which may or may not be County property). Liveaboards leave cars, bikes, and mopeds on the right of way at the dead end. At the west end of the anchorage some liveaboards access land via the Smilin' Island property (451-1930).

Pumpout Facility (if any): None

Parking Facilities (if any): Only at Smilin Island, for those liveaboards at the western end of the anchorage.

Any County Facilities or Land? Just the County road (Bay View Dr.) and the right of way.

Other Facilities (if any): None

Site Overview

General Condition/Situation: Sunset Cove is a moderately used anchorage by mostly low-end liveaboards. The location of the anchorage is likely due to the access at the end of Bay View Drive and the proximity to shopping, laundry facilities, places of work, restaurants, etc.

Preliminary Recommendations: This site is a problem for a number of reasons. Due to the low-end nature of the anchorage there are derelict, sunken and unattended vessels. The liveaboards park their vehicles on the right of way. Neighbors have complained about numerous problems including vandalism, noise, and drug use.

Priority Level: High. This site, if developed as a mooring field, could also be convenient for transient vessels transiting the ICW.

ANCHORAGE SITE EVALUATION FORM

Date: April 17, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Rock Harbor

Current Anchorage Population: 30-35 boats

Type of Vessels in Anchorage: Vessels in the outer anchorage are mid to high-end cruising sailboats (30-40'). The inner, and primary anchorage is mostly lower to mid-end sailboats around 25-30', but mostly kept up and in operational condition. There are a few power and houseboats, and only a very few abandoned or derelict vessels.

Water Depth: The outer anchorage, adjacent to Rodriguez Key, 8-10' deep. The inner anchorage ranges from 5-8' deep.

Benthic Environment: Seagrass.

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): The only shoreside access appears to be the end of 2nd Ave., located between Mandalay Marina (adjacent and to the east) and the new condo (adjacent and on the west side). The road dead ends into a impromptu ramp where dinghies tie off. The area is not protected and there is no dock.

Pumpout Facility (if any): There is a public pumpout facility at Rock Harbor Marina, adjacent to and east of Mandalay Marina. The pumpout charge is \$5.

Parking Facilities (if any): Liveaboards simply park on the right-of-way at the end of 2nd Ave.

Any County Facilities or Land? The road (2nd Ave.) is County, all the way to the ocean.

Other Facilities (if any): There are several facilities in the area, but none that currently serve the liveaboard community. The pumpout facility at Rock Harbor Marina is there to serve the public, but is not currently used by the boaters in the anchorage.

Site Overview

General Condition/Situation: The Rock Harbor anchorage has light to moderate use by both local liveaboards and a few true cruisers. There are two distinct anchoring areas: the outer anchorage behind Rodriguez Key which is used by transients as a stopover; and the inner anchorage closer to shore which is utilized almost exclusively by liveaboards. The liveaboard community at this anchorage does not appear to cause a large problem. Most of the vessels observed appeared to be in working condition and are often used for sailing as well as a home. There are only a few run-down, abandoned, or sunken vessels. The significant problems noted were the lack of proper sewage disposal, the lack of appropriate dinghy dockage, and a lack of appropriate parking. There have been no significant complaints about these problems. However,

the Public Works Department reported that due to a few complaints about parking they installed 'no overnight parking' signs on the east side of 2nd Ave. The existence of the public pumpout facility at Rock Harbor Marina could be utilized to alleviate the sewage issue. As far as dinghy dockage, if the County chooses to provide dockage it may be possible to do so utilizing the public property at the end of 2nd Ave. However, there is little room for a dinghy dock and no real appropriate parking area.

Preliminary Recommendations: This anchorage area has existed for many years and is apparently geographically convenient for both local and transient boaters. Although it may be possible to close down the end of 2nd Ave. to access for dinghies or parking to eliminate the anchorage, that is probably not a good solution. Considering that there is an existing pumpout facility and County property (2nd Ave.) adjacent to the anchorage, the County should further investigate possible scenarios for providing proper infrastructure without developing the anchorage and increasing the number of vessels and associated impacts.

Priority Level: Moderate.

ANCHORAGE SITE EVALUATION FORM

Date: March 20, 2002

General Information

Region of Keys: Upper Keys

Specific Population: Community Harbor; MM 91.7

Current Anchorage Capacity: Approximately 20-25 boats

Type of Vessels in Anchorage: Both power and (mostly) sailboats; typical long-term liveaboards as well as some storage boats; many in poor condition; numerous derelict vessels; some sunken and abandoned vessels.

Water Depth: 4-5'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): Idle Speed/No Wake

Site/Facilities Information

Landing Facility (if any): Vessels use the facilities at Mangrove Marina (852-8380), if they so choose. Steve Kurtz and Bernard Chiles are the co-owners. The marina management charges vessels for use of the facilities which includes dinghy dockage, laundry, showers, parking, etc. They currently charge \$125-200 per month, depending on the size of vessel and number of occupants.

Pumpout Facility (if any): Mangrove Marina has all their docks plumbed, as well as a pumpout station at the fuel dock (\$15 per pumpout). The pumpouts are not used by the anchor-outs.

Parking Facilities (if any): Parking is provided at Mangrove Marina in their fee.

Any County Facilities or Land? None

Other Facilities (if any): None

Site Overview

General Condition/Situation: Community Harbor is a well defined harbor, bounded by the shoreline and the mangrove fringe. A County marked channel marks the entrance to the harbor, with a controlling depth of 4'. The entire harbor area is an idle speed zone. The harbor has been a light to moderate use anchorage for many years, primarily used by low-end local liveaboards. Many of the vessels scour the bottom or rest on the bottom. This site has the typical anchorage problems including ground tackle damage, derelict and abandoned vessels, and illegal sewage dumping. The new marina owner has upgraded and improved the facility, which now offers it's services to the anchor-outs. Management supports the implementation of a mooring field.

Preliminary Recommendations: The problems in the anchorage could be minimized by putting vessels on moorings and requiring routine pumping out. The existing infrastructure at the adjacent marina would facilitate the implementation of a mooring field. It would be necessary to

work out an arrangement between the County and the marina for management of the anchorage.
The facility could also accommodate shallow draft cruising vessels.

Priority Level: High

ANCHORAGE SITE EVALUATION FORM

Date: March 27, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Windley Key (bayside); mm 84

Current Anchorage Population: 10 boats

Type of Vessels in Anchorage: Both sail and power vessels, and several floating structures. All in poor condition, some abandoned. Several sunken vessels and several tied up to mangroves. All appear to be either local liveaboards or storage vessels. Only three of the vessels were floating and in any decent type of condition.

Water Depth: 4-8'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): N/A

Site/Facilities Information

Landing Facility (if any): There are absolutely no facilities including shoreside access. Boaters dinghy into a small break in the mangroves adjacent to US1.

Pumpout Facility (if any): No facilities

Parking Facilities (if any): None. Boaters either walk or leave bikes in the mangroves.

Any County Facilities or Land? None

Other Facilities (if any): This site is directly across US1 from Holiday Isle Marina and Resort.

Site Overview

General Condition/Situation: This has always been a low-end anchorage and storage site for local boaters. All vessels at the site are in disrepair and should not be on the water. Many appear to have gone from liveaboards, to storage vessels, to sunken vessels. There are no facilities to make this a convenient anchorage. Liveaboards probably find this site amenable due to the somewhat hidden location of the anchorage and few people notice it, as well as the easy/unregulated access through the mangroves.

Preliminary Recommendations: This site is totally inappropriate as a liveboard anchorage, and is treated as a dumping grounds for old vessels. If not for the access through the mangroves the site would probably not be used at all. It is however a convenient and aesthetically pleasing site (if cleaned up) for cruisers transiting the ICW. As no facilities are available, it would be an excellent one or two night stopover for cruisers that require no facilities, including landing. A recommendation would be for the Village of Islamorada to shut off the mangrove access to anyone, remove all the derelict/sunken vessels and simply allow this small harbor to be used by transient vessels. Those vessels would be entirely on their own with no facilities or land access.

Priority Level: Moderate

ANCHORAGE SITE EVALUATION FORM

Date: March 27, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Big Basin/Lorelei (bayside); mm 82

Current Anchorage Population: Approximately 50 boats

Type of Vessels in Anchorage: Both sail (mostly) and power vessels. Both transient and local liveaboards. Most vessels in moderately good condition.

Water Depth: 6-8'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): None

Site/Facilities Information

Landing Facility (if any): There are several marina facilities in the vicinity of the anchorage site. Although not confirmed, boaters probably utilize the Lorelei and some of the other facilities for shoreside access as well as for dining and entertainment.

Pumpout Facility (if any): None

Parking Facilities (if any): Whatever parking is provided at the adjacent marinas that allow dinghy dockage.

Any County Facilities or Land? None

Other Facilities (if any): the various marina facilities adjacent to the anchorage.

Site Overview

General Condition/Situation: This is a significant anchorage site that appears to be utilized both by local liveaboards as well as true transiting cruising vessels. Many of the vessels (particularly in the eastern portion of the anchorage) are higher end cruising equipped vessels that are well kept. The lower end vessels generally are at the western end of the anchorage, and along the mangrove fringe. The local liveaboard vessels appear to be both mid and low-end, with some storage vessels and a few abandoned vessels.

Preliminary Recommendations: This site has been a heavily used anchorage for many years, probably due to the proximity to the ICW as well as local shopping and establishments in this popular area of Islamorada. The anchorage is not nearly as bad as some overcrowded anchorages. The majority of the boats appear in good condition. This would make an excellent managed mooring field that could serve local liveaboards as well as the cruising yachtsman. If developed this anchorage could become a prime destination (or stay-over) for high-end transients. However, that decision will probably be up to the Village of Islamorada.

Priority Level: High

ANCHORAGE SITE EVALUATION FORM

Date: March 27, 2002

General Information

Region of Keys: Upper Keys

Specific Location: Little Basin (bayside); mm 81

Current Anchorage Population: Approximately 15 boats

Type of Vessels in Anchorage: Both sail (mostly) and power vessels, including a few houseboats. No transients, all low-end local liveaboards or storage vessels.

Water Depth: 3-4'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): None

Site/Facilities Information

Landing Facility (if any): There are several marina and resort facilities located on the shore of Little Basin. None of these facilities, however, are likely to allow dinghy dockage for the low-end boaters. Most of the vessels are in very poor condition and up in the shallows, some tied to mangroves. It doesn't appear that many of the vessels are actually used for living aboard.

Pumpout Facility (if any): World Wide Sportsman

Parking Facilities (if any): Whatever parking is provided at the adjacent marinas/resorts that may allow dinghy dockage.

Any County Facilities or Land? None

Other Facilities (if any): the various marina facilities and resorts adjacent to the anchorage.

Site Overview

General Condition/Situation: Little Basin is not a heavily used anchorage, primarily due to the lack of depth (less than 3'). Most of the vessels that are anchored should probably not be in the water, and are certainly not good for the environment.

Preliminary Recommendations: This site should not be considered for an anchorage, due to the shallow controlling depth throughout the basin. This site should be shut down from allowing vessel anchoring. The Village of Islamorada also has jurisdiction in this area.

Priority Level: Low

ANCHORAGE SITE EVALUATION FORM

Date: April 17, 2002

General Information

Region of Keys: Middle Keys

Specific Location: East Bonefish Bay

Current Anchorage Population: 12-15 boats

Type of Vessels in Anchorage: All of the vessels anchored are very low-end liveaboard vessels, including: sailboats, powerboats, houseboats, and floating structures. There are many sunken, abandoned and derelict vessels.

Water Depth: 2-8'. The harbor is dredged along the developed shoreline, but quite shallow throughout the harbor itself. Most of the harbor was historically a shallow mangrove fringed lagoon.

Benthic Environment: Sparse seagrass. Turbidity is high, visibility and light penetration is low, leading to a lack of thriving seagrass beds.

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): The perimeter of the lagoon along the residential shoreline is idle speed/no wake.

Site/Facilities Information

Landing Facility (if any): Few of the vessels anchored appear to be actually used and live on. Those few that are actual liveaboards apparently dinghy into the docks at one of the fish houses.

Pumpout Facility (if any): The only pumpout facility in the vicinity is at Marie's Yacht Harbor, which is over a half-mile away.

Parking Facilities (if any): If any of the liveaboards have vehicles they apparently leave them parked at one of the fish houses.

Any County Facilities or Land? None

Other Facilities (if any): There are several fish houses and docking facilities located on the western shoreline of the bay. These fish houses supply dockage to commercial fishermen, but have absolutely no facilities for anchor-outs.

Site Overview

General Condition/Situation: East Bonefish Bay appears to be a relic of what once was a lightly used liveaboard anchorage. Most of the bay is extremely shallow and inappropriate for anything other than overnight anchoring of shallow draft vessels. People have left a variety of low-end vessels and floating structures anchored out for storage and a few liveaboards. None of the vessels are in any kind of functioning condition and all are creating an environmental impact. This anchorage is similar to what was found in middle Bonefish Bay some years back, which the City of Key Colony Beach put an abrupt end to.

Preliminary Recommendations: This anchorage falls under the jurisdiction of the City of Marathon. All sunken and derelict vessels should be removed. The City of Marathon should consider a policy of no liveaboards in East Bonefish Bay, as the bay is not appropriate as an anchorage of any kind.

Priority Level: Moderate

ANCHORAGE SITE EVALUATION FORM

Date: March 27, 2002

General Information

Region of Keys: Lower Keys

Specific Location: South Pine Channel (oceanside); mm 29

Current Anchorage Population: Approximately 20 boats

Type of Vessels in Anchorage: Both sail (mostly) and power vessels. Mostly low-end liveaboard vessels, storage vessels and a few houseboats and small commercial fishing vessels. Many of the liveaboard vessels are in disrepair, some obviously incapable of navigation. There are numerous abandoned and sunken vessels. There are, however, a few moderate to high end transient vessels located further out in the anchorage. Those vessels likely stay over just for a few nights without accessing shore.

Water Depth: 2-8'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): None

Site/Facilities Information

Landing Facility (if any): The only facility adjacent to the anchorage site is the 'swimming hole' basin located off of US1 at the foot of the bridge. This is a deep draft basin suitable for landing. Liveaboards dinghy into the basin (a few dinghy straight to the causeway) and most have bicycles they leave in the mangroves along the causeway or at the basin itself. There appear to be no other shoreside access points in the anchorage vicinity.

Pumpout Facility (if any): none

Parking Facilities (if any): None. The USFWS manages public properties in Big Pine, including the 'swimming hole' parcel, and do not allow parking at night.

Any County Facilities or Land? The State purchased the parcels adjacent to US1 and the 'swimming hole' several years ago. The 'swimming hole' appears to be quite suitable as a boat basin, and for the implementation of any infrastructure. However, there is a 3-4' controlling section at the mouth of the boat basin which currently prohibits use as a turning basin for most sailboats. The shallow controlling depth also makes permitting of docks or a boat ramp difficult.

Other Facilities (if any): Dolphin Marina is on the opposite side of South Pine Channel, but management at the marina has no desire to provide pumpout facilities or accommodate the liveaboard boaters.

Site Overview

General Condition/Situation: The South Pine Channel anchorage is an unusual situation. There is a deep draft basin adjacent to the anchorage field, but the field itself is quite shallow ranging from 2-8'. The bottom topography is not homogeneous. There appears to be a slightly

dredged area (~5') just outside of the basin, but there are numerous shoals all around the dredged area. There is no one area of significant size that would accommodate deep draft recreational vessels or a mooring field. Probably the only reason there are vessels in the area at all is because the basin ('swimming hole') is there which provides a landing for dinghies. Low-end liveaboards typically utilize any possible shoreside access, and at this site they have exploited the access that is there. Installing pumpouts at the basin would not be practical because (if the vessels were in a navigable condition) the controlling depth would prevent most sailboats from entering the basin. A pumpout barge would be a practical alternative, but unless the boats are on managed moorings, effective pumpouts likely would not happen. A managed mooring field may not be a viable option due to the lack of depth throughout the area. There is an additional problem at the site due to the power lines on the south side of the bridge. Vessels have been known to drag anchor into the wires causing a hazardous situation.

Preliminary Recommendations: Upon initial review it appears that the only feasible option is to eliminate the anchorage via eliminating the shoreside access. This anchorage needs to be studied further to consider more options. Water depths are a critical issue.

Priority Level: Moderate

ANCHORAGE SITE EVALUATION FORM

Date: April 16, 2002

General Information

Region of Keys: Lower Keys

Specific Location: Saddlebunch Harbor

Current Anchorage Population: Three boats

Type of Vessels in Anchorage: Only three vessels were seen. Two sailboats and one power boat, all under 25'. None appeared to be permanent liveaboards, more likely stored boats.

Water Depth: 5-8'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): None

Site/Facilities Information

Landing Facility (if any): None

Pumpout Facility (if any): None

Parking Facilities (if any): None. Vessel owners may possibly use the Shark Key boat ramp as access, and tie dinghies up in mangroves.

Any County Facilities or Land? None

Other Facilities (if any): None

Site Overview

General Condition/Situation: Although at times there have been a dozen or so vessels anchored in Saddlebunch Harbor, there are only a few currently anchored. There does not appear to be any problem or impacts from those few vessels.

Preliminary Recommendations: Nothing needs to be done in this area.

Priority Level: Low

ANCHORAGE SITE EVALUATION FORM

Date: April 16, 2002

General Information

Region of Keys: Lower Keys

Specific Location: Boca Chica Harbor

Current Anchorage Population: 100-130 boats

Type of Vessels in Anchorage: Most of the vessels in the anchorage are local liveaboards, many low-end vessels in poor condition. Many vessels are storage boats, some partially dismantled, and many sunken. There is a group of small commercial fishing vessels in the northwest anchorage area. There are some moderate to high end vessels as well, mostly sail. There are numerous power vessels, including houseboats, mostly in poor condition. At the southern end of the area is a group of larger cruising sailboats in good condition (these appear to be vessels that may be transient).

Water Depth: 2-8'. The harbor has a complex system of shoals which breaks the anchorage into pockets of vessels.

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): None

Site/Facilities Information

Landing Facility (if any): There are a number of landing sites. Peninsula Marine at the southeast tip of Stock Island has dinghy dockage and facilities (296-8110), as well as sailboats on Mediterranean moors in their boat basin. Dinghies were also seen along the seawall and on docks along the east side of Stock Island and next to Munro's Marina. There appears to be a variety of shoreside accesses, depending where the vessels are anchored in the harbor.

Pumpout Facility (if any): Unknown. Possibly at Peninsula Marine.

Parking Facilities (if any): There appears to be parking at the trailer parks on the eastern shoreline of Stock Island where dinghies were seen. Parking is also provided at Peninsular Marine.

Any County Facilities or Land? None

Other Facilities (if any): There are numerous marinas, fish houses, a campground and other facilities on the eastern side of Stock Island. This site needs to be researched further to better determine shoreside accesses and facilities. The facilities must be there or the boaters would not be.

Site Overview

General Condition/Situation: The Boca Chica harbor anchorage area is a significant anchorage, second in size only to Christmas Tree Island and possibly Boot Key Harbor. The anchored vessels are spread out over a very large area. Different types of vessels (fishing boats,

house boats, cruisers, sail/liveboards) appear to anchor in particular areas of the harbor. More research needs to be conducted in the harbor to determine the rhyme and reason for the anchoring patterns and the association to shoreside facilities.

Preliminary Recommendations: Boca Chica harbor has a large anchorage with all the associated negative impacts. The anchorage appears to be highly suitable as a managed anchorage/mooring field. More work needs to be done in the area to determine what facilities are along the shoreline, where the boaters need and use these facilities, and how best to develop the facilities to support the anchorage in coordination with the County.

Priority Level: High

ANCHORAGE SITE EVALUATION FORM

Date: April 23, 2002

General Information

Region of Keys: Lower Keys

Specific Location: Cow Key Channel (north and south)

Current Anchorage Population: 50-60 boats

Type of Vessels in Anchorage: Nearly all of the vessels anchored adjacent to Cow Key Channel (also considered the Houseboat Row area) are very low-end boats and floating structures. There are sail and power boats, houseboats, structures, parts of boats, modified boats, etc. There are numerous D/V's, abandoned boats, storage boats, and sunken boats. There are also about eight sailboats anchored adjacent to the northern extension of Cow Key Channel (these boats are low-end but not as bad as the boats in the main anchorage area).

Water Depth: 2-5'

Benthic Environment: Seagrass

Bottom Type: Soft bottom

Zoning (is site within a regulatory zone?): the anchorage is just south of the Cow Key Channel slow speed zone.

Site/Facilities Information

Landing Facility (if any): Most of the liveaboards dinghy into the seawall and tie up in the mangroves adjacent to Houseboat Row.

Pumpout Facility (if any): None

Parking Facilities (if any): There are no real facilities available to the liveaboards and no parking.

Any County Facilities or Land? None

Other Facilities (if any): There are several marina facilities across the channel from the anchorage area, on the western shoreline of Stock Island. These facilities do not service the anchorage in any way, and none have pumpout facilities.

Site Overview

General Condition/Situation: The anchorage at Cow Key Channel is probably the most inappropriate of all the anchorages observed. There is not enough depth in any part of the anchorage suitable for anchoring, with many vessels resting on the bottom through part of the tidal cycle. There are no appropriate facilities for the liveaboards, including shoreside access. Most of the vessels are in deplorable condition. Many vessels are just abandoned after they no longer suit the needs of the owner. The bottom has been denuded in the area due to the scouring from ground tackle, and there is much marine debris scattered about.

Preliminary Recommendations: Cow Key Channel is not, and never will be, an appropriate area for anchoring (particularly for long-term) primarily due to the lack of depth. Every attempt

should be made by the City of Key West to regulate this area and through regulations make all the anchored vessels relocate or be disposed of. The marine debris should be removed. Most of the vessels in this area are not functional, nor do they conform to state and federal safety and environmental regulations.

Priority Level: High

ANCHORAGE SITE EVALUATION FORM

Date: April 23, 2002

General Information

Region of Keys: Lower Keys

Specific Location: Wisteria Island/Fleming Key anchorage area

Current Anchorage Population: 250-400 boats

Type of Vessels in Anchorage: Mostly liveaboards on everything from low-end sail and power boats, modified vessels, and floating structures to mid and high-end sailboats. There are several dozen vessels, mostly sail, in good condition that appear to be true cruising boats located in particular areas of the larger anchorage area. There are numerous D/V's, abandoned and sunken vessels as well as marine debris scattered around the shoal areas. There are numerous old boat hulls washed up on the shore of Wisteria Island. There are also a handful of charter sailboats.

Water Depth: 2-15'

Benthic Environment: Mostly seagrass

Bottom Type: Mostly soft bottom

Zoning (is site within a regulatory zone?): No

Site/Facilities Information

Landing Facility (if any): It was difficult to determine from the preliminary survey where boat owners dinghy into shore. There are a number of marina facilities located along the western shore of Key West that may provide dinghy dockage and other services. However, for most of the anchorage area that would be a long dinghy ride which would include crossing the busy main channel with much boat traffic. Vessels are anchored all along the western shoreline of Fleming Key, however the land is a restricted area and landing is not allowed. There does not appear to be suitable facilities for shoreside access for the several hundred vessels anchored in the area.

Pumpout Facility (if any): Several of the marinas in Key West have pumpout facilities.

Parking Facilities (if any): Parking could not be determined from the preliminary survey.

Any County Facilities or Land? None

Other Facilities (if any): N/A

Site Overview

General Condition/Situation: The Wisteria Island/Fleming Key anchorage area appears to be the largest and most problematic anchorage in the Keys. The anchorage area, which covers several miles, appears to be comprised of several smaller anchorages that overlap somewhat. Different types of vessels and accompanying lifestyles were observed from one specific area to another. The dozen or so vessels anchored between Wisteria Island and Sunset Key appear to be mid to high-end true cruising vessels anchored in appropriate depth water. This location is close to the ships channel and real cruising grounds, and the vessels appear to be cruisers. On the north side of Wisteria the water is quite shallow in areas, with vessels in the worst condition

typically in the shallows and vessels in better condition in the deeper water to the west and northwest of the island. Almost all vessels in these areas appear to be local liveaboards. Just across Man of War Harbor, another hundred or so mostly low-end vessels are anchored adjacent to Fleming Key, with a few true cruising boats at the southerly end of that anchorage. At least half of the vessels anchored throughout the larger anchorage area are inoperable and in terrible condition, many just waiting to be abandoned or sunken.

Preliminary Recommendations: This enormous anchorage grounds is truly out of hand. The area is in dire need of management and enforcement of regulations. There are probably hundreds of D/V's, abandoned and sunken vessels to be removed at the expense of the public. There are plenty of marine facilities in the area that could possibly be developed to provide services to the liveaboard and cruising community. It seems feasible that the City of Key West could further develop it's mooring field system to provide suitable managed moorings to operable vessels, both cruising and liveaboard. The cruising community would probably welcome a system of moorings, pumpout services, shoreside access and information. Dealing with the local liveaboards will be a larger issue. Wisteria Island itself looks like a feasible location for facilitating management and providing limited services. The City of Key West should continue with studies to further evaluate the anchorage area and pursue developing a master plan to address the problems.

Priority Level: High

Anchorage Site Evaluation Summary

Of the fifteen anchorage sites evaluated only ten sites were considered to be a moderate or high priority in regards to significant problems that need to be addressed through some level of anchorage management (Table 1). The five sites determined to be a low priority had very few vessels anchored (seven or less), with few boating impacts observed, and no history of reported problems or complaints. Those five sites do not need to be considered for any further planning or review for the purposes of a Keys-wide mooring field system at this time.

Table 1.			
MANAGEMENT NEEDS PRIORITY LEVEL			
<u>Anchorage Site</u>	<u>High</u>	<u>Moderate</u>	<u>Low</u>
Little Manatee Bay			X
Blackwater Sound			X
Tarpon Basin			X
Buttonwood Sound	X		
Rock Harbor		X	
Community Harbor	X		
Windley Key *		X	
Lorelei *	X		
Little Basin *			X
East Bonefish Bay **		X	
South Pine Channel		X	
Saddlebunch Harbor			X
Boca Chica Harbor	X		
Cow Key Channel ***		X	
Wisteria Island ***	X		
* indicates anchorage sites within or adjacent to the jurisdictional boundaries of the Village of Islamorada			
** indicates anchorage sites within or adjacent to the jurisdictional boundaries of the City of Marathon			
*** indicates anchorage sites within or adjacent to the jurisdictional boundaries of the City of Key West			

The ten anchorages listed as moderate or high priority sites were found to have a greater population of vessels and were observed to have some significant boating impacts that need to be addressed. Five of those ten sites are within or adjacent to the jurisdictional boundaries of an incorporated area, and any further studies or recommendations for those sites should be left to the discretion of the management of those cities (i.e. Village of Islamorada, City of Marathon, and the City of Key West). This document should be provided to those cities for their review.

The remaining five anchorage sites (denoted in Table 1 with a bold X), which are located within unincorporated Monroe County, were observed to have a considerable number of vessels and associated boating impacts, and are reviewed further in this document and recommended to be included in the subsequent planning processes.

Review of Priority Anchorage Sites

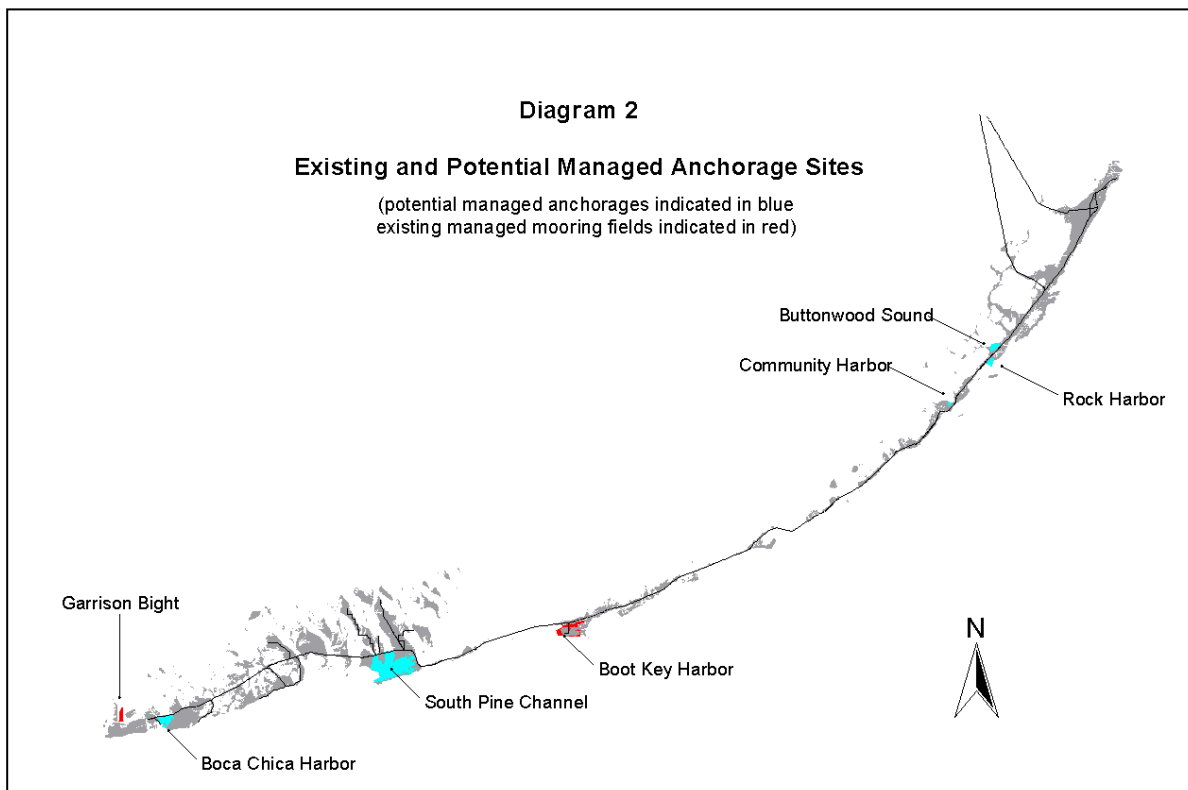
The anchorages at Buttonwood Sound, Rock Harbor, Community Harbor, South Pine Channel, and Boca Chica Harbor were determined from the site evaluations to be moderate to high priority sites. These five anchorages complete the list for sites that merit further research, planning, and possible development as a managed anchorage or mooring field (at this time). Table 2 provides a breakdown of some of the general findings at each site.

Table 2. ANCHORAGE SITE GENERAL FINDINGS						
<u>Anchorage Site</u>	<u>Number of boats</u>	<u>Landing facility</u>	<u>Pumpout facility</u>	<u>Derelict problem</u>	<u>Water depth</u>	<u>Used by transients</u>
Buttonwood Sound	25	none	none	yes	6-8'	no
Rock Harbor	30-35	none	yes	yes	5-10'	yes
Community Harbor	20-25	yes	yes	yes	4-5'	yes
South Pine Channel	20	none	none	yes	2-8'	yes
Boca Chica Harbor	100-130	none	none	yes	2-8'	yes

The one problem that each of the five anchorages has in common is derelict vessels. Every anchorage in the Keys that is home to local liveaboard boaters generates derelict, abandoned and sunken vessels. Four of the five anchorages were noted to have similar vessel population levels (20-35). Boca Chica Harbor, however has over one hundred vessels and the greatest liveaboard impacts. Although only four of the five anchorages were found to be used by transients, all of the anchorages are adjacent to either the Intracoastal Waterway (ICW) or Hawk Channel. The anchorage that did not have a significant number of transients (Buttonwood Sound) probably would be utilized by cruisers (transients) if facilities were available and the anchorage was not overrun with liveaboards.

Three of the five anchorages are located on the oceanside (Rock Harbor, South Pine Channel, and Boca Chica Harbor) and range from the upper Keys to near Key West. Two of the anchorages (Buttonwood Sound and Community Harbor) are located on the bayside in Key Largo. Two existing managed anchorages (mooring fields) are located in Boot Key Harbor in the middle Keys and at Garrison Bight in Key West. Each of those mooring fields is accessible from both the ocean and bay sides. The development of the five anchorage sites would result in a system of managed anchorages/mooring fields spread throughout the Keys, accessible to transients cruising both the oceanside and bayside. Such a system would not only provide secure anchoring facilities, but convenient legal pumpout access as well.

Diagram 2 indicates both the current managed mooring fields and the location of the five anchorages listed above. This diagram illustrates the connectivity of a proposed managed anchorage/mooring field system, which would be convenient for the typical transient who cruises between 20-40 miles per day (meeting the objective of DEP's Anchorage Program).



Buttonwood Sound

Like many liveaboard anchorages, the anchorage at Sunset Cove on Buttonwood Sound is utilized due to the convenient (and free) access to land. Although some of the boaters pay for dinghy dockage at Smilin' Islands (located adjacent to the western end of the anchorage) most of the boaters exploit the access at the dead end of Bayview Drive (adjacent to the eastern end of the anchorage). Because this is not a formal landing this utilization has resulted in neighborhood problems, including: vehicles parked on the right of way, litter, petty thefts, loitering, dinghies tied along the shoreline, etc. There are similar impacts on the water, including: abandoned and derelict vessels, sunken vessels, drug use, seagrass damage, and of course the illegal discharge of waste. This is a very low-rent anchorage, with most of the vessels in poor condition (leading to abandoned and sunken vessels). Just this year a boat was set on fire by juveniles and sank. Sunset Cove is adjacent to the ICW. Although it is only lightly used by transients, it would be a convenient anchorage if minimal amenities were provided. It may not be practical to develop the end of Bayview Drive for dinghy dockage and pumpout provisions, as this is a residential neighborhood. It may be possible to work with the proprietor/owner of the Smilin' Islands property to upgrade their existing dinghy dockage and provide pumpout service, either through the installation of a pumpout system or use of a pumpout barge. The County could arrange an agreement with the management to manage a small mooring field. The problems at Bayview Drive could then be addressed via the installation of a barrier at the end of the road to prevent launching, and a prohibition on overnight parking (which has already been done at Rock

Harbor). Developing the existing facilities (Smilin' Island) and cutting off use at Bayview Drive appears to be a feasible alternative to the existing conditions. A small managed mooring field would reduce the current impacts as well as serve transient vessels cruising the ICW.

Rock Harbor

Rock Harbor is the northernmost liveaboard anchorage on the oceanside of the Keys. In addition to the liveaboards, Rock Harbor also provides anchorage to transients who regularly anchor in the lee of Rodriguez Key as a stopping place. Like the Buttonwood Sound anchorage, the shoreside access at Rock Harbor is simply where a County road (2nd Ave.) meets the ocean. Unlike Buttonwood Sound, however, this is not primarily a residential neighborhood. Second Ave. is adjacent to several marinas (Mandalay Marina and Rock Harbor Marina) and a short distance from a boat yard, making the area more appropriate as an anchorage. Although not currently utilized by vessels in the anchorage, Rock Harbor Marina does provide pumpout services to the public for \$5. The anchorage appears to be used by both low and high-end vessels. Although derelict and abandoned vessels are not as great a problem here as in some Keys anchorages, the problems do exist. Dinghy dockage and parking appear to be the most obvious problems. There is no appropriate tie off for dinghies, and the County has created a 'no overnight parking' ordinance to address the problem of vehicles left along the right-of-way. As with the situation at Buttonwood Sound, it is probably not practical to develop the end of the road for shoreside services. However, the possibility for exploiting the marine services at either Mandalay Marina or Rock Harbor Marina to help provide dockage, parking, and pumpouts to the anchor-outs may be a feasible alternative. As with any other anchorage area, managed moorings may be the only means to ensure that vessels utilize approved pumpout facilities.

Community Harbor

On the opposite end of the spectrum from Buttonwood Sound and Rock Harbor is Community Harbor. All necessary services and amenities already exist and are accessible at Mangrove Marina. Although relatively shallow, Community Harbor has historically attracted low-end vessels, resulting in the typical derelict/sunken vessel problems. The harbor is adjacent to the ICW, and many conveniences are a short walk from the marina in the main section of Key Largo. The marina owner/management has already indicated a desire to have moorings installed to help alleviate the negative impacts from the resident liveaboards in the harbor. This anchorage appears to be a managed mooring field waiting to happen, and would only require a detailed management agreement between the County and Mangrove Marina to have the marina collect mooring fees and oversee pumpouts.

South Pine Channel

Pine Channel, on the south side of the bridge, has long been an anchorage to low-end local liveaboards. Like at Buttonwood Sound and Rock Harbor, the boaters have located here due to the proximity to an easy and free land access. Unlike the other locations however, the land access is not the end of a road but a dredged boat basin (known locally as the swimming hole). Although controlling depths are quite shallow, the boat basin has great potential for the installation of basic infrastructure to serve a mooring field. The 'swimming hole' was obtained through the CARL Program and may soon be transferred from the State to the County. Dinghy dockage could easily be built and pumpout facilities could be implemented via pumpout

equipment or a pumpout vessel. Although there are currently a minimum number of vessels using this site, it would be prudent to move ahead with some level of management, as the numbers and impacts fluctuate frequently. Problems with boat masts hitting the overhead powerlines is an additional incentive to provide safe, secure moorings.

Boca Chica Harbor

Boca Chica Harbor is by far the most heavily used of the five anchorages recommended for management. Controlling depths are not a problem for mooring installations, and would curtail the seagrass damage occurring in the shallower areas. Although similar in use to the before mentioned sites boaters utilize a number of locations for dinghy landing, making it difficult to ascertain how and where to best provide shoreside facilities. This anchorage is probably the most appropriate for development into a managed harbor due to the extensive use and high level of impacts. In addition, a significant number of transients utilize the harbor as a stopover, which is convenient to Hawk Channel. If an appropriate site/parcel could be found along the western shoreline for the County to possibly purchase and develop then all services could be provided in one location. The size of the harbor, the usage, and needs are very similar to Boot Key Harbor. Like Boot Key Harbor this would be a large, long term project and commitment by the County.