

## Special Issue 50 Years Dolphin Husbandry at Nuremberg Zoo – Introductory Remarks

### Themenausgabe 50 Jahre Delfinhaltung im Zoo Nürnberg – Einführende Bemerkungen

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Bringing a species back from the brink of extinction is not easy, but it is certainly possible. Many examples exist, and zoos, aquariums and botanical gardens have played a key role in making this happen (CBSG 2017, Mittermeier et al. 2017). The Lord Howe Island stick insect (*Dryococelus australis*), the American burying beetle (*Nicrophorus americanus*), the Kihansi spray toad (*Nectophrynoides asperginis*), the Mauritius kestrel (*Falco punctatus*), the verticillate erica (*Erica verticillata*), the European bison (*Bison bonasus*), and the Kemp's ridley sea turtle (*Lepidochelys kempii*), among numerous others, recovered due to a combination of *in situ* and *ex situ* interventions, carefully planned and evidence-based.

That is the principle of the One Plan Approach (OPA) embraced by the IUCN Species Survival Commission (SSC) – the recognition that conservation planning and action must include all responsible stakeholders and all populations of a species, whether inside or outside their natural range (CPSG 2020), including *in situ* and *ex situ* populations. In other words, OPA provides the conceptual framework for assuring that every individual of threatened animals, fungus and plants subject to conservation interventions plays a role in the recovery of the species.

Resolution 79 (Linking *in situ* and *ex situ* efforts to save threatened species<sup>1</sup>), adopted the IUCN World Conservation Congress in Marseille in 2020, takes this one step further by encouraging the Union's constituents – Members, Commissions and the Secretariat – as well as Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), to support application of all available tools in the design of conservation interventions. It highlights that it is never too early to explore the contribution that *ex situ* organizations may contribute, which include genetic and veterinary science, husbandry, sustainable breeding, education, and community engagement.

<sup>1</sup><https://portals.iucn.org/library/node/49218>

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This special issue of *Der Zoologische Garten*, on the occasion of the 50th anniversary of dolphin husbandry at Nuremberg Zoo, brings together leading experts in the various fields of cetacean research, in the context of OPA. The backdrop is the fact that nearly half of the world's cetaceans are threatened, requiring rapid, coordinated, evidence-based action. The dramatic decline of baiji (*Lipotes vexillifer*) and vaquita (*Phocoena sinus*) serve as motivators to rapidly innovate in complementing *in situ* and *ex situ* efforts for cetacean conservation.

Von Fersen and Miller open the collection with a review of the role of modern dolphinariums in applying OPA to the conservation of threatened cetaceans. Taylor et al. summarize the recommendations of a working group on Integrated Conservation Planning for Cetaceans (part of the IUCN SSC Cetacean Specialist Group), which examined existing knowledge gaps and the potential contributions of the tools available to revert declining trends. Nachtigall & Pacini illustrate the role of dolphinariums for research, in this case the study of hearing in odontocete. Their findings provide a basis to evaluate the negative effects of noise pollution. Smith et al. focus on the body of work produced by the US Navy Marine Mammal Program, highlighting their contributions to conservation medicine of small cetaceans, especially dolphins. Baumgartner et al. bring our attention to what it means to keep dolphins from a practical point of view, by summarizing the work of Nuremberg and Duisburg Zoos leading to sustainable breeding and high life expectancy, among other achievements. Hao et al. address the urgent plight of Yangtze finless porpoises (*Neophocaena asiatorientalis*) by combining *ex situ*-population increase, natural habitat restoration and management, deepening research and knowledge generation, and further increasing engagement with the public. Secchi et al. close this special issue with a summary of 15 years of research in Brazil, Uruguay and Argentina on behalf of Lahille's bottlenose dolphin (*Tursiops truncatus gephyreus*), highlighting the key role of institutional collaboration and partnership across this subpecies' geographical range.

This special issue of *Der Zoologische Garten* is a perfect example of the implementation of OPA within SSC's Species Conservation Cycle, with its three consecutive components – assess, plan, act – and its two transversal elements – network and communicate (Rodríguez et al. 2023). More than 8,700 SSC experts in 186 countries engage in generating the scientific evidence that underlies the IUCN Red List of Threatened Species<sup>2</sup> and the conservation plans and proposed actions that emerged from them. As is perfectly illustrated in this special issue and the work of SSC in general, we know how to do conservation, we just need to do more of it.

## References

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<sup>2</sup><https://www.iucnredlist.org/>