



Seaside Sanctuaries: A Concept Review

Prepared by Dolphinarium-Free Europe

Overview

The practice of displaying captive cetaceans to the public is undergoing an evolution. From happy circus clowns in the 1950s and 1960s, to serious environmental ambassadors in the 1980s and 1990s, to miserable intelligent beings in the 2010s, the public's image of aquarium and theme park dolphins and whales has changed. Since the release of the documentary films *The Cove* in 2009 and *Blackfish* in 2013, the public has increasingly viewed the practice of keeping cetaceans captive in a negative light. Orcas in particular are now seen as profoundly suffering in captivity, which is reflected in the decline of visitorship and revenue at aquariums and theme parks displaying this species.¹

Consequently, sanctuaries, meant to house captive cetaceans retired from performance in natural coastal areas (henceforth called seaside sanctuaries), are now being considered as alternatives for these former entertainers. A sanctuary for any species – not to be confused with natural habitat that has been set aside as a protected area for free-ranging populations – is a place of refuge where captive wildlife may live in a setting as close as possible to natural habitat and remain protected and attended by caregivers and veterinarians, where their well-being and autonomy, as individuals, is a priority. Such sanctuaries are in essence retirement facilities for animals rescued or removed from zoo display, circuses, laboratory use, the exotic pet trade, and other situations. Authentic wildlife sanctuaries do not breed their residents nor use them for commercial purposes.

Wildlife sanctuaries have existed for many years for terrestrial species, including elephants, big cats, bears and primates.² Therefore, the general blueprint for a land-based sanctuary has been available and operational for decades. However, as of early 2017, no seaside sanctuary exists. Among other reasons, a seaside sanctuary has yet to be developed because the marine environment has a number of elements that make setting aside, and enclosing, part of it legally, economically and logistically complex, more so than for a parcel of land.

However, despite these potential challenges, seaside sanctuaries as envisioned fit the general model for terrestrial wildlife sanctuaries. Seaside sanctuaries would be natural areas (such as bays or coves), enclosed by nets, where cetaceans formerly held for display or research, unable or unwilling to return to a life of full independence in the wild, can be retired and allowed to behave in more natural and socially compatible ways. Several projects, for warm-water dolphins and cold-water whales, are now in various stages of development. This summary of the seaside sanctuary concept and these projects is intended to

¹ See, for example, <http://www.dailymail.co.uk/news/article-2971294/The-Blackfish-effect-SeaWorld-loses-25-4-million-documentary-criticizing-company-s-treatment-killer-whales-lowers-park-attendance.html>

² <http://www.sanctuaryfederation.org/gfas/>

inform the public, the media, government officials, academics, and any other interested parties of the general requirements for seaside sanctuaries and the current status world-wide of making the concept a reality.

General requirements for a seaside sanctuary

Siting

As with real estate, a seaside sanctuary is all about location, location, location. Some captive facilities are sea pens, which are often better than concrete tanks for the animals (e.g., Ugaz et al. 2009, 2013), but may have unique complications associated with them. For example, some sea pen facilities are located in highly polluted areas, in biodiverse habitats that may be impacted by pen construction and/or operation, or in hurricane zones (see, e.g., Rose et al. 2009).

Any seaside sanctuary project will need to take site selection very seriously and evaluate potential sites for natural features, such as weather patterns, currents, water flow, tidal levels and species composition of the local ecosystem. At the same time, a seaside sanctuary project must evaluate anthropogenic features, such as local pollution levels and sources, shipping traffic, disease and harmful algal bloom outbreaks and fishing vessel distribution. Simultaneously, projects must identify sites that provide, *inter alia*, appropriate water temperatures, depths, substrates and salinity for the species to be held.

Local support for the facility will also be required. Significant opposition from local members of the public, industry or government, for example, could prove an insurmountable obstacle to establishing a seaside (or indeed, any wildlife) sanctuary at any particular site.

Sufficient land area must be adjacent to and acquired by a seaside sanctuary, to allow the construction of related infrastructure, including office space, veterinary facilities (see next item), a visitor's center, laboratory space, staff housing and other related features.

Veterinary care

As with any other wildlife sanctuary, the residents of a seaside sanctuary would arrive in various states of health. Some might need minimal intervention on a daily basis, while others might need regular intensive veterinary intervention. A sanctuary must be able to provide for these varying levels of care.

Quarantine and medical enclosures and full veterinary facilities must be on-site. Bidirectional risk of disease transmission, from the residents to local wildlife in the surrounding environment and to the residents from local wildlife, must also be mitigated and addressed by the sanctuary and its design.

In addition, routine veterinary monitoring for ingestion of foreign objects (for example, swallowing rocks or pebbles) must be provided for. This monitoring could include, *inter alia*, periodic ultrasound readings. While careful siting of the sanctuary can mitigate the potential for ingestion of foreign objects, the risk in natural habitat is unlikely to be fully eliminated, making monitoring essential.

As breeding would not occur in an authentic sanctuary, the logistics of preventing pregnancies must be considered and addressed during the planning phases. Various methods of preventing pregnancies may

be combined (such as chemical contraceptives with periodic physical separation of the sexes) or a sanctuary may only accept one sex. Whichever methods or combinations are used, they must be effective and humane.

Security

A seaside sanctuary may be remote (although a site should be 'on the grid,' with roads and, ideally, proximity to an airport, to ensure, *inter alia*, adequate accessibility to power for maintenance and relative ease of bringing animals to the facility) or it may be well within reach of members of the general public. Security protocols will need to be developed that are commensurate with the specific concerns of any given location. There will always be a risk of outside intruders penetrating a sanctuary perimeter and harming the residents, whether purposefully or inadvertently. Methods for monitoring the perimeter, directly or remotely, and for intervening should an incursion be noted, must be in place and in operation 24 hours a day.

Security concerns are bidirectional; a sanctuary must also be designed to minimize the potential for resident escape into the surrounding environment.

Food

Cetaceans, particularly toothed whales and dolphins, are known to have culture (Rendell & Whitehead 2001); this means they learn much of what they know and do, including their vocalizations, their food preferences, their foraging behaviors, and even maternal and mating behavior, from each other. Cetaceans held from a young age or born in captivity will have 'captive culture';³ for example, to a captive-born cetacean, food is dead fish, often specific species (such as herring or mackerel).

Therefore, any seaside sanctuary will need the infrastructure (such as a large freezer with reliable power and access to high quality frozen fish) to cater to the food preferences of its residents. Even if some residents come to see live fish swimming within the boundaries of the sanctuary as food (and this could be a source of enrichment – see next item), others may never do so and may need hand-feeding with dead fish for their entire tenure within the sanctuary. If live fish are to be provided, as primary nutrition or enrichment, a good relationship with the local fishing community would be key.

If live fish are to be the sole source of nutrition for some residents, then a method of monitoring food intake (such as periodic weighing) must be established. While it is tempting to assume residents can self-regulate food intake when relying on live prey, this is optimistic. Cetaceans can endure significant periods of inadequate caloric intake before exhibiting visible weight loss, making monitoring essential.

Enrichment

While a seaside sanctuary will have more natural stimulation than any concrete tank, it will still be only a microcosm of the marine environment. Enrichment, whether it involves direct interactions with

³ This is not meant to imply that 'captive culture' is equivalent to natural culture. In fact, in terms of complexity, enrichment and suitability for the cetacean species involved, any captive culture is highly likely to underserve the psychological needs of the individuals who experience it.

handlers or is provided remotely, will need to be designed and implemented to keep these intelligent animals from becoming bored or frustrated in what is still an enclosed space.

Social group management

It cannot be assumed that all seaside sanctuary residents will be compatible. Infrastructure must provide for the permanent and humane separation of incompatible animals, should this become necessary. This may include the ability to sub-divide enclosures or to expand the existing footprint of the sanctuary (for example, by netting off additional coves or bays adjacent to the original enclosure(s)).

Costs and revenue

As noted above, an authentic sanctuary does not use its residents for commercial purposes. The well-being of the individual animals is paramount. However, running a wildlife sanctuary is expensive and a seaside sanctuary for cetaceans may prove more so than a terrestrial sanctuary. A steady, reliable revenue stream for operating costs must be secured before a sanctuary proceeds, as the responsibility of those undertaking such projects to future sanctuary residents cannot be understated.

The capital and operating costs of any particular seaside sanctuary will vary depending on location, local economic conditions and even species. In addition, residents with greater veterinary needs will lead to higher operating costs than those with fewer such needs. The number of residents, which may fluctuate, will also affect operating costs. It is therefore impossible to offer even general 'ballpark' estimates of either capital or annual operating costs, but the former will reach millions of US dollars, whereas the latter will certainly be in the hundreds of thousands.

As previously noted, terrestrial wildlife sanctuaries exist globally and have established revenue-generating mechanisms that any future seaside sanctuaries can copy. For example, a sanctuary can have a visitor's center, with an entrance fee, which will educate the public on, *inter alia*, the resident species, conservation issues and welfare topics. Public donations are a mainstay. Big donors must be identified and cultivated. Eventually corporate donors may become a revenue source, but great care will need to be taken to ensure conflicts of interest are identified and addressed.

Current proposals

Italy (Rimini)

In January 2015, Rimini Dolphinarium was closed by the Italian authorities. The authorities cited the facility for mistreating its dolphins, for lacking the proper permits and for not meeting minimum facility requirements. The four dolphins held by Rimini are now at Acquario de Genova, but remain the responsibility of the government and would be moved to a sanctuary, when one is established. Several NGOs, including [Marevivo](#), [LAV](#) and [Tethys Research Institute](#), are pursuing a feasibility study to establish a seaside sanctuary in Italy, an effort supported by domestic authorities. This facility would also serve as a rescue center for stranded marine mammals in the Mediterranean. A public symposium assessing the elements such a sanctuary would need to consider and address was held in May 2016.

United States (National Aquarium)

The National Aquarium in Baltimore, Maryland, USA, has determined that its dolphin exhibit, which holds eight animals, is currently inadequate to provide for the dolphins' welfare. In June 2016, the Aquarium announced that it would close the exhibit and transfer the dolphins to a seaside sanctuary in the near future.⁴ This is the only project known to date where an operational aquarium is voluntarily closing its cetacean exhibit and establishing its own seaside sanctuary.

North America (Whale Sanctuary Project)

The Whale Sanctuary Project was founded in April 2016.⁵ It is intended to meet the needs of cold-water cetaceans (such as orcas and belugas). The project has received initial funding and has completed a 3-year strategic plan. This facility will be located in the northwest or northeast United States or the east or west coast of Canada. Several sites within these locations are currently under consideration.

Europe (Merlin Entertainments and [Whale and Dolphin Conservation](#))

Merlin Entertainments has acquired theme parks in Europe and China that also display bottlenose dolphins and belugas, in conflict with its policy of opposing whales and dolphins being removed from the wild for purposes of entertainment. This project has been working for a number of years to identify locations that are suitable for a warm-water sanctuary for its dolphins⁶ and is currently investigating a sanctuary site for its belugas.⁷

Greece (Aegean Marine Life Sanctuary)

The [Archipelagos Institute of Marine Conservation](#) has initiated a project to establish a sanctuary for captive dolphins, as well as a rescue center for stranded marine mammals, on the island of Lipsi in the Grecian Mediterranean.⁸ This is the only project to date that has publicly identified a sanctuary site.

References

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⁴ <https://aqua.org/sanctuary/index.html>

⁵ <http://www.whalesanctuaryproject.org>

⁶ <http://uk.whales.org/wdc-in-action/captivity/sanctuary>

⁷ <http://uk.whales.org/news/2016/11/beluga-sanctuary-update>

⁸ <http://archipelago.gr/en/the-aegean-marine-life-sanctuary/>