MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

Jimmy L. Morales, City Manager
Tel: 305-673-7010 , Fax: 305-673-7782

NO. LTC # **397-2017**

LETTER TO COMMISSION

TO: Mayor Philip Levine and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: August 4, 2017

SUBJECT: Sea Turtle Protection in Miami Beach

Over the last few weeks we have unfortunately witnessed many sea turtle hatchling disorientations that are a concern to all of us. Staff has prepared this Letter to Commission to make sure gathered information regarding recent changes to Miami-Dade County's Sea Turtle Monitoring program and Florida Fish and Wildlife Conservation Commission's (FWC) sea turtle conservation practices, as well as our on-going efforts to protect our sea turtle population are shared with all concerned about this matter.

Miami-Dade County Sea Turtle Conservation Program Background

The city's seven miles of beaches support Loggerhead, Green, Leatherback, and Hawksbill sea turtles. These four species of endangered and threated sea turtles lay their nests locally from April through early November every year. The federal Endangered Species Act of 1973 and Florida's Marine Turtle Protection Act (379.2431, Florida Statutes) protect sea turtles by restricting activities (possession, disturbance, harassment) that harm or could harm marine turtles, their nests, their eggs, or their hatchlings. Florida statutes also dictate that a specific authorization is required from FWC, as a delegated authority from the U.S. Fish and Wildlife Service (USFWS), to conduct scientific, conservation, or educational activities that directly involve sea turtles, their nests or their hatchlings in the state of Florida.

Miami-Dade County's Sea Turtle Monitoring program is the entity permitted to conduct conservation activities within our jurisdiction. As dictated by their FWC permit, County staff conducts daily inspections, starting at sunrise every morning, to identify, mark off and, where applicable, relocate nests, to inventory hatched nests, and to document hatchling disorientations. No beach activities (sand sifting, litter collection, concessionaire operations) are allowed to begin before the daily survey is completed and County staff gives the "all clear". This restriction prevents the loss of sea turtle tracks used to identify nests, as well as potential collisions with nesting sea turtles or newly laid nests. All nests identified by County staff during the survey are marked and surrounded by caution tape the same morning they are discovered, signaling the public to maintain a safe buffer of at least 10 feet.

2016 Changes to Sea Turtle Conservation Practices

In 2016, the County employee permit holder that was in charge of managing the program for more than 30 years retired. His position and his responsibilities as permit holder were transferred to a new County employee. In addition to a change in management, the state of Florida incorporated an updated Marine Turtle Conservation Handbook (the document that lists the requirements for the FWC sea turtle permits) into rule late last year. County staff began following these practices as early as this sea turtle nesting season. Despite maintaining open communication with County and FWC staff, city staff was only recently made aware of many of these changes.

Consistent with the updates to the handbook, most nests are no longer screened or caged. FWC also began requiring that permit holders leave more nests in place, rather than relocate them as has been done for the last 30 years. These changes are intended to reduce the risk of embryo and hatchling mortality associated with moving the eggs and caging the nests, respectively, placing the burden instead on better management of potential human threats, such as artificial lighting. Relocation is still used as a last resort in extenuating circumstances, such as with nests that would have otherwise been damaged by inundation, erosion, or other substantial threats as determined by the County and FWC. For example, Loggerhead nests laid between 14 Street and 41 Street, as well as between 62 Street and 77 Street are still relocated because these areas have been designated by FWC to have lighting that could potentially cause disorientations of this endangered species.

Miami Beach Sea Turtle Protection Initiatives

Reducing Potential Disorientations

Light pollution from upland properties is of increased concern, particularly as more nests are left *in situ*. Sea turtles can mistake artificial lighting for the reflection of the night sky on the water and become disoriented, heading toward the lights on land rather than toward the ocean. Nevertheless, adequate lighting is critical in addressing public safety concerns, particularly in the commercial and entertainment districts. This is why areas like Lummus Park were designated primarily for nest relocation in the past. The struggle to balance the need of lighting for public safety and darkness for sea turtles is common to cities up and down the coast. Although there is no substitute for a naturally dark sky, there are practices that the city follows to reduce artificial lighting during nesting season, while maintaining a safe environment for our residents and visitors.

Every March, prior to the start of nesting season, the city sends a letter reminding beachfront properties asking that they turn off all unnecessary lights or keep blinds closed at night (**Attachment A**). Code Compliance conducts regular nighttime inspections to identify non-compliant properties and to educate or issue violations in accordance with the city's sea turtle lighting ordinance (Chapter 46 of the City Code), as applicable. Despite these efforts, there is a number public and private properties that do not have sea turtle friendly lighting and which require a long-term plan for bringing them into compliance.

This nesting season residents have reported numerous disorientations, particularly in the vicinity of Marjorie Stoneman Douglas Park and Lummus Park. There are several reasons why disorientations appear unusually high this year. According to FWC, the three primary reasons are: 1) a reduced rate of relocation and caging; 2) increased public awareness regarding sea turtles; and, 3) in past years, disorientation reports were voluntary. The 2016 Marine Turtle Conservation Handbook made disorientation reports mandatory as part of the FWC permit,

creating a consistent database for the first time for our area. It is possible that disorientations have been happening at the current rate and were simply not observed or documented.

The City is working on short and long term strategies to reduce potential disorientations using the reports from Code inspections, as well as the nest, disorientation, and photometric data collected by the County and FWC. The Environment and Sustainability Department regularly analyzes the data to help other city departments prioritize lighting retrofit and enforcement efforts where they will have the greatest impact. In Marjorie Stoneman Douglas and Lummus Park, the Public Works Department has shielded existing fixtures as an interim measure in the areas with the highest documented disorientations incidents. Additionally, the Police Department has strategically repositioned temporarily lighting within Lummus Park and South Pointe Park away from the beach.

Long term, the city has several projects in planning, design and construction that will replace existing lighting on public property with lights that are turtle-friendly. The Lummus Park lighting project will replace the existing acorn lights with fixtures that direct light downward, reducing light lost skyward and improving visibility within the park, and that can accommodate shields to redirect light away from the beach. The new fixtures are currently being manufactured. Similarly, the Mid-Beach Recreational Corridor project that recently began construction between 53 Street and 64 Street calls for amber LED bollards that are turtle-safe.

Reducing Potential Collisions
Foot traffic and vehicular traffic on the beach are also potentially harmful to sea turtles. As part of their permit responsibilities, the County documents any incidents that result in disturbances to turtles or their nests. On June 18, 2017, the County documented the mortality of an adult Loggerhead female that had completed laying its nest on the beach in Lummus Park. According to the necropsy report from the National Marine Fisheries Service, the turtle suffered from blunt force trauma, without malicious intent (**Attachment B**).

In an effort to reduce the potential for future sea turtle collisions, the County trained two shifts of Police Department staff on June 30, 2017 on ATV best practices. The city, in partnership with the County and FWC, also hosted two workshops on July 14, 2017 on best practices during turtle nesting season: (1) an internal training attended by 51 city staff and contractors that work or operate vehicles on the beach, and (2) a community workshop attended by 28 members of the public. The internal training was recorded for use as on-going training of authorized beach personnel and the community workshop was live streamed on MBTV to increase its reach.

As part of their beach patrols, the Police Department is also keeping a watchful eye for vehicles that are not permitted to drive on the beach. This past Wednesday two officers witnessed and arrested an individual who was driving an unauthorized vehicle on the beach. Their continued efforts to reduce illicit beach driving will further reduce the potential of vehicular damage to sea turtles and their nests.

Next Steps
City staff is in communication with the County, FWC and USFWS to determine the best options for addressing our collective sea turtle concerns and has requested an interagency teleconference for next week to discuss short-term and long-term options for better protecting our native sea turtle population. Among the open issues that need to be discussed is whether the County can relocate new nests in areas that are experiencing high disorientations this season and designate those areas for relocation in future seasons. Additionally, FWC recently

collected photometric readings throughout the entire length of our beach that we will be requesting so we can develop a long-term plan of action to reduce artificial lighting.

We understand many residents are passionate about this issue and want to assist, particularly in saving disoriented hatchlings. Unfortunately, sea turtle protection laws in Florida strictly limit the ability of non-permit holders to participate in sea turtle conservation efforts. For example, it is illegal for the public to pick-up sea turtle hatchlings even if they are disoriented. Instead, residents who are passionate about this issue should report sea turtle incidents to (888) 404-FWCC (3922) or *FWC on cellular phones. We have requested guidance from the County, FWC, and USFWS regarding how we can better involve our residents as we work to improve sea turtle protection initiatives in Miami Beach and encourage all interested to sign-up for the city's Sustainability & Environmental e-newsletter to receive more information as it becomes available.

Should you have any questions, please contact Margarita Wells at 305-673-7010.

Attachments:
A – 2017 Nesting Season Letter
B – June 18 NMFS Necropsy Report

SMT/MKW

ATTACHMENT A

MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

March 15, 2017

Re: Sea Turtle Nesting Protection

The City of Miami Beach is dedicated to the conservation and preservation of its natural resources including the protection of sea turtles that nest annually on our beaches between April 1st and October 31st. **In an effort to minimize disturbance to sea turtles and their nests, we kindly request your support to reduce artificial light sources from your property that may visible from the beach.**

Light pollution from adjacent properties disorients nesting adults and hatchlings. Sea turtles mistake artificial lighting for the reflection of the night sky on the water. Although there is no substitute for a naturally dark sky, there are practices that our community can follow to improve the nesting conditions for marine turtles that lay their eggs every year on our beaches. This includes minimizing the use of direct artificial lighting from properties located along the beach and never touching or harassing a nesting sea turtle or sea turtle hatchlings.

Another easy way for oceanfront properties to make a difference is to **turn off all unnecessary lighting or to keep the blinds closed at night.** We also recommend the installation of tinted glass or shades on all windows and glass doors facing or within line-of-sight from the beach. Any light fixtures located on the exterior of the property can also be modified or replaced to decrease disorientation and improve nesting habits through the installation of indirect low profile lighting fixtures and bulbs. Existing fixtures can also be shielded or repositioned so that the point source of the light or any reflective surface is no longer visible from the beach. To obtain more information on sea turtle lighting please visit: http://www.myfwc.com/.

Thank you in advance for your help in ensuring the continued survival of the threatened and endangered marine turtles that nest on our City's beaches. If you have any questions or would like to meet to discuss correcting lighting problems, please contact the Code Compliance Department at (305) 673-7555.

Sincerely,

Margarita Wells
Environment and Sustainability Director

Hernan Cardeno
Code Compliance Director

ATTACHMENT B

PATHOLOGY CONSULTATION REPORT

National Marine Fisheries Service
Office of Protected Resources

Stationed at:
University of Florida
2187 Mowry Rd / Building 471
Gainesville, FL 32611
352-294-4098

Lab Case #: NMFS17-00177

Postmortem Examination

Animal #:	AMM2017061901	**Agency Case #:**	FWSB17OFF007639
Other ID #:	CC20170619-01 / Nest MB #75	**Pathology Acc #:**	NMFS17-00177
Patient Name/#:	None	**State:**	FL
Species:	*Caretta caretta*	**City / County:**	Miami-Dade
Sex:	Female	**Necropsy Date:**	7/13/2017
Age/Size Class:	Adult	**Necropsy Time:**	6:54

Submitting Institution:	**Contact Information:**
NOAA Southeast Fisheries Science Center	75 Virginia Beach Drive Miami, FL 33149 305-361-4595 wendy.teas@noaa.gov
Contact Person:	**Copy To:**
Wendy Teas	Allen Foley (FWC); Ann Marie Lauritsen (USFWS)

Evidence Received:

The following was received by Dr. Stacy at the Southeast Fisheries Science Center on 7/12/2017:
Frozen loggerhead sea turtle carcass

Examination Requested:

Postmortem examination (necropsy)

Examination Conducted:

Gross necropsy was performed at the Southeast Fisheries Science Center. The stranding report, written description of the circumstances of discovery, and photographs of the stranding location were provided by the Florida Fish and Wildlife Conservation Commission. Following initial external photographs (taken on 7/12/2017), dissection began at 0654 on 7/13/2017. Examination included histopathology.

Examination Results:

An adult female loggerhead turtle in good postmortem condition was examined. The cranial aspect of the left prefrontal scale immediately bordering the orbit was abraded. There was an approximately 5 x 3 cm abraded area on the cranial aspect of the left shoulder region, immediately ventral to the left 2nd marginal scute. The tip of the last right peripheral bone and marginal was fractured. The mouth was full of sand. Upon dissection of the head and neck region, the base of the supraoccipital crest was fractured with laceration of the associated muscle. There was an additional locally extensive laceration and hemorrhage of the deep cranial cervical muscles of the left aspect of the neck. Intramuscular hemorrhage also was present within the musculature surrounding the atlanto-occipital joint. The joint capsule was intact. Following removal of the dorsal aspect of the skull, a large subdural hematoma was present beneath the

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olfactory region of the brain and surrounded the optic chiasma. There was also bilateral retrobulbar hemorrhage. Small emboli of spirorchiid eggs were scattered within meningeal vessels. Upon removal of the plastron, the carcass was well muscled and adipose tissue was abundant. The ovaries included numerous vitellogenic follicles (3 cm diameter) and corpora lutea. The oviducts were flaccid and contained mucus. Flocculent yellow material (yolk) covered the hepatic and splenic capsules. The heart contained a 2 mm thick layer of soft yellow material separating the red cellular and serum fractions of the heart blood. The stomach contained a few small fragments of hard coral. The colon contained a small amount of green digesta. Small numbers (approximately 8-10) of spirorchiid emboli were multifocally distributed within the enteric submucosa. The urinary bladder contained a small number of trematodes (Plesiochorus cymbiformis). The airways were clear. The lungs were light and soft. No additional gross abnormalities were observed.

Cause of Death:

Blunt trauma (see comment)

Examination Conclusions and Comments:

The proximate cause of death is attributed to injuries sustained from acute blunt force trauma involving the head. This turtle was confirmed to have recently laid eggs and had all indications of being in good general health prior to injury. Based on the location of skull fracture and soft tissue trauma, subluxation of the atlanto-occipital joint with compression of the spinal cord may have occurred, but could not be confirmed. With regard to the characteristics of the head injuries and observations noted at the location of discovery, postmortem findings are consistent with trauma inflicted by a vehicle collision. Other diagnoses included mild intracoelomic yolk leakage, a common observation in nesting female sea turtles, and small numbers of endoparasites with mild associated inflammation. These observations are regarded as incidental to the cause of death. Please contact me if you have any questions regarding this case or have additional information pertinent to my assessment.

Stranding / Clinical Summary:

See Sea Turtle Stranding and Salvage Network Stranding Report. Additional history provided by the Miami Dade County Sea Turtle Conservation Program. While conducting daily morning nesting survey, Alex Martinez was stopped by a beach patron at approximately 6:30 AM. The patron informed Alex that there was a dead turtle on the shoreline on 10th ST and Collins Avenue. When Alex arrived to the location of the stranded turtle, he observed a crawl, mound, and secondary body pit directly west of the corpse. Upon closer inspection, tire tracks and several foot prints were present over the nest mound. The foot prints were located over the entirety of the crawl, and along with heavy rain, obscured all the tracks. The turtle itself was confirmed to be dead and was being washed out by outgoing tide. Alex pulled the corpse up the beach approximately five feet directly west. The entire crawl site was immediately barricaded off, including the corpse of the turtle. The site was then photographed from multiple angles and the turtle was inspected. The body appeared to be in great condition with a few exceptions. The wounds found were inconspicuous: A 4 cm wound/cut on the neck over the left shoulder, a 2 cm piece of the prefrontal scale over the left eye seemed to have been scraped off, and a small piece of a rear marginal scute was mostly broken off. The turtle seemed to be of healthy weight and appeared to be the adult female that had made the crawl and nest located directly west of the corpse. Teal Kawana MTPH was notified, as well as Miami Dade Beach Maintenance due to the delay. Alex contacted FWC dispatch to report the incident and Teal contacted several FWC officials as well. Alex then continued the primary beach survey and located a second nest that had been run over by similar tire tracks (Nest MB #77). After completing primary survey Alex returned to the corpse/nest to await further instruction from FWC. Officer Miguel Despian came to the site and photographed both nest sites that were affected and provided a case number (#FWSB17OFF007639). The corpse was transported to National Marine Fisheries for necropsy.

Gross Findings:

1. Supraoccipital fracture with acute subdural, retrobulbar, and intramuscular hemorrhage (blunt trauma)
2. Multiple acute abrasions (left shoulder, prefrontal region)
3. Acute superficial fracture, marginal/peripheral bone
4. Intracoelomic yolk with mesothelial hyperplasia
5. Spirorchiidiasis, meninges, small intestine (small numbers)
6. Trematodiasis, urinary bladder (small numbers)

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7. Good nutritional condition
8. Nesting female

Final Diagnoses:

1. Head: Supraoccipital fracture with acute subdural and intramuscular hemorrhage (blunt trauma)
2. Integument, left shoulder and prefrontal region: Multiple acute abrasions
3. Carapace, marginal/peripheral bone: Acute superficial fracture
4. Coelom: Intracoelomic yolk with mesothelial hyperplasia and mild chronic coelomitis
5. Multiple tissues: Embolized spirorchiid ova (small numbers) and intravascular trematodes (meninges only) with mild granuloma formation and lymphocytic inflammation
6. Urinary bladder: Trematodiasis (Plesiochorus cymbiformis, small numbers)
7. Body as a whole: Good nutritional condition
8. Body as a whole: Nesting female

Ancillary Diagnostics:

None performed.

Microscopic Examination:

T1: skeletal muscle (atlanto-occipital region); T2: skeletal muscle (occipital region), heart (ventricle); T3: skeletal muscle (occipital region), heart (ventricle); T4: heart (atrium), heart blood, spleen; T5: liver, adrenal gland, thyroid gland; T6: lung; T7: kidney; T8: brain; and T9: brain.

Select Histopathological Description:

General: There is a moderate degree of postmortem artifact resulting from mild decomposition and prior freezing. No evidence of yolk embolism is detected within vascular spaces or within an examined sample of heart blood. Small numbers of spirorchiid (blood fluke) eggs are embolized within multiple tissues and are surrounded by small granulomas and minimal, focal lymphocytic inflammation. Eggs are most numerous within the meninges (T8,9), but are still few in number, and there are filiform intravascular trematodes within meningeal vessels. Small numbers of lymphocytes multifocally infiltrate the leptomeninx. All of the spirorchiid eggs lack polar elongations (consistent with Neospirorchis sp.)
T2,3: There is widespread segmental and discoid disruption of the myofibers and hemorrhage within sections of muscle that were collected from the area of the fractured supraoccipital crest and adjacent laceration.
T5. Liver: The mesothelium of the hepatic capsule is prominently vacuolated, hyperplastic, and infiltrated by small numbers of heterophils and macrophages. Acellular eosinophilic material (yolk) is associated with the surface. The hepatocytes are prominently vacuolated (physiological lipidosis).

Photograph Log: DSC00140-156; DSC00189-219

Sample Inventory and Disposition of Evidence

Item :	Item Description:	Evidence Origin:
	Carcass	Submitted
	Follicles	Generated at necropsy
	Liver	Generated at necropsy
	Tissue set in formalin	Generated at necropsy

Examiner's Initials: _____

Prepared By:

Brian A. Stacy, DVM, PhD, DACVP

Digitally signed by Brian A. Stacy, DVM, PhD, DACVP
DN: cn=Brian A. Stacy, DVM, PhD, DACVP, o=NOAA Fisheries, Office of Protected Resources, ou=Veterinary Medical Officer, email=Brian.Stacy@noaa.gov, c=US
Date: 2017.07.21 09:47:25 -04'00'

Date

Brian A Stacy, DVM, PhD, Diplomate ACVP
Veterinary Pathologist (Anatomic)
brian.stacy@noaa.gov

Examiner's Initials: _____