

Final Environmental Assessment
of the
Designation of Two Additional
Manatee Protection Areas in Florida

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I. Summary

The Fish and Wildlife Service (Service) are establishing two (2) additional manatee protection areas in Florida. We are taking this action under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(ESA), and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361-1407)(MMPA), as a means to reduce the level of take of Florida manatees (*Trichechus manatus latirostris*). The sites of the manatee protection areas are the Barge Canal and Sykes Creek, in Brevard County Florida. Watercraft will be required to operate at slow speed within these areas.

II. Introduction

A. SECTION ONE - PURPOSE AND NEED

1. Introduction:

The authority to establish protection areas for the Florida manatee is provided by ESA and the MMPA, and regulations codified in Title 50 of the Code of Federal Regulations, Part 17, Subpart J. We may, by regulation, in accordance with 5 U.S.C. 553 and 43 CFR Part 14, establish manatee protection areas whenever there is substantial evidence showing such establishment is necessary to prevent the taking of one or more manatees. We may establish manatee protection areas on an emergency basis when we determine there is substantial evidence that there is imminent danger of a taking of one or more manatees, and that such establishment is necessary to prevent such taking. “Take” as defined by the ESA means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. “Harm” is further defined as an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. “Harass” is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3)

We may establish two types of manatee protection areas—manatee refuges and manatee sanctuaries. A manatee refuge, as defined in 50 CFR 17.102, is an area in which we have determined that certain waterborne activities would result in the taking of one or more manatees, or that certain waterborne activities must be restricted to prevent the taking of one or more manatees, including but not limited to a taking by harassment. A manatee sanctuary is an area in which we have determined that any waterborne activity would result in the taking of one or more manatees, including but not limited to a taking by harassment. A waterborne activity is defined as including, but not limited to, swimming, diving (including skin and SCUBA diving), snorkeling, water skiing, surfing, fishing, the use of water vehicles and dredging and filling activities.

The Florida manatee, a federally listed endangered species, resides in freshwater, brackish and marine habitats of coastal and inland waterways in the southeastern United States. The majority of this population resides in the waters of the State of Florida throughout the year and nearly all manatees use the waters of peninsular Florida during the winter months. The manatee is a cold intolerant species and requires warm waters (above 68° Fahrenheit) to survive during periods of cold weather. During the winter months many manatees rely on the warm water from natural springs, industrial and power plant outfalls for warmth. During the summer months they expand their range and are seen rarely as far north as Rhode Island on the Atlantic Coast and as far west as Texas on the Gulf Coast.

2. Purpose and Need of Action

Human activities, particularly waterborne activities, are resulting in the take of manatees. Recent information indicates that the overall manatee population has grown since the species was listed (32 FR 4001). However, the MMPA prohibits all take of manatees. Additionally, under the ESA in order for us to determine that an endangered species has recovered to a point that warrants the species' removal from the list of endangered and threatened wildlife and plants, the species must have improved in status to the point at which listing is no longer appropriate under the criteria set forth in section 4(a)(1) of the ESA. That is, threats to the species that caused it to be listed must be reduced or eliminated such that the species no longer fits the definition of threatened or endangered. While indications of increasing population size are very encouraging, it has not been demonstrated that human-related harm and harassment of manatees resulting from waterborne activities have been effectively reduced or eliminated.

Human use of the waters of the southeastern United States has increased dramatically as a function of residential growth and increased visitation. This phenomenon is particularly evident in the State of Florida. The population of Florida has grown by 124% since 1970 (6.8 to 15.2 million, U.S. Census Bureau) and is expected to exceed 18 million by 2010 and 20 million by the year 2020. According to a recent report by the Florida Office of Economic and Demographic Research (2000), it is expected that by the year 2010, 13.7 million people will reside in the 35 coastal counties of Florida. In a parallel fashion to residential growth, visitation to Florida has increased dramatically. It is expected that Florida will have 83 million visitors annually by the year 2020, up from 48.7 million visitors in 1998. In concert with this increase of human population growth and visitation is the increase in the number of watercraft which ply Florida waters. In 1999, there were 829,971 boats registered in the State of Florida (Florida Department of Environmental Protection, Division of Law Enforcement 2000). This is an increase in registered vessels of almost 20% since 1993. During this same period the number of watercraft related manatee mortalities has increased by 144% from 35 to 82 deaths per year. In addition to boats belonging to Florida residents, the Florida Department of Community Affairs estimates that between 300,000 and 400,000 boats registered in other states use state waters each year.

The large increase in human use of waters inhabited by manatees has had direct and indirect impacts on this endangered species. Direct impacts include injuries and death from vessel impacts, water control structure operations, lethal and sub-lethal entanglements with commercial and recreational fishing gear and alterations of behavior due to harassment. Indirect impacts include habitat destruction and alteration, decreases in water quality within some aquatic habitats, decreases in quantity of warm water at natural sites, marine debris and general disturbance from human activities.

Over the past ten years over 62 percent of watercraft-related manatee mortality has taken place in seven Florida counties (Duval, Volusia, Brevard, on the east coast, and Collier, Lee, Charlotte and Hillsborough on the west coast) (Florida Marine Research Institute 2000). Manatee mortality has continued to climb steadily. Average annual mortality in the 1990's was twice that of the 1980's, and this trend continued in 2000 when 273 dead manatees were recorded. Totals over the past four years have averaged 45 percent higher than in the early 1990's. When the record high total of 1996 is included (the year in which the red tide die-off inflated total mortality to 416 animals), average annual mortality over the past five years has been nearly 60 percent greater than in the early 1990's (Marine Mammal Commission 2001).

The continuing increase in the number of recovered dead manatees throughout Florida has been interpreted as evidence of increasing mortality rates (Ackerman *et. al.* 1995). Due to their low reproductive rate, a decrease in adult survivorship due to watercraft collisions could contribute to a long-term population decline (O'Shea *et. al.* 1985). It is believed that a one percent change in adult survival likely results in a corresponding change in the rate of population growth/decline (Marmontel *et. al.* 1997). Between 1976 and 1999, the number of carcasses collected in Florida has increased at a rate of 5.8 percent per year, and deaths caused by watercraft strikes increased by 7.2 percent per year (U.S. Fish and Wildlife Service 2001).

Collisions with watercraft are the largest source of human-related manatee deaths. Data collected during manatee carcass salvage operations in Florida indicate that a total of 979 manatees (from a total carcass count of 4021) were confirmed victims of collisions with watercraft since 1976. This number may not accurately represent the actual number of watercraft-related mortalities since many of the mortalities listed as "Undetermined Causes" show evidence of collisions with vessels. Collisions with watercraft comprise approximately 24 percent of all known manatee mortalities since 1976. Not only has the number of confirmed manatee watercraft-related mortalities increased, they have also increased as a percentage of total mortalities over that time. Since 1998, watercraft-related deaths have represented about 30 percent of all mortality, a five percent increase compared to the early 1990's. Although an increase in manatee deaths would be expected during periods of population growth, as apparently occurred in the 1980's and early 1990's, if population growth has leveled off and manatee mortality continues to increase, a decline in abundance is inevitable (Marine Mammal Commission 2001).

The second largest cause of human-related manatee mortality is entrapment in water control structures and navigation locks (Florida Marine Research Institute 2000). Manatees may be crushed in gates and locks or may be trapped in openings where flows prevent them from surfacing to breathe. Locks and gates were responsible for 159 manatee deaths between 1976 and 1999 (U.S. Fish and Wildlife Service 2000). While there are no well-defined patterns characterizing these mortalities, it is believed that periods of low rainfall increase the likelihood of manatees being killed in these structures. These periods require more frequent, large-scale movements of water which require more frequent gate openings and closings in areas that attract manatees searching for freshwater. Increases in gate operation are thought to increase the likelihood of manatees being crushed in gates.

Manatees are also affected by other human-related impacts. These impacts include death caused by entrapment in pipes and culverts, entanglement in ropes, lines, and nets, or ingestion of fishing gear or debris, vandalism, and poaching. The impact of these activities account for 106 manatee deaths since 1976. This is an average of four deaths per year. As with watercraft-related mortalities, other human-related deaths also appear to be increasing with 31 deaths, approximately 3 percent of the total mortalities recorded between 1997 and 2000, attributed to these impacts. This is an average of 7.75 deaths per year over the last four years attributable to other human-related activities.

Harassment of manatees is a concern, particularly when such actions impede the use of warm water areas critical to manatee survival during periods of cold weather. In particular, there is an increasing number of swimmers and divers visiting Florida's waters to view and swim with the manatees. On occasion, divers and swimmers have been observed attempting to pet, chase, ride, and even sit on manatees. This type of harassment may cause the manatee to leave warmer water to find relief from the harassment in colder areas where there are fewer people.

To help address the negative effects to manatees from human actions, we are establishing two additional manatee protection areas in Florida. In evaluating the need for additional manatee protection areas we have considered the needs of the manatee at an ecosystem level with the goal of ensuring that adequate protected areas are available throughout peninsular Florida to satisfy the biological requirements of the species, with a view toward the manatee's recovery.

We acknowledge that there exists an extensive network of manatee speed zones and sanctuaries, which have been established throughout peninsular Florida by Federal, State and local governments. This existing structure substantially fulfills the above-stated goal. The purpose of our evaluation was to identify remaining gaps in the existing network and to propose appropriate measures for filling those gaps.

We also recognize that the existing system of speed zones and sanctuaries has been established primarily by State and local governments. We recognize the

important role of our State and local partners, and we continue to support and encourage State and local measures to improve manatee protection. We are taking actions in areas in which State and local governments have been unable to implement what we consider to be adequate measures. We have also focused the action on those sites in which we have determined that Federal action can effectively address the needs in the particular area, recognizing that we face certain resource limitations. We are eager to work with State or local agencies to develop and implement measures in the areas discussed in the rule that would be equally protective of manatees.

Our authority to establish manatee protection areas is discretionary. During the development of this rule, many cited the increase in the overall size of the manatee population as evidence that the establishment of additional manatee protection areas is not needed. Recent data regarding the size of the manatee population are very encouraging, and indicate that local, State and Federal efforts to recover the manatee are working. However, increasing population levels do not change the fact waterborne activities are resulting in take of manatees, which is not allowed under the ESA and MMPA. Additionally, the continuing increase in the amount of human-related manatee mortality raises concerns that such take is impeding the recovery of the species. Therefore, we feel it is our obligation to use the tools we have available to reduce the level of human-related manatee mortality, so that we may someday achieve our goal of removing the manatee from the list of endangered and threatened wildlife and plants. The establishment of manatee protection areas is one such tool.

B. SECTION TWO - LONG-RANGE GOALS AND OBJECTIVES

1. Introduction:

The long-range goals and objectives of the proposed actions are to promote the protection and recovery of the federally listed Florida manatee, so that at a future date, it will eventually be downlisted and subsequently removed from the federal endangered species list.

The Florida Manatee Recovery Plan, Third Revision, (U.S. Fish and Wildlife Service 2001) establishes four objectives necessary to establish a sustainable population of manatees within the State of Florida. These objectives are to:

- a. minimize causes of manatee disturbance, injury and mortality;
- b. determine and monitor the status of the manatee population
- c. protect, identify, evaluate, and monitor manatee habitat;
- d. facilitate manatee recovery through public awareness and education.

The rule addresses one of these objectives; minimizing causes of manatee disturbance, injury and mortality. By establishing these manatee protection areas, we intend to reduce the occurrence of take related to human activities within these areas.

2. Long-Range Objectives of Designating Refuges and Sanctuaries

Important solutions to the problems that manatees are facing include the acquisition of habitat, creation of reserves and enforcement of regulations to protect manatees and their habitat. Where manatee protection areas have been previously established (Crystal River's King's Bay area) manatee use has increased substantially (Reynolds 1995). The establishment of these two manatee protection areas will help promote the protection of manatees by reducing the occurrence of take within these areas. As additional Federal, State and local manatee protection zones are established, the manatees will have a network of safe havens for traveling between feeding, resting and wintering areas and experience less harassment and fewer incidences of take.

C. SECTION THREE - ISSUES, CONCERNS AND OPPORTUNITIES IDENTIFIED

1. Issue 1 - Manatee Protection and Recovery

The Florida Manatee Recovery Plan, Third Revision (2001), substantially addresses the issues, concerns and opportunities associated with manatee protection and recovery and is hereby referenced and included as an attachment to this environmental assessment.

2. Issue 2 - Recreational Access and Uses

The sites affected under this rule serve a variety of recreational purposes. These sites are used by boaters to travel from point to point. In addition, these areas are used for recreational fishing, water skiing, and swimming. All sites are within a few miles of public access points and can be accessed from public and private boat ramps, docks or marinas. Designating these sites may alter recreational use in some areas. We realize the potential impact of this rule on recreational use and have considered it during the review.

3. Issue 3 - Commercial Access and Uses

These sites are used by commercial boat traffic and barges for the transportation of goods. These sites may be used for commercial fishing, particularly the crabbing industry. Additionally, water dependent facilities, such as bait and tackle shops, dive shops and marinas, and boat manufacturing facilities may be affected by the rule. Impacts to these industries were addressed during the review of the rule.

4. Issue 4 - Local Economy

Many of the economies of communities along Florida's waterways are dependent, at least partially, on water-related activities. These activities may include

commercial ports, marinas, tourism, fishing or any of a wide variety of other activities. An economic analysis was prepared as part of this rulemaking.

III. Alternatives

A. SECTION ONE - ALTERNATIVES CONSIDERED IN DETAIL

1. Alternative 1 - Baseline Management (No Action)

Under the “No Action” alternative the we would not create any new manatee protection areas. The existing network of speed zones and protection areas would remain. We would rely on State and local agencies to establish any new restricted areas which may be necessary through county or State-wide manatee protection plans.

2. Alternative 2 - Creation of a Limited Number (2) of Manatee Protection Areas

This alternative is our preferred alternative. Adoption of this alternative would result in the designation of 2 new manatee protection areas. Areas protected by this designation would include the Barge Canal and Sykes Creek in Brevard County; both of which are areas where manatees are at risk from watercraft.

B. SECTION TWO - ALTERNATIVES CONSIDERED BUT NOT ANALYZED

1. Alternative 3 - Establishment of All Suggested Refuges and Sanctuaries

This alternative would designate all areas recommended to us during the information gathering process as manatee protection areas and would include approximately 150 sites throughout the coastal waters of Florida and southeast Georgia.

2. Alternative 4 - Increase Enforcement of Existing Regulations Without Establishing New Refuges and Sanctuaries

This alternative would focus management on those areas already designated as manatee protection areas. We would not create any new refuges or sanctuaries for the Florida manatee. We would rely on increased efforts by Federal, State and local agencies to increase law enforcement within the previously designated areas.

IV. Affected Environment

A. SECTION ONE - SANCTUARY/REFUGE ECOSYSTEM

1. Habitat

a. Location

The two manatee protection areas are located within the inland waters of Brevard County, Florida. Brevard County is on the Atlantic coast in the central portion of the state.

b. Climate

The Florida climate is generally characterized as transitional between temperate and subtropical conditions in the northern portions of the state and tropical conditions found in the Keys. Summers are generally long, warm and relatively humid while winters are mild with occasional periods of cold air. The climate is influenced by warm ocean currents in the Atlantic Ocean and the Gulf of Mexico. Average temperatures during the winter months range from the middle 40s to the middle 50s with occasional cold waves bringing the temperature to 15° to 20° Fahrenheit for short periods of time.

c. Flood Plain, Wetlands, and Other Aquatic Resources

Both sites being designated are aquatic habitats. The designation of a site as a manatee protection area will result in restricted human activity in the area. These restrictions will include regulated use, such as slow speed zones, but will not eliminate waterway property owners access rights. Research has shown that boat traffic, especially at higher speeds, can cause considerable erosion to shorelines and emergent plants. Evidence of this has been shown where boat wash has removed the mud binder among shell substrate and loosens mangrove prop roots in Everglades National Park. Observations by officials indicate that many of the mangrove island along heavily traveled canals and the Intracoastal Waterway are disappearing (Snow 1989). The proposed management actions (i.e., slow speeds zones) may act to reduce shoreline erosion and therefore the need for shoreline protection, such as bulkheads, in some areas. The reduced erosion and turbidity will be beneficial to floodplains, wetlands, and other aquatic resources such as submerged aquatic vegetation within the restricted zones. Designation of a site may also reduce prop-cutting in submerged aquatic vegetation and benefit other aquatic resources by minimizing disturbances caused by faster moving watercraft. The designation and any restrictions associated with it, will not adversely impact the areas value as a floodplain, wetland or other aquatic resource.

d. Water Quality

The water quality in each of the designated sites varies depending on the human use associated with the water body. The designation of speed zones in the manatee protection areas may act to reduce some uses, such as water skiing and jet skiing, that could contribute to degraded water quality. However these effects are assumed to be small in terms of the overall water quality of the areas. Overall, the resultant creation of speed zones will have limited impact on water quality due to the small size of each of the proposed refuges.

e. Ground Water

None of the sites being designated are important ground water recharge areas. The designation of these sites will not affect the ground water recharge or quality in those areas.

2. Wildlife

a. West Indian Manatee

The designation of the selected manatee protection areas is expected to result in a decrease in the potential for “take” of manatees. Areas have been selected based on their importance to manatees as migration and travel routes and the potential of human/manatee conflicts.

b. Other Listed Species

There are several other species which also utilize open water habitat which would be protected under this rule. These species include green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle, and bald eagle. Sea turtles are often seen in the coastal and inland waters of Florida. Evidence of boat strikes on sea turtles have been found on many of the carcasses recovered and recorded by the Sea Turtle Stranding and Salvage Network (STSSN). In 1997, 233 carcasses were recovered with evidence of boat strikes. This accounted for 24.8 percent of the carcasses recovered that year (Florida Department of Environmental Protection 1998). In 1998, there were 301 carcasses recovered with evidence of boat strikes. This accounted for 30.6 percent of all carcasses recovered that year (Florida Department of Environmental Protection 1999). In 1999, there were 217 carcasses with evidence of boat strikes. This accounted for 23.6 percent of all carcasses recovered. The running average between 1989 and 1998 indicates that 18.8 percent of all sea turtle carcasses recovered have evidence of boat-related injuries (Florida Department of Environmental Protection 2000). The cause of death of the turtles recovered cannot be specifically identified but it can be assumed that many of the turtles that show evidence of boat strikes received the

injury prior to death and may have died due to those injuries. The establishment of restricted areas through the rule may decrease the potential for watercraft-related injuries to sea turtles just as it is expected to affect manatee mortality and injury.

B. SECTION TWO - SOCIO-ECONOMIC COMPONENTS

1. Public Use and Facilities

The sites proposed for designation as new manatee protection areas have varying degrees of human use.

The Barge Canal in Brevard County is used by both commercial and recreational vessels as a transit route between the Atlantic Ocean, Banana River and Indian River. A boat manufacturing facility is located on the Barge Canal and this company currently uses a portion of the Barge Canal to test boats.

Sykes Creek is used primarily by recreational and commercial boaters as a travel corridor. Additional uses such as fishing, swimming, water skiing or jetskiing also occur within this area.

2. Economic Conditions

This rule will not have an annual economic impact of \$100 million or adversely affect an economic sector, productivity, jobs, the environment, or other units of government. A cost-benefit analysis is not required. We do not expect that any significant economic impacts would result from the establishment of 2 manatee refuges (1528.5 acres) in Brevard County in the State of Florida. The public support for manatee protection is substantial in Florida. Using a contribution continuum method and reinforced by other empirical techniques, a study by Bendle and Bell in 1993 estimated that Floridians placed an asset value of \$3.2 billion (2001 dollars) on the protection of the manatee population. This amounts to a per-household value of \$18.12. The \$3.2 billion is an estimate of the benefit derived by Floridians from the existence of the manatee population.

The purpose of this rule is to establish 2 additional manatee protection areas in Florida. We are proposing to reduce the level of take of manatees by controlling human activity in these 2 areas. Affected waterborne activities the use of water vehicles. The 2 areas designated would be slow-speed zones. The economic effect of these designations will be measured by the number of recreationists who use alternative sites for their activity or have a reduced quality of the waterborne activity experience at the designated sites. The State of Florida has 12,000 miles of rivers and 3 million acres of lakes so the designation of 1528 acres for lower speed operation is unlikely to prevent any waterborne activity because of this rule, although some individuals may need to modify slightly when and where they pursue certain waterborne activities.

One watercraft manufacturer is known to use one of the designated sites as a boat testing area. The tests require boats to operate at greater than slow speeds, and the costs of relocating the test site has not been specifically estimated. However, based on information provided by the company, designation of the Barge Canal as a manatee protection area may have a substantial impact on the boat testing operations of this business. Substitute sites are available within a reasonable distance; however, the costs of operating at these sites will be substantially greater than the costs of using the current test site in the Barge Canal. We are intending to propose amendments to our regulations to allow for otherwise prohibited activities to continue provided those engaging in such activities can demonstrate that the activities will not result in take of manatees. If the manufacturer is able to meet this standard, we anticipate that this rule will result in at most a temporary impact on their boat testing program.

For boating recreationists, the inconvenience and extra time required to cross a slow-speed zone will reduce the quality of the waterborne activity for some participants. The extra time required for commercial charter boats to reach fishing grounds will reduce on-site fishing time and could result in lower consumer surplus for the trip. The number of recreationists and charter boats using the designated sites is not known. The State of Florida has nearly 800,000 registered boats, but only those boats and recreationists using the designated sites will potentially be affected. However, since Florida has 12 thousand miles of rivers and streams and 3 million acres of lakes and ponds, it is likely that only a small percentage of boat users will be affected by this rule. The current designation of these two protection areas will cause some inconvenience in travel time, but alternative sites within the proximity of the sites are available for all waterborne activities. Recreationists may be inconvenienced by having to travel to an undesignated area, but they are not prohibited from participating in any waterborne activity. Currently, no data sources estimate the amount of recreational activity in and around the 2 designated areas. For these reasons, we believe some inconvenience to the public may occur because of reduced travel speeds but that the economic impact will not be significant.

To determine the potential effects of this rule on small entities, we looked at economic data from the seven counties in Florida that would be affected. Table 1, below, depicts general economic characteristics of those counties, and Table 2 gives employment data. As can be seen in Table 1, the growth rate in per capita income is slower than the State average in Citrus, Brevard, and Charlotte Counties, but the rate of growth in total personal income exceeds the State average except in Brevard County, where it is slightly lower. Larger households account for the lower per capita income estimates in these counties. The proportion of total industry earnings coming from the amusements and recreation sector ranges from 0.5 percent in Brevard County to 2.7 percent in Sarasota County. All of these counties had the service sector as the largest economic contributor followed by retail trade and the real estate sectors. Overall, the affected counties had only a small proportion of earnings coming from the amusement and recreation sector. As a result, a small impact to the recreation sector would not result in a significant effect on county-level income.

Table 2 provides employment data using Standard Industrial Classification (SIC) codes. The latest available published data for the total number of establishments in the SIC codes for fishing, hunting, trapping (SIC code 9), water transportation (SIC code 44), miscellaneous retail and services (SIC code 59), amusement and recreation services (SIC code 79), and nonclassifiable establishments is 1997. These are the establishments most likely to be directly associated with recreationists pursuing waterborne activities where manatees may be involved. As can be seen on Table 2, of the total number of establishments in these SIC codes, a large proportion employ fewer than 9 employees with the largest number of establishments employing fewer than 4 employees. If any economic impacts are associated with this rule, they will affect some proportion of these small entities. Since the acreage effected (1,528.5 acres) by this rule is for manatee refuges, which would only require a reduction in speed, we do not believe the minor inconvenience caused by going slower in designated areas will cause more than an insignificant economic effect. The inconvenience may cause some recreationists to go to alternative sites, which may cause some loss of income to some small businesses. However, the inconvenience is small so we believe that this will not be a significant economic dislocation.

3. Cultural Resources

The aquatic areas of the State have been historically important to both the Native American and the colonial cultures. These areas may have been used for food collection, navigation and trade. The restriction resulting from the designation as a refuge will not adversely impact any archeological sites that may be present.

TABLE 1.—ECONOMIC CHARACTERISTICS OF THE SEVEN AFFECTED COUNTIES IN FLORIDA—1997

Selected Florida Counties	Employment	Per capita personal income (Dollars)	10 year rate of growth (Percent)	Personal Income (\$000)	10 year rate of growth (Percent)	Total industry earnings (\$000)	Services industry earnings for amusements and recreation (\$000)	Percent of total
Establishing Sanctuaries:								
Citrus	35,663	\$18,493	3.9	\$2,060,167	6.9	\$793,347	\$6,650	0.8
Hillsborough	644,694	23,719	5.2	21,558,783	6.6	18,847,236	67,676	1.4
Pinellas	506,946	28,367	4.9	24,770,929	5.5	13,876,518	114,826	0.8
Establishing Refuges:								
Brevard	223,815	22,205	3.7	10,342,080	6.3	6,255,354	34,237	0.5
Charlotte	47,091	21,861	3.7	2,894,781	7.6	995,159	10,336	1.0
Lee	196,448	25,568	4.4	9,862,900	7.3	4,848,936	61,103	1.3
Sarasota	169,984	35,654	5.2	10,706,931	6.8	4,239,034	114,742	2.7
State of Florida	8,032,538	24,799	4.5	363,979,647	6.6	220,985,959	4,255,304	1.9

Source: <http://govinfo.library.orst.edu/cgi-bin/reis-list>.

TABLE 2.—EMPLOYMENT CHARACTERISTICS OF BREVARD COUNTY, FLORIDA—1997

[Includes sic codes 09, 44, 59, 79, services, and nec]¹

	Mid-March employment	Total establish- ments	Number of establishments (1–4 employees)	Number of establishments (5–9 employees)	Number of establishments (10–19 employees)	Number of establishments (20 and over employees)
Brevard County	65,049	5,292	3,145	1,075	581	591

Source: <http://fisher.lib.virginia.edu/cig-local/cbpbm/go.cgi>.

¹sic 09—Fishing, hunting, and trapping.

sic 44—water transportation.

sic 59—miscellaneous retail services division.

sic 79—amusement and recreation services nonclassifiable establishments division.

V. Environmental Consequences

A. Alternative 1 - Baseline Management (No Action)

1. Proposed Action

Under the “No Action” alternative we would not initiate any new management practices within the currently proposed areas. All current management practices, such as enforcing the existing sanctuaries, refuges and speed zones, will continue as before. Failing to adopt appropriate protective measures within our authority and resources for reducing the potential take of manatees is not acceptable to us.

2. Effects on Manatees

The “No Action” alternative would not give us any additional capability to reduce the take on manatees in areas with identified problems. Over the last five years there have been 340 watercraft-related manatee deaths and 23 other human-related manatee mortalities. Human-related deaths have contributed to 25 percent (363 out of 1429 deaths) of all reported manatee mortalities in the last five years. Without additional protective measures in areas with documented take of manatees that currently lack sufficient regulation, the number of human-related manatee deaths is expected to increase as public use of the waterways increases. The goal of the Endangered Species Act, including species specific recovery plans, is to recover listed species to sustainable population levels and to eventually down or delist. Without the ability to reduce potential take by designating refuge and sanctuary areas for this species, we are limited in available methods to protect the manatee. We believe that increases in human-related manatee mortality will continue. We find that the “No Action” alternative is not acceptable due to the expected increase in take that will result as the public use of Florida’s waterways continues to increase.

3. Effects on Public Use

The “No Action” alternative would allow current use of the waterways by humans to continue with no further regulation imposed by us. Public use of the areas as well as all related manatee mortality numbers will continue to be monitored even if the areas are not designated. Use of the waterways by the public will continue to grow as the State’s population and visitor numbers increase. Due to this expected increase in human use of areas that manatees frequent and the related increase in potential for take, we find that the “No Action” alternative is not acceptable.

B. Alternative 2 - Creation of a Limited Number (2) of Refuges

1. Proposed Action

This alternative is our preferred alternative. Adoption of this alternative would result in the designation of 2 new manatee protection areas. Areas affected by this designation are listed below.

a. Barge Canal

We are establishing a manatee refuge for the purpose of regulating watercraft operation as “slow speed-channel included” for the entire length of the Barge Canal and extending eastward to the Canaveral Locks.

b. Sykes Creek

We are establishing a manatee refuge in Sykes Creek for the purposes of regulating watercraft operation to “slow speed-channel included”.

2. Site Description

a. Barge Canal

All waters lying within the banks of the Barge Canal and including all waters lying within the marked channel in the Banana River which lie between the east entrance of the Barge Canal and the Canaveral Locks.

b. Sykes Creek

All waters, including the marked channel in Sykes Creek. In particular, the portion of Sykes Creek southerly of the southern boundary of that portion of the creek commonly known as the “S” curve (said boundary being a line bearing East from a point on the western shoreline of Sykes Creek at approximate latitude 28°23'24" North, approximate longitude 80°41'27" West) and northerly of the Sykes Creek Parkway.

3. Reason for Determination

We intend for the actions in this rule to represent the minimum amount of regulation necessary to achieve the goal of preventing the take of manatees. We made every effort to make our designations consistent with the adjacent State or local designations. Therefore, in designating the sites as “slow speed” we adopted a definition that is consistent with that used by the State.

In documenting manatee use and historic manatee harm and harassment, we relied on the best available data including aerial survey data and manatee mortality data, information from the Florida Marine Research Institute, Pathobiology Laboratory, and other information from State and Federal sources. These data were supplemented with information from manatee experts, the public, and our best professional judgement. In determining the potential effectiveness of our actions, we considered the costs of managing sites versus the benefits to manatee conservation. Costs associated with site management include installation and maintenance of appropriate signage, public education, and enforcement. Because we will not deny access for owners of waterfront property, designation of sanctuaries in the waters bordered by private property entails additional administrative burdens in terms of identifying and providing access to affected

residents. We considered these administrative burdens in selecting sites. Finally, we evaluated the effectiveness of our actions against the likely effectiveness of actions by State and/or local governments. We have not designated sites for which we have determined that identified threats to manatees can be most effectively addressed by State or local action. We will continue to monitor sites which are not included in the current rule and may propose additional actions in the future, as appropriate.

a. Barge Canal

The Barge Canal serves as a major travel corridor between the Indian and Banana Rivers for manatees and mariners alike. There have been 16 manatee carcasses recovered from the Barge Canal and vicinity (Florida Marine Research Institute 2000). Portions of the Banana River north of the Barge Canal are possibly the most important summer feeding and resting areas on the Atlantic Coast. The Indian River is also an important feeding and resting area, however, it becomes more important during the winter months due to the number of warm water discharges including several electric generating plants, and various creeks and canals. The increasing number of manatees using the northern Banana River in spring during their northward migration must cross into the Indian River through the Barge Canal and Sykes Creek to continue their northward route (Marine Mammal Commission 1988). There has been a high rate of manatee carcass recovery from the Barge Canal vicinity. Additionally, aerial survey data indicate significant use of the area by manatees (Florida Marine Research Institute 2000). Currently there are four areas within the Barge Canal that are regulated as “25 miles-per-hour with 25-foot slow speed shoreline buffer, all year”, while the remainder of the Barge Canal is “slow speed - all year”. High speed vessel operation in a confined migration corridor, such as this, also has an enhanced likelihood of take. Regulating vessels to operate at “slow speed” will minimize the potential for take.

b. Sykes Creek

Manatees consistently use Sykes Creek for feeding, resting and cavorting and as part of a major travel corridor between the Banana River and Indian River (Marine Mammal Commission 1988). Like the Barge Canal, it is a fairly narrow water body and is the site of 13 watercraft-related manatee mortalities (Florida Marine Research Institute 2000). Aerial survey data indicates significant manatee use of the site (Florida Marine Research Institute 2000). High speed vessel operation in this area will have a high likelihood of resulting in a manatee take. Regulating vessels to proceed at “slow speed” will minimize the likelihood of take.

4. Special Area Management

The manatee protection areas established by this rule will be clearly marked as to the restrictions placed on the area and will be periodically patrolled by law enforcement officers.

We have increased our efforts to reduce watercraft related manatee mortality through law enforcement over the last few years. These law enforcement operations focus on areas of high manatee mortality, large number of watercraft and low levels of compliance with protection regulations. During 1999 a total of 20 days were spent in Collier, Brevard and Volusia Counties resulting in 716 notices of violation being issued (U.S. Fish and Wildlife Service 2000). This is a 128 percent increase in issued notices from 1997 when 313 tickets were written during the 20 days the task force was operating. The number of federally sponsored enforcement initiatives will increase as funding for the task force increases. The Florida Fish and Wildlife Conservation Commission and local law enforcement officers are also responsible for enforcing posted speed zones and restrictions which will be established under this proposed rule.

5. Effects on Public Use

Public use in areas designated will be affected. The effect of establishing areas as slow speed zones should be minimal. We tested the amount of time required to travel from the southernmost end of the slow speed zone on Sykes Creek, through Sykes Creek and the Barge Canal to the Canaveral Locks. This represents the longest possible distance that would need to be traveled at slow speed under this final rule. Under the existing speed zones this trip currently takes approximately 50 minutes. Under the conditions established per this final rule, the same trip will take approximately 1 hour and 25 minutes; and increase in travel time of 35 minutes. We do not consider this to be an unreasonable burden on the boating public.

6. Conclusion

In evaluating the need for additional manatee protection areas we have considered the needs of the manatee at an ecosystem level with the goal of ensuring that adequate protected areas are available throughout peninsular Florida to satisfy the biological requirements of the species, with a view toward the manatee's recovery. We recognize that there exists an extensive network of manatee speed zones and sanctuaries, which have been established throughout peninsular Florida by Federal, State and local governments. This existing structure substantially fulfills the above-stated goal. The purpose of our evaluation has been to identify remaining gaps in the existing network and to propose appropriate measures for filling those gaps.

We also recognize that the existing system of speed zones and sanctuaries has been established primarily by State and local governments. We recognize the important role of our State and local partners, and we continue to support and encourage State and local measures to improve manatee protection. We have

focused the currently proposed action on those sites in which we have determined that Federal action can effectively address the needs in the particular area, recognizing that we face certain resource limitations. We are also proposing actions in areas in which State and local governments have been unable to implement what we consider to be adequate measures. We are eager to work with State or local agencies to develop and implement measures in the areas discussed in the proposed rule that would be equally protective of manatees, thereby eliminating the need for Federal action.

This alternative, the designation, posting and enforcement of two manatee protection area is expected to increase public awareness of the potential for take of Florida manatees in areas of high manatee use. Public use of these areas would be affected in the areas. These restrictions are expected to provide the manatee some protection from take in heavily used travel corridors.

In accordance with section 7 of the Endangered Species Act, we have determined that this alternative is not likely to adversely affect manatees or other federally listed species in any way. This alternative will have a beneficial affect on manatees and sea turtles by reducing boat speeds in the Barge Canal and Sykes Creek; thereby, reducing the potential for take of manatees in these areas. Some in-water work will be necessary to erect appropriate signage within the designated areas; however, all appropriate precautions will be taken to avoid impacts to manatees during the installation of signs. This alternative is our preferred alternative.

C. Alternative 3 - Establishment of All Suggested Refuges and Sanctuaries

1. Proposed Action

This alternative would designate all suggested areas as either refuges or sanctuaries. This would account for approximately 150 sites throughout the coastal waters of Florida and southeast Georgia.

2. Effects on Manatees

Under this alternative, the number of manatee sanctuaries and refuges would be increased substantially. This increase in protected areas would be beneficial to manatees due the expected decrease takings within the zones.

3. Effects on Public Use

Public use in each of the suggested sites would be restricted to varying degrees based on whether the area is designated as a refuge or a sanctuary.

4. Conclusion

Many sites were considered at some point in the evaluation process. Many did not meet our criteria for further consideration because there are currently

adequate protective measures in place at these sites and the likelihood of future take at these sites is limited, provided the existing regulations are appropriately enforced. Others did not meet our criteria for designation at this time because it is as yet unclear, based on current information, what additional protective measures could be implemented to effectively reduce on-going watercraft-related manatee mortality in these areas. Other sites identified during the rule development process do, or may, warrant further consideration, particularly if State or local efforts to improve manatee protection at these sites are unsuccessful, and if manatee do not make satisfactory progress toward recovery. However, action at any of these sites is not any more urgent than the actions identified in our proposed rule, and as previously stated we had to make decisions to limit the scope of the proposed rulemaking due to our limited resources. Due to budgetary and staff allocation concerns, this alternative was not considered further during the review.

D. Alternative 4 - Increase Enforcement of Existing Regulations without Establishing New Refuges and Sanctuaries

1. Proposed Action

This alternative would focus management on those areas already designated as either refuges or sanctuaries. We would not create any new manatee protection areas for the Florida manatee. We would rely on increased efforts by federal, state and local agencies to increase law enforcement within the previously designated areas.

2. Effects on Manatees

The continuation and increase in law enforcement actions within existing manatee protection areas would be expected to create an awareness in the public of the importance of these areas and the potential for injury or death to manatees related to human activities. By educating the public through increased law enforcement activities it would be expected that manatee mortality and injuries would decline. We will continue to make enforcement of existing manatee protection areas a priority. However, enforcement cannot reduce take of manatees in areas that lack regulations to enforce or in areas in which existing regulations are inadequate to minimize take of manatees. We have determined that such areas exist; therefore, relying entirely on increased enforcement of existing zones would not address identified problems and is unacceptable to us.

3. Effects on Public Use

Studies have shown that boater compliance with existing speed zones is less than what is required to significantly reduce manatee injuries and deaths. Under this alternative, increased patrols and enforcement of existing regulations would be initiated to cut down on violations. This alternative would not affect that portion of the public who are in compliance with existing regulations since no new regulated areas would be established. The only impact on public use would result

from increased patrols and citations to those individuals who are violating the posted restrictions.

4. Conclusion

Due to the inability of increased law enforcement to minimize take of manatees in areas with lacking or inadequate protective measures, this alternative is not acceptable to us. We have made, and will continue to make, enforcement of existing regulations a high priority. Additionally, we will devote appropriate enforcement resources to any additional manatee protection areas designated.

E. Summary of Impacts of Alternatives

1. Biological Value of the Proposed Refuges and Sanctuaries

The biological value of each of the sites was previously discussed in section IV.B.3 above. These sites are important for their use as travel and migration corridors. The selection of the 2 sites was based on their importance to manatees as individual sites and also as important links within the local ecosystem.

2. Adequacy of the Funding

Our decision to propose 2 new and refuges in this rule is partially based on funding. In determining the potential effectiveness of our actions, we considered the cost of managing sites versus the benefits to manatee conservation. Costs associated with site management include installation and maintenance of appropriate signage, public education, and enforcement. It was determined that the budget allowance for this activity would allow for the designation, marking and enforcement of a limited number of small protected areas. There are many more areas that have been suggested as possible protected areas; however, the funding to manage those sites is not available at this time. As funding becomes available in the future, some of the suggested sites and possibly additional new sites, may be considered for designation as manatee protection area in the future. If additional funding is not available, We will not be able to propose new protected areas. At this time, there is sufficient funding available to manage the number and size of protected areas currently suggested.

3. Adequacy of the Amount Of Habitat Proposed for Designation

We selected sites for inclusion in the proposed rule from the list of sites developed through the preliminary meetings and the information gathered at the public workshops and in response to the advance notice. We based site selection on four factors-- 1) evidence that the site is used by manatees; 2) historic evidence of harm or harassment of manatees at the site due to waterborne human activities; 3) the potential for additional take based on manatee and human use of the site; and 4) a determination that we could implement effective measures at the site to address the identified problem, within our limits of staffing and funding.

In documenting manatee use and historic manatee harm and harassment, we relied on the best available data, including aerial survey data and manatee mortality data, information from the Florida Marine Research Institute, Pathobiology Laboratory, and other information from State and Federal sources. These data were supplemented with information from manatee experts, the public, and our best professional judgement. In determining the potential effectiveness of proposed Service actions, we considered the costs of managing sites versus the benefits to manatee conservation. Costs associated with site management include installation and maintenance of appropriate signage, public education, and enforcement. Because we will not deny access for owners of waterfront property, designation of sanctuaries in the waters bordered by private property entails additional administrative burdens in terms of identifying and providing access to affected residents. We considered these administrative burdens in selecting sites. Finally, we have reviewed the effectiveness of our proposed actions against the likely effectiveness of actions by State and/or local governments. We have not proposed areas for which we have determined that identified threats to manatees can be most effectively addressed by State or local action. We will continue to monitor sites which are not included in the currently proposed rule, and may propose additional actions in the future, as appropriate.

4. Past Actions

Past actions by Federal, State and local agencies have shown some encouraging results. The designation and enforcement of existing manatee protection zones and boating laws, and public education, while not eliminating the threat to manatees, appears to have allowed the manatee population in Florida to increase over the last 25 years. The most recent statewide winter aerial survey (January 2001) reported a minimum population of 3,276 manatees in Florida. However, problems still exist. Manatee mortality numbers from 1990 to 1999 indicate that 2,512 manatees have died of various causes. Of these, 604 can be attributed to watercrafts and 55 to other human-related causes (U.S. Fish and Wildlife Service 2000). The continuation of management actions will be instrumental in the recovery of the Florida manatee.

5. Future Actions

Possible future actions associated with the preferred alternative include enhanced law enforcement in the areas designated as manatee protection areas and the possible designation of additional areas if the need becomes apparent. The goal of existing, proposed, and future manatee protection areas is to protect the manatee, reduce levels of “take”, and promote a stable manatee population that may, in the future, warrant removal from the endangered species list.

6. Cumulative Effects

Observations by law enforcement officers and manatee researchers imply that “take” of manatees and human-related manatee mortalities are reduced in areas designated as manatee protection areas. This indicates that, on a site-specific

basis, previous actions to protect the manatee have been successful. However, areas outside of existing protection areas continue to experience human-related manatee injuries and mortalities. The designation of additional manatee protection areas at sites heavily used by manatee and humans alike is expected to decrease the potential for “take” in these areas and also enhance the public awareness of the steps that can be taken to help protect the manatee. The cumulative impact of designating additional manatee protection areas on the public has also been assessed. Impacts such as loss of recreational areas, increase in travel time, and general inconvenience that many boaters may experience due to these proposed refuges and sanctuaries will generally be limited to small areas within their overall travel area. It is expected that the addition of these two manatee protection areas may add a maximum of 35 minutes to their travel time through the sites.

VI. Consultation and Coordination with Others

A. Public Involvement

In preparation for this action we met with representatives from local, State and Federal agencies and organizations involved in manatee research, management and law enforcement. These meetings helped us to develop a list of sites throughout Florida and southeast Georgia that manatee experts felt should be considered for possible designation as manatee protection areas.

We published an advance notice of proposed rule-making in the Federal Register on September 1, 2000 (65 CFR 53222). The purpose of the advance notice was to inform the public that we were initiating the process of investigating areas for possible designation as manatee protection areas, and to solicit initial public input. We received 1,752 responses to the advance notice. Of these, 1,737 supported Service efforts to establish additional manatee protection areas and 13 were opposed. The remaining 2 comments did not state a specific opinion.

We also conducted a series of six public workshops throughout peninsular Florida to present the list of potential sites and to solicit public input. A total of 396 people attended the workshops, and 170 provided comments; either oral or written. Of these, 79 were general in nature either supporting Service efforts to establish additional manatee protection areas (40), or opposing them (39). An additional 36 comments were not specific to the topic or discussed other items. Fifteen commentors provided specific information or comments. These specific comments included increased enforcement (7), increased education (7), use of new technology including satellite tracking of manatees (2) and other rule related topics (3). Of the remaining comments, 28 were specifically opposed and 8 were specifically in favor of the establishing additional manatee protection areas.

Finally, the Service held four public hearings throughout the State of Florida in September, 2001, to receive comments regarding the published proposed rule. In addition, we solicited written comments for a 60-day period following the publication of the proposed rule. As a result, approximately 3,500 comments were received, with

approximately 3,200 comments expressing support for the establishment of manatee protection areas and 300 comments objecting to the establishment of additional protection areas.

B. List of Agencies and Individuals Receiving Copies of this EA

As of the date of the finalization of this EA, all potentially affected agencies and individuals have been notified of the availability of the draft EA, via publication of notice of availability in the Federal Register. We received no requests for copies of the draft EA. However, the draft EA was also made available on our web site, and it is likely that many individuals or agencies accessed the EA through this means; although we can not determine which, if any, specific individuals or agencies did so.

VII. References

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