

# **Ensuring sustainability of both Spinner dolphins and dolphin-tourism at Sha'ab Sataya, Red Sea, Egypt**

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This study has been conducted previously to the elaboration of a touristic management plan for Sha'ab Sataya. Its aim is to highlight the higher economic value of a responsible tourism and to identify the success factors and tools as well as the most adapted solution and plan to preserve both dolphins and the local touristic economy associated for Sha'ad Sataya dolphin site. The Touristic Management Plan designed for Sataya has been separated from this initial report and is available on our website (Sataya Preservation Plan). This report thus includes:

- An analysis of the Dolphin Swim's Touristic Spots Touristic practices & local management Analysis
- An analysis of the western touristic trends as per nature & wildlife
- A Comparative touristic attractiveness & economic outcomes of such sites based of whether their management (responsible or not).
- An identification of key success factors for a responsible tourism management of such touristic dolphin spots.

**Written for / Beneficiaries:**

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## I. Report Executive Summary

The Egyptian Red Sea hosts various populations of dolphins among which some Spinner dolphins. These are known to use different shallow reefs and lagoons as resting habitats away from deep sea predators (Norris and Dohl 1980; Wells and Norris 1994; Wursig *et al.* 1994). In the south of Egypt, in the red sea around Marsa Alam, such a site named Sha'ab Sataya.

However, with the boom of 'dolphin swim' tourism in this spot since the early 2000's, the lagoon of Sataya as a dolphin resting habitat is thus under a very high and continuously increasing touristic pressure and so is its daily visiting population of about 110 spinner dolphins.

The Wadi El Gemal National Park authorities in charge of Sha'ab Sataya are thus strongly willing to ensure that tourism does not deter dolphins from this last resting habitat in the Marsa Alam region. They wish to ensure the mid and long term survival of the local dolphin population while continuing to allow tourism around dolphins, as such touristic activities play a very important economic role locally.

The aim of this study is thus to provide inputs concerning the economic higher benefits of a responsible tourism around wildlife, about the best practices and solutions existing around the world that best combine dolphins' protection and touristic activities. This study also enabled to elaborate a Responsible Touristic Management Plan to better preserve Sha'ab Sataya and its visiting wild dolphins.

This report demonstrates that there is no need to choose between dolphins' conservancy and tourism revenues. There clearly exists a win-win solution which can combine both in the short, mid and long run.

As a matter of fact, the actual fast growing awareness among the world's citizens about the need to protect nature<sup>3</sup> but also to preserve wildlife to prevent it from disappearing<sup>5</sup>, has created an increasing appeal among tourists to immerge in protected natural sites and to live authentic and eco-friendly wildlife encounters<sup>6</sup>.

Given that the remaining number of such protected wildlife sites on our planet is very low and constantly diminishing, the economic potential of these sites as for tourism will thus highly increase in demand and value over time.

Positioning Sha'ab Sataya as a protected 'Wild Dolphins Sanctuary' is thus strategic and represents a win-win solution both for tourism and for dolphins' preservation.

From the analysis of Sha'ab Sataya as a 'dolphin swim' site, and its evolution over the last 7 years (via a direct onsite presence each year for a full week in the summer since 2013), 2 major challenges, were identified: an excessive number of tourists (boats and swimmers) around dolphins, and the boats' approaches and behaviours which are negatively impacting dolphins. From the analysis of various sustainable dolphin swim sites with similar physical configurations and/or challenges around the world, we could identify a suitable and easily replicable type of solution as well as key implementation success factors. We have thus been able to design a complete solution and a

detailed implementation plan for Sha'ab Sataya as presented in this report. (now in a separate report – see Sataya Touristic Management Plan for this part).

Please find below, in a nutshell, the solution key elements:

1. **Transforming the lagoon of Sataya into a protected “Wild Dolphins Sanctuary”** to strategically change and enhance its image, touristic value and appeal. And to ease the implementation of the below dolphins' protection plan.
2. **Defining the lagoon as a motor-boat free zone**, only allowing canoes-kayaks inside the lagoon. This solution would enable to solve many issues at once, whether regarding boats' noise and pollution towards dolphins and the lagoon ecosystem, or regarding boats' wrong behaviours around dolphins.
3. **Managing the number of visitors** in simple effective ways. A critical point to ensure dolphins' protection while restoring a high value authentic experience to visitors.
4. **A Code of conduct concerning dolphins' approach/swim** will be enough to complement the above elements and altogether enable a full protection of the dolphins.

Among other factors, 3 key success factors for such project were identified as follow:

5. **Training** for local operators and their teams to allow for the development of a local knowledge about dolphins ecology, ethology, preservation and economic value.
6. **Monitoring the dolphin pod's health and evolution** on continuous basis will be crucial to measure if the dolphins' protection measures are sufficient. This will also enable adjustments if necessary over time to guaranty the pod long term survival and their presence at Sha'ab Sataya.
7. **Strong Enforcement** via heavy sanctions in case of infringement, directly applicable by the Park authorities. This is critical to ensure respect of the overall plan without requiring any onsite costly type of monitoring.

## **II. Introduction**

This report presents in chapter III an analysis of the 'dolphin swim' sites around the world, in terms of quantity and of profile. Then, based on the evolution of western tourist's expectations concerning wildlife tourism, we will be able to define for each type of site, their mid and long-term economic potential for tourism. This will allow us to understand where Sataya stands as of today, and what would be the best strategic positioning for Sataya to enhance and maximise its 'dolphin swim' touristic potential.

As we will discover, protecting and preserving the lagoon of Sataya and its dolphins, is what will ensure sustainable economic outcomes for local tourism in the mid and long term. There thus exists a possible win-win situation for both tourism and dolphins.

By studying in chapter IV various sustainable management approaches, best practises and key success factors, this will give us some precious insights to define an appropriate solution and implementation plan for Sataya as outlined in chapter V (now in a separate document).

### **Important note:**

The analysis of Sataya as a touristic 'dolphin swim' site and of its evolution over the last 7 years has been conducted via direct onsite observations made by author each year since 2013 (during a one week stay in the lagoon each year, in either June, July or August).

Knowing well the site of Sataya and the challenges it is facing today, the author has voluntarily only retained in the present analysis and comparisons, 'dolphin swim' sites and other wildlife sites which are precisely relevant to Sataya (similar physical configuration or similar issues and aspects). Most sites mentioned as a comparison and all sites analysed have been personally visited by the author within the last 10 years. This enables to confront the sites' management plans and their actual effectiveness as directly observed in the field.

## **III. 'Dolphins swim' sites and touristic trend around the world**

### **A. 'Dolphin swim' sites number and profiles**

#### **1. Only a few remaining sites**

There are only few places left in the world where dolphins can be encountered close to shore (whether as residents or regular visitors).

Dolphins used to live on most coastlines around the world in the past, but due to the boom of human shore activities (industrial, commercial and touristic) over the last two centuries, most dolphins sites

close to shore have already disappeared. And they continue to diminish on a regular basis (the Riviera Maya coastline from Cancun to Tulum in Mexico lost all its dolphins within the last 30 years due to a huge touristic boom, Sha'ab Samadai in Egypt close to Marsa Alam was also lost less than 10 years ago etc.).

If among these places we only select the ones where the presence of dolphins is regular enough and the pod size big enough to enable a dolphin touristic activity, then the number of places drops drastically. And even more if we only select places where the accessibility, weather, sea temperature and conditions are all good enough to allow swimming with dolphins.

Finally, if among these very rare places we further select the ones where it is still allowed by local authorities to swim with dolphins, then **less than two handful sites remain around the world.**

As a matter of fact, to protect endangered species, mostly whales initially from tourism, many countries have forbidden both their close approach and their swim with (like USA and its Hawaiian islands, all the French Caribbean islands, Canada for both whales and orcas, Azores islands of Portugal for all big cetaceans except with 5 species of Dolphins, etc.).

Given that a similar touristic boom has developed around dolphins in many places over the last decade, some countries are also considering forbidding their approach and swim with to protect them.

In the Canary Islands (Spain), it is totally forbidden to swim with wild dolphins. In Hawaii (USA), the Fisheries department of the National Oceanic and Atmospheric Administration (NOAA) proposed to ban swimming with dolphins as well as to forbid any approach within 50 yards of spinner dolphins by any means in 2016<sup>1</sup>. This law has not yet been voted there, its outcome remains pending.

'Dolphins swim' sites are thus becoming very rare in the world and will become even rarer in the medium and long term. Both because dolphins are leaving our shores as a result of human disturbance and because some countries start to restrict or even forbid their approach and 'swim with'.

## **2. 2 types of dolphin swim sites**

Among this very small number of remaining 'dolphin swim' sites, we can observe 2 main profiles:

### ***a) Sites with eco-friendly authentic encounters***

These sites are usually in themselves beautiful natural marine or coastal environments. The size of the boats and number of passengers observed in such spots are usually rather small, and the number of boats and swimmers around and with the dolphins are also rather limited. Depending on the sites and countries, this is either due to local management rules (ex: USA, Australia, New Zealand), to touristic businesses being mostly managed by human-dolphin eco-friendly experienced professionals

(ex: Bimini island, Bahamas) or just because of a rather low tourism rate for the time being in other countries (ex: Drake bay, Costa Rica). Whatever the reason, these sites offer a truly authentic experience with wild sea mammals. Approaches are calm, slow and rather respectful, often guided by either knowledgeable and/or experienced professionals (whether scientists, biologists, eco-friendly sea mammal 'swim with' specialists etc.). We can observe that such spots are mostly in countries where nature and wildlife are locally considered as a natural wonder & heritage of the country, ie, highly valued. As a result, dolphins' encounters are marketed and advertised as offering a unique type of authentic experience with wildlife. Associated tours are thus advertised as a high value offer to tourists and their prices are as result not cheap<sup>2</sup>. These places are usually quite famous internationally and often classified in the media as the world best sites (ex: Frommers the famous US magazine, which is a reference for such world ratings, did list a pick of the best 'Dolphin Swim' spots in 2005<sup>2</sup>. Please see Appendix A for the full list and the tour information and prices etc.)

Frommers' pick include Bimini Island in the Bahamas, the Hawaiian islands, the Azores islands in Portugal, some spots on the Australian and New Zealand's coastline, Drake Bay in Costa Rica, etc.

Such highly rated and known authentic dolphin swim spots can attract tourists from all over the world just for the purpose of dolphins' encounters and swimming. Dolphins there are thus not just a one day or half day attraction but often represent the major purpose of the trip for many tourists. They are thus a great touristic asset and a precious source of touristic revenues, both at a national level and for local communities around these sites.

### *b) Overcrowded and unmanaged mass tourism sites*

These sites are much less known and in such countries, dolphins' encounters tend to represent no more than just another 'fun' or 'entertaining' excursion or activity to do while onsite, like in Mauritius Island, Madeira (Portugal) etc. In these sites, there is no local awareness of the rareness and preciousness of having dolphins close to shore. Dolphins' encounters are thus marketed as a rather low value offer. Boats tend to be bigger (from 20 to a 100 tourists) and boats as well as swimmers tend to be very numerous around dolphins. All types of practices and behaviours having a negative impact on dolphins can be observed there. There usually is no regulation around such 'dolphin swim' activities. Tourists may consider these tours fun and great, but many still consider them as a rather low value experience due to the overcrowded aspect of the tours, which in turns, confirms the rather low price rates of such tours etc.

Unfortunately, in the end as we have seen earlier, in some countries, dolphins may end up leaving these coastlines or sites.

And in many cases, as tourists are nowadays becoming more ecologically aware<sup>3</sup>, they slowly but surely start to be deterred from engaging in such excursions which are obviously un-respectful of dolphins. We can observe an increasing number of negative feedbacks on internet<sup>4</sup> of such excursions and sites. Internet allows to widely and rapidly share information and its power to influence the choices of tourists is becoming more and more important over time<sup>4</sup>.

## **B. The global trend in 'Dolphin swim' and wildlife tourism**

There is a strong and fast developing international ecological understanding of the real concern of our future on this planet: global warming, climate change, water rising, pollution, rapid extinction of so many animal species already happening and expected within a very short span etc. Research by scientists at WWF and the Zoological Society of London found that "Marine animal populations have already fallen by 40% overall" within the last 40 years<sup>5</sup>.

Therefore, more and more citizens in western countries (but not only) start to care about protecting nature and wildlife, understanding their immense value and the urgency to protect them. This has created a new trend among these citizens, whose appeal for everything that is natural, bio, green, eco-responsible etc. is fast growing, whether for food, clothes, materials, etc., and tourism.

Such citizens are also more and more interested to immerse in nature. The demand for destinations and eco-friendly activities associated with protected natural places and wildlife is a fast growing trend among western tourists as proved by recent studies<sup>6</sup>. Tourists are also willing to pay more for such touristic approaches according to these same studies<sup>6</sup>.

## **C. Conclusion**

Dolphin swim spots close to shore are becoming very rare in the world. If valued as such, protected and well managed, these sites can then represent a huge asset for tourism as protected 'wildlife heritage' or 'wildlife sanctuary' sites. Their value will increase in line with their increasing rareness, and due to the actual global tourism trend which shows a fast growing demand for all types of eco-friendly immersive experiences in nature and with wildlife.

However, if such wildlife tourism is not sustainable, then risk is very high that dolphin populations will decrease or move further away rapidly from these shores or sites. In such case, all potential revenues from the associated touristic activities will disappear. And if not, their touristic appeal, value and potential will decline no matter what in the mid and long term.

The strategic positioning and management of dolphins' sites and encounters are therefore crucial both for dolphin conservancy as well as critical for a high value sustainable tourism. It thus represents a win-win solution both for dolphins and for the touristic economy.

## IV. Status of the Sataya Lagoon

### A. The natural site and its potential as a 'dolphin swim' site

#### **The site as a natural environment:**

The lagoon of Sataya (Sha'ab Sataya) is an extremely beautiful yet fragile natural site and a rare type of large and almost fully closed horse shoe type of lagoon with very shallow waters, especially so far at sea. Furthermore, the quantity and variety of coral displays and fishes observable (outer deep reef & inner shallow reefs corals and marine life, numerous reef potatoes and a huge coral garden etc.) and their good conservation state make it a natural wonder in itself.

#### **The site potential as a dolphin swim site:**

For the moment we will voluntarily leave aside the existing touristic activities to assess first the 'dolphin swim' spot in itself and in its potential.

What makes a valuable dolphin swim spot is as follow: the high frequency and reliability of dolphins' presence, the importance of the pod size, its accessibility, the weather and sea conditions making it nice and easy to swim for humans and the underwater visibility.

In the lagoon of Sataya, all these conditions are at their best: dolphins come in most days and year round, pods seen on daily basis can approximately comprise between ten to one hundred dolphins, and dolphins usually remain many hours within the lagoon. Dolphins there are not fearful of humans but instead, very tolerant and even accepting a certain level of interactions with humans. Waters are warm and always calm due to the protecting surrounded horseshoe type of reef making it easy, nice and comfortable for swimming. The water also is very shallow (<15 meters), warm and with an incredible clarity offering an amazing underwater visibility.

The combination of the existence of such natural lagoon, its outstanding beauty and reef biodiversity, associated with a massive and reliable presence of dolphins, comfortable swimming conditions and perfect underwater viewing makes it one of the most beautiful and convenient natural site for dolphin encounters around the world. It would clearly deserve to be in the world best 'dolphin swim' spots for all these reasons, and it could easily be among the top 3.

As a comparison, the Red Sea is among the world top 3 most beautiful underwater life (with Australia and Belize) and is therefore one of the most famous destinations for scuba diving in the world. The associated touristic and economic benefits of such a natural wonder proved to be immense for the country.

### B. Actual status as a touristic 'dolphin swim' site

Tourism in the lagoon of Sataya exponentially developed over the recent decade in 3 main forms: day tours, site stop overs by many diving cruises, and dolphin swim cruises staying for one week in the lagoon of Sataya.

The site is thus unfortunately, slowly but surely, falling into an overcrowded mass-tourism type of 'dolphin swim' site. All the key elements known to negatively impact dolphins can be seen onsite. Also, the general attendance of the lagoon by dolphins seems to be decreasing. Even if no proper precise data is available to prove it or evaluate its extent, such general observation as gathered by the author from various dolphin swim operators over the last 6 years is to be raised as a red flag.

The main challenges associated with tourism at sha'ab Sataya are as follow:

- **Lagoon Habitat and dolphin pollution:** gas/oil and noise pollution from all types of boats, boats' liquid sewage rejected in the lagoon (from toilets, cooking, washing and cleaning products etc.). Also from garbage flying off the boats (plastic glasses and bottles, yogurt cups, foil etc. ending up on the reef). And finally, also from tourists' sun screen whose components negatively impact the reef (Downs CA, Kramarsky-Winter E, Segal R, et al. 2015)<sup>10</sup> and probably dolphins too given that some of their components also have a negative impact on the human body<sup>11</sup>).
- **Excessive tourism/overcrowded spots:** the number of boats and of tourists in the lagoon are more and more often way too numerous compared to the dolphin pod size, outnumbering it by large. (Up to six zodiacs can often be seen following a pod of only 3 to 8 dolphins, and up to 8 zodiacs (ie, 80/90 swimmers) can be seen swimming around a pod of only 10 to 15 dolphins. As for day boats, up to 100 swimmers or more can often be seen jumping directly off the back of day boats right on the dolphins, all at the same time, and so, even if the dolphin pod only counts 15 to 20 dolphins.
- **Boats' behaviours around dolphins (day boats and zodiacs) and dolphin encounters' management** are of an evident very high disturbance and nuisance for dolphins. Behaviours observable on a daily basis: Zodiacs chasing dolphins, zodiac arriving at high speed and navigating at speed right by the dolphins and over them. Zodiac's pilots and guides not checking or respecting if dolphins are sleeping or willing to be left alone. Zodiac's pilots and guides dropping people right on top of the dolphins, and allowing too many tourists in the water compared to the dolphin pod size. Dolphin day-long harassment: when dolphins try to leave away from swimmers, zodiac pilots/guides take tourists back on board and pursue dolphins to again drop tourists on top of them etc. This goes on as long as dolphins stay in the lagoon and this is done by 85% of all zodiacs and day boats on a daily basis etc.)

Dolphins are thus solicited all day long, and too often by way too many tourists and boats, no matter whether they show signs of reluctance, or whether they sleep or rest. The approaches are of high disturbance for dolphins as shown by their multiple behaviour changes when approached (diving to swim on the sea floor bottom, changing directions, accelerating their cruising speed to move away, etc.).

As many recent studies demonstrated, spinner dolphins come to such habitat to socialize, but most importantly, to rest, sleep and nurture their young, away from deep sea predators (Norris and Dohl 1980; Wells and Norris 1994; Wursig *et al.* 1994). Endangering their rest and sleep and/or creating too much environmental and behavioural disruption or stress have a critical negative impact on their health. It can deter them from continuing to use such resting sites and therefore endanger their mid or long term survival (Bejder *et al.*, 2006; Bejder *et al.*, In press).

Also, as a result, the lagoon and the dolphin swim experience are becoming rather poor in such overcrowded and noisy conditions. Swimmers often bump into one another given the crowd while trying to swim with dolphins. This thus impacts the image and value of such site and of all dolphin touristic tours.

## **V. Practices and key success factors among sustainable sites**

In this chapter, among the various best practices and key success factors concerning marine wildlife sustainable tourism, we only selected the ones which have a direct interest and relevance to the case of Sha'ab Sataya.

### **A. Strategic positioning of a site**

Most people around the world know and highly value, both the seven wonders of world (like the pyramids of Egypt), and the UNESCOs World Heritage sites (like the 'Grand Canyon' in USA). People understand their priceless value for humanity whether natural or cultural, as well as the critical need to protect such sites. These sites have thus become world famous, they receive substantial donations and help for protection, as well as they generate huge national and local tourism revenues by attracting millions of tourists from all over the world.

In USA, in the same way, both at a national and at a state level, authorities define and indicate to all citizens that certain sites are of high value and represent a great wealth for the state or country by creating and naming certain key sites as 'Heritage Sites' , 'Sanctuaries' or 'Protected Areas'. These can also be cultural or natural land and marine sites.

As highly valued sites, these are then highlighted and promoted by tourism departments as such. It thus generates greater tourism affluence (Osso 2014)<sup>7</sup> and this greater tourism affluence in turn confirms the precious and high value character of these sites (due to the important revenues generated around it locally).

Being classified as 'protected', this naturally entices a certain respect from touristic operators and tourists themselves regarding all protection rules applicable to such sites. This strategy is thus a successful proven virtuous circle, to better protect a site and enhance its touristic value.

This is how many American National Parks or marine protected Areas became so famous both locally and internationally (Grand Canyon, Yosemite national Park, Monterey Bay Marine Protected Area etc.), attracting millions of tourists but in an ecologically friendly way ensuring their long lasting sustainability.

We can observe the same outcome in Canada where many wildlife sanctuaries have been created. For example, the small village of 'Tadoussac' on the Atlantic coast, with only 800 inhabitants, has become internationally famous thanks to its marine wildlife sanctuary attracting more than 300 000 tourists per year coming to observe, seals, dolphins, whales and other sea mammals. By setting up such a protected wildlife sanctuary with a controlled and well organized eco-friendly type of tourism around sea mammals, Tadoussac has managed to perfectly combine wildlife protection and a thriving touristic economy. Thanks to such approach, it has entered since 1998 the very closed but yet internationally famous club of the "World's most beautiful bays"<sup>8</sup>.

What Tadoussac and the other above US sites mentioned prove is that it is possible to combine a thriving touristic economy and wildlife protection via an eco-friendly sustainable wildlife tourism approach. Instead of having cheap negative mass tourism which creates a poor touristic experience and a high threat to wildlife, such approach creates high value tourism, high revenues, better animal and habitat protection and a long lasting sustainability for both.

France has also started to do the same with many new protected marine areas on its southern coastline (the French Riviera) and in its island of Corsica. They also already start to be of an increased interest among tourists proving the economic and ecological interest of such strategic positioning.

We can note that because many such "sanctuaries" or "protected areas" have proven to be as beneficial for nature/wildlife as for business/tourism, they now are more easily welcomed by local communities who understand their economic benefits. They are thus easier and faster to implement.

Therefore transforming Sataya site into "Wild Dolphins Sanctuary" would be both very strategic and easily doable given the proven benefits for all parties of such solution.

## **B. Site management:**

Let us study the case of the Hawaiian Islands (USA). They are among the most famous destination for authentic 'dolphin swim', and are among Frommers' pick of 'dolphin swim' sites. In these islands, many spinner dolphin pods live very close to shore and use some shallow bays as resting habitats.

In USA at a country level, all cetaceans are protected by a national law stating that "Any harm, annoyance and even a simple disturbance to cetaceans is prohibited". This simple law created a clear understanding of the need to protect them among all citizens across the entire country.

**The law is enforced** via quite important field controlling means (compared to other countries), but mostly **thanks to severe sanctions that are of sufficient gravity to deter violations of the law (fines, revocation of pilot, boat and business licences and permits, court and jail).**

Also, given that citizens are well aware of the national general cetacean protection law, **citizens tend to report to the authorities or to the police when witnessing behaviours infringing the law. So everyone, including all touristic operators, tends to be respectful of the law by fear of being seen or reported.**

The dolphins' approaches and behaviours of all vessels and swimmers, along the eastern coastline of the island of Hawaii (Big Island) for example, are effectively among the softest and more respectful ones compared to many other countries and sites around the world.

So the national law clearly has a positive impact on both citizen's attitude and tourist operators which pass it onto foreign tourists. It has efficiently created some sort of common 'culture' or 'understanding' on one side and is well respected given its strong enforcement via severe sanctions.

The only main remaining difficulty the authorities are now facing in Hawaii, is that the overall number of tourists and associated boats doing dolphin swims have become way too numerous. They therefore end up creating proven negative impacts on dolphins as scientists and associations did demonstrate in recent studies (Danil *et al.* (2005)<sup>9</sup>.

Given that dolphins navigate all along the coastline very close to shore and visit various bays during the day where people can directly swim from shore to join them, controlling the number of boats and of swimmers around dolphins in such a wide environment is a real challenge. The NOAA Fisheries authority in charge has thus designed a law in 2016 (whose vote is still pending at this time) to forbid the approach of dolphins any closer than 50 yards<sup>6</sup>, therefore prohibiting any dolphin swims. Such law would of course then be highly effective and easily enforceable.

For example, whales in Hawaii are not to be approached closer than 100 yards, being a simple, clear and undisputable law, also highly enforced by severe consequences, the law is 100% respected.

We have observed the same type of law in many countries associated with similar heavy enforcement sanctions (Canada, French Caribbean, Azores etc.,) and they prove to be efficient in all these countries too.

This is why a similar type of law for dolphins in Hawaii would therefore also be highly efficient. However, the impact on tourism activities would be so severe locally that many discussions are ongoing to try and find other less radical alternate solutions.

This highlights:

- **The effectiveness of setting up rules which are simple, clear and undisputable, and to associate them with heavy sanctions in case of infringement. Such combination is thus a key to success.**
- **Also, when a rule is simple enough to create a general understanding or 'culture', it can be very beneficial too, either at a national or local level.**
- **Allowing everyone to report an infringement directly to the authorities can heavily support the enforcement of a law while lowering the need for monitoring.**

### **Interesting site management approach replicable in Sataya**

In Hawaii (USA), each state can classify its local wonders as 'heritage sites or sanctuaries' and the local (land or maritime) park authorities in charge, are also entitled to define particular management plans and rules based on the site specific needs.

As for spinner dolphins for example, Keleakekua bay in Big Island, a bay in which spinner dolphins come on a daily basis, has been declared 'State Heritage Marine Park'. And as such, it has been declared a boat free zone by the state park authorities. Instead, only kayak/canoes with permits and swimmers are allowed to enter the waters of this particular bay.

Only 3 kayaking companies have been granted a commercial permit to run dolphin kayaking tours with precise specifications about the time length, number of kayaks/tourists allowed and number of kayaking guides per groups etc. So dolphins in the bay are only visited by canoes and by additional swimmers who are directly swimming off from shore.

The 'boat free zone' rule being very simple, clear and undisputable, it is easily enforceable and onsite proves to be 100% respected locally.

**Creating such a free-boat zone would be easily replicable to the lagoon of Sataya as it is also a naturally well delimited zone. It would enable to avoid 99% of all pollution and noise pollution to the dolphins and the ecosystem. It would also stop at once all harassments and nuisances caused by boats/zodiacs which are one of the 2 major issues in Sataya.**

Unfortunately, in this particular Kaleakekua bay, aside kayaking tours, the increasing number of swimmers who are directly swimming off from shore into the bay have become too numerous compared to the dolphin pod size and the bay size. They now do start to represent a nuisance for dolphins.

Of course, Sataya shall never encounter such issue as no one can swim there from shore. **Nevertheless, it does highlight as another key success factor the importance of limiting and controlling not only the boats but also the number of swimmers/visitors around dolphins to ensure a proper protection of the dolphins.**

Finally, what is also interesting in the case of this particular bay, is that the authorized canoeing companies offering tours, even if allowed to offer dolphin swims as well, do not do so. They only offer a canoeing tour with the possibility to observe dolphins from the canoes. And surprisingly, these tours have a lot success among tourists (whereas tourists could choose any other provider to go swim with dolphins nearby). **This demonstrates that being able to simply view dolphins from close is sufficiently satisfying for many tourists.**

In Tenerife Island (Spain), where it is forbidden to swim with dolphins, dolphin watching tours also enjoy a great success among tourists.

**If such dolphin watching tours are also successful among tourists, they can represent a useful tourism management tool to lower the human presence and pressure on dolphins. For example, authorities could define that on a certain day per week (wednesdays for example) only dolphin watching from the canoes is allowed in Sataya (no swimming with allowed on that day). This would**

enable to offer dolphins a day off from any human swimmers while allowing for touristic tours to continue being run on these days.

## VI. Solution applicable to the Lagoon of Sataya

### A. Solution outline and key elements

We have seen that the main dangers for the lagoon ecosystem are as follow:

- Boat noise and gas/oil pollution,
- Liquid sewage rejected from boats

And the main dangers for dolphins are:

- The same above elements
- The excessive number of boats and swimmers with the dolphins at once, and all day long.
- The tourist boats/zodiacs' approaches and behaviours around dolphins

Therefore, given that the lagoon is far enough from shore and forming a well delimited and closed horse-shoe type of zone, a similar solution to the Hawaiian bay of Kaleakēkua could be replicated. The same strategic positioning of Sataya as a "wild dolphins protected sanctuary" with a free-boat zone management approach would be very efficient. The implementation could be fast and at low costs. This solution combined with a boat/visitor limitation management and a dolphin swim code of conduct will solve at once all actual issues cited above.

And to ensure success of this tourism management plan with law monitoring means, a strong enforcement via severe infringement consequences will be key success factor. Having proper and continuous data over the dolphin pod's health and evolution will also be crucial to evaluate if the plan is sufficient to ensure the sustainability of the dolphin pod and of Sataya as a resting habitat for them.

The solution key elements:

- ✓ **New strategic positioning: Sataya becomes a 'Wild Dolphins Protected Sanctuary'**
  - ↳ Aim: Enhancing the touristic value of the site in line with the growing global wildlife tourism trend, while easing the understanding and acceptance by all actors of the new site management rules and associated necessary investments.
- ✓ **Defining the Sanctuary's as a motor-boat free zone:** only canoes, kayaks or paddles are allowed inside.
- ✓ **Restricting & managing the number of boats and tourists onsite as well as around dolphins.**
  - ↳ Aim of the 2 above points: solving 99% of all dolphins and habitat nuisances at once, while restoring a high value authentic experience for visitors.
- ✓ **Training of all touristic operators taking visitors at Sataya**
- ✓ **Necessary dolphin pod wellness and evolution monitoring**

- ↪ Aim: provide accurate data to measure and adjust plan as necessary in the future to ensure sustainability of the pod and of its use of Sataya as a resting habitat.
- ✓ **Adequate enforcement means via heavy sanctions**
  - ↪ Aim: Ensure a 100% respect of the site management rules without requiring any costly onsite monitoring.

## B. Implementation Plan

Please find the Sataya Touristic Management Plan now in a separate document on our website.

## VII. Overall conclusion

This report highlighted that there can be a simple but effective solution combining both long term high value tourism and dolphins' protection at the same time. Such solution can be rolled out in a rather short time span implying low investments from the authorities as well as low management and monitoring costs to be sustained once settled.

Shall the authorities need further details or information on any part of this report, or additional inputs whether on this proposed plan or any other approach to protect the lagoon and its dolphins, please contact the author.

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## VIII. Appendix

### Frommers Magazine - Dolphin swim spots picks 2015

**Article: "Our Picks for Swimming with Dolphins Around the World" - Author: Charis Atlas Heelan**

**Source: Frommers 'website :** <https://www.frommers.com/trip-ideas/beach-water-sports/our-picks-for-swimming-with-dolphins-around-the-world>

"We've selected a few locations that provide ocean swimming experiences with an eco-friendly outlook that don't over-exploit these creatures or their habitat. Although a 100% money-back guarantee of being able to swim with the dolphins is never explicitly offered, most companies boast 99% success rates or offer free additional trips if you are not satisfied with your tour. Obviously the warmer the water, the more enjoyable your experience may be, although we have included a few cooler options where a wet suit may make your dip in the ocean more comfortable.

- **Key West, Florida**

There are a few operators that run dolphin inspired tours off the coast of Florida's Key West in the warmer Gulf waters. **Wild Dolphin Adventures** (tel. **866/296-3737**; [www.wilddolphinadventures.com](http://www.wilddolphinadventures.com)) offer morning and afternoon trips for \$85 per person plus tax for four-hours during daylight saving periods, or three-hours during the rest of the year. A 3% discount applies for trips paid in cash. Or if you would prefer, organize your own private charter for up to six people for \$450 plus tax for four-hours or \$775 for eight-hours. These charters can include visits to remote island beaches, snorkeling on coral reefs and shipwrecks.

- **Oahu, Hawaii**

If you are bound for the Hawaiian Islands and can drag yourself away from the beach, a magical Pacific Ocean dolphin experience awaits you with **Wildside Specialty Tours** (tel. **808/306-7273**; [www.sailhawaii.com/wildside.html](http://www.sailhawaii.com/wildside.html)). Setting sail from Waianae Boat Harbor, the tour boats take a maximum of 16 passengers for either a four-hour morning tour or a three-hour evening cruise. All cruises can combine a variety of marine life encounters (including spinner dolphins, turtles and/or whales) with snorkeling, swimming or just wildlife viewing. The price is \$95 per person plus tax, with a 15% discount for a group of five or more people (children are the same price as adults). Private charters are also available for \$350 per hour with a three-hour minimum for up to 10 passengers, and \$60 per person thereafter. All tours include snacks, beverages and use of the snorkel gear provided.

- **Bimini, Bahamas**

The Bahamas is one of the many Caribbean island groups to offer dolphin-swimming tours. Bimini was the setting for Ernest Hemingway's *Islands In The Stream*, but there's more than game-fishing here. If you are serious about your desire to get up close and personal with these marine mammals, then **Dolphin Expeditions'** (tel. **877/597-1800**; [www.dolphinexpeditions.com](http://www.dolphinexpeditions.com)) six-night/seven-day boat trip may be just what you are looking for. Staying on board the *Calypso Spirit*, the boat can accommodate six to ten passengers plus facilitators in either king or queen size double occupancy

staterooms with three heads (that's a toilet to you landlubbers). They are currently taking reservations for December 17 and 28, 2004 trips, which cost \$995.00 per person with most meals included. Additional costs are a \$15 Bahamian departure tax and a \$40 Bahamian environmental tax, both paid locally.

You can get to Bimini, the take off point for this tour, from Fort Lauderdale (from the Executive Airport, which is 20 minutes by taxi from the International airport). Charter Airline, **Bimini Island Airlines** (tel. **954/938-8991**) flies every Saturday and returns on Fridays with a roundtrip ticket costing \$190. Alternatively, **Chalks International Airlines** (tel. **800/424-2557**), a seaplane service, also flies to Bimini from Fort Lauderdale for approximately \$240 round trip.

- **Drake Bay, Costa Rica**

Swim with dolphins in the marine heaven that is found in Drake Bay off the Pacific coast of Costa Rica. Considered to be one of the most cetacean-rich areas in the world, the marine life here is abundant with pods of pan-tropic spotted, bottlenose, spinner and common dolphins as well as humpback, pilot, sperm and blue whales, giant manta rays, sea turtles and more. **The Delfin Amor Wild Dolphin Encounters** ([www.divinedolphin.com](http://www.divinedolphin.com)) are run through the **Delfin Amor Eco Lodge** ([www.delfinamor.com](http://www.delfinamor.com)) and cost \$95 for a full day, including lunch. You can fax **866-527-5558** toll free or e-mail [reservations@divinedolphin.com](mailto:reservations@divinedolphin.com) for more information.

The nearby **Drake Bay Wilderness Resort** (tel. **561/762-1763** in the US; [www.drakebay.com/dolphin\\_tour.html](http://www.drakebay.com/dolphin_tour.html)) also runs dolphin interaction tours as well as Whale and Dolphin Watch Packages. The four-day with three-night package includes two-day whale and dolphin watch trips, boat transportation to and from Drake Bay Airport, hotel lodging, three home-cooked meals each day and tours with bilingual guides for \$726 per person. They can also arrange your flight to and from San Jose/Pavas airport for an additional \$170 per person.

**Airfare Planet** (tel. **888/204 8869**; [www.airfareplanet.com](http://www.airfareplanet.com)) has roundtrip flights from New York to San Jose, Costa Rica from January 15 until March 31, 2005 for \$446, or \$508 from Los Angeles.

- **Kaikoura, New Zealand**

The South Pacific Ocean may be a little chillier, but with marine life in abundance, you may be willing to overlook the temperature fluctuation to experience the Southern Hemisphere dolphins. **Dolphin Encounter** (tel. **+64/3/319-6534**; [www.dolphin.co.nz/our\\_tours.htm](http://www.dolphin.co.nz/our_tours.htm)) runs specialized dolphin boat tours every day of the year (weather permitting) from Kaikoura, located on New Zealand's South Island, some 110 miles from Christchurch. Although dusky dolphins are most prolific in these waters, the dolphin tours often encounter other marine mammals such as Orcas (killer whales), pilot whales, New Zealand Fur Seals, and Hector's Dolphins. Three-hour tours include guided commentary and the boats are fitted with hot showers and covered areas for protection against the elements. Boats take 13 swimmers and up to 20 watchers, with November to April being the busy tourist season. Prices are \$80 for swimming adults (\$42 to observe) and \$73 for children under 15 (\$35 for non-swimmers).

From the US, **Travelocity** ([www.travelocity.com](http://www.travelocity.com)) has roundtrip direct flights on Air New Zealand from Los Angeles from \$903 in December 2004. From Christchurch, regular trains ([www.travelink.co.nz/nz/trainKaikoura.html](http://www.travelink.co.nz/nz/trainKaikoura.html)) and buses ([www.tourism.net.nz/region/christchurch/transport/bus-and-coach-services](http://www.tourism.net.nz/region/christchurch/transport/bus-and-coach-services)) service the route to Kaikoura.

- **The Azores, Portugal**

The Azores is a group of nine volcanic islands situated along the mid-Atlantic ocean ridge, halfway between North America and Europe. These islands belong to Portugal, which is about a three-hour flight or 950 miles to the east. Pico Island is considered one of the most beautiful of the Azorean islands, and it is in this remote location, that some of the best dolphin swimming sessions can be experienced. Also common are whales, turtles, sunfish and Blue Marlin.

**Pico Sport** ([www.whales-dolphins.net/azores\\_en/swimming\\_en.html](http://www.whales-dolphins.net/azores_en/swimming_en.html); e-mail [whales@gmx.net](mailto:whales@gmx.net)) operates the island's dolphin contact swimming tours during the summer to early fall seasons. A three-hour trip costs \$65 per person or \$48 per person with bookings of groups of four or more. The use of scuba gear is strictly forbidden in Azorean waters so dolphins are observed closer to the water's surface using the snorkeling equipment provided. Guesthouse and hotel accommodations on Pico Island (through Pico Sport) start from \$545 for seven-nights from June to September 2005.

With the remoteness of this island group, come the slightly longer flights and connections. From the US to Lisbon, **Iberia** (tel. **800/772-4642**; [www.iberia.com](http://www.iberia.com)) has the cheapest fares (via Madrid). From New York to Lisbon in June 2005, a roundtrip flight including taxes is \$576. **Grupo Sata** ([www.sata.pt](http://www.sata.pt)) has flights from Lisbon via Ponta Delgada to Pico Island for \$450 roundtrip. As of April 2005, Sata will introduce direct flights from the mainland (fares unavailable at this time)."

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