

RESORTS  
WORLD  
SENTOSA'S  
PLANS  
TO HOUSE  
**WILD-  
CAUGHT  
DOLPHINS**



# RESORTS WORLD SENTOSA'S PLANS TO HOUSE WILD- CAUGHT DOLPHINS



**acres**  
Animal Concerns Research & Education Society

BY **ACRES**  
(ANIMAL CONCERNS RESEARCH  
AND EDUCATION SOCIETY)



Supported by  
**Earth Island  
Institute**

Published by  
ACRES, 2011.

Written by:  
Louis Ng (MSc)  
Edited by:  
Amy Corrigan  
(BSc Hons)

ACRES is a pioneering Singapore-based charity and Institution of Public Character, founded by Singaporeans in 2001 with the aim of promoting animal welfare.

Our approach is **Scientific, Creative, Practical** and **Positive**.

## CONTENT PAGE

EXECUTIVE SUMMARY

INTRODUCTION

DIALOGUE WITH RWS AND  
PUBLIC FEEDBACK

TRADE OF RWS WILD-  
CAUGHT DOLPHINS MIGHT BE  
DETRIMENTAL TO SURVIVAL  
OF THIS SPECIES IN THE  
SOLOMON ISLANDS

GENERAL WELFARE  
CONCERNS WITH REGARD  
TO KEEPING DOLPHINS IN  
CAPTIVITY

SUBSTANDARD CARE  
FOR RWS WILD-CAUGHT  
DOLPHINS

TRANSPORTATION OF  
DOLPHINS

DANGERS OF DOLPHIN  
THERAPY

EDUCATION

DOLPHIN TRAINING AT OCEAN  
ADVENTURE

INTERNATIONAL FEEDBACK

CONCLUSION

REFERENCE LIST

APPENDIX I: European  
Association for Aquatic  
Mammals (E.A.A.M.) Standards  
for Establishments Housing  
Bottlenose Dolphins



**acres**

Animal Concerns Research & Education Society

91 Jalan Lekar  
Singapore 698917  
Tel : +65 6892 9821  
Fax: +65 6892 9721  
[www.acres.org.sg](http://www.acres.org.sg)  
[info@acres.org.sg](mailto:info@acres.org.sg)

## EXECUTIVE SUMMARY

- ACRES and Earth Island Institute are urging Resorts World Sentosa (RWS) to scrap their plans to exhibit dolphins at their Marine Life Park attraction. They have previously scrapped their plans to house whale sharks at the attraction indicating that such changes to their plans are possible.
- ACRES has been engaged in positive dialogue with RWS since 2006. ACRES last met up with RWS on the 1st December 2010, at which time we raised our concerns about the deaths of two of their wild-caught dolphins.
- In 2006, Genting announced its plans to build “RWS” which would feature the world’s largest oceanarium, housing animals including dolphins. RWS would run a programme for people to interact with dolphins as a form of therapy and there would be an interactive dolphin spa programme. The plans were confirmed when Genting won the Sentosa Integrated Resort bid.
- From 2008 until 2009, RWS purchased a total of 27 wild-caught Indo-pacific bottlenose dolphins (*Tursiops aduncus*) from the Solomon Islands. The dolphins were sent to the Philippines or Langkawi for training and will ultimately be sent to Singapore.
- In 2010, two of the RWS wild-caught dolphins died despite the “top-class care” that RWS had promised.
- Local NGOs and members of the public have consistently voiced their concerns about RWS’ plans to house dolphins.
- The International Union for Conservation of Nature (IUCN) has stated that import and export of bottlenose dolphins from the Solomon Islands should not take place as it might be detrimental to the survival of this species in the Solomon Islands.

- In 2009, a working group of the Animal Committee of the Convention of the Trade in Endangered Species of Wild Fauna and Flora (CITES) suggested that the Solomon Islands would now only export ten dolphins a year. In that same year, twenty RWS wild-caught dolphins were exported from the Solomon Islands; twice the recommended number by the Animal Committee working group.
- The National Museum and The Silliman University (the Philippines CITES Scientific Authorities for marine and aquatic species) both opposed the import of the RWS wild-caught dolphins into the Philippines. The National Museum stated "The National Museum...firmly opposes this illicit activity. This must not be tolerated". The Silliman University stated "the Philippines by allowing these importations... may well be participating in the unsustainable exploitation of a marine mammal, something at odds with our national policy (under law) of protecting marine mammals".
- In a study published in 2010, researchers declared dolphins as the world's second most intelligent creatures after humans and argued that their work showed it is morally unacceptable to keep such intelligent animals in captivity.
- Scientific evidence indicates that cetaceans in captivity suffer extreme mental and physical stress, which is revealed in aggression between themselves and towards humans, boredom, and a lower life expectancy and higher infant mortality.
- Cetacean specialist Professor Giorgio Pilleri concluded: "Whatever efforts are deployed, the keeping of cetaceans in captivity will always pose problems because of the inherent contradiction on which it is based: the keeping in cramped conditions of creatures which are accustomed to vast open spaces."
- RWS had failed to live up to its promise of providing sufficient care to the wild-caught dolphins. An undercover investigation by ACRES revealed that enclosures used to house the wild-caught dolphins in Langkawi failed to meet the European Association for Aquatic Mammals Standards for Establishments Housing Bottlenose Dolphins.

- The Langkawi enclosures failed in terms of: Not meeting minimum pool dimensions, failure to provide shelter, excessive noise, poor water quality, not having sufficient emergency procedures and not having a sufficient programme of measures for illness prevention and control.
- The wild-caught dolphins were housed in enclosures which provided at most 0.001% of the smallest recorded natural home range for bottlenose dolphins.
- Besides the small size of the enclosures, the location of the enclosures was a major concern. The location was completely unsuitable for dolphins due to the high boat traffic.
- RWS misled the public. The enclosures housing the RWS wild-caught dolphins were rusty. RWS denied this and stated that “ACRES chose, in pictures it used for campaigning, to highlight rust on the side of a boardwalk next to the enclosures. This picture is not reflective of the facility when it was in operation.” RWS’ statement was proved to be false after photos were released by ACRES showing the rusty enclosures with dolphins in them when the facility was in operation. RWS has acknowledged that their other statement “enclosures were more than double the size of what ACRES had indicated” was false.
- The RWS wild-caught dolphins endured several stressful journeys. Transportation may indeed be one of the most stressful events a captive dolphin must endure.
- Studies indicate that dolphin assisted therapy is not a valid treatment for any disorder. People participating in these sessions put themselves, and the dolphins, at risk of injury or infection.
- The RWS wild-caught dolphins are currently being trained at Ocean Adventure, a marine park in the Philippines. Animal welfare NGOs in the Philippines have filed a case in the Supreme Court against the marine park for alleged animal welfare violations. There have been high animal mortality rates at Ocean Adventure.

- Mexican Senator Ordorica wrote to Singapore's Minister Mah Bow Tan urging him to reconsider Singapore's decision to import the dolphins from the Solomon Islands, stating that Mexico's international reputation was dented as a result of its importing 28 Solomon Islands dolphins in 2003.
- United Parcel Service (UPS), which shipped the seven dolphins from the Solomon Islands to the Philippines, said it would stop moving this kind of cargo, as the practice violated its environmental principles.
- Chris Porter, who sold the wild-caught dolphins to RWS, called for RWS to "review its motivation for using these animals as a tourist draw". Porter was concerned that "RWS is using the animals primarily to make money while telling the public that its aim is to educate the public on marine conservation."
- Twelve marine and conservation organisations from around the world wrote to the Philippines government asking them to return the RWS wild-caught dolphins to the Solomon Islands.
- Progressive countries such as Chile and Costa Rica have banned the capture and display of dolphins, recognising that these animals belong in the vast open oceans.
- ACRES and Earth Island Institute are disappointed that RWS intends to continue with their plans to house wild-caught dolphins, despite the deaths of two dolphins and the serious welfare concerns.
- The dolphins have endured being removed from their homes in the Solomon Islands. They have endured the transport to the Philippines or Langkawi. The Langkawi dolphins have watched two family members die and endured living in small rusty enclosures, endured a year of training sessions, and the only thing in store for them now is the final stressful transport to Singapore to entertain RWS guests.
- Whilst economic growth is important, moral progress of our country is equally, if not more, important. Our economy and tourism sector must grow, but it is time for us to ask "at what cost?"

## INTRODUCTION

In 2005, the Singapore government decided to develop two Integrated Resorts (IR) in Marina South and Sentosa. In 2006, three different consortia submitted their proposals to build the Sentosa IR.

**Resorts World Sentosa Private Limited is the leisure and gaming company that owns and operates Singapore's biggest Integrated Resort, a 49-hectare development called Resorts World Sentosa. The mega resort is located on Singapore's holiday island of Sentosa.<sup>3</sup>**

**RWS is a wholly-owned subsidiary of Genting Singapore Public Limited Company (PLC), a leisure and gaming company listed on the mainboard of the Singapore Exchange. Genting Singapore PLC is part of the Genting Group that is listed in Malaysia.<sup>3</sup>**

In October 2006, Genting, as part of its proposal for its Sentosa IR bid, announced that its "Resorts World Sentosa" (RWS) would feature the world's largest oceanarium, housing 700,000 marine creatures, including dolphins and whale sharks.<sup>1</sup> RWS stated that they would run a programme for people to interact with dolphins as a form of therapy<sup>1</sup> and that

there would also be a pioneering interactive dolphin spa programme, providing spa therapies with dolphin interaction in specially created spa lagoons.<sup>2</sup>

In December 2006, it was announced that Genting had won the Sentosa Integrated Resort bid and RWS was slated to open in 2010.<sup>4</sup> The Marine Life Park attraction, where the dolphins will be housed, will be opened after 2010.<sup>5</sup>

Genting said "We are extremely delighted to have been chosen and are very excited and honoured to be entrusted with the great task of taking Singapore's tourism sector to the next level... and look forward to contribute to the next chapter of Singapore's tourism success story."<sup>4</sup>

In December 2008, it was leaked out that RWS purchased seven wild-caught Indo-pacific bottlenose dolphins (*Tursiops aduncus*) from the Solomon Islands and that the dolphins had been sent to Ocean Adventure, a marine park in the Philippines, for training.<sup>6</sup> The dolphins were to ultimately be re-exported to RWS.<sup>6</sup> Documents showed that each dolphin was sold for approximately US\$60,000.<sup>7</sup>

In January 2009, it was revealed that RWS purchased another eleven wild-caught Indo-pacific bottlenose dolphins from the Solomon Islands, and these dolphins were similarly sent to Ocean Adventure for training.<sup>8</sup>



Finally, in December 2009, RWS had purchased another nine wild-caught Indo-pacific bottlenose dolphins from the Solomon Islands and the dolphins were sent to Langkawi for training.<sup>9</sup>

In October 2010, two out of the nine dolphins housed in Langkawi died.<sup>10</sup> RWS confirmed the deaths only after questions from the media, two months after their deaths.

RWS said it did not announce the news immediately as it was awaiting conclusive pathology results.<sup>11</sup> RWS stated that "2 females – one aged between four and five years and the other, around 10 – died from an acute bacterial infection of Melioidosis. The bacteria, *Burkholderia pseudomallei*, can be transmitted through contact with contaminated soil and surface waters, with infections occurring primarily during the rainy season."<sup>10</sup>

In December 2010, RWS transported the remaining seven dolphins in Langkawi to the Philippines.<sup>12</sup>

As of January 2011, details of the Marine Life Park attraction are still being finalised and the opening date for the attraction has not been revealed.<sup>13</sup>

## CAMPAIGN OBJECTIVE

ACRES and Earth Island Institute are urging RWS to scrap their plans to exhibit dolphins at their Marine Life Park attraction.

RWS stressed that the attraction was “part of the bid”. However, in May 2009, RWS scrapped its plan to exhibit whale sharks at the same attraction, stating “it believes it may not be able to care for the animals.”<sup>14</sup>

RWS can similarly scrap their plans to exhibit dolphins. RWS have failed to live up to their promise of providing the wild-caught dolphins “with top-class care, and to treat them with respect.”<sup>31</sup> The deaths of the two wild-caught dolphins in their care, and the appalling conditions they housed these dolphins in, are clear indications that they could not care for these animals.



ACRES and Earth Island Institute are not calling for the entire Marine Life Park attraction plan to be scrapped. We are calling for RWS to focus on housing species which can adapt well to captivity and to also run an attraction that can indeed play a proper role in education and in-situ conservation.

# DIALOGUE WITH RWS AND PUBLIC FEEDBACK

ACRES has been engaged in positive dialogue with RWS since 2006, when they announced their plans to acquire dolphins. We have had a number of meetings with them since and have consistently raised our concerns with regard to housing dolphins and whale sharks in captivity.

ACRES last met up with RWS on the 1st December 2010, at which time we raised our concerns about the deaths of two of their wild-caught dolphins.

## **Local NGOs**

In October 2006, ACRES, together with the Nature Society Singapore and SPCA, sent a joint letter (which was published) to The Straits Times, a Singaporean newspaper, highlighting our strong objection to the proposed RWS attraction that will house dolphins. We stated that: “We object strongly to such proposals which would mean a giant step backwards for animal welfare and nature awareness in Singapore. We hope that the authorities would not approve of the coming attractions, which compromise animal welfare and conservation through exploitation, while mistakenly portraying and subjecting animals to an unnatural environment and circumstances.”<sup>15</sup>

## **Media and Public Feedback**

The media has actively covered ACRES’ concerns over the past four years, and members of the public have also been voicing their concerns on newspaper forum pages since 2006. Members of the public have commented on the forum pages that:

- The stress that these animals experience when taken from their natural habitats is significant and many do not survive the trip.”<sup>16</sup>
- “It is inhumane to confine these wild animals in a small body of water.”<sup>17</sup>
- “Dolphin loves freedom. No argument can rationalise the forced confinement of these highly intelligent creatures. I believe it is wrong to remove these beautiful marine animals from their natural environment and exploit them for commercial purposes. Dolphins and whales in captivity is not about education or conservation, it is about one thing – profit.”<sup>18</sup>

## TRADE OF RWS WILD-CAUGHT DOLPHINS MIGHT BE DETRIMENTAL TO SURVIVAL OF THIS SPECIES IN THE SOLOMON ISLANDS

All of the RWS wild-caught bottlenose dolphins were acquired from the Solomon Islands.

Taking the 27 dolphins might be detrimental to the survival of this species in the Solomon Islands. This was a huge gamble for RWS to take considering that it states on its website that it is committed to marine conservation.



Whilst the trade in bottlenose dolphins is allowed under the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), bottlenose dolphins are listed under Appendix II of CITES which places them among species “that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled”.<sup>19</sup>

Each export of bottlenose dolphins must be accompanied by a non-detriment finding (NDF) issued by the scientific authority of the exporting country. This is a scientific finding that the export would not be detrimental to wild populations of bottlenose dolphins.

The International Union for Conservation of Nature (IUCN), a leading authority on the environment and sustainable development, stated in 2007 that “We are not aware that any credible, peer-reviewed studies of bottlenose dolphins have been undertaken in the Solomon Islands since 2003 that would lead us to change the conclusion we reached at that time, i.e., that a non-detriment finding under CITES is not possible for these populations at present and that exports therefore should not take place.”<sup>20</sup>

A working group of the CITES Animal Committee has recommended that the Solomon Islands' government set a more cautious dolphin export quota.<sup>21</sup>

In April 2009, the working group recommended that the Solomon Islands would now only export ten dolphins a year, as a precautionary standard until population surveys are completed.<sup>22</sup> The previous annual export quota set by the government was a quota of 100 wild-caught dolphins – a level of trade deemed unsustainable.<sup>22</sup>

In that same year (2009), twenty RWS wild-caught dolphins were exported from the Solomon Islands; twice the recommended number by the CITES Animal Committee working group.<sup>8,9</sup>

The National Museum and The Silliman University (the Philippines CITES Scientific Authorities for marine and aquatic species) both opposed the import of the RWS wild-caught dolphins into the Philippines.

The National Museum stated “The National Museum... firmly opposes this illicit activity. This must not be tolerated”.

The Silliman University stated (referring to the RWS dolphins importation) “the importation should not have been allowed. The Non-Detrimental Finding (NDF) is not credible... the Philippines by allowing these importations under the cover of a non-credible NDF may well be participating in the unsustainable exploitation of a marine mammal, something at odds with our national policy (under law) of protecting marine mammals”.

IUCN has stated that “CITES Parties should not issue permits to import dolphins from the Solomon Islands.”<sup>20</sup>

Despite all of the above and IUCN's recommendation, the AVA stated in 2008 that they would grant the import permits if the shipment of RWS wild-caught dolphins was accompanied by a valid CITES export permit, and if it met quarantine and housing standards.<sup>6</sup>

# GENERAL WELFARE CONCERNS WITH REGARD TO KEEPING DOLPHINS IN CAPTIVITY

## Dolphin Intelligence<sup>23</sup>

In a study published in 2010, researchers Lori Marino, a zoologist at Emory University in Atlanta, Georgia and Diana Reiss, Professor of Psychology at Hunter College, City University of New York declared dolphins as the world's second most intelligent creatures after humans and suggested that they are so bright that they should be treated as "non-human persons."

Studies into dolphin behaviour have highlighted how similar their communications are to those of humans and that they are brighter than chimpanzees. These findings have been backed up by anatomical research showing that dolphin brains have many key features associated with high intelligence.



The researchers argue that their work shows it is morally unacceptable to keep such intelligent animals in amusement parks.

Dolphins have long been recognised as among the most intelligent of animals but many researchers had placed them below chimps, which some studies have found can reach the intelligence levels of three-year-old children. Recently, however, a series of behavioural studies has suggested that dolphins, especially species such as the bottlenose, could be the brighter of the two. The studies show how dolphins have distinct personalities, a strong sense of self and can think about the future.

Thomas White, Professor of Ethics at Loyola Marymount University, Los Angeles, has written a series of academic studies suggesting dolphins should have rights. "The scientific research . . . suggests that dolphins are 'non-human persons' who qualify for moral standing as individuals," he said.

## Acclimatisation

The captive environment which wild-caught dolphins find themselves in is a far cry from the wild environment. Wild-caught dolphins have never been enclosed within a restricted space until the sudden event of their capture.<sup>24</sup> At this time it becomes necessary for them not only to cope with capture, but also immediately begin to consume dead fish in some cases.<sup>24</sup> They must adjust to restrictions in their free-ranging mobility, being placed in small lagoons or land-based pools which may be absent from the visual and auditory sensory stimuli of their natural habitat.<sup>24</sup> They are required to acknowledge the presence of, and eventually accept, contact with humans.<sup>24</sup> In other words, everything that follows capture is a forced association.

## An Unnatural Life

The greatest abuse suffered by captive cetaceans lies in confinement itself.<sup>25</sup> The enormity and diversity of their

natural habitat is in stark contrast to the alien, minuscule confines of captivity.<sup>25</sup>

**The late ocean explorer Jacques Cousteau stated that: "No aquarium, no tank in a marine land, however spacious it may be, can begin to duplicate the conditions of the sea. And no dolphin who inhabits one of those aquariums or one of those marine lands can be considered normal."<sup>26</sup>**

Free-living cetaceans live in three-dimensional surroundings.<sup>25</sup> They are capable of deep diving, and in their natural environment they are almost always in motion, even while resting.<sup>25</sup>

Cetacean scientists studying wild populations point to the fact that dolphins and whales travel great distances during their normal lives.<sup>26</sup> These conditions cannot be duplicated in captivity, so many experts believe that the physical activity experienced by captive cetaceans falls far short of what is appropriate and necessary for adequate physical health.<sup>26</sup> In captivity, natural feeding and foraging patterns are also completely lost.<sup>46</sup> Other natural behaviours, such as those associated with dominance, mating, and maternal care, are altered in captivity, which can have a substantial impact on the animals.<sup>46</sup>

Most believe it is not possible to adequately house and care for intelligent, social, wide-ranging ocean mammals in captivity.<sup>26</sup>

Boredom, frustration, restriction of normal activities and sensory deprivation are cited as some of the most serious concerns.<sup>26</sup>

Dolphins also maintain complex societies, form strong bonds, and are known to communicate with each other.<sup>25</sup> When dolphins are captured from the wild, they are often removed from their natural social structures and forced into artificially controlled groupings.<sup>26</sup> The normal sex ratio, age make-up and number of animals per pod is vastly different from what they would experience in the wild.<sup>26</sup> These dolphins are torn from their natural social environment.<sup>25</sup>

Cetacean specialist Professor Giorgio Pilleri, who has studied dolphin intelligence and behaviour for 20 years, concluded: "Whatever efforts are deployed, the keeping of cetaceans in captivity will always pose problems because of the inherent contradiction on which it is based: the keeping in cramped conditions of creatures which are accustomed to vast open spaces."<sup>27</sup>

### **Effects of Captivity**

Scientific evidence indicates that cetaceans in captivity suffer extreme mental and physical stress, which is revealed in aggression between themselves and towards humans, boredom, and a lower life expectancy and higher infant mortality than in the wild.<sup>28</sup>

Stress-related conditions such as ulcers, stereotypical behaviours and abnormal aggression within groups frequently develop in predators denied the opportunity to hunt.<sup>46</sup>

Professor Pilleri believes that captivity, coupled with the destruction of the dolphin's sophisticated social structure, causes "profound psychological disturbance and neurotic behaviour almost identical to that of humans when held in solitary confinement."<sup>27</sup> These symptoms, he adds, "exacerbated by the utterly degrading tricks they are forced to perform in captivity," include loss of communication, despair and suicidal behaviour, and an unnatural aggression, probably induced by feelings of intense claustrophobia.<sup>27</sup>

Studies in the United States suggest that an inordinate number of captive dolphins succumb to typical stress-related illnesses such as heart attacks and gastric ulcers.<sup>27</sup> It can hardly be sheer coincidence that virtually identical disorders affect millions of human beings forced to endure tedious and repetitive menial work.<sup>27</sup> These stress-related illnesses are associated with animals who are presented with no options during stressful events.<sup>29</sup> Clinical signs associated with this type of stress response include gastric ulcers and eventually death.<sup>29</sup>



### **Conclusion**

All of this compelling evidence suggests that it is impossible to accommodate the mental, physical and social needs of dolphins in captivity and that it is cruel to confine them.<sup>28</sup>

Indeed, once captured and confined, most dolphins will never again escape their nightmare world of stress, insecurity and neurosis, except through the merciful release of death.<sup>27</sup>

## SUBSTANDARD CARE FOR RWS WILD-CAUGHT DOLPHINS

RWS has stated that they have “a world-class team of experienced professionals and animal experts”<sup>30</sup> and it is their “mission to provide our animals with top-class care, and to treat them with respect.”<sup>31</sup>

RWS has also stated that “its dolphin enclosure will ‘far exceed’ internationally recognised minimum space requirements for the animals”<sup>32</sup> and that “care and well-being of the dolphins are of paramount importance.”<sup>33</sup>

RWS further mentioned that bottlenose dolphins “are very adaptable to living in controlled environments.”<sup>31</sup>

ACRES has consistently reminded RWS of the difficulty in keeping dolphins in captivity. Despite our appeal, RWS went ahead and purchased wild-caught dolphins. Two of the dolphins (in Langkawi), of the species which RWS had stated is “very adaptable to living in controlled environments,” have now died.

An undercover investigation by ACRES in January 2011 revealed that the RWS wild-caught dolphins held at Awana Porto Malai Langkawi, Malaysia, from January until December 2010, had been housed in appalling conditions.

They were housed in four sea pens that were found to be rusty.



**The RWS wild-caught dolphins housed in appalling conditions in Langkawi. Note the small size of the enclosure and the rust.**

The dolphin enclosures failed to meet the European Association for Aquatic Mammals Standards for Establishments Housing Bottlenose Dolphins (Appendix I). ACRES believes that these standards are minimal and it is appalling that RWS failed to meet and exceed them.

These standards are not only “internationally recognised” but are used by the Agri-Food and Veterinary Authority (AVA; the Singapore government authority tasked with overseeing animal welfare issues) in assessing the welfare of captive dolphins.<sup>34</sup>



The enclosures failed in terms of: Not meeting minimum pool dimensions, poor maintenance, failure to provide shelter, excessive noise, poor water quality, not having sufficient/adhered to emergency procedures and not having a sufficient/adhered to programme of measures for illness prevention and control.

Besides the small size of the enclosures, the location of the enclosures was a major concern. The location was completely unsuitable for dolphins due to the high boat traffic (from a jetty and a private marina).

The European Association for Aquatic Mammals Standards for Establishments Housing Bottlenose Dolphins states explicitly that: “Cetaceans shall be protected from harassment by excessive noise... Sounds of mechanical origin are probably the most stressful for the animals.”<sup>35</sup>

Another set of guidelines, the New South Wales Exhibited Animal Protection Act, in its Standards for Exhibiting Bottle-nosed Dolphins, similarly states: "Attention should be paid to...protection of animals from disturbing noises, e.g. certain noises generated by mechanical systems and transmitted underwater."<sup>36</sup>

RWS have clearly failed to comply with these standards.

### **RWS Claims**

On 9 January 2011, The Straits Times reported that "To prevent any further deaths, Mr Goh (RWS spokesperson, Robin Goh) said RWS has built

an animal hospital and laboratory at its facility in the Philippines, and has hired a full-time vet who specialises in marine mammals to join its consultative team of vets."<sup>13</sup> This indicates that these measures were not in place at the time of the dolphins' deaths in Langkawi.

Shouldn't RWS have hired a full-time vet who specialises in marine mammals and set up an animal hospital as soon as they obtained the wild-caught dolphins, rather than after the death of two of the wild-caught dolphins?



RWS claimed that the enclosures are double the size (approximately 20 metres by 20 metres) of the ACRES figures.<sup>47</sup> RWS have, however, since acknowledged that their above figures were inaccurate.

Even if the enclosures are double in size, does RWS feel that it was ethically acceptable to confine these wild-caught dolphins to enclosures which provided only 0.001% of the smallest recorded natural home range for bottlenose dolphins? Remember that these dolphins only about a year ago swam freely in the vast open oceans.

RWS further claimed that “ACRES chose, in pictures it used for campaigning, to highlight rust on the side of a boardwalk next to the enclosures. This picture is not reflective of the facility when it was in operation.”<sup>47</sup>

RWS’ statement was again proved to be false and misleading. The photo (above) clearly shows that the enclosure was rusty at the time the dolphins were in the enclosure.



**The RWS wild-caught dolphin enclosure in Langkawi during its construction.**

## TRANSPORTATION OF DOLPHINS

The RWS wild-caught dolphins were transported from the Solomon Islands to the Philippines or Langkawi, Malaysia,<sup>6,8,9</sup> and in December 2010, the Langkawi dolphins were re-transported to the Philippines.<sup>12</sup> All of the dolphins will eventually be re-transported to RWS in Singapore.

RWS cannot deny that transporting the dolphins is a stressful process for the dolphins.

Transportation may indeed be one of the most stressful events a captive dolphin must endure. Scientific studies indicate that handling and transportation are stressful events for

dolphins<sup>37,38</sup> and can lead to impairment of their immune system.<sup>37</sup> Each time the dolphins are confined and shipped from one place to another, it is as traumatic as if they were being newly captured from the wild.<sup>39</sup> The experience of being removed from water and restrained is apparently so stressful to dolphins that they never find it routine.<sup>39</sup>



## DANGERS OF DOLPHIN THERAPY<sup>40</sup>

RWS stated that they would run a programme for people to interact with dolphins as a form of therapy at the RWS attraction.<sup>1</sup>

RWS must accept that there are zoonotic disease transmission risks involved in contact sessions with dolphins.

The United States National Marine Fisheries Service (NMFS) has acknowledged that the potential exists for transmission of diseases between wild marine mammals and humans.<sup>48</sup>

NMFS has noted that bites from marine mammals carry a danger of infection.<sup>48</sup> NMFS further noted that there are a number of disease agents that are common to both humans and marine mammals and can be transmitted between them.<sup>48</sup> For example, a variety of opportunistic bacteria found on the skin of dolphins may pose a threat to human health, and several fungal and viral agents which can affect marine mammals have been or can be transmitted to humans.<sup>48</sup>

Outbreaks of infectious diseases reported in dolphins also include erysipelas, pasteurellosis, hepatitis, *Burkholderia pseudomallei* infection (the cause of death of the two RWS wild-caught dolphins in Langkawi), and systemic mycosis.

Furthermore, in a report in 2007, two researchers from Emory University warned that people suffering from chronic mental or physical disabilities should not resort to a dolphin “healing” experience.

Lori Marino, senior lecturer in the Neuroscience and Behavioral Biology Programme, teamed with Scott Lilienfeld, professor in the Department of Psychology, to launch an educational campaign countering claims made by purveyors of what is known as dolphin-assisted therapy (DAT).

“Dolphin-assisted therapy is not a valid treatment for any disorder,” said Marino, a leading dolphin and whale researcher. Marino added that no scientific evidence exists for any long-term benefit from DAT.

She added that people who spend thousands of dollars for DAT don’t just lose out financially. They also put themselves, and the dolphin, at risk of injury or infection. And they are supporting an industry that outside



of the United States takes dolphins from the wild in a brutal process that often leaves several dolphins dead for every surviving captive.

In 2007, Marino and Lilienfeld reviewed five studies published during the previous eight years and found that the claims for efficacy for DAT were invalid. Their conclusions were published in *Anthrozoös*, the Journal of the International Society for Anthrozoology, in a paper entitled “Dolphin-Assisted Therapy: More Flawed Data and More Flawed Conclusions.”

“We conclude that nearly a decade following our initial review, there remains no compelling evidence that DAT is a legitimate therapy, or that it affords any more than fleeting improvements in mood.”

“It’s hard to imagine the rationale for a technique that, at best, makes a child feel good in the short run, but could put the child at risk of harm.”

Many people are under the impression that dolphins would never harm a human. “In reality, injury is a very real possibility when you place a child in a tank with a 400-pound wild animal that may be traumatized from being captured,” Marino said.

“If people knew how these animals were captured, I don’t think they would want to swim with them in a tank or participate in DAT.”

## EDUCATION

RWS claims that its attraction will “play a crucial role in educating visitors on the variety and beauty of marine animals. The Park will be a unique window for visitors to appreciate the ocean and the need for its conservation. We are convinced it will ignite and heighten environmental awareness and action among our guests.”<sup>31</sup>



The reality is: What can RWS really teach its visitors about dolphin protection? Would it not be an irony and contradiction for RWS to ask their visitors to protect dolphins when they themselves obtained 27 individual dolphins from the wild and two have now died?

We must remember as well that the public can't learn much from captive dolphins. Captive dolphins do not exhibit the same behaviours as their wild counterparts because of the totally different living conditions. The complex nature of dolphins' lives cannot possibly be demonstrated in the confines of captivity.

## DOLPHIN TRAINING AT OCEAN ADVENTURE<sup>41</sup>

25 wild-caught RWS dolphins are currently (January 2011) undergoing training at Ocean Adventure, a marine park in Subic Bay, the Philippines<sup>13</sup> which features false killer whales and dolphins.

Ocean Adventure is owned by the Subic Bay Marine Exploratorium (SBME) and claims to be “recognized as an international expert in the field of marine mammal care, training, education, conservation, study, rescue and rehabilitation.”

Animal welfare NGOs in the Philippines have, however, filed a case in the Supreme Court against the marine park. The complainants, Earth Island Institute (EII) and the Philippine Animal Welfare Society (PAWS), say dolphin shows perpetuate a cruel system where animals are captured from the wild and separated from their families, starved to obey their trainers and deprived of a full life as these animals die young in captivity.



**Some of the cetaceans housed at Ocean Adventure.**



**Dolphins being used as “water-skis” during an animal show at Ocean Adventure.**



**The RWS wild-caught dolphins being trained at Ocean Adventure.**

Unfortunately, these issues were never taken up in any public discussion as the Ocean Adventure Park (OA) did not register with the Bureau of Animal Industries (BAI) before it started its operations in 2001; a violation of the Philippine Animal Welfare Act (RA 8485). As such, both EII and PAWS filed a corresponding criminal case against the American corresponding criminal case against the American owners of Ocean Adventure – Timothy Desmond, John Corcoran and Gail Laule.

### **High Animal Mortality At Ocean Adventure**

In 2001, the facility imported six false killer whales. Of the six, only five animals arrived. The fate of the sixth is unknown, although it is believed that this animal may have died during transport.

At least three false killer whales have died at Ocean Adventure.

- Deuce, a juvenile male, died in July 2001.
- Coral, an eight year old, died in January 2004.
- A third, aged thirteen years old, died in July 2005. According to the operators of Ocean Adventure, this individual died of “gastro-intestinal” illness.

Given the three known deaths, there should still be two false killer whales remaining. However, recent newspaper reports and TV documentaries about the facility show only one remaining false killer whale. It is thus believed that a fourth false killer whale may have also died and that this was not reported in the media. Both EII and PAWS believe that the last remaining false killer whale will not survive to adulthood in Ocean Adventure.

## INTERNATIONAL FEEDBACK

### Feedback from a Mexican Senator<sup>42</sup>

In April 2008, Senator Jorge Legorreta Ordorica, Chairman, Committee of Environment, Natural Resources and Fisheries, Mexican Congress, was so dismayed at the plans of RWS to import bottlenose dolphins from the Solomon Islands for its attraction that he wrote to Singapore's National Development Minister Mah Bow Tan about it.

Senator Ordorica stated that:

- In July 2003, Mexico allowed an import of 28 *T. aduncus* from Solomon Islands, which at the time was not a party to CITES. Mexico allowed the import despite widespread opposition from both CITES members and non-governmental organizations. With hindsight the import should not have taken place, given the lack of data on the status of the species; the controversial nature of the capture, containment and transport of the animals; and the fate that awaited the dolphins.
- Of the 28 Solomon Islands dolphins that were sent to the "Atlantida" facility in Cancun, at least 12 are now dead, representing a 43% mortality rate in less than 5 years. The total number of deaths may actually be larger, but 12 have been confirmed or reported by reputable sources. The majority of these animal deaths were officially reported to SEMARNAT, the government agency in Mexico responsible for overseeing the public display of marine mammals.
- One dolphin died within a month of arrival, apparently due to transport-related stress (a common occurrence). Six more died in the following years – four in 2004 and two in 2005. The causes of death were various, including myopathy, neurogenic shock, and pneumonia. (An additional dolphin, a female calf born to one of the Solomon Islands females, also died in 2005, but is not included in the total reported above, as she was not part of the original trade.)

- Indo-Pacific bottlenose dolphins can live for 30-40 years or more. The individuals involved in the 2003 were younger animals. For almost half of the original group of 28 to die in less than five years is an appalling mortality rate.
- Mexico's experience with this single import led to our government imposing an outright ban on the importation and exportation of live cetaceans for entertainment purposes in February 2006. This ban is still in force.
- Mexico's international reputation was damaged because of the negative publicity surrounding the 2003 Solomon Islands dolphin import and we urge you to consider our experiences and the disturbing mortality suffered by these animals when evaluating permits for live dolphin imports from Solomon Islands.

Minister Mah replied to Senator Ordorica in May 2008, stating that "Any import of dolphins into Singapore would require a CITES import permit and must be in compliance with animal health, welfare and proper housing requirements. We will give careful considerations to these aspects of care when we evaluate any import applications for dolphins."<sup>43</sup>

Feedback from UPS- the Company Which Transported the RWS Wild-Caught Dolphins<sup>32</sup>

United Parcel Service (UPS), which shipped the seven dolphins from the Solomon Islands to the Philippines in 2008, said it would stop moving this kind of cargo, as the practice violated its environmental principles.

Feedback from Chris Porter Whose Company Sold RWS the Wild-caught Dolphins<sup>11</sup>

In December 2010, Chris Porter, who was considered the world's biggest dolphin broker and who sold the wild-caught dolphins to RWS, called for RWS to "review its motivation for using these animals as a tourist draw".

Porter was concerned that "RWS is using the animals primarily to make money while telling the public that its aim is to educate the public on marine conservation."

He told The New Paper, a Singapore newspaper, in an e-mail: “I would like to see more information on the amount of direct conservation work RWS plans to do and the amount of direct impact its display will have.”

By impact, he meant “not only for the economical benefit of Singaporeans, but also for the social benefit to wild dolphins.”

Recently, inspired by the film ‘The Cove’ and the recent death of a trainer caused by a captive orca in the USA, Porter decided to give up his business capturing dolphins in the Solomon Islands (where RWS obtained their dolphins) and selling them to aquariums. Porter further stated that he is now questioning the value of using such animals for entertainment purposes and keeping them in artificial environments that are a far cry from their native habitat.



### **Feedback from International NGOs<sup>8</sup>**

In January 2009, twelve marine and conservation organisations from around the world wrote to the Philippines government asking them to return the RWS wild-caught dolphins to the Solomon Islands. The groups further asked the Philippines government to: “Immediately notify the Solomon Islands government that you will not allow the import of any additional dolphins from there until and unless it complies with Article IV of CITES and with the relevant requirements contained in Philippine law.”

## CONCLUSION

ACRES and Earth Island Institute are disappointed that RWS intends to continue with their plans to house wild-caught dolphins at their Marine Life Park<sup>44</sup>, despite the deaths of two dolphins and the serious welfare concerns.



It is appalling that some of the reasons given by RWS include that they “are committed to delivering the bid and the Marine Life Park will help to boost tourism.”<sup>44</sup>

Whilst economic growth is important, moral progress of our country is equally, if not more, important. Our economy and tourism sector must grow, but it is time for us to ask “at what cost?” We must remember that the two dolphins who died were sentient individuals who only a year ago swam freely in the vast open oceans. They died despite RWS’ promise of providing a team of marine experts and best care.

RWS has made important contributions to Singapore, but their decision to continue with their plan to house wild-caught dolphins will undoubtedly harm Singapore’s good reputation.

Mexican Senator Ordorica has already written to Singapore's Minister Mah Bow Tan urging him to reconsider Singapore's decision to import the dolphins from the Solomon Islands, stating that Mexico's international reputation was dented as a result of its importing 28 Solomon Islands dolphins in 2003.<sup>42</sup>

It is laudable that RWS will be donating millions of dollars towards conservation work, that they have undertaken coral conservation and they remain one of the few destination resorts in the world that does not serve shark's fin in its restaurants.<sup>11</sup> RWS now needs to walk the talk with regard to dolphin protection.

As a company that believes in corporate social responsibility, surely they can do without the income generated from these dolphins and, after all, they state on their website that RWS is committed to marine conservation.<sup>45</sup>

There has been much discussion in Singapore about the need for everyone to become responsible global citizens and the sentiment that we need to care not only for ourselves and our family members, but for the others we share this world with.

The lives of the remaining 25 dolphins lie in our hands and we need to take action. We need to remember that these are 25 sentient beings who were quite recently living wild in the vast open oceans.

The dolphins have endured being removed from their homes in the Solomon Islands. They have endured the transport to the Philippines or Langkawi. The Langkawi dolphins have watched two family members die and endured living in small rusty enclosures, endured a year of training sessions, and the only thing in store for them now is the final stressful transport to Singapore to entertain RWS guests.

Progressive countries such as Chile and Costa Rica have banned the capture and display of dolphins, recognising that these animals belong in the vast open oceans.<sup>46</sup>

Let us remember that we must not only progress from an economic standpoint, but we need to progress from a moral and ethical standpoint as well.

## REFERENCE LIST

1. Showtime for Genting and Kerzner. 17 October 2006. The Straits Times, Singapore.
2. Royal flush \$5.2-billion: Resorts World unveiled. 17 October 2006. TODAY, Singapore.
3. Resorts World Sentosa – About Us. <http://www.rwsentosa.com/language/en-US/AboutUs> (Accessed 14 January 2011).
4. Genting “ecstatic” over winning bid for Sentosa IR. 8 December 2006. Channel NewsAsia, Singapore.
5. 18 dolphins for Resorts World Sentosa still in the Philippines. 17 February 2010. TODAY, Singapore.
6. Animal activists decry need to import wild dolphins for Resorts World Sentosa. 27 December 2008. The Straits Times, Singapore.
7. What the dolphins cost. 11 December 2008. Solomon Star, Solomon Islands.
8. Philippines asked to return dolphins to the Solomon Islands. 16 January 2009. Solomon Star, Solomon Islands.
9. Eight more Solomon Islands dolphins flown off to Malaysia. 11 December 2009. Solomon Star, Solomon Islands.
10. Dolphins bound for Resorts World Sentosa die, activists up in arms. 18 December 2010. TODAY, Singapore.
11. Resorts World Sentosa told to review dolphins by man who sold them the dolphins. 26 December 2010. The New Paper, Singapore.
12. Resorts World Sentosa: Oh where, oh where have the dolphins gone? 8 January 2011. TODAY, Singapore.
13. RWS moves dolphins again. 9 January 2011. The Straits Times, Singapore.
14. No whale sharks at Sentosa IR. 16 May 2009. The Straits Times, Singapore.
15. Nature groups against oceanarium at Sentosa. 21 October 2006. The Straits Times Forum, Singapore.
16. Review the plans for marine park in Sentosa’s integrated resort. 26 October 2006. The Straits Times Forum, Singapore.
17. Marine animals in captivity don’t contribute to conservation efforts. 26 October 2006. The Straits Times Forum, Singapore.
18. Best place to learn from dolphins? In the wild. 9 January 2011. TODAY Forum, Singapore.

19. CITES - The CITES Appendices. <http://www.cites.org/eng/app/index.shtml>. [Accessed 14 January 2011].
20. IUCN Letter to CITES Secretariat. 13 June 2007. [http://www.ssn.org/Documents/IUCN\\_CSG\\_to\\_CITES.pdf](http://www.ssn.org/Documents/IUCN_CSG_to_CITES.pdf). [Accessed 14 January 2011].
21. Solomon dolphin trade to be scrutinized by CITES. 28 April 2009. Earth Times, United Kingdom.
22. Dolphin export quota drops. 29 April 2009. Solomon Star, Solomon Islands.
23. Scientists say dolphins should be treated as 'non-human persons'. 3 January 2010. The Sunday Times, United Kingdom.
24. Sweeney, J. 1990. Marine mammal behavioral diagnostics, In: Dierauf, L. (editor) Handbook of marine mammal medicine. Boca CRC Press, Raton, Florida. pp. 53-72.
25. Mooney, J. 1998. Captive Cetaceans: A Handbook for Campaigners, Whale & Dolphin Conservation Society, United Kingdom.
26. Laidlaw, R. 1992. Dolphins and Whales in Captivity, Zoo Check Canada, Canada.
27. Johnson, W. 1990. The Rose Tinted Menagerie. Heretic Books, London.
28. Whale and Dolphin Conservation Society. Dying to Entertain brochure. Whale and Dolphin Conservation Society, UK.
29. Seligman, M.E.P. 1975. Helplessness: On depression, development, and death. Freeman, San Francisco.
30. Resorts World Sentosa committed to wildlife conservation. 10 January 2011. The Straits Times Forum, Singapore.
31. Marine Life Park Statement. 9 January 2009. Resorts World Sentosa, Singapore.
32. Dolphins at the Sentosa Integrated Resort: Senator cites Mexico's sad experience with dolphins. 12 January 2009. The Straits Times, Singapore.
33. RWS relocates 7 dolphins to Philippines. 8 January 2011. Channel NewsAsia, Singapore.
34. Dolphin Lagoon is too small: SPCA. 10 September 2010. The Straits Times, Singapore.
35. European Association for Aquatic Mammals (E.A.A.M.) Standards for Establishments Housing Bottlenose Dolphins. N.d. European Association for Aquatic Mammals.
36. NSW Agriculture. 1994. Standards for Exhibiting Bottlenosed Dolphins (*Tursiops truncatus*) in New South Wales. Exhibited Animal Protection Act. New South Wales Agriculture, Australia.

37. Noda K, Akiyoshi H, Aoki M, Shimada T, Ohashi F. 2007. Relationship between transportation stress and polymorphonuclear cell functions of bottlenose dolphins, *Tursiops truncatus*. *J Vet Med Sci*. 2007 Apr;69(4):379-83.
38. K. Noda, M. Aoki, H. Akiyoshi, H. Asaki, T. Ogata, K. Yamauchi, T. Shimada, F. Ohashi. 2006. Effect of bovine lactoferrin on the immune responses of captive bottlenosed dolphins (*Tursiops truncatus*) being transported over long distances. *Veterinary Record*;159:885-888 doi:10.1136/vr.159.26.885.
39. Humane Society of the United States - Do Marine Mammals Belong in Captivity in the 21st Century? 25 September 2009. [http://www.humanesociety.org/issues/captive\\_marine/facts/do\\_marine\\_mammals\\_belong\\_in\\_captivity.html](http://www.humanesociety.org/issues/captive_marine/facts/do_marine_mammals_belong_in_captivity.html). (Accessed 14 January 2011).
40. Dolphin 'Therapy' A Dangerous Fad, Researchers Warn. 24 December 2007. *ScienceDaily*.
41. Earth Island Institute - Animal Lovers File Case versus Subic Dolphinarium at The Supreme Court. 16 June 2009. <http://www.earthislandph.org/article/animal-lovers-file-case-versus-subic-dolphinarium-supreme-court>. (Accessed 14 January 2011).
42. Letter from Senator Jorge Legorreta Ordorica to Minister Mah Bow Tan. 12 April 2008.
43. Letter from Minister Mah Bow Tan to Senator Jorge Legorreta Ordorica. 21 May 2008.
44. Resorts World Sentosa urged to make 'moral decision' on dolphins. 20 December 2010. *TODAY*, Singapore.
45. Resorts World Sentosa - Marine Life Park - Marine Conservation. <http://www.rwsentosa.com/language/en-US/Attractions/MarineLifePark/MarineConservation> (Accessed 14 January 2011).
46. Naomi A. Rose, E.C.M. Parsons, and Richard Farinato, 2009. *The Case Against Marine Mammals in Captivity*. The Humane Society of the United States and the World Society for the Protection of Animals.
47. Langkawi dolphin pens 'appalling'. 14 January 2011. *The Straits Times*, Singapore.
48. WDCS/HSUS. 2003. *Biting the hand that feeds: The case against dolphin petting pools*. Whale and Dolphin Conservation Society and The Humane Society of the United States.

# APPENDIX I: European Association for Aquatic Mammals (E.A.A.M.) Standards for Establishments Housing Bottlenose Dolphins

These 'standards' indicate recommended minima; there are no limits for maxima.

## 1. Minimum Pool Dimensions

Total available pool space (including hospital or isolation areas) should be calculated to observe the following minima for up to five (5) animals:

1. Water surface area:  $275 \text{ m}^2 + 75 \text{ m}^2$  per additional animal.
2. An area of at least the minimum surface area should have a minimum depth of 3.5 m.
3. Total water volume:  $1000 \text{ m}^3 + 200 \text{ m}^3$  per additional animal.
4. Any establishment having pools which fulfill the minimum requirements of two of the above criteria, and where the third criterion is no more than 10% lower than the recommended minimum, should be regarded as acceptable.

## 2. Construction of Buildings, Installations and Fittings

1. The design of buildings, which house dolphins, must take into account the biology of these mammals.
2. Personnel housing, food preparation rooms, work rooms, filtration rooms/air conditioning rooms and heating rooms should be separated from each other.
3. All pools' surfaces shall be constructed of materials having a non porous, waterproof finish, which shall facilitate proper cleansing and disinfection, and which shall be maintained in good repair as part of a permanent maintenance programme.
4. In order to protect the animals from interference by the public, there must either be a sufficient number of personnel on hand, or a physical protection provided such as fences, walls, or glass screens at a suitable distance from the animals

5. There must be facilities which permit the animals to be handled, when necessary, for medical reasons etc. Such pools should measure at least 5.5 m x 3.5 m and 2.7 m deep.
6. The water and power supply must be both reliable and adequate and alternative emergency power supply shall be readily available. That is to say, it must be sufficient to maintain the conditions necessary for the animals' well-being, in all circumstances.
7. Open-air installations: Dolphins cannot be kept in open-air installations if air and water temperature fluctuations could result in health or hygiene problems for the animals. Particular attention must be paid to the following:
  1. The pool must always be ice-free.
  2. The temperature requirements for these animals should be laid down by the biologist and/or veterinary advisor.
  3. Shaded or covered areas must be provided in order to protect the animals from adverse conditions.
8. Indoor installations:
  1. Air and water facilities must be controlled to a degree so that the animals do not suffer from adverse weather conditions (heat or cold) when taking into account their requirements.
  2. Furthermore, indoor installations must have adequate fresh-air ventilation and measures must be taken to ensure that there are no chlorine (or other) fumes, nor strong odours. Normally, there should be a minimum five (5) metres unobstructed air space above the water level in the show pool and 2.5 metres above the isolation, quarantine or veterinary areas.
  3. The relative humidity should be at least 60% and the air relatively free of dust particles.
  4. Lighting should be in a spectrum as close as possible to that of sunlight. It must be adequate for routine health and hygiene checks, and for cleaning of the installation.

### **3. Noise**

Cetaceans shall be protected from harassment by excessive noise, including noise from irregular impulses. The noise level shall be kept as low as possible for the frequency range between 0 and 60 kHz (normal maximum ambient sound pressure level 100 dB re 1  $\mu$ Pa). Sounds of mechanical origin are probably the most stressful for the animals, because of their regular repetitive nature. Those of a random nature, except where based on metallic sounds, are probably not so significant. Any doubts as to the effects of any sound should be referred to an expert with experience of underwater acoustic measurement (NOT of airborne acoustics) in conjunction with the veterinary surgeon with experience and/or training in this field.

#### **4. The Aquatic Environment**

1. The coliform bacterial content of the pool should be monitored to be at a consistently low level and must not exceed 500 per 1000 ml. If the average figure is higher than this, the water is considered to be inadequate for the animals and, consequently, special measures must be taken (treatment or renewal of water) immediately. Water samples must be taken monthly and the coliform bacterial levels recorded.
2. Water samples must be taken daily to check the levels of acidity (pH) and the levels of oxidising agents, and their by-products, which are used to maintain the quality of the water, must be recorded. Only natural sea-water is exempt from these regulations, on condition that no chemical additives are used. The results of these tests must be logged and made available at all times for inspection.
3. The salinity of the pool water must be kept between 15 and 36 gms. of salt (NaCl) per litre.\* The pH of the water must be between 7.2 and 8.5.
4. The water must never be allowed to freeze nor exceed 28°C.
5. The total filtration turnover time of each pool must be adjusted to maintain water quality. Typically this should not exceed four (4) hours.
6. It must be possible to empty the pool rapidly.
7. Water used for pools must be kept separate from waste water and from soil/roof run off water.
8. When natural seawater is used, emergency procedures should be established to deal with sudden water pollution and poisonous algal blooms.

#### **5. Feeding Dolphins**

1. Food must be wholesome and of a standard fit for human consumption. It must be given to the animals in sufficient quantities and its nutritional value must be sufficient to keep the animals healthy. Any dietary additives must only be given on veterinary advice.
2. Preparation of food: All chemical and bacterial contamination must be avoided when preparing food. Frozen food must be kept in a deep freeze below -28°C and used within four (4) months for mackerel and seven (7) months for other species.
3. Food distribution: The animals must be fed at least once a day (except on instructions from a veterinary surgeon). The diet of each individual must be in keeping with its particular characteristics (age/size/weight/pregnancy etc.).
4. Food must be given to animals, which are fed individually, by a trained person who must be sufficiently competent to measure the differences and variations in eating habits of the animals in order to ensure their good health.

## **6. Health Checks**

1. A programme of measures for illness prevention and control must be set up by a veterinary surgeon.
2. Every day a qualified person must be assigned the task of observing the animals, and must make a daily report concerning the health of each animal. Any health problems must be reported to the veterinary advisor as soon as possible.
3. Newly arrived dolphins must be kept apart from the other animals until it is sure they are in good health. Ideally the quarantine pool should have a completely separate water system.
4. A temporary isolation pool must be set aside in each establishment for animals which are sick or in quarantine. Such pools must conform to the standards laid down under 2.e. In addition to the medical log, the establishment must keep a health record for each animal.
5. An autopsy must be carried out in the event of every death. This must be carried out by a veterinary surgeon as soon as is practical after notification. Post-mortem reports must be kept by the administrative service of the establishment, and submitted on request to the government agencies responsible for health checks.

## **7. General Hygiene**

1. All waste (food remains, faeces, etc.) must be removed from the pool daily in order to prevent contamination and infection. The walls and floor of the pools must be cleaned as frequently as possible to maintain the quality of the animals' environment.
2. All utensils used in the preparation and distribution of food must be cleaned after use. The kitchens and areas for handling food must be washed down daily and treated with cleaning products (e.g. hot water, detergents, disinfectants, etc.).
3. Chemical products used for cleaning must not be stored in areas used for storing food. Those chemicals must not be harmful to the animals.
4. Buildings, and walls, must be clean and in good condition. Structures must be kept in good repair. Pools must not contain any sharp or pointed objects on which the animals could injure themselves and designed so that there are no areas where the water remains unchanged.
5. Regular precautions must be taken against flies and other pests. Pest control products must be used under veterinary supervision.
6. The personnel must have access to washbasins, showers and lavatories to ensure cleanliness necessary for the well-being of the animals and themselves.

## 8. General Ethics

1. No animals should be moved from one establishment to another without approval from the supervising governmental authority, except in case of emergencies, after which they should be informed at the earliest opportunity.
2. No dolphin should be sold, lent, or given to another establishment that does not comply to these standards.

## 9. Education

Each establishment should establish educational goals of their programmes. These latter should typically contain some of the following elements:

1. Interpretive graphics
2. Publications
3. Audio-visual aids
4. Presentation/Show \*\*
5. Special educational programmes, outside the establishment
6. Interactive exhibits
7. Exhibit design
8. Object based interpretation
9. Exhibit guides
10. Arrangements for teaching
11. Formal educational programmes
12. Special needs programmes

Close links should be forged with the local Education Authorities so that the maximum use can be made of the facilities available. Outside of display times, the animals should normally be allowed access to the whole pool complex, especially those with underwater viewing facilities.

## 10. Research

Serious scientific research should be encouraged and the animals made available for such studies. Contacts should be made with the relevant departments of universities to advertise this availability. The appropriate government departments should be aware of the facilities offered and available so that they may coordinate the studies being made on a wider basis. Many research projects which can only be carried out in a captive situation are of relevance to free living animals and this aspect of research should be widely promulgated. The scientific committee of the European Association for Aquatic Mammals should be made aware of such research, so that they may be of help in the coordination of such research programmes.

\* Salinity of marine research establishments is now measured in 'PSU', that is Practical Salinity Units. Internationally salinity has been redefined in terms of the conductivity of a KCl-solution at atmospheric pressure and a temperature of 15°C. The differences between this and parts per thousand are small, being nil at a salinity of 35.000 PSU and 20°C and only about 0.050 PSU at -2°C.

\*\* The commentary on these should focus on biological facts. Any confusing or foolish comments should be omitted. Anthropomorphic and comic performances should be omitted.





**acres**

Animal Concerns Research & Education Society

[www.acres.org.sg](http://www.acres.org.sg)



[www.earthisland.org](http://www.earthisland.org)