

REFUTING THE RESEARCH PROJECTS

Compiled by the Free Morgan Group, 21 July 2011

SUMMARY

This document has been written to offer a response to and to refute the Introduction Plan presented by the Dolfinarium Harderwijk to the CITES Commission, in order to obtain a CITES Permit to move the orca known as Morgan from the Netherlands to the facilities of the Loro Parque, Tenerife, Canary Island, Spain.

Points are numbered to facilitate the refuting process.

Each Research Proposal is discussed separately.

Where given, Abstracts of the original documents are cited in quotes and in italics.

DETAILS

1. “DEVELOPMENT OF IMMUNOASSAYS TO DETECT SPECIFIC ANTIBODIES IN THE SERUM OF KILLER WHALES”

Morgan is not mentioned in the proposal, nor how her presence at Loro Parque would be absolutely necessary to carry out the study.

The proposal states that to date, no antibody screening is possible for any wild orca population. Therefore the only possibility is working with serum of captive orca.

The immune systems of captive animals are weaker and different from those of wild populations. Given Morgan was captured from the wild, it could be argued that she has an immune system which is closest to that of a wild orca, especially when compared to the orca currently held in captivity. However, as Morgan has now been in captivity for over a year, and during that time received multiple medical treatments, which included antibiotics (van Elk, 2010), her immune system is no longer 'pristine' and 'wild'. Additionally, as Morgan has been living in a concrete tank, which in no way resembles a wild environment, her immune system has already been compromised in terms of a reference point to compare to a wild population.

(van Elk, 2010, report on Morgan the orca)

2. “DEVELOPMENT OF SOFTWARE TOOLS AND RESEARCH ON THE VOCAL CULTURE OF ORCINUS ORCA”

Morgan is not mentioned in the proposal, nor how her presence at Loro Parque would be absolutely necessary to carry out the study.

Furthermore, no mention is made regarding the intention to compare wild orca calls with captive orca calls and no mention is made about the intention to study vocal learning process and/or development. We would suggest that these are the only plausible reasons for using Morgan and that these types of research questions could be addressed if Morgan was kept in a semi-natural environment.

Nowhere in the research proposal is it stated that there is a specific need of wild orca acoustical recordings.

Therefore, it is logical to assume that any kind of orca calls would be suitable for testing the hypothesis and to conduct the experiment reported in the proposal. Extensive databases of both wild and captive orca vocalizations already exist so there is no necessity to use Morgan's calls, especially if the use of such calls is the justification for relocating Morgan. It could be argued that Morgan's vocalizations could provide new material to the aforementioned databases. This may be the case, but those recordings have already been made at the Dolfinarium Harderwijk. If required, more could be made in the semi-natural enclosure at DeltaPark Neeltje Jans and once Morgan is released.

This research proposal revolves around the aim of creating new software tools and new statistical analysis of vocalizations; as explained before, for these purposes any kind of orca call would be sufficient.

In 2010, Luke et. al.¹ conducted a study at Loro Parque to develop software and statistic analysis for orca vocalization. The study was based on different acoustic experiments conducted on the group of orca currently held at Loro Parque. Detection algorithms were implemented and tested, different techniques compared, and an event database created. The passive acoustic recordings made were successful, indicating that such experiments as proposed here do not require the addition of yet another orca to be physically present.

Such a study offers new knowledge and new tools for the automated processing of orca vocalization and was performed entirely with the group of orca already existing at Loro Parque.

For this reason we do not see the necessity to add another animal to the group in order to further test the hypothesis or to develop further techniques,

¹ Luke J.P.; Marichal-Hernandez J.G.; Rosa F.; Almunia J. "Real time automatic detection of *Orcinus orca* vocalizations in a controlled environment" 2010, Applied Bioacoustics 71, 771-776 doi:10.1016/j.apacoust.2010.04.003

“RESEARCH ON CONSERVATION RELATED ASPECTS OF THE BEHAVIOUR OF ORCINUS ORCA”

“Orcas (Orcinus orca) have a wide distribution and occur in three ecologically different forms. One form is resident and lives in family groups (pods) that develop clear dialects and feed exclusively on fish; whereas another form is transient, e.g. travelling along shorelines, occurs in smaller and less stable groups and feeds mainly on mammals.”

This particular Research Proposal has an Abstract (above) which discusses orca ecology and although accurate for the North Pacific orca populations, says little nor considers the other orca populations around the world. It certainly does not apply to the North Atlantic populations, for which the concepts of “residents and transients” do not exist. Rather the terminology would correctly describe the populations as “mammal eating, fish eating, opportunistic”.

In fact, considering the only resident and transient structures and generalizing them to the whole *Orcinus orca* species is inaccurate and out of date. Additionally, it is not only extremely limiting, but also shows a lack of acknowledgement for the wide range of different social structures and cultures of orca which have become commonly recognised.

“...we will investigate the degree of their behavioural coordination and take deviations as a tool for an early detection of any possible shift in the psychophysical state of the animals.”

It is unclear how the author of this proposal can begin to assume that the behaviours he wishes to observe in a captive environment could ever replicate those observed in the wild.

It is abundantly obvious that within a tank structure orca do not behave in similar manners to their wild counterparts and 'coordination' studies of a group of individuals who have all been born in captivity does nothing to enhance such a proposal. That these individuals have also been forced to co-habitate in an unnaturally confined space, which is devoid of any natural features or environmental cues, again reflects how unrealistic this proposal is in its attempts to relate its objective of “concentrating on normal behaviours”.

From a quick glance at the Material and Methods it can be assumed that this proposal was compiled by cutting and pasting from another document at it refers, in multiple locations to 'dolphins' (not orca).

Additionally, the author states that some of the devices he intends to use were to be built and tested on dolphins at Dolphin Reef, Eilat, Israel. That particular facility works with dolphins in a netted off natural bay with natural sand and coral benthos, totally natural sea water which is completely exchanged naturally through the tidal

fluxes of the area and is in no way controlled by humans. It is in no way comparable to the smooth-walled, featureless rounded tanks which the orca are contained in.

Furthermore, as this proposal was presumably originally compiled in 2004/2005 for submission as part of the original CITES application to bring orca to Loro Parque from the United States, it would have been anticipated that these 'devices' would have, by now (i.e., six/seven years since the original application was written) have been tested and if suitable for such research, articles published on them. However we were not able to locate any paper which cited this work as completed. More tellingly, perhaps is the fact that the author has obviously not been contacted to update the proposal.

As stated by the author, in nature orcas are highly coordinated animals, they have been seen travelling, hunting and sleeping in groups (e.g., “resting lines or groups” Ford et al.1994).

Being highly social they are also presumed to be in constant acoustic contact, not only among members of a group but also between groups, especially when swimming outside visual range.

This coordination is linked to their complex social structures. The introduction of a new member into a human constructed 'group' of orca, such as that at Loro Parque, would most likely have a significant impact on both the animals already at Loro Parque and on Morgan.

It is easy to question how it is possible to conduct a series of experiments on behavioral coordination and obtain realistic data with orca who originate from different places, different pods and moving in the restricted space of a pool, in water that is shallower than the normal range these animals normally found in and in an echoing environment that apparently creates an environment where the orca no longer use their echolocation on a regular basis.

It is well known that echolocation is a formidable tool that cetaceans use to navigate and for hunting, travelling, searching for other conspecifics.

A lifetime spent in a concrete tank that reflects every sound emitted and echoes it back, results in acoustic pollution, which must be particularly offensive for sensitive cetaceans.

Moreover, orca learn each and every structure present in their enclosure and very often are seen swimming with their eyes closed and without echolocating whilst swimming.

In such a limited environment and in an artificially constructed social group of orcas, we find it hard to believe that any valuable information can be gleaned which will be effective in regarding their coordination in nature.

As Prof. Todt writes, “However, further experiments are necessary to clarify the role of echolocation in a marine mammal's life under tank-related conditions.”

We also fail to understand how the behavioural coordination can be used as a proxy for “*psycho physical state of the animals*”; unfortunately the research proposal is not clear in this respect. But perhaps of most significance is that there is absolutely no need for Morgan to participate in such an experiment as there are already orca present at Loro Parque who could fulfill the role which Prof. Todt proposes.

Ford, J. K. B., G. M. Ellis, et al. (1994). Killer whales: The natural history and genealogy of *Orcinus orca* in British Columbia and Washington State. Vancouver, University of British Columbia Press.

“Common criteria of good housing and caring conditions are successful reproduction as well as the life span of offspring and adults.”

It's been discussed already elsewhere (see Visser and Hardy 2011 and RESPONSE TO van Elk DOCUMENT with regard to FREE MORGAN RELEASE AND REHABILITATION PLAN) that the captive orca lifespan is significantly shorter than that for wild orca, therefore we fail to understand how such a reduced life can be a criteria for “good housing and caring conditions”.

Furthermore, “good husbandry and caring conditions” are in no way proof of animal welfare but only part of a captive animals requirements for wellbeing. For instance, medical care can produce healthy animals but not necessarily fit ones.

“Projects (1) and (2) will concentrate on the animals' normal behaviours, e.g. parameters of their vocalisations and measures of their motor coordination”.

Again we fail to understand, given all the details listed above, how the echolocation performed in a concrete tank can resemble that performed in the open ocean and how motor coordination can be measured using animals moving in such a restrained space.

“Projects (3) and (4) will deal with tests designed to identify possible problems that Orcas could face either in a given enclosure or, in particular cases, also in the wild and especially if (in a theoretical case) being released to the open sea.”

We believe that the semi-natural sea-pen in Neeltje Jans would be a more logical setting under which such kind of studies may be more realistic.

The variety of the environment in such location (coarse sand beach, opening towards towards the Scheldt estuary, stone walls) and the novelty of the setting would offer more clues regarding how an orca (Morgan) can change its echolocation pulses according to the different substrates and structures they come across.

Moreover, during the next phase of Morgan release, another sea-pen will be set up along the Norway coast. This will result again in a different environment that would provide a different data set.

A tank on the other hand is by definition a boring and monotonous environment. In particular, the pools at Loro Parque “... are constructed from reinforced concrete with a strength of 35 N/m². The intention of the construction method is to build watertight pools that

do not require the addition of a waterproof coating. All surfaces are smooth and without holes or cracks and all corners, door entrances, wall tops etc. are rounded with a 50-centimeter radius.”

“In the window Paradigm research, the new device will allow to present the animals with an “echo-free” area simulating a “window” in the enclosure's wall.”

Even though this project may *possibly* offer some relief to the orcas in the pools, providing them a sample of echo-free surface, we believe that this approach might also hold some potential dangers: the animals are acquainted with the pools and know the structure of every enclosure perfectly. If they swim with their eyes closed and may occasionally rely on echolocation to avoid the walls, therefore, if the “echo-free” window was present, they may collide with the concrete wall.

Projects 1,2,3,4 will establish the baseline for the behaviour; “*founded on the results of these projects, a further approach (5) will serve to develop and test procedures which allow to improve the conditions of Orca housing, and also to enlarge the current knowledge in Orca Conservation, or to stimulate a novel discussion on Orca Rehabilitation*”.

We believe that the rehabilitation and release plan we propose for Morgan would be ground breaking to learn and apply appropriate experiments and research. We do not believe that condemning yet another orca to captivity will enhance the life of any or all orca in captivity. With the advances in technology and all what's been learned from the previous releases (Springer and Keiko), it is more logical and ethical to release Morgan.

RESEARCH PROJECT 4 “PATRONES DE ALIMENTACION DE ORCAS (ORCINUS ORCA) EN EL ESTRECHO DE GIBRALTAR A PARTIR DE ISOTOPES STABLES (13C Y 15N) MEDIOS EN EJEMPLARES EN LIBERTAD Y EJEMPLARES AN CAUTIVIDAD”

We regret that the only version presented of this particular research proposal is in Spanish, unfortunately no one within the Free Morgan Group is a native Spanish speaker.

However, some of us have a reasonable comprehension of written Spanish and have attempted to translate the document.

The sound scientific approach proposed in this study concentrates in studying the wild population living around the Gibraltar Strait.

The research questions concern the investigation of the population diet via stable isotope markers (15N and 13C) which are widely used in ecology to study food web interactions and predator-prey dynamics. These techniques have been improved and nowadays many studies have utilized stable isotope as tracers and/or markers even in

the deep see.

Most of the research is proposed to be applied in the wild and would allow to understand better the prey preference of the Gibraltar orcas, specifically if they are uniquely praying on red tuna or if during certain months of the year they prefer a different diet.

To obtain baseline data for the calculation of the tissue specific correction factors for the isotopic fractionation are necessary. The appropriate method is to gather tissue samples from animals with a known diet. For instance, those held in captivity.

It's clear to the readers that within the frame work proposed for this Research Project that this is not possible in a natural environment because in such setting it's impossible to control the diet; therefore, using samples from captive animals is a solution.

Previous analysis regarding turn-over rate of such tissues need also to be determined and for this as well captive orca samples are a possibility.

However, as in all the previous studies, no mention is made regarding Morgan and how her presence within the captive orcas used for the experiment should provide new and valuable information.

Considering that the analysis of tissue samples of captive orcas will be needed only to determine base line values to which compare wild orca samples, it appears clear that any captive orca will do and for sure there are enough captive orca specimens to run the tests and the experiments, without the need to add Morgan to the collection.

CONCLUSION (all research proposals)

After broad analysis of all the research proposals submitted by the Dolfinarium Harderwijk, it remains clear that Morgan's presence is NOT required or conditional.

Morgan is not mentioned in any of the studies, with the acception of the 'introduction' plan and likewise, in none of the proposals is her supposed added value explained.

It's our firm belief that all the research proposal projects can be carried out successfully without Morgan using the existing collection of captive orcas that Loro Parque has. It should also be noted that for some of the proposed studies the addition (to the existing group of orca) of a new young individual would be detrimental for various reasons. For example, *inter alia*; a new individual disrupts the fragile equilibrium already existing in a consolidated group, therefore coordination experiments would result biased.

A former wild, now one year captive young individual, that undergoes antibiotic

treatment and is provided dead food cannot offer samples that in any possible way represent the wild natural immune system characteristics, therefore using those samples to develop viral tests or any other kind of protocol to clearly detect infections or pathologies would be useless.

Moreover, the development of acoustic software and or statistical analysis for the treatment of acoustic signals can be done with any recordings from any captive or wild orca calls; experiments conducted on echolocation in a pool can be done with the existing collection of captive orcas and do not require any other new member, still resulting however in reliable and qualitative sound data.

Morgan is not required for these research proposals and they are just a mask to cover that the facility wishes to obtain Morgan for breeding purposes and for commercial display.