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Cc: [Allen, Shauna R](#); [Alsentzer, Daniel](#); [Draper, Eric](#); [Small, Parks](#)
Subject: The ARC May Cayo Costa Management Plan Update
Date: Monday, April 12, 2021 3:36:34 PM
Attachments: [18March18FinalStuart_CayoCostaManagementPlan_Recommendations.pdf](#)
[12April21_Stuart_CayoCostaManagementPlan.pdf](#)

Dear Mr. Hamilton, et. al.:

I am taking this opportunity to provide public comment for the May 2021 Acquisition and Restoration Council hearing. The focus of my comments and concerns pertain to the 2021 draft Cayo Costa Management Plan's deletion of staff's original recommended policy to cancel the commercial lease for the island's south dock. The rescension of this policy presents a failure in sound management planning and coherent public policy consideration for Cayo Costa's south island area, commonly referred to as The Narrows. The pre-Sept. 2020 South Dock Policy should be restored. Please see the attachment 2018 Recommended Management Plan and the 12 April ARC correspondence.

I will call to follow up and to address questions, comments, etc.

Thank you and have a great day!

Greg

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April 12, 2021

To: Shawn Hamilton, ARC Chairman; DEP Deputy Secretary of Land & Recreation

From: Greg Stuart, MAURP

Re: ARC Public Comments _ The South Dock and Cayo Costa Ten Year Management Plan Update

CC: Acquisition and Restoration Council Members Dr. William Palmer, Eric Sutton, Dr. Thomas Eason, Erin Albury, Dr. Timothy Parsons, Lynetta Usher Griner, and Elva Peppers, c./o. Shauna Allen

Dear Mr. Hamilton:

I am taking this opportunity to provide public comment for the May 2021 Acquisition and Restoration Council hearing. The focus of my comments and concerns pertain to the 2021 draft Cayo Costa Management Plan's deletion of staff's original recommended policy to cancel the commercial lease for the island's south dock. The rescission of this policy presents a failure in sound management planning and coherent public policy consideration for Cayo Costa's south island area, commonly referred to as The Narrows.

As an introduction I am a twenty-four year resident of Matlacha. By the gift of proximity, I have been fortunate enough to have been able to raise and share with both my children and now my grandchildren the splendors of Cayo Costa! My family and I have explored the tropical hardwoods, fished around the bayside mangrove swamps and have played on the beaches for over two decades. In addition, I am a professional land use planner with over 40 years of public and private sector consulting experience. My comprehensive land use planning expertise includes testimony in courts ranging from the Superior Federal Court in Tacoma, WA, to Lee County Circuit in Fort Myers. Consequently, I have observed and experienced the island from not only a recreational user perspective, but also from a professional land use management point of view (see www.StuartUrbanDesign.com).

In 2018 I reached out to Parks and Recreation Staff (Daniel Alzentzer, et. al,) to offer my perspective on Cayo Costa Island in general and the mis-managed, unwarranted commercial utilization of The Narrows in particular. I developed the Recommendations To The 03/2018 Cayo Costa State Park Draft Unit Management Plan, a copy of which is attached to this correspondence. I presented the summary planning report and took part in the management planning workshop on Pine Island. As a follow up to the workshop I went to Tallahassee with two other interested citizens who were, and still are, concerned with the same set of issues that of myself. That is, the excessive upland and marine

impacts generated by the commercial use of the former non-commercial and at the time, unimproved south island boat dock.

I sincerely and respectfully urge you to read the attached summary planning report. Succinctly, the recommendations are based on an integrated, systems analytical approach. For Cayo Costa management planning this method take into account the island's geography, coastal morphology and processes, ecological characteristics, habitat values and user activities. Recognizing the island's "drumstick" form, Boca Grande Pass and Captiva Pass inlet systems, coastal macro-geomorphic processes, ecological and habitat conservation goals, and state park facilities and infrastructure, it is very clear that the north end of the island has the highest resilience to park visitation, recreational uses and coastal processes, and that The Narrows has the least resilience. This finding cannot be disputed. Taking politics out of the equation, it is very clear that commercial utilization of The Narrows is not supportable from a management perspective and not sustainable from a coastal ecological framework.

In 2016 DEP and the Division of Parks and Recreation entered into a non-competitive lease with a commercial charter company to use Cayo Costa's south dock. From a review of the attached Recommendations To The 03/2018 Cayo Costa State Park Draft Unit Management Plan, commercial utilization of the former unimproved boat dock is not supportable and is non-sustainable for the following reasons. Cayo Costa's south end is very narrow, being less than 1/10th of a mile to 3/10th's of a mile wide. The curvature of the coast and proximity to Captiva Pass, leads to greater sensitivity to wind, wave and tide coastal erosion. From an examination of historic air photo's The Narrows has little if any beach accretion while being subject to consistent erosion. The 2018 Draft Unit Management Plan identified Cayo Costa's south end as being starved of sediment (pg. 16 para. 4). The zone's narrow geography lends itself to poor resistance to recreational user impacts. It has limited recovery potential from user activities and larger proportional impacted areas because of its small system area and narrowness. The relative "thinness" of the Dune, Coastal Strand, and Maritime Hammock systems, and the relative absence of coastal grasslands, make The Narrows highly sensitive to negative short-term and long-term recreational user trampling, littering, erosion and upland species habitat impacts. Recognizing that large boat south dock access is constrained due to shallow back-bay waters, The Narrows is also highly sensitive to short and long-term sea grass propeller dredging impacts with subsequent water quality degradation and marine habitat loss.

It is my professional opinion that the 2016 private commercial charter company south dock lease was ill-conceived. The lease was, and still is, not congruent with park best management practices and primary conservation park objectives. With up to forty persons per boat twice daily, the commercial lease grants unrestricted 7 days per week, 365 days per year access. Thus the commercial south dock lease may grant up to 29,200 persons onto the most fragile part of Cayo Costa Island and does so without any direct park oversight. The fact that the south dock is approximately five miles from the park's

management staff, office and hardened recreational facilities makes the commercial use of the south dock even more difficult for efficient management and monitoring. It is my understanding that Division of Parks and Recreation relies on the commercial lessee to manage the subject area and that to this day, Cayo Costa park officials still do not have independent, arms-length data for south dock user counts, user impacts and the like. I have to differ with Staff's 2021 unsubstantiated management policy reversal regarding the suitability and desirability of continued commercial south dock use. I have yet to see any commercial dock user impact analysis and/or carrying capacity assessment as to whether the lease supports park conservation and management goals and whether or not 12,000 to 29,200 more visitors at the south end is even logical. I am copying Daniel Alzentzer, with this correspondence so he can correct me on this matter if in fact a professionally accepted analysis has been completed. Clearly, the recreational management objective should be to reduce, and not to encourage, user impacts within the State Park's least resilient area; i.e., The Narrows.

From 2019 to August 2020, the Division of Parks and Recreation came to the same conclusion as I did. Namely, the continued and unrestricted commercial use of Cayo Costa's south dock is not supportable and is non-sustainable. The draft policy was not only logical and congruent with accepted park planning management principles and practices, it was supported by all members of the participating public, excluding the commercial charter business owner. The pre-September 2020 policy language was as follows:

South Dock / Southern Gulf Beach Access: *In 2016, the existing bayside dock located near the south end of Cayo Costa was designated for concession boats. Visitor use impacts to the natural communities and shorebird/sea turtle nesting habitat have occurred on the beach side of the trail extending from the south dock, indicating the need for closure of this site for facilitated direct public access. The dock and trail will be maintained for park support purposes only. As permitted in other remote areas of the park, this southern portion of the park will remain accessible for visitors by hiking or other authorized means from the Gulf, such as self-guided boating or paddling. Reduced visitation at this site is expected to result in gradual recovery of the observed impacts. Due to resource impact concerns (i.e., seagrass beds and mangrove swamp) and poor navigability of the shallow waters along this segment of the island, alternative locations for a southern concession dock and beach access trail were determined infeasible. As additional parcels are acquired, depth conditions change, and new navigational information becomes available, alternative access points may be evaluated. Concession ferry access will continue to be facilitated through the docks at Pelican Bay."*

It is noted that the ecological facts and management principles and practices that underpin the afore referenced policy have not changed since 2018. Yet, some time around the end of 2020 the above referenced policy was deleted. A review of the public records documents the receipt of a 3 September 2020 letter from the commercial lessee,

Captiva Cruises, to Mr. Eric Draper. I have been told that the correspondence was in association with a meeting with Captiva Cruises and its legal council, which unto itself is entirely appropriate. That said, given the ecological conservation and management goals of the Division of Parks and Recreation, it is also entirely appropriate to speculate on the nature and character of discussions that led to the deletion of what all non-commercially interested public citizens would deem as sound public policy aimed at protecting Cayo Costa Island's most sensitive area.

Is it possible that the commercial lessee challenged DEP with potential legal action? If so, it is important to remind the Committee that the lessee does not own and has no vested property interest in the dock nor the submerged lands. Potential litigation based on the loss of beneficial value argument is not supported by related case law. For example, using billboard amortization cases as an evaluative framework for lease conclusion, the adoption of the afore referenced policy with associated lease "wrap-up" is absolutely and unarguably in the public interest. Consequently, commercial south dock lease cancellation is completely supported by law since it is clearly in the public interest (*Agins v. Tiburon*, 1979). Furthermore, it must be noted that any claim of lost beneficial interest is not total nor absolute. The commercial lessee can still operate tours and use Cayo Costa's Middle Zone for beach landings or the North Zone where hardened facilities exist that can handle the additional traffic (see pages 7 - 9, Recommendations To The 03/2018 Cayo Costa State Park Draft Unit Management Plan). Thus and again, the adoption of pro-conservation management policy with subsequent commercial lease cancellation is eminently supported by law (*Lucas v. South Carolina Coastal Commission*, 1992).

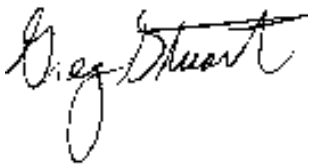
The Fall 2020 lobbying by the commercial charter company claiming that it provides Cayo Costa beach visitation for the handicapped is not accurate nor valid. The south dock does not provide for handicapped access. The existing hardened handicapped access facilities are at the north end of the park, not the south end. Furthermore, the recent staff claim that The Narrows can and should handle an additional 12,000 visitors vis-a-vis the commercial lease cites a study that is not in the public records. I respectfully submit that there is no professionally based and objective, scientifically oriented carrying capacity study that can support the claim that the commercial utilization of south dock with no daily, weekly and annual visitor restrictions and no direct park oversight, offers sound public policy and management practices.

In so far as the Cayo Costa Ten Year Management Plan Update, the south island issue in front of the Committee is very simple. Do you stay true to the parks primary conservation mission and, based upon science and accepted professional management practices, restore the original language and policy cited on page three of this correspondence? Or do you ignore science and accepted professional management principles and practices, grant favor to one commercial special interest, and continue to allow unrestricted, non-monitored south dock commercial use within Cayo Costa's most environmentally fragile area?

An additional and broader issue that the Committee may need to address is Staff's very recent contention that Cayo Costa needs more capacity for greater visitation. If I recall this contention is based on the north end of the park may be at capacity, notwithstanding the lack of documentation regarding north end capacity issues, south island 12,000 person visitation needs, and alternatives such as and including Middle Zone beach landings (see attached 03/2018 Recommendations). As with almost all national and state parks, there is always a limiting capacity for balancing natural resource and scenic conservation goals with passive and active recreational users and activities. If in fact the park's north end is at user capacity and that the north area cannot be further expended and hardened to sustain additional visitors, then does it makes sense add additional visitor capacity to the park in it's area that can least sustain it?

To conclude, I have no vested interest in these issues other than living in the great State of Florida and being a long time user of not only Cayo Costa, but dozens of other State parks. I strongly believe that the Committee needs to look after the interest's of my children and grandchildren and not to the one sole business venture involved in the south dock. The Committee needs to manage the island in a scientifically sound and professionally acceptable manner by placing primary value in conservation and not sustained and/or increased south island commercial charter visitation. The Committee needs to restore the pre-Sept. 2020 South Dock policy language and recommend wrapping-up the commercial lease based up legal guidance. In the coming weeks I very much will want to speak with the ARC members to address any questions or comments that the Committee may have, in addition of allowing me to further this dialogue. Until that time, may the best of fortune be with you!

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Stuart". The signature is fluid and cursive, with a large, stylized "G" and "S".

Greg Stuart, MUARP

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March 15, 2018

RECOMMENDATIONS TO THE 03/2018 CAYO COSTA STATE PARK DRAFT UNIT MANAGEMENT PLAN

Prepared for: Daniel Alsentzer, Park Planner

Office of Park Planning _ Division of Recreation & Parks; FL DEP

INTRODUCTION: As a twenty year resident of Matlacha, on scores of occasions I have taken advantage of my home's close proximity and ease of boat access to take family and friends to Cayo Costa State Park. I have explored the tropical hardwoods, fished around the bayside mangrove swamps and have played on the beaches with my children and grandchildren. The island and state park is a true gem, unique not only to Florida but to America as a whole! As a land use planner with over 33 years of professional consulting experience (see www.StuartUrbanDesign.com), I have a unique perspective on Cayo Costa Island, both as a planning professional and as an avid recreational user. Consequently I am taking this time to offer my comments and recommendations in response to the Cayo Costa Advisory Group's Draft Unit Management Plan. I look forward to participating in the public planning process and the 20 March workshop. My reports emphasis revolves around the Draft Unit Management Plan's Resource Management Component basis (page 11, para. 4):

"Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts."

The issue(s) that I am concerned about and am offering recommendations through the public participation process concern larger ecosystem/recreational use management issues and the rela-

tionship of these issues to outside commercial public access, public communications and economics. Specifically, the purpose of this brief is to introduce an appropriate Resiliency/Distance-decay Recreation Management Approach, more cost effective management through an enhanced interpretive signage program, and a new, much needed funding mechanism.

CAYO COSTA MANAGEMENT GOALS AND BEST PLANNING PRACTICES: In summary, the key Cayo Costa State Park management goals are: (a.) to restore and maintain the islands natural communities and habitat, (b.) to maintain, improve or restore imperiled species populations and habitat, (c.) to provide public access and recreational opportunities, and (d.) to develop and maintain capital facilities and infrastructure necessary to meet the goals and objective of the management plan.



Fig. 1 Cayo Costa Island's Murdock Point and The Lagoon Looking South

From a land use and park planning and management perspective, there are instances where the afore referenced goals are in conflict with each other. As will be discussed, for various island recreation management zones the objective of providing public access and recreational opportunities can be in direct conflict with the objective of maintaining and restoring habitat. Consequently, it is of vital importance that the 2018 Cayo Costa Unit Management Plan specifically identify the area(s) that recreational users and public access conflict with conservation values and objectives. From such explicit identification, better management planning will evolve.

There are a number of factors to be evaluated when assessing and planning for recreational visitor utilization of lands with high conservation values. They are: (i) the conservation value of the site, (ii) its resistance to use, (iii) its recovery from use, (iv) its susceptibility to erosion, (v) the severity of direct and indirect impacts associated with specific activities, (vi) the amount of use, and (vii)

the ecological dimensions to the timing and total area of use (*10 Factors That Affect The Severity of Environmental Impacts of Visitors In Protected Areas*, Catherine Pickering; *Ambio*, 02/2010, 39(1)). For the purpose of this brief, these seven evaluative factors form Best Planning and Recreational Management practices for the author's recommendations to the 2018 Cayo Costa Unit Management Plan.

ISLAND SYSTEMS AND COASTAL DYNAMICS: The new Unit Management Plan is based on clear environmental, habitat and systems documentation. In order to strengthen the proposed draft, it is important integrate upland systems and coastal processes into a unified recreation management framework. The SW Florida barrier island morphodynamics analysis by Richard Davis has led to a more sophisticated understanding of Cayo Costa coastal processes (*Morphodynamics of the West-Central Florida barrier System: The delicate balance between wave and tide domination*; Richard A Davis, Jr. Dept. of Geology Un. of South Florida, Tampa, FL 33620 20 Jan. 1988). This work needs to be better factored into State Park recreation management planning as it pertains to coastal erosion, and coastal user and activity locations.



Cayo Costa Island _ A Complex & Ecologically Diverse Barrier Island Featuring Marine Tidal Marsh, Beach Dune, Coastal Grasslands, Maritime Hammock & Mangrove Swamp Systems.

Fig. 2 The Cayo Costa Island Inlet Morphology

As the Davis study notes, the island narrows from a maximum north end width of 1.7 mi +/- to a minimum south end width of less than 500-ft.. In doing the island's ecological systems become more exposed to risk caused by greater exposure to severe tides, storms sand burial, and unconstrained user recreation activities. Generally speaking, for the southern end of the island (one mile north from Captiva Pass to past The Narrows) there is an absence of east to west upland systems depth which creates less resistance to use, longer recovery period from use and impacts, and susceptibility to coastal and upland erosion.

The south end of the island is bounded by Captiva Pass, a highly dynamic inlet system with associated beach erosion due to mixed conditions of natural evolution and anthropogenic change (*Evaluation of Beach Erosion Up-drift of Tidal Inlets In Southwest and Central FL*; Mohamed A Dabees and Brett Moore Humiston and Moore Engineers, 5679 Strand Ct Naples FL 34110 2017). Of particular note is the coastal cove area south of Murdock Bayou and within The Narrows geographic area. Due to wave action and north to southwest alongshore current, the curve of the coast is more susceptible to and has demonstrated a higher degree of coastal erosion. From the authors casual observations over time, it is clear that the lower and upper beach zones are regularly disturbed by high tides and storm waves. From an ecological perspective The Narrows upper beach zone recolonized by drift line annuals and trailing perennials. Above the reach of annual wave action is a very limited and thin fore dune area, consisting primarily of sea oats. From the authors observations, this zone exists under constant burial from sand blown off the beach and trampling from recreation users.

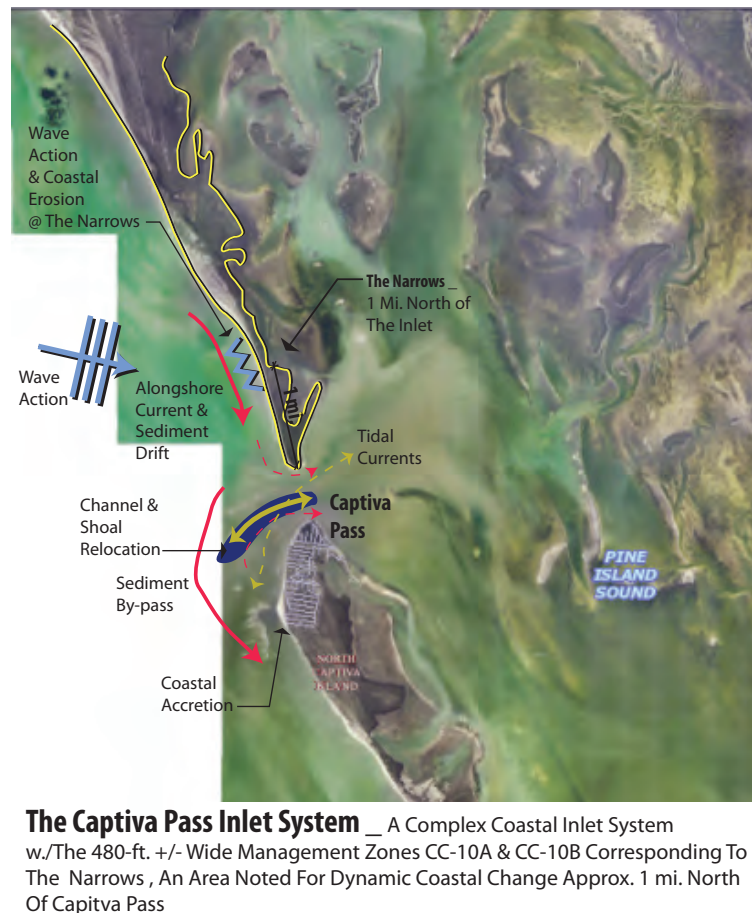
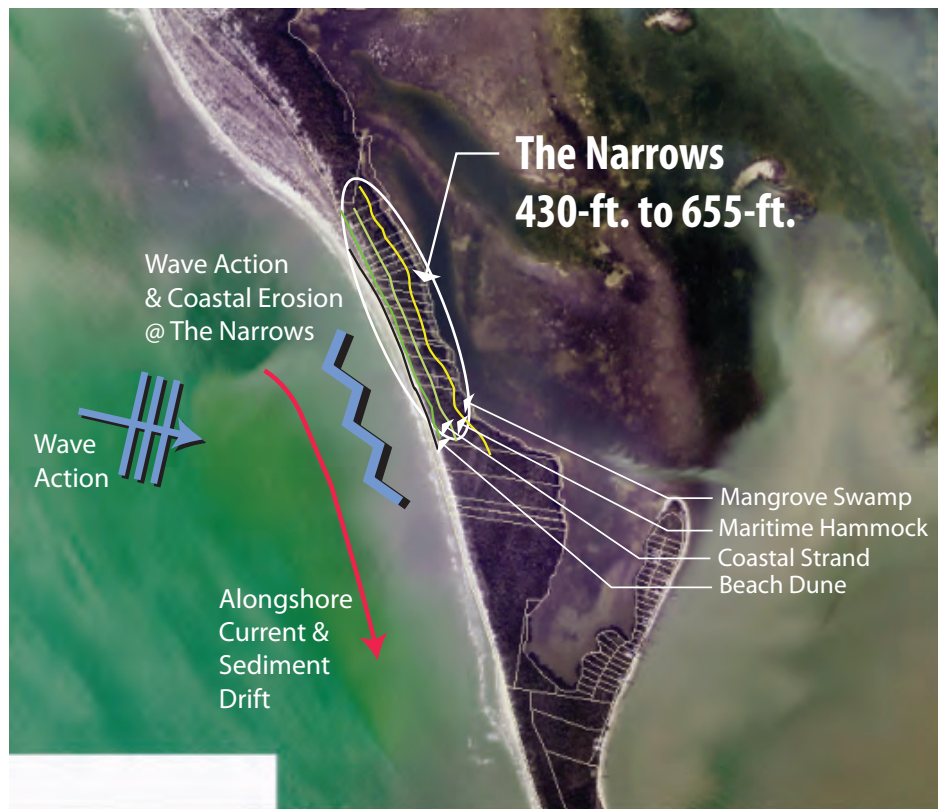


Fig. 3 Captiva Pass Inlet System Dynamics

The Narrows area is approximately 3,400-ft. in length, and 430-ft. to 700-ft. + in width. The Narrows consists of a Beach Zone, a Beach Dune Zone, a Coastal Strand Zone, a Maritime Hammock zone, and a Mangrove Swamp system. The Beach Dune zone is a predominantly herbaceous Sea Oats community occurring on the upper beach and fore dune. Due to the narrow geography and beach erosion, the Beach Dune community is limited in size and width. This area is not that stable, being disturbed by seasonal or storm high tides at least every few years. Behind the Beach Dune zone is the Coastal Strand shrubby community. It too is narrow and is occupied by grasses and trailing shrubs with a scattering of taller shrubs and cabbage palms. Located in front of the Mangrove Swamp system is the Narrows' Maritime Hammock. This includes the shell mound community identified in the Management Plan's Cultural Resources elements, along with FLUCCS 425 (tropical hardwoods), and 427 (live oak). Other than the dense Mangrove Swamp system, the Narrows' Maritime Hammock has an area and dimension that grants it a comparatively higher degree of resiliency when compared to the Coastal Strand and Beach Dune zones.



The Narrows Upland Systems

- * Due To Narrow 430-ft. + Width Low Resistance To Recreational Use & User Impacts, Limited Recovery Potential & Susceptibility To Erosion
- * Management Zones CC-10A, CC-10B & CC-10C
- * FLUCCS 425 Tropical Hardwoods & Some 427 Live Oak, and Coastal Strand Behind The Dune Zone w./Scattered Grasses (grama grass and sea oats) & Shrubs (FL lantana); Beach Dune Zone Species of Concern Include Gopher Tortoise In CS and Roseate Tern, Piping & Snowy Plover, & Loggerhead, Green and Kemps Ridley Sea Turtle

Fig. 4 The Narrows Upland Systems

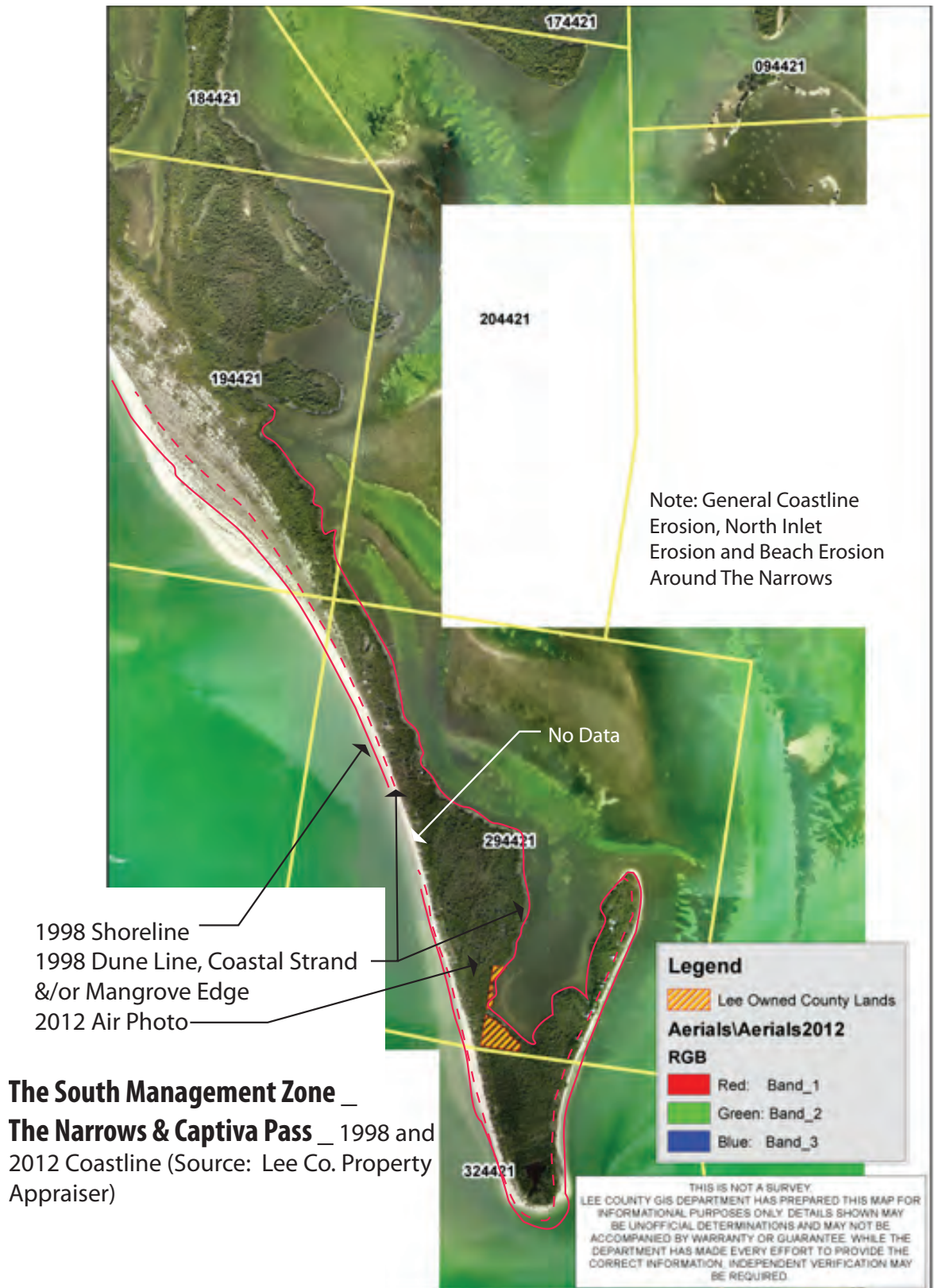


Fig. 5 The South Zone Coastal Erosion

THE RESILIENCY DISTANCE DECAY RECREATIONAL MANAGEMENT ASSESSMENT:

The utilized recreational management assessment is based on an integrated, systems analytical approach that factors in Cayo Costa Island geography, island morphology and coastal processes, ecology, habitat, and user activities. Referring to Figure Five, based on the island's "drumstick" form, Boca Grande Pass and Captiva Pass Inlet systems, the island's macro-geomorphic processes, and ecological systems, habitats and state park facilities and infrastructure, it is very clear that the north end of the island has the highest resilience to recreational uses and coastal processes.

The analysis divides the island into three "Resiliency Zones". The first zone is located in the island's north end. It is the widest part of the island, ranging from 0.7 mi. to 1.7 mi. in width. It contains approximately 1,500 acres, equal to 2.3 square miles. The North Zone is characterized as having high recreational user resiliency because of its width that grants superior habitat resiliency in area and depth. Due to its larger area and width, ecological zones and habitats have enhanced resistance to user activities, have better recovery from use and impacts, and have limited proportional impacted areas due to size. The North Resiliency Zone is noted for beach accretion due to south Boca Grande Pass coastal processes. The North Zone has a large variety of hardened trail systems, and good, back-bay boat docking and support facilities. These factors grant the north end superior user resiliency when compared to the middle and southern portions of Cayo Costa. Hence, it is logical to have the park's active and passive recreational facilities in this zone. The draft 2018 Unit Management Plan is correct in focusing park improvements within the north zone while building upon existing infrastructure. Furthermore, by clustering recreational facilities within the north, maintenance, monitoring and management objectives and tasks are more easily achievable. It is recommended that all group activities, commercial activities, including boat charters, should take place within the north zone area.

The Middle Zone has average user resiliency when compared to the north island. The area is generally comprised of Management Zones CC-07, CC-08 and CC-09 (a & b). It is on average 0.5 mi. to 0.8 mi. in width, has average sized upland mesic systems (Maritime hardwoods and Mesic flatwoods), some hardened trail systems and north to south/southwest longshore coastal sand drift. In the absence of back-bay dock facilities, boat access is restricted to shoreline anchoring. With an average distance of over 2 miles from the campsite area, the Middle Zone remains proximate to effective park management, maintenance and monitoring tasks.

The South Zone has poor user resiliency when compared to the two afore referenced zones. This is due to geography, coastal morphology and processes. The South Zone is very narrow, being less than 1/10th of a mile to 3/10th's of a mile wide. The curvature of the coast and proximity to Captiva Pass, leads to greater sensitivity to wind, wave and tide coastal erosion. From an examination of historic air photo's The Narrows little if any beach accretion. As the 2018 Draft Unit Management Plan points out, the south end of the island is starved of sediment (pg. 16 para. 4). The zone's narrow geography lends itself to poor resistance to user activities, has limited recovery potential from user activities and larger proportional impacted areas because of its small system size. The relative "thinness" of the Dune, Coastal Strand, and Maritime Hammock systems, and the relative absence of coastal grasslands, make the South Zone highly sensitive to negative long-term recreational user impacts. The fact that the South Zone is approximately five miles from the park's hardened recreational facilities area makes the area more difficult for efficient management and monitoring. This fact is especially germane given the recent commercial boat charter use at the old Narrows back-bay dock. Since 2016 the dock has allowed multiple boats per day and with up

to forty persons per boat, to have direct access to the least user resilient part of the island. Clearly, the recreational management objective should be to reduce, and not to encourage, user impacts within the State Park's least resilient area.

THE CAYO COSTA ISLAND RESILIENCY DISTANCE-DECAY MANAGEMENT ASSESSMENT

An Integrated Systems Management Analysis Based On Island Geography, Island Morphology, Coastal Processes, Habitat and User/Activities

The North Zone High

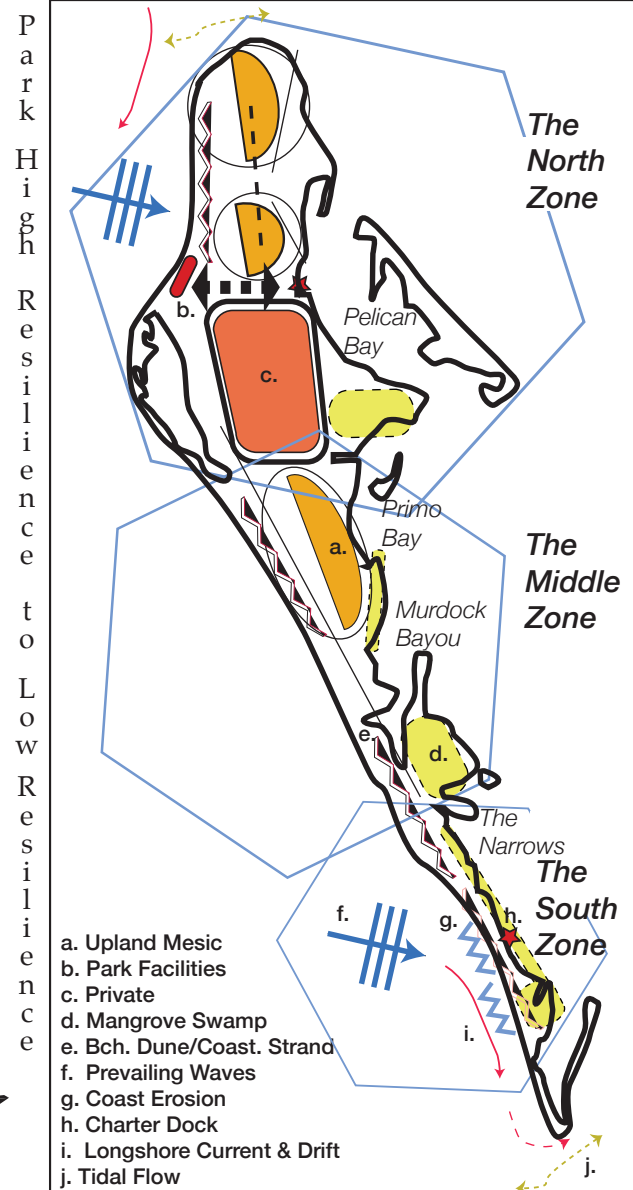
Resiliency: Relying on 0.7 to 1.7 mi. width, south Boca Grande Pass longshore sand deposits w./good beach accretion, large upland mesic areas, existing structured facilities, hardened trail systems, good back-bay and offshore boat docking & facilities, and ease of maintenance & management.

The Middle Zone Average

Resiliency: Zones CC-07, 08 & 09(a & b); Relying on 0.5 to 0.8 mi. width, ave. longshore north to south sand deposits, ave. to above average upland mesic areas, some hardened trail systems, offshore boat anchoring, and average ease of maintenance & management.

The South Zone Poor

Resiliency: Based on narrow < 0.1 to 0.3 mi. width, greater sensitivity to wind, wave and tidal coast erosion with limited beach accretion, limited upland mesic areas, no hardened trail systems, offshore boat anchoring, 1 back-bay dock (commercial charters), and poor ease of maintenance & management due to distance from park facilities.



RECOMMENDATIONS - THE DISTANCE DECAY RECREATIONAL MANAGEMENT

PLAN: As a supplement to the 2018 Draft Unit Management Plan, (UMP) the author's proposed recreation management plan utilizes and builds upon the 2018 Draft UMP's objectives, policies and programs. The proposed recreation management plan uses a distance-decay resiliency approach; i.e., a geographically based, north to south recreation management plan. The plan is based on conservation values, existing facilities resistance to use, recovery from user impacts, potential severity of direct and indirect impacts, erosion resiliency, amount of use to proportionate area, and ease of management and monitoring.

Utilizing the three zonal approach (see Figure 6), the plan calls for the State to continue recreation management facility maintenance, improvement and expansion efforts directed toward the north end of the island. This is to include the State's proposed dock facility expansion, but with particular emphasis on ensuring suitable commercial charter boat docking and associated on-the-ground transportation facilities to assist commercial passengers in getting to the beach. Public access and recreational use is very important objective. Obviously, the best and most user resilient island area is the North Zone. For private boaters the North Zone's shoreline presents a highly resilient area for island recreation, so the area around Murdock Point and north, should be encouraged for anchoring. The Middle Zone is suitably resilient for medium active and passive recreation uses. Corresponding to CC-07, 08 and 09(a & b), the State should place much greater public communication, education and management emphasis via an enhanced interpretive signage program for the Middle Zone's Dune, Coastal Grass, Coastal Strand and Maritime Hammock habitat areas. The focus should be on systems education and responsible use, encouraging proper anchoring locations and the relationship of user to system impacts. If done properly management benefits will be significant. The plan calls for, from Murdock Bayou northward, commercial charter boats shoreline anchoring;. South of Murdock Bayou commercial charter boats anchoring off the shoreline is to be prohibited due to the island's decreasing resiliency. The key new recreation management objective and policy for the South Zone is to limit The Narrow's boat dock to private recreation boater use. Commercial charter boats should be prohibited from using the dock based on acknowledging that two to four 40-person charter boat access ultimately is not sustainable for the South Management Zone. This is due to The Narrow's and South Zone's poor group user resiliency, the areas limited ability to recover from over-use, due to geography, proportional larger impacted areas because of limited habitat size, pronounced coastal erosion, large boat navigational sea grass impacts, and difficulties in effective management and monitoring. (see Figure 7). Succinctly, large group commercial charter boat access should logically be where the facilities and infrastructure are to support large groups; i.e., the North Zone and State Park dock. As with the Middle Zone, the State should place much greater public communication emphasis via interpretive signage. The focus should be on systems education and responsible use, encouraging proper anchoring locations and the relationship of user to system impacts.

Interpretive signs create great management value for the dollar. As such, a new funding mechanism is needed to implement an enhance public communications interpretive signage program and better management programs in general. In coordination with Lee County, the State should implement a Cayo Costa State Park Boat Access sticker program. When one is annually registering a boat, a \$20 optional surcharge for State Park use should be part of the program. Based on 2015 county boater registration data with 44,743 registered boats and assuming 15% of registered

boaters go out to the barrier islands and Charlotte Harbour, \$134,229 dollars may be generated. Even if one-half of the value is raised, the State Park can use \$67,000 + for it's various programs, including the new and enhanced interpretive sign program.

THE CAYO COSTA ISLAND RESILIENCY DISTANCE-DECAY RECREATION MANAGEMENT PLAN

A Management Model Based On Conservation Value, Existing Facilities Resistance To Use, Recovery From Use Impacts, Severity of Direct and Indirect Impacts, Erosion Resiliency, Amount of Use To Proportionate Area, & Management Ease

The North Zone _ High Passive & Active Recreational Users & Activities w./Shoreline & Back Bay Docking, Anchoring & Charter Boats; Maximum Recreation Focus On Existing Use, Improvement & Expansion of Existing North Island Park Facilities.

The Middle Zone _ Medium Passive & Select Active Recreational Users & Activities For Zones CC-07, 08 & 09(a & b) w./Shoreline Private & Commercial Anchoring; New Focus On Beach, Dune, Coastal Strand & Maritime Habitat Interpretative Signage For Education & Management.

The South Zone _ Medium To Low Passive & Active Recreational Users & Activities w./No Back Bay Commercial Charter Docking, Shoreline Commercial Charter Anchoring North of Murdock Bayou; Private Boat Shoreline & Back Bay Anchoring & Docking. New Focus On Trail Hardening, and Beach, Dune, Coastal Strand & Maritime Habitat Interpretative Signage For Education & Management.

All Zones _ New Management Funding Mechanism via Lee Co. Tax Collector Boat Sticker For Park Use

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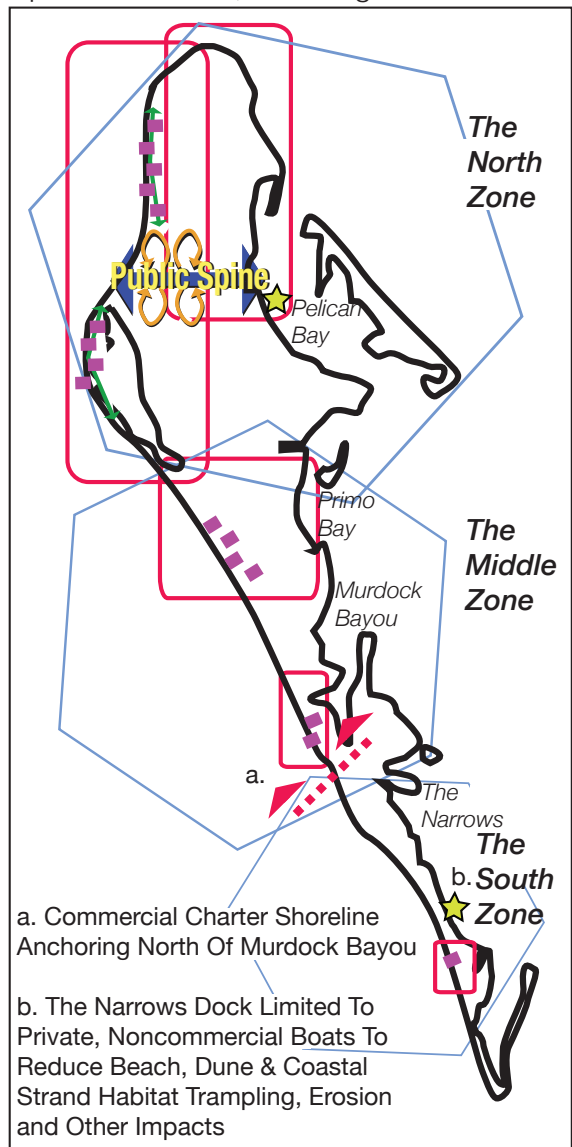


Fig. 7 The Cayo Costa Distance-decay Recreation Management Plan



Large Charter Boat Seagrass Impacts



Habitat Management & Monitoring Difficulties



40 Person Charter Boat v. 4 to 6 Person Private Boat



Large Scale Group Recreation @ The Narrows



Increase Trampling, Dune & Herbaceous Grass Impacts



Multiple Charter Boats w./Larger User Impacts At The Narrows

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Fig. 8 The Narrows/South Recreation Management Zone Pictures

RECOMMENDATIONS TO THE CAYO COSTA MANAGEMENT GOALS, OBJECTIVES AND POLICIES IMPLEMENTATION:

Goal One: Provide administrative support for all park functions.

- New Objective C _ In response to user coast impacts and limited south island system resiliency, expand administrative monitoring and management support for the South Zone and The Narrows/Capita Pass area.

Goal Two: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored conditions.

- New Action Four _ Recognizing that viable seagrass beds are essential water quality components, coordinate with Lee County to implement new back-bay seagrass monitoring programs and programs aimed at reducing boater seagrass impacts.

Goal Three: Maintain, improve or restore imperiled species populations and habitats in the park.

- **Objective D _ Continue to improve protection and awareness of sensitive shorebird and sea turtle nesting areas.**
 - New Action One _ Implement enhanced interpretive signage program with particular emphasis on the South Zone/The Narrow/Capita Pass area's species and habitats.

Goal Six: Provide public access and recreational opportunities in the park.

- New Objective E _ Concentrate all group and commercial group charter boat access to the North Zone/State Park Dock and Facilities Area.
 - New Action One _ Off-shore Charter boat group access permitted from Murdock Bayou north; off-shore and back-bay charter boat group access prohibited south of Murdock Bayou.

Goal Seven: Develop and maintain the capital facilities and infrastructure necessary to meet the objectives of this management plan.

- New Objective E _ In coordination with Lee County implement a new Cayo Costa State Park Boat Access sticker program to generate revenues for an enhanced interpretive signage management program.