

Florida Fish & Wildlife Conservation Commission
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Tallahassee, Florida 32399-1600
850-488-4676

Honorable Brian Yablonski
Honorable Aliese P. (Liesa) Priddy
Honorable Ronald M. Bergeron
Honorable Richard Hanas
Honorable Bo Rivard
Honorable Charles W. Roberts, III
Honorable Robert A. Spottswood

May 23, 2016

Dear Sirs and Madame,

Please find, accompanying, the collection of recommendations from the Collier County Local Rule Review Committee regarding our County manatee protection zones. As your staff is aware, the existing plan that has been in place for the past 15 years has been a success story in Collier County. Manatee mortality as it relates to motorboat collisions has declined since the implementation of said plan. This is true even in the face of our human population growth, and the growth in the number of vessel registrations during that time. It is important to note that although reported carcass counts have decreased in Collier County, synoptic surveys do not show manatee population in the County as increasing over time. In the last 15 years, the survey numbers have fluctuated significantly from year to year. It is important that manatees continue to be protected.

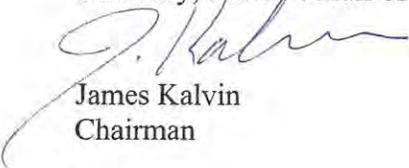
It was in that light that you will see relatively few recommended changes to the existing plan.

Minority opinions are provided for areas that were not unanimous. Significant public input was submitted to the County by the website set up to share documents for this process, this information has been reviewed by our committee and has been provided for your use.

Scott Calleson and Ron Mezich were very helpful during these meetings, and we look forward to working with them when the plan comes back to Collier County for the public hearing stage of this process.

We appreciate the opportunity to participate in this rule development initiative, and look forward to following the process through to its conclusion.

Sincerely, and on behalf of the Committee,



James Kalvin
Chairman

Enclosures

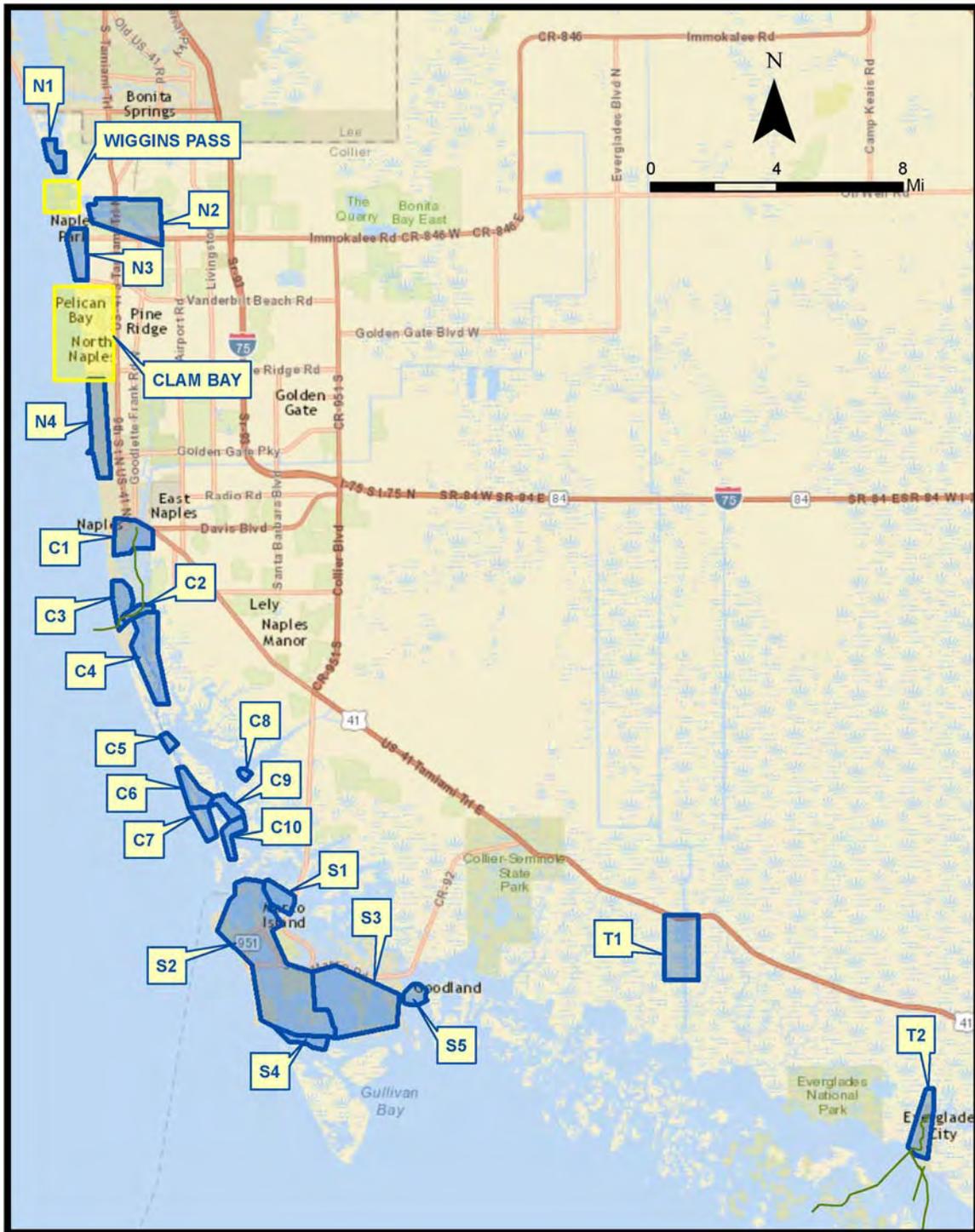


Figure 1: Areas Discussed Within This Report

Zone N1: Little Hickory Bay Central

The majority of the LRRC (8 members) agreed with Option 2 from FFWCC to “change all of the narrow section (roughly between markers 5 and 18) to a shore-to-shore Slow Speed zone. The existing zone is comprised of a 30/20 zone with 30/SS zones both north and south of the area in discussion. The total length of the channel in this section is approximately 1.3 miles.” During the warm season (Apr – Oct) there are portions of this zone 3x to 7x the mean of the manatee-boat overlap. Due to the narrow nature of the channel there is not adequate room for manatees to safely avoid impacts with traveling vessels on plane and thus supports the need for a shore-to-shore Slow Speed zone.

The minority of the LRRC (1 member) did not feel that there was a high enough manatee-boat overlap year round to warrant a year round shore to shore speed zone throughout the entire area. The opinion was that the main area of concern is from channel marker 10 to 18.

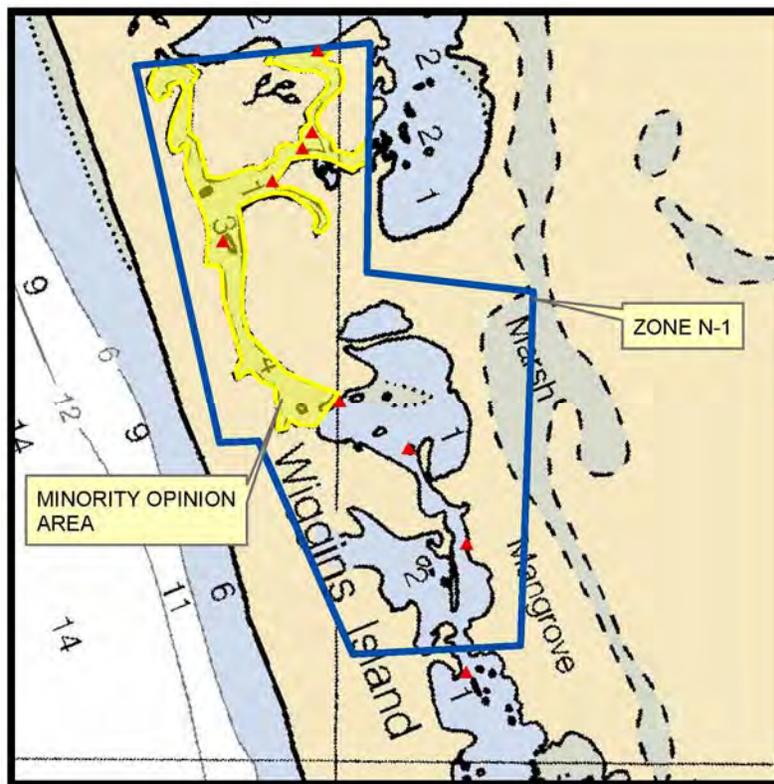


Figure 2: Exhibit of N1 Minority Opinion

Zone N2: Cocohatchee River

The majority of the LRRC (7 members) agreed with FFWCC’s Option 1 “take no action and leave the existing zone in place”. Currently this area is mostly a 30/20 zone with the western portion a slow speed zone. The area has a very low manatee-boat spatial overlap and the waterway is not heavily traveled. There are only a few residential neighborhoods upstream from the current speed zone and most of the traffic west of this zone travels in and out of the pass and intracoastal waterway. (This zone may be marked a 30/20 zone on the FWC records for the eastern portion but the only sign posted in the area is a 20 mph sign.)

There is no minority opinion for this area as two members abstained from voting for undisclosed reasons.

Zone N3: Vanderbilt Lagoon

The majority of the LRRC (8 members) agreed with FFWCC's Option 1 "take no action and leave the existing zone in place." The existing manatee speed zone is SSMW and provide adequate protection for the manatee. A more restrictive speed zone is not warranted and a more liberal one would not provide adequate protection. The waterway is almost completely built out and the likelihood of more vessels within the waterway is limited.

The minority of the LRRC (1 member) felt that a more restrictive speed zone, idle speed, should be put in place based on personal manatee sightings stating that there are more manatees in the area than represented in FFWCC's data. The existing channel is shallow and narrow restricting boats and manatees to use the same travel corridors. On multiple occasions herds of 5 to 10 individuals have been spotted within the waterway and a more restrictive zone will allow better protection for them. For a detailed minority report for Zone N3 please refer to Appendix A1 submitted by Susan Snyder.

Zone N4: Doctors Pass / Moorings Bay

The majority of the LRRC (8 members) agreed with FFWCC's Option 2 "add a slow speed zone". This zone was requested by the City of Naples as the previous local ordinance is no longer in place, leaving the area with no current speed zones. The LRRC feels that the lack of manatee mortality in the area is due to the success of the previous local speed zones. There are only a few areas throughout the waterway that have high manatee-boat spatial overlap but manatees have been spotted throughout the waterway by LRRC members.

The minority of the LRRC (1 member) felt that there is not enough data to support a manatee zone within this area but the area should be under a speed zone to protect the properties and boats within the bay. For a detailed minority report for Zone N4 please refer to Appendix A2 submitted by James Kalvin.

Zone C1: Naples Bay North

The LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." This area is very congested due to the number of marinas and the public boat ramp and therefore should remain as an Idle Speed zone to continue to provide protection to the manatees.

Zone C2: Naples Bay South

The LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." This area is a main channel for Naples boaters to access the Gulf of Mexico and even with the high manatee-boat spatial overlap the current zone restricts high speed vessels to the channel providing slow speed areas outside of the channel for manatee protection.

Zone C3: Gordon Pass

The LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." The existing idle speed zone provides adequate protection for the manatees and area boaters are accustomed to going idle through the area before ingress/egress out of Gordon's Pass.

Zone C4: Dollar Bay

The majority of the LRRC (8 members) agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." There is an area in the middle of Dollar Bay that has a high manatee-boat spatial overlap but it is located in a wide bay with high speed boats restricted to a narrow channel. Outside of the channel there is adequate depth for manatees and boats are restricted to slow speed. The narrow portions of this zone have a low manatee-boat spatial overlap and do not warrant a more restrictive speed zone.

Zone C6: Halloway Island South

The majority of the LRRC (9 members) agreed with FFWCC's Option 2 "change a part of the existing zone / unregulated area to a shore-to-shore slow speed zone" applicable to the channel from marker 30A/31 to marker 27A/28. This "dog leg" area has a high manatee-boat spatial overlap and the boaters in the intracoastal should proceed through this area at slow speed to reduce the chance of injuring a manatee. The southern portion of this area is choked with a large shoal that restricts both manatees and boats to the channel as the shoal is too shallow for boaters or manatees to travel over.

The minority of the LRRC (1 member) agreed with the more restrictive speed zone but felt it should only apply to the bottom portion of the "dog leg" from marker 28A to marker 28. This is the area of the existing shoal and warrants additional manatee protection. The remainder of the proposed modification is very well marked channel and should not be included in the slow speed zone.

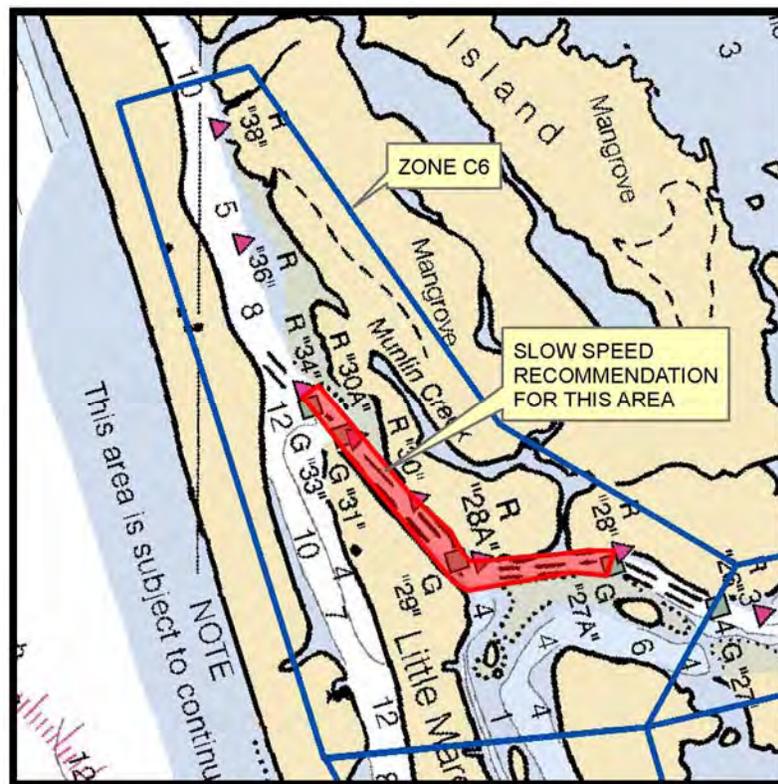


Figure 4: Zone C6 SSMW Recommendation

Zone C7: Little Marco Island

The LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." The existing channel is well defined and the eastern portion of the zone is a popular water sports area. The southern portion of the zone has a high manatee-boat spatial overlap and is where both channels slow down to slow speed. There is very low manatee-boat spatial overlap through the rest of the zone.

Zone C8: Hall Bay North

The LRRC unanimously agreed with FFWCC's Option 2 to "change the narrow section to a shore-to-shore slow speed zone." Currently the area is marked slow speed and is followed by the majority of local boaters

therefore there will be very little impact to the local boating community. This area is very restrictive channel between two bays and warrants manatee protection.

Zone C9: Johnson Bay North

The majority of the LRRC (7 members) agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." This waterway is a main channel for the intracoastal waterway that connects Marco Island to Naples Bay and there is not enough data to support a more restrictive speed zone. Maintaining the slow speed outside of the existing channel provides a large water body for manatee protection.

The minority of the LRRC (3 members) thought that the area should be slow speed to provide greater protection to the manatees in the area. Just as the area is a main channel of the local intracoastal waterway it is also a heavily used corridor for the manatees as they travel the area throughout the year. For more details on the minority opinion please refer to Appendix A5 and A6 submitted by Susan Snyder and Nancy Anderson.

Zone C10: Johnson Bay Central

The majority of the LRRC (8 members) agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." Just like Zone C9 this waterway is a main channel for the intracoastal waterway that connects Naples Bay and Marco Island. A more restrictive speed zone is not warranted as the channel is wide enough to allow both manatee and boat traffic. There are adequate depths for manatees on either side of the channel and the area is currently Slow Speed outside of the marked channel and therefore provides adequate protection for the manatee.

The minority of the LRRC (2 members) thought the channel should be Slow Speed to match the rest of the waterbody to provide an increased level of protection to the manatees. Just as with Zone C9 this area is a major corridor for manatees traversing the protected waters of Rookery Bay. For more details on the minority opinion please refer to the minority reports in Appendix A6 and A7 submitted by Nancy Anderson and Susan Snyder.

Zone S1: Marco River North

The LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." This channel is commonly used by area boaters to travel the intracoastal waterway and access the Gulf of Mexico from Marco Island canals. The water body is wide and provides ample room for boats and manatees.

Zone S2: Marco Interior

The LRRC unanimously agreed with FFWCC’s a modified Option 2 referenced as Option 3 and only apply the Slow Speed Minimum Wake to the marked channel within the Marco River. The remainder of the river and interior canals located in Zone S2 should remain Idle Speed No Wake. This allows boaters traveling east to west to maintain an appropriate speed in this fast moving water body when ingressing/egressing the Gulf of Mexico.

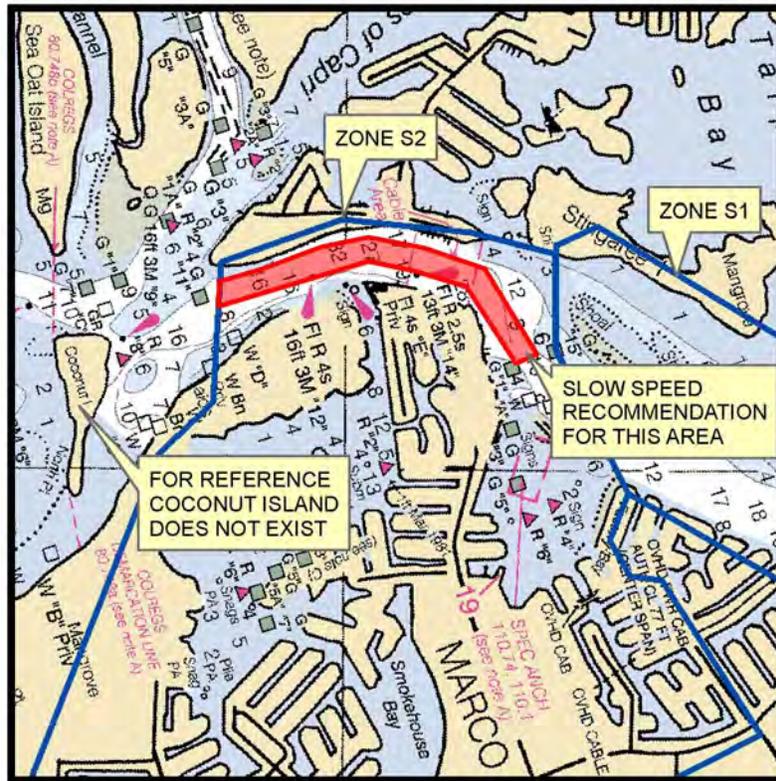


Figure 5: Zone S2 SSMW Recommendation

Zone S3: Barfield Bay

The LRRC unanimously agreed with FFWCC’s Option 1 to “take no action and leave the existing zone in place.” This area as a whole has low boat usage and does not warrant a more restrictive manatee speed zone. There is one area that has a high manatee-boat spatial overlap and that area is currently in an Idle Speed No Wake zone.

Zone S4: Caxambas Bay

The LRRC unanimously agreed with FFWCC’s Option 1 to “take no action and leave the existing zone in place.” This area has a marked channel and at the north end of a very vast series of channels and bays, outside of the channel the area is Slow Speed Minimum Wake and does not warrant a more restrictive manatee speed zone.

Zone S5: Goodland

The majority of the LRRC (9 members) agreed with FFWCC’s Option 1 to “take no action and leave the existing zone in place.” Area boaters are accustomed to the existing Idle Speed No Wake and this area is

a choke point for the intracoastal waterway providing an area for potential conflict and thus does not warrant a less restrictive manatee zone.

The minority of the LRRC (1 member) felt that there was not a high enough manatee-boat spatial overlap to warrant Idle Speed No Wake and recommended the area be modified to Slow Speed Minimum Wake to maintain a level of protection for the manatees. One member abstained from voting for undisclosed reasons.

This area also included the canals on either side of State Road 92 and the LRRC unanimously agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place" leaving this area Idle Speed No Wake.

Zone T1: Port of the Islands

The LRRC unanimously agreed with FFWCC's Option 2 but amended to exclude all boaters from the manatee warm water refuge feature. The feature was created to protect the manatees and the permit drawings include floating barricades to prevent all boaters from accessing the area. This area is one of the few warm water refuges in Collier County and thus all measures should be taken to ensure that this new feature does not become a place where manatees are disturbed by ecotourism or curious boaters.

Zone T2: Barron River

The majority of the LRRC (7 members) agreed with FFWCC's Option 1 to "take no action and leave the existing zone in place." Since the existing zone, Idle Speed No Wake, is currently in place area boaters and commercial fisherman that utilize the river are accustomed to the restricted speeds within the narrow river.

The minority of the LRRC (2 members) felt that the area was better suited for Slow Speed Minimum Wake as there is not a high enough manatee-boat spatial overlap to support the existing zone. The Slow Speed criteria would also allow area boaters to have the confidence to use adequate power during their ingress/egress through the river which at times can have a very swift current.

Additional 30/20 Zones in 10,000 Islands

The majority of the LRRC (7 members) agreed that the existing zones should be left in place as they provide some level of protection to the manatees while allowing boaters to access the vast network of creeks, rivers and bays. Since the majority of this area has no marked channels the speed limit defaults to 20mph which provides much more protection than if the zone is removed. While there is not enough data provided by FFWCC to analyze the manatee-boat spatial overlap local knowledge by LRRC members suggests that there the amount of boats utilizing this area is relatively small when compared to the more congested waterbodies throughout the county. These boaters are also typically more conscious of the waterway and avoiding obstacles as a vast portion of these areas are too shallow for slow speed operation and require the boater to be on plane while avoiding oyster bars, driftwood, etc.

The minority of the LRRC (2 members) felt speed should be 30/slow speed where channels are marked and 20 shore-to-shore where there are no marked channels. With the ongoing efforts of the Everglades Restoration Project, it is expected there will be more fresh water flowing back into the natural creeks and rivers, which could attract more manatees to the area. Manatee zones may not be re-considered for another 10 years. Future utilization of the area by manatees should be considered. The FFWCC mortality maps indicate that there are a high number of mortalities in this large area and indicates a need for increased protection. For more details on the minority opinion please refer to minority reports A8 and A9 submitted by Susan Snyder and Nancy Anderson.

The LRRC reviewed the other 30/20 zones throughout the County and felt the same comments to the 10,000 island area apply County Wide. The 30/20 zone provide more protection than an unregulated area and more restrictive zones are already in place where data supports them.

Additional Area: Clam Bay System (Clam Pass, Outer Clam Bay, Inner Clam Bay, Upper Clam Bay and Adjacent Areas)

The majority of the LRRC (7 members) felt that this area should be added as a manatee speed zone, as it is a sensitive area utilized by manatees. FWC Manatee survey data, FWC telemetry data, and numerous recent sightings document manatees use the area. Seagrass beds are well-documented at Clam Pass, the interconnecting tributary, and Outer Clam Bay. In agreement with the Florida Manatee Sanctuary Act, these seagrass beds should be protected to provide a food source for manatees traveling the coast. Large portions of the Clam Bay waterbody are very shallow and at low tides are too shallow for manatees to utilize restricting them to the channels where there is a high risk for manatee/boat interaction. Thus the entire area should be a shore-to-shore Idle Speed/No Wake Zone. With the ISNW designation, low impact recreational use will be available to all water craft (motorized and otherwise), and the System will experience reduced turbidity, which will improve conditions for seagrass beds to expand. Until the previous signage was removed, the Clam Bay System was marked as an Idle Speed/No Wake Zone and the LRRC feels that designation should be placed under the manatee protection purview of FFWCC.

The minority of the LRRC (2 members) felt that the area should be a slow speed minimum wake zone but for boater safety, not manatees. The area does not have the same manatee usage as other areas of the county as Clam Pass is often too shallow for manatees to enter the area and the majority of the seagrasses within the bays are not the preferred grasses eaten by manatees. There is also a very restricted group of boaters that utilize the area with nearly no outside motor boat utilization as the area is not part of the intracoastal waterway and there are no public boat ramps introducing additional boats to the area. One member abstained from voting as their firm is currently overseeing the ongoing environmental oversight of the area.

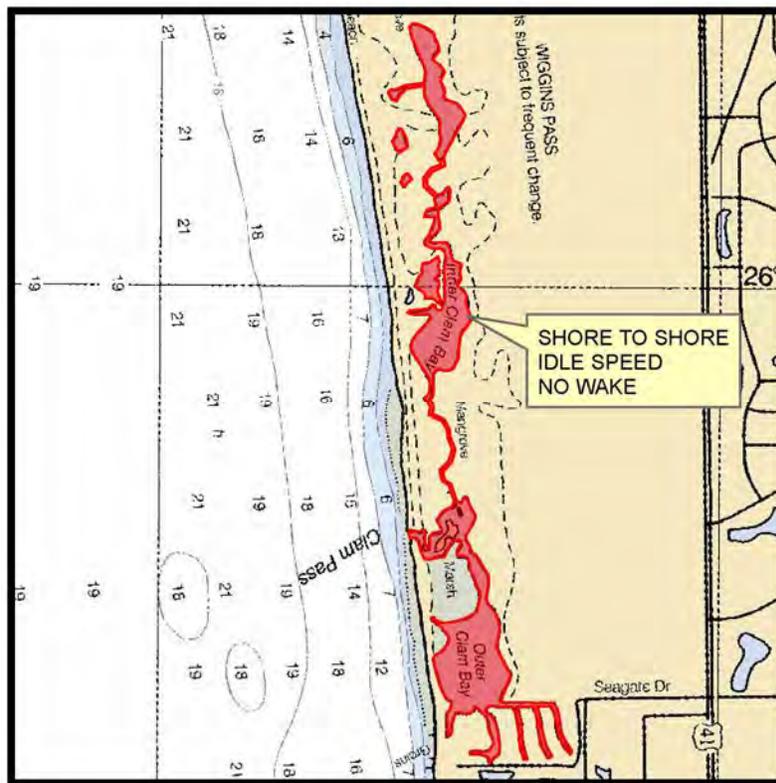


Figure 6: Clam Bay ISNW Recommendation

Additional Area: Wiggins Pass

This majority of the LRRC (7 members) felt that the entire pass to the four way intersection of the Cocohatchee River and Intracoastal Waterway should be modified to Idle Speed No Wake. This area is restrictive and under a state of constant change with moving shoals requiring boaters to be very cautious while under power. These shoals also restrict manatees to the channel when traveling through the pass and thus should have the same level of protection as the other passes in the County. The entire area shows a very high manatee-boat spatial overlap (over 7x the mean) and is a highly used waterway and is confusing as there are different zones with conflicting signage in the area.

The minority of the LRRC (2 members) felt that the existing Slow Speed Minimum Wake zone should stay in place as it provides boaters adequate speed to maintain a safe speed while traveling through the swift pass. For more details on the minority opinion please refer to the minority report A10 submitted by James Kalvin.

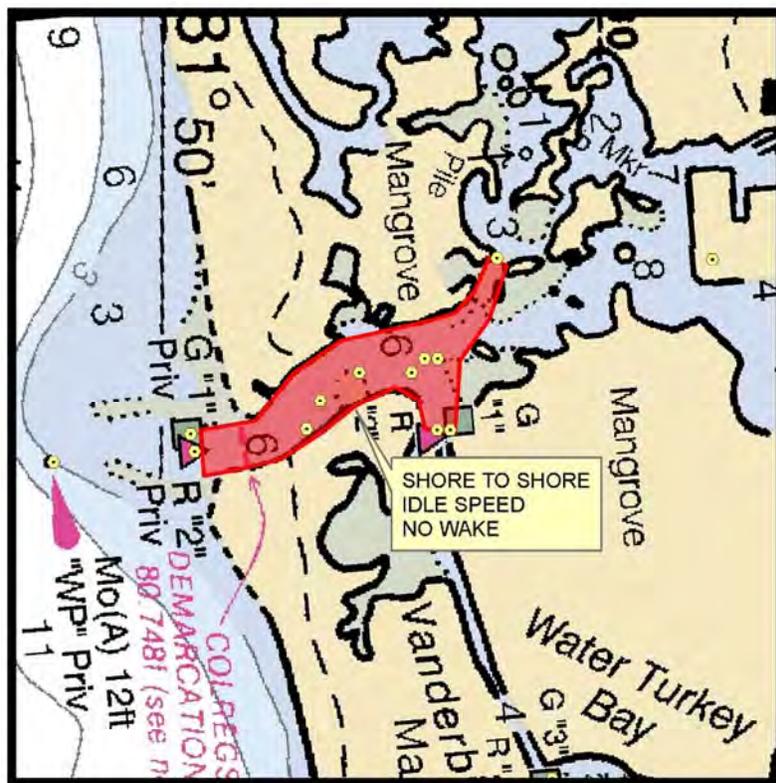


Figure 7: Wiggins Pass ISNW Recommendation

Guide / Commercial Permits

The majority of the LRRC (9 members) unanimously agreed to keep the Guide/Commercial Permits in place and suggest that FFWCC take no action. One member abstained from voting as they had a bad connection for the teleconference that day.

Appendix A – LRRC Submitted Minority Reports Submitted as of 05/19/2016

- A1 – N3 Vanderbilt Lagoon Submitted by Susan Snyder
- A2 – N4 Doctors Pass Submitted by James Kalvin
- A3 – C4 Dollar Bay Submitted by Nancy Anderson
- A4 – C4 Dollar Bay Submitted by Susan Snyder
- A5 – C9 Johnson Bay Submitted by Susan Snyder
- A6 – C9 & C10 Johnson Bay Submitted by Nancy Anderson
- A7 – C10 Johnson Bay Submitted by Susan Snyder
- A8 – 10,000 Islands Submitted by Susan Snyder
- A9 – 10,000 Islands Submitted by Nancy Anderson
- A10 – Wiggins Pass Submitted by James Kalvin

N3 Minority Report: Vanderbilt Lagoon: submitted by Susan Snyder 4/26/16

SPEED RECOMMENDATION: REPLACE SLOW SPEED/MINIMUM WAKE SHORE-TO-SHORE ZONE WITH IDLE SPEED/ NO WAKE SHORE-TO-SHORE ZONE.

Rationale: Current data supports the need for increased manatee protection from Vanderbilt Lagoon to Wiggins Pass. This area is in the Wiggins Pass Estuarine System, identified by the State of Florida as “Outstanding Florida Water (“OFW”),” 62-302.700 F.A.C. An OFW, is designated worthy of special protection because of its natural attributes. This designation demonstrates that the Florida Department of Environmental Protection recognizes this as an area that provides good habitat for marine creatures, including manatees. Given the frequent manatee sightings in the area, the presence of seagrasses, the number of motorized watercraft using the area, the narrow width and shallow depth of much of the channel, and sign confusion, this area is a critical manatee habitat that needs additional protection in order to 1) prevent manatee/ boat collisions, 2) protect seagrass beds, and 3) provide a “safe area where manatees can rest, feed, reproduce, give birth or nurse undisturbed by human activity.” (1) (References, indicated with blue numbers throughout this document, are listed on page 3.)

Supporting Data:

1) Evidence of Manatee Use: Although FWC Aerial survey data collected in 2006-2008 lists only four manatees in the warm season and no manatees in the cold season (2), FWC qualifies its findings with: “These surveys are inexact because of changing weather conditions, water clarity, manatee behavior, and other factors. As a result, scientists are reluctant to base their evaluations of the manatee population on these surveys.” (3) Also note, this data is 8-10 years old.

More recent anecdotal observations prove manatees are using N3 for mating, nursing, and feeding. Manatees are often observed near the “finger canals” in Vanderbilt Lagoon, and since March, 2008, no fewer than 23 individuals, are known by this LRRC member to have been sighted at Baker-Carroll Point (BCP). BCP is located at the north end of N3, just south of Water Turkey Bay. Twenty manatees were observed in Warm Season (April-October) and 14 in Cold Season (November - March). Seasonal overlap occurred with a 2012 mating herd.

Sightings include: **2008:** March 28, a pair of manatees were swimming near Delnor-Wiggins State Boat ramp. (EXHIBIT A.) **2012:** March 26 - April 2, a mating herd of at least 10 individuals were spotted south of Water Turkey Bay, and reported to Chris Boland (Imperiled Species Division of FWC) on March 27, 2012. (EXHIBITS B - D) **2015:** April 6, a mother nursing her calf was in the lagoon near the Delnor-Wiggins State boat ramp. FWC Law Enforcement and a Collier County Marine Sheriff came to look for what was reported by a BCP resident as a large dead manatee being pushed by a small manatee. November, a manatee was swimming near the seawall. December, a manatee was swimming near the seawall. **2016:** April 1, a manatee was swimming at the BCP Marina entrance. April 11, a manatee was swimming at the northern tip of BCP.

April 14: a large manatee was swimming south along the seawall. Later that evening it was seen swimming north, April 25, a mating herd of 5 manatees were observed at Delnor-Wiggins State Boat Ramp and later at the small lagoon SW of the ramp.

(EXHIBITS E - H)

2) Seagrass Presence: “Existence of features within the area that are essential to the survival of, or are known to attract manatees, such as seagrasses...” is an item that the Commission utilizes in determining restrictions. (4) Prop wash removes seabed sediments and dislodges seagrasses, therefore, at “idle speed,” there is less habitat destruction than at “slow speed”. The “destruction of essential manatee habitat” is an item that the Commission utilizes in determining restrictions. (5) Seagrasses are well-documented in N3. In fact, on March 1, 2012, the Collier County Planning Commission determined that a developer, Vanderbilt Partners II LTD., could not build a 49-wet slip marina in N3 because it would adversely affect the seagrass beds.

3) Evidence of Boat Use: Numerous motorized watercraft use N3, and many are traveling at fast speed. (EXHIBITS I & J) Collier County Sheriffs with the Marine Division and FWC Law Enforcement have responded when called, and have kept dispatch records. Launching points include Delnor-Wiggins State Park Boat Ramp, single family docks that line “finger canals” of Vanderbilt Lagoon, multiple condominium and hotel docks along the western shore of Vanderbilt Lagoon, the Baker-Carroll Point Marina, and the South Bay Marina (which rents boats).

4) Channel Characteristics: A factor the Commission utilizes in determining speed restrictions is “Characteristics of the waterway.” (6) Much of the channel between Vanderbilt Lagoon and Wiggins Pass is very narrow and shallow. The width is ~ 50 feet. Two posted signs state that at low tide, the depth of the channel is maintained at 3 feet. When tides are low, most water outside the channel is too shallow to be used by either motorized watercraft or manatees. (EXHIBIT K) Because motorized watercraft and manatees must use the same narrow, shallow channel at these times, it is inevitable that manatees are cut by props and receive blunt-force injuries from collisions. “The faster a boat goes, the more force is applied to a ‘strike.’” (7) Idle speed from the Vanderbilt Lagoon north to Wiggins Pass would reduce the strike force.

5) Analysis of FWC Aerial Boat Survey and Mortality Data: The 2006-2007 FWC “Fast” Boat Density and Manatee-Boat Overlap for all months was only .06.(8) This low number can be attributed to the fact that only four manatees were documented in the 2006-2008 survey. (2) As stated earlier, that low manatee count is unsupported by recent observations. In the FWC notebook information for N-3, Table 5 shows there were two perinatal carcasses found and no boat-related mortalities reported. (9) However, absence of boat-related mortality data (really carcass count) does not mean manatees have not been struck. With the present density of boats and manatees using the same narrow, shallow channel, it is likely that manatees are receiving physical damage from collisions in N3, including propeller scars (see EXHIBITS F - H) and blunt force injuries. Chronic injuries can linger for days, weeks, or longer before the manatee finally

succumbs from internal bleeding or infection. (7) In such cases, the corpse may be found far from where it was struck.

6) **Signage Confusion:** A sign at the southern end of Water Turkey Bay, indicates the speed in N3 traveling South from that point is Idle Speed/No Wake. (EXHIBIT M) A sign south of the 111th street bridge facing North indicates the speed is Slow Speed/Minimum Wake. (EXHIBIT N) Thus, based on posted signage, channel speed is different depending on direction of travel. There is no speed sign what-so-ever at the Delnor-Wiggins State Boat Ramp. **Solution:** Making N3 an IDLE SPEED/NO WAKE ZONE, and posting correct signage, including a speed sign at the state boat ramp, will eliminate speed signage confusion.

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- (1) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 2, page 5, 68C-22.001 Scope and Purpose, (1).
 - (2) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 3, Table 1, p. 19
 - (3) "U.S. Fish & Wildlife Service North Florida Ecological Services Office....Population Status"
<http://www.fws.gov/northflorida/Manatee/manatee-gen-facts.htm>
 - (4) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," (Section 2, page 5, 68C-22.001 Scope and Purpose item (2) (a) 2 e
 - (5) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 2, page 5, 68C-22.001 Scope and Purpose (2) (a) 1. c
 - (6) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 2, page 5, 68C-22.001 Scope and Purpose, (2) (a) 2. f
 - (7) "Information for Boaters and PWC Operators...Causes of Manatee Deaths in Florida"
"<<http://myfwc.com/education/wildlife/manatee/for-boaters/>>"
 - (8) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 3, Table 4, p. 23.
 - (9) "Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016," Section 3, Table 5, p. 24
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N3 Exhibits for this Minority Report begin on the next page.

EXHIBIT A: March 28, 2008: A pair of manatees was sighted near Delnor-Wiggins State Boat Ramp.

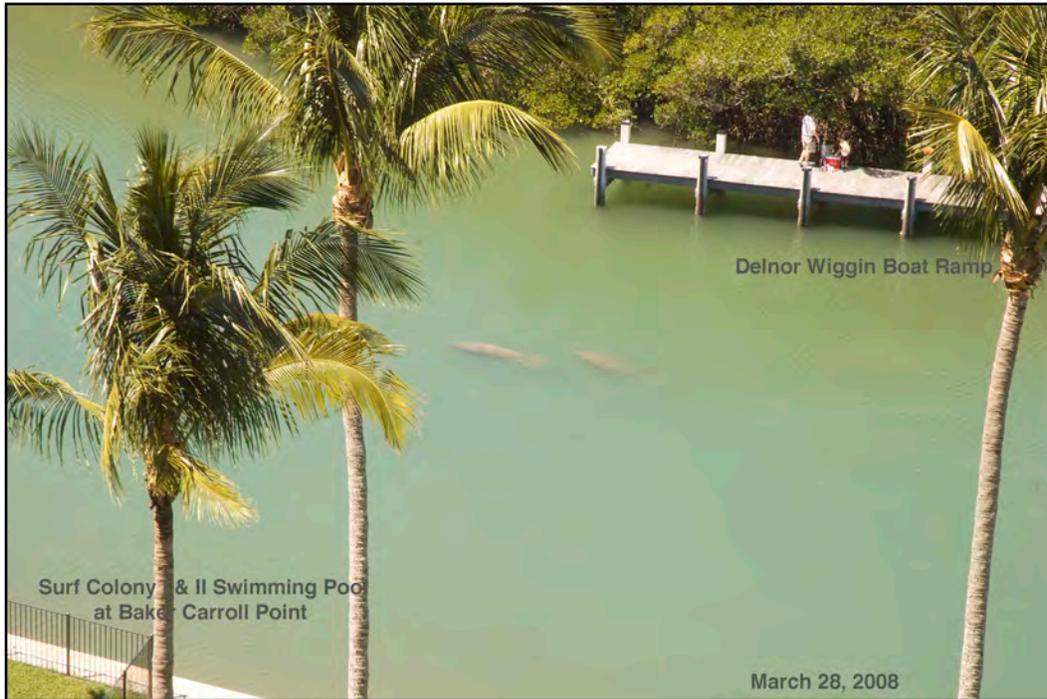


EXHIBIT B: March 26, 2012: Four manatees were swimming between Vanderbilt Surf Colony III Condo and Delnor-Wiggins State Boat Ramp.



EXHIBIT C: April 2, 2012: A mating herd of 10 was photographed near Baypoint Condo, Baker-Carroll Point .



EXHIBIT D: This map shows some of the many manatee sightings between March 26 & April 3, 2012. The width of the waterway between the Dunes Condominiums and Baker-Carroll Point is 226 feet. Note the location and width of the narrow Vanderbilt Channel.



EXHIBIT E: April 25, 2016: A mating herd of 5 manatees was at Delnor-Wiggins State Boat Ramp.



EXHIBIT F: April 25, 2016: This closer photograph of the mating herd at Delnor-Wiggins State Park Ramp shows many have fresh propeller scars.



EXHIBIT G: April 25, 2016: The mating herd moved to a lagoon SW of the state boat ramp. Note the scarring on the back and tail of the manatee on the left.



EXHIBIT H: April 25, 2016: A pair is mating within feet of the Delnor-Wiggins State Boat ramp.



EXHIBIT I: These February 11, 2012 PWCs are quite typical of weekend users of N3. These were launched from Delnor-Wiggins State Boat Ramp, where there is no posted speed sign or manatee sign.



EXHIBIT J: Typically on weekends in season, there is a lot of boat traffic. This particular day (April 7, 2012) was also when the mating herd was nearby. Note the location of Channel Marker 13, which is the far right green marker.



EXHIBIT K: This photograph was taken in the early morning at low tide, looking NE into Water Turkey Bay. Note the location of Channel Marker 13 and the sandbar to the right of the marker.



EXHIBIT L: April 7, 2012: A manatee (part of the mating herd) looks at Channel Marker 13. At low tide, this manatee would be on a sandbar, as noted in EXHIBIT K . EXHIBITS J & L were photographed moments apart, proving how close the watercraft are to the mating herd.



© Taken from Roof of Vanderbilt Surf Colony/ Channel Marker 13/ Water Turkey Bay
4/7/12 by Susan Leach Snyder

EXHIBIT M: This sign facing South from Water Turkey Bay, indicates the channel speed from this point south is ISNW.



EXHIBIT N: This sign facing North from just south of the 111th (Immokalee Rd./Bluebill Ave) street bridge, indicates the channel speed from that point north is SSMW. This sign and the one above are facing one another in the same section of N3.



Collier County Local Rule Review Committee

Minority Opinion

N4 – Dr.'s Pass / Moorings Bay

5/5/16 - amended

Historically, a “manatee zone” has meant that an area has one or more of the following features:

- * Established feeding ground w/ abundant food sources
- * Warm water discharge area
- * Breeding area
- * Fresh (drinking) water source
- * Migration corridor
- * Synoptic survey data showing high or consistent usage during all or parts of the year
- * Mortality relating to boat strikes

Moorings Bay has none of those features. Though some sea grass can be seen on the bar adjacent to Dr.'s Pass during certain times of year, this is generally after the summer season (study submitted for consideration was done in August). With herbivores that consume between 100 and 150 pounds of vegetation per day, this particular food source is limited, and not enough to be considered a consistent food source for any number of animals.

Though the author of this minority report agrees that Moorings Bay should be a slow speed area as it always has been for boating safety, naming this body of water a “manatee zone” lowers the standard of such a designation such that any water body in Florida could have the same designation and vessel regulations applied.

Respectfully Submitted

James Kalvin
Chairman, Collier County LRRC

Minority Report:
C-4 Dollar Bay / Nancy Anderson

Minority Opinion: I believe FWC's Option 2 is the best choice. Change all or part of the existing zone to a shore-to-shore Slow Speed zone *during the warm season only or year round, for continuity.*

A slow speed zone shore to shore would provide greater protection of the manatees as well as a food source, the documented continuous seagrass beds.

Information to support opinion:

1. It is clear manatees are in this area.

FWC identified this area as 1) a "Potential higher risk area", 2) having "High Fast Overlap," and 3) "Moderate manatee density during the warm season." Specifically, the "manatee density for this area was moderate (1.1 times the overall mean density) during the warm season and low in the cold season. Fast Overlap was high (4.4 times the overall mean) during the warm season but low in the cold season. A boat operator reported striking a manatee in April 2015 while traveling at about 25 mph just north of Dollar Bay."

2. Seagrasses in this area form continuous beds thus providing a food source for manatees.

References for statements referring to reason #2

Ecology and Conservation of the Sirenia / Dugongs and Manatees Helen March, Thomas J. O'Shea and John E. Reynolds III; p. 141

Seagrass communities are important habitats for the West Indian manatee. Seagrasses are limited to coastal waters and are highly vulnerable to human impacts because the coastal zone supports a high proportion of the world's human population, a proportion that is increasing.

Ecology and Conservation of the Sirenia / Dugongs and Manatees Helen March, Thomas J. O'Shea and John E. Reynolds III; p. 141

Refer to Seagrass Study (Preliminary Data Benthic Habitats) Rookery Bay National Estuarine Research Reserve, presented by Nancy Anderson on 4/22/16

Minority Report: C-4 Dollar Bay by Susan Snyder

Facts about C-4:

FWC identified this area as 1) a “Potential higher risk area”, 2) having “High Fast Overlap,” and 3) “Moderate manatee density during the warm season.” Specifically, the “manatee density for this area was moderate (1.1 times the overall mean density) during the warm season and low in the cold season. Fast Overlap was high (4.4 times the overall mean) during the warm season but low in the cold season. A boat operator reported striking a manatee in April 2015 while traveling at about 25 mph just north of Dollar Bay.”

Seagrasses in this area form continuous beds. (1) Section 379.2431(2) F.S. (The Florida Manatee Sanctuary Act), 68C-22.001 Scope and Purpose lists conditions where restrictions are necessary to protect manatees or manatee habitats. The Act recognizes “the existence of features within the area that are essential to the survival of, or are known to attract, manatees, such as seagrasses or other food sources...” (2)

Existing Zone: This bay is a 30/SS zone pursuant to the existing FWC rule.

Minority Opinion: Option 2 is a better choice. Change all or part of the existing zone to shore-to-shore Slow Speed Zone.

Rationale for Minority Opinion: A slow speed zone would better protect the manatees by giving both manatees and boat captains more time to react to prevent possible collisions. Further, if there are collisions, blunt force injuries to the manatees will be much less severe. Finally, slow speed will reduce turbidity, creating less stress on the seagrasses.

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- (1) Preliminary Data Benthic Habitats map: [The Journal of Wildlife Management 75 \(2\): 399-412; 2011;DOI: 10.1002/jwmg.41](#) “New Aerial Survey and Hierarchical Model to Estimate Manatee Abundance:
(2) “Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016,” Section 2, page 5, 68C-22.001 Scope and Purpose (2) (a) 1. c

Minority Report: C-9 Johnson Bay North by Susan Snyder

Facts about C-9:

FWC identified this area as 1) a “Potential higher risk area, 2) a “Very high Fast Overlap”, and 3) a “High manatee density in warm season.” Specifically, the manatee density for this area was high (4.5 times the overall mean density) during the warm season and low during the cold season. Fast Overlap was very high (8.8 times the overall mean) during the warm season but low during the cold season.”

Seagrasses in this area form discontinuous beds. (1) Section 379.2431(2) F.S. (The Florida Manatee Sanctuary Act), 68C-22.001 Scope and Purpose lists conditions where restrictions are necessary to protect manatees or manatee habitats. The Act recognizes “the existence of features within the area that are essential to the survival of, or are known to attract, manatees, such as seagreases or other food sources...” (2)

Water outside the channel is very shallow.

Existing Zone: 30/SS zone pursuant to the existing FWC rule.

Minority Opinion: Option 2 is a better choice. This option would change all or part of the existing zone to a shore-to-shore Slow Speed Zone.

Rationale for Minority Opinion: Since water outside the channel is very shallow, manatees must use the channel to traverse this waterway. This places them in the same location as the boat traffic. A slow speed zone would better protect the manatees by giving both manatees and boat captains more time to react to prevent possible collisions. Further, if there are collisions, blunt force injuries to the manatees will be much less severe. Finally, slow speed will reduce turbidity, creating less stress on the seagrasses.

(1) Preliminary Data Benthic Habitats map: [The Journal of Wildlife Management 75 \(2\): 399-412; 2011;DOI: 10.1002/jwmg.41](#) “New Aerial Survey and Hierarchical Model to Estimate Manatee Abundance:
(2) “Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRRC, March 25, 2016,” Section 2, page 5, 68C-22.001 Scope and Purpose (2) (a) 1. c

Minority Report:

C-9 Johnson Bay North & Central C-10 / Nancy Anderson

Minority Opinion: I believe FWC's Option 2 is the best choice. Change all or part of the existing zone to a shore-to-shore Slow Speed zone *during the warm season only or year round, for continuity.*

Information to support opinion:

1. Very High Fast Overlap / High Manatee Density during warm season

North: FWC identified it as potential higher risk area. Very high Fast Overlap and high manatee density during the warm season. Manatee density was high (4.5 times the overall mean density)
Fast Overlap was very high (8.8 times the overall mean) during the warm season but low during the cold season.

Central: FWC FWC identified it as potential higher risk area. Very high Fast Overlap and high manatee density during the warm season.
Manatee density was high (3.6 times the overall mean density)
Fast Overlap was very high 9.5 times the overall mean)

Although this data dates back 8-10 years (2006-2008), it's likely to still hold true today due to the following facts based on research see references below: ([*References for statements referring to reason #1*](#))

- Deeper channels, Intracoastal Waterways and the "travel corridors" of boats are the same travel corridors that manatees use during their migratory warm season.
- Manatees repeat their migratory patterns and destinations from one year to the next.
- Manatee calves learn the migratory patterns from their mothers and follow the same routes.

Because of these facts, it would be logical to conclude that that same very high fast overlap that was identified in 2006 would still exist today .

Page 2

C-9 Johnson Bay North & Central C-10 / Nancy Anderson

References for statements referring to reason #1:

Manatee Movements / Travel Corridors:

Placing a transmitter on a manatee yields a great deal of information about the behavioral biology of both that individual and the species as a whole. (Reid et al. 1995; Deutsch et al.2003) Through tracking, we have learned that manatees use the same waterways that boats use to navigate from area to area. This habit of sharing canals and channels with boats puts manatees directly in harm's way.

The Florida Manatee Biology and Conservation: Roger L. Reep & Robert K. Bonde 2006
Deeper channels also used as migratory routes (Kinnaird 1983).
Boat channels are often used by manatees to travel from one region to another (Curran 1989; USGS/BRD 1993)

Migratory Patterns: A multi-year (1986-1998) telemetry study of 78 Florida manatees along the Atlantic coast of the United States: Travel routes typically followed the dredged channel of the Intracoastal Waterway between the mainland and barrier islands although some manatees also travelled in the ocean just beyond the breaking surf.

All tracked manatees moved from offshore seagrass beds to inland rivers, creeks and other sources of fresh water every 2-8 days, and travelled along distinct linear corridors (Stith et al. 2006).

Learned Behaviors: Manatees from the Atlantic coast that were calves when their mothers were tracked were also tracked as subadults; the subadults adopted the migratory patterns of their mothers and showed strong philopatry to the warm season ranges that they had occupied as nursing calves.

Individuals repeated their migratory patterns from one year to the next , and showed high fidelity to both warm season and winter destinations (Deutsch et al.2003)

Page 3 C-9 Johnson Bay North & Central C-10 / Nancy Anderson

2. Respiration Frequency

Manatees surface to breathe every 1-8 minutes thus increasing the possibility that a boat may come in contact with a manatee.

References for statements referring to reason #2:

Ecology and Conservation of the Sirenia / Dugongs and Manatees Helen March, Thomas J. O'Shea and John E. Reynolds III; p. 155

Respiration frequency is influenced by multiple factors, including activity level, body size, water temperature, water depth and reproductive status. Bottom-resting adult Florida manatees rise to breathe every 1-8 minutes (maximum 24 minutes; Reynolds 1981a), but breathe more frequently while traveling (Hartman 1979).

Exhalations last about 1-3 seconds, with inhalations slightly shorter, depending on activity level (Hartman 1979). Manatee cows and their calves often breathe synchronously (Hartman 1979; Reynolds 1981b), and synchronous breathing also occurs in small groups of manatees and dugongs (Jarman 1966; Hartman 1979; Hodgson 2004).

3. Seagrass/ Food Source shown to be in these areas

References for statements referring to reason #3

Ecology and Conservation of the Sirenia / Dugongs and Manatees Helen March, Thomas J. O'Shea and John E. Reynolds III; p. 141

Seagrass communities are important habitats for the West Indian manatee. Seagrasses are limited to coastal waters and are highly vulnerable to human impacts because the coastal zone supports a high proportion of the world's human population, a proportion that is increasing.

Ecology and Conservation of the Sirenia / Dugongs and Manatees Helen March, Thomas J. O'Shea and John E. Reynolds III; p. 141

Refer to Seagrass Study (Preliminary Data Benthic Habitats) Rookery Bay National Estuarine Research Reserve, presented 4/22/16

4. Boat Speed & Sublethal Injuries: refer to notes submitted by Nancy Anderson on 4/8 and 4/22/16

Minority Report: C-10 Johnson Bay Central by Susan Snyder

Facts about C-10:

FWC identified this area as 1) a “Potential higher risk area,” 2) a “Very high Fast Overlap,” and 3) having “High Manatee density during warm season.” Specifically, the “manatee density for this area was high (3.6 times the overall mean density) during the warm season and low during the cold season. Fast Overlap was very high (9.5 times the overall mean) during the warm season but low during the cold season.”

Seagrasses in this area form continuous beds in some locations and discontinuous beds in other locations. (1) Section 379.2431(2) F.S. (The Florida Manatee Sanctuary Act), 68C-22.001 Scope and Purpose lists conditions where restrictions are necessary to protect manatees or manatee habitats. The Act recognizes “the existence of features within the area that are essential to the survival of, or are known to attract, manatees, such as seagreases or other food sources...” (2)

Existing Zone: 30/SS zone pursuant to the existing FWC rule.

Minority Opinion: Option 2 is a better choice. This option would change all or part of the existing zone to a shore-to-shore Slow Speed Zone.

Rationale for Minority Opinion: A slow speed zone would better protect the manatees by giving both manatees and boat captains more time to react to prevent possible collisions. Further, if there are collisions, blunt force injuries to the manatees will be much less severe. Finally, slow speed will reduce turbidity, creating less stress on the seagrasses.

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- (1) Preliminary Data Benthic Habitats map: [The Journal of Wildlife Management 75 \(2\): 399-412; 2011;DOI: 10.1002/jwmg.41](#) “New Aerial Survey and Hierarchical Model to Estimate Manatee Abundance:
(2) “Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016,” Section 2, page 5, 68C-22.001 Scope and Purpose (2) (a) 1. c

Minority Report: 10,000 Islands by Susan Snyder

Facts about 10,000 Islands:

This area is used extensively by manatees. Although data provided by FWC is dated, manatee aerial surveys (1986 - 1993) show 86.7 manatees per survey (4942 total) for both seasons; 3303 total in the warm season. (1)

This area is used by many boaters. Boat Aerial Surveys (2006-2007) show 257.1 boats per survey (4114 total) for both seasons; 3697 total in the warm season. (2)

Boat-related Manatee Mortality from 1974 to 2015 totals 76 with 36 killed in summer months and 40 killed in winter months. **Mortality numbers in the last 15 years (2000-2015), 31 deaths, equates to 41% of all manatees killed by boats in the last 41 years.** (3) This number proves current speeds are not protecting manatees.

Unlike other counties in Florida, Collier County manatee population is not increasing, and we cannot afford to be complacent about speed zones. The average number of manatees per synoptic survey for the county between 1991 and 2015 is 184 with the low being 98 in 2002 and the high of 354 in 2001. (4)

Seagrasses in this area form discontinuous beds (5) Section 379.2431(2) F.S. (The Florida Manatee Sanctuary Act), 68C-22.001 Scope and Purpose lists conditions where restrictions are necessary to protect manatees or manatee habitats. The Act recognizes “the existence of features within the area that are essential to the survival of, or are known to attract, manatees, such as seagrasses or other food sources...” (6)

Existing Zone: According to FWC, there are existing 30/20 zones in most waters of 10,000 Islands outside of Everglades National Park with the exception of the Faka Union Canal/Port of the Islands area and the immediate vicinity of Everglades.

Minority Opinion: Change 30/20 zones to 30/Slow Speed zones where there are marked channels, and 20 shore-to-shore speed zones where there are no marked channels.

Rationale for Minority Opinion: These changes will better protect manatees by giving both manatees and boat captains more time to react to prevent possible collisions. Further, if there are collisions, blunt force injuries to the manatees will be much less severe. Finally, slower speeds will reduce turbidity, creating less stress on the seagrasses.

- (1) Figures 55 & 56 (pg. 78 & 79) Florida Fish and Wildlife Conservation Commission Materials for Collier County LRRC March 25, 2016.
- (2) Figures 57 & 58 (pg. 80 & 81) Florida Fish and Wildlife Conservation Commission Materials for Collier County LRRC March 25, 2016.
- (3) Figures 59 & 60 (pg. 82 & 83) Florida Fish and Wildlife Conservation Commission Materials for Collier County LRRC March 25, 2016.
- (4) <<http://www.colliergov.net/home/showdocument?id=64884>> FWC Manatee Synoptic Survey Results for Collier County 1991-2015. This graph was plotted from data provided to the LRRC on April 1, 2016 by Scott Calleson.
- (5) Preliminary Data Benthic Habitats map: The Journal of Wildlife Management 75 (2): 399-412; 2011;DOI: 10.1002/jwmg.41 “New Aerial Survey and Hierarchical Model to Estimate Manatee Abundance:
- (6) “Florida Fish and Wildlife Conservation Commission... Materials for Collier County LRRC, March 25, 2016,” Section 2, page 5, 68C-22.001 Scope and Purpose (2) (a) 1. c

Minority Report: Ten Thousand Islands

Nancy Anderson

Minority Opinion:

Change 30/20 zones to 30/Slow Speed zones where there are marked channels, and 20 shore-to-shore speed zones where there are no marked channels.

I agree with all aspects of Susan Snyder's Minority Opinion Report regarding the 10,000 Islands.

I would like to include a couple of additions to her report:

1. With the completion of the Picayune Strand Restoration Project, natural fresh water sheet flow will return to the Faka Union Canal and, most likely, to areas west of the canal. This may attract more manatees to the area west of the canal as there probably will be additional fresh water sources, thus more manatee travel corridors. In addition, the Manatee Mitigation Site to the west of the canal should also provide fresh water and a warm water refuge for manatees.
2. This area has a large travel corridor area for manatees as shown by the map below where manatees were tracked using satellite-linked GPS technology. The map also shows grass beds, in green. Plate 13 Detailed movements between feeding areas and freshwater sites using satellite-linked GPS technology (2001).
3. Rookery Bay Watershed Engineering Research Project, Seagrass Study " Preliminary Data Benthic Habitats, presented by Nancy Anderson 4/22/16.

Although the seagrass beds in this area may have changed since the U.S. Geological Survey of 2001, the "Seagrass Study " Preliminary Data Benthic Habitats", indicates there is still seagrass in this area.

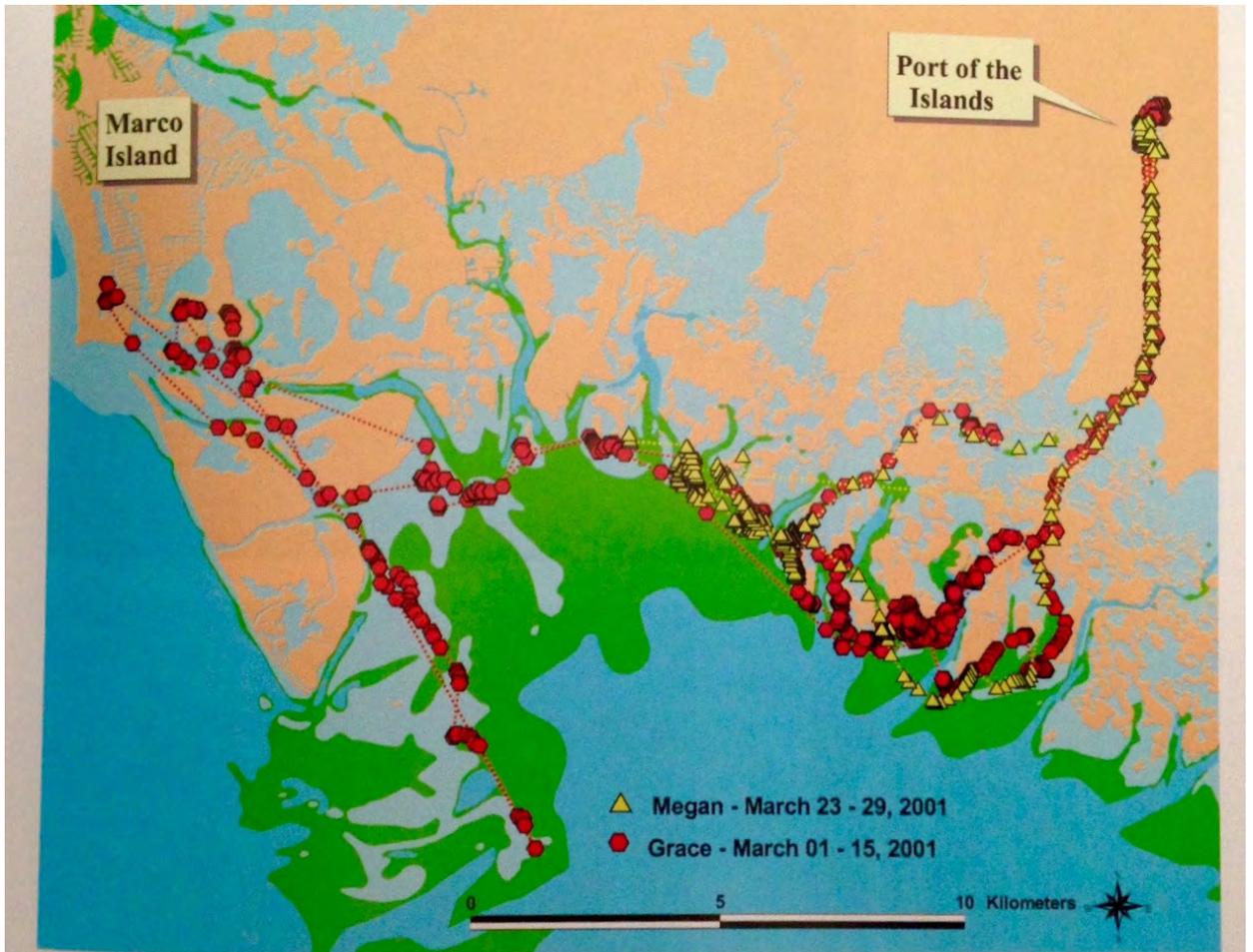


Plate 13. Detailed movements between feeding areas and freshwater sites for two manatees in the Ten Thousand Islands area of southwest Florida obtained using satellite-linked GPS technology. Grass beds shown in green. (Figure by Rachel Henriques and U.S. Geological Survey.)

Collier County Local Rule Review Committee

Minority Opinion

Wiggins Pass

5/17/16

Wiggins Pass is a shallow, narrow, and treacherous inlet for Mariners. Currents are extreme on the incoming and outgoing tide, and boaters are required by law to do what is needed to keep control of their vessels.

Posting Wiggins Pass as an "Idle Speed" zone will confuse operators, and will cause problems with boaters and manatees. Those who try to comply with this designation will have trouble maintaining their position in the channel, presenting a hazard to both man and animal.

Mortality data does not suggest that changes in this area are necessary.

Being that the Pass was included with other proposed zone modifications in the area, I suggest that this entire area be left as is - with current errant markers repaired or replaced as needed to notify boaters of current regulations.

Respectfully Submitted,

James Kalvin
Chairman