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Mission to explore different options for the future of cetaceans at Marineland d'Antibes

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The authors certify that none of their past or present activities have affected their impartiality in the drafting of this report.

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Summary

The law of November 30, 2021 aimed at combating animal mistreatment and strengthening the bond between animals and humans provides, with regard to cetaceans, for an end to shows and a ban on their reproduction in captivity as well as their detention by December 1^{er} 2026 with, however, possible derogations for refuges or sanctuaries and for scientific research purposes.

Of the two cetacean establishments in France, Marineland d'Antibes, which at the time of writing owns two orcas and 12 bottlenose dolphins, does not wish to enter into this derogatory framework and therefore plans to part with its animals. To this end, it has entered into a contract with a Japanese water park willing to take in the animals, which is meeting with strong opposition from animal protection associations, who consider the transfer to be contrary to the spirit of the law, as it would lead to a deterioration in the animals' well-being.

In this context, the IGEDD's mission is to explore and compare the different options for the future of Marineland's cetaceans, taking into account regulatory and legal aspects, as well as animal welfare.

After meeting with all stakeholders, and in particular Marineland's management and teams, as well as government departments, scientists, associations and sanctuary project sponsors, the mission proposed to the DEB that a call for expressions of interest be issued concerning the creation of a sanctuary as an alternative to transferring the animals to another dolphinarium.

- On the basis of the responses received to this AMI, comparing them with the reception conditions of the two aquatic centers that have given their agreement to receive orcas and dolphins, and after consulting a panel of experts on captive and wild cetaceans, the mission was able to make the following recommendations: With regard to orcas, it considers that only the Nova Scotia sanctuary project, led by the *Whale sanctuary project*, meets the criteria of the AMI in terms of technical quality, feasibility in terms of deadlines and financial sustainability, even if the project is of an experimental nature which involves an inherent element of risk.
- The only acceptable alternative to the orca sanctuary would be to place them at Loro Parque in Tenerife, which has the advantage of having facilities ready to accommodate both specimens in addition to those already present, under conditions similar to those at Marineland.
- As far as bottlenose dolphins are concerned, the proposed sanctuary on St Paul's Island at the entrance to the Gulf of Taranto is likely to be able to accommodate 2 to 4 individuals in good conditions in the near future. In the absence of other sanctuaries identified by the mission, the other dolphins will have to be distributed, in part, to Loro Parque and other European dolphinariums yet to be determined.
- In all scenarios, Marineland's full cooperation and the maintenance of social ties between individuals (especially orcas) are essential to their well-being, in addition to the quality of the infrastructure and care provided.
- In the case of animals placed in sanctuaries, and in an attempt to put an end to controversy, the mission recommends that scientific monitoring be carried out by researchers using recognized protocols, so that results can be analyzed and useful lessons drawn for future sanctuaries.

List of recommendations

Recommandation 1.

[DEB] Ensure full cooperation with Marineland in the transfer project, taking into account as much as possible the constraints of the group but also the support of the staff who take care of the cetaceans for preparation, transport and if possible after their arrival in the reception structure.31

Recommandation 2.

[DEB] Establish scientific partnerships with research institutions for the monitoring of animals placed in sanctuaries on the basis of protocols validated by a committee of experts. 32

Recommandation 3.

[DEB] Propose that Marineland initiate team collaboration with the WSP in order to examine the feasibility of an effective transfer to the sanctuary in the coming months, and at the same time start discussions with Loro Parque on the future of the animals.34

Recommandation 4.

[DEB] Propose to Marineland to distribute the dolphins between the Ionian dolphin conservation sanctuary in Taranto, the Loro Parque and other dolphinariums and ask it to facilitate exchanges between the teams for the carrying out transfers34

Introduction

Over the past decade and with the rise of opinion movements in favor of animal welfare, the issue of keeping marine mammals held in captivity in zoos and aquariums has gained significant momentum, particularly since the release of the documentary *Blackfish* in 2013¹ which had a strong impact on the general public in the USA and Europe.

Since then, the controversy has grown between supporters of abolishing cetacean captivity on ethical and animal welfare grounds, and representatives of zoos and aquariums. The latter emphasize their educational and scientific role in the conservation of endangered species, the standards set to ensure their well-being, and the fact that the vast majority of animals held are born in captivity and unfit to survive in the wild. The question of the welfare of these captive animals, which is at the heart of the debate, is often based on data that are poorly supported by scientific studies.

In any case, to respond to this societal concern, after an attempt in 2017 to ban them by ministerial decree, annulled by the Conseil d'Etat, Law no. 2021-1539 of November 30, 2021 aimed at combating animal abuse and strengthening the bond between animals and humans provides for an end to cetacean shows and a ban on their reproduction in captivity. As a result of parliamentary debates, the proposed law, which initially envisaged keeping animals in dolphinariums until they died, was amended to include a requirement that no more animals be kept in dolphinariums by December 1^{er} 2026, with exemptions for shelters and sanctuaries and establishments carrying out duly evaluated scientific research.

However, the short-term extinction of dolphinariums in France has not put an end to the polemics and attacks targeting the two establishments concerned², whether with regard to Marineland for alleged mistreatment and against plans to send the orcas to another water park abroad, or to Planète sauvage concerning the reality of the scientific research carried out there, which could justify keeping its dolphins.

At the same time, the search for alternatives to captivity (placement in a refuge or marine sanctuary), provided for by law and recommended by the CGEDD report published in 2021³, has made little progress, despite a call for tenders launched in 2023 on this subject but which proved unsuccessful.

It was against this backdrop that, faced with preparations to ship Marineland's orcas to Japan and strong opposition from certain animal rights associations, the French Secretary of State for Biodiversity commissioned the IGEDD to explore the various options for the future of the cetaceans held at this facility.

The mission set out to study the various options for killer whales, notably through a simplified call for expressions of interest, and to explore a few options for bottlenose dolphins on the basis of the same criteria as for killer whales, without however, for lack of time, aiming for exhaustiveness.

¹ Documentary film, largely centered on the life of the orca Tilikum at the Sea World aquatic park in Orlando, Florida, and the three fatal accidents involving its caretakers, as a plea against keeping these animals in captivity.

² In addition to Marineland, this includes the Planète sauvage park in Port-Saint-Père. Parc Astérix, meanwhile, closed its dolphinarium in January 2021, just before the law was passed.

³ Galibert T. and Lhote C. Le placement des animaux sauvages vivants. CGEDD Report May 2021

1 Background and order

1.1 Law no. 2021-1539 of 2021 provides for the eventual closure of establishments holding cetaceans.

Law no. 2021-1539 of November 30, 2021 aimed at combating animal abuse and strengthening the bond between animals and humans provides for concerning cetaceans as of December 1^{er} 2026 (article L. 413-12 of the Environment Code):

- a ban on cetacean shows and direct contact between cetaceans and visitors;
- a ban on keeping and breeding cetaceans in captivity, with the exception of captive wildlife sanctuaries and MTECT-approved research programs.

At present, two establishments still keep cetaceans in France: Marineland d'Antibes (06) with 2 orcas⁴ (*Orcinus orca*) and 12 bottlenose dolphins (*Tursiops truncatus*), and the Planète sauvage zoological park in Port-Saint Père (44) with 11 bottlenose dolphins.

Faced with this obligation to comply by the end of 2026, the two establishments have adopted different strategies: while the Planète Sauvage zoological park is preparing an application to obtain authorization to keep cetaceans for research programs, including participation in European breeding programs, Marineland d'Antibes is planning to send its cetaceans to a Japanese dolphinarium, and to convert its activities - most of which are located in flood-prone areas - into an aquatic theme park without keeping animals.

Marineland, owned by the Spanish leisure group *Parques Reunidos*, explains that the decision was taken for economic reasons: sales have been falling in recent years, while animal maintenance costs remain very high and facilities require new investment. This fall, accelerated from 2020 by the Covid pandemic, is attributed to an image deficit in the context of the law and societal pressure exerted by certain associations and the media.

As for the orcas, considering it impossible to find structures in Europe capable of accommodating them, Marineland has established contacts and signed a contract in 2023 with the *Kobe Suma Sea World* park in Kobe, Japan, which has built facilities to accommodate orcas.

A number of animal protection associations, who had been very active in the campaign to have the ban on dolphinariums enshrined in law in the name of animal welfare, were moved by the proposed transfer to a country that still practices whaling, does not have legislation equivalent to European countries in terms of animal welfare, and has infrastructures that do not represent an improvement in detention conditions. They therefore consider that a transfer to Japan would be a betrayal of the spirit of the 2021 law.

Demonstrations, widely reported in the press, took place in front of Marineland as the animals were being prepared for the transfer, raising fears of public order disturbances when they were shipped out.

⁴ Inouk, the adult male killer whale, died during the mission

The associations have also lodged complaints, leading to two legal proceedings:

- one civil case was the subject of an interim injunction issued by the Court of Appeal of Aix-en-Provence on 17/01/24, requesting an expert report on the health of the orcas by two veterinary experts and imposing a ban on moving the animals until the final expert report is submitted (expected in the autumn), subject to daily penalty payments in the event of non-compliance with the ban,
- the other is being investigated by the Grasse court on criminal charges of animal mistreatment following the death of the orca Moana in October 2023 (the autopsy revealed septicemia linked to a bacterial infection with the germ responsible for red mullet, common in marine mammals).

Adult male killer whale Inouk died on March 27, 2024. An autopsy revealed death by peritonitis due to intestinal perforation by a foreign body. This leaves Marineland with just two orcas - Wikie, a 23-year-old female, and her son Keijo, a 10-year-old sub-adult male - and 12 bottlenose dolphins.

1.2 An initial order whose deadlines were altered by the judicial calendar

In a letter dated January 4, 2024, the chief of staff of the French Secretary of State for Biodiversity asked the IGEDD to conduct a mission to explore and compare the various options for the future of the cetaceans held at Marineland. In particular, it is asked to examine :

- the advisability of transferring to other leisure/zoological parks or other refuge or sanctuary-type structures,
- the feasibility of such a transfer under existing regulations, in particular CITES⁵ , the orca being a protected species whose international trade is regulated (Annex II of the Washington Convention, but Annex A of European regulation no. 338/97 of December 9, 1996),
- the comparison of these different options in terms of animal welfare, timescales, technical feasibility and available funding, as well as public and stakeholder acceptability and legal certainty.

This initial order, whose terms and deadlines were dictated by the probable imminence of a transfer of the Marineland orcas to the *Kobe Suma Sea World* and the decision to be taken by the MTECT⁶ whether or not to issue a CITES export certificate, has been reformulated with the agreement of the clients. The summary judgment of the Aix-en-Provence Court of Appeal of 17/01/24 provides for a ban on moving the animals until the final veterinary expert report is submitted, which is not expected before autumn 2024.

The slackening of the timetable has enabled the mission, in agreement with the MTECT cabinets, to continue its investigations and exchanges, broadening the circle of partners involved in the search for alternative scenarios, and postponing the submission of its proposals until June 2024.

⁵ International Convention on Trade in Endangered Species of Wild Fauna and Flora (Washington Convention)

⁶ Ministry of Ecological Transition and Territorial Cohesion

1.3 Situation at Marineland

1.3.1 Animals mostly born in captivity or kept for many years

At the time of writing, Marineland holds :

- two orca specimens, a captive-born adult female of reproductive age (Wikie), aged 23, and her son (Keijo), a 10-year-old male who has not yet reached adult size or sexual maturity;
- twelve specimens of bottlenose dolphins, divided into two groups of five (mothers, two of them quite old, captured in the wild in the early 1980s, and their youngest offspring, housed in the former orca tank built in 1985 and equipped with bleachers, where they take part in shows) and seven (youngsters born in captivity, housed in the "lagoon" built in 2005, where they are in contact with the public, who are allowed to enter the tank in small groups. Reproduction is now blocked by progestins and separation of females in estrus by the park veterinarian.

1.3.2 A dolphinarium doomed to close

1.3.2.1 Economic history and geography of the site

Marineland, supplied with filtered seawater thanks to its proximity to the Mediterranean, tempered by the inertia of the basins but not refrigerated, opened in 1970 with two specimens of orcas, the park's emblematic species from the outset and highlighted in its communications.

In the 1980s, it diversified into other leisure parks (including Aquasplash, a water park with slides), and in 2015, into hotel accommodation (in its constructible part). A cetacean research center was added in 1998, and a sea turtle care center was created in 2017. The current orca tank (44 million liters, 5 connected tanks) was built in 2000.

In October 2015, flooding in the Alpes Maritimes caused damage to facilities and the loss of several animals.

As Antibes' main economic and tourism player, Marineland reports a steady fall in profitability over the past 10 years, which it attributes to the constant pressure exerted on dolphinariums by the media and associations (demonstrations and legal proceedings), reinforced since the law was passed in 2021 and combined with the effects of flooding and then the Covid-19 pandemic in 2020 (confinements).

1.3.2.2 Group strategy and leisure park conversion project

The *Parques reunidos* group bought the park in 2006. The park's current director, Pascal Picot, has been in post since 2017. In 2022, the group's shareholders decided to abandon the Marineland brand and all animal presentation activities to the public, and to begin work on transforming the site into a water park without accommodation. A redundancy plan is being studied. The first step in this process is to transfer the cetaceans and then the other animals to the network of European or non-European zoological parks.

1.3.2.3 Current expectations of elected representatives

Jean Leonetti, mayor of Antibes since 1995, supports the park, a major economic player in the region. Initially in favor of keeping the cetaceans on site by relaxing the law, he is now siding with the arguments of the Marineland group and management, who wish to hasten the animals' departure, given the ongoing conflict and litigation that weighs on the employees and generates a risk of disrupting public order.

1.3.3 A contentious and mediatized context with associations

1.3.3.1 Media and social pressure

The U.S. documentary *Blackfish* (2013) marked the strengthening of associative mobilization and accelerated societal awareness of the animal welfare and carer safety issues posed by keeping cetaceans in captivity and exploiting them commercially. Numerous press articles (*Nice Matin*, *Le Monde*, *Reporterre*, *Géo*, *Le Figaro*, *Le Point*...) illustrate the growing media coverage of the actions of various French animal protection associations (notably *One Voice* and *C'est assez!*). The expansion of social networks (*Instagram*, *Twitter/X*, *Facebook*...) enables their message to be relayed to a vast audience.

While they do not propose a consensual sanctuary solution (different projects supported by *One Voice* and *Sea Shepherd France*), or even criticize competing projects, the associations are unanimous in denouncing the planned transfer of orcas for public display and breeding at *Kobe Suma Sea World*. Some, like the marine animal protection association "*C'est assez*", regret that the government did not anticipate the transition from the animals' point of view between the adoption of the law and its entry into force, and are concerned that the transfer to a sanctuary for this species would be too long, costly, complex and risky.

1.3.3.2 Past and current administrative and legal proceedings

The animal protection association *One Voice* has been multiplying complaints against the park for mistreatment since 2019.

In November 2023, following the death in October of the orca *Moana* from bacterial septicemia, two veterinarians appointed by the French Secretary of State for Biodiversity carried out an assessment, which did not call into question the clinical condition of the three orcas housed at the time, nor their environmental conditions.

In January 2024, *One Voice* went to court to demand a new expert report, forcing the park to keep the orcas for at least four months. The summary proceedings, which are still underway, are being monitored by the Grasse judicial court. Noting that the park was training the cetaceans to enter a stretcher in preparation for their potential move to Japan, *One Voice* took *Marineland* to court to force the park to keep the orcas while two veterinary experts carried out an independent legal assessment of the facilities (state of the basins, water quality) and the animals' state of health. During successive interviews, the park's management did not rule out a departure of the animals despite the court-ordered injunction to keep them on site in January 2024, on pain of penalty payments, considering that it is prepared to suffer the financial consequences. Such a departure would, however, raise the question of the granting of a CITES export permit by the DREAL PACA in defiance of the court order, a permit which the park plans to apply for over the summer.

At the same time, *C'est assez!* has appealed to the *Conseil d'Etat* to ban all commercial transfers of captive cetaceans from France to foreign countries, except in the case of transfers to marine sanctuaries.

In April 2024, following the sudden death of orca *Inouk* in March (intestinal perforation and

peritonitis following ingestion of a foreign body), C'est assez ! has launched a new emergency procedure before the Nice administrative court (juge des référés), to ask the prefecture to give Marineland formal notice to take all necessary measures to protect the last two orca specimens held. The association is calling for the orcas to be transferred to the dolphin tank while the orca tank is being refurbished.

The pressure exerted by activists in the field, combined with the presence of the media and the multiplication of legal actions, seems to have contributed to accelerating the park's decision in principle to dispose of the animals, but also to postponing their transfer to Japan and mobilizing the French authorities to urgently find an alternative solution. It has also undoubtedly led to the abandonment of a scenario in which the animals would remain in the park by means of work and a scientific program, given the strain this would place on Marineland's management and employees, and to the breakdown of dialogue on a possible transfer to a sanctuary, which would require mediation efforts if it were to be completed at present.

1.4 Legal considerations concerning the positioning of MTECT

It is worth recalling at this point the legal framework in which the State's intervention takes place. The planned transfer is in fact a transfer operation (free transfer) between two private structures holding animals presented to the public. The State is only formally involved in issuing (or not) a CITES export certificate (issued by the Direction régionale de l'environnement de l'aménagement et du logement (DREAL PACA)) and a health certificate for transport (issued by the Direction départementale de la protection de populations (DDPP 06)). Whatever pressure may be brought to bear by associations, the media and Marineland on the French Ministry for Ecological Transition, whose regional departments are responsible for issuing CITES permits, the decision to issue or refuse to issue an export permit must necessarily be based on legally sound grounds, given the likelihood of any of the parties appealing against the precise decision.

When consulted by the mission, the Ministry's Legal Affairs Department (DAJ) considers that the legal risk is largely averted from the point of view of CITES export permit issuance: a priori, there is nothing to prevent the departure of the animals, insofar as they are fit for transport and the dossier provided by Marineland is sound.

Given Marineland's plan to convert its activities into an amusement park without keeping animals, the high cost of maintaining the animals (around €500,000 per year per killer whale) and the legal costs incurred, the financial consequences for the French state if it decides to oppose the departure of the two killer whales are likely to be greater than if the decision is to grant the permit. In fact, since its decision to sell the orcas is a direct consequence of the provisions of the law of November 30, 2021, Marineland could be entitled to demand that the State pay the costs of cancelling the departure and maintaining the animals kept at Marineland against its will, or even the financial losses incurred by the delay in the conversion plan, until such time as a solution is found.

2 The various options studied by the mission

In view of the risks of litigation mentioned in the previous chapter, the mission has endeavored to explore all possible solutions in full transparency with Marineland's management and staff, as well as the other parties involved.

Two of these were ruled out: releasing the animals back into the wild is doomed to failure, as most of them were born and bred in captivity, unable to hunt or feed themselves, have never eaten live fish⁷ and seek human contact, which could also pose safety problems. Similarly, euthanizing the animals, which are currently in good health, seemed morally and politically unacceptable, particularly in view of their high emotional and symbolic value. The mission therefore explored three scenarios:

- keeping cetaceans in the existing, refurbished structure (renovated and enriched basins), and converting it into a refuge under the provisions of law no. 2021-1539,
- shipping cetaceans to one or more other aquatic parks abroad (an option currently chosen by Marineland in conjunction with KSSW),
- the housing of cetaceans in one or more "sanctuaries" designed for this purpose in semi-natural captivity conditions, in France or abroad.

2.1 A reminder of definitions

2.1.1 Water parks

For the purposes of this report, these are zoological establishments (commercial operations) of a fixed and permanent nature, presenting to the public live specimens of local or foreign fauna, in this case marine fauna, including cetaceans (dolphinariums authorized to present orcas and/or dolphins to the public), whether or not involved in demonstrations or shows (which presuppose the animals have been trained).

Marineland is an establishment open to the public which keeps animals of non-domestic species (articles L413-1 to L413-5 of the CE). The opening of such establishments is subject to a decree by the Conseil d'Etat, and those in charge of the establishment must hold a certificate of competence for the care of animals of the species held.

In addition to legal obligations, in the face of criticism concerning animal welfare and to lend credibility to the role of zoos in the conservation of endangered species, zoos have formed national and international networks to promote standards of housing and care, as well as the involvement of zoos in cooperative programs and animal exchanges linked to in situ conservation programs.

Marineland is a member of AFDPZ and EAZA⁸. It is also a member of EAAM.⁹

⁷ It should be noted, however, that Marineland's orcas sometimes catch gulls venturing into their tanks.

⁸ Association française des parcs zoologiques and *European association of zoo and aquarium*

⁹ *European association for aquatic mammals*, dedicated to marine mammal conservation since 1972

2.1.2 Refuges or sanctuaries for captive wild animals

The notion of sanctuary was most recently defined by the law of November 30, 2021 in its article 47: "A refuge or sanctuary for captive wild animals is a non-profit establishment welcoming animals of non-domestic species, captive or having been captive, having been the subject of an act of seizure or confiscation, found abandoned or placed voluntarily by their owner who wished to relinquish them (Article L413-1-1 of the Environment Code).

The operator of a refuge or sanctuary for captive wild animals must hold a certificate of competence for the activity of breeding the animal species present on the site when there is no presentation to the public. In the event of presentation to the public, the certificate for this activity is required.

The establishment must have been authorized in accordance with article L. 413-3. In a refuge for captive wild animals, the animals must be kept under conditions designed to satisfy the biological needs, health and natural behavior of the various species, in particular by providing facilities, equipment and enclosures adapted to each species.

Any activity involving the sale, purchase, rental or reproduction of animals is prohibited. The presentation of training acts and any direct contact between the public and the animals on the initiative of the visitor or the staff of the refuge or sanctuary are forbidden".

While the legislator makes no distinction between sanctuaries and refuges, the former generally refer to establishments that take in confiscated, seized, abandoned or stray wild animals on a temporary basis, whereas sanctuaries are intended to take in wild animals on a permanent basis throughout their lives, ensuring the best possible living and welfare conditions adapted to their physiological needs.

2.1.3 Marine sanctuaries

The concept of a "marine sanctuary", to be distinguished from the¹⁰ marine protected areas of the same name, involves placing the animals in an enclosed space in a natural environment, with the infrastructure and personnel to provide all the care currently provided by Marineland. The term "marine enclosure" would therefore have been more appropriate. Apart from the release of the orca Keiko¹¹, an enclosure housing two belugas in Iceland, and a few bottlenose dolphin projects, notably in Bali, very few experiments of this type have been carried out to date. In fact, the lack of scientific evaluation and long-term support means that the many questions raised about the sustainability and welfare benefits of this type of facility, compared with keeping animals born and bred in captivity in land-based tanks, remain unanswered.

To explore this option, in early 2023, MTECT's Water and Biodiversity Division launched a call for tenders for a feasibility study on the creation of one or more marine enclosures for cetaceans in France. This included (i) a diagnosis of the French captive cetacean population, (ii) a description of the reception structures and travel arrangements, (iii) a financial analysis and (iv) project monitoring arrangements. The tender, which covered several lots and took almost 12 months to complete, proved unsuccessful.

¹⁰ For example, the Pelagos Sanctuary, which brings together France, Italy and Monaco to protect cetaceans in the Ligurian Sea and the Gulf of Genoa.

¹¹ Keiko, made famous by the film "Save Willie", was released into a sea pen in Iceland to rehabilitate him for life in the wild. When his enclosure broke up, he migrated to the Norwegian coast, where he died a few months later.

Nevertheless, a number of associations came forward to propose a solution for the future of Marineland's orcas, a solution they consider to be the best in terms of well-being and ethics.

In contact with Marineland's management, the latter expressed a willingness to collaborate in the search for a solution for the cetaceans' future, and to *ultimately* defer to the Ministry's decision, insofar as it does not call into question Marineland's project to convert the park into an amusement park, and the timeframe envisaged (start of work in 2025).

Consequently, the mission proposed that the French Secretary of State for the Sea and Biodiversity launch a call for international expressions of interest for a sanctuary project capable of housing the three orcas at Marineland¹², so that all projects would be subject to the same set of criteria (cf.§2.2).

With regard to bottlenose dolphins, which receive less media attention and for which solutions appear easier due to the number of potential host structures, the relative logistical ease of transfer and a handful of past sanctuary experiences (whereas only the "Keiko" experiment was carried out on orcas), no formal call for expressions of interest was launched. However, the same criteria were applied to consider the various options identified by the mission on the basis of the needs of the species in captivity, as defined by the experts consulted for this purpose.

2.2 Call for expressions of interest in sanctuaries :

2.2.1 Questionnaire, evaluation methods and criteria

In keeping with the spirit of the Animal Welfare Act, the French Secretary of State for the Sea and Biodiversity launched a call for expressions of interest (AMI) for a sanctuary project to house the two orca specimens housed at Marineland d'Antibes. The aim was to assess the alternative solution to transferring the orcas to a zoo abroad, in the form of a transfer to a "sanctuary", in France or abroad, within 12 to 24 months.

The AMI for the sanctuary project to house the two orca specimens housed at Marineland d'Antibes had several objectives:

- put an end to the captivity of orcas, in compliance with French law,
- examine the technical and financial feasibility of a marine enclosure to house Marineland's two orcas in France or abroad,
- guarantee respect for animal welfare and develop a scientific approach that can be reproduced for use with other captive cetaceans and/or for their preservation in the wild.

The call for expressions of interest was open to any interested non-governmental organization and/or public research establishment, in France or abroad.

The project managers had to be able to justify the biological, technical, regulatory and financial conditions for moving cetaceans into marine enclosures. The accommodation structure on a natural site by the sea had to be compatible with the welfare requirements of specimens born in captivity. To this end, various documents concerning the

¹² Reduced to two orcas with the death of Inouk in March 2024

technical characteristics of the project, its operation and its financing model were required (see appendix 3)

Letters of support from recognized figures or organizations in the field of environmental protection and animal welfare were also requested, and in the case of collaboration with a public research institution, the memorandum of understanding and commitment of the consortium members. Applications had to be submitted by April 30, 2024 at the latest.

To evaluate the projects (from May 1 to May 31, 2024) in the light of the best available scientific knowledge, three experts working on cetaceans in captivity and in the wild, and members of the jury appointed by the Ministry to examine scientific programs for the maintenance of cetaceans in captivity, have been called upon¹³

The Water and Biodiversity Directorate then drew up a technical opinion with the support of the mission, which had previously interviewed the project sponsors, with the exception of the Sibylline Océans project, which was submitted on time but received by the DEB with a delay.

The aim of this process was to select the project best able to accommodate the animals in the best possible conditions and within a reasonable timeframe: the sanctuary must be up and running and the animals transferred as quickly as possible, ideally before September 30, 2025 and no later than March 1, 2026.

2.2.2 AMI results for sanctuaries

2.2.2.1 Cetacea project

Cetasea is a small non-profit organization (under the French law of 1901) founded in 2015 by a former zookeeper to protect marine species. It brings together some twenty scientists, caretakers and conservation professionals who are campaigning for the creation of a rehabilitation center in France to take in animals in distress.

The aim of this project, proposed with the help of an architect, is to build a dolphinarium as a refuge for marine mammals in distress, whatever their origin. No precise site has yet been identified. The dossier gives only very general information. Many fundamental elements are not provided (budget, date of delivery of the site/center, personnel, animal welfare monitoring, etc.). Financial support is requested. There are no scientific references. The dossier remains superficial, the project is not ready, is not dimensioned and does not clearly position itself for the reception of orcas. Its only strength is the technical competence of the people involved, who have worked with captive cetaceans, but in its current state the project is unrealistic and deemed incompatible with the objectives of the AMI.

13 David Lusseau, Professor, Danish National Institute of Aquatic Resources, Section for Ecosystem-based Marine Management,

Fabienne Delfour, PhD in ethology and ketology, researcher at the Ecole Nationale Vétérinaire de Toulouse, associated with the Laboratoire d'Ethologie Expérimentale et Comparée at the University of Paris 13,

Christophe Guinet, Deputy Director, Centre d'Etudes Biologiques de Chizé - Director of Oceanology, Université Aix-Marseille 2 - CNRS Research Director - Equipe Prédateurs Marins.

2.2.2.2 Tilikum's spirit project

Tilikum's Spirit (named after the orca at the center of the Blackfish documentary) is a very young association (created in 2023) by a campaigner for the protection of equines and domestic animals, in opposition to Marineland's plan to transfer the 3 orcas Inouk, Wikie and Keijo from the park to Japan.

The Tilikum's spirit project proposes to take over and transform Marineland's infrastructure into a refuge-type space keeping most of the animals on site. This proposal encompasses all the animal species present on the site, not just the orcas, and takes a medium-term view of the situation, as the park plans to dispose of all its animals fairly quickly with a view to conversion.

Keeping the orcas at Marineland is undoubtedly the best scenario from the point of view of the animals, the groomers, the veterinarian and certain associations (C'est assez), but such an option is radically opposed to the decision of the park's shareholders to put an end to all animal keeping.

The strength of the dossier lies in its knowledge of the facility. The team includes experts in captive wildlife care and management practices.

2.2.2.3 Sibylline oceans project

Sibylline océans is a small association founded by French and Spanish veterinarians during the Prestige oil spill in 2003. Abroad, it works with marine wildlife in difficulty. In France, it is promoting the creation of a medical, research and educational center for animals in danger or stranded on beaches.

The project is relatively old, the subject of a veterinary thesis in 2013, and aims to accommodate orcas and dolphins in two enclosures in the northern section of the Canal du Rove, which connected the northern part of the Marseilles harbor in the Mediterranean Sea with the Etang de Berre in the Bouches-du-Rhône region, before its tunnel collapsed in 1963. The canal, which is located near Marignane but whose water quality is currently very poor, would be closed off by a fish barrier, and the animals would cohabit with leisure activities.

In a second phase, the animals would be transferred to Mimizan-plage in the Landes region on the Atlantic coast. The proposed offshore structure is small, floating, with an unexplained anchorage to the seabed, and mobile, with no details of its resistance to bad weather, its depth, noise considerations or mitigation measures.

The dossier submitted gives an unscientific overall impression, with numerous inaccuracies and imprecisions, particularly concerning cetacean biology, behavior and welfare. It does not give details of the team involved or its skills. The experience highlighted but not documented concerns the care of wild megafauna, not captive wildlife. No technical information is provided on the transport and maintenance of captive cetaceans or on scientific collaborations. The association itself lacks public visibility, despite an advanced but unreferenced twenty-year history, particularly in Spain. There is no link to the cetaceans in distress working group, even though the project's ambition also seems to be to serve as a care center.

There is no information on financing and economic support for the project. It cannot be selected as part of the AMI.

2.2.2.4 Sea Shepherd project

Sea Shepherd France is an association under the French law of 1901, whose purpose is to support the international campaigns of Sea Shepherd, a Canadian NGO of international scope founded in 1977 by Captain Paul Watson, whose mission is to protect marine wildlife, but also to work on local issues.

The sanctuary project in the southern part of the Brest roadstead is interesting because of its location on national territory (ease of transfer, communication), but there are many uncertainties, partly linked to its very recent nature.

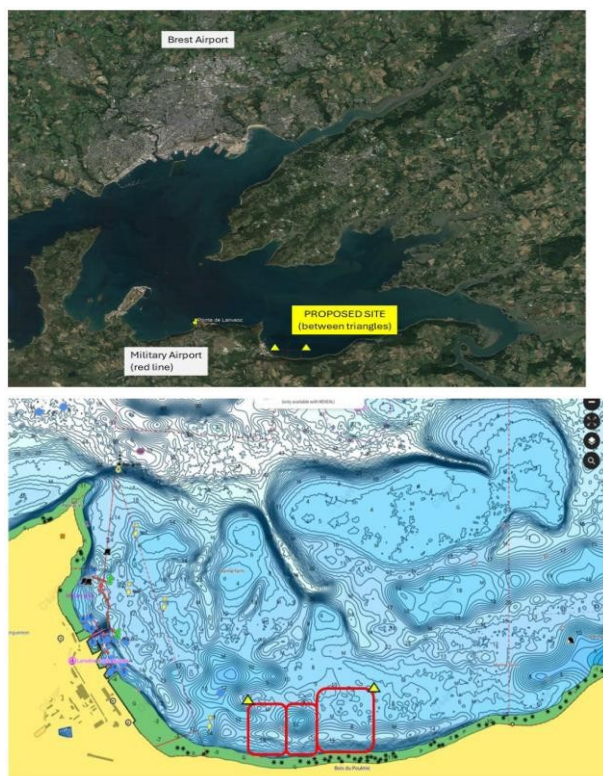


Figure 1: Location of the project in Brest harbour

The chosen geographical area is located to the east of the Lanvéoc- Poulmic (29) naval air station. The choice of site is justified by the arguments of geographical proximity (mainland France), water temperature close to EAAM recommendations (between 12 and 16°C), topography and bathymetry, and protection against currents and bad weather: site protected from extreme weather conditions.

The absence of housing and/or human activities in the immediate vicinity, the planned collaboration with the French Ministry of the Armed Forces and the Lanvéoc-Poulmic naval school to share access to Poulmic Bay for personnel, equipment and materials required for construction are all advantages, as is the proximity of two airports (military on site and civilian in Brest), for the transfer of animals by air. Public and drone access to the site is restricted.

One of the positive aspects of the project is the association's international scope, which suggests a good capacity for long-term mobilization and financing.

On the other hand, the project is fraught with uncertainty, with no concrete details of the contacts made with elected representatives, the French Navy or the fishermen who are supposed to supply the fish,

on the financial support of the association's members and sponsors, on the nature and dimensions of the planned facilities, the absence of double netting on the enclosure, night-time surveillance, and capture procedures in the event of health problems. The skills and expertise of the team are unclear (no mention is made of the quality of future employees), but in any case no expertise in dealing with animals in zoos is apparent. Only the veterinarian is known for his involvement in animal welfare issues (wildlife experimentation trainer).

The location raises a number of questions: underwater noise from military activities and the navigation of nuclear submarines has not been assessed, protection from bad weather remains to be verified, the proximity of the Parc Naturel Régional d'Armorique (important presence of birds) poses infectious risks (avian flu), and reconciliation with shellfish farming, fishing and nautical activities is questionable. Lastly, the project is located in a Natura 2000 zone that is potentially incompatible with the installation of bird scaring devices and the drilling and work on the coastline.

Furthermore, in the absence of water quality analyses on the site, the data available online at¹⁴ show a high level of pollution (pesticides, heavy metals, antifouling, microbiological contamination and eutrophication of the environment) in the Brest roadstead, which is only open to the ocean via a 1.5 km wide inlet.

There was no upstream consultation to compare scenarios for transferring animals by plane or truck. The technical solutions for the enclosure system and transport are very sketchy. The technical soundness of the dossier as a whole is the major weakness of this project: there are no details of any training, even for medical monitoring purposes, nor of any acclimatization procedure. The information provided makes no reference to the guidelines for keeping cetaceans in captivity, and the scientists consulted give no concrete measures for monitoring animal welfare.

The scientific program is barely scratched the surface. The protocol for access to killer whales for scientific purposes is not defined. The scientific projects proposed seem to be essentially carried out by several people linked to the sanctuary project (no institutional involvement of one or more research organizations).

The budget remains unclear as to the funds that will be mobilized for the project and the projected budget. The sponsors mentioned are not clearly indicated as supporting *Sea Shepherd* France or international, and the projected timetable for the project is not detailed.

In conclusion, the dossier contains a lot of generalities, which can give a general impression of amateurism in terms of detention, often reproached by the captivity world to sanctuary projects. It remains at a very early stage, subject to the lifting of numerous conditions and the approval of the relevant authorities, and its local acceptability is not a foregone conclusion. It would also require strong political and financial support from the French government, which would de facto become a stakeholder in the project. It seems unrealistic that this project could be implemented within the allotted timeframe, or even in the short term, given all the stages still to be completed. **In view of the need to find a rapid solution for the reception of animals, the mission has decided not to retain it.**

2.2.2.5 The Whale sanctuary project

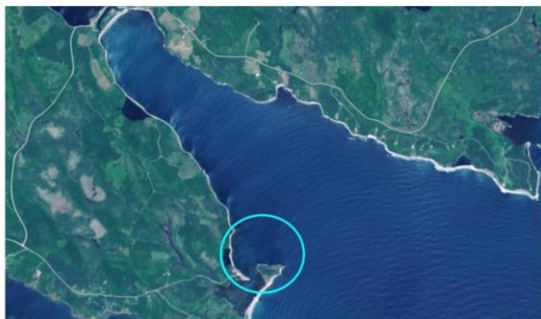
The association is headed by Lori Marino, a scientist who has worked on the evolution of the brain and intelligence in dolphins, whales, primates and farm animals, and Charles Vinick, who has worked for 25 years on educational programs and films.

¹⁴ <https://theconversation.com/dans-la-rade-de-brest-les-effets-irreversibles-de-la-pollution-humaine-sur-le-plankton-170354>

on the ocean and the environment, and head of the high-profile project to reintroduce Keiko, the orca made famous by the film "Free Willy", to the wild in Iceland.

The project has been under study since 2016, with concrete advances since 2019. The site leased by the NGO is located in the province of Nova Scotia (Canada) and includes a total area of 80 hectares, including 40 ha for the orcas, a small island facing the shore where one of the nets will be moored, a safety perimeter and the space needed to anchor the enclosures. The depth is up to 18 meters. The site would be protected by a natural barrier, while allowing the water to be stirred up by currents and the tide. It also includes 12 ha of land for staff and facilities.

The site is located in the rural commune of Wine Harbour. There are no houses in the vicinity. It is accessible by road. In the town of Sherbrooke, 20 km from the sanctuary, there are restaurants, a gas station, a bank, a grocery store, a pharmacy, schools, a small hospital and the WSP operations center, which organizes tours. Permanent staff would have ample accommodation options, and temporary staff would be housed at or near the WSP operations center. The site is also accessible by sea from Port Bickerton (30 minutes). Boats will be stationed in Port Bickerton and will contribute to the operation of the sanctuary.



Port Hilford Bay (also known as Indian Harbour) with sanctuary site in the circle.
Accessed via Barrachois Road.



Close-up photo of sanctuary site

Figure 2. Location of the proposed sanctuary in Port Hilford Bay and aerial photo of the site

Residents of neighboring communes and the local administration support the project. Two lobster fishermen have agreed to relocate their boats parked in the sanctuary zone. Settlement and local relations have been maintained since 2021 and appear to be favorable.

In 2022, the operational center opened in Sherbrooke. It organizes educational exhibitions and events. Relations have been forged with the Micmac aboriginal people, for whom the orca is a culturally important animal, and whose consultation is required by Canadian law. Collaborations are also underway with the University of Halifax, capital of Nova Scotia, and the Atlantic Veterinary University on the island of Nova Scotia.

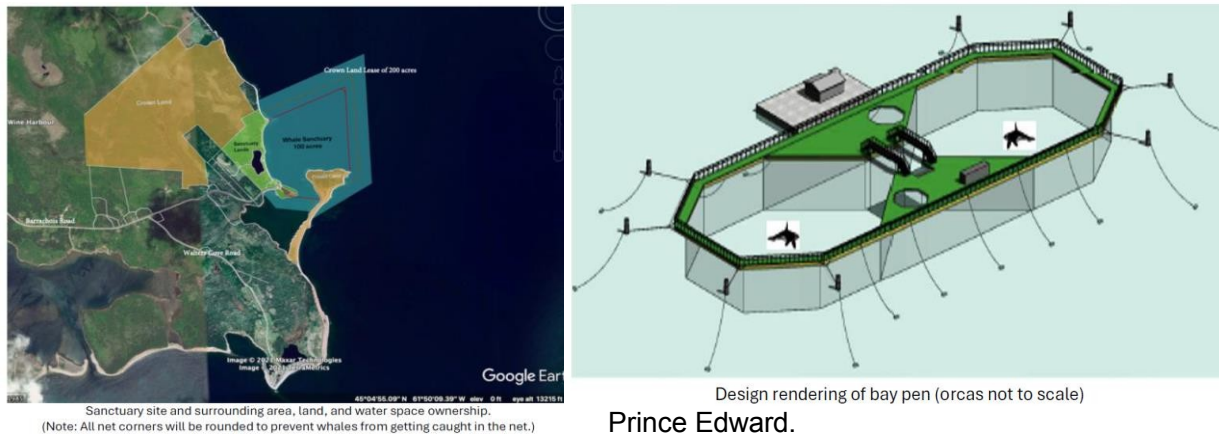


Figure 3: Project land and sea boundaries and details of the adaptation enclosure

The overall sanctuary will comprise around 40 hectares of offshore space at the end of the road, with the net enclosure designed to encompass the wharf and extend in a semicircle to the northeast of the island and as far as Rocky Point on the western shore. The enclosure is a net-walled structure, measuring 122 m by 46 m, made of Dyneema, a tough high-molecular-weight polyethylene, held vertically in the water by flotation pipes at the surface with an integrated walkway above the pipes and a heavy chain at the base of the net, where the net comes into contact with the seabed. There will be an additional horizontal lead line woven into the lower part of the net, which will serve to keep the net taut despite the daily tides.

Regular maintenance and cleaning will be carried out on the nets. The cleaning system will consist of scuba diving teams manually cleaning the nets and/or automated net cleaning systems.

Staff facilities will be built for operational activities on the 12 hectares of land, including the existing jetty adjacent to the sanctuary waters. On-site facilities allow for animal maintenance (feeding), medical, research, administrative, marine/dive operations, security, equipment storage and team accommodation.

The entire working area of the sanctuary site will be surrounded by a security fence, with access limited to authorized staff and visitors. The land lease authorizes the installation of a security fence on the isthmus linking Barachois Island to the mainland. The waters of the sanctuary will be surrounded by a net, with a 100-meter wide buffer zone (no access) outside the net, delimited by a line of buoys. The sanctuary will be staffed 24 hours a day, 7 days a week, with surveillance by cameras and hydrophones above and below the water.

A detailed operational plan is provided for the animals. It includes welfare assessment, conditioning and acclimatization, transportation, on-site care, description of facilities and management of associated risks. The document is presented as "evolving", in consultation with the Marineland team, as well as with other experts in the field of captive killer whale maintenance and welfare, who will be mobilized should the project be selected.

The issue of arsenic pollution of bottom-dwelling crustaceans linked to former mining activities in the vicinity of the site is addressed: different species metabolize heavy metals in different ways, and arsenic levels above those safe for human consumption are unlikely to be relevant for consumption by cetaceans: properly-fed orcas are unlikely to regularly ingest crabs; cetaceans are exposed in the wild to significant levels of heavy metal exposure via the marine food chain.

A list of the names of the technical staff is not provided, but it is planned to hire: an operations manager, an operational coordinator, two veterinarians specialized in marine mammals, a caretaker in charge, and five or six caretakers to work with the current team.

However, there are still a number of uncertainties regarding the characteristics of the facility: in the large final enclosure, how can a sick animal be captured for treatment? A sanitary platform is lacking, as is a noise abatement plan in case of need, a fallback solution if the orcas have difficulty acclimatizing to the cold during the first few winters, and detailed information on staffing (qualifications, numbers).

The associated scientists tend to have expertise in wildlife in the wild. The procedure for accessing animals for scientific purposes is described a little too briefly, as are the animal activity programs. The length of the transport also poses a risk. The strength of storms and tides remains to be verified.

The budget is based on pledges from 2025 onwards.

However, the experts consulted validate this project as offering the greatest number of guarantees for accompanying orcas in a scientifically supervised sanctuary experience.

The solidity of the team and the dossier, the fact that the project was initiated several years ago, well ahead of the sole question of the future of the orcas at Marineland d'Antibes, and the medium- and long-term projection, make it the most credible innovative solution among sanctuary projects.

2.3 Reception in another dolphinarium

2.3.1.1 Kobe Suma Sea World (Kobe, Japan)

On October 23, 2023, Marineland SA signed a contract with *Granvista Hotels & Resorts*, the Japanese company behind the KSSW project, for the donation of two orcas and the loan of two others for breeding purposes (historically carried out by the *Kamogawa seaworld* belonging to the same group), public education and scientific research into animal behavior. *Granvista Hotels & Resorts* is committed to applying CITES and animal welfare regulations in line with international standards. It should be noted, however, that there are no international regulations or Japanese legislation governing the welfare of these species in captivity. However, KSSW points out that facilities for orcas have just been built "to the highest standards in force"¹⁵.

The new center is scheduled to open to the public on June 1, 2024¹⁶. According to

¹⁵ Undefined, but the AFDPZ points out that the park is a member of the worldwide WAZA association, a guarantee of partnership with the IUCN and compliance with strict guidelines - it should be noted, however, that it is not currently on the membership map, unlike Nagoya Zoo, which also has orcas (<https://www.waza.org/members/find-a-waza-zoo-or-aquarium>).

¹⁶ <https://www.kobesuma-seaworld.jp/en/>

According to information available on the Internet, *Kobe Suma Sea World* is home to two orcas, one from the Nagoya aquarium ("Stella") and the other from *Chiba Kamogawa Sea World* ("Ran", Stella's daughter).

The KSSW has four objectives: i) recreation, by helping visitors to understand how marine ecosystems function; ii) education, with programs for schoolchildren; iii) conservation, with breeding programs; and iv) research, in support of in situ conservation.

The Granvista Group also owns *Kamogawa Seaworld*, which has been home to orcas for several years. It has the financial backing for the project and future developments at the new site in Kobe. It also has many years' experience of housing and presenting cetaceans to the public, as well as breeding them.

The ultra-modern facilities are an improvement on Marineland's current aging facilities. In addition to the pools, the park is equipped with a medical pool with a liftable floor for veterinary interventions, as well as scales for regular weighing and veterinary facilities for routine analyses. Animal feed (fish quality, storage, quality control, individual monitoring, etc.) complies with the standards in force in the best aquatic parks. The same applies to water quality, which undergoes double treatment (bleach and ozone) and a heating/cooling system.

Qualified staff will be recruited, and a program of enrichment and involvement of the team of dedicated caretakers is planned.

However, the size of the tanks at KSSW is much smaller than at Marineland:

Presentation pool: 35x19x6.5m triangular in shape, with two adjoining pools measuring approx. 30x15x6.5m and a medical pool (10x6x4m) for a total of 8,400 m³ including 3,500 m³ for the main pool.

The four tanks represent only a third of the surface area and a fifth of the volume of those at Marineland (44,000m³ in total over 5 tanks, including 17,000 m³ for the main tank), for an equivalent number of orcas (4 to 5).



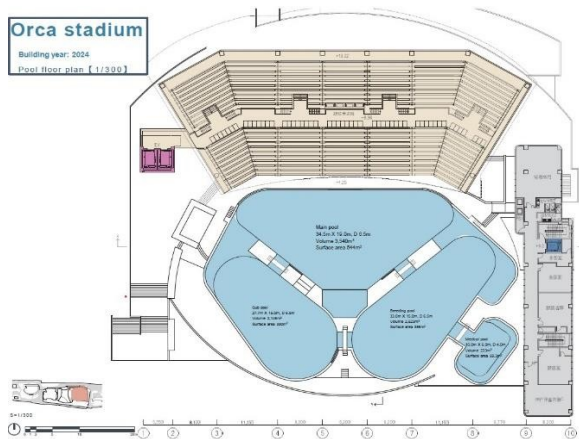


Figure 4. Aerial view of the dolphin and orca tanks and detail of the orca tank

The Ministry's issuance of a CITES permit (whose legal basis does not take into account animal welfare aspects) for animals of species listed in Appendix II (A of the European regulation), born and bred in captivity, is a priori legally sound enough provided Marineland compiles a complete file, even if it is bound to be contested by NGOs. The latter could also challenge the animals' health certificates and the fact that they are fit for transport, given their health history.

In conclusion, while the transfer of Marineland to the KSSW does not entail any major changes to the environment, and even a certain improvement with new equipment up to the latest standards, several points of vigilance need to be emphasized:

- The size of the tanks is significantly smaller than those at Marineland, even though a larger number of animals is planned. Of the three tanks, one is intended for breeding, which means that the other animals will be confined to the two remaining tanks, thus reducing the space available.
- The KSSW has a policy of breeding in captivity and is therefore very interested in acquiring Wikie, a female with proven reproductive qualities. However, the maintenance of the family unit made up of Wikie and her son Keijo, an essential element in their well-being, is not guaranteed. Taking part in a breeding program with Kamogawa Park will mean exchanging animals and probably separating the family unit.
- Marineland enlisted the help of recognized experts in this field to prepare the animals for transport, in terms of conditioning and habituation to restraint, as well as container and gondola design. Simulation exercises were also carried out. The costs incurred are considerable. Furthermore, orcas have already been transported over equivalent distances in the past, with no fatalities. The fact remains, however, that long-distance transport by cargo plane (over 12 hours flight time) is undeniably stressful and entails a risk for the animals.
- Acceptance by the general public and NGOs is very low, the latter believing that the transfer to Japan - a country that continues its whaling activities, and for which there are no regulations equivalent to those in Europe on animal welfare - will lead to a deterioration in animal welfare conditions and goes against the spirit of the 2021 law.

2.3.1.2 Loro Parque (Tenerife, Spain)

Located on the outskirts of Puerto de la Cruz, it is one of the most popular tourist sites in the Canary archipelago. Founded in 1972, it is owned by one of its founders, German businessman Wolfgang Kiessling.

Covering an area of 13.5 hectares, it features around 800 animals. It is one of only four dolphin parks in the country to feature bottlenose dolphins, and the only other dolphinarium in Europe, along with Marineland, to feature orcas. With annual visitor numbers approaching one million, it is one of the four most visited zoos in Spain, which suggests that it has sufficient funds to maintain the animals.

The park is a member of the European Association of Zoos and Aquariums (EAZA) and participates in European endangered species programs for bottlenose dolphins (EEP).

Loro Parque has been keeping orcas since 2006. It currently has 4 orcas (3 males and 1 female) in its facilities and 9 bottlenose dolphins.

The orca facility comprises four interconnected basins with a total volume of 21,150 m³ and a maximum depth of 12m for the main basin and 8m for the others, while the medical basin, which can be used for quarantine purposes as it has an independent circuit and filtration, has a depth of 4.2 m, and is equipped with a hydraulic floor elevator.

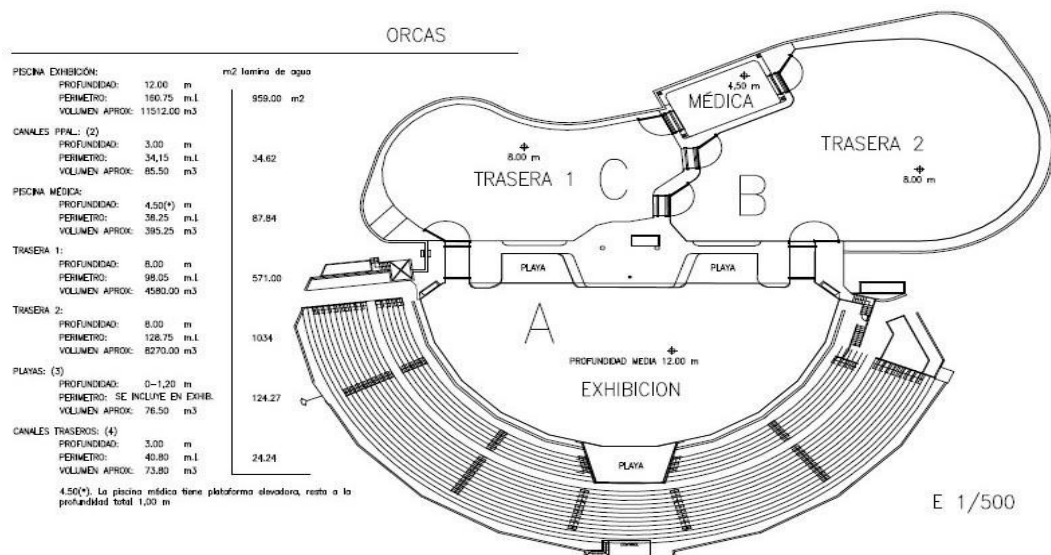


Figure 5. Plan of Loro Parque orca facilities with tank dimensions

The facilities have been designed to minimize blunt surfaces and promote maximum hygiene. The triple filtration system provides 20% daily water renewal. In addition, a water-cooling system maintains the water at around 13°C.

The park had initially stated that it was unable to accommodate Marineland's orcas due to lack of space, but has now changed its position, now that there are only two of them, in its existing facilities, without, according to the park, the need for any further development or investment. We may be able to welcome the orcas in the near future, just long enough to obtain Marineland's approval (negotiations to be envisaged for the sharing of transport costs and the takeover of part of the dolphin population) and to organize the departure and acclimatization procedure.

According to the experts interviewed, the integration of Wikie and Keijo into the group does not seem to pose a problem, given the matriarchal social structure. There are plans to breed Wikie.

A partner of Sea World, the park has had the capacity and qualified staff to hold between 4 and 8 orcas since 2006. It has been breeding since 2010. Since 2011, it has been home to the Morgan killer whale (taken in 2010 off the coast of the Netherlands and unable to be released back into the wild because she is deaf).

Since 2012, however, it has experienced several animal deaths due to intestinal problems, heart problems or unexplained causes.

Air transport time is short, and the Park is close to an international airport capable of handling large aircraft. The transfer with similar packaging to that for KKSX poses no particular problems. Should this option be chosen, the cost-sharing arrangements between the two parks would have to be agreed.

In addition, the proximity of the two sites will facilitate contact with the caretakers once the animals have arrived, and even their recruitment, making it easier for the orcas to adapt to their new environment.

Although the general public and NGOs will be more receptive to this project than to a transfer to Japan, given that it concerns an EU member state, it will not silence criticism that the spirit of the law has been abused. On the other hand, the solution may appear to be the best for Marineland's management and staff, but not for shareholders, given the commitments already made to Japan.

For intra-European transfers, the movement of orcas requires a CITES permit issued by the country of departure, as well as a health certificate issued by the DDPP. In addition, as this is a species listed in Appendix A of the European CITES regulations, authorization is required from the CITES authorities in the country of destination, who must judge whether the housing and care conditions comply with European animal welfare regulations, which should not pose a problem given Loro Parque's reputation.

It would therefore be difficult, in the absence of an amicable agreement with Marineland, to oppose such a transfer without exposing oneself to legal recourse. On the other hand, NGOs could contest the animals' health certificates and the fact that they are fit for transport, given their health history.

It appears that transferring to Loro Parque this autumn offers the best prospects in terms of feasibility and timeframe.

2.4 The case of the bottlenose dolphins at Marineland

The mission also looked into the future of the 12 bottlenose dolphins held at Marineland, applying the same criteria as for the orcas, but without carrying out a formal AMI as for the latter.

In Europe, the captive population of bottlenose dolphins numbers around 280, in some thirty establishments. However, following the closure of several¹⁷ dolphinariums, and given the relative ease of captive reproduction of this species, which is the subject of

¹⁷ Including Parc Astérix, where 7 of the 8 bottlenose dolphins have been entrusted to other dolphinariums in Sweden and Spain in 2021, the last one having been euthanized

due to illness.

of a program coordinated at European level (EEP¹⁸), there are a priori no facilities in Europe requesting new bottlenose dolphins. This is also the case in North America, where only Asian dolphinariums (China and Japan), whose numbers continue to grow, are looking for new specimens.

Marineland's policy was therefore to link the fate of the bottlenose dolphins to that of the orcas, by negotiating with Kobe Suma Sea World to host the 12 dolphins in addition to the two orcas. Any other option concerning the orcas will therefore require finding an alternative home for the bottlenose dolphins, at least as far as the offshore sanctuaries studied in the previous chapter are concerned, which are not designed for bottlenose dolphins.

Three options were studied by the mission: two marine sanctuaries for dolphins, at Lipsi in Greece and on San Paolo Island, off the coast of Taranto in Italy, as well as Loro Parque.

2.4.1 Aegean Marine Life Sanctuary in Lipsi (Greece)

Located on the island of Lipsi in the Dodecanese archipelago, the Archipelago Institute's project involves closing off a bay with a net and housing 6-8 bottlenose dolphins. After several years of studies and fund-raising campaigns, the mission's initial contact with the project's management led us to anticipate its imminent completion. In the end, however, the project's promoters did not respond to our subsequent requests, as they were unable to obtain the necessary authorizations from the Greek authorities to close the bay, and were unable to complete the project's financing.

2.4.2 Ionian dolphin conservation sanctuary (Taranto, Italy)

Ionian dolphin Conservation, an association of marine biologists dedicated to the conservation of marine ecosystems and environmental education, conducts research on cetaceans in partnership with several universities and manages the Ketos Euro-Mediterranean Center for Education about the Sea and Cetaceans. In addition to a laboratory dedicated to marine sciences, the center welcomes the public and schoolchildren and organizes daily outings at sea to meet the 5 species of cetaceans that regularly frequent the waters near Taranto.

The sanctuary project, initially conceived as a care center for wild cetaceans stranded before release, has since evolved to also welcome dolphins from dolphinariums in an environment closer to natural conditions, with no a priori prospects of release.

The chosen site is located in the immediate vicinity of the island of San Paolo, which closes off the Gulf of Taranto. Thanks to its natural location, the site is well protected from storms all year round, yet far from the port of Taranto. The island of San Paolo, owned by the Italian Navy, is uninhabited and off-limits to visitors, and is far enough away from the main shipping lanes to guarantee a certain tranquillity for the dolphins.

The site consists of a 4 ha marine enclosure set on a sandy seabed 4-11m deep, and made up of several 1000 m² (40x20m) enclosures with double netting to ensure maximum safety and maintenance operations. Once completed, the facility will be able to accommodate up to 7 bottlenose dolphins. In addition to the onshore facilities at the Ketos center, a floating structure is also planned, with a room to accommodate staff and store food and veterinary equipment. A 24/7 video surveillance system linked to the land-based center is also planned, enabling the animals to be presented to the public without disturbance.

¹⁸ *European endangered species program for *Tursiops truncatus**, aims to coordinate the reproduction of this species in order to promote genetic mixing and avoid inbreeding.

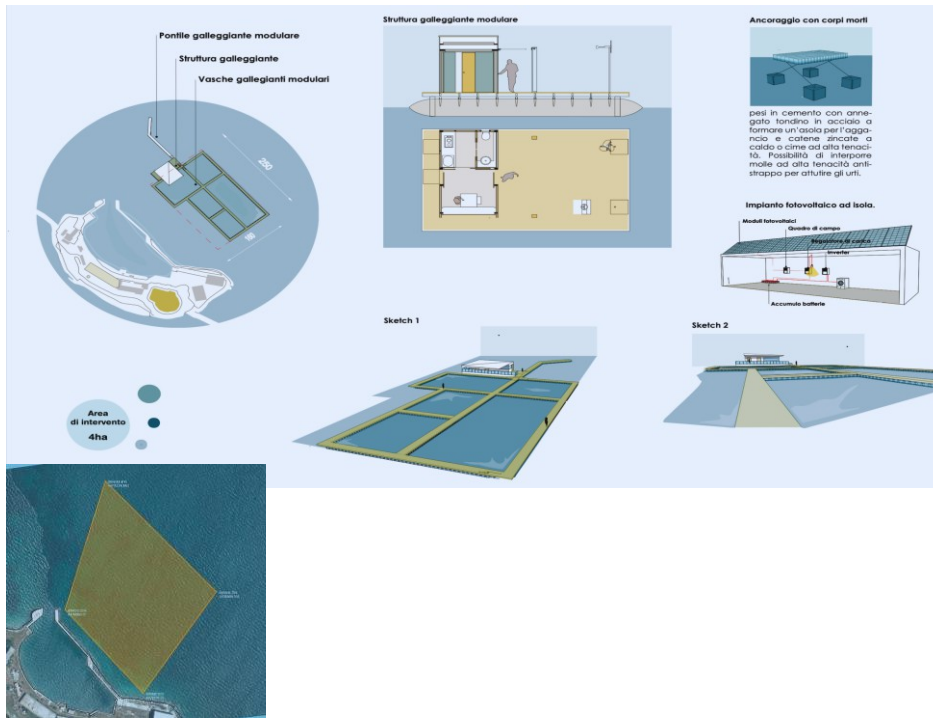


Figure 6. Location and layout of the dolphin sanctuary facilities

Staff already on site include a veterinarian (not exclusively involved with cetaceans), a marine mammal caretaker (with little experience of dolphins, but working in the Italian captivity network) and several doctors of marine biology specializing in cetaceans. Additional qualified staff (caretakers) will be recruited to monitor and stimulate the dolphins and ensure their well-being.

In terms of partnerships, the project is strongly supported by the city of Taranto, which wishes to give a new appeal to the city, whose image is marked by its industrial past, around the emblem of the dolphin, makes the historic premises of the Ketos center available free of charge¹⁹ and finances the center through paying school visits. The Italian Navy also supports the project by making available the site near the island of San Paolo, and the possibility of using its small port to house the animals in the event of an emergency.

¹⁹ The 18th-century Palazzo Amati, with a surface area of over 1,000 m².

The project is also supported by a number of private sponsors for maritime equipment, security, vineyards and the marina. It also benefits from a European Interreg program, enabling the project to be financed up to 2028.



Figure 7. Ketos training session and program of events

In conclusion, while the project is not yet fully developed, the mission believes it has a number of strengths:

- The quality of the site in terms of water quality, safety of facilities and ease of access, which is also regularly visited by wild bottlenose dolphins.
- The project team, made up of marine biologists specializing in cetaceans²⁰ as well as staff with experience of captive cetaceans.
- Substantial resources: three boats, including two catamarans for cetacean observation, a center dedicated to welcoming and educating the public, and a laboratory for pooling resources with the refuge.
- Excellent local support (from the town council, the army and local businesses, who see the project as a vector of attraction and image for the town, which is in the process of converting from an industrial activity to tourism).

Among the points of vigilance remain the ability to complete the project in time to welcome the dolphins in the first half of 2025, and the recruitment of additional qualified staff for the day-to-day care of the dolphins.

2.4.3 Other bottlenose dolphin sites

The two sanctuaries mentioned above are the only ones in the pipeline at European level, and the Taranto sanctuary is the only one with prospects of taking in dolphins from Marineland within a timeframe compatible with the intentions of the park's owners.

Among the other sites, in addition to the KKSJW already mentioned, Loro Parque, which has 9 bottlenose dolphins, has said it is ready to welcome four Marineland specimens in its facilities, in addition to the two orcas already mentioned. Both establishments meet the EEAM standards for dolphin tank size for Marineland²¹.

Apart from these establishments, there are few other facilities for bottlenose dolphins in Europe. In China, however, there are several dolphinariums.

²⁰ With some forty scientific articles published on ecology, behavior, stranded animals and pathologies

²¹ For 6 bottlenose dolphins: 550m² +75m² extra per animal, a minimum depth of 3.5m, and a water volume of 200m³+300m³³ per additional animal.

to welcome bottlenose dolphins. Dubai could also be a potential drop-off point for such animals, but was not explored by the mission.

2.5 Summary of different options

With regard to orcas, following the call for expressions of interest, it appears that almost all of the responses do not provide a credible solution within a timeframe compatible with the law and Marineland's economic conversion project.

In addition, Marineland's cetacean staff are anticipating its imminent closure, and are already actively seeking employment in other centers. This, combined with the delays in renovating the facilities since the law was passed, poses a risk to the animals' physical and mental health.

It appears to the mission that, whatever the destination *ultimately* chosen, it is not possible to delay the departure of orcas and dolphins beyond 12 to 18 months without exposing them to excessive risk.

In view of the numerous appeals that are bound to be lodged, the proposed conversion of Marineland, together with major works, would appear to be unrealistic. What's more, it would require a major financial commitment on the part of MTECT, which would de facto become the contracting authority for the operation in a context of great legal and financial uncertainty.

In the light of these constraints, the analysis of the various options means that only a limited number of scenarios can be retained.

The table in Appendix 4 compares the most "realistic" scenarios for the orcas' future in terms of progress, timeframe, funding, animal welfare guarantees, transfer feasibility, acceptability, legal certainty and implementation schedule: transfer to *Kobe Suma Sea World*, Loro Parque, a sanctuary in Brest harbor (*Sea Shepherd*) or in Nova Scotia (*Whale Sanctuary Project*).

As indicated in paragraph 2.2.2.2, it quickly becomes apparent that keeping the animals in situ is not an option. Examination of the other options reveals two main hypotheses, one in a park and the other in a sanctuary, and identifies a number of conditions for success.

As far as dolphins are concerned, a mixed solution (dispersal of the population between parks and sanctuaries, by affinity pairs or small groups of animals) would have the advantage of enabling the operability of a sanctuary to be tested on a small scale, with less complexity and risk for this species.

3 Recommendations for the future of Marineland's cetaceans

3.1 General principles

3.1.1 Ensure Marineland's full cooperation before and, if possible, after the transfer

Animal welfare being the main reason why the legislator voted to close captive cetacean presentation centers to the public, the guarantee of this welfare must be a cardinal criterion in the choice of destination for Marineland's cetaceans. In addition to the material conditions of accommodation, it is essential to maintain the social structure of the group and, as far as possible, the relationship with the caretakers, at least temporarily, as these are social animals with a superior psyche, having developed very close relationships with their caretakers.

Preparing the animals in advance of their departure, and taking into account individual characteristics and affinities between individuals when forming groups of bottlenose dolphins if they have to be separated, is essential to the success of the transfer. Full collaboration with the caretakers, before, during and if possible after the transfer of the animals, is essential. This requires full commitment to the project, which is not automatic in the case of marine sanctuaries, where there are still many uncertainties as to the chances of success.

Whatever the options chosen by the Ministry, specific communication with Marineland's management, and even with the staff directly involved, to explain the choices made and to recognize their major role, contrary to the attacks to which they have been subjected, seems necessary to ensure their full collaboration, and even, if they are willing, to negotiate their recruitment by the future host structure.

Recommandation 1. ***[DEB] Ensure full cooperation with Marineland in the transfer project, taking into account as far as possible the group's constraints, as well as support for the staff caring for the cetaceans during preparation, transport and, if possible, after their arrival at the new facility.***

3.1.2 Maintaining essential social ties between individuals

Cetacean experts (orcas and, to a lesser extent, bottlenose dolphins) agree that the main factor in well-being is the maintenance of social bonds between individuals in the same pod. This is essential for Keijo, Wikie's son, who needs to be kept with his mother²², even more so after the disappearance of the group's two other orcas. Guarantees should be obtained from the animals' buyers that the two individuals will not be separated.

In the case of bottlenose dolphins, relationships within the group are more flexible in the wild, with alternating splits and reunions.

²² In the wild, male killer whales remain attached to their mothers throughout their lives, who ensure their protection and integration into the female-dominated group. The death of a female reduces the life expectancy of her male offspring (Christophe Guinet, personal communication).

individuals from Marineland a separation of the two groups. In all cases, however, it is advisable to maintain *at least* the bottlenose dolphin affinity pairs identified by the caretakers.

3.1.3 Scientific monitoring of animals after transfer.

Given the numerous controversies concerning sanctuaries but also on welfare standards in dolphinariums, with arguments often based on individual experiences without robust protocols or scientific evaluations, past sanctuary experiences do not allow us to rule on the added value in terms of welfare of marine sanctuaries²³.

However, with the gradual closure of dolphinariums in France and other Western countries, and the rise of the *wellfarist* movement, scientific answers to these questions need to be found that go beyond partisan squabbles dictated by interests that are sometimes far removed from the question of animal welfare.

Whatever the destination of Marineland's cetaceans, the mission recommends scientific monitoring based on protocols validated by a committee of wild and captive cetacean specialists, covering the fields of animal welfare, veterinary health, zootechnics and ethology. Protocols should be validated by a scientific committee, while ensuring the full collaboration of the host structure and, if possible, Marineland²⁴.

The results of monitoring and scientific work could be presented to all stakeholders (zoological parks, associations, research centers, etc.) in order to objectify the results and build consensus on the subject.

Recommandation 2. [DEB]. Set up scientific partnerships with research establishments to monitor animals placed in sanctuaries, based on protocols validated by a committee of experts.

3.1.4 Ensure that the Ministry's positioning takes account of the legal and financial consequences

Taking into account the regulatory obligations associated with CITES and the related European Union Regulation is essential to ensure the legal security of animal transfers, whatever their destination. According to the analysis carried out by the DEB's Washington Convention office, the CITES obligations to be met by French players are as follows:

- if the orcas are to be transferred to the Brest Bay sanctuary, Marineland will have to apply to the Provence-Alpes-Côte d'Azur DREAL for an intra-Community certificate for transport to a sanctuary, and *Sea Shepherd* will have to apply to the Brittany DREAL.

²³ See the recent synthesis: Bruck, J.N. The Cetacean Sanctuary: A Sea of Unknowns. *Animals* 2024, 14, 335. <https://doi.org/10.3390/ani14020335>

²⁴ By implementing the well-being assessment tools developed by EAAM: see in particular Baumgartner, K.; Huttner, T.; Clegg, I.L.K.; et al. Dolphin-WET-Development of a Welfare Evaluation Tool for Bottlenose Dolphins (*Tursiops truncatus*) under Human Care. *Animals* 2024, 14, 701. <https://doi.org/10.3390/ani14050701>

an intra-Community certificate for transport for scientific purposes,

- in the event of the transfer of orcas and part of the dolphins to Loro Parque, Marineland must apply to the DREAL Provence-Alpes-Côte d'Azur for an intra-Community certificate for transport for public display purposes, the issue of which is subject to the favorable opinion of the CITES authorities competent for the destination establishment concerning the capacity of this structure to receive and treat orcas with care (this opinion will relate to the quality of the facilities and the qualifications of the personnel),
- in the event of transferring orcas to the WSP in Canada and part of the dolphins to the Taranto sanctuary, Marineland will have to apply to the DREAL Provence-Alpes- Côte d'Azur for an export permit for scientific purposes, and the DEB will have to ensure that a scientific program exists,
- in the event of the transfer of orcas and dolphins to *Kobe Suma Sea World*, Marineland will have to apply to the DREAL Provence-Alpes-Côte d'Azur for an export permit for the transfer for purposes that are not primarily commercial. The European Union Regulation stipulates that this purpose must be verified by the CITES authorities of the country of departure (the French National Management Body, i.e. the DEB), in the case of a transfer to a country outside the European Union. This is a real difficulty for the French authorities, and will require the collaboration of the Japanese CITES authority.

In financial terms, it's not out of the question for Marineland management to claim compensation for all or part of the financial losses incurred as a result of the failed transfer to Japan. Similarly, if the orcas' relocation takes an excessively long time, Marineland could charge the State for the delay in converting its facilities and the additional maintenance costs. In the case of a sanctuary, choosing a site outside France minimizes the risk of being financially burdened in the long term, compared with a French site.

3.2 Proposals for the two killer whales

Two scenarios can be proposed to Marineland with the aim of obtaining its collaboration, with different political, legal and financial consequences to be anticipated:

- **As a priority, explore the transfer to the WSP sanctuary**, which requires more complex and time-consuming preparations (finalization of the project, travel, greater difficulty for caretakers to accompany the acclimatization phase given the remoteness, scientific mobilization to be ensured for supervision and monitoring...) and includes a share of the risk of failure both in terms of animal welfare and financing. On the other hand, this option allows for more positive communication, focused on a noble ambition in two respects - animal welfare and research - and could make the decision symbolic at international level of France's action as the first country to try to offer a more respectful end-of-life to this emblematic species in relation to captivity, and in favor of the protection of cetaceans in their natural environment.
- **Should this first option not be feasible, the transfer to Loro Parque** is a pragmatic solution which, however, presupposes the termination of the contract with the Japanese park and prior negotiation, notably concerning the division of costs between Marineland and Loro Parque, and the preparation, according to a procedure well established in captivity circles, of the animals and teams. This choice is likely to trigger media reactions and legal action from associations. The reaction of the staff is not yet known, but it is to be hoped that they will be involved in the preparations and the aftermath of the transfer in the interests of the animals' welfare.

of the animals. Nevertheless, the diplomatic risk seems limited, given the arguments that the French government can easily put forward (distance, small size of the tanks, reception in Kobe of two additional orcas already announced on the Internet). If the application for an export permit to Japan is nevertheless submitted, a refusal would seem defensible on the grounds of legitimate doubt as to the non-primary commercial objective of *Kobe Suma Sea World*.

Recommandation 3. [DEB] Propose that Marineland initiate team collaboration with the WSP to examine the feasibility of an effective transfer to the sanctuary in the coming months, and at the same time start discussions with Loro Parque on the future of the animals.

3.3 Proposals for bottlenose dolphins

The mission did not have enough time to explore all the possibilities for accommodating this species in a European zoo. A single proposal has therefore been put forward, leaving Marineland to find a destination for the animals not taken in (it should be noted that the park's management has raised the possibility of at least temporary accommodation in various Spanish parks): that of allowing at least a small part of the population (2 to 4 specimens, in two transfers staggered over time) to be housed in a sanctuary. As the Greek project (Lipsi) did not respond to the mission's requests, *Ionian Dolphin Conservation* appears to be the only scientific and educational NGO currently capable of finalizing a sanctuary within the required timeframe. As with the WSP, this proposal carries a risk of failure and will need to be scientifically supervised and evaluated.

As far as the other animals are concerned, the Loro Parque option for orcas has the advantage of offering a solution for 3 to 4 dolphins that the park would be willing to host (no certainty on the other hand in the absence of an agreement on orcas). This would leave only 4 dolphins to be housed in another facility.

As with the orcas, the cooperation of the grooming team will be important, but the risk of media and legal challenges seems lower, as does the financial risk.

Recommandation 4. [DEB] Suggest to Marineland that they share the dolphins between the Ionian dolphin conservation sanctuary in Taranto, Loro Parque and other dolphinariums, and facilitate exchanges between teams to carry out the transfers.

Conclusion

Initially designed to provide an emergency response to the imminent risk of the orcas leaving Marineland in Japan, the mission was extended and its timetable relaxed to enable us to seek the best solution(s) for the animals' future, taking into account not only their welfare, in the current state of knowledge, but also the economic, legal and regulatory aspects, in a context of intense media coverage and radicalization of the positions of the various players.

Faced with very clear-cut positions for or against "marine sanctuaries" (in reality enclosures in maritime sites) as a response for animals born in captivity, the mission, after meeting and hearing numerous stakeholders and examining the available scientific literature on the subject, proposes to try the sanctuary experiment, but bearing in mind the absence of objective, scientifically-supported data enabling conclusions to be drawn on the basis of the few feedbacks from past experience.

In the face of a strong societal movement against keeping marine mammals in captivity, which found its translation in France in the law of 2021, the question of the future of the animals, most of which were born and bred in captivity, and whose life expectancy is measured in decades, will indeed arise in the future in an increasingly acute manner. Consequently, the question of the future of Marineland's cetaceans (which should have been anticipated when the law was passed) can be seen as the forerunner of a more general problem that will arise in the future.

In its search for a solution, the mission has therefore tried to propose several levels of interpretation: the search for one or more reception structures offering the best guarantees in terms of infrastructure, care and environmental enrichment, in order to provide the least disruptive end of life possible for these animals with their highly-developed psyches and social relationships. In this respect, Loro Parque in Tenerife appears to be the second and undoubtedly the most practical option.

Given the trend towards the closure of dolphinariums in the Western hemisphere, and the difficulty of finding facilities that meet European animal welfare standards, the preferred option is to give sanctuaries a chance. Although it involves a degree of risk, this option, combined with scientific monitoring by recognized experts, according to protocols validated by a committee comprising specialists in captive and wild cetaceans, would make it possible to advance knowledge in all fields concerning cetacean conservation. With this approach, the *Whale sanctuary* project in Nova Scotia for orcas and the *Ionian dolphin conservation sanctuary* for bottlenose dolphins offer the best guarantees of success, subject to the indispensable cooperation with Marineland staff and scientific monitoring already mentioned.

Céline Couderc-Obert



Inspector

Olivier Robinet



General Inspector

Appendices

Appendix 1. Letter of engagement



La directrice du cabinet

Paris, le 04 JAN. 2024

Réf : SB/2024-01/328

Monsieur Paul Delduc
Chef du service IGEDD
Tour Sequoia
1 place Carpeaux
92800 PUTEAUX

Monsieur le chef du service, *Cher Paul,*

Les dispositions de la loi du 30 novembre 2021 prévoient la fin des spectacles incluant une participation de spécimens de cétacés et les contacts directs entre les cétacés et le public. Cette disposition nécessite de la part des structures détenant des cétacés d'anticiper son application à la fin de l'année 2026. L'IGEDD a déjà rendu deux rapports sur les cétacés en captivité en 2019 et 2021.

Le parc Marineland d'Antibes détient en particulier des spécimens d'orques (*Orcinus orca*) et de grands dauphins (*Tursiops truncatus*).

Dans ce contexte, je souhaite vous confier une mission d'exploration et de comparaison des différentes options relatives au devenir de ces animaux.

Cette mission portera en particulier sur les opportunités de transfert des animaux vers d'autres parcs de loisirs ou d'autres structures propres à les accueillir, sur la réglementation applicable dans chacun des cas et sur les acteurs de ces structures existantes ou en devenir.

Vous étudierez la faisabilité des transferts au regard des réglementations existantes, en particulier CITES. Vous comparerez ces différentes possibilités, à la fois en termes de bien-être animal, des délais d'aboutissement et de la faisabilité du transfert, des financements disponibles pour celui-ci, d'acceptabilité du grand public, des ONG et des acteurs du secteur, et de sécurité juridique. Vous examinerez le calendrier de mise en œuvre en tenant compte des délais d'instruction des autorisations nécessaires pour chacune d'entre elles.

Dans le cadre de votre mission, vous pourrez vous appuyer sur les services du ministère, en particulier la Direction de l'eau et de la biodiversité et la Direction des affaires juridiques, la Direction départementale de la protection des populations des Alpes-Maritimes et de la DREAL de la Région Sud-PACA, en lien étroit avec les préfets des Alpes-Maritimes et de la région Sud-PACA.

Votre rapport est attendu sous un mois après réception de la présente lettre de mission pour les orques et sous trois mois pour les dauphins.

Marine BRAUD

Appendix 2. List of people we met

Name	First name	Organization	Function
METAYER	Marie-Laure	MTECT/DEB	Assistant Director DEB
DEMOLIS	Raphaël	MTECT/DEB	Office Manager ET3 FSC
TERRAUBE	Léa	MTECT/DEB	Project Manager
CIAMBELLI	Marco	MTECT/DEB	Deputy Head of Office ET4 CITES
CRANSAC	Lise	MTECT/DEB	CITES Project Manager
AUBERT	Anne	MTECT/DAJ	Assistant deputy director environment
GOUPILLIER	Corentin	MTECT/DAJ	Office Manager
LHOTE	Catherine	IGEDD	General Inspector
DOMBREVAL	Loïc	IGEDD	Former Member of Parliament, rapporteur for the 2021 Act
LE COZ	Christian	IGEDD	General Inspector
HUET	Brice	Cabinet SEMB	Chief of Staff
KORYSKO	François	Cabinet SEB	Former Biodiversity Advisor
LEHOUCK	Marie	Cabinet SEMB	Biodiversity consultant
GIRARDO	Claudine	French Embassy in Japan	Agricultural and health advisor
PERDREAU	Jérôme	French Embassy in Japan	Economic department
ISODA	Ryoko	French Embassy in Japan	Economic department
SEMICHON	Carole	French Embassy in Canada	Sustainable development consultant
GENEY	Jean-Claude	Grasse sub-prefecture	Sub-prefect
FOREST	Sébastien	DREAL PACA	Director
SOUAN	Hélène	DREAL PACA	Nature department manager
FAJARDI	Véronique	DDTM 06	Departmental Manager
GRASSIN	Anaïs	DDTM 06	Head of Animal Health Department

Name	First name	Organization	Function
DESSAINT	Romuald	Antibes Police Station	Chief Brigadier of Police
TAILLANDIER	Valentin	Grasse District Court	Deputy Public Prosecutor TJ
ROOSE	Caroline	EU Parliament	Member of the European Parliament
HUGNET	Christophe	Veterinary practice	Court-appointed veterinary surgeon
LEONETTI	Jean	Antibes Town Hall	Mayor and Chairman of Sofia Antipolis
PICOT	Pascal	Antibes Marineland	Director
CHOUX	Bénédicte	Antibes Marineland	Legal coordinator
SCALA	Christopher	Antibes Marineland	Veterinarian
MONTAY	Damien	Antibes Marineland	Zoological Director
CHAPERON	Katia	Antibes Marineland	Cetacean captain and caretaker manager
BÖYE	Martin	European Association for Aquatic Mammals (EAAM)	President. Planète Sauvage scientific manager,
DELORD	Rodolphe	Association of parks zoological parks (AFDPZ)	Chairman of the AFDPZ and President of Parc de Beauval
ERNY	Cécile	French Association of Zoological Parks	Director, AFDPZ
KIESSLING	Christoph	Loro Parque (Spain)	Vice President
ALMUNIA	Javier	Loro Parque fundacion	Director, marine mammal veterinarian
GRANDJEAN	Christine	It's quite	President, CNCFS member
WATSON	Paul	Sea shepherd conservation society	Chairman
ESSEMLALI	Lamya	Sea shepherd France	President
FOURRE	Maya	Sea shepherd France	Member, MGH Partners
CHABAN-DELMAS	Guillaume	Sea shepherd France	Lawyer MGH partners
VESSER	Ingrid	Sea shepherd	cetacean specialist
ARNAL	Muriel	One Voice	President
VINICK	Charles	Whale Sanctuary project (New Scotland, Canada)	Executive Director
MARAYNES	Matt	Whale Sanctuary project	Member

Name	First name	Organization	Function
MARINO	Lori	Whale Sanctuary project	Cetacean specialist
FANIZZA	Carmelo	Ionian dolphin conservation sanctuary (Italy)	Project Manager
CLEMENT	Nicola	Ionian dolphin conservation sanctuary	Coordinator of research activities
BARNABA	Monica	Ionian dolphin conservation sanctuary	Veterinarian
CATAPANO	Guissepe	Ionian dolphin conservation sanctuary	Soigneur, marine mammal specialist
MONTASIO	Helena	Ionian dolphin conservation sanctuary	member
MILIOU	Anastasia	Archipelago Institute (Greece)	Lipsi project manager
RINGUET	Christine	Tilikum spirit	president
VAN DICK	Catherine	Tilikum spirit	member
GILBERT	Frédérique	Cetacea	president
LE BOUETTE	Laurent	Artifact	Cetacea project architect
CHEYENNE	Frédérique	Sibylline Oceans	President, veterinarian
GUINET	Christophe	CNRS CEB Chizé	Researcher, orca expert
DELFOUR	Fabienne	Teaching veterinarian at ENVT	Veterinarian, ethologist, bottlenose dolphin expert
LUSSEAU	David	National Institute of Aquatic Resources, (DK)	professor of marine sustainability, cetacean expert
TIXIER	Paul	IRD Marseille	Orca ecology researcher

Appendix 3. Questionnaire for the call for expressions of interest

The AMI for the sanctuary project to house the two orca specimens housed at Marineland d'Antibes met several objectives:

- Put an end to the captivity of orcas, in compliance with French law. Expressions of interest must propose an economically and environmentally viable solution that respects animal welfare.
- Examine the technical and financial feasibility of a marine enclosure to accommodate Marineland's two orcas in France or abroad: take into account technical, regulatory and geographical constraints, and carry out a financial analysis of the proposed structure, which must provide guarantees of sustainability.
- Guarantee respect for animal welfare and develop a reproducible scientific approach useful for the reception of other captive cetaceans and/or their preservation in the wild.

The call for expressions of interest was open to any interested non-governmental organization and/or public research institution, in France or abroad.

The project managers had to be able to justify the biological, technical, regulatory and financial conditions for moving the cetaceans into a marine enclosure. The accommodation structure on a natural site by the sea should be compatible with the welfare requirements of specimens born in captivity. To this end, the following documents were required:

- exact geographical location and justification for choice of site: topography, safety, access, neighborhood, human occupation, local acceptability, avoidance of possible conflicts of use, land aspects (ownership, leasing or provision of land), environmental quality (studies and analyses of water quality and temperature, underwater noise environment), possibility of fencing, protection from currents and bad weather,
- regulatory and administrative feasibility study (coastline protection regulations where applicable): relevant departments, status of necessary authorizations,
- financing model for a minimum of ten years, with a projected budget (income and expenditure):
 - partnerships or sponsorship, donations, remote public access (observation sites on land), public support,
 - construction, maintenance and operation of infrastructures, remuneration of permanent staff, feed, veterinary care, enrichment equipment,
 - executive and operational governance of the project and, if available, a list of the names and qualifications of the permanent staff, mentioning their experience with captive cetaceans, releases into the wild or sanctuaries: director, veterinarian, holder of a certificate in

capacity, caretakers, other administrative and technical staff. The team should include expertise in cetacean biology and behavior, as well as in marine structural engineering,

- the project's scientific partners (universities, research institutes) and, if available, a list of the names of the researchers and PhD students involved, together with their main scientific publications and planned research projects. A scientific committee will be set up to monitor the project, with ongoing evaluation and public communication of the results obtained two, five and ten years after receipt of the animals,
- detailed description of facilities, including enclosures, acclimatization and quarantine ponds (surface and depth dimensions), veterinary care center (in compliance with current regulations) and equipment (weighing scales, staff accommodation, public facilities, etc.),
- operation: monitoring of environmental parameters, video surveillance, staff rotation, on-call duty, identification of risks in terms of staff and animal safety, meteorology and health, and procedures for preventing and managing these risks, etc.
- planned supply: suppliers, quantity and quality, storage facilities,
- human interaction to facilitate habituation to the new environment (play and training sessions),
- veterinary care (dental care, food supplements, etc.),
- reproductive control methods (chemical contraception, separation of animals),
- air transfer and acclimatization procedures in collaboration with Marineland.

Appendix 4. Comparison of the main scenarios studied for killer whales

Destination	Kobe Suma Seaworld (Kobe Japan)	Loro Parque zoo (Tenerife Spain)	Sea Shepherd Sanctuary (Bretagne)	WSP Sanctuary (Nova Scotia, Canada)
Project description	<p>A contract was signed on October 23, 2023 between the Japanese company Granvista Hôtels & resorts, which is carrying the KSSW project, and Marineland SAS for the donation of two orcas and the loan of the other two for breeding purposes (historically practiced by the <i>Kamogawa seaworld</i> belonging to the same group), public education and scientific research into animal behavior (two of the 4 animals have since died). The latter undertakes to apply the regulations CITES and animal welfare standards (NB: there are no international or Japanese regulations on the welfare of these species in captivity). To this end, orca holding facilities have been built according to the following principles the highest standards²⁵.</p>	<p>Loro Parque has been keeping orcas since 2006. It currently has 4 orcas (3 males and 1 female) in its facilities.</p> <p>The park had initially said it could not take in the Marineland orcas for lack of space, but now that there are only two, it is ready to welcome them.</p>	<p><i>Sea Shepherd</i> France, with the financial and other support of <i>Sea Shepherd International</i>, is proposing to create a marine sanctuary in the southern part of the Brest harbor in the commune of Lanvéoc, close to Ile Longue, home to France's fleet of strategic nuclear submarines. The proximity of these facilities is seen by the promoters as an asset, given the control of the land and the restrictions on navigation and overflight of the site.</p>	<p>Spearheaded by the North American NGO <i>The Whale Sanctuary Project (WSP)</i>, the project, located in Port Hilford, Nova Scotia, envisages a 40ha coastal sanctuary with partly existing onshore infrastructure. The NGO says it scouted over 130 sites before choosing this one for its physical characteristics of storm protection, land-based facilities and freedom from disturbance. Numerous studies have been carried out to refine the feasibility and design of the sanctuary based on past experiences and lessons learned, including the unsuccessful Icelandic release of the orca Keiko, in which one of the project's managers participated, and the Icelandic sanctuary that took in 2 belugas in 2019 (with disappointing results to date).</p>

²⁵ Undefined, but the AFDPZ points out that the park is a member of the worldwide WAZA association, a guarantee of partnership with the IUCN and compliance with strict guidelines - it should be noted, however, that it does not appear on the membership map, unlike Nagoya Zoo, which also has orcas (<https://www.waza.org/members/find-a-waza-zoo-or-aquarium>).

Progress report	The park officially opened on June 1 ^{er} with 2 orcas from other Japanese parks, and may welcome Marineland orcas in the coming months.	Loro Parque's management has said it is ready to welcome Marineland's two orcas into its existing facilities, without the need for any additional investments or modifications.	The project is at a very preliminary stage: no site survey or request for authorization has yet been carried out to ascertain the characteristics of the site and the quality of the water, nor have local elected representatives and military authorities been consulted about the project.	Studies have been carried out on site parameters and plant design, as well as the overall project budget. The agreement of the Nova Scotia Natural Resources Administration is expected after positive informal contacts. A quotation for a floating enclosure, anchored to the seabed, measuring 110m*50m, based on a model designed for salmon farming and adapted for orcas, has been drawn up, along with all the installations needed to set up the project.
Lead times	The facilities are now operational (the transfer of the orcas was originally scheduled for mid-March 2024).	As early as autumn 2024. The time needed to obtain Marineland's approval (negotiations to be envisaged for sharing transport costs and taking over part of the dolphin population) and to organize the departure and arrival procedures will be short. acclimatization.	The association estimates that it could welcome the animals within a year, provided that the Ministry indicates its interest in the project, first in a smaller habituation park, before creating a larger enclosure. definitive.	The project sponsors say they are ready to welcome the orcas in the first half of 2025, provided the French government gives its official backing to the project.
State of financing	The Granvista Group, owner of <i>Kamogawa Seaworld</i> , which has been home to orcas for several years, has the financial resources to finance the project and future developments at the new site in Kobe.	With annual visitor numbers approaching one million, Loro Parque has sufficient financial resources to support the additional costs of maintaining two additional orcas.	<i>Sea Shepherd</i> is a world-renowned anti-whaling NGO, and on the strength of its previous campaigns and the support of media personalities, it believes it will have no difficulty in raising the funds to finance the facilities, as long as the project is officially supported by the Ministry.	Based on past sanctuary experience, the WSP says it has no difficulty in raising the necessary budget. Out of a total of 18M USD earmarked for the project, the WSP has raised half, and many sponsors have indicated their willingness to contribute once they have been assured that the orcas will be destined for the project, thus securing the funding. initial.
Animal welfare	Maintaining the family unit, made up of the female and her son, is an essential element. The	The park is a member of the European Association of Zoos and Aquariums and participates in European programs for	The project is led by a ketologist biologist who has worked on numerous refuge projects. The transfer to a marine site	Moving animals over a long distance is stressful, even if past experience has shown that when carried out in accordance with the rules of the trade, it is possible to avoid stress.

	<p>However, participation in a breeding program with Kamogawa Park does not guarantee that animals will not be exchanged between the two parks.</p> <p>The ultra-modern facilities are an improvement on Marineland's current aging facilities. The latter emphasizes the performance of filtration and water quality, and the dedication of the caretaker team.</p> <p>However, the size of the basins is much smaller than at KSSW (a total of 8400 m³ including 3500 m³ for the main basin, compared with 44000 m³ including 17000 m³ respectively for Marineland).</p> <p>Moreover, long-distance airfreight transport is undeniably stressful.</p>	<p>endangered species.</p> <p>The orca facility consists of four interconnected basins with a total volume of 21,150 m³, with a maximum depth of 12m for the main pool and 8m for the others. The facilities have been designed to minimize blunt surfaces and promote maximum hygiene. The triple filtration system allows daily renewal of 20% of the water. In addition, a water cooling system keeps the water at around 13°C, the temperature recommended by experts.</p> <p>According to the experts interviewed, the integration of Wikie and Keijo into the group does not seem to pose a problem, given the matriarchal social structure. There are even plans to breed Wikie.</p> <p>Our staff are highly qualified and experienced.</p> <p>Air travel time is short, and the Park is close to an international airport capable of handling wide-body aircraft. In addition, the proximity of the two sites will facilitate contact with the carers after the animals have arrived, to see their</p>	<p>However, for animals described as routine and neophobic both in the wild and in captivity, a major change in their environment was required. However, previous experience has shown that with a gradual expansion of the park, the orcas quickly take over the whole area.</p> <p>On the other hand, releasing them into a large enclosure makes observation and handling more complicated, as well as the separation of aggressive or sick individuals and care.</p> <p>Furthermore, in the absence of water quality analyses on the site, the data available online at²⁶ show a high level of pollution (pesticides, heavy metals, antifouling, microbiological contamination and eutrophication of the environment) in the Brest roadstead, which is only open to the ocean via a 1.5 km inlet. In addition, the presence of the French navy, fishing and yachting fleets and the nearby Lanvéoc naval air station are sources of noise pollution that have yet to be assessed.</p> <p>The temperature in Brest harbor, between 9 and 18°C, is quite close to that at Marineland (10-21°C).</p> <p>In all cases, full collaboration with the teams from</p>	<p>the art, and on healthy animals the transport did not constitute an inordinate risk.</p> <p>On the other hand, transfer to a marine site represents a major change in their environment for animals described in the wild and in captivity as routine and neophobic. However, previous experience has shown that as the park is progressively enlarged, orcas quickly take over the entire park.</p> <p>On the other hand, releasing them into a large enclosure makes observation and handling more complicated, as well as the separation of aggressive or sick individuals and care.</p> <p>Questions have been raised about the quality of the water, which may have been contaminated by arsenic from an old gold mine, but recent analyses have shown the water column to be unharmed.</p> <p>Another aspect concerns the water temperature, which varies from 0°C in January to 19°C in August. This is a priori compatible with orca physiology, but will require habituation prior to departure and release in spring or summer.</p> <p>In all cases, full cooperation with Marineland's caretaker teams before and after the transfer is an essential part of the process.</p>
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		recruitment, making it easier for them to adapt to their new environment.	Marineland's caretakers before and after the transfer is an essential part of the animals' well-being.	animal welfare.
Transfer feasibility	<p>Marineland called on the best international experts to prepare the animals for transport, in terms of conditioning and habituation to restraint, as well as container and gondola design. Simulation exercises have also been carried out. The costs involved are considerable.</p> <p>Furthermore, orcas have already been transported over equivalent distances in the past, with no fatalities.</p>	<p>Transfer with packaging similar to that for KKSU poses no particular problems.</p> <p>Should this option be chosen, the cost-sharing between the two parks would still have to be agreed.</p>	<p>The choice of site, with a military airport in the immediate vicinity and a short flight distance, is a priori an advantage over other travel options.</p>	<p>Marineland called on the best international experts to prepare the animals for transport, in terms of conditioning and habituation to restraint, as well as container and gondola design. Simulation exercises were also carried out.</p> <p>Furthermore, orcas have already been transported over equivalent distances in the past, with no fatalities.</p> <p>The investment already made in this area would be useful in the event of a transfer to Canada.</p>
<p>Acceptability:</p> <p>- general public</p> <p>- NGO</p> <p>- Marineland</p>	<p>Acceptability to the general public and NGOs is very low, the latter believing that transfer to Japan would lead to a deterioration in animal welfare conditions and run counter to the spirit of the 2021 law. On the face of it, this solution is unanimously opposed by NGOs.</p> <p>On the other hand, Marineland and the zoo community consider that</p>	<p>Although the general public and NGOs will be more receptive to this project than to a transfer to Japan, given that it concerns an EU member state, it will not silence criticism that the spirit of the law has been abused. On the other hand, the solution may appear to be the best one for Marineland's management.</p>	<p>The idea of ensuring a natural end of life for Marineland's three orcas is viewed positively by the general public, especially if the animals remain in France.</p> <p>However, animal protection NGOs are likely to oppose the project, given its unpreparedness and uncertain financial viability. What's more, the project's location in a high-traffic area does not bode well for how it will be received by the public. stakeholders (fishermen, Navy, even farmers, local residents, elected representatives, etc.).</p>	<p>The idea of providing a natural end-of-life for Marineland's three orcas is viewed positively by the general public and NGOs (One Voice). However, some of them consider that it would be preferable to leave the animals at Marineland (C'est assez) or that a site in France should be preferred (<i>Sea Shepherd</i>).</p> <p>Marineland and AFDZ are opposed to any sanctuary project, for reasons of animal welfare (difficulty in controlling the environment), timeframes for the development of the sanctuary, and the need to protect the animals. implementation, and as a matter of principle (seen as a victory for the</p>

- other actors	it's the only solution that offers every guarantee for the well-being of animals and Marineland's economic future.		on any restrictions on use and regulatory constraints.	zoo opponents will feel vindicated in their campaign).
Legal certainty	The Ministry's issuance of a CITES permit (which does not take into account animal welfare aspects) on the basis of animals of a species listed in appendix II (A of the European regulation), born and bred in captivity, is a priori legally sound enough subject to Marineland's constitution of a complete file, even if it will not fail to be contested by the NGOS. The latter could also challenge the animals' health certificate and suitability for transport, given their health history.	As this is an intra-European transfer, the movement of orcas does not require a CITES permit. Only a health certificate issued by the DDPP is required. In the absence of an agreement with the Marineland to oppose such a transfer without exposing themselves to legal recourse. On the other hand, NGOs could contest the animals' health certificates and the fact that they are fit for transport, given their health history.	Unless this option is agreed with Marineland (which is a priori opposed to it), it will require the refusal to issue a legally questionable CITES permit (see above) and/or health certificate, for reasons of the animals' state of health, which makes it impossible to guarantee their transport in a way that minimizes the risks of injury, illness or rigorous treatment. However, the proximity of the sanctuary site and its location on national territory, which exempts it from the need to issue CITES permits, is an advantage over the proposed sanctuary in Nova Scotia.	Unless this option is chosen by mutual agreement with Marineland (which is a priori opposed to it), it will require the refusal to issue a legally contestable CITES permit (see above). and/or health certificate, because the state of health of the animals does not allow them to be transported in such a way as to minimize the risk of injury, illness or rigorous treatment. If this is the case, it will be difficult to justify that these conditions are met for an expedition to Nova Scotia, unless the departure is postponed.
Implementation schedule	Marineland said it had reserved a slot for a cargo plane in mid-March. However, no request for a CITES permit has yet been sent to the DREAL. In addition, a summary judgment handed down by the Aix Court of Appeal prohibited the moving animals under penalty of fines	It appears that transferring to Loro Parque in the autumn is the solution that offers the best prospects in terms of feasibility and timescales.	At this stage, no timetable has been provided. <i>Sea Shepherd's</i> application to a DEB call for tenders for the feasibility of a marine park, lasting 6 months before a decision is taken on the enclosure on French territory, makes the one-year deadline for the transfer of the animals, which could only be moved in the summer of 2025, unrealistic.	The mission was provided with a realistic timetable for the development of the project, which would enable the animals to be moved as early as 2025. However, the temperature of the water at the site could lead to the transfer being postponed until spring.

	until the submission of the experts' report (scheduled for April at the earliest). probably later).			
Comments	<p>In an exchange on 29/02, Marineland said wait for the report from the two experts before scheduling a new transfer of the orcas, given the booking fees lost in the event of postponement. Furthermore, the KSSW, which opens to the public in the summer of 2024, says it cannot accommodate the Marineland orcas beyond December. This postponement of the project will allow the various options to be examined in greater depth before a decision is taken, and to seek the most consensual solution between the main players.</p>	<p>Initially excluded due to the lack of capacity to accommodate 4 individuals, the opportunity to transfer Wikie and Keijo to Loro Parque represents a credible alternative in terms of feasibility, financial viability and animal welfare, while minimizing environmental changes. The fact remains that this option will be strongly criticized by associations.</p>	<p>Despite the promoters' clear determination and the fact that the project is national in scope, there are still many uncertainties concerning the choice of site and its suitability for housing the orcas, the necessary authorizations and the reception of the local population and stakeholders.</p> <p>Financial estimates for orca maintenance appear to be underestimated.</p> <p>Lastly, the NGO is acting as a service provider for a project supported by the State, which will have to assume all the financial consequences for its implementation (even if <i>Sea Shepherd</i> assures us it has the funding), but above all for its long-term viability. The MTECT's financial involvement may raise criticism in a complicated social climate with economic players, but also with environmental players, if this funding replaces credits for in-situ conservation (the question of preserving cetacean populations - accidental capture, interactions with boats generating shooting... - is already an acute one in France and Europe).</p>	<p>Although there are still a number of authorizations and formalities to be completed, the project, which has been in the pipeline for several years, appears to offer better guarantees of success.</p> <p>The team has been involved in most of the previous sanctuary projects and is surrounded by a recognized scientific team.</p> <p>Furthermore, the fact that the project is taken on by the NGO, which is supported by philanthropic foundations with substantial resources, removes the risk of having to contribute to recurring project costs.</p> <p>The impact in terms of image of choosing this site rather than the one in France is difficult to assess, given the divergent positions of the NGOs.</p> <p>Choosing an overseas solution involves logistical and welfare constraints, and the need for full cooperation with local authorities.</p> <p>On the other hand, financial sustainability and the guarantee that the French state will not be called upon to contribute, and will not have to conduct local consultations in a tense social climate, are undeniable advantages.</p>

Appendix 5. Glossary of acronyms and abbreviations

Acronym	Meaning
AFDPZ	Association française des parcs zoologiques Call
AMI	for expressions of interest
CE	Environment Code
CGEDD	General Council for the Environment and Sustainable Development (now IGEDD)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washing Convention) Legal Affairs (tone)
DAJ	Department
DDPP	Direction départementale de protection des populations
DEB	Direction de l'eau et de la biodiversité
DREAL	Direction régionale de l'environnement de l'aménagement et du logement
EAAM	European Association for Aquatic Mammals
EAZA	European Association of Zoos and Aquariums
EEP	European captive breeding program for endangered species (bottlenose dolphin) Inspection
IGEDD	générale de l'environnement et du développement durable
KSSW	Kobe Suma Sea World
MTECT	Ministère de la Transition écologique et de la Cohésion des territoires non-
NGO	governmental organization
PACA	Provence Alpes Côte d'Azur region
SEMB	Secrétariat d'Etat à la Mer et la Biodiversité
EU	European Union
WAZA	World Association of Zoological Parks
WSP	The Whale sanctuary project



IGEDD website :
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