NOAA TECHNICAL MEMORANDUM
NMFS-SEFSC-382

Bottlenose Dolphin Health Assessment: Field Report on Sampling near Beaufort, North Carolina, during July, 1995

by

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National Marine Fisheries Service
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Abstract: *Bottlenose dolphins (*Tursiops truncatus*) in the estuarine waters near Beaufort, NC, were captured, examined, and released during July, 1995, to provide samples for estimating relative health assessment indices. This report summarizes the health assessment sampling activities and analytical work conducted to date, and provides information on ancillary data. The estimation of health assessment indices and the results of ancillary studies will be reported elsewhere.*

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ERRATUM (May 16, 1996)

Hansen, L.J. and R.S. Wells. 1996. Bottlenose Dolphin Health Assessment: Field Report on Sampling near Beaufort, North Carolina, during July, 1995. NOAA Tech. Mem. NMFS-SEFSC-382, 24pp.

An error was noted in the Acknowledgments section of this report. F. Townsend, DVM, was not credited for his significant contributions to the health assessment sampling activities. The authors wish to recognize his contributions and apologize for this oversight. A corrected version of the Acknowledgments section is provided below:

ACKNOWLEDGMENTS

The safe and successful completion of the health assessment sampling field activities was made possible only through the participation of a large number of people equipped with a significant amount of expertise in handling and sampling wild dolphins. These experts were provided by the following institutions: Chicago Zoological Society, Dolphin Biology Research Institute, Dolphin Quest, Duke University Marine Laboratory, Mote Marine Laboratory, National Aquarium in Baltimore, New England Aquarium, University of North Carolina at Wilmington. Staff from the National Marine Fisheries Service's Beaufort, Charleston, and Miami Laboratories, and Office of Protected Resources, and from the North Carolina Maritime Museum also were integral members of the field team. The Beaufort Laboratory and Duke University Marine Laboratory both provided considerable and indispensable amounts of logistical support to the operation. It was a difficult task, and the team displayed dedication and responded professionally throughout the entire project. We would like to thank each of the 50+ individuals involved but, regretfully they are too numerous to name; however, L. Fulford deserves special mention for providing his superb dolphin catching skills and we must thank A. Read, H. Rhinehart, K. Urian, M. Wells, and their associates, and D. Casper, A. Hohn, B. Mase, W. McLellan, A. Pabst, L. Sayigh, R. Stone, J. Sweeney, F. Townsend and the "Miami boys" for providing their excellent field skills and moral support.

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INTRODUCTION

The Southeast Fisheries Science Center (SEFSC) is conducting research to estimate and eventually monitor health assessment indices of local bottlenose dolphin (*Tursiops truncatus*) stocks throughout the Southeast Region in order to assess the impact of human activities on specific bottlenose dolphin stocks. These health assessment indices will be used to refine estimates of human-induced mortality and other human-induced impacts. The indices, when combined with reproductive rate, age structure, and stock structure information will allow more accurate estimation of potential biological removal levels for a given population.

The health assessment studies require sampling of live bottlenose dolphins. The SEFSC has conducted live capture, sampling, and release exercises in specific areas of the coastal Southeast Region where anomalous mortalities of bottlenose dolphins have occurred. Reference samples collected at an unaffected site (Sarasota, FL) have been used, with those collected by the SEFSC, to develop and test a quantitative health assessment model (Wells, 1994; Sweeney et al., in review a and b). This model is still being refined, and when used with other information may provide a means of estimating the effects of some indirect, human-induced impacts, such as environmental contaminants, on dolphin stocks (e.g., Reif et al., in review), and for identifying stocks at relatively higher risk of mortality.

The SEFSC sampling has included bottlenose dolphins in an affected site, Matagorda Bay, Texas (Staff, 1992; Sweeney, 1992). Dolphins in this estuarine area were sampled during July, 1992, because of unusually high numbers of strandings there during 1990 and 1992 (Hansen, 1992, in press; Miller, 1992; Colbert et al., in press). Bottlenose dolphins of the U.S. Atlantic coastal stock were classified as depleted under the Marine Mammal Protection Act as a result of a mass dieoff during 1987-88 (Scott et al., 1988; Geraci, 1989; Lipscomb et al., 1994). The bottlenose dolphins which occur in the estuarine system near Beaufort, NC, are thought to belong to this depleted stock (Wang et al., 1994). This report provides summary information on the 1995 sampling activities conducted on these dolphins.

METHODS

The capture and sampling project was conducted in the estuarine system in and around Beaufort, NC, (Figure 1) during July 9-23, 1995. The capture and most of the sampling techniques used were developed primarily by R. S. Wells et al. of the Dolphin Biology Research Institute (e.g., see Scott et al., 1990). Bottlenose dolphins were sampled by a multidisciplinary team of approximately 50 persons, the majority of whom had prior experience. A fleet of seven to ten 6-9 m boats was required to conduct the sampling. The sample collection effort consisted of locating a group of animals in shallow waters, and if deemed suitable, encircling them with a net, restraining by hand, and collecting samples. The sampling and measurement included: weight; sex; vital signs (heart rate, respiration rate, temperature, etc.); physical exam by veterinarian; photographs; morphometrics; swabs taken for bacteriology; ultrasound for blubber depths; diagnostic ultrasound exam; blood, urine, feces, and milk; skin/blubber biopsies; tooth extraction. All animals were roto-tagged, all but one were freeze-branded, nine received radio transmitters, and four received Trac Pacs. Details on capture and sampling are provided below.

Capture: The dolphins were captured using proven capture methods with a 600m long, 4m deep net specifically constructed for capturing dolphins (e.g., Scott et al., 1990). Captures were conducted in shallow waters, approximately 1.5m deep or less, and we attempted to net only groups of 3-6 or fewer animals. Larger groups were followed until the appropriate size sub-group was available for capture. The dolphins were encircled with the net which was deployed at high speed from an 8 m long commercial fishing net boat. Three additional vessels, 5-7 m long, were deployed around the circle to: 1) create an acoustic barrier as the net was set, and 2) distribute approximately 20 dolphin handlers around the net, primarily to aid dolphins which became entangled prematurely in the net. Capture was facilitated in some cases by pinching the net to reduce the size of the enclosure and encourage net entanglement. Most often, the dolphins became entangled shortly after the net was set. A few dolphins were captured by handlers while the dolphin swam slowly within the pinched net circle or remained stationary.

Restraint: After capture, animals were manually restrained by three to six dolphin handlers. The dolphins were placed in a sling, and then hoisted onto the deck of an 8m catamaran specifically modified for veterinary examination and sampling. On deck, the dolphin rested on a closed-cell foam pad, and was shaded by a canvas "Bimini" top. The dolphin's

eyes were kept shaded from direct sunlight, and three of the other 6-8 team members on deck kept the dolphin wet and cool with sponges, and provided restraint as necessary. Some sampling occurred before we hoisted the animal on deck (e.g, many measurements and venipuncture were often conducted with the animal in the water). The heart rate, respiratory rate and quality, body temperature and behavior of each animal were continually assessed while under restraint or while on deck. Prior to processing, adult females were held in the water and examined with diagnostic ultrasound to determine reproductive status. If she was determined to be in the later stages of pregnancy, she was weighed but not placed on the deck and then returned to the water for processing.

Measurements: The dolphin was weighed with a load cell system while hoisted in a sling prior to being placed on the foam pad on deck. A series of 25 standard length and girth measurements was obtained while the animal was on deck; an incomplete series of maesurements was made in the water on animals not brought on the deck. A series of blubber depth measurements was made with an ultrasonic probe. Descriptions and locations of the length, girth, and blubber depth measurements are given or illustrated in Appendix I.

Venipuncture: Blood samples were drawn from the flukes with the animal on deck, usually with the animal rolled onto its right side or with the animal in the water with its back at the surface and its flukes slightly raised out of the water. Samples, up to 240ml from each individual, were typically obtained from a vessel on the ventral surface of the flukes with a 19 gauge 3/4" butterfly catheter. Samples were placed into a variety of vacutainers and stored at the appropriate temperature until processed at the field laboratory. Samples were processed for: standard chemistry, hematology, and hormonal analysis, genetic analyses, contaminant analyses, immune function, morbillivirus titer, and other analyses as requested.

Marking: The animals were permanently marked by freeze-branding with unique, three digit codes which can be used to identify individuals by visual and by photo-identification. Brands used here were the "700" series, i.e., the first digit of each brand was a "7", and the brands were numbered consecutively beginning with 700. Males received even-numbered brands, and females received odd-numbered brands. Each of the metallic digits measured approximately 2" x 1", and were applied to dried skin for 20 seconds (less for some of the small animals) after being supercooled in liquid nitrogen. A photograph was then immediately taken, after which the skin was wetted to return temperature to normal. Brands were placed on both sides of the dorsal fin and on the body just below the dorsal fin, or only on the body for the

smallest animals. The brands provided an unambiguous, long-term means of positive identification, of both live and stranded animals.

Cattle ear tags (roto-tags) were also used to mark the animals. A single (sometimes two), small plastic tag was clipped through the trailing edge of the dorsal fin of each animal. The tags allow for immediate identification of animals already captured during an on-going capture operation. Such animals were avoided or re-captured and quickly released, depending on the status (captured vs. not-captured) and number of other animals in the group. The tags are generally shed within a year or less of attachment. The tags are lost through separation of the two halves or migrate posteriorly and leave minor, permanent notches in the fin which can be used for photoidentification (Scott et al., 1990).

Tooth extraction: A single tooth was extracted for age determination from every individual captured, unless the veterinarian in charge determined that the procedure was too risky to the individual. For instance, if an animal was considered too ill or fragile the procedure was not performed. Cotton towels were wrapped around the lower and upper jaws and used to hold the animal's mouth open to examine the teeth, and to provide access to the tooth during the procedure. Tooth #15 (LL15) in the left mandible was removed, unless it was not free of abnormalities. The nearest, adjacent, suitable tooth was removed if LL15 was unsuitable. A standard high-pressure, 30 gauge dental injection system was used to inject the periosteal ligament with lidocaine to achieve local anesthesia. The tooth was elevated with straight and angled tooth periosteal elevators, and then, when loosened, extracted with rongeur forceps. The alveolus was plugged with cotton saturated with ferric sub-sulfate to staunch bleeding; the plug was removed before the animal was released. The procedure is modified from that described by Ridgway et al. (1975). Tissue adhering to the tooth was removed and collected for genetic analyses.

Skin/blubber biopsy: Wedge biopsies of approximately one gram of tissue (skin and blubber) were collected. The biopsy site was located on the left side, approximately 10 cm posterior to the posterior aspect of the dorsal fin and 10 cm ventral to the dorsal midline. The site was prepared with a local anesthetic, using an "L" block configuration. Samples were cut approximately 1 cm deep with a sterile scalpel. Each sample was stored in a teflon bag and frozen. The blubber will be used for contaminant analyses, and the skin was further divided with portions frozen for genetic analyses and other portions placed in preservative for histological analysis.

Diagnostic ultrasound: Real time diagnostic ultrasound examinations were performed with the animal on its side on the deck or upright in the water. The heart, pleura, cardio-phrenic notch, liver, stomach, kidney, and reproductive organs were examined from both sides of the dolphin. Adult females were examined for pregnancy and fetal measurements were taken. Testis length and diameter were also measured. The exams were recorded on 8 mm video tape and/or with a printer.

Urine Sampling: Urine samples were collected by urinary catheterization. Catheterization was conducted with the dolphin lying on its side, under standard field sterile conditions (sterile surgical gloves were worn; catheter and other equipment were sterile). The folds of the genital slit were retracted to expose the urethral orifice, and a sterile #8 French urinary catheter, lubricated with sterile lubricating gel, was inserted into the bladder via the urethra. Urine was collected into 10 ml blood collection tubes without additive for urinalysis and other studies.

Fecal Sampling: Samples were collected opportunistically as the animal voluntarily voided, and/or by anal catheterization. In either case, feces were collected in a sterile container. Catheterization was conducted with the dolphin lying on its side, under standard field sterile conditions (sterile surgical gloves were worn; catheter and other equipment was sterile). The folds of the anal slit were retracted to expose the anal orifice, and a sterile #8 French urinary catheter, lubricated with sterile lubricating gel was inserted into the colon. The fecal samples will be examined for parasites.

Microbiological Samples: Swab samples were taken from the blowhole of each dolphin. A sterile swab was inserted into the blowhole during a breath, moved along the wall of the blowhole, and removed during the next breath. Swab samples were placed in transport media in preparation for culturing and species identification.

Milk Sampling: All adult females were examined for signs of lactation (swollen mammaries, milk expressed with gentle pressure) and milk samples were collected from lactating females. The milk samples were collected by applying external pressure on the mammary gland while applying suction with a "breast pump" device placed over the nipple. The device consisted of two 60 cc syringes connected by their tips with Tygon tubing. The plunger of one syringe was removed, and the open end was placed over the nipple. The plunger in the other syringe was retracted to produce suction. The samples were placed in hexane washed

glass jars. The samples will be analyzed to assess levels of lipophilic contaminants and to determine composition.

Colonic Temperature Measurements: These measurements were obtained with a linear array of thermal probes interfaced to a laptop computer (for more information on this system see Pabst et al. in press, Rommel et al. 1992, 1994). A 3 mm OD flexible plastic tube was used to house the probes. The tube was sterilized, lubricated and then inserted through the anus and into the colon to a depth of 0.25 m to 0.40 m, depending on the size of the dolphin (the larger the dolphin, the deeper the insertion). Temperature was continuously monitored. The data collected will be used in studies of variation in colonic temperature due to the effects of vascular cooling (e.g., Pabst et al. in press, Rommel et al. 1992, 1994)

Acoustic Recordings: The recordings were obtained using hydrophones connected with cables to a central recording system on one boat. Each hydrophone was contained in a soft rubber suction cup approximately 9 cm in diameter. The suction cup was placed on the animal's melon soon after the animal was restrained (in the water and on deck), or the apparatus was held in the water next to the dolphin. The recordings will be used in ongoing studies of the development and function of signature whistles (for more information see Sayigh 1992, Sayigh et al. 1990).

Telemetry: Advanced Telemetry Systems Model 10-18 VHF transmitters were bolted to the trailing edge of roto-tags, and then the tag was clipped through the trailing edge of the dorsal fin. The transmitter were cylindrical, and measured approximately 5.0 cm by 1.5 cm in diameter. A thin, 25 cm long antenna projected out of the end of the tag, following the long axis of the transmitter. The tags were used for tracking the animals to provide information on movement and social patterns, range, habitat usage and other parameters.

Trac-Pacs, a non-invasive telemetry system, were also deployed. The Pacs consisted of two-piece plastic saddles, with each piece measuring approximately 20 cm long and 9.5 m high. A VHF radio transmitter (similar to that described above) and a time-depth and velocity recorder (approximately 5 cm in diameter and 2 cm thick) were attached to the outer sides of each saddle, in pockets formed to accept each unit. The Pacs were designed to wrap around the front of the dorsal fin, with two corrodible magnesium pins at the front and a strip of Velcro at the rear to hold the two sides together. The inner surface of each piece was lined with a section of "bath mat" material, with the many small suction cups facing inward. Attachment to the dorsal fin was achieved by applying lateral pressure to the Pac to flatten the suction cups

against the surface of the dorsal fin. The corrodible magnesium pins were designed to dissolve within 4 and 16 hours (depending on desired attachment time). After dissolving, the Pac split apart (due to water then being forced between the inner surfaces of the Pac and the dorsal fin) and was released from the dorsal fin. The radio transmitters were used to track the animals and to recover the Pacs after release. The animals were tracked continuously, and the data collected will be used to describe detailed, short term movement patterns, surfacing and dive patterns, and velocity.

Release: Following completion of the examination, measuring, sampling and marking, the dolphin was returned to the water. The procedures on deck typically required 40-75 minutes for each animal. Mothers and dependent calves were released together.

RESULTS

Captures were conducted on 11 days during the period July 10-21, 1995. Dolphins were captured in various parts of the estuarine system, with most captures occurring in the Newport River and Bogue Sound (Figure 1). A total of 31 dolphins, 17 males and 14 females, was captured, sampled, and released. Two of these animals were recaptured; one was released quickly and the other was held until sampling not completed during the first capture was completed. Fourteen additional animals were encircled; two escaped, and the others were released without sampling. Table 1 provides a summary of daily capture and sampling results and Table 2 provides more detailed capture and sampling information by animal.

Capture efforts were hampered by several factors. One major problem was a relatively large tidal fluctuation (about 2 m) which made much of the area either too shallow for animals to cross or too deep for captures. The tidal fluctuation also resulted in periodic strong currents which rendered many areas unsuitable for capture, and also negatively impacted sampling in progress depending on the tidal state. Another difficulty was the grouping behavior of the dolphins; on many occasions the dolphins occurred in large (20-40+ total animals) aggregations comprised of mingling sub-groups. This made selecting, following, and capturing a specific, small, sub-group problematic.

Lengths were measured for all 31 animals sampled; lengths ranged from 197 cm to 278 cm. Complete morphometrics were obtained for 28 animals. Weights were measured for all except one younger animal (FB704) that was not removed from the water. Weights ranged from 84.6 kg to 252.2 kg. Blood samples were obtained from all 31 animals and hematology

and blood chemistry analyses were conducted by two laboratories which were familiar with dolphin blood. A tooth was extracted from 28 animals. Skin and blubber biopsies were collected from all 31 animals. Milk samples were obtained from three lactating females. Fecal samples were collected from 28 animals, and urine samples from 27 animals. Bacterial swab samples were taken from the blowhole of 29 animals. Blubber depth measurements (by ultrasound) were made on 30 animals. A diagnostic ultrasound exam was conducted on 26 animals. Colonic temperature measurements were made on 29 animals. All 31 animals were acoustically recorded. Thirty of the animals were freeze branded for permanent identification. Nine animals were fitted with roto-tag mounted VHF radio tags and four additional animals were outfitted with Trac-Pacs. The radio tracking and Trac-Pac studies are reported in Read et al. (1996a) and Townsend et al. (1996), respectively. A roto-tag was mounted on the trailing edge of each of the 31 dolphins, four of the animals were outfitted with an additional roto-tag. Tables 2-4 provide details of samples collected and procedures conducted for each animal. Tables 5-6 present the results of the hematology and blood chemistry analyses, and the urinalysis results are presented in Table 7.

The samples were distributed to a variety of institutions for analyses and or archiving. Table 8 lists the samples and the researchers and or institutions which received them. The table also gives the purpose of each research project or analysis and indicates which projects or analyses are completed.

A photo-identification study of bottlenose dolphins has been conducted in the Beaufort, NC, area since 1985 and several hundred animals have been identified (Thayer and Rittmaster, 1995). The dolphins we captured were compared to the catalogue of identified animals, and 10 were dolphins previously observed in the study area but none prior to 1989 (Table 9). Seven of these had been seen on only one occasion, and three were seen two or more times. All of these dolphins were previously sighted only during summer months, with the exception of one (712), which was sighted only during winter months from 1991-1995. All of the known dolphins in this area have been considered "summer" or "winter" dolphins, with no intermixing documented (Thayer and Rittmaster, 1995). Dolphin 712 is the first dolphin known to frequent the estuarine area during both winter and summer months. Recent studies show some of the other captured dolphins also occur during both winter and summer months in the Beaufort, NC, area (Read et al., 1996b).

ACKNOWLEDGMENTS

The safe and successful completion of the health assessment sampling field activities was made possible only through the participation of a large number of people equipped with a significant amount of expertise in handling and sampling wild dolphins. These experts were provided by the following institutions: Chicago Zoological Society, Dolphin Biology Research Institute, Dolphin Quest, Duke University Marine Laboratory, Mote Marine Laboratory, National Aquarium in Baltimore, New England Aquarium, University of North Carolina at Wilmington. Staff from the National Marine Fisheries Service's Beaufort, Charleston, and Miami Laboratories, and Office of Protected Resources, and from the North Carolina Maritime Museum also were integral members of the field team. The Beaufort Laboratory and Duke University Marine Laboratory both provided considerable and indispensable amounts of logistical support to the operation. It was a difficult task, and the team displayed dedication and responded professionally throughout the entire project. We would like to thank each of the 50+ individuals involved but, regretfully they are too numerous to name; however, L. Fulford deserves special mention for providing his superb dolphin catching skills and we must thank A. Read, H. Rhinehart, K. Urian, M. Wells, and their associates, and D. Casper, A. Hohn, B. Mase, W. McLellan, A. Pabst, L. Sayigh, R. Stone, J. Sweeney and the "Miami boys" for providing their excellent field skills and moral support.

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Table 1. Summary of bottlenose dolphins captured, sampled, and approached during July, 1995, health assessment sampling in and around Beaufort, NC.

	Jul 10	Jul 11	Jul 13	Jul 14	Jul 15	Jul 16	Jul 17	Jul 18	Jul 19	Jul 20	Jul 21	Total
Dolphins Encircled	7	8	4	0	3	7	4	4	3	5	2	47
Dolphins Sampled	3	3	4	0	3	3	3	4	3	5	2	33
Weighed	1	3	4	0	3	3	3	4	3	4	2	30
Measured	1	3	4	0	3	2	3	4	3	3	2	28
Blood Samples Collected	3	3	3	0	3	3	3	4	3	4	2	31
Tooth Collected	1	2	4	0	3	3	3	4	3	3	2	28
Biopsy Sample Collected	3	3	3	0	3	3	3	4	3	4	2	31
Milk Sample Collected	0	0	0	0	0	0	1	0	1	0	1	3
Fecal Sample Collected	1	3	4	0	3	2	3	4	3	3	2	28
Urine Sample Collected	0	3	4	0	3	2	3	4	3	3	2	27
Blowhole Swab Collected	1	2	4	0	3	3	3	4	3	4	2	29
Blubber Ultrasound Exams Conducted	1	3	4	0	3	3	3	4	3	4	2	30
Diagnostic Ultrasound Exams Conducted	0	2	4	0	2	3	3	3	3	4	2	26
Colonic Temperature Recordings Collected	1	2	4	0	3	3	3	4	3	4	2	29
Acoustic Recordings Collected	3	3	3	0	3	3	3	4	3	4	2	31
Dolphins Freeze branded	1	3	4	0	3	3	3	4	3	4	2	30
Dolphins Radio-tagged	1	2	2	0	2	0	1	0	1	0	0	9
Trac-Pacs Deployed on Dolphins	0	0	0	0	1	1	0	1	1	0	0	4
Dolphins Roto-tagged	3	3	3	0	3	3	3	4	3	4	2	31
Groups of Dolphins Harassed	3	11	12	9	10	6	5	4	6	7	4	77
Dolphins Harassed	17	93	124	61	83	118	89	20	125	122	32	884

Table 2. Capture dates, times, locations, and other information on bottlenose dolphins examined during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: FB = freeze brand, Set# = net sets were consecutively numbered, NCMM# = North Carolina Maritime Museum identification number. The remaining column headings are self-explanatory.

FB	Date	Time	Set#	Location	Latitude N	Longitude W	NCMM#	Comments
700	13-Jul-95	1424	5	Newport River	3445.74	7640.66	1330	Caught with FB03, FB705, FB706.
701	11-Jul-95	853	3	Newport River	3445.25	7641.15	1337	
702	10-Jul-95	1419	2	Newport River	3445.67	7640.74	1321	Caught with FB704, FB706. Freeze brand body only.
703	13-Jul-95	1424	5	Newport River	3445.74	7640.66	405	Caught with FB700, FB705, 706.
704	10-Jul-95	1419	2	Newport River	3445.67	7640.74	1326	Caught with FB702, FB706. Not branded
705	13-Jul-95	1424	5	Newport River	3445.74	7640.66	1328	Caught with FB 700, FB703, FB706.
706	10-Jul-95	1419	2	Newport River	3445.67	7640.74	1047	Caught with FB702, FB704. Recaptured and branded on 13-Jul-95.
706	13-Jul-95	1424	5	Newport River	3445.74	7640.66	1047	Recaptured with FB700, FB703, FB705, completed processing
707	15-Jul-95	718	6	Newport Marsh	3445.35	7645.54	1211	
708	11-Jul-95	1610	4	Newport River	3445.92	7641.49	1356	Caught with FB710 and 5 others that were released. Freeze brand fin only.
709	15-Jul-95	1152	8	Core Creek Mouth	3446.55	7640.46	1324	
709	20-Jul-95	1134	15	Newport River	3445.78	7640.82	1324	Recaptured with FB730. Released after examining biopsy, alveolus, brands.
710	11-Jul-95	1610	4	Newport River	3445.92	7641.49	1339	Caught with FB708 and 5 others that were released.
711	16-Jul-95	1000	10	South River	3459.15	7634.46	1354	Caught with FB714, FB716, 1 other escaped, 3 released.
712	15-Jul-95	924	7	Newport Marsh	3444.85	7641.52	641	
713	17-Jul-95	1138	12	Bogue Sound	3442.25	7656.40	1333	Calf of FB715
714	16-Jul-95	1000	10	South River	3459.15	7634.46	1011	Caught with FB711, FB716, 1 other escaped, 3 released.
715	17-Jul-95	1138	12	Bogue Sound	3442.25	7656.40	1334	Mother of FB713, first trimester pregnancy
716	16-Jul-95	1000	10	South River	3459.15	7634.46	1327	Caught with FB711, FB714, 1 other escaped, 3 released
717	19-Jul-95	916	14	Bogue Sound	3442.29	7656.45	1342	Caught with FB 719, FB728.
718	17-Jul-95	853	11	Bogue Sound	3441.90	7654.02	801	
719	19-Jul-95	916	14	Bogue Sound	3442.29	7656.45	1344	Mother of FB728, caught with FB717.
720	18-Jul-95	926	13	Bogue Sound	3442.88	7654.35	1331	Caught with FB722, FB724, FB726.
721	20-Jul-95	1416	16	Middle Marsh	3441.49	7637.77	1338	Caught with FB723, FB725. Third trimester pregnancy.
722	18-Jul-95	926	13	Bogue Sound	3442.88	7654.35	316	Caught with FB720, FB724, FB726.
723	20-Jul-95	1416	16	Middle Marsh	3441.49	7637.77	1341	Caught with FB721, FB725.
724	18-Jul-95	926	13	Bogue Sound	3442.88	7654.35	1329	Caught with FB720, FB722, FB726.
725	20-Jul-95	1416	16	Middle Marsh	3441.49	7637.77	1343	Caught with FB721, FB723. Early pregnancy (3.25cm fetus).
726	18-Jul-95	926	13	Bogue Sound	3442.88	7654.35	1335	Caught with FB720, FB722, FB724.
727	21-Jul-95	1106	17	Newport River	3446.14	7641.28	558	Mother of FB732. May be pregnant (early, no fetus observed).
728	19-Jul-95	916	14	Bogue Sound	3442.29	7656.45	1340	Calf of FB719, caught with FB717.
730	20-Jul-95	1134	15	Newport River	3445.78	7640.82	1096	Caught with FB709.
732	21-Jul-95	1106	17	Newport River	3446.14	7641.28	1355	Calf of FB727 (8-sec freeze brand)

Table 3. Sex, length, weight and information on sampling and procedures conducted on bottlenose dolphins examined during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings and entries (Y = yes, N = no) are defined as follows: FB = freeze brand; Sex, M = male, F = female; Leng cm = total length in cm; Wt kg = weight in kg; Tooth, LL15 = lower left #15, LR15 = lower right #15; Bio = biopsy collected; Fec = feces collected; Blow swb = blowhole swab; Blub US = blubber depth ultrasound; Col Tem = colonic temperature; Aco Rec = acoustic recordings; FB = freeze branded; Shark Scar = evidence of shark bites; Enta Scar = evidence of net or line entanglement; Lact = lactating; Testis, leng = length in cm, dia = diameter in cm; Preg = pregnant?; Diag US = diagnostic ultrasound exam. The remaining column headings are self-explanatory

FB	Sex	Leng cm	Wt kg	Blood ml	Tooth	Milk ml	Bio	Urine ml	Fec	Blow Swb	Blub US	Col Tem	Aco Rec	FB	Roto-tag	Radio VHF	Trac Pac	Shark Scar	Enta Scar	Lact	Testis leng	Testis dia	Preg	Diag US
700	M	219	120.0	240	LL15		Y	Y	Y	Y	Y	Y	Y	Y	on radio	Green-103								Y
701	F	205	92.6	240	LL15		Y	15	Y	Y	Y	Y	Y	Y	on radio	Green-109								Y
702	M	224	115.8	240	LL15		Y	N	Y	Y	Y	Y	Y	Y	on radio	Green-116			Y?					N
703	F	244	150.6	240	LL15	N	Y	Y	Y	Y	Y	Y	Y	Y	on radio	Green-108		Y	Y	N			N	Y
704	M	221		240	N		Y	N	N	N	N	N	Y	N	Blue-11									N
705	F	214	113.6	240	LL15		Y	Y	Y	Y	Y	Y	Y	Y	Pink-178									Y
706	M	209		240	N		Y	N	N	N	N	N	Y	N	Blue-12									N
706	M	210	105.1	0	LL15		N	45	Y	Y	Y	Y	Y	Y	Blue-12									Y
707	F	247	151.2	240	LL15	N	Y	30	Y	Y	Y	Y	Y	Y	on radio	Pink-39	Y			N			N	Y
708	M	233	136.4	240	N		Y	10	Y	N	Y	N	Y	Y	Blue-24									N
709	F	221	131.4	240	LL15		Y	18	Y	Y	Y	Y	Y	Y	Pink-166								N	N
710	M	223	129.6	240	LL15		Y	30	Y	Y	Y	Y	Y	Y	on radio	Green-114					11.5	2.11		Y
711	F	242	156.2	240	LL16	N	Y	30	Y	Y	Y	Y	Y	Y	Pink-154					N			N	Y
712	M	250	210.7	240	LR15		Y	4	Y	Y	Y	Y	Y	Y	on radio	Pink-48					18	8.4		Y
713	F	208	92.2	240	LL15		Y	5	Y	Y	Y	Y	Y	Y	Pink-164				Y					Y
714	M	225	122.2	240	LL15		Y	N	N	Y	Y	Y	Y	Y	Blue-4			Y						Y
715	F	246	160.4	260	LL15	25	Y	45	Y	Y	Y	Y	Y	Y	Pink-175	Pink-160		Y?		Y			Y	Y
716	M	230	153.4	240	LL15		Y	44	Y	Y	Y	Y	Y	Y	Blue-10		Y				10.5	2.14		Y
717	F	206	101.6	240	LL13		Y	25	Y	Y	Y	Y	Y	Y	Pink-169		Y							Y
718	M	278	252.2	240	LL14		Y	20	Y	Y	Y	Y	Y	Y	Blue-19	Green-113					29.5	7.34		Y
719	F	234	152.8	240	LL15	35	Y	35	Y	Y	Y	Y	Y	Y	on radio	Green-23				Y			N	Y
720	M	222	122.4	240	LL15		Y	30	Y	Y	Y	Y	Y	Y	Blue-17		Y				N	1.77		Y
721	F	234	163.2	240	N	N	Y	15	Y	Y	Y	Y	Y	Y	Pink-171					N			Y	Y
722	M	234	142.2	240	LL13		Y	35	Y	Y	Y	Y	Y	Y	Blue-7						10.5	2.12		Y
723	F	238	157.0	240	LL15	N	Y	32	Y	Y	Y	Y	Y	Y	Pink-162, 165					N			N	Y
724	M	212	111.8	240	LL15		Y	25	Y	Y	Y	Y	Y	Y	Blue-16									N
725	F	253	214.0	240	LL15	N	Y	N	N	Y	Y	Y	Y	Y	Pink-151					N			Y	Y
726	M	230	134.0	240	LL15		Y	32	Y	?	Y	Y	Y	Y	Blue-3, 23									Y
727	F	254	195.0	240	LL15	15	Y	20	Y	Y	Y	Y	Y	Y	Pink-163					Y			Y	Y
728	M	197	84.6	240	LR15		Y	25	Y	Y	Y	Y	Y	Y	Blue-2									Y
730	M	205	101.8	240	LL15		Y	35	Y	Y	Y	Y	Y	Y	Blue-15									Y
732	M	207	97.6	240	LL15		Y	40	Y	Y	Y	Y	Y	Y	Blue-1				Y		9	1.56		Y

Table 4. Lengths, girths and other measurements of bottlenose dolphins examined during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: FB = freeze brand, PF = location where measurements were taken (B = on deck, W = in water), 1 - 28 correspond to the measurement sites given on the forms in Appendix 1. The representative blubber thickness measurement is given in column 81, and the colonic temperature in °C is given in column C.

FB	PF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	81	C
700	B	219	131	97	32	39	27	10	28	51	101	138	155	109	65	38	29	15	60	24	31	29	120	101	30	30	5	64	93	12	31
701	B	205	119	92	31	39	26	9	27	52	91	140	147	99	60	36	28	14	54	19	25	26	109	90	28	28	5	64	87	11	28
702	B	224	127	96	33	40	27	10	27	53	96	130	146	107	67	37	26	15	57	21	29	28	124	109	29	29	5	67	92	12	26
703	B	244	140	106	36	43	29	11	29	56	113	158	170	118	73	44	32	16	73	22	31	29	133	114	36	38	6	71	91	12	31
704	W	221																													
705	B	214	127	93	31	36	26	9	26	47	96	136	145	106	61	37	28	15	56	20	30	27	120	101	28	29	5	60	86	11	31
706	B	210	123	94	33	38	27	9	27	46	97	134	149	106	62	37	28	14	54	20	28	26	115	98	27	27	5	60	87	13	31
707	B	247	142	104	35	43	29	10	32	54	110	159	172	116	73	44	32	17	67	22	31	30	127	109	34	35	6	69	94	14	31
708	B	233	127	100	33	41	28	9	26	52	111	148	164	114	65	41	31	15	56	22	28	28	128	109	29	30	4	70	90	13	30
709	B	221	129	95	32	38	27	10	23	51	105	147	158	110	68	37	28	15	53	23	33	29	127	109	32	34	6	65	96	13	31
710	B	223	130	96	33	40	28	9	28	50	101	141	158	115	72	41	31	15	58	22	32	29	129	119	30	30	5	66	97	16	30
711	B	242	142	105	33	41	29	10	29	51	104	155	166	116	71	44	31	17	63	22	34	31	132	108	33	33	6	68	94	14	32
712	B	250	144	103	35	42	29	11	32	57	112	151	175	134	94	45	33	18	79	29	37	33	147	129	41	39	7	71	114	12	30
713	B	208	121	91	31	37	26	9	26	47	101	137	145	99	62	36	26	14	55	19	28	27	106	92	28	28	5	58	86	14	32
714	B	225																												14	32
715	B	246	136	102	32	39	26	10	25	52	113	164	171	117	74	42	33	17	68	23	31	29	134	119	35	35	6	67	91	13	32
716	B	230	135	100	32	40	27	9	26	51	105	144	164	121	75	40	31	17	60	24	31	30	137	112	31	32	6	65	102	16	32
717	B	206	117	91	31	38	25	9	25	51	96	135	144	108	58	37	26	14	53	20	26	26	117	97	27	27	5	65	87	14	30
718	B	278	153	112	34	41	29	10	28	55	126	170	192	136	88	44	34	19	73	26	38	34	158	140	38	37	6	71	106	15	31
719	B	234	143	102	32	39	26	8	25	48	102	154	163	116	70	42	31	16	69	23	34	29	133	109	36	36	7	65	98	13	30
720	B	222	127	94	33	41	27	10	27	50	102	139	157	114	66	39	28	16	59	22	30	28	121	106	30	31	6	65	90	13	30
721	B	234	134	103	33	41	28	9	27	50	112	160	169	122	74	42	31	17	64	22	31	27	140	124	32	33	7	64	94	14	29
722	B	234	138	106	35	42	29	9	28	55	113	150	168	112	68	41	30	16	62	21	30	31	124	107	31	32	6	69	93	15	30
723	B	238	138	101	33	40	29	10	27	52	104	148	158	119	71	42	31	17	66	22	34	29	132	111	34	35	6	67	96	13	29
724	B	212	126	93	32	38	26	9	27	47	100	134	149	111	67	38	29	15	56	21	30	27	121	102	29	29	6	63	94	15	30
725	B	253	151	110					29										70	23	36				35	36	7			21	29
726	B	230	136	100	33	40	28	10	28	52	107	142	160	110	66	40	28	16	67	23	31	30	122	104	35	35	7	68	97	16	30
727	B	254	153	111	35	42	29	10	28	55	111	170	117	130	80	45	34	19	72	26	36	30	145	124	36	37	6	71	100	14	31
728	B	197	114	85	30	37	25	7	26	43	90	118	133	98	56	35	24	13	51	19	25	24	106	90	26	26	5	56	84	15	30
730	B	205	121	91	32	38	26	9	28	51	93	130	144	104	63	38	30	15	59	20	26	26	116	93	30	31	6	61	88	12	
732	B	207	118	91	32	39	26	9	26	48	93	127	142	103	60	39	27	15	52	19	28	27	110	95	27	27	5	62	90	15	31

Table 5a. Hematology results from SmithKline Beecham Laboratory for bottlenose dolphins captured and sampled during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: **FB** = freeze brand (sample id); **dy** = day of July 1995 when sample was processed; **wbc** = white blood cell count ($x10^3$ /mm^3); **rbc** = red blood cell count ($x10^6$/mm^3); **hgb** = hemoglobin (g/dl); **hct** = hematocrit (%); **mcv** = mean corpuscular volume (fl); **mch** = mean corpuscular hemoglobin (pg); **mchc** = mean corpuscular hemoglobin concentration (g/dl); **neut rel** = segmented neutrophils, relative (%); **ban rel** = band neutrophils, relative (%); **lymp** = lymphocytes, relative (%); **mon rel** = monocytes, relative (%); **eos rel** = eosinophils, relative (%); **bas** = basophils, relative (%); **n. rbc** = nucleated red blood cells (/100wbc); **neut abs** = segmented neutrophils, absolute (per mm^3); **ban abs** = band neutrophils, absolute (per mm^3); **lymp abs** = lymphocytes, absolute (per mm^3); **mono abs** = monocytes, absolute (per mm^3); **eos abs** = eosinophils, absolute (per mm^3); **bas abs** = basophils, absolute (per mm^3); **fib** = fibrinogen (mg/dl); **plate. cn** = platelet count (per mm^3).

FB	dy	wbc	rbc	hgb	hct	mcv	mch	mch c	neut rel	ban rel	lymp rel	mon rel	eos rel	bas rel	n. rbc	neut abs	ban abs	lmyp abs	mon abs	eos abs	bas abs	fib	plate. cn
700	14	10.00	3.93	15.7	51.8	131.8	39.9	30.3	28	0	38	1	33	0	0	2800	0	3800	100	3300	0		188,000
701	12	7.52	3.42	13.8	45.8	133.7	40.3	30.1	44	0	23	8	25	0	0	3210	0	1730	630	1910	20		179,000
702	11	9.52	3.47	14.5	45.5	131.2	41.8	31.8	35	0	29	8	28	0	0	3260	0	2720	790	2650	10	300	151,000
703	14	7.24	3.35	14.7	47.8	142.7	43.9	30.8	45	0	41	0	14	0	0	3258	0	2968	0	1014	0		108,000
704	11	11.94	3.46	13.1	42.2	122.1	37.8	31.0	31	0	28	7	34	0	0	3710	0	3270	880	3960	30	200	181,000
705	14	15.16	3.56	14.3	45.6	128.1	40.2	31.4	35	0	31	2	32	0	0	5306	0	4700	303	4851	0		148,000
706	11	7.53	3.10	12.7	39.8	128.1	40.8	31.9	28	0	31	12	29	0	0	2090	0	2250	890	2150	20	400	185,000
707	17	14.18	3.64	16.0	49.3	135.4	44.0	32.5	24	0	34	0	41	1	0	3403	0	4821	0	5814	142		157,000
708	12	10.63	3.51	14.4	45.6	130.0	40.9	31.5	41	0	19	8	32	0	0	4360	0	1890	800	3420	30		209,000
709	17	11.50	3.53	15.4	48.3	136.8	43.6	31.9	35	0	17	1	47	0	0	4025	0	1955	115	5405	0		188,000
710	12	9.05	4.23	16.1	52.2	123.5	38.1	30.9	42	0	26	6	26	0	0	3830	0	2190	560	2320	20		154,000
711	17	10.28	3.54	15.0	48.5	137.0	42.4	30.9	33	0	27	1	39	0	0	3392	0	2776	103	4009	0		117,000
712	17	7.89	4.17	16.9	52.6	126.1	40.5	32.1	38	0	32	0	26	1	0	2998	0	2525	0	2051	79		138,000
713	18	8.22	3.48	14.9	50.0	143.7	42.8	29.8	30	0	40	2	28	0	0	2466	0	3288	164	2302	0		126,000
714	17	11.89	3.33	14.0	43.6	130.9	42.0	32.1	25	0	31	1	43	0	0	2972	0	3686	119	5113	0		247,000
715	18	11.99	2.99	12.8	43.7	146.2	42.8	29.3	44	0	13	5	38	0	0	5276	0	1559	600	4556	0		147,000
716	17	9.98	3.73	14.1	45.0	120.6	37.8	31.3	47	0	27	4	21	1	1	4691	0	2695	399	2096	100		194,000
717	20	6.85	3.67	14.9	49.9	135.9	40.5	29.8	50	0	23	7	19	1	0	3450	0	1530	480	1270	60		159,000
718	18	12.45	4.09	17.3	54.0	132.0	42.3	32.0	35	0	12	4	49	0	0	4357	0	1494	498	6100	0		116,000
719	20	14.32	3.04	13.1	42.6	140.0	43.0	30.7	43	0	20	7	30	0	0	6130	0	2770	980	4270	50		135,000
720	19	9.35	3.60	14.2	46.1	128.1	39.4	30.8	48	0	27	0	25	0	0	4488	0	2524	0	2337	0		238,000
721	21	7.66	3.49	14.8	49.4	141.5	42.4	30.0	33	0	41	1	25	0	0	2528	0	3141	77	1915	0		172,000
722	19	11.97	3.51	14.5	46.3	131.9	41.3	31.3	48	0	24	0	28	0	0	5746	0	2873	0	3352	0		157,000
723	21	12.83	3.59	15.9	50.5	140.7	44.3	31.5	32	0	36	0	32	0	0	4106	0	4619	0	4106	0		161,000
724	19	8.52	3.27	14.6	43.5	133.0	44.6	33.6	39	0	25	0	36	0	0	3323	0	2130	0	3067	0		196,000
725	21	10.57	2.92	13.2	43.1	147.6	45.2	30.6	36	0	12	1	51	0	0	3805	0	1268	106	5391	0		146,000
726	19	7.37	3.27	13.7	43.5	133.0	41.9	31.5	36	0	39	3	22	0	0	2653	0	2874	221	1621	0		177,000
727	22	7.70	3.34	14.4	45.0	134.7	43.1	32.0	45	1	16	2	35	1	0	3465	77	1232	154	2695	77		185,000
728	20	7.61	3.34	14.0	44.5	133.2	41.9	31.4	39	0	26	9	25	1	0	3000	0	1940	690	1870	60		169,000
730	21	8.55	3.54	14.3	49.0	138.4	40.4	29.2	34	0	40	0	26	0	0	2907	0	3420	0	2223	0		155,000
732	22	8.20	3.66	14.7	48.7	133.1	40.2	30.2	47	0	26	2	25	0	0	3854	0	2132	164	2050	0		204,000

Table 5b. Hematology results from University of Miami Comparative Pathology Laboratory for bottlenose dolphins captured and sampled during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: **FB** = freeze brand (sample id); **con** = condition of sample, htem = high temperature; **dy** = day of July 1995 when sample was processed; **wbc** = white blood cell count ($x10^3$ /mm^3); **rbc** = red blood cell count ($x10^6$/mm^3); **hgb** = hemoglobin (g/dl); **pvc/hct** = packed cell volume/hematocrit (%); **mcv** = mean corpuscular volume (fl); **mch** = mean corpuscular hemoglobin (pg); **mchc** = mean corpuscular hemoglobin concentration (g/dl); **neut rel** = segmented neutrophils, relative (%); **ban rel** = band neutrophils, relative (%); **lymp rel** = lymphocytes, relative (%); **mon rel** = monocytes, relative (%); **eos rel** = eosinophils, relative (%); **bas** = basophils, relative (%), **n. rbc** = nucleated red blood cells (/100wbc); **neut abs** = segmented neutrophils, absolute (per mm^3); **ban abs** = band neutrophils, absolute (per mm^3); **lymp abs** = lymphocytes, absolute (per mm^3); **mono abs** = monocytes, absolute (per mm^3); **eos abs** = eosinophils, absolute (per mm^3); **bas abs** = basophils, absolute (per mm^3); **fib** = fibrinogen (mg/dl); **rbc morph** = red blood cell morphology, slt poly = slight polychromasia, slt aniso = slight anisocytosis; **plate est** = platelet appearance; **wbc morph** = white blood cell morphology.

FB	con	dy	wbc	rbc	hgb	pcv/ hct	mcv	mch	mchc	neut rel	ban rel	lymp rel	mon rel	eos rel	bas rel	n. rbc	neut abs	ban abs	lymp abs	mon abs	eos abs	bas abs	fib	rbc morph	plate est	wbc morph
700		14	10.3	4.03	15.8	46	115	39	34	33	0	30	2	35	0	0	3399	0	3090	206	3605	0	229	slt poly	adequate	normal
701		12	10.3	3.58	14.3	43	121	40	33	45	4	23	4	24	0	1	4635	412	2369	412	2472	0	234	normal	adequate	
702		11	10.0	3.39	14.9	41	120	44	36	41	0	30	1	27	1	0	4100	0	3000	100	2700	100		normal	adequate	normal
703		14	7.1	3.46	14.3	42	122	41	34	51	1	28	9	11	0	0	3621	71	1988	639	781	0	199	normal	adequate	
704		11	12.7	3.46	13.5	38	110	39	35	35	0	33	2	30	0	0	4445	0	4191	254	3810	0		normal	adequate	normal
705		14	17.8	3.64	14.2	41	113	39	34	27	0	31	3	39	0	0	4806	0	5518	534	6942	0	130	normal	adequate	normal
706		11	7.7	3.08	13.1	36	118	43	36	36	0	29	1	34	0	0	2772	0	2233	77	2618	0		normal	adequate	normal
707		18	14.9	3.74	15.9	45	122	43	35	30	0	31	0	39	0	0	4470	0	4619	0	5811	0	174	normal	adequate	normal
708		13	10.7	3.69	14.9	44	118	41	34	44	0	21	6	29	0	0	4708	0	2247	642	3103	0	213	slt aniso	adequate	normal
709		18	10.4	3.61	15.3	44	121	42	35	33	0	23	5	39	0	0	3432	0	2392	520	4056	0	253	normal	adequate	normal
710		13	10.0	4.21	16.6	47	112	39	35	34	0	34	2	30	0	0	3400	0	3400	200	3000	0	199	slt aniso	adequate	normal
711		18	10.8	3.60	15.3	43	120	43	36	39	0	26	5	30	0	0	4212	0	2808	540	3240	0	217	normal	adequate	normal
712		18	7.0	4.25	16.8	49	115	40	34	40	0	36	4	20	0	0	2800	0	2520	280	1400	0	212	normal	adequate	normal
713		18	9.9	3.57	14.8	43	120	41	35	39	0	34	5	22	0	0	3861	0	3366	495	2178	0	178	normal	adequate	normal
714		18	11.0	3.45	14.2	41	118	41	35	26	0	31	0	43	0	0	2860	0	3410	0	4730	0	288	normal	adequate	normal
715		18	12.0	3.08	13.1	38	123	43	35	44	0	29	2	25	0	0	5280	0	3480	240	3000	0	254	normal	adequate	normal
716		18	10.0	3.79	14.3	41	108	38	35	50	0	24	5	21	0	0	5000	0	2400	500	2100	0	221	normal	adequate	normal
717		20	7.2	3.75	15.4	45	120	41	34	50	0	24	2	24	0	0	3600	0	1728	144	1728	0	211	normal	adequate	normal
718		18	13.2	4.27	17.5	50	116	41	35	28	0	26	0	46	0	0	3696	0	3432	0	6072	0	203	normal	adequate	normal
719		20	16.6	3.12	13.7	40	127	44	35	44	0	18	2	36	0	0	7304	0	2988	332	5976	0	301	normal	adequate	normal
720		19	9.2	3.58	14.0	41	113	39	35	41	0	25	2	32	0	0	3772	0	2300	184	2944	0	214	normal	adequate	normal
721		21	8.1	3.58	15.1	44	122	42	35	42	0	31	3	23	1	0	3402	0	2511	243	1863	81	232	normal	adequate	normal
722		19	12.5	3.57	14.7	42	117	41	35	39	0	13	6	42	0	0	4875	0	1625	750	5250	0	248	normal	adequate	normal
723		21	13.8	3.69	15.8	46	123	43	35	23	0	32	0	45	0	0	3174	0	4416	0	6210	0	201	normal	adeuate	normal
724		19	10.3	2.96	14.7	37	126	50	39	51	0	16	2	31	0	0	5253	0	1648	206	3193	0	191	normal	adequate	normal
725		21	13.3	3.06	13.3	38	124	44	35	27	0	19	3	51	0	0	3591	0	2527	399	6783	0	204	normal	adequate	normal
726		19	8.1	3.32	13.8	40	119	41	35	46	0	25	2	27	0	0	3726	0	2025	162	2187	0	189	normal	adequate	normal
727	htem	24	8.4	3.36	14.8	44	131	44	34	49	0	19	8	24	0	0	4116	0	1596	672	2016	0	267	normal	adequate	normal
728		20	7.2	3.40	14.3	42	122	42	34	35	0	25	1	39	0	1	2555	0	1825	73	2847	0	182	normal	adequate	normal
730		21	9.7	3.59	14.6	42	117	41	35	34	3	33	4	26	0	0	3298	291	3201	388	2522	0	154	normal	adequate	normal
732	htem	24	8.9	3.69	14.8	47	126	40	32	53	0	26	6	15	0	0	4717	0	2314	534	1335	0		normal	adequate	normal

Table 6a. Blood chemistry results from SmithKline Beecham Clinical Laboratory for bottlenose dolphins captured and sampled during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: **FB** = freeze brand (sample id); **con** = condition of sample , froz = frozen, s.hem = slight hemolysis, war = warm; **dy** = day of July 1995 when sample was processed; **gl** = glucose (mg/dl); **so** = sodium (mEq/L); **po** = potassium (mEq/L); **cl** = chloride (mEq/L); **bu** = blood urea nitrogen (mg/dl); **cr** = creatine (mg/dl); **b/c** = bu/cr; **tp** = total protein (g/dl); **al** = albumin (g/dl); **gb** = globulin (g/dl); **a/g** = al/gb; **tbl** = total bilirubin (mg/dl); **ca** = calcium (mg/dl); **ph** = phosphorus (mg/dl); **ua** = uric acid (mg/dl); **ap** = alkaline phosphatase (U/L); **alt** = alanine aminotransferase (U/L); **ast** = aspartate aminotransferase (U/L); **ldh** = lactic dehydrogenase (U/L); **cpk** = creatine phosphokinase (U/L); **ggtp** = gamma-glutamyl transpeptidase U/L); **cho** = cholesterol (mg/dl); **tir** = total iron (ug/dl); **tgy** = triglycerides (mg/dl); **chs** = cholinesterase (mu/ml).

FB	con	dy	gl	so	po	cl	bu	cr	b/c	tp	al	gb	a/g	tbl	ca	ph	ua	ap	alt	ast	ldh	crk	ggtp	cho	tir	tgy	dbl	chs
700	s.hem	14	93	154	4.0	112	67	1.7	39	7.6	3.7	3.9	0.9	0.1	8.9	4.7	1.1	376	16	212	472	188	36	212	90	90	0.1	132
701		12	20	157	4.6	105	68	1.8	38	7.9	3.8	4.1	0.9	0.2	9.3	9.5	1.2	191	27	300	591	217	50	218	183	92	0.1	170
702		11	97	151	4.1	109	61	1.6	38	7.3	3.7	3.6	1.0	0.2	9.0	4.4	1.3	286	36	327	443	117	26	190	167	122	0.1	129
703		14	90	155	4.1	114	61	1.4	44	7.9	3.6	4.3	0.8	0.1	9.1	4.3	1.0	306	17	226	427	155	34	193	168	85	0.1	177
704		11	99	150	4.3	115	69	1.2	58	7.5	3.7	3.8	1.0	0.1	9.0	4.3	0.6	308	15	163	342	147	25	157	102	78	0.0	159
705		14	100	154	3.9	116	57	1.2	48	7.5	3.3	4.2	0.8	0.1	8.6	4.7	0.6	256	19	219	453	221	26	156	116	76	0.1	149
706		11	106	152	4.2	112	74	1.3	57	7.3	3.5	3.8	0.9	0.1	9.0	3.5	0.8	318	15	163	345	125	17	155	217	96	0.0	124
707	froz	21	30	160	3.7	115	52	1.6	33	7.8	3.8	4.0	1.0	0.2	9.3	5.7	0.8	340	29	303	495		51	201	160	90		
708		12	85	158	4.4	115	50	1.7	29	8.1	3.7	4.4	0.8	0.2	9.1	5.5	0.5	259	15	207	469	221	29	208	96	94	0.1	202
709	froz	21	102	154	4.1	114	51	1.6	32	7.9	4.0	3.9	1.0	0.1	9.2	6.7	0.9	709	26	257	466	145	39	208	123	84	0.0	173
710		12	135	161	4.2	116	49	1.8	27	7.1	3.9	3.2	1.2	0.2	9.1	5.2	1.0	406	14	153	394	198	34	251	154	119	0.1	189
711	froz	21	124	157	4.0	112	77	1.5	51	7.4	3.8	3.6	1.1	0.2	9.3	4.5	2.3	406	24	342	524	576	62	186	171	104	0.0	135
712	froz	21	81	155	4.5	117	69	2.2	31	7.5	3.9	3.6	1.1	0.2	9.2	6.6	0.7	295	17	232	482	104	38	244	139	104	0.0	160
713		18	101	152	3.8	114	51	1.6	32	8.3	3.8	4.5	0.8	0.2	9.2	5.1	0.6	707	14	163	386	171	32	203	177	91	0.1	196
714	froz	21	99	157	4.2	111	80	1.6	50	7.5	3.4	4.1	0.8	0.1	9.1	5.6	1.3	337	13	174	397	69	40	159	149	96	0.1	107
715		18	50	151	4.5	109	63	1.5	42	8.1	3.3	4.8	0.7	0.1	9.0	5.8	1.3	142	26	233	425	108	40	175	100	77	0.1	134
716		17	103	156	4.4	115	71	1.4	51	7.4	3.7	3.7	1.0	0.1	9.2	4.8	1.1	423	22	191	443	103	38	179	107	62	0.0	152
717		20	102	148	4.4	116	59	1.5	39	7.1	4.1	3.0	1.4	0.2	9.1	4.6	1.2	583	14	206	445	173	34	187	161	71	0.1	190
718		18	54	156	4.0	112	40	2.3	17	9.2	3.7	5.5	0.7	0.2	8.6	4.8	0.7	175	14	209	508	124	41	191	157	74	0.1	185
719		20	45	152	3.9	110	72	1.3	55	8.4	3.4	5.0	0.7	0.1	8.6	4.8	1.6	136	17	201	476	105	41	154	170	70	0.1	136
720		19	64	153	3.9	117	56	1.4	40	7.6	3.6	4.0	0.9	0.2	8.8	5.8	0.7	256	22	196	483	132	37	179	97	82	0.0	160
721		21	95	160	4.0	118	61	2.1	29	7.4	4.1	3.3	1.2	0.1	9.6	5.0	0.9	308	13	173	366	147	26	223	155	94	0.1	105
722		19	68	150	4.0	120	40	1.6	25	7.1	3.4	3.7	0.9	0.1	9.1	6.6	0.5	225	14	127	353	103	28	189	90	86	0.1	119
723		21	73	158	3.9	111	63	1.7	37	8.1	4.1	4.0	1.0	0.1	9.4	5.7	1.3	407	11	169	422	60	25	176	160	101	0.0	164
724	s.hem	19	90	155	4.2	117	58	1.4	41	6.7	3.6	3.1	1.2	0.3	9.0	5.9	1.1	376	22	173	432	124	29	184	105	82	0.1	131
725	war	21	53	156	4.2	117	55	1.5	37	7.7	3.9	3.8	1.0	0.1	9.1	4.8	0.6	222	8	177	422	16	38	117	126	53	0.1	128
726		19	120	153	3.9	120	44	1.3	34	6.6	3.2	3.4	0.9	0.2	8.5	4.4	0.6	186	18	171	434	124	25	166	61	94	0.0	128
727		22	77	155	4.1	116	63	1.4	45	7.5	3.9	3.6	1.1	0.2	9.0	5.1	0.8	148	14	174	330	112	23	194	139	85	0.1	123
728		20	88	152	3.8	117	51	1.6	32	7.8	3.7	4.1	0.9	0.2	8.6	3.1	0.9	237	14	191	403	145	30	130	191	75	0.1	136
730	war	21	111	153	4.5	115	79	1.3	61	6.9	3.6	3.3	1.1	0.2	9.4	5.1	1.3	456	11	141	366	108	28	152	164	90	0.0	142
732		22	109	152	4.3	116	36	1.6	23	6.2	3.9	2.3	1.7	0.2	9.1	6.3	0.5	1270	12	81	305	192	28	236	264	158	0.0	162

Table 6b. Blood chemistry results from University of Miami Comparative Pathology Laboratory for bottlenose dolphins captured and sampled during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings are defined as follows: **FB** = freeze brand (sample id); **con** = condition of sample, froz = frozen, hem = hemolysis, war = warm; **dy** = day of July 1995 when sample was processed; **gl** = glucose (mg/dl); **so** = sodium (mEq/L); **po** = potassium (mEq/L); **cl** = chloride (mEq/L); **bu** = blood urea nitrogen (mg/dl); **cr** = creatine (mg/dl); **b/c** = bu/cr; **tp** = total protein (g/dl); **al** = albumin (g/dl); **gb** = globulin (g/dl); **a/g** = al/gb; **tbl** = total bilirubin (mg/dl); **ca** = calcium (mg/dl); **ph** = phosphorus (mg/dl); **ua** = uric acid (mg/dl); **ap** = alkaline phosphatase (U/L); **alt** = alanine aminotransferase (U/L); **ast** = aspartate aminotransferase (U/L); **ldh** = lactic dehydrogenase (U/L); **cpk** = creatine phosphokinase (U/L); **ggtp** = gamma-glutamyl transpeptidase U/L); **cho** = cholesterol (mg/dl); **tir** = total iron (ug/dl); **pal** = pre-albumin (g/dl); **alb** = albumin (g/dl); **al1** = alpha1-globulin (g/dl); **al2** = alpha2-globulin (g/dl); **beta** = beta-globulin (g/dl); **gam** = gamma-globulin (g/dl); **ct** = cortisol (ug/dl); **co** = CO_2 (mEQ/L); **thy** = thyroxine (ug/dl); **ptp** = pathology report on total protein, nor = normal, mm = mild to moderate increase, min = mild increase, lnor = low normal, llnor = low to low normal; **pag** = pathology report on a/g, nor = normal; **pgl** = pathology report on globulinopathologies, mphg = mild polyclonal hypergammaglobulinemia.

FB	con	dy	gl	so	po	cl	bu	cr	b/c	tp	al	gb	a/g	tbl	ca	ph	ua	ap	alt	ast	ldh	cpk	ggtp	cho	tir	pal	alb	al1	al2	beta	gam	ct	co	thy	ptp	pag	pgl
700		14	97	149	3.7	115	60	1.1	54.5	7.2	3.2	4.0	1.65	0.2	8.8	5.3	0.8	429	38	232	1342	152	72	169	85	0.12	4.36	0.12	0.19	0.87	1.53	2.5	20	12.1	nor	nor	none
701		12	66	147	4.5	112	59	1.3	45.4	7.2	3.1	4.1	1.39	0.1	9.0	6.7	1.1	233	63	330	1539	167	97	170	163	0.00	4.18	0.35	0.24	0.66	1.77	2.4	23	10.6	nor	nor	none
702		11	97	149	4.2	113	59	1.2	49.2	6.7	2.9	3.8	1.42	0.1	9.1	4.6	1.1	370	67	348	1352	109	62	154	165	0.00	3.93	0.36	0.21	0.39	1.81	3.2	29	10.8	nor	nor	none
703		14	96	151	3.6	117	54	1.0	54.0	7.4	3.2	4.2	1.39	0.1	8.8	4.7	0.9	378	44	239	1237	134	71	153	152	0.11	4.20	0.10	0.24	0.85	1.91	2.5	18	13.3	nor	nor	none
704		11	101	149	4.3	118	64	0.8	80.0	6.8	2.9	3.9	1.59	0.1	9.3	4.6	0.5	360	37	181	1127	127	58	125	96	0.00	4.18	0.29	0.37	0.35	1.61	2.1	25	12.0	nor	nor	none
705		14	101	149	3.8	118	55	0.8	68.8	6.9	2.9	4.0	1.29	0.2	8.6	5.2	0.5	306	52	245	1402	174	59	123	113	0.12	3.77	0.14	0.39	0.87	1.61	3.3	26	12.5	nor	nor	none
706		11	105	150	3.9	116	71	0.8	88.8	6.6	2.9	3.7	1.47	0.1	9.0	3.8	0.6	367	34	181	1091	102	44	126	201	0.00	3.93	0.34	0.22	0.50	1.60	2.6	28	11.4	nor	nor	none
707	froz	21	33	151	3.3	118	46	1.1	41.8	7.4	3.4	4.0	1.59	0.2	9.3	5.9	0.8	405	86	313	1452	78	106	163	155	0.00	4.54	0.44	0.24	0.67	1.51	5.6	18	12.9			none
708		13	89	150	4.8	118	47	1.3	34.2	7.4	3.2	4.2	0.80	0.2	9.0	6.2	0.4	322	49	244	1586	167	62	164	85	0.16	4.15	0.22	0.27	0.82	1.98	2.9	24	12.2	nor	nor	none
709	froz	21	111	148	3.9	117	44	1.1	40.0	7.4	3.4	4.0	1.71	0.2	9.6	6.8	0.8	852	73	292	1447	141	79	170	124	0.00	4.67	0.32	0.21	0.61	1.59	6.3	19	14.3			none
710		13	138	149	4.6	116	47	1.2	36.8	6.8	3.3	3.5	0.90	0.2	9.1	5.7	0.8	536	45	182	1497	147	72	197	146	0.18	4.35	0.21	0.30	0.75	1.02	6.2	29	11.4	nor	nor	none
711	froz	21	130	147	3.7	113	72	1.2	60.0	7.0	3.2	3.8	1.82	0.2	9.5	4.7	2.3	478	75	373	1683	582	125	152	171	0.00	4.52	0.31	0.18	0.55	1.44	2.7	23	11.7			none
712	froz	21	90	150	4.3	121	62	1.8	34.4	7.0	3.4	3.6	0.90	0.2	9.9	6.9	0.5	369	60	255	1505	156	79	200	140	0.00	4.62	0.26	0.32	0.46	1.34	5.3	17	10.7			none
713		18	100	148	3.7	114	45	1.1	40.9	7.7	3.3	4.4	1.65	0.2	9.1	5.8	0.5	885	38	198	1228	155	66	169	173	0.00	4.80	0.33	0.41	0.35	1.82	3.7	28	14.1	nor	nor	none
714	froz	21	105	148	3.7	112	70	1.3	53.8	6.9	3.0	3.9	1.33	0.1	9.4	5.9	1.1	388	58	212	1239	103	82	134	146		3.93	0.43	0.17	0.52	1.84	2.0	23	11.5			none
715		18	31	151	4.5	112	56	1.1	50.9	7.5	3.1	4.4	1.24	0.1	8.8	7.2	1.1	214	62	245	1344	87	87	141	100	0.00	4.15	0.45	0.22	0.78	1.91	3.9	21	13.1	nor	nor	none
716	hem	18	106	149	3.9	113	67	1.0	67.0	7.2	3.3	3.9	1.81	0.3	9.4	5.3	1.0	478	75	234	1410	89	85	144	117	0.00	4.64	0.16	0.36	0.68	1.36	4.8	28	12.6	nor	nor	none
717		20	102	148	4.1	114	57	1.1	51.8	6.7	3.2	3.5	2.26	0.2	9.4	6.0	1.0	728	40	237	1466	154	71	162	153	0.00	4.64	0.31	0.31	0.49	0.94	3.9	27	9.9			none
718		18	60	152	3.8	115	36	1.7	21.2	8.5	3.5	5.0	1.17	0.3	8.7	5.5	0.6	264	53	236	1434	109	83	159	158	0.00	4.59	0.20	0.29	0.66	2.77	4.2	23	10.4	mm		mphg
719		20	39	151	3.9	113	65	1.2	54.2	8.0	3.1	4.9	1.03	0.2	8.6	5.4	1.5	197	43	217	1432	88	87	136	160	0.00	4.05	0.46	0.47	0.53	2.48	2.2	23	9.9	min		mphg
720		19	76	150	3.9	118	52	1.0	52.0	7.2	3.1	4.1	1.36	0.1	8.6	6.3	0.5	333	86	220	1501	124	77	150	93	0.00	4.16	0.17	0.33	0.81	1.74	3.6	26	12.4	nor	nor	none
721		21	73	151	4.1	118	51	1.6	31.9	7.4	3.6	3.8	1.87	0.3	9.7	8.1	0.6	382	34	204	1290	159	63	182	177	0.00	4.82	0.30	0.51	0.50	1.27	2.8	16	9.1			none
722		19	72	152	4.0	121	36	1.1	32.7	6.8	2.9	3.9	1.51	0.1	8.8	7.0	0.4	294	40	151	1033	88	61	160	84	0.00	4.09	0.40	0.16	0.63	1.53	3.5	19	10.2	nor	nor	none
723		21	79	151	4.0	114	53	1.5	35.3	7.7	3.7	4.0	1.73	0.1	9.2	6.3	1.1	474	41	197	1238	107	53	144	162	0.00	4.88	0.29	0.22	0.41	1.89	2.0	18	13.0			none
724		19	80	150	3.9	117	53	1.1	48.2	6.4	3.0	3.4	1.90	0.2	8.8	6.0	0.7	478	42	206	1418	99	73	159	97	0.00	4.19	0.12	0.31	0.83	0.94	3.3	23	12.3	nor	nor	none
725		21	53	151	4.2	118	49	1.1	44.5	7.4	3.4	4.0	1.53	0.1	9.0	5.0	0.5	257	39	208	1355	22	82	92	125	0.00	4.47	0.32	0.26	0.59	1.76	1.8	23	11.4			none
726		19	122	148	3.8	121	42	1.0	42.0	6.2	2.6	3.6	1.39	0.1	8.3	4.8	0.5	251	43	190	1267	111	54	140	55	0.00	3.60	0.14	0.32	0.73	1.40	3.2	26	9.4	lnor	nor	none
727	war	24	10	155	3.2	120	55	1.3	42.3	7.1	3.4	3.7	1.65	0.1	9.9	7.2	0.7	160	159	188	1042	57	63	92	145	0.00	4.43	0.32	0.67	0.31	1.38	2.3	12	10.8	nor	nor	none
728		20	108	148	3.4	116	49	1.2	40.8	7.3	2.8	4.5	1.28	0.2	8.9	3.4	0.8	317	38	210	1277	131	65	117	177	0.00	4.09	0.28	0.18	0.56	2.18	1.6	28	8.5			mphg
730		21	107	147	4.5	117	77	1.0	77.0	6.7	2.9	3.8	1.69	0.2	9.3	5.3	1.0	519	43	167	1232	130	60	127	162	0.00	4.20	0.15	0.19	0.66	1.49	2.3	26	9.6			none
732	war	24	122	154	4.2	119	33	1.4	23.6	5.5	2.9	2.6	1.71	0.1	9.4	6.1	0.3	1447	34	96	945	46	63	183	248	0.00	3.47	0.23	0.29	0.47	1.04	1.4	24	13.7	llnor	nor	none

Table 7. Urinalysis results for for bottlenose dolphins captured and sampled during July, 1995, health assessment sampling in and around Beaufort, NC. Column headings and entries are defined as follows: **FB** = freeze brand (sample id); **col** = color, yel = yellow, amb = amber; **tur** = turbidity, clear = clear, cloud = cloudy, hazy = hazy; **sgv** = specific gravity; **ph** = pH; **pro** = protein (mg/dl); **glu** = glucose (mg/dl); **ket** = ketones (mg/dl); **bil** = bilirubin; **nit** = nitrite; **leu** = leukocyte esterase; **blo** = blood; **uro** = urobilinogen (EU/dl); **wbc** = white blood cells (/HPF); **rbc** = red blood cells (/HPF); **epi** = epithelial cells (/HPF), m. squam = moderate amount of squamous, occ = occasional; **bact** = bacteria; **crys** = crystals, amorph urat = amorphous urates, amorph phos = amorphous phosphates; **cast** = hyaline casts (per LFP); **other**, sperm = spermatozoa, muc. = mucus (/LPF).

FB	col	tur	sgv	ph	pro	glu	ket	bil	nit	leu	blo	uro	wbc	rbc	epi	bact	crys	cast	other
700	yel	clear	1.030	6.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
701	yel	cloud	1.030	6.0	30	0	0	0	0	0	0	0.2	0	0	0	present	amorph urat		
702																			
703	yel	cloud	1.030	6.5	30	0	0	0	0	0	0	0.2	0	0	0	0	amorph urat		
704																			
705	yel	clear	1.030	6.0	trace	0	0	0	0	0	0	0.2	0	0	0	0	0		
706	yel	clear	1.025	6.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0		
707	yel	clear	1.030	6.5	30	0	0	0	0	0	0	0.2	0	0	0	0	0	2 - 4	
708	yel	clear	1.025	5.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
709	yel	clear	1.030	6.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
710	yel	clear	1.030	6.0	trace	0	0	0	0	0	0	0.2	0	0	0	0	0	2 - 4	
711	yel	cloud	1.030	7.5	trace	0	0	0	0	0	0	0.2	0	0	0	0	amorph phos	0	
712	yel	hazy	1.015	7.5	0	0	0	0	0	0	0	0.2	0	0	0	0	amorph phos	0	
713	yel	clear	1.030	6.5	30	0	0	0	0	0	trace	0.2	0	0	m. squam	present	0	0	
714																			
715	yel	cloud	1.030	6.0	30	0	0	0	0	0	trace	0.2	0	0	0	0	amorph urat	0	
716	yel	clear	1.025	6.5	trace	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
717	yel	clear	1.030	6.5	30	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
718	yel	cloud	1.030	7.0	30	0	0	0	0	0	mod.	0.2	2 - 4	0	0	0	0	0	Sperm
719	yel	hazy	1.030	6.0	trace	0	0	0	0	0	0	0.2	0	0	0	0	amorph urat	0	
720	yel	clear	1.030	6.5	100	0	0	0	0	0	trace	0.2	0	2 - 4	0	0	0	9 - 13	
721	yel	clear	1.030	6.5	0	0	0	0	0	0	0	0.2	2 - 4	0 - 1	0	0	0	5 - 8	
722	yel	clear	1.030	6.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0	9 - 13	
723	yel	cloud	1.030	6.0	>300	0	0	0	0	0	0	0.2	0	0	0	present	amorph urat	0	
724	yel	clear	1.030	6.0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
725																			
726	yel	clear	1.005	6.0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	5 - 8	
727	yel	hazy	1.040	5.5	2+	0	0	0	0	0	0	0.2	1 - 3	0 - 1	occ	0	1+ amorpho	0	
728	yel	clear	1.030	6.5	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	
730	yel	clear	1.030	6.5	30	0	0	0	0	0	0	0.2	0	0	0	0	0	2 - 4	
732	amb	clear	1.032	6.0	trace	0	0	1+	0	0	0	0.2	1 - 3	3 - 5	rare	0	0	0	muc:1+

Table 8. Disposition of samples and or data collected from bottlenose dolphins examined during July, 1995, health assessment sampling in and around Beaufort, NC. The samples and or data were transferred to the location of the Lead Researcher/Institution for processing, analyses, or to add to a database for ongoing comparative studies. Results of completed projects are archived at the NMFS, Charleston Laboratory.

Sample or Data Type	Lead Researcher/Institution	Purpose	Comments
Morphometrics	A. Read, Duke University	Comparative studies	ongoing
Blood	Smith Kline, Tampa, FL	Hematology and blood chemistry	completed
	University of Miami	Hematology and blood chemistry	completed
	G. Bossart, University of Miami	Immunology	in progress
	S. Stoskopf, North Carolina State University	Immunology	in progress
	P. Duignan, University of Guelph	Morbillivirus	completed
	D. Duffield, University of Oregon	Genetics	ongoing
	NMFS, Charleston	Health assessment estimates, genetics, contaminants, and archive	in progress
Teeth	NMFS, Beaufort	Age determination	in progress
Biopsy	NMFS, Charleston	Genetics, contaminant analysis, histology	in progress
Milk	NMFS, Charleston	Contaminant analysis, archive	in progress
Fecal	NMFS, Charleston	Parasitology, archive	begin Feb. 96
Urine	SmithKline, Tampa, FL	Urinalysis	completed
	NMFS, Charleston	Biomarkers, archive	exploratory
Blowhole swabs	J. Buck, University of Connecticut	Bacteriology	completed
Blubber depth	R. Wells, Chicago Zoological Society	Body condition	ongoing
Diagnostic Ultrasound	R. Stone, Dolphin Quest	Health assessment parameter	report in prep.
Rectal temperature	A. Pabst, University of North Carolina	Comparative studies	ongoing
Acoustic Recordings	L. Sayigh, University of North Carolina	Comparative studies	ongoing
VHF tracking	A. Read, Duke University	Range, movements, habitat usage	report avail.
Trac-Pac	S. Shippee, Naval Ocean Systems Center	Short-term tracking, monitor speed, dives	report avail.

Table 9. Photo-identification history of bottlenose dolphins examined during July, 1995, health assessment sampling in and around Beaufort, NC. Information provided by K. Rittmaster, North Carolina Maritime Museum, Beaufort, NC, current as of August 17, 1995.

Freeze Brand	North Carolina Maritime Museum #	Month Observed (times observed)
703	405	Jun-93 (one)
706	1047	Sep-94 (one)
707	1211	Aug-92 (one)
709	1324	Jun-95 (one)
712	641	Nov-91 (one) Dec-92 (one) Jan-93 (one) Dec-94 (one) Jan-95 (one) Mar-95 (one)
714	1011	Jul-93 (one)
718	801	Jul-94 (one) May-95 (one)
722	316	Jul-94 (one)
727	558	Aug-89 (three) Aug-90 (one) Sep-91 (one) Jul-92 (one)
730	1096	Oct-94 (one)

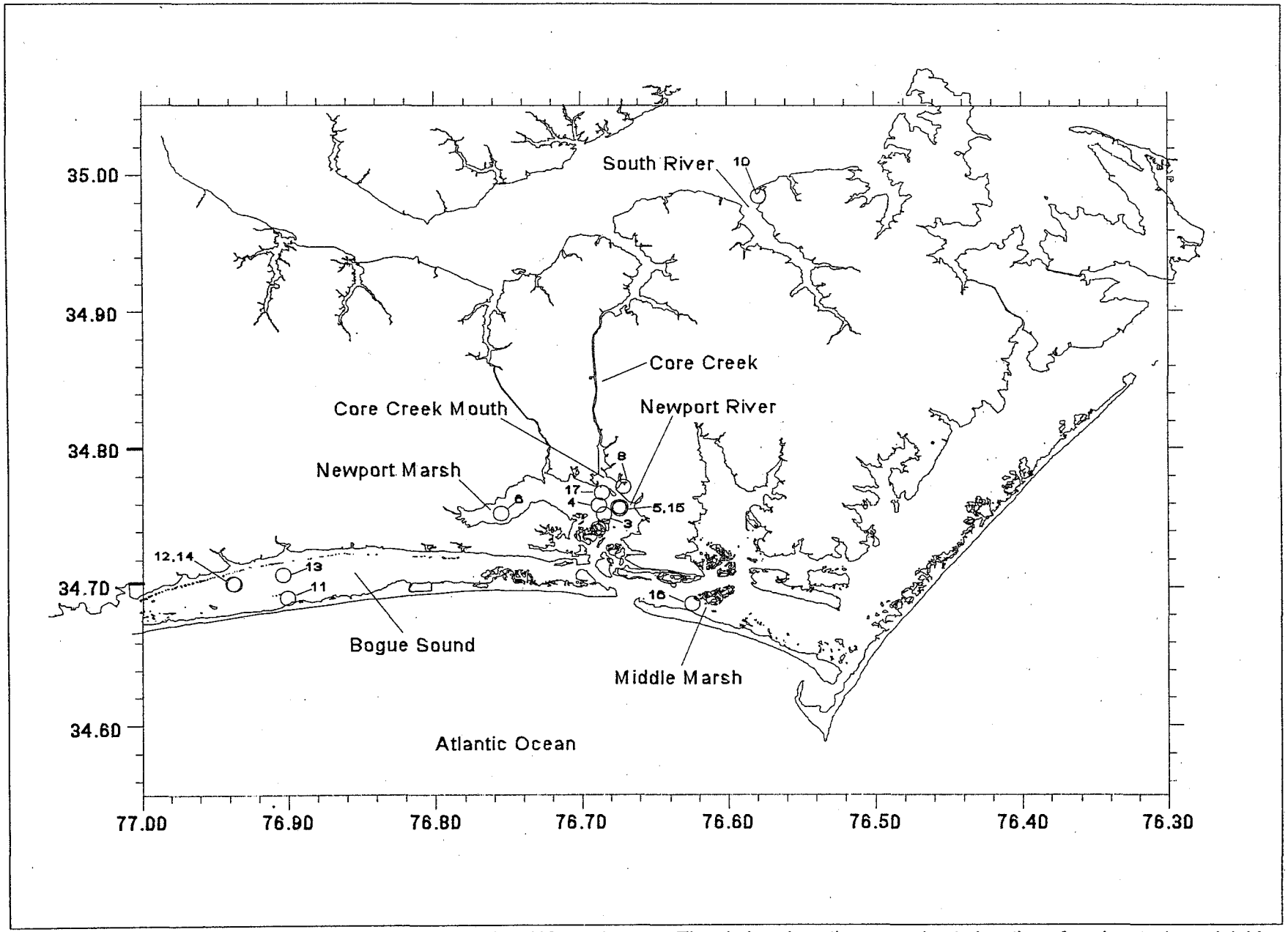


Figure 1. Bottlenose dolphin capture sites in the Beaufort, NC, study area. The circles show the approximate location of each set where dolphins where captured and sampled; the associated numbers are the set numbers listed in Table 2. Latitude (N) in decimal degrees is on the vertical axis, and the longitude (W) in decimal degrees is on the horizontal axis.

Set # 8

TURSIOPS CAPTURE DATA — DATE 15 Jul 19 95 — DOLPHIN NAME FB709

ROLL: FRAME-FRAME — SIGHT TIME 1137 — FREEZEBRAND 709

PHOTOS: BSB:17-end, BP3:4->8 — CAPTURE TIME 1152 — TAG TYPE Rototag

RESTRAINT TIME 1205-1259 — TAG NO./COLOR 166/Pink

TAPES: no video, acoustic — RELEASE TIME 1313 — DOLPHIN SEX FEMALE

CAPTURE LOCATION south of mouth of Core Creek

SIGHTING NO. 8 — GROUP SIZE 12 — NO. CALVES 2 — NO. ESCAPES ϕ

OTHERS CAPTURED none

SAMPLES OBTAINED: WEIGHT: DOL + SLING 143.8 — SLING 12.4 — DOLPHINS 131.4 kg

BLOOD ~240 cc — TOOTH NO. — LR URINE ✓/18 cc — FECES ✓ cc — MILK N/A cc

OTHER fecal (swab + culture), urine, blowhole, blubber biopsy, skin, acoustic, fixed-board-bay — ULTRASOUND? ✓ (No diagnostics - only pregnancy check before coming on boat)

INSTRUMENTS (Straightline, in cm) on boat

Tip Upper Jaw To:

1) Fluke Notch	221	13) Genital Slit Length	
2) Dorsal Fin Tip	129	14) Anal Slit Length	
3) Dorsal Fin Leading Edge	95	15) Genital-Anal Slit Separation	
4) Eye, Center (left)	31.5	16) Mammary Slit Length (L) / 31) (R)	
5) External Auditory Meatus (L)	38	34) Girth at Meatus	96
6) Angle of Gape (L)	26.5	17) Girth, Axilla / 27) DFF	110 / 126.5
7) Melon Apex	9.5	18) Girth, Anus / 28) DFR	68 / 109
8) Blowhole, Center of Arc	22.5	19) Flipper Tip to Ant Insertion (L)	37
9) Flipper, Anterior Insertion	51	20) Flipper Tip to Axilla (L)	27.5
33) Axilla	64.5	21) Flipper Width (L)	15
10) Umbilicus	105	22) Fluke Span / 29) (R)	52.5 / 32 L/R
11) Genital Slit, Center	147	32) Depth of Fluke Notch / 30) (L)	6 / 34
12) Anus, Center	158	23) Dorsal Fin Height	22.5
		24) Dorsal Fin Length (base)	33
		25) Lower Jaw Projection Beyond Upper	
		26) Rostral Girth	28.5

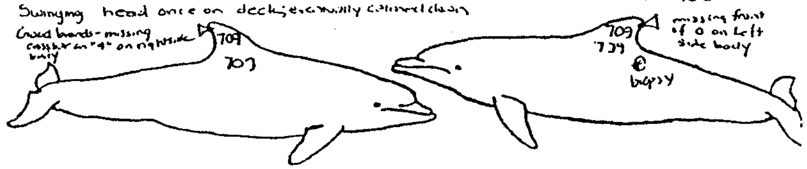
TOOTH COUNT:

Upper Jaw (L) ____ (R) ____

Lower Jaw (L) ____ (R) ____

SKETCH POSITIONS OF SCARS, MARKS, TAGS, FREEZEBRANDS, ETC.

Swinging head once on deck; eventually calmed down



*FB 709 taken off boat ... R/V Miller ...

COMMENTS, DESCRIPTIONS OF TREATMENTS RESPONSES, BEHAVORIAL NOTES, ADDITIONAL DATA ON REVERSE SIDE

Set # 8

BOTTLENOSE DOLPHIN CONDITION FIELD DATA:

DOLPHIN NAME FB709 — FB 709

DATE 15 July 1995

TIME 1217

LOCATION mouth of Core Creek

WATER TEMP 87°F, 31°C

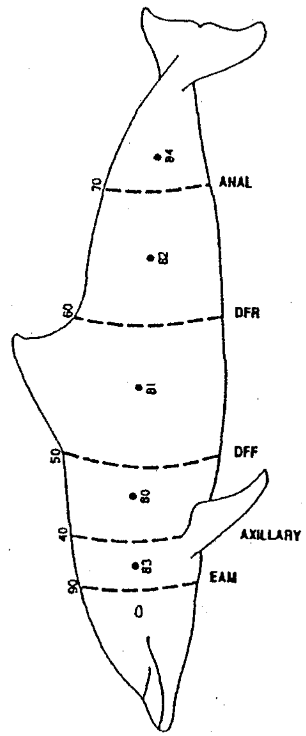
SEX FEMALE

WEIGHT 131.4 kg — LENGTH 221 cm

EAM GIRTH 96 cm — AX GIRTH 110 cm

DFF GIRTH 126.5 cm — DFR GIRTH 109 cm

ANAL GIRTH 68 cm



ULTRASOUND READINGS (mm)

EAM			AXILLARY		
Dorsal	(90)	17	(40)		16
10 cm	(91)	14	(41)		15
20 cm	(92)	11	(42)		14
30 cm	(93)	18	(43)		13
40 cm	(94)	14	(44)		11
50 cm	(95)		(45)		12
60 cm	(96)		(46)		15
70 cm	(97)		(47)		
Ventral	(98)	14	(48)		15

DFF			DFR		
Dorsal	(50)	18	(60)		20
10 cm	(51)	14	(61)		16
20 cm	(52)	13	(62)		12
30 cm	(53)	10	(63)		13
40 cm	(54)	10	(64)		14
50 cm	(55)	13	(65)		16
60 cm	(56)	13	(66)		
70 cm	(57)		(67)		
80 cm	(58)		(68)		
Ventral	(59)	15	(69)		22

ANAL			MID-LATERAL		
Dorsal	(70)	16	EAM AX	(83)	19
10 cm	(71)	15	AX DFF	(80)	11
20 cm	(72)	12	DFF DFR	(81)	13
30 cm	(73)	18	DFR ANAL	(82)	14
40 cm	(74)		POST-ANAL	(84)	13
50 cm	(75)				
Ventral	(76)				

COMMENTS on boat

READER A. Hohn

Appendix I. Example of forms used for recording the 25 standard length and girth measurements, and ultrasound measurements of blubber depth. Locations and/or descriptions of measurements are shown on the forms. These forms were developed and provided by the Dolphin Biology Research Institute of Sarasota, Florida.