

Can individual tracking systems be used for conservation of wild dolphin populations in behalf of live captures in Turkish waters?

Fethi BENGİL^{1,2,*}, Janset KANKUŞ² and Reyhan SÖNMEZ^{1,2}

1. Underwater Research Society, Akıncılar Sokak 10/1 Gazi Mustafa Kemal Bulvarı Maltepe / Ankara, Turkey.

2. Dokuz Eylül University Institute of Marine Sciences and Technology, Bakü Bulvarı No: 100 TR 35340 Inciraltı / İzmir., Turkey.

* Corresponding author, F. Bengil, E-mail: fethi.bengil@ogr.deu.edu.tr

Received: 23. October 2011 / Accepted: 17. April 2012 / Available online: 6. May 2012 / Printed: December 2012

Abstract. In this study, we argue that all the dolphinariums should be controlled regularly by certain state, civil societies or universities. Individual specific controlling systems should be developed, in order to prevent possible contraband catching in Turkey. If the animals in captivity could track individually, their life stories can be followed and this will give us chance to display their welfare. New regulations on standards may prevent to open new poor facilities which endanger the captive animal's health.

Key words: Individual tracking system, live capture, dolphinarium, *Tursiops truncatus*.

Tursiops truncatus (Bottlenose dolphin) is probably the most known of the small cetaceans because of its coastal habits and prevalence in captivity worldwide. Both incidental and direct exploitation of bottlenose dolphins are generally at low to moderate levels. Worldwide, the largest direct kills of the species have been known in the Black Sea (Jefferson et al. 1993). Highlighted by Öztürk (1999) at least 200-300 individuals of the species per year may be taken incidentally in Turkish fisheries. The Black Sea subspecies of bottlenose dolphin (*T. truncatus ponticus*) is classified as endangered and the Mediterranean subpopulation of the species is classified as vulnerable under the criteria of IUCN Red List of Threatened Species (Reeves & Notarbartolo di Sciara 2006).

Ministry of Food, Agriculture and Animal Husbandry (formerly The Ministry of Agriculture and Rural Affairs) in Turkey gave permissions for the capture of 23 individuals of *T. truncatus* from Mediterranean and Marmara coastal waters of Turkey in 2006 and 2007 for dolphinariums of Turkey (Didrickson et al. 2009).

Following the permission given by Ministry of Agriculture and Rural Affairs in Turkey to capture 23 individuals of *T. truncatus* for the dolphinariums, the local fishermen reported that illegal dolphin capture requests by facilities became more frequent. Following the legal capture of these 23 individuals, facilities wanted to continue dolphin catching illegally, in order to replace dead individuals. Even though there is no concrete evidence for these replacements, fishermen's reports, which state contraband catching requests, point the requirement of some precautions to prevent illegal live captures.

The study by Lusseau & Newman 2004 has revealed the importance of individuals in the social network and community structure of *T. truncatus*, which may be affected by the removal of individuals in live capture operations. The removal of key individuals from a population of *T. truncatus* might lose cohesion and disperse the population. Therefore, to prevent more illegal captures from wild populations, we suggest forming individual tracking systems in order to be sure if the legally captured animals have replaced the illegal captured ones in dolphinariums.

Photo identification, as capture-recapture method, is used for long term small cetacean studies on wild population dynamics and distribution pattern (Wursig & Jefferson

1990). Another identification method is microchip implantation which is basically a passive chip placed under the skin of the animal and allows the identification of the individuals with identical number on it. The microchips are invisible because they are placed under the skin and by nature they are passive devices which do not transmit active signals. Easy usage of the microchips made it commonly used for pets. (AVMA 2011, WSAVA 1999). Although it seems as a suitable method also for captured dolphins, it is not common but still there are few examples of usage of these microchips. According to the news of CNS (2008), Cayman Islands used microchips for controlling exporting or importing captured individuals. Microchips were also suggested by NEPA (2007) to the Jamaican government for the same purpose in the draft of standard and requirements of dolphin facilities of Jamaica.

We suggest Photo-ID or microchips or both as possible methods to monitor captive individuals. Both methods can give enough information about the individual whether it is replaced with another dolphin or not. As Photo-ID uses specific tail and flux traces to identify the individuals, the passive microchips read by an apparatus give unique numbers which makes it possible to identify individuals.

This individual tracking system should be combined with "Capture Marine Mammals Information System" which is suggested by Bengil et al. (2010). Within this information system, the information regarding the captive individuals, such as weight, length, sex, date of birth, age is known in addition to their belonging population data and individuals' current location.

We suggest that the monitoring should be done regularly by independent governmental or non-governmental units, such as non-governmental organizations or Vets Room. Insurance companies can also be a part of the monitoring studies, in case the animals are insured. This inspection would be beneficial for monitoring because of mutual interest.

References

- Bengil, F., Kankuş, J., Sönmez, R., Danyer, E., Sevim, M., Tamtürk, Z. (2010): Havuz Tutsakları: Yunuslar (Prisoners of Pools: Dolphins). Report of Underwater Research Society-Marine Mammals Research Group (SAD-DEMAG). 53pp. <http://www.sad.org.tr/images/stories/demag_tutsaklik_raporu_2010.pdf accessed at 10.04.2011.> [in Turkish]

- Didrickson, O.K., Williamson C., Güçlüsoy, H. (2009): Live captures of *Tursiops truncatus* - can they be justified by dolphin-assisted therapy? p.96-97. In: Abstract Book of the 23rd Annual Conference of European Cetacean Society, Istanbul, Turkey.
- Jefferson, T.A., Leatherwood S., Webber, M.A. (1993): Marine mammals of the world. FAO Species Identification Guide. UNEP/FAO, Rome. 320 pp.
- Öztürk, B. (1996): Yunuslar ve Balinalar (Dolphins and Whales). Anahtar Yayınları, İstanbul. [in Turkish]
- Reeves, R., Notarbartolo di Sciara, G. (eds) (2006): The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain. 137 pp.
- Würsig, B., Jefferson, T.A. (1990): Methods of photo-identification for small cetaceans. In: Hammond, P.S., Mizroch, S.A., Donovan, G.P. (eds), Individual Recognition of Cetaceans. Reports of the International Whaling Commission (Special Issue 12): 43-52.
- Lusseau, D., Newman, M.E.J. (2004): Identifying the role that animals play in their social networks. Proceedings of the Royal Society of London Series B Biological Sciences 271(6): S477-S481.
- AVMA (2010): Frequently Asking Questions About Microchipping of Animals. American Veterinary Medical Association. <http://www.avma.org/issues/microchipping/microchipping_faq.pdf, accessed at 10.04.2011.>
- WSAVA (2011): Australian Microchip Standard. World Small Animal Veterinary Association <<http://www.wsava.org/Auschips.htm>, accessed at 10.04.2011.>
- NEPA (2007): Standards and requirements for the operation of dolphin facilities in Jamaica. Report of National Environment and Planning Agency. 17 pp. <<http://www.nepa.gov.jm/documents/Dolphin-requirements-October-2007.pdf>, accessed at 10.04.2011.>
- CNS (2008): Captive dolphins arrive. Cayman News Service. <<http://www.caymannewsservice.com/headline-news/2008/12/05/captive-dolphins-arrive>, accessed at 10.04.2011.>
-