

An interactive study with wild *Stenella frontalis*

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In the early 1970's American treasure hunter, Sir Robert Marx was intensively salvaging a Spanish wreck in the Little Bahamas Banks. Located 40 miles north of Grand Bahama Island, with West End as the nearest customs port, the Banks are a series of sand flats with nothing but an occasional small timbered wreck site to relieve its faceless appearance.

Marx spent months on the location, occasionally accompanied by his family members, including his young daughter. Using the 'mailbox' method of removing sand from his target, Marx found that the noise and activity was attracting increasingly large numbers of wild, free roaming Spotted dolphins. Eventually the animals would join his workers, himself and his family for periods of play and interaction. The animals singled out his young daughter for special attention and he has said the dolphins would allow the child to touch them and be taken for dorsal fin rides. While there is little doubt as to the socialization of the dolphins, there has not been any corroborating proof of the girl's more tactile contact.

Sir Robert eventually told his friend Hardy Jones of the animal's daily visits and interactions. Jones, along with his wife Julia Whitty, film producer Michael Wiese, and underwater cinematographer Jack McKenney travelled to the location in the mid 1970's. They equipped a sailboat with a net hanging on both sides of the bowsprit. This enabled them to simulate the dolphin's habit of riding the bow pressure waves and also gave them the opportunity to film the animals on the move.

Steve Gagne designed a special underwater keyboard. The film made as a result of the excursion shows the dolphins coming in to play, twist and cavort around Gagne as he produced the sounds underwater.

Over the intervening years the Loran co-ordinates for the location were revealed and several organizations began to sell weekly trips to the Bahamas for the express purpose of playing with the dolphins. Two such groups were the now defunct Friends of the Sea, and the Oceanic Society which still offers trips during the summer months.

Over the years it was reported that the numbers of animals willing to interact with humans was increasing. Where one pod had begun the contact, now there

were reportedly over twelve separate groups, each containing animals that were easily identifiable.

When Patricia St John, founder and Executive Director of MID*POINT Foundation, first began investigating communication and interactive behavioural research, she knew that contact with wild dolphins would be necessary. This would enable her to establish the validity of skills and techniques developed via interaction with captive cetaceans. She and her staff concluded that it was important to spend three consecutive weeks with the wild *Stenella frontalis*. This would establish a sense of continuity for the animals, as well as for the humans. A boat was chartered and the trips were scheduled for 2nd August through 21st August 1987. Cinematographer Jack McKenney was employed during the second week to film the research.

Documentation also included the use of a Nikonis V underwater camera and a Pentax camcorder in an underwater housing. All tapes of encounters were reviewed and commented upon each evening.

The captain and crew of the boat had frequently been to the site and were experienced guides. St John and her staff spent many hours questioning each person as to the normal behaviours of both the dolphins and the people who swam with them. In this manner she was able to arrive at a fairly complete understanding of what to expect once her charter was on site.

The boat normally anchored at the 'Angle Iron' wreck, a sparse collection of timber and metal remains of a light buoy. Usually the animals would arrive between 7-9 a.m. and then from 3-5 p.m. At the first sighting of a dorsal fin and the identification of a dolphin, the captain would up anchor and begin a circular patrol of the sand flat. Another salvage operation had replaced that of Sir Robert's and so the only means of judging position for the passengers would be where the salvage boat would be sighted in the distance. The captain would steer in circles, actually 'trolling' for dolphins by using the sound of the engine and the tempting lure of the bow pressure wave.

The boat also carried a hydrophone system which was attached to a tape recorder. *Tursiops* sounds were transmitted through the water, as well

as intermittent selections of classical and popular music. It was the joint opinion of all passengers on board that the transmitted sound seemed not to be effective in attracting the animals. The most common method was to have the boat remain anchored at the wreck so as to be available in position when the dolphins were through with their feeding runs.

The crew commented that the dolphins always came in close to the boat and once they had people in the water, would begin a slow movement away from the boat, never towards it. This we saw was accurate. Conditions at sea are transient at best. Each of the three weeks was characterized by its own weather patterns. Winds, waves, strong current were more often the norm. A 150 ft tag line was extended from the boat's stern during all in-water encounters. A zodiac was available to pick up those people who had been lured too far from the boat for an easy return. With no reef for a frame of reference, it became easy to follow the dolphins and then find oneself more than a mile from the boat.

St John was aboard for all three trips, with no less than 2 MID*POINT staff on board at all times. The other participants were people who had booked passage as a result of St John's open invitation during her slide lectures in several cities. The profile was mixed in age and occupation. On board were a psychologist specializing in pain management, a dean of a college, 2 executive directors of residential locations for autistic and mentally disabled youths, computer engineers, an expert on shark research, scuba scholars from two scuba conferences, a teacher of French, and a sound engineer. A total of ten passengers, plus four crew, made up each of the three excursions.

Those on board were given an orientation to the dolphins, to the boat and what behaviour was expected of them. Four main instructions were given: no one was to attempt to reach out and touch any dolphin, they were to attempt to identify individual animals via major markings and scars, if dolphins were seen in groups then humans were to attempt to recreate that group in size and behaviour, and play was not the intent, but rather interaction. The major purpose of the trips was to establish whether or not correct protocol behaviour would result in deepened interaction, not to just have play encounters.

The first two weeks provided valuable information for St John and her staff. It soon became clear that the dolphin's time of arrival was as capricious as the wind, that it was of great importance to remain on one sand flat rather than seek them on neighbouring flats, that the animals were curious about humans, and that they responded by increasing the size of the daily groups coming in for contact.

Throughout the early stages of the study the dolphins would come in and wait patiently for humans to gear up and enter the water. They were equally responsive to snorkel and to scuba. Populations

ranged from mothers with their young and the accompanying nursemaid, to juveniles, to incredibly spotted senior animals. An occasional *Tursiops* would join the group, but they were usually stand-offish and never bothered to interact with either the *Stenella* or the humans.

It was during the third and final trip that the most interesting encounter occurred. The previous two weeks were marked by severe weather and high currents, while each day of the final week became more and more beautiful. Calm seas, warm days, no current, clear skies every day. At night there would be a hint of a storm in the far distance, never coming close enough to ripple the surface of the water.

The dolphins had appeared earlier than usual that morning. After an extended interaction, the humans were somewhat relieved that the animals had chosen to move on. It can be difficult to spend great periods of time moving through water. This was to be the hottest day yet.

After lunch most of the passengers retired below deck to enjoy what little air conditioning was available and to nap and charge up for the next dolphin encounter. At 12.30 the call went out and people dashed topside to see a group of seven dolphins circling and waiting for people to enter the water. St John dived in and then took the underwater video camera.

The humans waited a few moments as the animals had moved off the starboard bow side of the boat. Dolphins appeared through the blue mist and it became clear that the group was comprised of five juveniles and two accompanying seniors, both female. The older animals remained aloof while the younger ones began what wound up to be a 4 hr interaction.

St John, on snorkel, positioned herself so as to capture the animal/human interaction. It became apparent the dolphins were particularly interested in the video camera and the noise the battery powered motor made. One young female proved to be more camera-struck than the rest and this enabled St John to capture clear video and vocalizations from the animal.

Behaviours shown ranged from the dolphins hitting the sand with their stomachs, to positioning head down and twirling their rostrums into the sand to ferret out sand worms, to sexual foreplay with one female cruising upside down while two males stroked her belly with their pectoral fins, to the dolphins herding a school of jacks over to one of the swimmers.

Eventually all involved tired and the dolphins appeared to move on. St John exited the water and began to open and clean the video equipment, leaving a few people in the water to relax and recoup their energy.

Two people standing on the stern platform saw

that the dolphins had returned for a second session and alerted everyone. As the video was still out of the underwater housing, St John chose to re-enter the water without it. This also allowed her to begin direct interaction rather than be separated by the camera.

Within a few moments of being in the water St John was approached by the same young female that had found the camera to be of such great interest. She was easily identifiable by her marking, her repeated tonal sound sequence and by the twin black nylon tags that had been placed on her rear fluke by scientists in a past encounter.

St John began to make sounds through her snorkel which stimulated the female to greater action. The animal came directly under St John and began to maintain strong eye contact. Leisurely both St John and the dolphin swam through the seas, side by side, each vocalizing. They were soon accompanied by the rest of the pod, and then by the humans who were in pursuit of the animals.

After a lengthy time, the animal moved off to be with other humans. At this time St John noticed that particulate matter had begun to move through the water and recognized that the current was beginning to build. She also saw that the boat was now more than a mile and a half in the distance. She decided to move closer to the boat and without telling anyone started to swim towards the tag line. The dolphins suddenly surrounded her. She saw that there were now almost 20 animals, 13 more than the original group. Off to her right side the two most senior dolphins approached her within three inches of her fingertips. From their body movement St John deduced that they were inviting her to touch their rear flanks. St John knew from previous research

with *Tursiops* and *Inia* that this movement always preceded human/dolphin touch. She chose not to reach out as she had emphatically instructed the other passengers not to do so. Side by side the humans, who again followed the animals, and the dolphins returned to within 10 yards of the stern of the boat. The pod circled the human group twice and then left for some unknown destination.

Several points made this an unusual encounter. The length of time that the animals spent with the humans, the strong, individual eye contact, the enlarging of the dolphin pod, the invitation to touch, but primarily the return to the boat. While there was some play activity by the humans, more often there was just correct communal interaction and no reaching out to touch.

The three week excursion was originally planned as a study of interactive behaviours by wild *Stenella frontalis*. The information gathered seems to indicate that a return to the site would be of research value. At this time another excursion is planned for the weeks of 15th–28th October, 1988. This group would consist of 14 Americans and 14 Russians. Half of each group would be comprised of young adults, ages 16 to 21. Seven of the Americans would be MID-POINT staff and personnel. A return for a greater amount of time will be scheduled for the summer of 1989.

In conclusion, while there were no remarkable breakthroughs in communication, it did become clear that the dolphins are willing to interact on more than a play level and that an extended period of time spent anchored on site may well provide more information about the nature of group interaction and alternative methods of communication.