

To: ACE Coral World SAJ-1976-89037
District Engineer



HUMANE SOCIETY
INTERNATIONAL



11 December 2012

Coastal Zone Management Commission
Department of Planning & Natural Resources
Cyril E King Airport Terminal Building
St. Thomas, VI 00802

Dear Commissioners:

We are writing on behalf of the more than 11 million supporters worldwide of Humane Society International (HSI), WDC (Whale and Dolphin Conservation), and the Animal Welfare Institute (AWI), in reference to the request by Coral World Inc. to construct an offshore dolphin exhibit in Water Bay.

Our three organizations strongly oppose proposals to build new dolphinariums. The construction of dolphinariums is a backward step for any region to take. True ecotourism has minimal costs to the environment and maximum benefits for the local community. Dolphinariums in new areas never meet the former standard and rarely meet the latter standard. The construction of a dolphinarium is a high-impact endeavor, often requiring substantial environmental disruption. Many facilities give the highest paying jobs – such as curators and trainers – to non-locals with greater experience with captive cetaceans.

The practice of exhibiting cetaceans to the public has also become increasingly controversial. In particular, SeaWorld, a long-standing leader in displaying whales and dolphins to the public, has suffered recent setbacks due to employee safety issues and animal welfare concerns. Currently a proposal to import wild-caught beluga whales from Russia to the U.S. is generating tremendous controversy with the American public. Indeed, dolphinarium construction and operation is in decline in the developed world; it is increasing only in the developing world. This is a disturbing trend, given the lack of expertise in these regions, including in the Caribbean.¹

Dolphinarium proponents sometimes provide government officials with information about dolphin captures and captive dolphins that is inaccurate, out-dated, and biased. HSI, WDC, and AWI hope that the information and perspectives provided in this letter will assist you in making

¹ We note, for example, that Coral World will have only an off-site dolphin veterinarian; there are very few veterinarians that specialize in captive dolphin care in the Antilles. This is one of the highest paying jobs at a dolphinarium and in this instance, it will go to a non-local. This is also an animal welfare concern, as dolphins frequently do not show signs of illness until they are seriously compromised – off-site veterinary expertise can lead to delayed care or an inadequate initial response.

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7

an informed decision regarding the construction of a dolphin exhibit at Coral World. We will also comment on some specific elements in the permit application, especially as they relate to coastal impacts in Water Bay.

Dolphins: Captive-Born Versus Wild-Caught

While Coral World claims it will stock its exhibit with captive-born dolphins who form an intact social unit, it is difficult to evaluate this assurance without knowing the facility from which the animals will be acquired; the permit application fails to name a source for the dolphins. There are in fact not many facilities in the world with 6-10 “surplus” captive-born dolphins who could be moved as an intact group, making this claim highly suspect.

In addition, any expansion of the cetacean display industry through construction of new dolphinariums and cetacean exhibits increases the demand for captures from the wild. The industry is not self-sustaining – while most U.S. facilities have not removed cetaceans from the wild in the past two decades (and, not coincidentally, the overall number of cetacean exhibits in the U.S. during this same timeframe has declined), dolphinariums in other parts of the world do so routinely. Indeed, cetaceans are still routinely captured from the wild for public display, with bottlenose dolphin capture “hotspots” in Cuba, the Solomon Islands, and Japan (Fisher and Reeves 2005). Therefore any new facility, regardless of the origin of the cetaceans to be exhibited, is fueling the international global capture of and trade in live cetaceans.

The demand for wild cetacean captures does more than harm the individual(s) captured – it can threaten cetacean populations and the marine ecosystem (Reeves *et al.* 2003). The capture of even a few animals can result in the death or injury of many more, since the capture activities involve intensive harassment of a group or groups. In addition, it can negatively impact already depleted cetacean populations by removing breeding (or otherwise important) members from the group. The National Marine Fisheries Service (NMFS) in the U.S. has acknowledged that “The animals removed from the wild for permanent maintenance in captivity often represent only a proportion of the total take [‘take’ being defined under U.S. law as killing, capturing, injuring, or harassing] during a live capture operation” (NMFS 1989, p. 33). In addition, social networks in these highly social species can be disrupted when key individuals are removed, whether through natural mortality or as a result of hunting or capture operations (Williams and Lusseau 2006; Lusseau and Newman 2004; Wells 2003).

The International Union for Conservation of Nature notes that cetaceans should not be removed from the wild unless their population has been thoroughly assessed. It agrees that removing individuals can reduce a population’s long-term viability and compromise its role in an ecosystem. Thorough assessments would include “delineation of stock boundaries, abundance, reproductive potential, mortality, and status (trend)” (Reeves *et al.* 2003, p. 17) and cannot be conducted without significant investment of time and funding.

Furthermore, removal of cetaceans from the wild can result in (currently) unknown but potentially harmful impacts to local ecosystems, especially when so little is known about many marine ecosystems and cetacean populations. Marine mammals, as top-level predators, can play an important and beneficial role in maintaining the health of fish populations (Kaschner and

CORAL ISSUES
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Pauly 2004). Cetacean predation on fish species that are predators of other types of fish may play an important role in the health of fisheries.

In summary, we emphasize these points regarding wild capture because 1) any trade in cetaceans, even when captive-born, promotes the live capture of wild cetaceans to replenish and expand the global captive collection and 2) Coral World's assurance that it will only use captive-born dolphins may ultimately not be honored by Coral World. Several facilities, including the Curaçao Sea Aquarium, have made similar assurances but in the end included wild-caught cetaceans in their inventory when there were not enough captive-born animals available.

Environmental Impacts

Sea pens and enclosures with direct links to the sea and located in coral reef habitat pose a risk to reefs and coral. Cetaceans produce a significant amount of waste on a daily basis, which is normally not concentrated in a single location (cetaceans can swim up to 100 miles in a day). When several cetaceans are confined in an enclosure at a discrete location, natural dispersal mechanisms are clearly stymied. If flushing of the enclosure area through tidal flow and/or current is inadequate, then cetacean waste and decaying fish parts that these cetaceans do not consume during feeding can concentrate in an abnormal manner and accumulate around and through reefs. This material, consisting of organic debris, nutrients, and fecal coliform bacteria, can cause abnormal levels of algal growth, which can smother and kill corals and also sea grass beds. Biodiversity in such affected areas can decrease substantially – a study by Goreau (2003) suggests that this negative impact on reefs near dolphin pens has already occurred in Cozumel.

The permit application cites only one study in its discussion of mechanisms by which dolphin waste will be eliminated from the enclosure. Sazima *et al.* (2006) reports that dolphin waste is naturally consumed by certain fish species that associate with dolphins. The permit application implies that this fish consumption will reduce the dolphin waste burden inside and even outside the enclosure substantially. However, Sazima *et al.* (2006) was a study of wild dolphins, making the comparison an apples-and-oranges exercise. In addition, the study focused on a different species (spinner dolphins) and an entirely different ecosystem (and hemisphere – the study was conducted in Brazil). While it is probable that some dolphin feces in Water Bay will be consumed by some fish, this is unlikely to be a major mechanism of eliminating waste from the enclosure or outside it, as 1) the waste will be concentrated in an artificial manner (see above) and 2) the fish species in Water Bay will not rely on dolphin waste as a food source, given that wild dolphins do not regularly inhabit this area and this type of scavenging relationship will have had no opportunity to evolve as a result.

Coral World plans to relocate a large number of heads of the boulder coral, *Montastrea annularis* (which will soon be listed under the U.S. Endangered Species Act), as they are found within the footprint of the proposed enclosure. Coral World claims that other corals outside of the footprint will not be affected, due to flushing of the enclosure area. These more distant corals are endangered (*Acropora palmata*) or about to be listed (*Dendrogyra cylindrus*), which emphasizes at a minimum the need for references supporting these optimistic claims (no references supporting these predictions of “no impact” are provided in the permit application) and

potentially the need for focused studies examining how this concentration of wastes might affect the corals in Water Bay.

Coral World is also claiming that water quality overall in the area will not be affected by the dolphin enclosure, either during construction or operation. These claims again are difficult to evaluate without knowing more about the water movement in Water Bay and the effect on that movement from the fencing and wave barrier to be installed. The permit application acknowledges that the fencing and wave barrier will reduce water movement, but downplays its significance. The claim that other sea pen enclosures have not experienced water quality impacts is both incorrect and irrelevant. There are in fact other facilities (see, for example, Alaniz and Rojas 2007) that have had significant water quality impacts; and while some facilities may have had minimal impacts, the water movement (and thus flushing of effluent) in these other areas may be greater than in Water Bay. Coral World provided water quality information for several other facilities, but no water movement data – both are necessary to support any comparison between two different sites.

Dangers to Humans in Swim-with-the-Dolphin Encounters

Coral World is proposing to offer swim-with-the-dolphin (SWTD) encounters and even suggests that eventually the dolphins will be allowed access to open water to swim with snorkelers or scuba divers (as is done in Honduras, for example). This last is curious, as it suggests that Coral World management is unaware that the U.S. Marine Mammal Protection Act does not allow captive cetaceans to be taken outside of their enclosures without a permit for research or conservation enhancement.² This lack of familiarity with federal regulations raises concerns about the ability of Coral World to meet its federal obligations.

Coral World claims that captive bottlenose dolphins present no danger to human swimmers, which is not true. Dolphins carry diseases that can be transmitted to humans (and vice versa) (Geraci and Ridgway 1991; Mazet *et al.* 2004). Furthermore, they are wild animals and are unpredictable, even when trained. It is not uncommon for people to be injured from swimming with captive dolphins (NMFS 1990). Even trainers with extensive experience have been seriously injured by the dolphins with whom they work (Defran and Pryor 1980; Kirby 2012).

Most SWTD participants and government officials are unaware of the injuries people incur when swimming with captive dolphins. Such injuries have included broken bones, internal injuries, and serious lacerations. In addition to the 18 significant incidents documented by the National Marine Fisheries Service in the U.S. within a five-year period, many more injuries went unreported during this time. The most recent incident of which we are aware occurred in Mexico last month and involved a Swedish tourist, who was seriously bitten.³ These incidents are often reported only in the media (rather than to an official agency – and not all incidents are deemed newsworthy) and are not tabulated by any entity globally or regionally.

² 50 C.F.R. §216.35(c) – only the U.S. Navy Marine Mammal Program is exempt from this requirement. Captive dolphins in Florida were allowed access to open water in the past, but this “open-gate” practice was determined to be illegal by U.S. authorities under the MMPA regulations and ceased some years ago.

Dolphin Welfare and Survivorship

The lack of environmental control in sea pens and enclosures that have a direct link to the sea can often make them inadequate and poorly suited for the maintenance of cetaceans. For example, water temperature cannot be controlled in pens, which may force cetaceans to remain in shallow water with excessive exposure to the sun, resulting in unnaturally and sometimes dangerously high water temperatures. Coral World acknowledges that temperatures may be higher inside the enclosure than in the rest of Water Bay once the fencing and wave barriers are erected; this is a significant welfare concern.

As noted above regarding impacts on nearby reefs, water quality often cannot be adequately controlled in pens, even when pumps or other similar water movement devices are installed. Captive cetaceans can be forced to remain in stagnant, shallow water adjacent to human activity that may contain considerably higher concentrations of marine contaminants than they would encounter in the wild. The permit application discusses storm drainage and claims that construction activities are unlikely to change these drainage patterns, but does not adequately discuss whether this storm drainage (regardless of whether it changes or not) will negatively affect the dolphins, which cannot escape any runoff (a dolphinarium in Antigua closed in 2004 due to drainage impacts on the dolphins). Obviously, such exposure to marine pollution can lead to illness and death. Coral World acknowledges that eutrophication has been an issue in Water Bay in the past but implies that this is a minor and easily addressed concern, when in fact there is insufficient information in the permit application to support this optimism.

The permit application claims that 1) harmful algal blooms are rare in the Virgin Islands and 2) captive marine mammals are not affected by them, as they are fed fish from “pristine waters.” It is curious to include both points, as it seems either one standing alone would be sufficient to dismiss this as a threat to any dolphins exhibited by Coral World. However, neither is particularly convincing in this instance. The lack of harmful algal blooms in the Virgin Islands historically is not a valid predictor of their future occurrence, given that the occurrence of harmful algal blooms is increasing globally.⁴ Also, “restaurant quality fish” that is fed to captive marine mammals is usually wild-caught and is just as likely to carry certain contaminants and pathogens that are potentially harmful to cetaceans as any fish eaten by wild cetaceans.

At a minimum, adequate references must be provided before a confident conclusion can be drawn regarding the suitability of this site for a dolphinarium in regards to water quality. The permit application mentions “a number of studies...in regard to dolphin enclosures” (p. 92) and water quality that have been conducted, but does not cite them – at a minimum, Coral World must provide these citations.

Exposure to loud sounds – airborne and underwater – can stress cetaceans, who are highly acoustically sensitive. The harmful effects of anthropogenic noise on cetaceans have been documented in numerous studies and are an ongoing focus of research by marine mammal biologists (see, for example, Marine Mammal Commission 2007). Sound travels very well

⁴ This is likely a climate change-related phenomenon – see, for example, recent reports from the International Whaling Commission Scientific Committee’s Standing Working Group on Environmental Concerns at

through water and even airborne sounds (for example, aircraft or music) can penetrate the air-water interface and be heard by captive animals. When cetaceans cannot remove themselves from prolonged, loud sounds, physiological stress and damage can result (Wright *et al.* 2007).

Coral World claims that Water Bay vessel traffic, which includes a jet-ski operation adjacent to the proposed site, will have no adverse impact on the dolphins. Indeed, it claims that dolphins are very adaptable to boat traffic. Coral World also suggests that a 40' buffer created by the use of a buoy line around the enclosure will be adequate mitigation for any possible noise impacts. There is no scientific basis for any of these claims, especially the last (and indeed no references are provided for any of these statements). Bottlenose dolphins (and most other toothed cetaceans) can hear – and be disturbed by – boat traffic and louder sounds such as those generated by jet skis at far greater distances than 40' (see, for example, Weilgart 2007). Depending on bottom topography and substrate, the noise might be loud enough or have characteristics that disturb cetaceans at distances on the order of miles, not feet. The jet skis in particular may prove problematic for any dolphins held in this proposed enclosure – jet skis are very loud and tend to elicit larger negative responses in cetaceans than boats (Mattson *et al.* 2004).

Facilities in areas with hurricanes and typhoons are at additional risk. Coral World has been damaged at least three times by hurricanes (Hugo, Marilyn, and Luis, in 1989 and 1995), making this concern highly germane. The discussion of this issue in the permit application also seems oddly lacking a climate change perspective – Coral World discusses hurricanes and storms as if weather patterns seen historically will continue into the future, when in fact this is unlikely. For example, rainfall and hurricanes may become greater/stronger in the future, making most if not all of Coral World's projections about the ability of the dolphin enclosure to withstand weather obsolete from the outset. In addition, averaging rainfall over 40 years (as the permit application does) will mask any recent trends since climate change impacts have begun to manifest.

We also note that a land-based facility in the state of Mississippi was completely destroyed by Hurricane Katrina in 2005 and several animals, including eight dolphins, were washed out to sea and injured. Therefore, safety for the dolphins is not necessarily enhanced by moving them onto land, as the Coral World hurricane contingency plan proposes. Actually, the permit application is somewhat confusing in its description of the hurricane contingency plan – it seems that Coral World plans to move the dolphins in transport containers to the second story of the adjacent education center and hold the dolphins in these containers for the duration of any storm. However, the permit application also describes the use of Navy-designed inflatable enclosures that have been used by the Navy to hold dolphins for more than two weeks at a time.

Holding dolphins in transport containers is inarguably stressful and dangerous for dolphins. Physiological indicators of stress associated with capture and transport include elevated stress hormones (St. Aubin and Geraci 1988; Thompson and Geraci 1986; Curry 1999; Schmitt *et al.* 2010) and impaired cell function (Noda *et al.* 2007). Small and DeMaster (1995a) found that mortality rates of bottlenose dolphins shoot up *six-fold* immediately after capture from the wild and do not drop down to “normal” levels for up to 35-45 days. In addition, dolphins face this elevated mortality risk *every time* they are transported, even after long periods in captivity; in short, they never become accustomed to transport. Therefore a hurricane contingency plan involving holding the animals in transport containers – potentially for days – should be dismissed.

out of hand as inhumane (we are unaware of any existing facility that uses transport containers for the duration of a hurricane or storm). If the animals are moved to inflatable enclosures, any maintenance beyond two weeks (a possibility if the dolphin enclosure is severely damaged or totally destroyed by a hurricane) could have a negative outcome.

To our knowledge, no studies have demonstrated that the average or maximum lifespan of dolphins is statistically greater in captivity than in the wild, despite the claims of some facilities. In fact, two studies (Small and DeMaster 1995b; Woodley *et al.* 1997) determined that survivorship rates in bottlenose dolphins through the mid-1990s remained persistently *lower* than in free-ranging animals (although the differences were no longer statistically significant). Although this indicates that husbandry has improved over the years, it has not done so to the extent that bottlenose dolphins live longer on average in captivity. This is notable considering that one might expect captive dolphins to live longer (as do many terrestrial wildlife species in zoos) because of veterinary care, a reliable and plentiful food source, and protection from predators and pollution.

As a result of these data, as well as public concern, there has not been a capture of dolphins from U.S. waters for public display since 1993. A voluntary moratorium has been in place since 1989 on the capture of bottlenose dolphins in the Gulf of Mexico and along the U.S. Atlantic coast. The governments of several countries have already denied permits to capture dolphins from the wild for public display. In the last decade, the Environment Secretary of Mexico declared a moratorium on the capture of dolphins from the wild and the government of Antigua revoked a permit it had earlier issued for the capture of up to 12 dolphins annually from local waters. In 2008, Panama chose not to issue a permit for the capture of up to 80 dolphins over five years from its waters.

Educational Value

HSI, WDC, and AWI are unaware of any peer-reviewed studies⁵ documenting that exposure to, or interaction with, captive cetaceans increases the public's knowledge level or concern about cetaceans and the environment. The most in-depth survey conducted by the public display industry and published as a white paper was critiqued unfavorably by a peer-reviewed evaluation of its methods and results (Marino *et al.* 2010). A Congressional hearing held in April 2010 on the issue of education through marine mammal public displays discussed many of the concerns we have with this type of "informal" learning.⁶ In fact, there is reason to believe that captive cetacean attractions actually *miseducate* the public about wildlife and the marine environment. Not only does the public not learn much, if anything, about the real life of cetaceans, but they are led to believe that the tricks they see are natural behaviors, and that cetaceans have value only in the context of their relationship to humans.

As a final observation, we note that the permit application describes the recent division of the genus *Tursiops* into two species, *truncatus* in the Atlantic and *aduncus* in the Pacific. However,

⁵ We know only of professional opinion polls and customer surveys conducted and analyzed by dolphinariums themselves. These types of surveys tend to be mere reflections of the visitors' perceptions, not of the true effectiveness of any education or information transfer.

⁶ See <http://www.dolphinconservation.org/2010/04/20/042010hearing.html> for a video of this hearing

this description is incorrect – *T. truncatus* is found in both the Atlantic and the Pacific. The division of these two species was not based on geography but on anatomy and genetics. If this is an example of the accuracy of Coral World's knowledge, then we respectfully suggest that there is uncertainty regarding the quality of any education they provide the public.

Conclusion

Several countries, as well as U.S. states and counties, have prohibited the public display of whales and dolphins altogether. South Carolina did so in 1992; Maui County in Hawaii in 2002; Nicaragua in 2003; Costa Rica and Chile in 2005; and Croatia in 2009. Switzerland banned the import of dolphins in 2012, leaving the one remaining dolphinarium to close when its last three dolphins die. Other countries, such as St. Maarten and Panama, have consistently rejected proposals to build dolphinariums, with a result similar to legislating against them. Yet other countries, such as the United Kingdom and Brazil, have put in place regulations for dolphinariums so stringent that no facilities have been able to meet them in a cost effective manner.

As noted above, in the developed world, including the U.S., the number of cetacean exhibits is declining – the number of dolphinariums is increasing only in the developing world, where expertise to maintain these highly specialized mammals is in short supply. This latter trend is not one of which any responsible zoo or aquarium should wish to be a part. Given these trends, the cetacean display business is looking increasingly anachronistic in the 21st century and perhaps a bad bet as an investment for the tourism sector. It would be regressive for Coral World to build a dolphinarium now, when the popularity of this type of exhibit has almost certainly peaked and begun a global decline.

Rather than offering an outdated and artificial “copy-cat” wildlife attraction, if St. Thomas wishes to hold onto the cruise ship passenger traffic that goes to Tortola to swim with captive dolphins, it should offer something unique, entertaining, and equally or more charismatic to keep tourists on-island. St. Thomas does not have to offer the *same* attraction to keep tourists on St. Thomas – cruise ship passengers have only a few hours to participate in an excursion and if an activity is offered that is as interesting and exciting as a dolphin swim, then it will be patronized.


St. Thomas should continue to promote its natural beauty. A truly progressive tourism plan would offer only environmentally friendly options for visitors and guests. Our organizations have expertise in marine ecotourism – not only whale and dolphin watching but general marine wildlife viewing – and would be happy to discuss options that add to and enhance St. Thomas' reputation as a naturally beautiful destination with the relevant authorities.

We hope that the information in this letter can contribute to the recognition that the expansion of dolphinariums (through either captive breeding or directly stocking collections with wild-caught animals) is harmful not only to the animals involved, but also to marine ecosystems. Building a dolphinarium, even if it displays only captive-bred animals, is regressive environmentally, economically, and socially. HSI, WDC, and AWI respectfully request that you deny permission to Coral World to construct a dolphin exhibit. We urge you (and Coral World) instead to give


serious consideration to alternative tourist attractions or excursions that would be truly environmentally responsible and equally or more attractive economically.

Thank you for your consideration of our views on this important matter and please let us know if we can provide you with further information.

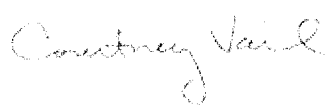
Sincerely,



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Susan Millward
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Courtney Vail
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CC: The Honorable John P. de Jongh, Jr., Governor
The Honorable Gregory R. Francis, Lieutenant Governor
The Honorable Alicia Barnes, Department of Planning and Natural Resources
Mr. Jean Pierre Oriol, Department of Planning and Natural Resources
Mr. Roy A. Pemberton, Department of Fish and Wildlife
Ms. Beverly Nicholson-Doty, Virgin Islands Department of Tourism
Ms. Donna Christensen, U.S. House of Representatives
Ms. Lisa Hamilton, U.S. Virgin Islands Hotel and Tourism Association
Mr. Bruce Potter, Island Resources Foundation
Mr. Aaron Hutchins, The Nature Conservancy
Ms. Anne Marie Hoffman, The Nature Conservancy
Mr. Jason Budson, Environmental Association of St. Thomas and St. John
Mr. Paul Chakroff, Virgin Islands Conservation Society
Mr. Joe Aubain, Humane Society of St. Thomas
Mr. James Magner, St. Thomas Fishermen's Association
Ms. Helen Gjessing, League of Women Voters
Mr. Sebastiano Paiewonsky Cassinelli, St. Thomas-St. John Chamber of Commerce
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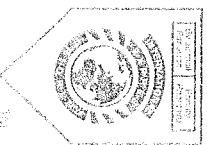


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