United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

April 9, 2007

Colonel Paul L. Grosskruger
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Dear Colonel Grosskruger:

This document is the Fish and Wildlife Service's (Service) biological opinion for the multi-slip dock projects listed below, resulting in 31 new slips in Palm Beach County, Florida. The biological opinion addresses the potential effects of the proposed projects on the Palm Beach County segment of the Atlantic Subpopulation of the West Indian (= Florida) manatee (*Trichechus manatus*) (manatee), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), the Marine Mammal Protection Act of 1972, as amended (MMPA) (16 U.S.C. 1361 *et seq.*), and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

Service Activity Code	Service Consultation Code	Corps Application No.	Slips	Date Received	Applicants
2007-FA-0096	2006-F-0072	SAJ-2005-5937 (LP-JBH)	12	10/17/2006	Ryan O. Thomas (Domani Condominium)
2007-FA-0154	2006-F-0104	SAJ-2006-6063 (LP-JBH)	19	10/26/2006	Leon Moore (Jonathan's Landing)

This biological opinion was prepared based on information provided by the U.S. Army Corps of Engineers (Corps), the Corps' Reach Characterization Analysis, the *Florida Manatee Recovery Plan* (Service 2001), the *South Florida Multi-Species Recovery Plan* (MSRP) (Service 1999), data supplied by the Florida Fish and Wildlife Conservation Commission (FWC), and other sources of information. A complete administrative record of this consultation is on file at the Service's South Florida Ecological Services Office in Vero Beach, Florida.

Palm Beach County is one of 13 coastal (= key) counties directed by the Governor and Cabinet to develop a Manatee Protection Plan (MPP). Although the county approved their plan in June 2006, the MPP has not been approved by the State. In the absence of a State-approved MPP, the State recommended new or expanded boating facilities in Palm Beach County be limited to one powerboat slip per 100 linear feet of shoreline (the 1:100 ratio) until the county implements its plan. The slip density of the proposed multi-slip docks listed above exceeds the 1:100 ratio. The Service believes the facilities, as proposed, are not consistent with the State's recommended 1:100 ratio for new watercraft access projects in a key county without a State-approved MPP and, therefore, may have an adverse effect on the manatee.

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Consultation History

On the dates listed above, the Corps issued the Public Notice for the proposed residential developments and multi-slip dock projects. The Corps provided a determination of "may affect" for the endangered manatee.

The Service examined the July 2005 version of the (2005 Manatee Key) along with its attachments and agrees with its structure and content. Service concurrence for the 2005 Manatee Key was provided in letters to the Corps dated July 12, 2005, September 30, 2005, and August 28, 2006. Based on implementation of Interim II and the effects determination procedure described in the 2005 Manatee Key, the Service has sufficient information to provide formal consultation for the proposed multi-slip docking facilities.

FISH AND WILDLIFE RESOURCES

The proposed projects have the potential to impact wetlands (including mangroves) and submerged aquatic resources (including seagrasses). The Service believes fish and wildlife resources will be affected and recommends the Corps require the applicants avoid, minimize, and mitigate for anticipated resource impacts.

For projects where there is dredging or filling, methodology and turbidity containment should be employed such that any seagrasses or live hardbottom near the project footprint and de-watering area are not impacted by sedimentation during operations. If there are wetlands along the shoreline and/or seagrasses in the project area, the Service recommends the applicant adheres to the *Dock Construction Guidelines for Florida* developed by the Corps and National Marine Fisheries Service (NOAA Fisheries) (Corps and NOAA Fisheries 2001). Specifically, the dock should be configured to minimize impacts to mangroves, seagrasses, and other submerged aquatic resources. The Service also recommends in-kind mitigation be provided for any unavoidable impacts to seagrasses, live bottom, and mangroves.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Domani Condominium project is located within Reach 5 and the Jonathan's Landing project is located in Reach 6 of the Corps' Reach Characterization Analysis. Vessels using the new multi-slip docks would likely travel through waters of the Atlantic Intracoastal Waterway (AIW) in Palm Beach County, Florida.

Ryan O. Thomas (Domani Condominium) proposes to construct a multi-family dock that would contain 12 slips within the Lake Worth Lagoon. The applicant appears to own approximately 221 feet of shoreline. The Corps has assigned application SAJ-2005-5937 (LP-JBH) to this project. The project is located in Section 4, Township 42 South, Range 43 East, Palm Beach County, Florida.

Leon Moore (Jonathan's Landing) proposes to construct an addition to an existing marina with a "T" shaped dock containing 19 slips within the Lake Worth Creek. The applicant owns 555 feet in the marina basin and an additional 335 feet on the AIW. The existing marina has 376 dry slips and 31 wet slips. The Corps has assigned application SAJ-2006-6063 (LP-JBH) to this project. The project is located in Section 7, Township 41 South, Range 43 East, Jupiter, Palm Beach County, Florida.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Service has determined the action area for these projects include the coastal waters of Palm Beach County within Reach 5 and 6, the most likely travel route of watercraft leaving from this facility.

STATUS OF THE SPECIES/CRITICAL HABITAT

Species/Critical Habitat Description

The West Indian manatee is federally listed as an endangered species under the Act (16 U.S.C. 1531 *et seq.*) (32 FR 4001) and the species is further protected as a depleted subpopulation under the MMPA (16 U.S.C. 1361-1407).

Manatees are large fusiform-shaped mammals with skin that is uniformly dark grey, wrinkled, sparsely haired, and rubber-like. Manatees possess paddle-like forelimbs, no hind limbs, and a spatulate, horizontally flattened tail. Females have two axillary mammae, one at the posterior base of each forelimb. Their bones are massive and heavy with no marrow cavities in the ribs or long bones of the forearms (Odell 1982). Adults average about 10 feet in length and 2,200 pounds in weight, but may reach lengths of up to 15 feet (Gunter 1941) and weigh as much as 3,570 pounds (Rathbun et al. 1990). Newborns average 4 to 4.5 feet in length and about 66 pounds (Odell 1981). The nostrils located on the upper snout, open and close by means of muscular valves as the animals surface and dive (Husar 1977; Hartman 1979). A muscular flexible upper lip is used with the forelimbs to manipulate food into the mouth (Odell 1982). Bristles are located on the upper and lower lip pads (Marshall et al. 2000). Molars designed to crush vegetation form continuously at the back of the jaw and move forward as older ones wear down (Domning and Hayek 1986). The eyes are very small, close with sphincter action, and are equipped with inner membranes that can be drawn across the eyeball for protection. The ears are external, minute, with no pinnae. The anatomy of the internal ear structure suggests they can hear sounds within a relatively narrow low-frequency range, their hearing is not acute, and they have difficulty in localizing sound (Ketten et al. 1992). However, Gerstein (1995) suggested manatees may have greater low-frequency sensitivity than other marine mammal species that have been tested.

Critical habitat for the Florida subspecies (*Trichechus manatus latirostris*) was designated in 1976 [50 CFR § 17.95(a)]. Critical habitat is described as the specific area within the geographic area occupied by the species, at the time it is listed under the provisions of section 4 of the Act, on which are found those physical or biological features (*i.e.*, constituent elements): (1) essential

to the conservation of the species; and (2) which may require special management considerations or protection [Act § 3(5)(A)]. No specific primary or secondary constituent elements were included in the critical habitat designation. However, experts agree essential habitat features for the manatee include seagrasses for foraging, shallow areas for resting and calving, channels for travel and migration, warmwater refuges during cold weather, and fresh water for drinking (Service 2001).

Designated manatee critical habitat on the Atlantic Coast of Florida includes those intracoastal waters connecting rivers and bays from the Florida/Georgia border south to Key Largo in Monroe County, excluding those waters in Broward County, Florida. The Atlantic Subpopulation of manatees also uses critical habitat identified between Key Largo and mainland Miami-Dade County in Florida Bay.

Designated critical habitat on the west coast of Florida includes Crystal River in Citrus County, portions of the Little Manatee River in Hillsborough County; portions of the Manatee River in Manatee County; portions of the Myakka River in Sarasota and Charlotte Counties; portions of the Peace River in Desoto and Charlotte Counties; portions of the Caloosahatchee River and all coastal waters in Lee County; and all coastal waters in Collier and Monroe Counties between Gordon's Pass (Collier County) and Whitewater Bay (Monroe County).

Life History

Manatees are herbivores that feed opportunistically on a wide variety of aquatic vegetation. Feeding rates and food preferences depend, in part, on the season and available plant species. Manatees frequently feed in waters 3 to 9 feet in depth where aquatic vegetation is abundant. Seagrasses appear to be a staple of the manatee diet in coastal areas (Ledder 1986; Provancha and Hall 1991; Kadel and Patton 1992; Koelsch 1997; Lefebvre et al. 2000). Manatees can remain submerged for several minutes with the longest submergence record lasting 24 minutes (Reynolds 1981).

Breeding takes place when one or more males (ranging from 5 to 22 individuals) are attracted to an estrous female to form an ephemeral mating herd (Rathbun et al. 1995). Mating herds can last up to 4 weeks, with different males joining and leaving the herd daily (Hartman 1979; Bengston 1981; Rathbun et al. 1995; Rathbun 1999). Permanent bonds between males and females do not form. During peak activity, the males in mating herds compete intensely for access to the female (Hartman 1979). Successive copulations involving different males have been reported. Some observations suggest that larger, presumably older, males dominate access to females early in the formation of mating herds and are responsible for most pregnancies (Rathbun et al. 1995). Although breeding has been reported in all seasons, Hernandez et al. (1995) reported that histological studies of reproductive organs from carcasses of males showed evidence of sperm production in 94 percent of adult males found between March and November. Females appear to reach sexual maturity by about age 5 but have given birth as early as age 4 (Marmontel 1995; Odell et al. 1995; O'Shea and Hartley 1995; Rathbun et al. 1995). Males may reach sexual maturity at 3 to 4 years of age (Hernandez et al. 1995). Manatees may live in excess of 50 years (Marmontel 1995), and evidence for reproductive senescence is unclear (Marmontel 1995; Rathbun et al. 1995).

Calf dependency usually lasts 1 to 2 years after birth (Hartman 1979; O'Shea and Hartley 1995; Rathbun et al. 1995; Reid et al. 1995). Calving intervals vary greatly among females, with an average birth cycle of 2 to 2.5 years. Intervals may be considerably longer depending on age and perhaps other factors (Marmontel 1995; Odell et al. 1995; Rathbun et al. 1995; Reid et al. 1995). Females that abort or lose a calf due to perinatal death (small manatees, less than 60 inches in length) (O'Shea and Hartley 1995), may become pregnant again within a few months (Odell et al. 1995) or even weeks (Hartman 1979).

Manatees often use secluded canals, creeks, embayments, and lagoons, particularly near the mouths of coastal rivers and sloughs, for feeding, resting, cavorting, mating, and calving (Marine Mammal Commission [MMC] 1986; MMC 1988). Manatees frequent coastal, estuarine, and riverine habitats and are capable of extensive north-south migrations. Based on telemetry, aerial surveys, photo-identification sighting records, and other studies over the past 20 years, manatee distribution in the southeastern United States is better understood (Beeler and O'Shea 1988; O'Shea 1988; MMC 1984; MMC 1986; Lefebvre et al. 1989). In general, the data reveal that manatees exhibit opportunism, as well as predictable patterns in their distribution and movement.

They are able to undertake extensive north-south migrations with seasonal distribution determined by water temperature below 68 degrees Fahrenheit (20 degrees Celsius). Manatees depend on areas with access to natural springs, manmade warmwater refugia, vascular plants, and freshwater sources. Manatees normally migrate along shorelines and use deeper corridors to access shallow water feeding and resting areas. When ambient water temperatures drop below 68 degrees Fahrenheit in autumn and winter, manatees aggregate within the confines of natural or artificial warmwater refuges (Lefebvre et al. 1989) or move to the southern tip of Florida (Snow 1991). Most artificial refuges are created by warm water outfalls from power plants or paper mills. As water temperatures rise, manatees disperse from these winter aggregation areas. While some remain near their winter refuges, others undertake extensive migrations along both Florida coasts and far up rivers and canals. Many manatees return to the same warmwater refuges each year. However, some manatees use different refuges in different years, and others use two or more refuges in the same winter (Reid and Rathbun 1984; Rathbun et al. 1990; Reid et al. 1991). There are many lesser known, minor aggregation areas used as temporary thermal refuges. Most of these are canals or boat basins where warmwater temperatures persist as temperatures in adjacent bays and rivers decline.

Population Dynamics

The total population size of manatees in Florida is unknown. Annual synoptic surveys suggest a minimum population of 3,000 animals statewide. Adult manatee survival rates are considered to be the most important indicator of maintaining a stable and secure manatee population. Given the low reproductive rate, manatee populations would be slow to recover from extensive depletions of their numbers.

Status and Distribution

Based on telemetry studies, aerial surveys, photo identification studies, and other research over the past 30 years, manatee distribution in the southeastern United States is now well known

(Beeler and O'Shea 1988, Fertl *et al.*2005, Lefebvre *et al.*1995, Rathbun *et al.*1982, Schwartz 1995). Florida manatees can be found in Florida waters throughout the year, and nearly all manatees use the waters of peninsular Florida during the winter months. In winter months, most manatees rely on warm water from industrial discharges and natural springs for warmth.

There are four regional management units of manatees in Florida: (a) the Northwest Region, along the Gulf of Mexico from Escambia County east and south to Hernando County; (b) the Upper St. Johns River Region, consisting of Putnam County from Palatka south to Lake and Seminole counties; (c) the Atlantic Coastal Region, consisting of counties along the Atlantic coast from Nassau County south to Miami-Dade County and that portion of Monroe County adjacent to the Florida Bay and the Florida Keys; and counties along the lower portion of the St. Johns River north of Palatka, including Putnam, St. Johns, Clay and Duval counties; and (d) the Southwest Region, consisting of counties along the Gulf of Mexico from Pasco County south to Whitewater Bay in Monroe County. The largest numbers of manatees, comprising perhaps 80 percent of the manatee population in Florida, are found in the Atlantic Coast and Southwest regions. The Northwest and Upper St. Johns River units comprise about 20 percent of the population. Manatees in the NW, Upper St. Johns River and Atlantic Coastal regions are exhibiting positive growth, however those in the SW region appear to be in decline, probably due to the combined effects of watercraft mortality and episodic red-tide events (Craig and Reynolds 2004; Runge *et al.*2004; Langtimm *et al.*2004; K. Langtimm pers. comm. 2006).

Reasons for Legal Protection

In 1967, both the Florida and Antillean subspecies of manatees (*T. manatus latirostris* and *T. manatus manatus*) were listed as endangered (32 FR 4061) and received Federal protection with the passage of the Act in 1973. Since the manatee was designated as an endangered species prior to enactment of the Act, there was no formal listing package identifying threats to the species, as required by section 4(a)(1) of the Act. However, since that time, threats to the manatee (discussed below) have been identified.

Manatees are also protected under the MMPA. The MMPA establishes, as national policy, maintenance of the health and stability of marine ecosystems and, whenever consistent with this primary objective, obtains and maintains optimum sustainable populations of marine mammals. It also establishes a moratorium on the taking of marine mammals, which includes harassing, hunting, capturing, killing, or attempting to harass, hunt, capture, or kill any marine mammal. Section 101(a)(5)(A) of the MMPA allows the Service, upon request, to authorize by specific regulation the incidental, unintentional take of marine mammals by persons engaged in identified activities within specific geographic areas, if the Service determines that such taking would have a negligible impact on the species or subpopulation. Since the manatee, which is comprised of the Florida and Antillean manatee subpopulations, is currently listed as "endangered" under the Act, they are considered "depleted" under the MMPA.

Section 115(b) of the MMPA requires conservation plans be developed for marine mammals considered "depleted." In the case of the Florida manatee, the Service developed the initial recovery plan for the manatee in 1980. This initial plan focused primarily on manatees in Florida, but included Antillean manatees in the Commonwealth of Puerto Rico and the

United States Virgin Islands. In 1986, the Service adopted a separate recovery plan for manatees in Puerto Rico. To reflect new information and planning needs for manatees in Florida, the Service revised the original plan in 1989 and focused exclusively on the Florida manatee. This first revision covered a 5-year planning period ending in 1994. The Service revised and updated the plan again in 1996, which again covered a 5-year planning period ending in 2000. In 1999, the Service initiated the process to revise the plan for a third time. An 18-member recovery team, consisting of representatives of the public, agencies, and groups that have an interest in manatee recovery and/or could be affected by proposed recovery actions, was established to draft the third revision. The latest manatee recovery plan, which also covers a 5-year planning period, was finalized in October 2001.

Threats

The two most significant threats to the Florida manatee population statewide are collisions with watercraft and the loss of warm water habitat. All other threats are relatively minor in comparison. Mortality from watercraft collisions accounts for 25-33 percent of all manatee mortalities statewide (FWC-FWRI 2006). Warm water habitat is essential for manatee survival during cold weather. Prolonged exposure to cold water temperatures can result in debilitation and/or death due to "cold stress syndrome" (Bossart *et al.*2004, Rommel *et al.* 2001). However, when compared to all other threats, including the loss of warm water habitat, watercraft-related mortality poses the most serious long-term risk to the growth and resilience of the manatee population.

Other threats to manatees include crushing or entrapment in gates and locks, entanglement in ropes, lines, and nets, ingestion of fishing gear or debris, vandalism, poaching, and exposure to red tide brevetoxin (Bossart *et al.* 1998).

Protection Measures

Through 2005 with more than 1,000,000 vessels registered in the State of Florida and an estimated 400,000 out-of-state vessels, over 1.4 million watercraft use Florida's waterways annually, and the popularity of watercraft recreation continues to grow. While every new watercraft access facility may not directly equate to a watercraft added to the water, cumulatively, the addition of watercraft access points result in increased watercraft use and, in some cases, changes in watercraft travel patterns and modification of manatee behavior.

Watercraft speed zones were established in some coastal Florida counties with high manatee-watercraft collision rates to slow watercraft to reduce collisions. Anecdotal information indicates that when manatees detect the presence of an oncoming boat, they often but not always dive and/or swim rapidly out of its path. Their ability to effectively elude the oncoming boat is largely determined by the speed of the approaching boat. Given ample time, manatees should be able to avoid lethal and injurious encounters with boats. As such, slow-moving boats are less of a threat to manatees. To control boat speeds and limit boater access to sensitive manatee areas, the State's "Florida Manatee Sanctuary Act" was enacted in 1978. This act designated the State of Florida as a manatee sanctuary and allowed for the regulation of boating activity within State waters. Since its inception, manatee protection zones have been established in 26 counties.

Prior to Shapiro (2001), there were no definitive studies assessing the effectiveness of the protection zones during the more than 20 years that some of the zones have been in place. Initially, the manatee carcass salvage program was used as a measure to gauge the effectiveness of these zones. The results were very discouraging with watercraft-related deaths continue to occur and increase in excessive numbers in the counties with manatee speed zones.

When gauging the effectiveness of these zones, other factors in addition to the number of watercraft-related deaths must be included in any such evaluation. These factors include, but are not limited to: (1) the types of zones; (2) the volume of vessel traffic; (3) vessel type and size; (4) season/day of week/time of day; and (5) the presence of enforcement [*i.e.*, compliance].

To date, ten compliance studies have been conducted to measure the extent to which boaters comply with manatee protection zones. These studies were conducted in several counties as well as several sites throughout peninsular Florida and demonstrated compliance rates ranging from a low of 26 percent compliance within study areas to a high of 79 percent compliance within study areas for the duration of the various monitoring periods. Four of the studies concluded the presence of law enforcement officers on-the-water during their sampling period increased levels of compliance. Furthermore, one researcher concluded "consistent law enforcement presence will ensure consistent compliance." Another researcher concluded low levels of enforcement, few citations, and poor signage were responsible for poor compliance.

- Kinnaird (1983) reviewed protection strategies for manatees by examining the number of watercraft-related deaths that had occurred in certain areas before and after they were designated as protection zones. Because the number of deaths was relatively unchanged, she was not able to conclude that they were an effective means to reduce these collisions. However, she believed that the zones "are of critical importance in the reduction of manatee harassment and injury as well as the prevention of habitat degradation." Furthermore, she believed the zones "may be the most effective short-term strategy for reducing [harassment] and the number of manatee/boat collisions." She encouraged an increase in funding for enforcement and sign maintenance and recommended measures for enhancing the effectiveness of law enforcement activities.

- Morris (1994) conducted the first boater compliance survey to assess boater compliance with manatee protection zones. The surveys were conducted in Brevard County from April 1993 to April 1994. Morris believed that, based on the low number of observations of law enforcement vessels in certain areas and the fact that few citations had been issued in these same areas, boater compliance with these protection zones was poor. He further attributed poor compliance with unclear and confusing signage in manatee protection zones.

- Gorzelany (1996) monitored boater compliance with manatee protection zones in Sarasota County during January-December 1995. Conclusions reached as a result of this study include: (1) areas with a frequent law enforcement presence have the highest level of boater compliance; and (2) observed levels of compliance were higher (74 percent vs. 61 percent) and levels of blatant noncompliance lower (8 percent vs. 18 percent) in the presence of enforcement vessels. A "cautious" interpretation of other data appears to demonstrate that, when a law enforcement vessel was present in a protection zone, average boat speeds were

lower, suggesting an overall slow down in aggregate boat speeds. Gorzelany concludes "a larger allocation of funds, personnel, and resources toward enhancing marine enforcement in Florida" are necessary to promote "effective coastal waterway management."

- Gorzelany (1998) monitored boater compliance in Lee County during 1997-1998. General trends and problem areas were identified in the report. Statistically significant comparisons between compliance levels and the presence or absence of law enforcement activities were determined. Specifically, Gorzelany demonstrated "the presence of a law enforcement vessel influenced the speed and compliance of vessels."

- Tyson and Combs (1999) conducted a 6-month assessment of boater compliance in Brevard County during May-October 1997 and concluded that (1) compliance was best when law enforcement officers were on the water and (2) consistent law enforcement presence will result in consistent compliance. Tyson and Combs urged the Service to continue its task force initiatives to supplement local law enforcement activities and, thereby, reduce the threat of speeding vessels to manatees.

- Shapiro (2001) focused on boater compliance in evaluating the effectiveness of speed zones at several sites throughout Florida from July 2000 to June 2001. This approach was designed to provide a synoptic view of statewide vessel traffic and boater compliance data. The study consisted of two components: (1) a baseline evaluation that assessed the number of vessels in compliance with posted speed zones, including the size and types of vessels, the season, and time of day; and (2) an enforcement evaluation that assessed how the presence of law enforcement affects boater behavior and compliance. Shapiro reported that (1) compliance increased with increasing vessel size; (2) sailboats were the most compliant, whereas, personal watercraft were the least compliant; (3) compliance was lower when vessel traffic was greater in the afternoon, on weekdays, and during the fall [for those sites along the Atlantic Intracoastal Waterway]; and (4) compliance increased significantly (as high as 89 percent at one location) when law enforcement was present.

- Gorzelany (2002) evaluated boater compliance with two new speed zones in Lee County between February and August 2002 and, similar to Shapiro (2001), observed that (1) compliance increased with increasing boat size and (2) levels of compliance varied with boat types [*i.e.*, personal watercraft the least compliant]. Gorzelany also found that while compliance was 66 percent with one newly established speed zone, compliance was only 26 percent at the second new speed zone (in Mullock Creek) and concluded the absence of law enforcement was the reason for the high level of non-compliance.

- Gorzelany (2004) evaluated a series of boater compliance studies performed in 1995 and in 1998 in order to assess the effectiveness of existing speed zones designed to protect manatees in Sarasota and Lee counties. Overall boater compliance was 63 percent in Sarasota County (1995) and 58 percent in Lee County (1998). Compliance varied significantly with vessel type and size. Compliance increased as vessel size increased in both counties. Differences in compliance among survey sites were also significant and were related to travel patterns, traffic volume, vessel composition, sign placement, level of speed restriction, and law enforcement presence.

- Gorzelany (2005) conducted a study to assess boating recreational activity and boater compliance on three waterways in Broward County. All three survey sites were located within manatee speed zones. Overall compliance ranged from 52 to 59 to 78 percent, respectively. Though compliance was moderate for two of the three sites, blatant non-compliance was very low (3 and 2 percent, respectively). For all three survey sites, the operators of smaller boats (less than 26 feet) tended to be less compliant than operators of larger vessels (26 feet and greater).

- Viera-Alwell and McDonald (2006) evaluated boat traffic and boater compliance in the St. Sebastian River, Indian River County. Over 90 percent of the boats observed in the study were less than 26 feet in length. Boater compliance increased more than 10 percent over a similar study conducted 5 years earlier in the same location (Shapiro 2001). Yachts in the 26- to 40-foot length category were 100 percent compliant with the posted speed limits. Higher compliance rates and increasing trends in compliance rates in the St. Sebastian River may be linked to community environmental stewardship and social pressures.

Although many actions the State has identified to reduce watercraft-related manatee mortality (*e.g.*, speed zones, increased State law enforcement, public education) apply to the manatee's conservation throughout the species' range in the State, other actions proposed by individual counties, cities, and other municipalities, and in some instances Federal and State agencies, are specific to designated areas. In addition to those approved by the State, manatee speed zones can be designated by both the county and city with the County Sheriff as well as City Police Department providing enforcement of these local zones within their respective jurisdictional boundaries. Specific Federal and State actions can include the establishment of refuges, sanctuaries, and parks with enforcement of speed zones within these areas.

Manatee protection plans

Concerned with an increased number of manatee mortalities and boating accidents, the Governor and Cabinet directed the Florida Department of Natural Resources (DNR) in June 1989 to make recommendations for specific actions to protect the manatee and its habitat and to make the State's waterways safer for the boating public. DNR's final report, Recommendations to Improve Boating Safety and Manatee Protection on Florida Waterways, found that over 80 percent of all watercraft-related manatee mortality occurred in 10 counties: Brevard, Broward, Citrus, Collier, Dade (now Miami-Dade), Duval, Lee, Martin, Palm Beach, and Volusia. Though watercraft-related mortality was not high for St. Lucie and Indian River Counties, these two counties were considered important areas as travel corridors as well as foraging and resting areas for manatees. Sarasota County volunteered to be the 13th county and was included because it too provided on the west coast the same important use areas that St. Lucie and Indian River Counties did on the east coast.

The Governor and Cabinet directed each of these 13 coastal (= key) counties to develop an MPP. The purpose of an MPP is to present a summary of existing information about manatee use and watercraft use within the county and to develop strategies to balance manatee protection, resource protection, waterway uses, boating facility siting, speed zones and boating safety, and to educate the boating public. Watercraft access projects that are consistent with a county's MPP

provides a level of boater access and activity that is within the capacity of the manatee protection measures provided. Projects that are not consistent with a MPP may exceed the capacity of these protective measures and, therefore, may result in incidental take of manatees. Countywide MPPs are identified in the *Florida Manatee Recovery Plan* (Service 2001) as a method for protecting manatees and manatee habitat.

Citrus County was the first county to have a State and federally-approved MPP in 1991. The county's MPP identified actions that address manatee mortality and included a boating facility siting plan. The MPP also discussed conservation measures to protect manatee habitat. Subsequent to its approval, the State established regulatory speed zones for watercraft. The State of Florida subsequently approved MPPs for Collier County in May 1995 followed by Miami-Dade County in December 1995; Duval County in June 1999; Indian River County in August 2000 which was amended in February 2002; St. Lucie County in March 2002; Martin County in June 2002; Brevard County in February 2003; Sarasota County in February 2004, Lee County in June 2004; and Volusia County in October 2005.

The remaining key counties without a State-approved MPP are Palm Beach and Broward. The State is currently working with Broward and Palm Beach Counties regarding the development of their MPP to address appropriate protection measures for manatees within the county and the inclusion of a boating facility siting component.

The Service believes county MPPs are one of the best vehicles to address such issues as boating facilities (marinas, docks, boat ramps, dry storage areas); boating activity patterns; manatee information; a boat facility siting plan; manatee protection measures; and an education and awareness program for the boating public. They are valuable planning tools and provide an excellent venue for local manatee protection efforts. In addition, it is our view an effective MPP must contain components that address manatee protection areas (*e.g.,* manatee refuges or manatee sanctuaries), speed zone enforcement, funding for manatee protection efforts, and a reporting/monitoring element. Implementation of a State-approved MPP will have met State standards and addressed our concerns in maximizing benefits to the manatee while providing regulatory certainty to the public.

Palm Beach County is one of 13 coastal (= key) counties directed by the Governor and Cabinet to develop a Manatee Protection Plan (MPP). Although the county approved their plan in June 2006, the MPP has not been approved by the State. In the absence of a State-approved MPP, the State recommended new or expanded boating facilities in Palm Beach County be limited to one powerboat slip per 100 linear feet of shoreline (the 1:100 ratio) until the county implements its plan. The slip density of the proposed multi-slip docks listed above exceeds the 1:100 ratio. The Service believes the facilities, as proposed, are not consistent with the State's recommended 1:100 ratio for new watercraft access projects in a key county without a State-approved MPP and, therefore, may have an adverse effect on the manatee.

Analysis of the Species/Critical Habitat Likely to be Affected

Due to the increase in the number of slips resulting from the proposed action, the Corps has determined that the proposed projects "may affect" the manatee. We concurred with the Corps' determinations and have performed a more complete analysis of the effects of the proposed

actions in order to determine whether or not the proposed activities are reasonably certain to result in the take of manatees through impacts to the Atlantic Subpopulation.

The construction of the proposed projects may affect the manatee by increasing watercraft and human presence in the action area, and by increasing the potential to adversely affect submerged aquatic resources (*i.e.*, seagrasses). This may disrupt, disturb, or delay manatee migration to warmwater refugia, freshwater drinking sources, and cause additional stress to manatees and calves present in the action area. An analysis of the projects related effects and impacts to manatees and seagrasses will be considered further in the remaining sections of this document.

ENVIRONMENTAL BASELINE

This section analyzes all past and ongoing human and natural factors leading to the current status of the manatee in the action area. In 2000, Save the Manatee Club, other environmental groups, and several individuals filed suit in the District of Columbia against the Corps and the Service. Plaintiffs alleged violations of the Act, the National Environmental Policy Act, the MMPA, and the Administrative Procedure Act, with regard to the Florida manatee, and alleged that the Clean Water Act Section 404 permitting of Florida boating facilities was responsible for watercraft-related manatee mortality in Florida's coastal counties.

A settlement agreement was signed by all parties of the lawsuit on January 5, 2001, containing the following elements in which the Service agreed to complete and/or implement: (1) revision of the manatee recovery plan; (2) designation of manatee refuges and sanctuaries as manatee protection areas in peninsular Florida; (3) promulgation of a rule for incidental take of manatees under the MMPA; and (4) development of an interim guidance document to be used in section 7 consultations pending completion of the MMPA rule. The designation of refuges and sanctuaries as well as the interim strategy were short-term measures intended to address recent levels of mortality. A long-term solution to address historic levels of mortality depended on the development of small take regulations under the MMPA.

Based on an analysis of manatee mortality data, the Service identified four prerequisites necessary to ensure incidental take would be unlikely to occur. These four prerequisites are: (1) appropriate speed zones; (2) appropriate signage; (3) speed zone enforcement to prevent watercraft collisions with manatees from occurring as a result of the proposed project; and (4) placement of these measures prior to project implementation. If these prerequisites are not met, the Service believes a new watercraft facility in this area would result in the incidental take of manatees and the Service would identify the area as an area with "inadequate protection."

Within the range of the Atlantic subpopulation, the Service designated a portion of the Indian River Lagoon in Brevard County and the Tomoka River in Volusia County as areas with "inadequate protection" in 2001. Since designating these waterways as "areas of inadequate protection" for the manatee, the Service has been working with the State, county, and city entities to ameliorate the watercraft collision threats specific to these regions. With the implementation of State-approved MPPs for Brevard and Volusia Counties as well as the establishment of Federal manatee refuges in both counties, the areas of inadequate protection designations were removed

ACTION AREA

We chose to use counties as the basic geographic analysis area because many factors important to manatee protection are provided at the county level. MPPs are produced by counties, manatee speed zones are designated by the State of Florida with county participation or by the county itself, and county sheriff's departments provide enforcement within their boundaries. These factors make county-by-county and reach-by-reach review the most logical and manageable way to analyze data and provide recommended courses of action. The Service has determined the action area for these projects includes the coastal waters of Reach 4 and 5 in Palm Beach County. Specifically, the action area is the most likely travel route of watercraft leaving this and going to the Atlantic Ocean via the AIW and the Lake Worth Inlet.

Status of the Species within the Action Area

Waters within the action area are not designated as critical habitat for the manatee. However, important components of manatee habitat include areas of submerged vegetation for foraging, shallow areas for resting and calving, channels for travel and migration, warmwater refugia for cold weather events, and fresh water for drinking.

The Atlantic Subpopulation of manatees migrates through the waters of Palm Beach County. Manatee distribution and dispersal patterns as well as numbers of individuals within an area can vary considerably from year-to-year and season-to-season. This variability in dispersal patterns is dependent on a variety of biotic and abiotic factors, such as warmwater discharges, freshwater sources, foraging areas, and mating season.

Manatee abundance in Palm Beach County has been documented repeatedly through aerial surveys conducted from 1995 to 2002; however, the survey data do not indicate the number of manatees observed in Reaches 4, 5, 6, and 7. During January 2003 there were three synoptic aerial surveys covering Florida. A total of 1,695; 1,814; and 1,705 manatees were observed along the east coast of Florida. These surveys did not delineate how many manatees were observed within Palm Beach County.

Results of aerial surveys and anecdotal evidence indicate that manatees exhibit seasonal movements within Palm Beach County. Manatees respond to cool ambient temperatures during the winter by aggregating within deeper water such as power plant discharge sites. However, during mild winters (> 68 °F ambient temperature), manatees may remain in the action area. Throughout the warm season, manatees are widely dispersed within the action area.

The nearest primary warmwater refuge to the project sites is the Florida Power and Light's Riviera Beach Power Plant. Many of the artificial waterways (*i.e.*, manmade canals) in the action area are known to be used by manatees for resting and calving.

Factors affecting species environment within the action area

Watercraft

Commercial and recreational boat use in the action area is increasing. According to information provided by the State of Florida, the total number of registered vessels in Palm Beach County since 2000 is as follows:

Year	2001	2002	2003	2004	2005
Registered vessels	40,027	42,107	44,145	44,322	45,103

New watercraft resulting from the proposed projects will likely travel within the waters of the Loxahatchee River, Lake Worth Lagoon, and the AIW in Palm Beach County Florida. The most likely effects to manatees caused by increased watercraft traffic are deaths or injuries from collisions with watercraft and alteration of seagrass beds used as feeding or resting areas.

Mortality

From January 1, 2000, through December 31, 2005, 25 manatees died as a result of a watercraft collision in the
Palm Beach County.

Year	2000	2001	2002	2003	2004	2005	2006
Palm Beach County	3	3	6	5	3	5	0

Speed Zones

Palm Beach County adopted manatee speed zones in 1993 (Florida Administrative Code 68C-22.010) for the purpose of regulating the operation of motorboats within Palm Beach County, including all associated and navigable tributaries, lakes, creeks, coves, bends, backwaters, canals, channels and boat basins, unless otherwise designated or excluded. Zone types and locations were based on manatee congregation data, manatee mortality data, boat use data, and other manatee natural resource needs.

All Palm Beach County posted manatee speed zone signs are in compliance with both the State-approved design parameters and Chapter 68D-23 "Uniform Waterway Markers in Florida Waters." The intent of Chapter 68D-23 is to provide for uniformity in design, construction and coloring of markers so that all vessel operators may readily recognize, identify and distinguish between authorized markers and unlawfully placed markers, and to provide a means by which the FWC law enforcement officers and all other law enforcement officers charged with the enforcement of this chapter may determine with reasonable certainty which boating areas are lawfully established and marked. For more detail on manatee speed zones in Palm Beach County see http://floridaconservation.org/psm/gis/mapref.htm.

Enforcement

Enforcement of posted speed zones in Palm Beach County is conducted by the FWC and the Palm Beach County Sheriff's Office (PBCSO). The PBCSO operates two boats that patrol county waters from Jupiter to Boca Raton. One vessel operates daily from 6:00 am to 4:00 pm and the other vessel operates daily from 11:00 am to 9:00 pm. Officers from the PBCSO spend most of their time enforcing manatee speed zones in the AIW and its tributaries. Designated manatee speed zones are enforced by members of all duly authorized law enforcement agencies within the county. The U.S. Coast Guard and the Service also provide speed zone enforcement through special task force events.

Education

Aside from enforcement, another factor influencing boater compliance is education. Boater education is an integral component of county MPPs. The purpose of an MPP is to present a summary of existing information about manatee use and watercraft use within the county and to develop strategies to balance manatee protection, resource protection, water resource uses, facility siting, speed zones, boating safety, and provide for public education.

In reviewing the baseline and to determine if speed zones or levels of enforcement were sufficient to minimize the likelihood of adverse effects to manatees, we looked at existing speed zones, levels of enforcement, manatee aggregation areas, warmwater refugia, freshwater sources, seagrass beds, and mortality data, as well as other biological factors. Based on this review, we focused on manatee mortality because this is the only form of take for which quantitative data are available. For Palm Beach County, the result of all these factors (*i.e.*, zones in the right place with the appropriate signage for officers to enforce) is that between 1994 and 2005, 38 watercraft-related manatee deaths were recorded within Palm Beach County, including 3 in 2000, 3 in 2001, 6 in 2002, 5 in 2003, 3 in 2004, 5 in 2005, and 0 in 2006.

We know sublethal forms of take (such as injury and harassment) occur, but some of these forms are immeasurable. Sublethal injury to manatees due to boat interactions is a significant factor. On a continued basis, this type of injury could have an impact on maintaining a healthy and viable population. In that regard, most manatee carcasses examined bear scars from previous strikes with watercraft (Wright et al. 1995), and a significant number of living, but scarred, manatees exist. A photo-identification system and database of scarred manatees currently maintained by the Sirenia Project (Beck and Reid 1995) contain only individuals with distinct scars, the vast majority of which appear to have been inflicted by propeller blades or keels. This database now documents 1,184 living individuals scarred from collisions with boats. Most of these manatees (1,153, or 97 percent) have more than one scar pattern, indicating multiple strikes with boats. Carcasses examined at necropsy also bear healed scars of multiple past strikes by boats; one extreme case, recently noted by the FMRI, had evidence of more than 50 past boat collisions (O'Shea et al. 2001). The severity of these boat strikes, including completely severed tails, major tail mutilations, and multiple disfiguring dorsal lacerations, is thought by some manatee researchers to impact population processes by reducing calf production (and survival) in wounded females, although there are no reliable data to establish this cause and effect relationship. Overall, the full effects of harm to manatee population dynamics resulting from boat strikes remain largely unknown.

In addition to direct injury due to boat strikes, harassment by boats and swimmers may drive animals away from preferred sites thus altering manatee behavior and movement patterns. Significant and/or long-term harassment may require manatees to travel greater distances to feed or to reach warmwater refugia. Furthermore, some researchers are concerned manatee calves can be separated from their mothers and some individuals may be driven from preferred warmwater refuges due to harassment.

Summary

Designated manatee critical habitat is not present within the action. Manatees forage in the extensive seagrass beds present throughout Palm Beach County's waterways. Between 2000 and 2005, 25 manatees died as a result of a watercraft collision in Reaches 4, 5, 6, and 7 in Palm Beach County.

EFFECTS OF THE ACTION

This section includes an analysis of the direct and indirect effects of the proposed actions on the manatee and their interrelated and interdependent activities.

Factors to be Considered

New watercraft access projects may have a number of direct and indirect effects on manatees and manatee habitat. Direct impacts include alteration of manatee habitat through dredge and fill activities associated with construction of the development and potential direct harm or harassment of manatees during construction activities. Anticipated direct impacts to habitat are addressed through modifications in the project design during the permit review process. Direct impacts to manatees during construction are dealt with through application of the *Standard Manatee Construction Conditions* (FWC 2005), which are routinely included as conditions of Department of the Army permits issued for construction projects in manatee habitat.

Indirect effects include effects to manatees and manatee habitat caused by operation of the facility. Construction of new watercraft access projects may provide increased access by watercraft to areas frequented by manatees or may alter watercraft traffic patterns in such a way as to increase watercraft-manatee interactions. This may lead to increased harassment of manatees or increased watercraft collisions with manatees. Depending on the location of the project, construction of watercraft access projects may encourage boats to travel through important manatee habitat features such as submerged aquatic vegetation and warmwater refuges; thereby potentially altering manatee habitat and manatee habitat use patterns. These projects are in an area occupied by the manatee. The projects are located on the AIW in Palm Beach County within the southern portion of the geographic range of the Atlantic Subpopulation of the manatee. The timing of construction for each project (when it will be constructed) as it relates to sensitive periods of the manatee's life cycle is unknown. Manatees may be found adjacent to the proposed construction footprints during the spring, summer, and fall. Due to cooler water temperatures generally present during mid-winter, there is a significantly lower likelihood that manatees will be adjacent to the construction footprint during this time. There is a high probability that during the cooler months, manatees will be present at the Florida Power and Light – Riviera Beach Plant. Each project will be constructed in a single, disruptive event, followed by perpetual activities, such as maintenance of the dock structures and watercraft ingress and egress. The entire construction sequence is expected to be completed in less than 3 months. Although users of watercraft associated with each project must operate at posted speeds within the action area, and must be cautioned about the possible presence of manatees, physical contact or harassment is still possible.

Analyses for Effects of the Actions

The Corps has determined the proposed projects are located within the Palm Beach County portion of Reach 5 and 6, as defined by the Corps' Reach Characterization Analysis. Furthermore, the Corps has determined that all projects within these Reaches cause an increased risk to the manatee due to several reach characteristics including: (1) the very high extent of shallowness in high speed areas; (2) the very high dock and boating density; (3) the very high potential for watercraft traffic to cross manatee aggregation areas; and (4) the reach is very close to a manatee aggregation area.

Beneficial Effects - There are no known beneficial effects to manatees from the proposed activities.

Direct Effects - Direct effects are those effects that are caused by implementation of the proposed action, at the time of construction, and are reasonably certain to occur. The direct effects that these projects will have on the manatee within the action area include noise from barge operation and construction equipment; in-water movement of construction equipment and work watercraft; placing and securing dock support structures and mooring piles; and barge ingress and egress to the construction sites.

To reduce potential construction-related impacts to the manatee and critical habitat (where present), the Corps has agreed to include as a condition of the permits, and the applicant has agreed to implement as part of their construction, the *Standard Manatee Construction Conditions* (FWC 2005), which are as follows:

The permittee shall comply with the following manatee protection construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the MMPA of 1972, the Act of 1973, and the Florida Manatee Sanctuary Act.

c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a 4-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.

f. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (904-232-2580) for north Florida or Vero Beach (772-562-3909) in south Florida.

g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the permittee upon completion of the project. A sign measuring at least 3 feet by 4 feet which reads *Caution: Manatee Area* will be posted in a location prominently visible to water related construction crews. A second sign should be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should be at least 8-1/2" by 11" which reads *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-772-562-3909) for south Florida.*

With the incorporation of the above *Standard Manatee Protection Construction Conditions* (FWC 2005) into the project permit by the Corps, the Service believes the construction of the proposed project will not directly affect the manatee.

Interrelated and Interdependent Actions - There are no interdependent or interrelated actions associated with the proposed activity that is expected to impact manatees.

Indirect Effects - Indirect effects are those long-term effects that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Authorizing a dock or marina or boat ramp in some manatee-inhabited areas indirectly affects manatees by increasing the likelihood of manatee mortality and injury resulting from collisions with new vessels associated with the permitted facility. Placement of watercraft access points has the potential to concentrate boating activities to that particular vicinity. If this area is frequented by manatees, the likelihood of watercraft collisions with manatees is increased proportional to the number of watercraft using the area, given that the boats are operating at a speed that could result in collisions with manatees. Also, take in the form of harassment from watercraft could increase in certain areas with the addition of more sublethal watercraft-manatee interactions. However, the likelihood of take is reduced if the adequate and appropriate regulatory measures (*i.e.*, designated manatee speed zones with the appropriate signage coupled with the necessary speed zone enforcement to prevent watercraft collisions with manatees from occurring as a result of the proposed project) are in place.

Watercraft-related manatee mortality was assessed for the action area. Between 2000 and 2005, 25 manatees died as a result of a watercraft collision in Palm Beach County. Furthermore, the Service believes the vessels using the proposed facility are reasonably certain to result in the take of manatees in the form of harassment. As defined by the Act, take is not just death and injury, but includes actions (= harassment) that create the likelihood of injury to manatees by significantly disrupting normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering.

As stated earlier, an MPP is one means of providing adequate planning to address effects of watercraft access projects on manatees and manatee habitat. Such plans provide a level of manatee protection commensurate with a certain level of boater access. Projects that are consistent with a State-approved MPP provide a level of boater access and activity that is within the capacity of the manatee protection measures provided in the plan. Projects that are not consistent with the approved MPP may exceed the capacity of the protective measures present and, therefore, may result in adverse effects to manatees.

Although Palm Beach County's MPP has been approved locally, the plan has not been approved by the State. The Service believes the facility, as proposed, is not consistent with the State's recommended 1:100 ratio for new watercraft access projects in a key county without a State-approved MPP and, therefore, may have an adverse affect on the manatee.

Species response to the proposed action

Watercraft using the proposed multi-slip dock facilities will likely travel within the waters of the AIW and the Atlantic Ocean. The most likely effects to manatees caused by increased watercraft traffic are deaths or injuries from collisions with watercraft and alteration of seagrass beds used as feeding or resting areas.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions are not considered in this section because they require separate consultation under section 7 of the Act. The Service has considered cumulative effects within the action area, and based on the above discussion, have not identified any additional cumulative effects beyond those already discussed in the Environmental Baseline.

However, based on the absence of the necessary measures to protect manatees (*e.g.*, a State approved MPP and limited enforcement of speed zones) in the project action area, the Service believes the proposed action is reasonably certain to result in the take of manatees in the form of additional deaths and injuries.

CONCLUSION

After reviewing the current status of the manatee, the environmental baseline for the action area, the effects of the proposed actions and the cumulative effects, it is the Service's opinion the actions, as proposed, are not likely to jeopardize the continued existence of the manatee and are not likely to destroy or adversely modify designated critical habitat. However, the Service believes the proposed actions may result in incidental take of manatees. The Service believes county MPPs are one of the best vehicles to address such issues as boating facilities (marinas, docks, boat ramps, dry storage areas); boating activity patterns; manatee information; a boat facility siting plan; manatee protection measures; and an education and awareness program for the boating public. They are valuable planning tools and provide an excellent venue for local manatee protection efforts. Although Palm Beach County is currently developing an MPP, the plan has not been approved by the State or the Service. Therefore, the Service believes the facilities as proposed are not consistent with the State's recommended 1:100 ratio for new watercraft access projects in a key county without a State-approved MPP and, therefore, may have an adverse effect on the manatee. The Service believes the proposed actions are reasonably certain to result in the take of manatees in the form of additional deaths and injuries.

INCIDENTAL TAKE STATEMENT

The Service anticipates the proposed actions are reasonably certain to result in the take of manatees. However, the Service is not including an incidental take authorization for marine mammals at this time because the incidental take of marine mammals has not been authorized under section 101(a)(5) of the MMPA and/or its 1994 Amendments. Following issuance of such regulations or authorizations, the Service may amend this biological opinion to include an incidental take statement for marine mammals, as appropriate.

REINITIATION - CLOSING STATEMENT

This concludes section 7 consultation on the proposed issuance of the following Corps permit application:

Service Activity Code	Service Consultation Code	Corps Application No.	Slips	Date Received	Applicants
2007-FA-0096	2006-F-0072	SAJ-2005-5937 (LP-JBH)	12	10/17/2006	Ryan O. Thomas (Domani Condominium)
2007-FA-0154	2006-F-0104	SAJ-2006-6063 (LP-JBH)	19	10/26/2006	Leon Moore (Jonathan's Landing)

As provided in 50 CFR § 402.15, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained and if: (1) the amount of incidental take is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered by this consultation, (3) the action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered by this consultation, or (4) a federally listed

species or its critical habitat not addressed in this biological opinion may be affected by the action. In instances where incidental take occurs, any operations causing such take must cease, pending reinitiation.

The above findings and recommendations constitute the report of the Department of the Interior. Thank you for your cooperation and effort in protecting fish and wildlife resources. If you have any questions regarding these projects, please contact Allen Webb at 772-562-3909, extension 246.

Sincerely yours,

Paul Souza
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