

Thinking Big — But Not Forgetting Small **The ICMMPA 2 “Take Home” Vision**

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Let me start with the story of the gray whale and the vaquita — two marine mammals from Baja California, Mexico, one breeding there, the other living year-round. The popular, wide-ranging, 35-tonne gray whale might seem to have little in common with the low profile, geographically-challenged, 50-kilogram vaquita. But let’s take a look.

The Pioneering Gray Whale was one of the first known endangered whales. In 1857, Capt. Scammon discovered the gray whale breeding and calving lagoons and less than two decades later wrote "...the large bays and lagoons, where these animals once congregated, brought forth and nurtured their young, are already nearly deserted...*[famous whale words...this was one of the first texts I read when I was learning about whales]* and ere long it may be questioned whether this mammal will not be numbered among the extinct species of the Pacific." At least one report from the 1920s referred to gray whales as “probably extinct”.

The Shy Vaquita, on the other hand, is a stay at home marine mammal, preferring local waters, home cooking, with the most restricted range of any marine mammal. Theoretically, that ought to make it simple to protect, right? We have been discussing that from day one here at the conference in two talks each by Lorenzo Rojas and Oscar Ramírez.

The Pioneering Gray Whale was the first whale to attract the interest of modern science in studying whales. Starting in the late 1940s, Carl Hubbs and his students made annual counts from the University of California rooftops. The Pioneering Gray Whale was the first whale to “earn its keep”, being watched commercially by boat in 1955 on the world’s first whale watch tour. The gray whale was the mainstay for whale watching, the most popular whale until the 1970s when humpback whale watching started off Provincetown, Massachusetts, and in Hawaii.

The Vaquita was named as a species as recently as 1958 — from three skulls. Not until 1985 did a scientist get a look at one. To this day, few people have ever seen them in the wild. Shy? Retiring? Cryptic? This porpoise is about the size of an adolescent human. Female vaquitas grow up to 1.5m (4 foot 11) and 50 kg (100 pounds, or 7 stone). When it breaks the surface, in even a mild sea state, the low profile disappears and they become invisible.

The Protected Gray Whale became a symbol for the US environmental movement and the first state marine mammal for California. It was the first Poster Whale. The Protected Gray Whale was the first whale to have a marine protected area designated for it, the 1972 Ojo de Liebre Refuge. This later became part of the network of lagoons designated as El Vizcaíno Biosphere Reserve. In the 1990s, the integrity of this reserve was tested when the Mitsubishi Corporation wanted to expand its salt works adding traffic and noise to the breeding grounds. México's Grupo de los Cien said "no, enough is enough." So did IFAW, the UNESCO World Heritage Convention, and a consortium of international supporters that created a pre-facebook, pre-social media campaign that turned the tide. So the gray whale is lucky to have friends in high human places. And today it is considered a rare conservation success story: an endangered species that has returned to around its original numbers of 22,000 whales.

The Semi-Protected Vaquita lives partly in a national biosphere reserve designated in 1993 as well as in the vaquita reserve core area. However, these reserves do not cover the full range of the species. The Critically Endangered Vaquita had about 245 individuals in 2008 and was on a downward trajectory — a 57% decline since 1997. The species continues to decline because of gillnet fishing for shrimp and finfish within and outside the reserve. An estimated 700 artisanal gillnetters operate throughout the vaquita's range. The vaquita is a clear winner in the "most likely not to succeed" contest. Vaquitas are not considered "poster material". Few tourists to Mexico ever hear about them.

So I am going to proposed that we need to think big and outside the box for the vaquita, as we did, successfully, with the pioneering gray. But more about that later.

It may be worth noting here the recent feat of the Pioneering Climate Change Whale. Last year a gray whale swam from Baja to Alaska and

then passed through the recently opened Northwest Passage, and became the first gray whale to enter the North Atlantic since the species went extinct there in the 1600s. No one knows the precise route the whale took but the whale turned up off Israel, as far inside the Mediterranean as you can go. Did this gray read the salty Mediterranean as a breeding lagoon? In any case, the animal made the journey of a lifetime — roughly 12,000 nautical miles (21,000 km) following the most likely straight-line route.

Is this the future? Or a one-time thing? Will we see southern right whales intermixing with North Atlantic right whales one day? Will we see humpback whales traversing the Suez Canal and populating the Mediterranean? Will dugongs move north in the Pacific from Japan and the Philippines eventually re-populating the Far East Russian Commander Islands' niche that its cousin, the Steller's sea cow, inhabited before going extinct?

One thing is almost for sure, if climate change does turn up the heat in the Gulf of California, there will be nowhere for the vaquita to go even if they decide to swim up the Colorado River. The stay-at-home vaquita could be the marine mammal most immediately affected by climate change. Vaquitas, already being caught accidentally in nets at a high rate, may simply run out of habitat.

So, aside from stopping gillnetting and reversing the course of climate change, no mean feat, how do we save the vaquita? Broad public support. A few years ago, however, Lorenzo Rojas asked the Grupo de los Cien if they were considering the idea of running a campaign for vaquitas. Their answer? Vaquitas are not sexy enough.

Not sexy enough. Well, all sorts of wildlife have that problem. Endangered Steller sea lions are veteran losers of animal popularity contests. For most of the early to well into the mid 20th century there were bounties on them in the North Pacific. Machine guns were set up to mow them down and it was only the 2nd world war that interrupted this practice. Talk to fishermen about their love affair with sea lions. Sea lions steal their fish, ruin their gear. Or we could go back to another one of Georg Wilhelm Steller's eponymous animals, the Steller's sea cow. That one was popular — as an easy-to-catch food item. I think Steller genuinely liked this animal, judging from his diaries, but the other members of the Bering expedition shot them not only for food but for fun. Twenty-seven years after they

were discovered in 1741, after feeding the expeditions that made a dent in the fur seal and other pinniped populations, sailors ate the last sea cow on the beach at Bering Island. The bones of the Steller sea cow can still be found on those beaches, but the song of the sea cow, and 20 million years of Sirenian evolution in the North Pacific, as Daryl Domning put it, abruptly ended that winter of 1768.

As researchers and MPA managers, the stories that we uncover and retell to others can make the difference for a species and its habitat. Look at E.O. Wilson with his ants, the parasol ants, the honeypots; they have character and when he talks about the sisterhoods of workers, the nuptial flights and other sci-fi-like events in the lives of these six-legged animals, we are carried along into the story and to a desire to protect the rain forest habitat. If you can enchant the public with stories of the *Basiceros* ants — the slowest, laziest, dirtiest ants in the world who wear dirt for camouflage and specialize in overwhelming slow-moving snails, then anything is possible. Dirty ants may not be sexy but they can be fascinating. The way that the general public perceives an animal is tied up with its survival. Usually the way to adjust a negative or ignorant perception is by learning more. When the public gets involved in an animal's life and its home, people see that every animal has its own integrity and importance in the scheme of things.

But let's talk about *not* sexy. Actually, the barnacle-encrusted, heavily scarred (and asymmetrically too) gray whale is not all that sexy as whales go, so there should be sympathy here for the vaquita. Gray whales have the advantage of ubiquity and closeness to humans, which of course was a distinct *disadvantage* when the whalers were about, but with whale watching they turned it to their advantage, at least until the more photogenic, sexier humpbacks, blues, fins, orcas came along. So gray whales at least might give hope to vaquita that a not so conventionally attractive animal might be able to cultivate...a certain image, maybe not fetching, but at least appealing in some way or other.

Bob Pitman and Lorenzo Rojas wrote in *Natural History* magazine:

“The vaquita has no value as a commodity: It is too shy and small ever to support an ecotourism venture. [*might argue with that: remember Peter Mathiessen's snow leopard trip finding no snow leopards only tracks?*] It is not a vital link in the marine food chain.

There is no cure for any human disease lurking in its liver proteins. It is just a lowly beast trying to make its way, like the rest of us. [*nice turn of phrase —putting them on a level footing with humans*] Its loss would barely be noticed. Yet it was part of the magnificent diversity of life on Earth that our generation inherited, [*rather chilling the way it goes into the past tense as if the species is already extinct and we are looking back*] and it is rapidly becoming part of the dwindling legacy we are leaving behind [*soberingly back to the present*]. We have a year or two now to decide whether we are going to let this species live, or whether, like the baiji, we vote it off the island and wipe that little black smile off the face of the Earth forever.”

That little black smile. Maybe that’s what we need to promote.

In my search for materials for this talk, I came across the website savethevaquita. I was thinking: “Wow, someone does care. It’s happening. Pretty soon it will be on one of those social media sites with a massive write in campaign.” I clicked on the link and — the website had expired.

Wait a minute! It hasn’t gone extinct yet, has it? Well, the website had.

Did they run out of money? Give up hope? Assume that the species was beyond saving or that it was just too late? Or did they just find that no one was interested?

This is supposed to be an inspirational “go forward” talk and I’ll come to that. So far, the positive part is the gray whale returning to original numbers, the success of the MPA network on the breeding grounds to protect it, not to mention its ability to achieve sexy status in view of its questionable physique. Of course, we could have focused on the western gray whale population and how they may be headed for extinction which may partly be because of a failure to implement a large enough MPA off Sakhalin Island.

But — we need to know the bad news if we are going to do something positive. We have to learn lessons from the past and present to make things better. We have to pay attention to the big stuff but not forget the small details. I think that we are starting to do that.

Looking into the future is tricky, perilous. Still, many of us are being asked to make decisions based on sketchy data that will not only affect but determine the future. We are being asked to use the precautionary approach to anticipate the future needs of animals in view of climate change and a wide range of other escalating threats. We are being asked to define zones and boundaries of proposed MPAs when many of us know that things are not always so different on one side or other of a boundary. We are being asked to enforce — or in some cases ignore — regulations created on sketchy grounds at best. The boundaries, the guidelines, the regulations, the enforcement seem at times to have little or nothing at all to do with the reality of these wide-ranging, highly mobile, animals — the little we know about them.

Yet we're lucky when it comes to marine mammals. We are working with animals that capture public imagination, animals that travel the world and connect people and places, animals that we are learning more and more about but are still, inspiringly, on the steep side of the learning curve. In many ways we have been able to bring the public along on this fantastic ride of exploration, learning and conservation through whale watching, public education and engagement on marine mammal issues. That alone should expand our ambitions to protect their habitat.

Yet we have a long way to go in the protection department. According to the latest up-to-the-minute numbers from IUCN, as Dan Laffoley told us, only 1.41% of the ocean is in MPAs and, according to Louisa Wood and her colleagues, just 0.08% is highly protected — a long, long way from minimal targets. For the most part, when it comes to marine mammals, we have protected the near-shore critical habitats of a few researchers. We need more data — of course we will always need more data — and we need to devise more ways of making incomplete data go much, much further, to help us make difficult decisions. Some say it doesn't matter what we decide today, that we can always change it, and that review and change through an iterative process will be built into the management plan. But more often, what happens is that later on the status quo becomes difficult to shift; it becomes the reference point by which all future decisions are made. Psychologists and pop economists call this the "anchoring effect". That's why in negotiations it is better to avoid putting a number on something as everything that follows remains firmly anchored in reference to the initial number. Or if you have to assign a

number, make it as high and as close to the improbable as you dare. If we are going to be nailed down to certain sizes or degree of MPA protection, we need to set the bar as high as possible.

Climate change, as I've said, looks like one key driver of our future. We don't know to what extent, yet we suspect that the future is going to include erosion of coastlines, rising water mass temperatures, shifting marine and land-based habitats, and a challenge for all of us to deal with. And it's not just climate change acting alone, but all the other threats to marine life that may combine synergistically. Our challenge now is to envision the broadest extent of the change and then be ready to help marine mammals through what will be a difficult period that, hopefully, can be gotten through. If sea levels rise to a great extent, however, we may be struggling to help our own coastal human populations in their efforts to survive the changes.

A second key driver will be technology with positive and negative implications. On the one hand technology can help us catch more fish, make ships go faster and hit more whales and drive them crazy with more noise, but at the same time technology could help fishermen be far more selective and less wasteful, reducing the bycatch scandal of the sea. Ships might travel as fast but much more efficiently with better propellers, less cavitation and thus much quieter. Future sensor designs might help ships avoid striking whales.

Every ship at sea should have to carry, as part of its license, a low-cost transceiver unit for the vessel monitoring system (VMS) or other sensor system using satellites to pinpoint location and help assess activities at sea. Of course, there will always be a need for special sensors and platforms to handle the task of monitoring non-cooperative vessels. These and other remote monitoring technologies may provide powerful tools for future research and management of all marine protected areas in the ocean, no matter how far from land.

The economy figures in all of this, too. The current state of the world economy is marginalizing the effort to conserve marine habitat. We used to have corporations failing, then banks failing, now it's countries failing. In Greece several years ago, dolphin researcher Giovanni Bearzi called for a network of protected areas to save the endangered common dolphin in the Mediterranean. "Endangered common dolphin" sounds like an oxymoron. In fact this dolphin may be the dolphin of Aristotle, the one the ancient Greeks befriended.

Having survived the dark ages and the 20th Century, common dolphins in Greece are now on their way out. Greece cannot hope to create the network of protected areas and stop the impacts now in time to make a difference. It is literally too late. The best we may be able to do is to protect these dolphins mainly in the western and central Mediterranean and hope that if we can keep the waters clean enough they might one day return to the waters of Greece. But for Greece, right now, it is not a matter of endangered common dolphins but an endangered country and people. And of course the economic problems in Greece appear to be simmering in other European countries as well. We don't know where this will go and how bad it might get. But there will be few marine conservation initiatives when there is no money.

These are not the brightest of days to be undertaking the massive marine protection efforts we want to do here in terms of creating new areas, new networks, managing existing areas and building strong and effective management bodies. But I can easily come up with three things that give some optimism in the MPA field despite the situation we find ourselves in:

1. Networks. The networks that were our featured theme for ICMMPA 1 are flourishing. Agreements between Chile and the US MPAs have recently been signed and there are exciting network developments in South America: the river dolphin network: SARDPAN and the Northeast South America Regional Cooperation for Marine Mammals and the Wider Caribbean programme initiatives, all of which were the subjects of workshops here that brought together people thinking and working on river, estuary and coastal conservation. Also, the High Seas Alliance, formed in June 2011, is bringing conservation groups together and thinking big about the 64 percent of the ocean on the high seas. I believe that this Alliance will show the ability to work together to drive action. The Alliance is anchored by the collaborative scientific work of the Global Ocean Biodiversity Initiative (GOBI) which is helping to pull together the data needed to identify and establish MPA networks on the high seas.

2. The monk seals. This might seem a strange thing to be optimistic about in a region where the Caribbean monk seal, went extinct half a century ago. But I know it is good news to see the successes in Madeira, for example, and the sheer number of monk seal mothers and calves turning up on a regular basis all over the Mediterranean,

hiding out in an estimated 300 caves, and even on one open beach. That and Giuseppe Notarbartolo's success in bringing the monk seal people together in Martinique, to build on the discussions started at ICMMPA 1 in Hawaii — it's very good news.

3. Thinking big, the push to create more, very large areas by Pew, IUCN, Marine Conservation Institute, the High Seas Alliance, the Antarctic and Southern Ocean Coalition, and the Whale and Dolphin Conservation Society, promoted by this conference in 2009 as well as now in 2011, although not without controversy and critics, has created the opportunity for large ecosystems to be protected in a way that was difficult to impossible when MPAs were averaging a square km in size. The large marine national monuments set up in the Pacific in the last few years have raised the bar in Australia, the UK, France, the Cook Islands, among other countries.

On the world map that we made in 2004 for the 1st edition of my book, *Marine Protected Areas for Whales, Dolphins and Porpoises*, most of the areas outside of the Great Barrier Reef Marine Park are just dots on the map.

On the world MPA map of 2011, just completed, you can now see many areas are added and filled in, particularly in the Pacific where highly protected, IUCN Category I marine national monuments have been created in the interim.

Comparing the top 15 MPAS in size in the 2004 edition of my book with the top 15 as listed in the new 2011 edition, average size has gone from just over 100,000 km² to 220,591 km². So MPAs for marine mammals are getting bigger. They are also expanding in number from 358 in 2004 to 570 today. Now the challenge will be trying to manage them, to fund enforcement, to make them into areas that function for conservation, but the vision is there.

I would also like to highlight the large-scale zoning approach. There are more and more examples of ocean zoning starting with Tundi Agardy's recent *Coastal Ocean Zoning* book, and we have been discussing and finding other examples here in Martinique. This has key implications for marine mammals because of their extensive spatial needs. Zoning offers the chance to really get together and plan sensibly how the ocean might be used to integrate conservation with all the other anticipated uses. That's an awfully tall order, yet there

are the seeds of this idea planted and growing in a few areas and again, the vision is there. As Christine Schweizer said in her presentation about bioregionalisation in Australia, if we approach conservation issues one-by-one on an ad hoc basis, the problems can suddenly expand to where we realize that we should have been looking at the big picture right from the start. That's why large scale spatial planning makes sense at the beginning.

I also note a strong emphasis the last few days, in panels and workshops, on tackling the threats that marine mammals face. In many ways this has been the missing ingredient in terms of managing MPAs that work. By focusing on bycatch, ship strikes, enforcement of regulations, the growing spectre of noise, we are attempting to broaden the effective management powers of MPAs, so that we can make effective MPAs a reality. We need to think big, and outside the box, devising effective solutions for protecting large habitats, while adapting our thinking so as not to forget the small populations living in important micro-areas.

The first ICMMPA conference had as its theme networks. We networked and here we are again and hopefully meeting for ICCMPA 3 in another two or three years.

ICMMPA 2, here in Martinique, with its focus on endangered species and spaces, could remind us that gray whales were once in this situation. But now the endangered species and space story is about Hector's dolphins, six species of river dolphins, manatees, dugongs, North Atlantic and North Pacific right whales. But the vaquita embodies many of our concerns that we have been discussing the last few days.

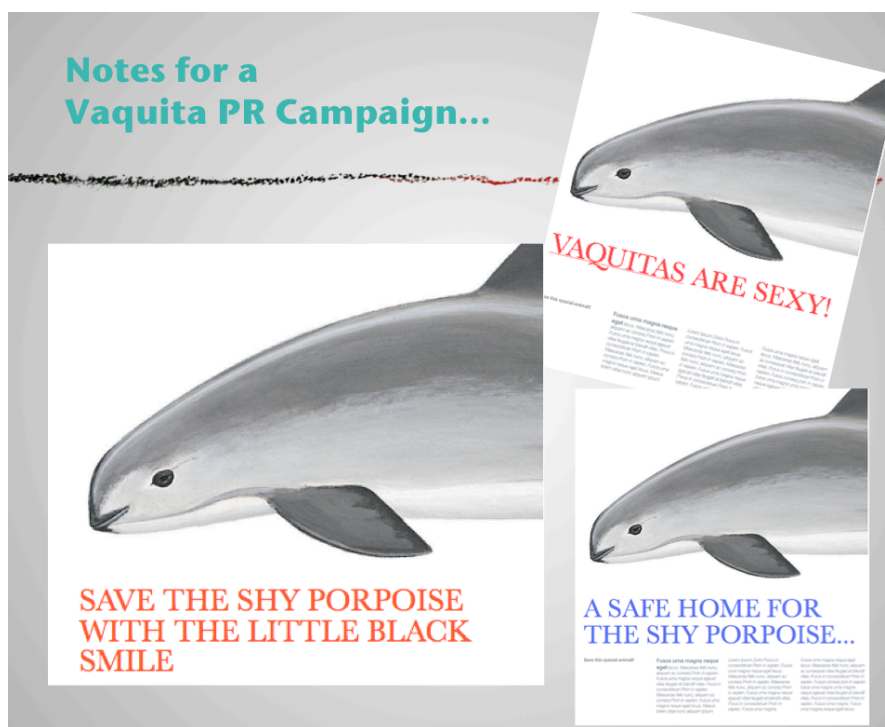
In closing, I want to say that the vaquita needs gray whale-type attention. It may take a *grupo de los millones* this time, but if we get it rolling, it should be easier with social networking, Google Ocean and iPhone apps. Yesterday, I checked again on the expired savethevaquita website and found that it was back in business. Maybe there is hope — although the website clearly needs improvement. The next step is to create a catch phrase, a poster or badge that says "Vaquitas are sexy" or: "Safe homes for shy vaquitas!", or: "Save the vaquita: the shy porpoise with the little black smile!"

I am sure a clever PR Agency can improve greatly on all of these, but it's a starting point. Of course, it may not be vaquitas but each of us here has an opportunity to influence the course of events with conservation in our own corner of the world. It is our stories, as scientists and MPA managers about these animals and how they live, their habitats, that helps provide the inspiration. By moving the conservation initiative into the public arena, this can give and administrators the license and courage to turn what might have been an unpopular decision into a necessary one.

Finally, I wanted to relate that yesterday, at the bycatch workshop, Artie Jacobson asked the group in that delightfully blunt Australian fashion: "Is there any value to the vaquita?" Everyone was quiet for a few seconds and then Oscar Ramírez said: "Only in the heart of Lorenzo Rojas!"

Everyone laughed. And then Oscar added: "...and in my heart, too."

We need to get vaquita into the hearts of a few more million people — that's all.



Abstract for Closing Keynote Address

Thinking Big — But Not Forgetting Small The ICMMPA 2 “Take Home” Vision

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This is the story of the gray whale and the vaquita — two marine mammals, one breeding, and the other living year-round off Baja California. The 35-tonne, high profile, wide-ranging gray whale has little in common with the small, low profile, geographically-restricted vaquita. The gray whale was the first whale to be studied and watched commercially in the wild, and the first ever marine mammal to have a marine protected area designated for it, the 1972 Ojo de Liebre Refuge which later became part of the network of lagoons designated as El Vizcaíno Biosphere Reserve. For the vaquita, the 1993 designation of a national biosphere reserve aimed to protect this cryptic, critically endangered porpoise (N = >245 in 2008, decreasing ~57% since 1997). Yet the species continues to decline because of gillnet fishing for shrimp and finfish within the reserve and even occasionally within the more restricted highly protected Vaquita Refuge. An estimated 700 artisanal gillnetters operate throughout the vaquita's distribution range.

The gray whale embodies the themes of the first two ICMMPA conferences and is a success story. The gray whale became an endangered species in the late 19th Century after the discovery of its lagoon breeding habitat by whalers made it easy pickings. Saving the gray whale was a matter of stopping the whaling in the lagoons and along the migratory routes and keeping the lagoons as protected isolated ecosystems. The gray whale inspired networking in the Mexican MPA systems and later the US and California state sanctuaries. The gray whale is also a pioneering whale when it comes to climate change, with one bold gray whale having recently navigated the ice-free Northwest Passage enroute to Israel, setting a distance record of at least 21,000 km. Marine mammal researchers and climate specialists wonder if this is a sign of things to come.

As scientists, managers, and conservationists, we need to think big and outside the box in terms of creating, linking and managing MPAs in the face of not only climate change, but also uncertainties regarding species data across the open ocean, emerging technologies both for and against conservation, and the state of the world economy. Despite the negatives, there are many positive signs in the collaborative work by the Global Ocean Biodiversity Initiative (GOBI) and High Seas Alliance (HSA), the latest developments facilitating offshore monitoring and enforcement, as well as the networks that have emerged in the Caribbean, northeast South America and among the river dolphin specialists from eight countries in South America plus Asia.

Nevertheless, we are faced with difficult problems to solve, such as the battle for effective habitat protection for the vaquita. Since the baiji went extinct in 2007, the vaquita is the marine mammal species voted most likely not to succeed. The vaquita story touches on the challenges and concerns of ICMMPA 2 in Martinique — an endangered species in this case living in a protected productive ecosystem in the Upper Gulf but endangered by outside forces beyond the control of marine mammal scientists and managers. In terms of a campaign to try to save it, the vaquita was rejected as not glamorous enough by the *Grupo de los Cien* that was part of the national and international movement that stopped Mitsubishi's salt works expansion in the protected gray whale habitat of San Ignacio Lagoon in 2000. Every species needs its champion but it may take an inspired *grupo de los millones* to save the vaquita.