April 4,.2024

10,000 ISLANDS DOLPHIN STUDY PROJECT

Marco Island, Florida

2024 1ST QUARTER REPORT JANUARY 1 – MARCH 31

OBJECTIVE: The 10,000 Islands Dolphin Study Team monitors the travel range, social behavior, abundance, genealogy, feeding habits, health and overall well-being of the bottlenose dolphin population in the waters of north Marco Island, Florida and surrounding vicinity. The study has a database of documented sightings dating back to February 8, 2006 and created a new, unique database in 2018 to detail more efficiently the above mentioned criteria and more. The enclosed information describes the data compiled for calendar period January 1, 2024 through March 31, 2024. The study continues…

The team experienced 154 excursions to collect data during this three month period with a total of 1,883 individual sightings of more than 125 identified, local dolphins for an average of 11 dolphins per excursions. For the calendar year 2023 there were 434 excursions that yielded a total 4,763 individual, identified dolphin sightings of more than 125 local bottlenose dolphins.

ECOSYSTEM: The 10,000 Islands and Rookery Bay are mainly a mangrove forest with a shallow water content. Before human development in the region, dolphins here fed primarily around the mangrove islands, on the sand bars and on the mud flats. The introduction of civilization produced additional foraging opportunities with docks, seawalls and canals. Because of the abundance of food in this habitat the bottlenose dolphin

population does not migrate any great distance from our survey area. They are a residential, coastal species with a limited travel range. Ranging from young of year to the oldest adults, this local population will consume, collectively, about 1 ton of fish per day.

FEEDING: Many of our dolphins feed individually along the sand bars and base of the mangrove islands because of the shallow waters here. They don't require a pod structure as witnessed in offshore feeding habits. They also trap fish along the seawalls. On occasion, small groups have worked together herding fish to sand bars and shorelines. Strand feeding has also been observed along a mud flat in our eastern survey area.

IDENNTIFICATION: Our dolphins are identified by markings on their dorsal fins, nicks and notches caused by one individual raking its teeth across another's dorsal fin. The marks are unique to each dolphin and rarely are any two dolphins' markings identical. Photos of each fin on every excursion are documented and transferred to computer files of each individual which, in turn are transferred to our database for historical purposes. Markings will change over time so dated photo identifications and constant updating of files and the database are required to maintain accuracy of the individuals that we monitor.

NAMES: Names given to dolphins here primarily derive from guests, staff and area organizations. They are unique to the 10,000 Islands Dolphin Study Program and are the property of the Study Project. Each dolphin also has a catalog number assigned through our database and unique to our program.

COOPERATIVES: The team has worked with, and assisted, Florida Fish and Wildlife Conservation Commission (FWC) as well as NOAA to rescue and/or identify dolphins in need of assistance or to provide historical data of deceased or injured marine life.

ENCLOSED IS A SUMMARY OF ACTIVITY REGARDING OUR BOTTLENOSE DOLPHIN POPULATION OVER THE PAST THREE MONTHS WITH AN INCLUSION OF HISTORICAL DATA DATING BACK TO 2006.

2024 FIRST QUARTER REPORT

CALVES: Of the 10 calves born in our primary birthing period, being September, October and November, 7 have survived their first six months of life. These 7 were all born to experienced adult females that have already produced at least 3 other calves each.

The cause of death of these calves is not specifically known. However, predators such as bull sharks and hammerhead sharks do roam our waters. Also, adult males will engage in “infanticide” whereby they remove a calf from the dolphin society by drowning. This opens the adult female to mating, rather than raising a calf. The survival rate of calves born to first time moms is low in comparison to experienced adult females.

Calves that just turned 1, 2 or 3 years old are all doing well by their mother’s side, with no known loss of life in this age group.

From 2018 through 2023 the team has documented 52 new calves born, with 43 surviving, a success rate of more than 80%.

SUB ADULTS: Young dolphins that have left the care of an adult female are no longer calves, but now known as “sub adults” since they are not yet mature. We find that some in this age group will actually form societies of 3 to 6 dolphins that socialize and feed together on a regular basis. This pattern has been consistent throughout our study history. Also, some of the male sub adults tend to disappear from the region. Outside studies suggest that the older, mature males will drive the young from a society,

recognizing that they may be competition as they mature to mate with societal females. Female sub adults tend to be free to roam within our society, not bothered by adult males.

The health and well being of our sub adult population in general is very good. They socialize among each other very well. Many of these young were taught by their mothers to feed in a certain area, a “natal range” and our study finds them feeding in these areas quite often, right where they were raised by mom.

ADULT FEMALES: Our adult female population outnumbers the adult male population by nearly 3 to 1. Mothers that now have a second or third calf by their side rarely lose that infant to predation or infanticide. It appears that they have learned how to protect their young of year by this time in life.

As previously mentioned, most of our new calves are born in the Fall months. A few of our females that have lost an infant in the first month or two tend to become pregnant within 60 days of that loss, accounting for a few births documented in November and December months. Gestation period is one year. They become pregnant in November or December after the loss of a calf in September, giving birth the following November or December.

In general, our adult female population is very healthy.

The survey team has listed 15 adult females that have potential to give birth this Fall, with 3 sub adults turning 8-11 years old this year. It is not positively know if these sub adults are male or female. However, social behavior indicates strongly that 2 of these 3 are female.

ADULT MALES: Mature males will sometimes form a “Male Pair Bond” whereby 2 males will join together to feed and socialize, but the primary purpose of this bonding is mating with females.

This pair bond will segregate a female and follow her continuously for the purpose of mating. A single, mature male will be barred from approaching this female by the pair bond. They will fight if necessary to keep the single male away. Females seem to recognize the dominance of the male pair bonds, which could help the female determine which males should approach when she is ovulating.

For nearly 2 decades, 3 dominant male pair bonds ruled the mating opportunities in our region. However, there seem to be 2 more dominant local male pair bonds forming that may provide competition for the existing males. Pair bond Captain Jack and Trixie (male) have been together for more than 15 years. In documented sightings during the last 6 months, Captain Jack has been noticeably slowing down and spending less time with his longtime pair bond Trixie. Captain Jack and Trixie are seen only on occasion together, with Jack appearing to age considerably.

Some other adult males tend to stay to themselves, quite often feeding on their own and not very social to the rest of the local population, joining groups for feeding only on minor occasions.

GRANDPARENTS: The team is currently documenting 9 known grandmothers. There is a potential for 2 more adult females to become grandmothers this coming Fall. If an 8 year old named Fireball is indeed a female and gives birth this year we will begin a 4^{th} generation with our first known great grandmother.

ENVIRONMENTAL ISSUES 2024: There were no significant weather events for the first 3 months of 2024 and no known algal blooms or other bacteria related outbreaks in the Marco Island waters. The death of sawfish and other species in the Florida Keys did not have any effect on our marine life here. Hurricane season begins shortly and we will closely monitor our dolphin behavior during the storms.

2024 EVENTS: In April, 2023 the team noticed a 19 month old calf with fishing line wrapped around its fluke. This resulted in a rescue that included NOAA, FWC, Mote Marine, Clearwater Aquarium, Sea World, the 10,000 Islands Study Team and others that resulted in a successful release of the line and rescue of the calf in a life saving event. Now 30 months old, that calf, Fergie, is doing well and his mom Skipper is about 6 months pregnant.

There have been no other significant changes in societal behavior in 2024 at this time. The team will continue to monitor our population and report our findings to the appropriate authorities.

QUARTERLY OVERVIEW: Our viewings per excursion have been extremely similar with an average of 11 identifiable, local dolphins per trip over the past 3 years. The population is growing at a slow but steady rate. The number of young surviving past their third birthday is just over 80%. This can be attributed to a clean ecosystem and, because of shallow waters, predators are not that large. Even though some young are taken by sharks, there are at least 9 shark bite survivors in our local population.

The population consists of 39 adult females, 15 adult males, and the remaining 58% are sub adults and calves. Birthing season this Fall should produce 10 to 15 new calves, above average compared to the last 6 years.

In addition to the local, residential population of bottlenose dolphins, others of the same species, referred to a transient dolphins, do pass through our study area and we have documented more than 100 dorsal fins to include in our database.

Since these are not seen on a regular basis, they are not included in our general study database, but are noted in our files.

Changes in dorsal fin markings will be noted on a regular basis so as not to lose the identity of any known dolphins, any loss of life or missing members of our general, local population.

REPORT: This report was compiled by the 10,000 Islands Dolphin Study Project's team members which include an Environmental Scientist, a Marine Biologist and 4 Florida Master Naturalists (Certified thru the University of Florida). The report is presented to you by Lead Naturalist / Florida Master Naturalist Bob McConville. You may contact Bob at 239-642-6899 or by email at dolphinsofmarco@gmail.com. Bob and the team welcome all inquiries regarding our program and look forward to other institutions sharing their data and thoughts with our team.

Thank you for your time to read our report. We hope it generates some thoughts about the importance of sharing data worldwide.

Our motto: PASSION, INTEGRITY, EDUCATION

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