

CETACEAN RELEASES

A List of Examples Compiled by

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"Over the years that dolphins have been kept in captivity, some have been released back into the wild after varying periods of time. During most of these early dolphin reintroductions, the animals were often taken from a tank and placed back in the bays close to the facilities. Some of these were display animals no longer of use to the facility. In all these cases there was no followup monitoring." (Bassos, 1993).

This document is dedicated to "Keiko", "Junior", "Tanouk" and "Lolita" , as well as the many smaller captive cetaceans which have been and are maintained in solitary confinement and inadequate facilities devoid of significant educational benefit to the public or conservation benefit to their species. They could be returned to the benefit of all.

For this preliminary summary, I have included anecdotal reports of releases of dolphins (including large species such as killer whales) from captivity by institutions and individuals which have maintained them in many parts of the world. I have also included a few examples of reintroductions of stranded cetaceans which provide useful background on followup documentation. But, it is not the astonishing durability and survival instinct of these animals in nature that is in question. Currently, a major point of contention in the issue of release or reinstatement of captive cetaceans is whether the dolphin or whale will readapt to catching live prey after it has been fed piecemeal in prolonged captivity. Another point of contention is whether released animals will spread acquired pathogens to the wild community, or have sufficient immunity from pathogens in the wild. And, a third point concerns the question of whether a released cetacean will readapt socially, or be condemned to a life of loneliness.

These points must be responsibly addressed; but, if post-captive release is lethal, dangerous and irresponsible, then why has it been done so many times by organizations that are generally considered responsible?

This is not intended to be an exhaustive list, and any additions or suggestions the reader can offer will be appreciated. Considering the worldwide, sometimes illegal and often unregulated trade in these animals, there undoubtedly have been other releases for institutional and business convenience which are not included herein. In the interest of proper historical documentation, I will list only those which have been published or have been reported to me firsthand by reliable sources. This does not include reports of approximately 20 dolphins that have been rehabilitated from stranding events and released back to the wild (NMFS records). It will be particularly useful in future editions of this publication to compile a list of releases of cetaceans that were examined by qualified veterinarians prior to release, and for which veterinary records (and/or specimen materials) may be available. This information, together with similarly compiled information from stranding events may yield useful epidemiological insights into the question of immunocompetence and introduction of 'captive acquired pathogens' to wild populations. The state of the art in telemetry and observational studies can in many cases reveal whether released animals fare well and are socially reinstated.

In the case of non-native introductions, DNA techniques may now be employed in studies of the host populations to reveal additional information concerning the genetic ramifications of non-native releases (eg. in The Bahamas *Tursiops truncatus* population; or in operational releases such as done by the U.S. Navy, other navies, and swim programs).

Whatever one's view on captivity may be, it is in the interest of humanitarian treatment of those animals which are no longer suitable for display, etc., to seriously examine release and reinstatement to the wild as an option for their retirement. In this respect, the genetic and immunological issues are important and should be objectively addressed; but, in a very real sense they represent spilt milk due to the common past practices of institutions the public has entrusted with the care of marine mammals.

Dolphin (*Tursiops* sp.) releases

1993. Flipper – a male bottlenose dolphin released off Laguna, Brazil after approximately ten years of captivity (Rollo, 1993). Since release, Flipper has been seen along at least 155 miles of coastline, often in the company of other dolphins. His most recent sighting was in early 1995. Returned to native habitat. One dolphin; Captive 10 years; followup successful.

1992. TT-745 – a male bottlenose dolphin captured on 20 July 1988 in Mississippi was inadvertently released by the U.S. Navy on 2 June 1992 at an undisclosed location (NMFS MMIR 08/03/93). No followup reported. Not reported whether returned to

native habitat. One dolphin; Captive 4 years; no followup. There should be more information available on this animal through FOIA request.

1992. TT-682 "Scanner"— a male bottlenose dolphin captured on 08/30/84 was inadvertently released by the U.S. Navy on 1 May 1992 at an undisclosed location (NMFS MMIR 08/03/93). No followup reported. Not reported whether returned to native habitat. Good veterinary records at first in Hawaii, later in Key West Florida to 4/24/92; ran off with a pod 4/22/92, but apparently was recalled or voluntarily returned; transferred to Morehead City NC on 4/28/92. Presumably, Scanner went AWOL off North Carolina. In 1988 this dolphin was reported to have exhibited skin lesions similar to those observed in east coast strandings; should seek samples. Dr. Greg Bossart signed veterinary report of 3/17/88 indicating skin dermatitis of viral etiology. One dolphin; Captive 8 years; no followup.

1992. Bahama Mama – an adult female bottlenose dolphin inadvertently released after at least seventeen years of captivity (Claridge and Balcomb, 1993). No official followup occurred, however this dolphin was positively photo-identified up to eight months after release in the company of wild dolphins in the Bahamas. Assumed returned to native habitat. One dolphin; Captive 17 years; followup successful.

1992. Rajah (male), Nero (male), Frodo (male), Rani (pregnant female), Echo (juvenile daughter of Rani), Mila (female) and Luka (her calf), Nakita (juvenile daughter of Mila), Kia (juvenile) – nine bottlenose dolphins in a socially perturbed group released 13 January 1992 off Perth, Australia, after eleven years of captivity (Gales and Waples, 1993). Rajah, the lone male, followed the research boat out to sea and within ten minutes had his first encounter with wild dolphins, two subadults. "Rajah seemed to have no problem keeping pace with the wild dolphins..." Eleven days later, he approached the research boat excitedly and followed it back into the seapen enclosure. He had lost 18 kg (10.8% of his prerelease weight), which was considered unsatisfactory, and he is now kept permanently in a large netted enclosure within a marina. Mila was recaptured 28 February, and she was reported to have lost 23 kg (14.7% of her prerelease body weight), which was considered unsatisfactory. She also is now kept permanently in the large netted enclosure. Her calf (Luka) presumably died. One of the juveniles (Echo) was recaptured one week after release, having lost 10kg (8.5%) of her prerelease body weight, which was considered unsatisfactory. She too is now maintained permanently in the large netted enclosure. Frodo appeared to be in fine condition on 16 February. Nero was seen at sea on 31 January. Several other sightings of these released dolphins (unidentified as to which ones) have been made as late as September 1992. The authors report that, "The major reason for the ambiguity of the results was our inability to effectively track the dolphins whilst they were at sea." Returned to native habitat. Nine dolphins; Captive 11 years; 3 recaptured, 1 presumably died, 2 followup successful, and 3 no followup.

1992. Matt, an adult male bottlenose dolphin was rehabilitated, freezebranded, and then released after 37 days at Mote Marine Laboratory's facility (Gorzelay, 1992). Within a matter of minutes he was associating with a mother-calf pair in the area. At least 12 sightings of Matt have been reported in the first nine months following release. Returned to native habitat. One dolphin; Captive 37 days; followup successful.

1992. Annessa, a captive-born Atlantic bottle-nose dolphin held at the Dolphin Research Center in the Florida Keys, disappeared and was feared lost during a hurricane in August, 1992. Annessa survived the hurricane, however, and was adopted by a pod of wild dolphins. She has been sighted numerous times - healthy and foraging on her own. One dolphin; Captive since birth; followup successful.

1991. Rocky (male), Missie (female) and Silver (male) – three bottlenose dolphins released off Turks and Caicos Islands, after twenty, twenty-two, and fifteen years of captivity, respectively (Klinowska and Brown, 1985). "In the acclimation seapen, they learned how to capture live fish" (McKenna, 1992). Released September 1991. All have been resighted numerous times since then, and Silver has been seen as recently as early 1994. In several of the recent sightings, Silver was in the company of JoJo, a "friendly" dolphin that swims near Club Med at Providenciales, Turks and Caicos. Rocky and Missie were captured in the North Atlantic or Gulf of Mexico (probably off Florida), and Silver was captured off Taiwan in the Pacific. Not returned to native habitat.

Note: This reintroduction was recently labelled as fraud by marine parks spokespeople in the United Kingdom, but this author is convinced that it was conducted responsibly and without intent to deceive. Three dolphins; Captive 20, 22 and 15 years; followup tentatively successful.

1990. Echo (male) and Misha (male) – two adult bottlenose dolphins released intentionally after two years of research (Wells, 1991; Bassos, 1993), with extensive followup. The dolphins had been captured in 1988 with the intention of studying aspects of their reintroduction following captivity. Released on 6 October 1990 off Bishop Harbor, Tampa Bay, Florida in the vicinity where they had been captured. These two dolphins have been resighted numerous times (recently March, 1994), and they appear to have successfully reacclimated to the wild. Released to native habitat. Two dolphins; Captive 2 years; followup successful.

1990. TT-652 "Budro", a male bottlenose dolphin captured 02/24/84 in Mississippi was inadvertently released by the U.S. Navy on 06/04/90 at an undisclosed location (NMFS MMIR 08/03/93). Budro was at Key West, FL on 5/2/90. No followup reported. Not known if returned to native habitat. Veterinary records 3/29/90 indicate Budro exhibited anorexia, possible ulcer which was medicated; and 4/22/90 records indicate "animal well fleshed and healthy" at that time. One dolphin; Captive 4 years; no

followup.

1987. Joe (male) and Rosie (female) – two bottlenose dolphins released off Wassaw Island, Georgia, after seven years of captivity (Coyle and Hickman, 1988). "All reports of their activity in the wild indicate that they are in good health and have associations with resident pods." Released July 13, 1987. These dolphins were captured off Mississippi and released off Georgia. Not returned to native habitat. Two dolphins; Captive 7 years; followup successful.

Note: Dr. David Bain has suggested that Joe and Rosie may have been the carriers of disease which ravaged dolphins along east coast in 1987/88, but on review of the facts that seems improbable. The massive die-off of dolphins along the east coast began off New Jersey in June 1987 before Joe and Rosie were released, and it progressed southward along the coast. Strandings of dolphins did not occur off Georgia until year end. A retrospective analysis in 1993 indicates the die-off may have been due to a morbillivirus with environmental contaminants implicated in immune system failure. Phocine morbillivirus has been detected in New England since 1986 and earlier.

1986. TT-658, "Echo", a female bottlenose dolphin captured 03/30/84 in Mississippi was inadvertently released 07/15/86 by the U.S. Navy at an undisclosed location (NMFS MMIR 08/03/93). On 2/24/86 Echo was stationed at NOSC, Hawaii. No followup reported. Not known if returned to native habitat. Veterinary records indicate nothing remarkable in her history. One dolphin; Captive 2+ years; no followup.

1985. TT-672, a male bottlenose dolphin captured 09/06/84 in Mississippi was inadvertently released 08/02/85 by the U.S. Navy at an undisclosed location (NMFS MMIR 08/03/93). No followup reported. Not known if returned to native habitat. Veterinary records indicate NOSC San Diego. One dolphin; Captive 11 months; no followup.

1984. TT-#13, a female bottlenose dolphin captured 03/23/84 in Mississippi was released by the U.S. Navy ten days later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed released to native habitat. One dolphin; Captive 10 days; no followup.

1984. TT-#10, a male bottlenose dolphin captured 02/24/84 in Mississippi was released by the U.S. Navy twenty days later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed released to native habitat. One dolphin; Captive 20 days; no followup.

1984. TT-#11, a female bottlenose dolphin captured 03/03/84 in Mississippi was released by the U.S. Navy twelve days later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed released to native

habitat. One dolphin; Captive 12 days; no followup.

1984. Nine bottlenose dolphins released after three months captivity for the filming of "Cocoon" by Fox Studios off Nassau, Bahamas. No official followup occurred. Twelve dolphins had reportedly been captured off Eleuthera, Bahamas (S. Claridge, pers. comm.). One died, two are reportedly now at UNEXSO, Freeport, Bahamas. Released to native habitat. Nine dolphins; Captive 3 months; no followup.

1984. TT-#14, a male bottlenose dolphin captured 07/26/84 in Mississippi was intentionally released 08/14/84 by the U.S. Navy, presumably near the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed released to native habitat. One dolphin; Captive 18 days; no followup.

1984. One Atlantic bottlenose dolphin captured 07/03/84 off the Florida panhandle was released 08/26/84 by the Gulfarium of Fort Walton Beach because it "would not adapt to captivity." No followup reported. Presumed native reintroduction. One dolphin; Captive 57 days; no followup.

1983. One Atlantic bottlenose dolphin captured 06/22/83 in Mississippi was released 07/07/83 by the Aquarium of Niagara Falls (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 15 days; no followup.

1983. One Atlantic bottlenose dolphin captured 07/27/83 by Sea World for Dr. Gerald Kooyman (Scripps Institute of Oceanography) was released 10/01/83, presumably near the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 2 months; no followup.

1983. Two bottlenose dolphins were released in Mississippi sound approximately one month after capture by Marine Animal Productions, Inc. (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. Two dolphins; Captive 1 month; no followup.

1983. Two Atlantic bottlenose dolphins were reported in the NMFS MMIR 08/03/93 to have been captured by Sea World and subsequently released. No followup reported. Presumably native reintroduction. Two dolphins; Captive 2 weeks; no followup.

1982. One Atlantic bottlenose dolphin was reported released in Mississippi Sound four days after capture by the Dinnes Memorial Veterinary Hospital in Saugus California (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 4 days; no followup.

Note: It is interesting that the MMIR reports 45 bottlenose dolphins held by Dinnes Memorial Veterinary Hospital suddenly commencing in 1982 and extending until 1991 - 25 died, and the remaining were transferred to other organizations, eg. The Mirage in

Las Vegas, Brookfield Zoo, National Aquarium in Baltimore, Mystic Aquarium, Marine Animal Productions, and Marineland Spain. I telephoned the veterinary hospital on 17 August 1994 and was told by the receptionist that the dolphins they owned were leased to exhibitors in various states when they were held, and they no longer hold dolphins. The average time of survival for the dolphins that died in this "rent-a-dolphin" program was less than three years. Deaths were attributed to such causes as: chlorine toxicity, palm fronds, oleander poisoning, sting ray spines, intestinal obstruction, pneumonia, and accidental drowning.

1982. Eight Atlantic bottlenose dolphins were reported in the NMFS MMIR 08/03/93 to have been captured by Sea World, three died within ten days of capture of pneumonitis, pancreatitis and possible septicemia, and two dolphins were released. Two dolphins; Captive 9-12 days; no followup.

1982. One Atlantic bottlenose dolphin was released one month after capture by Marine Animal Productions, Inc. (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 1 month; no followup.

1981. Eight Atlantic bottlenose dolphins were captured and held at Sea World of Florida for up to 90 days while they were used in experiments to monitor the development of freeze-brands. Released in the vicinity of capture site in Indian River, Florida and followup conducted by Sea World (Odell & Asper, 1990). Native Reintroduction. Eight dolphins; Captive <90 days; followup successful.

Note: Although not reported by the authors, there were sixteen dolphins reported in the NMFS MMIR 08/03/93 to have been captured by Sea World in 1981, one of which died during capture, two died subsequently, and two were sent to the New England Aquarium.

1980. An adult male bottlenose dolphin was rehabilitated from stranding on Florida coast, and released by Miami Seaquarium after four months captivity. No followup occurred, but the dolphin was observed joining a large pod of dolphins after release. Native reintroduction. One dolphin; Captive 4 months; no followup.

1980. Two Atlantic bottlenose dolphins were captured and held at Sea World of Florida for up to 90 days while they were used in experiments to monitor the development of freeze-brands. Released in vicinity of capture site in Indian River, Florida and followup conducted by Sea World (Odell & Asper, 1990). Two dolphins; Captive <90 days; followup successful.

Note: Although not reported by the authors, there were fifteen dolphins reported in NMFS MMIR 08/03/93 to have been captured by Sea World in 1980, of which seven were released up to 90 days later and five others subsequently died in captivity. Native

reintroduction.

1980. One Atlantic bottlenose dolphin captured 07/22/80 at Rockport Texas by Adriatic Sea World was released 07/31/80 presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 9 days; no followup.

1979. Two Pacific bottlenose dolphins (6 yr male, 8 yr female) permitted ocean access after four years of captivity at Sea Life Park in Hawaii (NMFS MMIR 08/03/93). The dolphins gradually ventured further from their seapen, and eventually after four months of ocean access they chose to remain at sea. No followup occurred, but it was assumed they had reintegrated into a local pod. Native reintroduction. Two dolphins; Captive 4 years; no followup.

1979. One Atlantic bottlenose dolphin was released 11/05/79 by Marine Animal Productions Inc. after being held in captivity for one week (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 7 days; no followup.

1979. One Atlantic bottlenose dolphin released after one month captivity by Marine World Africa USA (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 1 month; no followup.

1979. One Atlantic bottlenose dolphin released to Gulf of Mexico after two months captivity by Marineland Cote D'Azur, France (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 2 months; no followup.

1978/79. Ten Atlantic bottlenose dolphins were captured between 23 August 1978 and 15 February 1979 and held at Sea World of Florida for up to 90 days while they were used in experiments to monitor the development of freeze-brands. Released at capture site in Indian River, Florida and followup monitoring was conducted by Sea World (Odell & Asper, 1990). Native reintroduction. Ten dolphins; Captive <90 days; followup successful.

Note: Although not reported by the authors, three dolphins reported in NMFS MMIR 08/03/93 for this period died during or after capture.

1978. TT-#08, a female bottlenose dolphin captured 04/04/78 in Mississippi was released by the U.S. Navy the next day, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 1 day; no followup.

1978. Four Atlantic bottlenose dolphins were captured by Sea World and released up

to two months later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Assumed native reintroduction. Four dolphins; Captive 2 months; no followup.

1978. One Pacific bottlenose dolphin was captured by Sea World and released ten days later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Assumed native reintroduction. One dolphin; Captive 10 days; no followup.

1978. One Pacific bottlenose dolphin (Leo Tg-558M) was captured for the US Navy on 20 January 1977 off Catalina Island, California and escaped 15 January 1978 off Kaneohe Bay, Hawaii where it "joined an indigenous herd (confirmed)." One dolphin; Captive one year; followup apparently successful.

1977. TT-#07, a female bottlenose dolphin captured 08/19/77 in Florida was released five days later by the U.S. Navy, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Assumed native reintroduction. One dolphin; Captive 5 days; no followup.

1977. Two female Atlantic bottlenose dolphins used for research project by Dr. Lou Herman in Hawaii were illegally released off Oahu, Hawaii after more than five years of captivity (NMFS MMIR 08/03/93). No followup occurred. Non-native reintroduction. Two dolphins; Captive 5 years; no followup.

Note: DNA studies of the Hawaiian Pacific host population may reveal useful information concerning the success or failure of this release.

1977. Seven Atlantic bottlenose dolphins were captured by Sea World and released up to three months later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. Seven dolphins; Captive <90 days; no followup.

1975. TT-495, a male bottlenose dolphin captured 07/11/74 in Mississippi was inadvertently released by the U.S. Navy 10/10/75 at an undisclosed location (NMFS MMIR 08/03/93). No followup reported. Unknown reintroduction. One dolphin; Captive 15 months; no followup.

1975. TT-499, a male bottlenose dolphin captured 07/13/74 in Mississippi was inadvertently released by the U.S. Navy 08/25/75 at an undisclosed location (NMFS MMIR 08/03/93). No followup reported. Unknown reintroduction. One dolphin; Captive 13 months; no followup.

1975. One Atlantic bottlenose dolphin captured 05/10/75 in Mississippi by Marine Animal Productions Inc. was released 05/23/75, and another captured 10/19/75 was

released 11/05/75 because they were "not adapting." (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 13-16 days; no followup.

1974. TT-#02, a male bottlenose dolphin captured 07/09/74 in Mississippi was released by the U.S. Navy six days later, presumably in the vicinity of the capture site (NMFS MMIR 08/03/93). Three additional dolphins captured the same day were also released. No followup reported. Presumed native reintroduction. Four dolphins; Captive 6 days; no followup.

1974. Liberty and Florida – two bottlenose dolphins released off Eleuthera in the Bahamas after two years of captivity. Prior to release, the dolphins were readapted to feeding on live fish, freeze branded, and airlifted to the Bahamas for release. One of these may now (1994) be the dolphin known as JoJo off Turks and Caicos. (McKenna, 1992). Non-native reintroduction. Two dolphins; Captive 2 years; no followup.

1974. Six bottlenose dolphins released after one and a half years in captivity for the filming of "Day of the Dolphin" off Marsh Harbour, Abaco Bahamas. No official followup occurred, however local residents reported seeing some of these distinctively marked individuals up to two years later. The dolphins had been captured off Key Largo, Florida and released in the Bahamas (Dr. Jesse White, pers. comm.). Non-native reintroduction.

Note: DNA techniques could determine whether there was any genetic influence by this reintroduction. Six dolphins; Captive 18 months; followup?

1972. Gussie (male) – an adult bottlenose dolphin released in Biscayne Bay, Florida after two years of captivity at Miami Seaquarium. Reintroduction because of unsuitability for training. No followup occurred. Native reintroduction. One dolphin; Captive 2 years; no followup.

1972. Opo (female) – a bottlenose dolphin returned to original capture site in Biscayne Bay, Florida after one year of captivity at Miami Seaquarium. No followup occurred, but the dolphin had readapted to diet of live fish and was allowed to swim away. Native reintroduction. One dolphin; Captive 1 year; no followup.

1972. Two bottlenose dolphins used for behavioral studies at Mote Marine Laboratory were marked and released after less than one year in captivity (Irvine and Wells, 1972). No followup occurred. Native reintroduction. Two dolphins; Captive <1 year; no followup.

1970. Adult female bottlenose "diseased" dolphin released in Biscayne Bay following stillbirth after unreported number of years in captivity at Miami Seaquarium (Dr. Jesse

White, pers. comm.). No followup occurred, but dolphin was observed swimming in Biscayne Bay following release. Native reintroduction. One dolphin; Captive ? ;no followup.

1970's? "A single mature male dolphin was released from an Aquarium at Port Elizabeth Museum in South Africa and although no specific effort was made to track the animal he was sighted on several occasions post release (G.Ross, Pers. comm.)" Ref. Gales and Waples, 1993. One dolphin; Captive ? years; no followup.

1967. Three or four dolphins released off Key Biscayne, Florida by Dr. John Lilly after several years of communications experiments. Reference personal communication from Rosi Løvdal, who had seen the dolphins numerous times while Dr. Lilly was conducting experiments, and whose son (Scott Kurth) was present at the release. Rosi reportedly observed one of the released animals off West Andros in 1973, and identified it by a distinctive notch on the top leading edge of the dorsal fin. She also reports that the dolphin appeared to have recognized her, as well. Native reintroduction. Three or Four dolphins; Captive ? years; followup ?

1966. Dal (male) and Suwa (female) – two bottlenose dolphins released in Florida to open lagoon after two to four years of captivity, and fed by human caretaker for more than twenty years. Dal died of natural causes in 1986, and Suwa injured a young male swimmer in ocean in 1987, and was subsequently no longer allowed out of lagoon. Pet relationship, not complete reintroduction.

1964. Pedro – an adult male bottlenose dolphin released by Miami Seaquarium after approximately ten years of captivity. No official followup occurred, but the dolphin was observed swimming in Biscayne Bay following release. Native reintroduction. One dolphin; Captive 10 years; no followup.

1960's. Dolly (female) – Atlantic bottlenose dolphin released by US Navy near Key West, Florida following unreported length of time in captivity (Lockyer, 1990). No followup occurred, but this dolphin was reported for many years to be sociable with people in the Florida Keys. Assumed Native reintroduction. One dolphin; Captive ? years; no followup.

1960's or 1970's. Dee-Dee – an Atlantic bottlenose dolphin released by Hugh Downs following unreported length of time in captivity (Miami News Weekender, May 16, 1987). Dr. Henry Truby (Professor of Pediatrics, University of Miami) reported, "We released a number of dolphins with no problems."... "We kept trying to release Hugh Down's dolphin and he'd come back home like a boomerang. He'd be waiting for us at the dock." Assumed Native reintroduction. One dolphin; Captive ? years; no followup.

Dolphin (*Lagenorhynchus* sp.) releases

1991. On 15 February, a 161-kg male Atlantic white-sided dolphin stranded on Lieutenant Island, Wellfleet, Massachusetts and was transported by New England Aquarium staff to Mystic Marineland Aquarium. After eight months of rehabilitation the animal was fitted with a satellite-monitored Argos radio transmitter and released off Stellwagen Bank in the Gulf of Maine. Transmission continued for six days with normal dive patterns, until the tag was apparently dislodged during a storm. (Mate, et al., 1994) One dolphin; Captive 8 months; followup successful.

1979. South of Montauk Point Long Island, NY, a white-sided dolphin was released with spaghetti tag. Reportedly seen one month later swimming with a large group of lags. (pers. comm, J. Lawrence Dunn). One dolphin; Captive ?; followup successful.

Killer Whale (*Orcinus orca*) releases

Pacific Northwest Reintroductions. Although no official followup on reintroductions occurred, photo-identification studies which commenced in the early and mid 1970's in British Columbia and Washington State have documented the recovery and social structure of virtually all of the pods which were exploited for public display. We list reintroductions following capture events to elucidate potential social effects of perturbation, which were unknown and unconsidered at the time of capture. In all of the following cases, the sub-sequent independent followup by the Center for Whale Research indicates that the reintroductions can be considered successful, and have been verified by the author, except as otherwise cited.

1976. S and O pods, numbering 7 whales, were captured in Puget Sound and held temporarily while two whales (O-4, O-5) were selected for a Sea World and University of Washington radio tag research project. The unselected whales were released after one week to reintegrate back into the transient community. The two selected whales were maintained in captivity for 55 days before being released to reintegrate back into the transient community (Erickson, 1977). They have been independently photodocumented almost every year since release and are still alive 19 years post-release. Native reintroduction.

Note: Transient whales range over thousands of miles and could potentially have great difficulty relocating their podmates following reintroduction; nonetheless these two certainly did reintegrate into their social community. Seven whales; Captive 7-55 days; followup successful.

1975. Q pod, numbering six whales, was captured off southern Vancouver Island and held temporarily while a young female and a young male were removed for public display. The unselected whales were released to reintegrate back into the transient community. Photodocumented numerous times since release. Native reintroduction. Four whales; Captive ?; followup successful.

1973. Unknown pod (presumably southern resident) was captured in Washington State and held temporarily while one mature female was removed for public display. Native reintroduction. ???

1973. K pod, numbering approximately 17 whales, was captured off South Vancouver Island and held temporarily while one mature female was removed for public display. An adult male (K-1) was retained for two months before being released to reintegrate into his pod. Native reintroduction. Sixteen whales; Captive ? to 60 days; followup successful.

Note: K-1, alias Taku, is a prominent member of K pod, and is now approximately 39 years old, based upon his state of maturity in 1973.

1973. L pod, numbering approximately 39 whales, was captured off South Vancouver Island and held temporarily while a mature male and a mature female were removed for public display. The unselected whales were released to reintegrate back into the local community. Native reintroduction. Thirty-seven whales; Captive ?; followup successful.

1972. J pod, numbering approximately 15 whales, was captured in Puget Sound and held temporarily while one young male was removed for public display. The unselected whales were released to reintegrate back into the local community. Native reintroduction. Fourteen whales; Captive ?; followup successful.

1971. L pod, numbering approximately 45 whales, was captured in Possession Sound and held temporarily while two young females and a young male were removed for public display. The unselected whales were released to reintegrate back into the local community. Native reintroduction. Forty-three whales; Captive ?; followup successful.

1971. Unknown pod (presumably southern resident) of whales was captured and held in Washington State while two young males were removed for public display. Native reintroduction. ???

1971. Ishmael, a young male killer whale from J or K pod was inducted into the US Navy Project Deep Ops in 1968, but escaped from his handlers off the north coast of Oahu, Hawaii in February 1971 (Bowers and Henderson, 1972). No followup due to radio tag failure. Non-native reintroduction. One whale; Captive 28 months; no followup.

Note: If DNA studies were conducted on killer whales in Hawaiian or Central Pacific waters, it is possible that some genetic influence of Ishmael's reintroduction might be detected. It is also possible that Ishmael may yet be found by photo-identification studies.

1970. M pod, numbering three whales, was captured off southern Vancouver Island and held temporarily. One young female whale (Chimo) was removed for public display, and the other two (M1, M2) were maintained in a seapen at Pedder Bay, BC. These two whales "escaped" the seapen after eight months captivity and reintegrated back into the transient whale community (Hoyt, 1990). They have been photodocumented almost every year since. Native reintroduction. Two whales; Captive 8 months; followup successful.

1970. J, K, and L pods, numbering approximately 85 whales (contemporary news said 50 whales, but number was higher), were captured in Possession Sound and held temporarily while twelve whales were removed for public display (or by accidental drowning). The unselected surviving whales were released to reintegrate back into the local community. Native reintroduction. Thirty-eight to seventy-three whales; Captive 13 days; followup successful.

Note: The only surviving captive whale from this event now resides in solitary confinement at Miami Seaquarium. She is a J, K, or L pod female now approximately 31 years of age. DNA and communications research proposals to enrich her environment and examine the strength of social bonds over the long term have been presented to Miami Seaquarium.

1969. A5 pod, numbering approximately sixteen whales, was captured in Pender Harbor Vancouver Island and held temporarily while six whales were removed for public display (Hoyt, 1990). The unselected whales were released to reintegrate back into the local community. Native reintroduction. Ten whales; Captive ?; followup successful.

Note: Only two whales survive in captivity from this capture event: Corky at Sea World, San Diego, and Yaka at Marine World Africa USA in Vallejo, CA. Neither facility has allowed communications experiments between their captive and wild whales for environmental enrichment or to examine the strength of social bonds over the long term. "Prime Time Live" surprised Sea World officials by playing an audio tape of A5 pod at Corky's tank. This impromptu experiment aired in August, 1993. Corky visibly shuddered as she heard her family's voices. Yaka was involved in a study reported in 1993 in which, "Results of this study demonstrate that captive killer whales will pursue, capture and eat live fish. The whales in this study used echolocation while in pursuit of fish, as well as at other times." (Newman and Markowitz, 1993).

1969. A male killer whale from A5 pod released after one year captivity in pen in Pender Harbor since 1968 capture. No details available. Native reintroduction. One whale; Captive 1 year; followup ?

1968. J and L pods, numbering approximately 65 whales, were captured in Puget Sound and held temporarily while five whales were removed for public display or military purposes (US Navy). The unselected whales were released to reintegrate back into the local community. Native reintroduction. Sixty whales; Captive ?; followup successful.

Note: See Ishmael, 1971 reintroduction.

1968. A5 pod, numbering approximately 18 whales, was captured off northern Vancouver Island and held temporarily while six whales were removed for public display. The unselected whales were released to reintegrate back into the local community. Native reintroduction. Twelve whales; Captive ?; followup successful.

1967. K pod, numbering approximately 25 whales, was captured in Puget Sound and held temporarily while eight whales were removed for public display. The unselected whales were released to reintegrate back into the local community. Native reintroduction. Seventeen whales; Captive ?; followup successful.

Icelandic killer whale reintroductions. As in the Pacific Northwest, no official followup studies have been conducted to ascertain whether there was successful reintegration of any of the released animals. In contrast to the Pacific Northwest, there are no independent followup or photoidentification studies either. It is clear, however, that killer whales have been released back into the Icelandic population after periods of captivity (Dudok van Heel, 1986; Sigurjonsson, 1988), and there is no evidence that they have not been reaccepted and fared as well as has been reported for Pacific Northwest animals. At least one Icelandic reintroduction after captivity of several months duration was considered by world experts as the best option for survival for the reintroduced animals. The following records are the only ones we know about:

1981. Seven killer whales captured and one released shortly after being captured to reintegrate back into the wild community. One whale; Captive ?; no followup.

1980. Six killer whales captured and one released shortly after being captured to reintegrate back into the wild community. One whale; Captive ?; no followup.

1978. Eleven killer whales captured and three released after being kept in a holding pool for several months, during which time they developed frostbite and skin infections. Two other killer whales died in this holding pool before shipment from Iceland. Three whales; Captive ? months; no followup.

1976. Six killer whales captured, one released shortly after being captured and two

released after being kept in a floating pen. Three whales; Captive ?; no followup.

Other successful whale reintroductions

Most other cetacean reintroductions have been conducted following rehabilitation from stranding events or release from captivity due to health/behavior problems. The followup for such reintroductions has generally been brief or non-existent, but there are a few notable exceptions:

1972. Gray whale (*Eschrichtius robustus*). A baby gray whale (Gigi) was captured in early March of 1971 during an expedition sponsored by Sea World, Inc. This whale was maintained in captivity for one year at Sea World, San Diego before being instrumented with a radio tag and released on 13 March 1972, during the gray whale northerly migration. The reintroduction was considered a success, but official followup was discontinued in May 1972 when the radio tag failed (Evans, 1974). There were several confirmed sightings of this whale after radio tag failure, one of which was two years later reporting the square white scar intentionally placed for identification. One whale; Captive 1 year; followup successful.

1985. Humpback whale (*Megaptera novaeangliae*). "Humphrey", the famous wrong way whale which swam up the Sacramento River, CA in November 1985 was escorted back to sea following a 24 day ordeal ending in a freshwater slough. He stranded several times, and appeared close to death on more than one occasion, but he nonetheless survived his ordeal and was documented by photo-identification studies numerous times for the three following years (Calambokidis, et. al., 1989). While not an actual reintroduction from captivity, Humphrey provides a remarkable example of survival resilience in these animals. One whale; 'Captive' 24 days; followup successful.

Pilot whale (*Globicephala melaena*). Following rehabilitation from stranding events, pilot whales have been reintroduced to the ocean environment on numerous occasions throughout the world (Robson, 1984 lists six successful pod rescues around Australia and New Zealand). Rarely, has there been any followup. We cite a couple of examples where there has been followup, and would appreciate learning of any others.

1991. Two pilot whales were rehabilitated by the Miami Seaquarium from a stranding which occurred on the Florida coast in 1991. They were satellite tagged by Dr. Bruce Mate and released in the vicinity where they had stranded. These two whales were resighted off the coast of Florida in February 1994 by the US Coast Guard, and their tag harnesses were still attached, although the batteries had died. (Mate, pers. comm. 1994). Two whales; Captive ?; followup successful.

1987. Three pilot whales were rehabilitated at the New England Aquarium in Boston, MA from a stranding which occurred on Cape Cod in December, 1986. They were released at sea off Cape Cod on June 29, 1987. One whale was fitted with a Telonics-built Argos transmitter (satellite tag), and one was fitted with a conventional radio tag. "The satellite-monitored whale was tracked by Argos for 95 days, as the whale swam at least 7,600 kilometers. Just three weeks after tagging, this Argos-equipped whale was spotted in a group of more than 100 pilot whales, suggesting that its movements and dive patterns were typical of normal pilot whales." (Mate, 1989). Three whales; Captive 6 months; followup successful.

1967. Pilot whale (*Globicephala melaena*). After almost eight years of captivity at Marineland of the Pacific, a twenty year old pilot whale named Bimbo was successfully reintroduced to the wild. Captured in January/February, 1960 at a length of 17' 6", he performed well for about three years. When his female pilot whale and dolphin companions died, Bimbo's behavior changed drastically. "One day he would be as friendly as ever, the next in a wildly agitated state or apathetic and apparently depressed" (Valentry, 1969). It was decided to keep him as an attraction whether or not he performed. After four years of treatment including antidepressant drugs and tranquilizers, Bimbo smashed into a window, flooding spectators. He was released in August, 1967 at a length of 20' 6", "...after much planning and weeks of isolation in a tank for physical tests to make sure he was fit for fending on his own at sea" (op. cit.). He was resighted in 1969 near Santa Barbara, CA by a U.S. Navy collector, and again in 1974 near San Clemente identified from photographs by L Cornell and J. Prescott (pers. comm., John Prescott.) One whale; Captive 7.5 years; followup successful.

Other cetacean species reintroductions with no followup.

1988. Two harbor porpoises (*Phocoena phocoena*) released 11/16/88 after eight months of captivity by Zeedierenpark Harderwijk (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. No followup reported. Presumed native reintroduction. Two porpoises; Captive 8 months; no followup.

1984. One Atlantic white-sided dolphin (*Lagenorhynchus acutus*) was released on 04/11/84 after four months of captivity/rehabilitation by Mystic Marinelife Aquarium (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 4 months; no followup.

1983. One spinner dolphin (*Stenella longirostris*) was released on 06/07/83 by Sea Life Park, Hawaii after seven years of captivity (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 7 years; no followup.

1983. One common dolphin (*Delphinus delphis*) was released 09/09/83 by Marineland of New Zealand after three weeks of captivity (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One Dolphin; Captive 21 days; no followup.

1980. One Dusky dolphin (*Lagenorhynchus obscurus*) was released 01/14/80 by Marineland of New Zealand after an unreported length of captivity (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive ?; no followup.

1978. Mr. A.H. Cobreros of Bahia Blanca Argentina held two Commerson's dolphins (*Cephalorhynchus commersonii*) in a pond for 48 days before releasing them back to the wild (Goodal, et. al., 1988). No followup reported. Presumed native reintroduction. Two dolphins; Captive 48 days; no followup.

1974. Two rough-toothed dolphins (*Steno bredanensis*) were captured by Sea Life Park, Hawaii and released six days later (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. Two dolphins; Captive 6 days; no followup.

1972. One spinner dolphin (*Stenella longirostris*) was released 08/17/72 by Sea Life Park, Hawaii after twenty months of captivity (NMFS MMIR 08/03/93). No followup reported. Presumed native reintroduction. One dolphin; Captive 20 months; no followup.

Other short-term reintroduction opportunities for cetaceans which currently may provide information on epidemiological and genetic effects of reintroduction.

UNEXSO, a swim with the dolphin facility in Freeport, Grand Bahama routinely allows several of its dolphins (some imported from Mexico) to escort boats and divers to the open ocean, and some dolphins are reported to remain at sea for several days (mingling and mating with wild dolphins) before returning to their facility. It would appear that this operation could offer opportunities to study both epidemiological and genetic effects of non-native reintroductions of bottlenose dolphins.

For military operations, including exercises, there have been many cetacean reintroductions conducted worldwide, some temporary and some permanent, which have not been adequately documented in the public or scientific record. The circumstance of removal from the wild has also generally not been available to the public or to the scientific community. At some point in time, the facts about these removals, introductions and releases, transfers and all of the information on epidemiology, genetics, physiology, husbandry, training, and abilities of these animals should be made available to science and the tax-paying public. Such information is potentially available from Cuba, The United States, and the former Soviet Union, at least. We would appreciate learning of any contact persons who may be able to guide

us to sources of some of this information.

We have requested (08/07/94) intentional or inadvertent dolphin release information from the Navy under the authority of the Freedom of Information Act, and have been advised by the Office of the General Counsel, Department of the Navy (20/07/94) - "To date no Department of the Navy marine mammals have in fact been released to the wild. Therefore, the Department of the Navy and the Naval Command, Control and Ocean Surveillance Center, Research Development Test and Evaluation Division (NCCOSC RDT&E DIV) has no documentation requested." We pointed out the discrepancy of this response with the MMIR's, and in a followup letter from the Office of the General Counsel (24/08/94) a list of nine inadvertent dolphin releases was provided, indicating that none of the releases were native: six dolphins from Mississippi were inadvertently released in the Pacific, one Mississippi dolphin escaped in North Carolina, and another in Florida. Perhaps the most interesting release from a documentation standpoint was that of Leo (Tg-558M), who was caught 20 January 1977 at Catalina Island off California, and escaped 15 January 1978 at Kaneohe Bay, Hawaii, where he "joined an indigenous herd (confirmed)."

"The Navy has been training most of its marine mammals free, in the open ocean, daily, for over 25 years. There are no records on the release of these animals as the Navy has never considered this practice to be a release/return to the wild. There are no veterinary medical records correlated to the daily working of these animals in the open ocean." Given that these are publicly owned animals, and that it is standard procedure to maintain detailed husbandry records for them, we suggest that germane veterinary medical records may available for them, whether or not they are correlated with daily working in the open ocean.

Considerations for future releases and research on reintroductions.

"Zoos and aquaria play an important role in species conservation and propagation. As wild populations dwindle, it often falls on captive breeding programs not only to maintain captive populations, but to reintroduce individuals to the wild. For marine mammals, successful captive breeding has been well documented with births reported in 16 species, including cetaceans, pinnipeds, sea otters, and manatees." (Duffield, 1990.)

When will we seriously examine the issue of research on cetacean reintroductions to the wild in order to allow zoos and aquaria to play their important role? To date, it seems unlikely to occur in the private sector, so long as public interest in release, reintroduction or reinstatement to the wild, per se is considered an anathema to the business of maintaining marine mammals for entertainment purposes. Even so,

rehabilitation, reintroduction or release and adequate followup should theoretically not be a problem in the public sector. Of all the dolphins released intentionally or unintentionally by the Navy (n=24, including 12 long-term captives), none have reported any followup, although we think this deserves further examination. Of all the dolphins released by the public display industry (n=72), all of those which reported followup (29) were successful except for three which were recaptured and returned to captivity (that release "experiment" was sponsored by a marine park going out of business).

In many cases where followup occurred for public display animals released, and in all cases where followup was successful, it was done by persons independent of and unsponsored by the public display industry. Sixty percent of the dolphins released by the public display industry had no followup whatsoever! By what objective criteria can anyone say that release is cruel and likely to result in the dolphins' death? Who is responsible for that?

There already are surplus marine mammals of some species in captivity, for example *Tursiops truncatus* in several US public display facilities, and almost the entire US Navy inventory of marine mammals whose maintenance budget is \$5.5 million per year. There will predictably be more surplus animals in the future. The US Congress (Congressional Record-House, 18 November 1991, p. 10460) made a request to the US Navy to "...develop training procedures which will allow [marine] mammals which are no longer required for this project [US Navy] to be released back into their natural habitat. The conferees prohibit the release of these mammals to any alternative captive environment. The conferees further direct the Navy to budget in future years the funds necessary to adequately care for mammals in the Navy inventory and to adapt the mammals which are no longer required for Navy projects for release into the World's oceans." Congress then gave the Navy \$500,000 to heed their request.

Perhaps it is incumbent upon the Navy to study this problem with us.

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