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Dedicated to a Healthy Sea of Cortez

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→ The Problem

Sea of Cortez Under Threat

The Sea of Cortez, that mightiest of fish traps, is in the middle of a total collapse.



Breaking News

→ [Gillnets ravaging Sea of Cortez.](#)

SeaWatch discovers illegal gillnet fisherman taking the last reef fish while government looks the other way.

→ [90% of World's Oceans Depleted](#)

Recent study shows that massive depletion of fisheries within 10 years of the start of commercial fishing.

→ [SeaWatch launched fundraising drive.](#)

See what you can do to support the Sea of Cortez.

The Solution | Working with government towards ...



VMS
[Monitoring fishing in restricted areas](#)

Center for Sustainable Fisheries
[Conducting sound science for a sustainable future.](#)

Guardianas Del Mar
[Empowering citizens to guard the sea.](#)

Coalition for the Sea of Cortez
[Because a united opposition is easily defeated.](#)



Newsletter Signup

Enter your e-mail to receive periodical information.

Selected By The Rolex Awards For Enterprise as One of the Top 100 ecological projects worldwide.



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 Center For Sustainable Fisheries

 VMS.


Projects in Need of Support

The Sea of Cortez is greatly under threat. Unlike other endangered parts of the oceans, however, the Sea of Cortez falls entirely within the waters of one country. This accident of geography, coupled with the encouraging rise of participatory democracy in Mexico creates an important opportunity - and not a moment too soon - for all Mexicans and anyone who plans to enjoy the the Sea of Cortez in the future- to make a last stand for one of the world's greatest marine ecosystems.

Today, SeaWatch is working closely with government to design and **implement practical solutions to the serious problems** confronting the Sea of Cortez. For SeaWatch to become involved with any project it must be scalable, it must have measurable performance criteria, and it must be directly overseen by SeaWatch. As has been the case since it's inception, every dime donated to SeaWatch goes directly to the specific projects.

See below to find out which projects you would like to help support.

Center For Sustainable Fisheries

\$20,000,000 (includes operational endowment)

If the Sea of Cortez is to provide a sustainable source of economic development for the people who live along its shores, we must have quality, reliable data. Modeled along the lines of a very successful, similar program in Alaska run by the University of Miami, the Center for Sustainable Fisheries will be crucial for the long term future of Mexico's richest sea. [Click here for more information](#) or [email us directly](#). [link to CSF page on SeaWatch web site on Contact Us page.]

VMS

Seed Financing \$300,000

If what is left of the Sea of Cortez is to be saved, there **MUST** be strict enforcement of fishery laws. VMS or [Vessel Monitoring Systems](#) are an important and proven technological solution to monitor the locations of commercial fishing boats. Already used in Chile, Canada, the E.U. and the United States, VMS enables vast stretches of sea to be monitored at a fraction of the cost of other monitoring systems (ships or planes.) While political momentum is shifting in favor of this program, SeaWatch is actively seeking funding to supplement the start up costs (approx. \$2,000 per boat.) VMS is currently SeaWatch's most important project and represents the first real opportunity to enforce the laws that SeaWatch helped pass. [Email us to find out more](#).

Guardianas Del Mar

\$120,000 per year

Though VMS offers a technology solution, there also must be a human component. [Guardianas Del Mar](#) will create a Mexican state equivalent to the Fish and Game Department. Six honest wardens

Without active enforcement there is essentially no management of the Sea of Cortez and it's fisheries.

A Popular Denunciation is a instrument initiated by the public that requires specific government action.



Executive Director Guillermo Alvarez



Sinking the last boat

and a boat is all that it takes to patrol the entire coast of Baja California Sur from Cabo San Lucas to Loreto. Though the Guardianas Del Mar wardens will be legally empowered as a branch of government, SeaWatch will provide funding and oversight. [Email us to find out more.](#)

Documentary:

The Old Sea of Cortez \$50,000

As the recent landmark [study by Myers and Worm](#) shows, within 10 years of the start of commercial exploitation, a fishery is reduced by 90%. The Sea of Cortez has been fished on an industrial scale since 1980. As with many of the world's oceans, even well-intentioned fisheries laws have been implemented too little and too late, years after the major damage has been done. If we are ever to restore the Sea of Cortez, and not just maintain its productivity at current depressed levels, we must know what it once was. Fortunately, there are some fishermen who still remember the way it was. This project will document, on film, their experience and recollections so that all generations will know what the real baseline measurement should be. [Email us to find out more.](#)

Coalition for the Sea of Cortez

\$50,000 seed financing

Since 1949 when CONAINPES, the commercial fishing lobby, was founded, fish stocks in the Sea of Cortez have fallen 95%. If the Sea of Cortez is to be saved, conservation interests must unite to present reasonable solutions towards an economically and environmentally sustainable Sea of Cortez. To that end, [Coalition for the Sea of Cortez](#) organizes stakeholders, develops scientifically-sound and socially responsible policy alternatives, and communicates those alternatives to opinion leaders, the media, and government. [Email us to find out more.](#)

Comision Nautico

\$18,000 seed financing

An important development in 2003 was the special invitation by SEGARPA's Secretary Usabiaga to create a commission charged with recommending specific policies to government. This officially-sponsored [commission](#) [link to this SeaWatch page] is currently taking shape and will offer an opportunity for conservation, tourism, and sportfishing interests to have a seat at the table as specific management recommendations for the Sea of Cortez are being formulated. This commission will ultimately be an important counterweight to the commercial fishing industry which has long enjoyed close ties to government. To maximize the effectiveness of this Comision, however, it must be adequately funded. [Though in the long run it's members will provide the funding, SeaWatch is helping to identify funds for the first year of operation. It's first six months of operations have already been provided by an important friend of conservation in Mexico City. [Email us to find out more.](#)

Artificial Reef Program

\$30,000

In November 1999, SeaWatch sunk two boats off the coast of Espiritu Santu creating a marine habitat and new sites for local dive operators. We have since identified two other boats currently docked at Guaymas that also would make excellent artificial reefs. Though the Mexican Navy has offered to donate the ships themselves, they still must be cleaned and transported and Environmental Impact Studies must still be completed. [Email us to find out more.](#)

Marine Regulation Handout

\$3,500

This small but important project will fund the writing and distribution of a laminated handout explaining fishing limits, restricted areas, and restricted gear types. If people are willing to break the law, they should at least understand which laws they are breaking. [Email us to find out more.](#)

Media Outreach

\$3,000

Informing the public about the destruction currently taking place in the Sea of Cortez has always been a part of SeaWatch's core mission. Following each media campaign, Congressional offices are overwhelmed with phone calls demanding immediate action. This project will help fund twenty special reports. [Email us to find out more.](#)

Capacity Building

\$3,000 per month

Though not very sexy, SeaWatch too must pay for mundane - but critical - items like telephone lines, electricity, Internet connections, and essential travel. [Email us to find out more.](#)

SeaWatch

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SeaWatch Accomplishments

Since its founding in 1993 by a small group of Americans and Mexicans disgusted with the destruction of fisheries in the Sea of Cortez SeaWatch has been able to accomplish huge feats in conservation. All on an annual budget of under \$35,000 a year - as always each dime donated to SeaWatch will go only to the projects we are involved in directly.

The following are our major accomplishments to date (click on each item for further description):

[→](#) SeaWatch worked to defeat the original Shark NORMA



[→](#) SeaWatch Advisor Barbara Gomez Morin

[→](#) Socorro Island



[1. Helped defeat the flawed Shark NORMA-029 in October of 2002](#)

[2. Made major progress towards implementation of Vessel Monitoring Systems](#)

[3. Secured the declaration of the Eastern Pacific Islands as a biosphere in 1994](#)

[4. Closed the Revillagigedo Islands to commercial fishing in March 2002](#)

[5. Started the first artificial reef program in the Sea of Cortez](#)

[6. Produced over 120 special reports on the destruction of the Sea of Cortez](#)

[7. Spearheaded a petition to stop the killing of whale sharks and Giant Pacific Mantas](#)

[8. Brought international press to the destruction of the Sea of Cortez](#)

[9. Worked to stop tuna seiners from setting in the inshore sea mounts in the southern Baja](#)

[10. Discovered and filmed massive, clandestine buildup of longliners](#)

[11. Filmed over 22 boats illegally fishing in the Revillagigedo reserve](#)

1.) Helped defeat the flawed Shark NORMA-029 in October of 2002

Under Mexican law, it is illegal for longliners or gill-netters to fish commercially within 50 miles of the coast of the Sea of Cortez. These rich striped marlin waters are reserved for sportsfishing. Shark NORMA-029 was created as a mechanism by CONAPESCA to

**Selected By
The Rolex
Awards For
Enterprise as
One of the Top
100 ecological
projects
worldwide.**

**A Popular
Denunciation is
a instrument
initiated by the
public that
requires
specific
government
action.**



→ One of the ships that SeaWatch helped sink.



→ Televisa Reporter Armando Figaredo



→ A Giant Pacific Manta killed for it's nearly-worthless flesh.

The Sacramento Bee
Life. Captured daily.

allow longliners to come within the 50 mile no fishing zone by getting "shark permits" under new regulations for shark fishing. This permit would allow these longliners to keep all bycatch, including sportsfish, such as marlin, dorado, sailfish, wahoo etc. The "Regulations for sustainable shark fisheries" were in essence a license to break the law, and would have further depleted the already devastated fisheries. SeaWatch helped award-winning videographer and producer Armando Figaredo do 24 special TV reports for Televisa (one of the world's largest television stations). Televisa brought their morning news team to Baja for one week, and every morning the news was dedicated to stories condemning the Shark NORMA regulations.

SeaWatch, along with other conservation groups, spent \$60,000 U.S. publishing an open letter to President Fox in newspapers explaining the problem with Shark NORMA and how he could intervene. As a result, President Fox told Secretary Usiabaga, the Minister of SAGARPA, to urge the Senate to cancel the NORMA. In October 2002, the senate cancelled the NORMA.

2.) Made major progress towards implementation of Vessel Monitoring Systems

Vessel Monitoring Systems (VMS) are the only way Mexico will be able to adequately enforce its 50-mile no fishing zones and other closed areas. VMS allows one employee to monitor up to 300 boats for about \$1.00/day per boat and the entire land station can be set up for a maximum of \$50,000.

For the last four years SeaWatch, along with the Billfish Fund, have spearheaded a drive to put vessel monitoring systems on the Mexican longline and drift gillnet fleet. SeaWatch advisor Barbara Morin Gomez and Guillermo Alvarez have been actively lobbying and working with all levels of government including Congress, SAGARPA, and Baja California Sur state officials.

At a public meeting in Cabo San Lucas on [insert date] Secretary Usabiaga of SAGARPA embraced VMS and agreed to provide all of the financing. VMS is also backed by SEMARNAT, the Navy, Gobernacion, PROFEPA. and CONAPESCA.

In March 2003, SeaWatch visited Bob Harman, the head of VMS systems installation and enforcement in the Pacific, and received an in-depth presentation about how the VMS system works. In May, 2003, the B.C.S. SAGARPA paid for Navy Captain Rogelio and Mr. Soto to visit Hawaii and meet with Bob Harman and other NOAA officials where they also came to understand the benefits and efficiency of VMS during this trip partially organized by SeaWatch. Shortly after their return, CONAPESCA Commissioner Ramos asked the U.S. government to provide training and support for a Mexican version of VMS.

But even with federal support for VMS, SeaWatch will continue to take a leadership role in urging government to implement this important system. (link to VMS Position paper)

3.) Secured the declaration of the Eastern Pacific Islands as a biosphere in 1994

In 1994 Seawatch exposed the brutal killing of Giant Pacific Mantas in the Revillagigedo Islands. The news was run three times on Guillermo Ortega's influential Mexican TV news-magazine, *Al Despartar*, seen by 58 million Latinos. With the help of free-lance



→ Nets on world-famous dive site El Bajo



→ Illegal shark-fining boats in the Revillagigedo Islands.



→ Fishing is now prohibited within 12 miles of the islands

reporter, Armando Figaredo, SeaWatch made nine more Sea of Cortez specials for Al Despartar. The slaughter of the mantas was also shown on international news stations.

Along with Pronatura, Mexico's most influential and politically connected environmental group, SeaWatch brought political and media attention to the amazing beauty of the islands and the Mantas. Shortly thereafter the Eastern Pacific archipelago (Revillagigedo Islands) were declared a biosphere, in which no commercial fishing was allowed within 12 miles of the islands. Also, a law was introduced that enacted a \$10,000 fine for killing a Manta in the Revillagigedo Islands. See Biosphere Management plan. & Revillagigedo Island overview

4.) Closed the Revillagigedo Islands to all Fishing in March 2002.

In March of 2002, SeaWatch and Miguel Sanchez Navarro invited Secretary Santiago Creel to the Revillagigedo biosphere to see the Giant Pacific Mantas and witness first hand the damage being done to the fishery by illegal longliners, drift gill-netters, and over-fishing by yachts and long range boats from California. While out to sea, SeaWatch, Santiago Creel and a Navy Escort saw a longliner fishing 1.9 miles north of the Island of Benedicto. As a result of the trip and a lawsuit filed by the Hotel and Sportsfishing Association of Cabo San Lucas, Santiago Creel closed the entire biosphere to all fishing as of March 2002.

However, this was only a partial victory. Eliminating the watchful concern of conservation-minded sportsfishermen meant that illegal commercial fishing are now unmonitored in the islands. Sportsfishermen's presence is a significant deterrent to commercial poachers. SeaWatch supports reopening the islands to sportsfishermen as well as requiring all boats in the area to have VMS. [link to VMS page.]

5.) Started the first artificial reef program in the Sea of Cortez

SeaWatch found two neglected 150-foot boats and developed a plan for the first artificial reef program in the Sea of Cortez. SeaWatch and Pronatura (Mexico's leading environmental group) paid for the environmental impact and feasibility studies and contributed the initial money towards sinking the two boats outside of La Paz. On November 18, 1999, these two large fishing boats were sunk in the Sea of the Cortez. Julia Carabas, the Mexican Secretary of the Environment, Ecology, and Fisheries was master of ceremonies at the dedication celebration. These first two boats are the start of a major effort to sink old and dilapidated fishing and naval boats, in an effort to create more habitat for sea life and boost the local diving business and local economy.

6.) Produced over 120 special reports on the destruction of the Sea of Cortez

SeaWatch has produced over 120 special reports that have been aired on Mexico's most watch evening news. Following each of the three to five minute reports, Senators and Congressman have been flooded with calls from constituents angry about the destructive practices taking place in the sea of Cortez and its surrounding waters.

7.) Spearheaded a petition to stop the killing of whale sharks

and giant pacific mantas

A year and a half of work between Pronatura, SeaWatch, Pesca, and SEMERNAP culminated in a program of protection for the giant pacific manta and the whale shark in the Sea of Cortez.

In 1998, SeaWatch photographed the brutal killing of whale sharks in the Loreto area and spearheaded a worldwide petition, along with Pronatura, to stop the killing of whale sharks and giant mantas in the Sea of Cortez, where neither were protected. SeaWatch posted pictures of the killing of these graceful giants on its website and as a result received over 1300 petitions from people all over the world. This was followed up by distributing full color petitions at an international dive show held in New Orleans in January of 1999. Over 2,200 were signed and also sent to Mexico. On April 1, 2000, federal legislation was created to protect the whale shark and giant Pacific Manta in Mexican waters.

8.) Brought international press to the destruction of the Sea of Cortez

SeaWatch's work has created interest from worldwide press and brought in writers and film crews from around the world to chronicle the destruction of the Sea of Cortez. For example, SeaWatch invited a reporter from the Sacramento Bee to Mexico. Tom Knudson spent six months chronicling the destruction in the sea and published his results in a four part series for which he ultimately won the Pulitzer Prize.

9.) Worked to stop tuna seiners from setting in the inshore sea mounts in the southern Baja

In May 2001 Seawatch posted on its website, video and pictures taken of a tuna seiner dropping its nets around the seamount at Gordo Banks. Commercial fishing is not only illegal within 50 miles of shore, but when large tuna seiners wrap inshore seamounts, they catch all the other local residents, including sharks, pelagics, reef fish, and mantas. There were over 800 tons of tuna taken from the Jamie Bank in the spring of 2002. SeaWatch armed the Billfish Fund of Mexico with the evidence posted on the website, which has allowed them to negotiate with the tuna industry and SAGARPA, for regulations to keep tuna seiners away from all inshore seamounts and islands in southern Baja.

10.) Discovered and filmed massive, clandestine buildup of longliners

In 1999, SeaWatch discovered and filmed the first clandestine longliners, of what became a fleet of 50-75 boats, being outfitted in Mexico. CONAPESCA & Jim Cook (one of the biggest longline distributors in the USA) were involved in the outfitting. These organizations denied the building of these boats, but the pictures taken by SeaWatch were undeniable.

Shortly thereafter Jim Cook's Hawaiian longline fleet applied for 138 longline permits to work in the waters inside the EEZ off California. The Billfish Foundation in the USA brought in fisheries scientist Dr. Russ Nelson to help fight the issuing of those permits. SeaWatch helped bring together the Billfish Foundation and the people in Mexico, in order to fight the buildup of Mexican Longliners. The Billfish Foundation agreed to pay Dr. Nelson to split his time between Mexico and the USA to fight the proliferation of longliners in both countries. SeaWatch worked closely with those objecting to the permits and presented a paper against issuing the permits: [Link] A Case Against Longlining in California.

After a two year struggle led by the Billfish Foundation, Dr. Russ Nelson, the United Anglers, and others, the Pacific Fisheries Management Council in October 2002 voted against allowing any permits for longliners inside the 200 mile Exclusive Economic Zone along the Pacific Coast of the USA.

11.) Filmed over 22 boats illegally fishing in the Revillagigedo reserve

SeaWatch has filmed an over 25 boats illegally fishing in the Revillagigedo Island reserve since 1994. Many of those reports have since been turned into television specials. The special reports led to 12 of these boats to be arrested. The Navy now has a frigate on patrol within the Biosphere to further reduce illegal fishing.

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State :
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Message :

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You have my permission to post my name and comment on your web site.

SeaWatch is a 501(C)3 non-profit organization located in Portland, Oregon and La Paz, Mexico.


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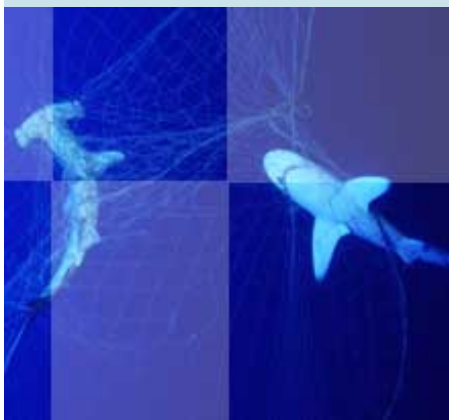
**The Sea of
Cortez: Owned
by all
Mexicans,
Managed by
None.**




 A hacked manta wing. Extremely valuable for attracting tourists to the region, mantas are nonetheless killed regularly for their nearly worthless meat or as bycatch.



 A sea lion caught in a net.



 Sharks are caught for their fins. Still alive, they are thrown overboard where they sink to bottom to die.

The Problem: Destruction of the Sea of Cortez "Owned by All Mexicans and Managed by None"

The Sea of Cortez, one of the most unique and diverse seas in the world, is on the brink of collapse. At one time, this stretch of water produced more protein per cubic meter than any other sea in the world. Today, its fish stocks have been decimated.

Fish populations in the Sea of Cortez have decreased by more than 90% since the 1960s with the advent of new commercial fishing methods & technology. The reduction of fish stocks in the Sea of Cortez has followed a similar trajectory as almost all of the world's oceans. As the recent [Myers-Worm study](#) showed, the biomass of large predators (i.e. tuna and billfish) are typically reduced by 80% within 15 years of the start of commercial exploitation. The Sea of Cortez is no different - only 5-10% of it's original fish stocks remain.

Though the Sea of Cortez is the only major body of water in the world entirely under the control of one government, a fisherman working in its waters can fish for anything he wants, using any method (gear type) he wants, at any time of year, and catch as much as he wants.

What Happened

Industrialized fishing for shrimp started in the 1940's and some longlining was done by the Japanese after the war. But the big changes started in the 1970s with the introduction of the outboard motor, the now-famous fiberglass panga and worst of all: the inshore monofilament gillnet. Fish stocks were immediately and drastically effected, with large decreases in yellowtail and roosterfish seen almost overnight. The world famous roosterfish tournament held yearly at the hotel at Punta Area de la Ventana was out of business within four years. The hotel closed shortly thereafter. In the 1980's it was estimated that there were 20,000 pangas or small fishing boats in the Sea of Cortez. However, in the early 1980's came the drift gillnet used by small, medium and large sized boats. The huge runs of white sea bass and thresher shark on the Pacific side as well as the sharks in the Sea nearly went extinct because of these nets in the mid 1980s. At this same time the sardines in the Guaymas basin were being decimated at the rate of over 1 billion pounds per year for use in chicken feed. As the catches in the basin decreased, a new fleet of refrigerated seiners were built so the juvenile sardines could be chased to their feeding grounds in the Midriff Islands and killed. The sardine fishery and most large predators dependent on the sardines for food were gone by 1990.

As the fish populations continued to decline, panga longliners emerged along the mainland coast near Manzanillo and quickly spread up the coast to Guaymas . Though these areas were reserved for sportfisherman, the panga longliners targeted sailfish and dorado under the guise of catching shark. By the late 1990's newspaper reports estimated that the commercial take of dorado was 60 to 80 tons each day and sailfish were being landed at the

Destruction of the Sea of Cortez represents as much a potential social catastrophe as an environmental one.

Only 5-10 % of the Sea of Cortez' original fish stocks remain.



→ Mantas are often curious about divers and allow them to approach very closely.

rate of 150 to 200 tons each month. Both species are very scarce now in the Sea of Cortez. Now in 2003 the last of the fish - the reef fish- are threatened by [indiscriminate gillnets](#) that take about half to one ton of reef fish per panga daily. The southern gulf islands continue to be systematically depleted

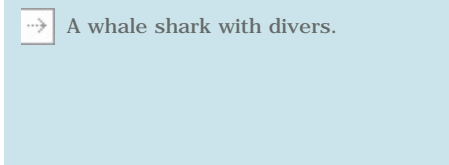
The Economics of Overfishing

A group of six fishermen on a five day trip from Los Angeles will spend \$1,800 on airfare with Aero California, \$350 a day on a boat, \$250 a day on hotels, \$50 a day on food, and \$40 a day on tips. The total spent for a five day trip is over \$5,000. However, if there are no fish, these fishermen will not come. Kozy Boren, an American fisherman, recently told SeaWatch that after forty years of coming to La Paz he was considering taking his business to Costa Rica because of the lack of fish here. This summer he has not been able to catch enough fish to feed the people on his boat. In the three months that he is in La Paz each year, he spends over \$100,000 in Baja.



The Marisula seamount, or "El Bajo" used to be the number one place in the world to see hammerhead sharks in the early 1980's. At that time, the dive business in La Paz was booming. But commercial fishing pressure has now reduced the population from over 500 hammerhead sharks in 1981 to less than 18 in 1998. ([Peter Klimley study](#)). Costa Rica saw the economic potential and protected their hammerhead sharks. Cocos Island, off Costa Rica, is now the number one place in the world to see schooling hammerhead sharks. Consequently, divers account for over \$5,000,000 spent in Costa Rica each year. The Cortez Club, a La Paz dive shop, estimates that the ability to advertise that a diver would see a Giant Pacific Manta while in La Paz alone would be worth \$3,300 a day in extra business.

In Loreto Marine Park sportsfishing charters say business is off 40% to 50% from last year alone. Even the commercial fishermen are feeling the effects. They report that the money they make with their catches now can't pay for the gas to catch them.



→ A whale shark with divers.

Although representing less than 5% of the total Mexican waters, the Sea of Cortez in 1993 produced about 75% of Mexico's yearly 1,500,000 metric ton fish catch. It is still producing about 60% of Mexico's catch, but the product mix has changed and 2nd and 3rd class fish comprise most of the catch. In the markets today not only are there fewer fish but they are smaller and younger than even just a few years ago.

The ripple effect of overfishing is enormous. Whereas wise management could ensure that the once bountiful Sea of Cortez supported hundreds of communities, instead, a few greedy fisherman are squandering not only what little remains of an important Mexican natural heritage, but also **the economic future of generations of millions of Mexican families.**

The Solutions

Mexico is not the first country to face these challenges. Fortunately, there are proven and cost-effective solutions:

- 1.) **VMS. Vessel Monitoring Systems** allow authorities to know where all the large boats are at all times, which will help enforce established fishing laws. Already in use in Chile, Western Europe, Canada, and the U.S., vast areas of ocean can be monitored at a



→ A Giant Pacific Manta Ray caught in a net.

Twenty years ago fisherman used to fish exclusively with small pangas, multiple hooks or spearguns, now they use gillnets, trawls, longlines, inferred devices and even helicopters.

A shark recovery program would require substantial reductions in fishing of sharks over a period of decades.

Divers account for over \$5,000,000 spent in Costa Rica each year.



→ Turtles, once common even along the shore in La Paz are now endangered.



→ Tuna, overfished by foreign boats and then by Mexican boats are now increasingly rare



→ Dr. Russel Nelson: "the extraction of reef fish stocks has produced dangerous, but perhaps not irreversible level of stocks."

cost of only \$1 a day per boat. [See SeaWatch's VMS position paper to learn more.](#)

2.) **A Responsible Shark NORMA.** Under the guise of shark permits, commercial fisherman are intruding on the 50 mile no commercial fishing zone from the coast to catch the few remaining dorado, marlin, and other sportsfish. The new Shark NORMA (regulation) must remove this loophole and enforce the 50 mile limit. [See SeaWatch's Shark NORMA position paper.](#)

3.) **Remove the Gillnets.** Gillnets inaugurated the start of the destruction of the Sea of Cortez in the 1970's and they are about to herald its demise. Cheap, indiscriminate, and extremely effective, a single gillnets can remove virtually all sea life from a stretch of reef in a few hours. There are thousands of gillnets currently in use. [See SeaWatch's gillnet position paper.](#) or [see the video.](#)

What you can do:

- 1.) [Become a member by joining SeaWatch today.](#)
- 2.) [Become a member of The SeaWatch Leadership Circle by supporting a SeaWatch Project](#)
- 3.) If you represent an NGO, association, or local business, [join the Coalition for the Sea of Cortez.](#)
- 4.) If you've seen something illegal, [click here to report an illegal fishing activity.](#)

Species by Species Report

Interviews with fisherman, as well as reports from long term Baja residents, show the extent of the destruction:

DECREASE IN THE FISH POPULATIONS IN THE LAST 10 YEARS

	Zone 1 Mag./C. Pulmo	Zone 2 Pulmo/La Paz	Zone 3 La Paz/Midriff	Zone 4 Midriff	Zone 5 N. Cortez	Average Decrease
1.) Yellowfin	60%	85%	85%	n/a	n/a	75%
2.) Cabrilla	80%	80%	80%	80%	n/a	80%
3.) Black Seabass	95%	85%	85%	90%	90%	90%
4.) Gulf Grouper	85%	85%	85%	85%	80%	85%
5.) White Seabass	n/a	n/a	n/a	80%	80%	80%
6.) Yellowtail	90%	100%	80%	80%	80%	85%
7.) Manta Ray	100%	100%	85%	?	?	100%
8.) Striped Marlin	60%	70%	80%	n/a	n/a	70%
9.) Blue Marlin	70%	70%	70%	n/a	n/a	70%
10.) Roosterfish	80%	95%	95%	n/a	n/a	90%
11.) Sailfish	70%	70%	70%	n/a	n/a	70%
12.) Amberjack	75%	75%	75%	?	n/a	75%
13.) Dog Snapper	80%	90%	80%	80%	80%	80%
14.) Dorado	60%	60%	60%	60%	?	60%
15.) Wahoo	75%	75%	n/a	n/a	n/a	75%
16.) Sierra	85%	90%	90%	n/a	n/a	90%
17.) Vaqueta (Grouper)	n/a	n/a	75%	75%	n/a	75%

Fish species shown in bold type are commercially extinct, or will be within a few years.

The above information is based on 17 years of fishing and diving these areas on a DAILY basis, talking with the long-range boats from California on a DAILY basis, as well as fishermen in fish camps, charter boat owners, etc. from Cabo San Lucas to San Felipe on a CONTINUING basis. Major population decreases were first noticed in the very early 1980's, with catastrophic drops in every species starting in 1984 - 1985.

Figure1: This survey was taken in 1993 by Sea Watch. It parallels closely the Myers/Worm report just released in mid 2003. [\(click to enlarge\)](#)

Commercial fishing interests have only short term profits in mind, while their longlines and gillnets are reeking long-term havoc on the sea and the communities that rely on it.

For more Watch the Video- "Tesoros sin Protection" (Spanish only.)

The Cortez Club, a La Paz dive shop, estimates a Giant Pacific Manta in La Paz alone would be worth \$3,300 a day in extra business.

Striped Marlin:	down by 50-60% over the last 15 years The average size in Cabo San Lucas is down from 160 to 110 pounds (Inter-American Tropical Tuna Commission just admitted that striped marlin are being fished at twice their sustainable rate. This admission came only after they split the striped marlin into a northern and a southern population)
Tuotova:	Nearly Extinct
Turtles:	Endangered
Shrimp:	Down dramatically. Now they weigh the whole shrimp instead of just the tails to preserve the illusion that catches remain high.
Sardines:	One billion pounds a year were taken; now all Guaymas canneries are gone.
Grouper:	Commercially extinct.
Yellowtail:	Down dramatically. Loreto was the yellow tail capital of the world, two seiners destroyed them in two weeks.
Thresher Sharks:	Extinct
Pacific Manta:	Dramatically reduced
Whale Sharks:	Divers haven't seen them in large numbers for five years in the Sea of Cortez.
Gray Whales:	Starving from lack of resources.

Sea Watch



VMS Position Paper

Under current Mexican law, it is illegal for commercial longliners, drift gillnetters, and shrimpers to fish within fifty miles of the coast in the Sea of Cortez, and within 12 miles of the Revillagigedo Islands. Because of limitations in funds, and personnel, as well as the incipient corruption, CONAPESCA, the Navy and PROFEPA have failed to monitor these areas with traditional methods, such as ships and airplanes. Consequently, these fishing laws are not being enforced, and the amazing Sea of Cortez continues to be destroyed.

Vessel Monitoring Systems (VMS) are the only way Mexico will be able to adequately enforce its 50 mile no fishing zones and other closed areas. VMS is essentially a Global Position System carried on commercial fishing boats that transmits the ship's geographic position to various state enforcement agencies. VMS allows one employee to monitor up to 500 boats for about \$1.00/day per boat - about 1% the cost of aerial or marine surveillance and much more effective. Setting up the system is also very inexpensive: the cost per boat is about \$2,000 and the entire land station, including servers, workstations, and internet connections costs a maximum of \$50,000. Similar systems are operational already in the U.S, Canada, the E.U., Chile, and others [check to see where else they use them]. [Click here](#) to learn about the successful implementation of VMS in Hawaii. [link to Hawaiian example at the bottom of the page.]

For the last four years SeaWatch, along with the Billfish Fund, have spearheaded a drive to put vessel monitoring systems on the Mexican longline and drift gillnet fleet. SeaWatch advisor [Barbara Morin Gomez](#) and [Guillermo Alvarez](#) [links to their bios – is Guillermo on the SeaWatch advisory board?] have been actively lobbying and working with all levels of government including Congress, SAGARPA, and Baja California Sur state officials. At a public meeting in Cabo San Lucas on [insert date] Secretary Usabiaga of SAGARPA embraced VMS and agreed to provide all of the financing. VMS is also backed by SEMARNAT, the Navy, Gobernacion, PROFEPA, and CONAPESCA. In March 2003, SeaWatch visited Bob Harman, the head of VMS systems installation and enforcement in the Pacific, and received an in-depth presentation about how the VMS system works.

In May, 2003, the B.C.S. SAGARPA paid for Navy Captain Rogelio and Mr. Soto to visit Hawaii and meet with Bob Harman and other NOAA officials. They also came to understand the benefits and efficiency of VMS during this trip partially organized by SeaWatch.

Shortly after their return, CONAPESCA Commissioner Ramos has asked the U.S. government to provide training and support for a Mexican version of VMS. But even with federal support for VMS, SeaWatch will continue to take a leadership role in urging government to implement this important system. Mexico must make a long-term commitment to provide the necessary political, legal, and financial support. And with over 20% of the entire Mexican coastline, Baja California Sur has the most to gain...and the most to lose.



VMS represents the first step towards a truly sustainable Sea of Cortez.

SeaWatch is working closely with government to:

- Urge the Marine Recreation and Sportsfishing Commission of the B.C.S Conapesca Commission to pass a declaration expressing their total support for VMS.
- Help draft and oversee a clear set of legal standards for VMS.
- Educate the public, the fishing industry, and other NGO's about VMS, its benefits for safety and communication, and its critical role in protecting Mexico's natural heritage.
- Establish an effective sportsfishing permit system to provide long-term funding for VMS.
- Continue lobbying and working with all levels of government to maintain institutional support for VMS.
- Continue lobbying and working with all levels of government to maintain institutional support for VMS.

If you too would like to see VMS implemented and want to help get involved, visit the [What You Can Do](#) [link] page or [contact us via email](#) [link].

The following explains how the system actually works in Hawaii and how Mexico can learn from the mistakes that Hawaii made:

NOAA Law Enforcement's Pacific Islands Fishing Vessel Monitoring System

Brief Description

Since June 1994, NOAA Fisheries (also known as National Marine Fisheries Service), Southwest Law Enforcement Division, has used an automated, satellite-based vessel monitoring system (VMS) on a routine basis. The VMS program was developed and implemented in response to concerns about effective monitoring of large, geographically isolated regulated areas in the US Pacific Islands. In close cooperation with the fishing industry, fishery management council and other government agencies, NOAA implemented remote monitoring techniques to enhance management of the pelagic longline and lobster fisheries.

The Pacific Islands system was the first large-scale vessel tracking application in a US domestic fishery. All pelagic longline vessels in Hawaii (**currently about 145**) are required to carry and operate the shipboard VMS units (sometimes called "transponders") as a condition of obtaining a permit to fish in Hawaiian waters or land their fish in Hawaiian ports.

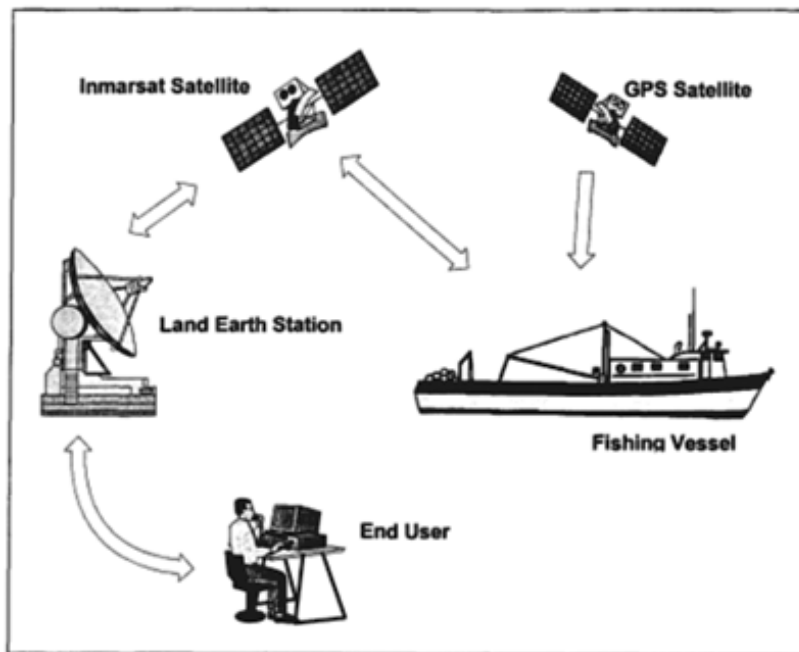


Figure 1. Component diagram of Hawaii vessel monitoring system.

The hardware, software and communications components of the system are all commercially available. The Pacific Islands VMS program combines the use of the Global Positioning System (GPS) with the Inmarsat-C satellite communications network to send information about fishing activities to a shore side control center. NOAA pays all costs for equipment purchases, repairs and position reporting in the Pacific Islands program. The shipboard unit can be linked to a personal computer, which provides the vessel operator with navigational information and secure two-way communications. The vessel pays these personal communication costs.



Figure 4. VMS shipboard components, antenna and transceiver.

The VMS unit, a Trimble Galaxy Inmarsat-C/GPS transceiver, is mounted in the vessel's wheelhouse and the antenna is mounted on top of the wheelhouse or on a mast. The cost of the antenna, transceiver and installation is less than US\$2000. The GPS position is included in a data message that contains the vessel's identity, date and time. The data message may also contain other parameters such as course and speed, and special codes for antenna blockage, power failure, and others. This data message is transmitted automatically at pre-set intervals to an Inmarsat satellite. NOAA can remotely change the reporting interval, which

can range from 10 minutes up to 24 hours. The message is received at a land earth station, which processes the message into usable form, and makes it available to the VMS control center in Honolulu.

The control center that would cover all the Eastern Pacific Ocean (the whole world for that matter) would cost a maximum of US\$50,000, which would include servers, internet connection, analysis workstation, graphics monitor, software applications for VMS (database, base maps, office applications, mapping, etc.), service contracts, etc. Data are received and stored in a database and displayed on a mapping program, which allows storage, archival, manipulation and display of the vessel position information. A list of exception reports are available in the software so information on any vessel of interest, for example, one approaching a no fishing zone can be sent automatically via email or cellular phone call to the Navy or other authorized personnel. In Hawaii, Coast Guard watch standers are tasked with reviewing the control center every few hours to monitor system functionality and identify vessels of interest.

The program has been a success. All of the law enforcement cases relating to violations of the closed areas have been initiated by the VMS. The system also enhances search and rescue operations in the region.

Comparisons of the cost-effectiveness of the VMS versus traditional methods for surveillance and enforcement (ships and airplanes) show that the Hawaii VMS can monitor the activities of the fleet **for less than 1% of the cost of traditional methods**. The VMS also offers a level of surveillance coverage that far surpasses traditional methods.

Conclusions:

A. Enhancement of fisheries enforcement

- A remote vessel monitoring system can greatly enhance the monitoring and control of closed areas in a pelagic longline fishery.
- The Hawaii VMS uses Inmarsat-C and GPS on a fleet-wide basis, and this system has been a successful enforcement tool.
- The VMS in Hawaii can readily detect unlawful incursions into closed areas if all components of the system are operational, including shipboard equipment, space and land communications segments, base station and watch standing. If any one of these segments fails, the system will not function properly.
- To date, there have been 40+ law enforcement cases related to closed areas in which the VMS was a critical factor. None of these violations or alleged violations would likely have been detected without the VMS.
- The Hawaii VMS has been effective in providing almost 100% coverage of the pelagic longline fleet for about 1% of the cost of traditional surveillance methods, i.e., aircraft and surface vessels (\$200,000 vs. \$22 million), and traditional methods do not provide the same level of surveillance coverage as the VMS.

- In this fishery, the VMS is a much better tool for monitoring compliance with closed area requirements than traditional air and surface patrols.

B. Costs

- The shipboard equipment used in this project costs less than \$2000 per vessel, installed.
- Repair costs are variable, depending on the nature of the repair, but budgeting 20% of the purchase cost per year for repairs is necessary.
- Data reports and associated polling and communications costs average about \$0.10 per report, and the annual costs vary with the periodicity of data reports and activity of the vessel. For example, If the shipboard equipment on a vessel was energized around the clock and every day of the year, and if the equipment was programmed to send a position report every hour, the annual cost for that vessel would be \$875. The actual communication costs realized in the Pacific Islands program are lower (approximately \$500.00), because most vessels are not active all the time.
- The VMS base station equipment cost approximately \$35,000 to \$50,000, including the computer, the latest tracking software, and ancillary components.
- The working life of the equipment, to date, has been nearly 10 years. Most VMS units have been repaired or replaced gradually, so the timing and cost of large-scale equipment replacement is not clear.

C. Communications and security:

- The space segment of the VMS provides adequate data security.
- The land segment is also secure (using encrypted internet communications).
- If end-use data are to be secure, the base station must be physically secure. Watch standers and other end users must have the appropriate security clearances.
- Tampering with shipboard VMS equipment tampering in the Pacific Islands has been negligible.

D. Operational details:

- The appropriate polling frequency in the Hawaii pelagic longline fishery is one hour, Less frequent reporting compromises our ability to characterize the vessel's activity pattern (i.e., fishing, traveling or drifting), and more frequent reporting is usually superfluous.
- At a minimum, one person dedicated to program management is required, in addition to the appropriate number of watch standers and other support personnel.

E. Industry acceptance and system usage:

- One-fourth of longline vessel operators in Hawaii use ancillary computers connected to the shipboard VMS equipment for personal communications.
- An undetermined percentage of the longline fleet uses an auxiliary output from the VMS transceiver to send navigational data to other equipment.
- Much of the initial industry resistance to the VMS program has evolved into acceptance by those that use the system for personal communications and navigation, and general indifference by those that do not.
- Industry acceptance has resulted largely from full government funding for system. There is still strong industry opposition to vessels potentially being forced to pay for the VMS. If the industry were forced to fund the system, there is consensus that the entire fishery (seafood wholesalers and retailers, gear, bait and ice suppliers, vessels, etc.) should be required to fund the system, not just the fishing vessels.
- Some operators are still opposed to the government's monitoring of their activities.

F. Safety:

- The US Coast Guard uses the NOAA VMS routinely, in some way, for search and rescue cases in the central Pacific.
- No longline vessel has used the distress feature of the VMS transceiver to date, but the USCG has used VMS data in several ways related to vessel safety, including response to distress calls, medical emergencies, etc.

G. Basis for future VMS decisions

- Implementation of a VMS is not a simple matter. In the Pacific Islands program, the high level of success is attributed to conforming to a single set of technical standards and specifications, and to the dedication of the personnel involved.
- If a fisheries management agency adopts a VMS, it must make a long-term commitment of personnel and funding to support the system.
- NOAA's experience has placed it in a position of international leadership in the evolution of remote vessel monitoring as an established and desirable tool for fisheries management (especially enforcement) in the Pacific.
- Remote VMS technologies are advancing rapidly, and fisheries management agencies should be prepared to adopt new technologies as these new systems and components become available and desirable.

The information for this overview was supplied by NOAA. The equipment currently used in Hawaii is not now being manufactured. The big three right now in US fisheries are:

Argos Mar-GE (non-inmarsat)

http://www.cls.fr/html/argos/peche/marge_en.pdf

Thrane & Thrane 3022D Inmarsat

<http://www.tt.dk/products/marine/Fisherysolution.asp>

Thrane & Thrane 3026M Inmarsat Mini-C

<http://www.tt.dk/products/marine/TT-3026LM.asp>

Bob Harman really likes the new 3026. It's compact and inexpensive, but it's so new that there has been very little testing.

Sea Watch

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Center for Sustainable Fisheries

"Management schemes are usually implemented well after industrialized fishing has begun, and only serve to stabilize the fish biomass at low levels."

-Myers & Worms, Rapid Worldwide Depletion of Predatory Fish Communities, Nature, March 25, 2003.

President Fox has recently announced that CIBNOR will receive \$25 million pesos or \$2.5 million dollars to evaluate fishery stocks and recommend proposals for their future management. However, this is too little too late: fish including sharks in the Sea of Cortez are already 95% gone. (Source: [2000 Sea of Cortez survey](#))

Our goal should be to bring the fish back to pre-industrialized levels, not to sustain fish stocks at their current low levels. As Myers and Worms point out, it is appropriate and necessary to attempt restoration on a global scale, and provide a benchmark which community recovery can be assessed.

A Baja Center of Sustainable Fisheries will not only focus on understanding present fishery stocks, but also how much the sea has been depleted, and how this depletion affects the remaining ecosystem. Only through such a sophisticated understanding can Mexico develop a sustainable harvest practice for the future. As Myers & Worms point out: it is impossible to understand present levels of biomass without considering the effects of removing 90% of large predators.

PROPOSAL

Modeled on a similar center established in Prince William Sound in Alaska, the Baja Centers for Sustainable Fisheries will be overseen by Gary Thomas, director of the Marine Biology and Fisheries Division at the University of Miami. The Center will be based in La Paz but have regional centers in the Revillagigedo Islands, Magdalena Bay & Cabo San Lucas.

OBJECTIVES:

The three primary objectives of the center will be the following:

- Identify important coastal ecosystems, communicate with the people living in these communities and where there is interest, assist them in establishing the regional host and observing programs that will allow greater understanding of the ecosystem.
- Set realistic fishing regulations and introduce tools to measure their success or failure.
- Manage, understand, and protect the marine environment at the Revillagigedo Islands. The islands have been closed for over a year, for example, and we know nothing about the changes taking place as a result of the closure, except for the anecdotal evidence

It is impossible to understand present levels of biomass without considering the effects of removing 90% of large predators.

Our goal should be to bring the fish back to pre-industrialized levels.



→ Baja Center for sustainable fisheries

collected by SeaWatch.

FUNDING:

The Baja Center for Sustainable Fisheries will be funded through private grants to build the original center. The Regional centers will be funded through an endowment. Please click on [Projects in need of Support](#) to find out how to donate to the Baja Center for Sustainable Fisheries.

To learn more about what could be Baja Center for Sustainable Fisheries, please read the following summary written by Professor Gary Thomas on fishery ecosystem observation programs



"A white paper on coastal, fisheries ecosystem observation programs"

Coastal communities around the globe have developed due to the access to rich fisheries resources. The economies of these fisheries-dependent communities have often undergone boom and bust cycles, which are positively correlated with the abundance of the fisheries resources they harvest. In most cases, the only method that is available to determine the status of the fisheries is the catch by the commercial fishery. The problem with this approach today is that fishing techniques have undergone a technological revolution. Today, fishers are deadly efficient due to GPS navigation and plotting, electronic scanning sonars and aerial optics, not to mention the improvements to vessels (speed, range, storage, etc.) and fishing gear (FADS, monofilament, net designs, etc.). Compounding this problem is that foreign fisheries harvest coastal fish stocks offshore from many countries without the country's knowledge of how many and what types of fish and marine life are being removed. This all contributes to what we see as a decline in the quality of life in fishing-dependent communities around the world. Combine this with the growing world population of humans and increase in demand on marine life as food supply and we can expect substantial hardship in the future for our global coastal communities.

In recognition, some coastal communities have turned to conventional management and research groups for answers. However, what they find is sparse, incomplete and relatively low quality data and little or no understanding about the factors controlling ecosystem change. This is compounded by a lack of interest by the centralized government agencies for operations on scales of interest to the coastal communities. Furthermore, the management agencies are reluctant to get involved in monitoring at the fisheries ecosystem scale due to the nature of annual appropriations, which do not provide the continuity to maintain long-term programs. The bottom line is that no one institution has the responsibility, or willingness to assume the responsibility for monitoring the coastal fisheries ecosystems and developing quality reports on their status for the communities. This must change if coastal communities are to survive. A new level of information services is needed so that coastal communities can become informed on the changes occurring in their ecosystem that could

affect their future. This will enable local communities to become active in the decision-making process that currently allows centralized governments to permit outside industrial interests to operate in a fashion that causes deterioration of fisheries and ecosystem resources and declines in the quality of life in coastal regions.

At the University of Miami, we are creating a small, endowed group at the Center for Sustainable Fisheries that is dedicated to building fisheries ecosystem observation programs in coastal communities worldwide. Our role is to identify important coastal ecosystems, communicate with the people living in these communities and where there is interest, assist them in establishing the regional host and observing programs that will allow them to understand the changing status of their ecosystem and resources that they depend upon. To implement our side of the program, we will convene fisheries ecosystem meetings and workshops in specific regions, invite an international casts of experts and public to identify and review issues, develop science and implementation plans and form research and political working groups.

Our answer to this problem is the creation of coastal ecosystem information systems (CEIS). There are four aspects of CEIS: scientific approach, operational logistics, social-economics and financial considerations. First is the scientific approach. This involves creating an operational observing system to monitor and model physical conditions comprehensively, and to identify dominant plankton-nekton and wildlife populations for monitoring and modeling purposes. The approach for the physics is model-based monitoring due to the advanced state of the circulation and atmospheric models now available from the physical sciences. The approach for the dominant plankton-fish and wildlife is observation-based modeling due to the availability of advanced acoustical and optical technologies and the relatively poor state-of-development for mechanistic, spatially explicit, population models. In contrast, centralized government agencies are focused on single species at large ocean scales that make it difficult to acquire synoptic, repeatable and consistent data.

The second aspect is the operational logistics of the program. Much of the information collected in the ecosystem has to be at real-time or at least timely to be of value to the communities. To carryout operations in coastal ecosystems that have real-time function requires a regional host. These hosts have the staff to maintain instrumentation and implement field observations programs need to collect information on the status of dominant features in the ecosystem, which are used independently or combined with models to improve predictions of change. The regional hosts staff needs both recognized experts and local residents to facilitate open exchange of information between local fishers, industries, government and the public. Implementing the models and monitoring technologies requires a multidisciplinary team of scientists and its formation requires academic guidance and input.

Third is the social-economic aspect of creating regional hosts. By building regional hosts you increase the local capabilities for the communities to understand their ecosystems, while diversifying the local economy. Besides acquiring the data needed to understand the ecosystem, the regional host staff provides the conduit for disseminating information and understanding to the community. They collect the data and work with local fishers and vessel owners so the local community has ownership in the data. They convene meeting and present seminars to inform and education the local communities. As a long-term strategy, the regional hosts support k-12 science education programs to educate the youth and build greater appreciation for science. With the long-range goal of

creating host institutions that are owned locally but provide opportunities for visiting scientists and jobs for graduate students, it is a win-win scenario for the academic and the coastal communities. The grass roots support generated from this outreach for science will far exceed any expectations that could be derived from direct academic ownership.

We believe that regional host is the "missing" organization in our current non-government organizational structure and is key to establishing continuous monitoring of regional ecosystems.

Fourth is the financial aspect of the program. Besides facilitating the above activities, Center will assist in the establishment of endowments for the regional host. The endowment is critical. Unlike traditional short-term research approaches, once implemented we believe that the monitoring and prediction of dominant ecosystem features will always be needed information services to the coastal communities. The governmental approach to use annual appropriations to establish ecosystem-monitoring programs and build quality long-term data bases on the natural resources in our environment has failed. Our answer is to build private, inflation-proofed endowments dedicated for this purpose. Also, recognizing the political instability of many governments and institutions, the Center and donors will chose sites for the endowments to best insure a permanent dedication to the ecosystem mission, provide for protection and growth of the capital and of course security. Where this is not available the University of Miami Foundation can provide the default.

Our experience in Prince William Sound after the EXXON VALDEZ oil spill in 1989, demonstrates that the cost for operating the regional hosts is relatively low. For example the \$120 million in appropriations for Steller sea lion research over the past three years in Alaska could have funded CEIS programs in the six major coastal fishery ecosystems of Alaska, forever (Sitka Sound, Prince William Sound, Cook Inlet, Kodiak Island, Aleutian Islands and Bristol Bay). Yes, it is our experience that a \$1 million a year budget or a \$20 million endowment will establish these regional hosts as permanent ecosystem centers. Once the endowment is established the Center will work with the regional hosts to seek one-time grants to make major purchases of equipment or conduct specific research to improve the program. After information services begin, it is expected that partnerships will develop with industry and government to share in the costs of the acquisition, analysis and dissemination of information.

By serving the information needs of the coastal communities it will serve the needs to better manage and understand the marine ecosystems and fisheries resources. The nesting of the coastal fisheries ecosystem observing programs into the larger, ocean-basin scale programs that are operated by centralized government agencies will further enhance the understanding of coastal fisheries ecosystems. The implementation of these coastal fisheries ecosystem programs represents a breakthrough of marine science into a new paradigm of operational fisheries oceanography, which is a key to sustaining our marine fisheries throughout the world.

The logo for Sea Watch, featuring the words "Sea Watch" in a stylized, light blue font.

Guardianas Del Mar

Under current Mexican law, it is illegal for commercial longliners, driftgillnetters, and shrimpers to fish within fifty miles of the coast in the Sea of Cortez and within 12 miles of the Revillagigedo Islands. Small fishing pangas and sportsfishing boats are required to carry fishing permits and abide by daily and seasonal catch limits and other regulations. These fishing laws, however, are currently not enforced, and the amazing Sea of Cortez continues to be destroyed.

The Guardianas Del Mar or Guardians of the Sea program will be the human compliment to [Vessel Monitoring System](#). Together, these enforcement solutions will help ensure the sustainability of marine resources for future generations of Mexicans.

Guardianas del Mar or Guardians of the Sea will be the rough equivalent to a State Fish and Game Department in the United States. This program will empower trained but unpaid citizens to help enforce environmental laws and regulations. Community members will attend a training program where they are educated about Mexican fishing laws and how to recognize violations. After completing the program, they will be issued certifications, uniforms, and boats. Though they will not have the right inspect boats on their own, they will be able to assist authorities with inspections. Oversight and accreditation will be handled by Profepa, the agency within the Department of Environment responsible for protection of endangered species.

SeaWatch, is currently helping Luis Fueyo, an Attorney General with Profepa and a dedicated advocate for conservation, to design and fund Guardianas del Mar. Funding for the program will be provided by Profepa, other government agencies, and private interests.

Without active enforcement there is essentially no management of the Sea of Cortez and it's fisheries. Because of limitations in funds and personnel, it is impossible to enforce the laws with traditional methods (governmental officials, ships and airplanes). Guardianas Del Mar will be the extra eyes and ears of enforcement.

Guardianas Del Mar, along with VMS, is an inexpensive and practical solution to the problem of enforcement with limited government resources. It maybe the only way to protect and preserve the diversity and abundance of life in the Sea of Cortez for future generations.

To learn more about how you can help [click here](#) [link to how you can help page] or see below for more information about Guardianas Del Mar.


Guardianas Del Mar Detailed

Objective


Without active enforcement there is essentially no management of the Sea of Cortez and it's fisheries.

A Popular Denunciation is a instrument initiated by the public that requires specific government action.




 All it would take is a handful of honest inspectors working between Loreto and Cabo San Lucas to adequately



 A panga with a net.



 Illegally caught fish being sold in the Bravo Fish market in La Paz.



Guardianas Del Mar is an inexpensive enforcement solution for a government with limited resources.

Empower volunteer groups and citizens to report illegal activities and make those reports admissible in court.

Training

Persons will be accredited by PROFEPA and educated in the law with respect to permits, licenses, concessions, inspections, and sanctions and the various agencies involved in all of the above.

The training program, to be conducted by Profepa, will include education in regards to the basic understanding of constitutional principles, the Popular Denunciation mechanism, regulations relevant to natural resources, and the "Ley de Pesca" - fisheries law.

Following the training, candidates will be evaluated based on their understanding of the laws, honesty, and commitment to protect the natural environment.

Public monitors will be helpers to the authorities and will NOT have the right to inspection.

Recruitment

Profepa will be responsible for sending inspectors into various communities to promote their participation in the program. Additionally, Profepa will work with institutions of higher learning to appeal to recent graduates to become voluntary monitors. [check this]

Oversight

The program will be overseen by a governing body, Committee of Participatory Monitoring, that will include a President, Secretary, Treasurer, representatives from various environmental groups and others as may be required.

The committee will have the following responsibilities:

- Develop the orientation program
- Assist in meetings to analyze any problems with the program
- Participate in the selection of [x] monitors
- Formulate Popular Denunciations
- Write reports on the progress of the program to Profepa
- Support Profepa in it's inspections and special operations as may be required

In turn, this committee will be headed by the President of the Governing Body or Mesa Directiva. His or her responsibilities will be to:

- Ensure the adequate functioning of the committee and coordinate its activities
- Represent the Committee before various authorities
- Hold planning meetings
- Participate in evaluation meetings with various authorities
- Coordinate actions of the state Profepa Subdelegate for Inspection and Monitoring
- Formulate, with the state delegate of Profepa, Popular Denunciations procedures according to Chapter VII of LGEEPA.

-Report on the committees activities, including Popular Denunciations it has received

The Assistant Attorney General for Natural Resources along with State Delegates for Profepa will design the framework for evaluating the success of the program.

Legal Context

The legal framework for Guadianas del Mar can be found in the following:

-The Mexican Constitution Articles 4, 25, and 26 establishes the right to personal development and well-being

-La Ley General de Equilibrio Ecologico, Article 1 establishes the collective and individual right to participate in the preservation and restoration of the natural environment.

- La Ley General de Equilibrio Ecologico, Article 189 establishes the legal mechanism for Popular Denunciation in relationship to the natural environment.

- La Ley General de Vida Silvestre urges the social participation in conservation programs

- La Ley Forestal, Article 1 urges an increase in social participation in the protection, conservation, restoration, and improvement of natural resources

-El Plan Nacional de Desarrollo, el Programa Nacional de Medio Ambiente y Recursos Naturales y el Programa de Procuracion de Justicia Ambiental 2001-2006 establishes [polticas publicas] to stimulate the social participation in the care and conservation of the natural environment and natural resources, specifically in the monitoring of the compliance of the environmental law.

In this context, it is the obligation of Procuraduria to orchestrate the mechanisms to enable individual participation of those interested in helping authorities with the conserving and restoring the natural environment.

For more information about Guardianas del Mar [contact SeaWatch](#) [link to our contact us page] or [Profepa](#) [link to their site].



Coalition for the Sea of Cortez

Mission

To ensure an economically and environmentally sustainable Sea of Cortez.

Goals

1. Enforce the 50-mile commercial fishing limits through VMS
2. Enact a responsible shark NORMA that reflects the 50 mile limit.
3. Remove gillnets from the West Coast of Baja California

Background

Since 1949, the Mexican commercial fishing lobby, Canainpes, has been setting the fisheries agenda in Mexico. With over 95% of the commercial fish stocks of the Sea of Cortez now gone, the need for a coalition to present sustainable solutions has never been more pressing.

What We Do

The Coalition for the Sea of Cortez organizes those groups, businesses, and individuals interested in the conservation of the Sea of Cortez, identifies practical solutions for it's continued economic and environmental viability, and communicates to the media, the public, and government. Specifically, CSC:

A.) Organizes Stakeholders

The coalition seeks to identify and recruit those concerned with the future of the Sea of Cortez. That includes - but is not limited - to:

- **The Tourism Industry**

The value of a shark killed for it's fins is approximately \$100; the value of a live shark to local tourist-related business is \$3,500, each year. Hotels, restaurants, rental car companies, travel agents, and those that service these industries will all be devastated if the Sea of Cortez becomes devoid of wildlife.

- **Recreational Sports Industry**

Other interested groups include those directly providing services to tourists interested in appreciating the Sea of Cortez and it's marine life. Those include sportfishing, diving, sailing, and kayaking companies.

- **Non-Governmental Organizations**

Many non-profit groups are also actively involved in preserving the Sea of Cortez. This coalition provides an important forum for such groups as Sea Watch, WWF, The Billfish Foundation, Amigos del Mar, Pronatura, and others.

Because the few fish that remain in the Sea of Cortez are found off the coast of Baja California Sur, this state is the primary, though not the only, area of focus for the coalition.

B.) Coordinates

The coalition provides a mechanism to generate ideas, manage work flow, avoid overlap, and communicate a focused, unified message.

C.) Raises Awareness

The coalition publicizes the over-exploitation of the Sea of Cortez through all available media outlets.

D.) Recommends Reasonable Policy Solutions

The coalition works closely with scientists and government to develop reasonable policies aimed at ensuring the long-term sustainability of the Sea of Cortez. Currently, the coalition is actively involved in three policy areas: [Shark NORMA](#), [Gillnet Ban](#), and [VMS](#). [links to these SeaWatch pages.]

Why We Do It:

The coalition exists because a divided opposition is easily defeated. With that in mind, CSC aims to unite conservation stakeholders behind a few, core messages and by doing so, present a reasonable alternative to [Canainpes](#). Not an easy challenge considering we are eleven offices and fifty-three years behind. Currently, when a bill or regulation is proposed, the powerful commercial fishing lobby is able to meet with officials, buy media coverage, and spread misinformation - often on the same day. If the Sea of Cortez is to survive, conservation interests must present a **united, reasonable, and powerful alternative.**

Who Should Join

- Hotel Associations
- Hotels
- Dive Shop Associations
- Sports Fishing Associations
- Dive Shops
- Sport Fishing Charter Companies
- Ribereno Fishing Cooperativas
- Conservation Groups
- Prominent Businessmen
- Government Officials
- Scientists
- Individuals

To find out how to get involved in the coalition, send an email today to coalition@seawatch.org



Sea Watch Alert # 24

A new method utilizing hooka divers and long inshore monofilament gill nets allows pangas to clean the inshore reefs of the lower gulf Islands. On new reefs, each panga kills from 1000 to 1500 reef fish daily. Unless there is the political will to stop inshore monofilament gillnets, the fisheries declines in the Sea of Cortez cannot be stopped. Nothing less than a total ban on inshore monofilament gillnets will stop the destruction and allow the rebuilding of stocks to start.


Most of the fish are already gone from the Sea of Cortez. One of the only areas left to still have a few fish are the southern gulf Islands, located between Loreto and La Paz in BCS. These Islands are some of the most beautiful in the Sea of Cortez and at one time the Islands and the nearby seamounts were a major attraction to divers from around the world. The major world dive community long ago moved on, due to depleted fisheries on the sea mounts, but novice divers, snorkelers, kayakers and other eco-tourists continued to arrive to enjoy the tropical waters and reef fish around the Islands. Millions have been spent on these Islands to stop their commercialization, but nothing has been done to protect the waters around the Islands and now they have become a wasteland.

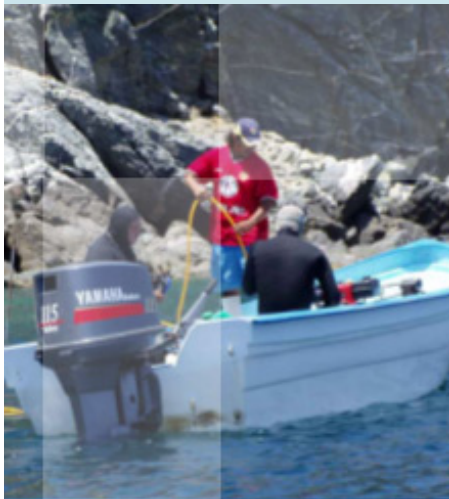
Two La Paz fishing cooperatives with at least nine boats are targeting the reef fish populations around the lower gulf Islands. This new fleet of boats and the young fishermen running them are armed with new 225 meter long inshore monofilament gill nets. They have new large Yamaha motors, new dive compressors and the latest diving gear. Examples of these type of boats are the Flor de Malva II, III, IV, V, VI, VII and the Bahia de La Paz I, II, III, IV . Five of these boats have been working the Islands of San Jose, Santa Cruz and San Diego for the last several weeks. On this day at Santa Cruz Island, it took the Bahia de La Paz just over 3 hours, to kill over ½ ton of small reef fish (about 1000 reef fish). They can easily set their net two to three times each day. The 250 meter monofilament net is set at the base of the reef along the rocks and then both ends are brought up over the reef. 2-4 divers using compressors (hooka) then swim into the semicircle of the net and drive the fish into the net. The divers can within one hour drive all the fish inside this 250 meter semicircle into the nets. This scenario is being repeated many times daily along the shores of the southern gulf Islands between Loreto and Cabo San Lucas. Local fisherman say they have repeatedly reported this to Sargarpa and as always nothing has been done. According to local fishermen from San Evaristo, the commercial fishermen operating from Playa Blanca in the Loreto Marine Reserve are even worse offenders.


If the Federal Government (SARGARPA) and/or the new BCS State Consejo Estatal de Pesca y Acuicultura are not ready to ban inshore gillnets from the Sea of Cortez, then they shouldn't waste their time trying to stop the destruction. Also, by eliminating the gillnets they will stop the worst destruction of all, the taking of huge schools of breeding pargo and other snappers every spring. **Nothing short of a complete ban will stop the decline. Only hook and line can be used!** All the commercial fishermen we interviewed this summer

This innocuous looking fish camp located on San Jose Island was used by two La Paz co-operatives. Fishing with hooka gear and monofilament gill nets, five of their nine boats worked from this camp. With each boat taking 1000 to 1500 reef fish daily, it took less than three weeks to kill about 70% of the small reef fish on the Islands of Santa Cruz and San Diego.



 This small fish camp with 5 pangas using new fishing methods is responsible for killing 1000s of reef fish daily from Islas San Jose, San Diego and Santa Cruz in June and July of 2003.



 Illegal fishing in the Sea of Cortez is rampant. These boats according to authorities in La Paz have no permits to fish on reefs and are illegally using hooka, although local authorities couldn't supply Sea Watch with those laws



→ This panga caught 600 kilos (about 1000 reef fish) in this one 3 hour set on the west side of Santa Cruz.



→ Two to four hooka divers drive the fish schools into the semicircle net, allowing for large and quick catches.



→ 70% of the small reef fish on San Diego and Santa Cruz Islands were taken in less than three weeks.

(except those using these gillnets) said the nets had to go if the Sea was to survive. The dramatic declines in the Sea of Cortez started with the advent of monofilament gillnets in the mid 1970s. Now there are 1000s of these nets in use in BCS and the last of the fisheries here will soon end with those same nets.

Pictures tell the story:



This is a reef on the west side of Santa Cruz Island on 7/10/03
[\(click to enlarge\)](#)



Televisa reporter Armando Figaredo swimming on that same reef area on 7/22/03 one week after the area was cleaned out by hooka divers using nets.
[\(click to enlarge\)](#)



This sign is located about 200 yards from the fish camp killing 5000 to 8000 reef fish each week
[\(click to enlarge\)](#)



Two hooka divers driving fish into the nets. Each boat with two divers averages over 1000 reef fish every day.
[\(click to enlarge\)](#)



The nets take over 70% of the reef fish.
[\(click to enlarge\)](#)



Only the very small and very large survive.
[\(click to enlarge\)](#)





Commercial Fleets Reduced Big Fish by 90%, Study Says

By ANDREW C. REVKIN - *The New York Times*- May 15, 2003

In just 50 years, the global spread of industrial-scale commercial fishing has cut by 90 percent the oceans' population of large predatory fishes, from majestic giants like blue marlin to staples like cod, a new study has found.

Oceanographers not connected with the study say it provides the best evidence yet that recent fish harvests have been sustained at high levels only because fleets have sought and heavily exploited ever more distant fish populations.

Other studies had shown such trends for individual species and some coastal fisheries, but experts said this was the first systematic study to measure the effect throughout the oceans.

The study is to appear on Thursday in the journal *Nature* and is online at www.nature.com.

The authors, from Dalhousie University in Halifax, Nova Scotia, said they hoped the findings would spur countries to honor a declaration most signed last summer at the World Summit on Sustainable Development in Johannesburg, which called for restoring stocks by 2015.

American fisheries officials and representatives of the fishing industry said that declines in fish stocks were inevitable but that progress was being made in stemming damage to the most depleted stocks.

The study, drawing on decades of data from fishing fleets and research boats, paints a 50-year portrait of fish populations under siege as advances like sonar and satellite positioning systems allowed fleets to home in on pockets of abundance.

Even as sought-after species like tuna and swordfish declined, many other less popular fishes also dropped enormously in numbers as they were caught unintentionally on long lines of baited hooks or in bottom-scouring trawls.

"With all this technology together, the fish hardly have a chance," said the lead author, Dr. Ransom A. Myers, who spent 10 years combing archives of information from Japanese long-line fleets, research trawling expeditions and other sources.

But representatives of the seafood industry called the study unnecessarily alarmist.

Glenn R. Delaney, a consultant to American fishing companies and a government-appointed member of the International Commission for the Conservation of Atlantic Tunas, said some fleets had overfished in the past and some continued to do so, particularly rogue vessels connected mainly to Taiwanese companies. But he said that major ocean fisheries were being managed better now.

The study was financed mainly by the Pew Charitable Trusts, a foundation that has long promoted efforts to alert the public to

problems with the oceans. It was extensively reviewed by experts from the industry and other institutions before appearing in Nature, the authors said.

The authors and other experts said recent improvements in stocks of some species, like swordfish, were creditable but reflected only a tiny increase in populations that remained the dimmest shadow of what they were two generations ago.

This level of depletion not only threatens the livelihood of fishers and an important source of protein, but could also unbalance marine ecosystems, experts and the study's authors said.

In some places, the study found that when top predators were removed, competing species thrived and filled the gap in the food web. When cod declined in the Grand Banks east of Canada in the 1950's, flatfish numbers soared, and when populations of blue marlin plunged in the tropical Atlantic as they were caught on tuna hooks, sailfish and then swordfish became abundant.

But in each case, the statistics showed, the replacement species were quickly decimated by overfishing or by accidental catches. That left the oceans largely bereft of big predators as a whole.

One remarkable aspect of the new study is the 50-year statistical portrait it paints that reveals not just the extent of the damage, but also the pattern, with charts showing year by year how, as oceangoing fleets fanned out, catches boomed each time they reached new waters, then plummeted in their wake.

In almost all exploited areas, it generally took just 10 or 15 years for populations to crash. One measure was fish caught per 100 hooks on the Japanese lines. The study said the rate went from 10 fish per 100 hooks to 1 or less in that period.

"This shows that the reason we've had so much tuna and swordfish, the only reason this has been sustained, is because boats kept going farther and farther away," said Dr. Jeremy B. C. Jackson, a professor at the Scripps Institution of Oceanography. Dr. Jackson has conducted other studies showing declines and ecological effects in coastal waters but was not involved in the new work.

"The problem now is there's no place left to go," he said. "There are a lot of people out there willing to fish the last fish. But that's just not going to work."

One of the biggest concerns is the potential effect on global ecosystems, said Dr. Boris Worm, the second author of the study. He is affiliated with Dalhousie and the University of Kiel in Germany.

"You can't cut off the head of an ecosystem and expect it to behave the same way," he said. "From all we've studied in parts of the ocean, you can end up with things being less stable, less predictable, and maybe less hospitable."

He said that for most fish species, recovery was possible, even from such low numbers.

"On land, we did it with buffalo," Dr. Worm said.

"They went from 30 million to a thousand," he added, "and we saved them because we wanted to. With fish we haven't thought the same way yet."

There are already efforts underway to curb overfishing, create reserves that serve as nurseries for valued species and encourage consumers to avoid the most endangered fishes.

Fishing industry representatives also note that tuna and swordfish populations are stabilizing in many places. But the authors of the study and other experts note that most of these efforts are voluntary and grossly insufficient.

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Revillagigedo Islands Overview

Thirty years ago the Revillagigedo Islands were one of the richest archipelagos in the Eastern Pacific. World famous for the abundance of apex predators like hammerhead sharks, giant pacific mantas, and yellowfin tuna, these islands have been decimated by over-exploitation. What remains is greatly threatened.

“When I got to the islands 25 years ago,” says [Mike McGettigan](#), founder of Sea Watch and one of the first people to extensively dive the area, “you would often be surrounded by several hundred sharks. We would see up to 100 wahoo at a time and often spend 45 minutes underwater with the same school of tuna swimming by. The schools would be miles long.”

That was then.

On the three inner islands of Socorro, Benedicto and Roca Partida:

- Wahoo populations have been devastated with the average weight of a fish around 20 lbs and populations down 70-80 % since the 1970s and down about 50% in the last 10 years with the biggest decreases coming in the last 5 years due to increased sportsfishing.
- Sharks have decreased 50-60% and many that are left have mouth injuries from hooks and are trailing long fishing lines.
- Yellowfin tuna populations have also dramatically declined over the past 20 years due mostly to tuna seiners that work the waters in and around the biosphere as well as the oceans just south of the Revillagigedo Islands.
- Reef fish like the Blue Jack, Rainbow runners and Leather Bass have also been heavily impacted by sportsfishing with populations down 30-40%. (For sources see 2003 [Survey Report](#) & [Fisherman Interviews](#).)


Uncontrolled commercial and to a lesser degree sportsfishing is the primary cause of these tragedies. These islands, as fragile and diverse as the Galapagos Islands, can be greatly impacted for years by a single longliner. Today, longliners operate without penalty in the Revillagigedo Islands...even though [the Mexican government closed the islands to all commercial fishing in 2002!](#)

THE ST. VALENTINE'S MASSACRE


Since it's founding in 1993, SeaWatch has been bringing public attention to the destruction of these islands. A typical example is SeaWatch's work following the St. Valentine's Massacre.

At 9:00 a.m. on February 14th, 1994 the Unicap III, a Mexican



 The island of Socorro is considered one of the world's premier dive destinations and one of the most threatened



 The Revillagigedo Islands are located about 300 miles south of Cabo San Lucas.

Today longliners operate without penalty even though the Mexican government closed the islands to all commercial fishing in 2002.





→ Schooling Hammerheads used to be numerous in the islands.

Department of Fisheries boat, started pulling in their nets off the south end of San Benedicto. Passengers aboard SeaWatch's floating headquarters, the Ambar III, watched helplessly as their worst fears came true.

Two of the mantas they had been riding the day before were hopelessly tangled in the nets. These gentle giants had fought the nets and been torn to pieces. Because of the damage to the nets, and to the mantas, those on the fishing boat decided it would be easier to cut their nets loose and throw them back in the water - entangled mantas, nets and all. When they left, there were thousands of feet of thin monofilament net all over the reef, still killing.

When they pulled in their long lines, there was nothing but reef sharks on the hooks. As these dead or dying sharks came up over the back of the boat, the lines were cut off above the hook and the hook and shark were dropped back into the water, where they immediately sank to the bottom. The underwater reef was littered with dozens of dead sharks. At that time they were selective as to which sharks had value and most sharks were just fanned.

In all this killing, not one usable fish was caught.

In the meantime, another fishing boat, Mero VII, was busy harpooning the first manta that passed by their boat. The twenty-foot, one-ton manta was then gaffed with large hooks, and lifted out of the water, still very much alive, alongside the boat. Then the men got out in a small boat and proceeded to use axes to cut the wings off the still-living manta. In just a few hours over five tons of fish were killed near this pristine volcanic island, and many more were going to die in the discarded net. The two boats had nothing to show for all that carnage, except two, almost useless manta wings.

This world famous spot to ride mantas was forever changed in just 4 hours - divers from all over the world clamored to come and ride the gentle giants of San Benedicto. This senseless act cost millions of tourist dollars in the future.

RAISING AWARENESS

Within days SeaWatch brought this senseless slaughter the attention of the Mexican public. The news was run three times on Guillermo Ortega's influential Mexican TV news-magazine, Al Despartar, which is seen by 58 million Latinos. With the help of freelance reporter, Armando Figaredo, SeaWatch made nine more Sea of Cortez specials for Al Despartar. The Manta slaughter was part of the national CBS Evening News in August and it became international news on CNN the same month.

Reaction was swift: Miguel Sanchez-Navarro and Mauricio Ruiz, President of Pronatura, the largest private Mexican ecology foundation, took the video of the killing of the Mantas directly to the Mexican President and the Head of Fisheries. Within two months, the Giant Pacific Manta was put on the endangered species list. It is now a crime to kill one [in the Revillagigedo Islands, punishable with a \$10,000 fine.

CLOSING THE ISLANDS TO FISHING

Eight years of raising public awareness finally culminated in March of 2002 when SeaWatch and Miguel Sanchez-Navarro invited Secretary Santiago Creel, the minister in charge of the islands, to witness first hand the damage being done by illegal longliners, drift gill-netters and the over fishing by long-range boats from California. As a result of this trip and a lawsuit filed by the Hotel and Sports Fishing Association of Cabo San Lucas, **the entire**



→ Commercial fisherman often fish within the reserve - few are ever punished.

In all this killing, not one usable fish was caught.

Sportsfishing boats had only a small environmental impact on the reserve but they provided an informal surveillance network.

It is now a crime to kill a Giant Pacific Manta in the Revillagigedo Islands.



biosphere was closed to all fishing as of March, 2002.

Unfortunately, this closure also included sports fishing. Though these boats had only a small environmental impact on the reserve, they provided an informal surveillance network. That network is now gone as they, of course, have followed the law while the large commercial operators have chosen to ignore it.

Today, **the Revillagigedo Islands Biosphere remains primarily a park on paper only.** While these Islands will never have the draw of the Galapagos, managed carefully they could be the **one place in all Mexico** that is a breeding ground for tuna and wahoo that could be brought back to pre-industrial fishing levels.

Unlike many parts of the world's oceans, the Revillagigedo Islands fall entirely within the territorial limits of one country – there is no need for an international cooperation or legal framework to protect them. **All that is needed is the political will to enforce the laws already on the books.** And a little technology.

Today, SeaWatch, The Billfishfund, Pronatura and several other groups are actively working with the Mexican authorities to implement [Vessel Monitoring System \(VMS\)](#), an automated, satellite-based program to monitor geographically isolated areas similar to ones already in use in many countries including the U.S., Canada, and Chile.

Though holdouts remain, officials in the highest reaches of government have proclaimed their support for VMS, including the minister of Agriculture, Rural Development, and Fisheries, [Javier Usabiaga](#). In order to see VMS and other reasonable management plans through to their completion, SeaWatch also has been helping to organize a [coalition of like-minded interests](#), including representatives from the sports fishing and scuba diving companies, government officials, non-government organizations, leaders in the hotel industry, and prominent Mexico City businessmen.

This coalition, officially called the Comision Nautico~Recreativa y de Pesca Deportiva, has [formal government backing](#) and will have a seat at the table as various management plans for the Sea of Cortez and the Revillagigedo Islands are discussed.

Here are some things you can do to protect one of Mexico's last wild places include,

- [Join the coalition](#)
- [Support SeaWatch](#)
- [Contact government officials](#)

→ A Giant Pacific Manta slaughtered for its nearly worthless meat.



→ The remote Roca Partida is frequented by illegal commercial fisherman.

SeaWatch

Where Have All the Mantas Gone?

With their 18-22 foot wing span, gliding motion, and gentle disposition, giant pacific mantas are one of the truly amazing creatures to watch underwater. Mantas show curiosity and even playfulness around divers – they will come back to find a diver time and again, and float over the diver's bubbles attempting to get a tummy rub. A few lucky divers have even been able to take rides on the mantas back by holding on to the fins of parasitic remoras.

Twenty years ago, giant pacific mantas could be found around every major reef in the Sea of Cortez. By 1990, mantas had become victims to harpooning and gillnets, and their populations have dwindled to close to nothing. Although traditionally mantas have not been a targeted species, many become tangled in nets intending to catch other species. Once in the nets, the mantas are harpooned and thrown overboard to die. Today because of dwindling populations of sharks and sportsfish, manta ray is now often targeted and served at taco stands.

The Mexican government is slowly becoming aware of the Mantas's importance to tourism. At the Revillagigedo Islands, one of the only places in the world you are still practically guaranteed a manta encounter, over \$2,000,000 is spent each year by tourists wishing to see and photograph these gentle giants.

In June of 1997, because of the influence of El Nino, six mantas entered the Sea of Cortez. For three weeks, divers from all over the world photographed and watched these beautiful one-ton creatures. The La Paz dive operations began to increase their bookings and hoped the mantas would stay for the entire summer. Unfortunately, a local fishing co-op heard about the mantas and targeted and killed three of them. The remaining three left soon after the killing.

In response to this episode and many like this, SeaWatch started a petition to stop the killing and gathered over 3000 signatures. On January 1, 2000, the Mexican government issued the "Mexican Official Standard Rules that Regulate the Shark and Ray Fisheries in Mexican Waters." This regulation establishes special protection status for the Giant Pacific Manta Ray, making it illegal to capture or kill them in Mexican waters.

However, laws are meaningless without enforcement. Funds and personnel are limited in the enforcement agencies, and consequently manta rays continue to be senselessly killed both by gillnets and targeted for meat.

In the complicated food chain of the ocean, it is difficult to say exactly how the absence of mantas will impact other species. But it is quite clear that tourists will be less likely to come and dive in the Sea of Cortez without the likelihood of an encounter with these amazing creatures.

WHAT YOU CAN DO


Twenty years ago, giant pacific mantas could be found around every major reef in the Sea of Cortez.

Laws are meaningless without enforcement.




 Manta Ray swimming with net.



 Manta killed for its nearly worthless meat.



 Free diver with a Giant Pacific Manta.



Individuals can make a difference, if you see a manta ray being killed, take a picture of the fishing boat and note date and place of the killing and [report the information to SeaWatch](#). [Link to report illegal acts page]

[Support the Guardianas Del Mar program](#), which will provide extra sets of eyes and ears to enforce existing laws. [link to guardianas del mar page] It is crucial that fisherman understand that Mexican laws will be enforced.

[Help SeaWatch](#) [link: Join SeaWatch] bring attention to the destruction of these gentle giants by joining today.

Finally, encourage your friends not to eat manta ray at local restaurants and taco stands.



By helping SeaWatch you can help preserve the future of the Giant Pacific Manta.

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Billfish: The End of an Era?

"The billfish are almost all gone." Marco Guluarte, Baja fisherman 2001

Billfish in the Sea of Cortez have been overfished to the brink of collapse. The source: gillnets and longliners. Some claim the decline is cyclical, that the fish will return; they will not. The billfish population in the Sea of Cortez is down about 70-80% from pre-industrial fishing levels of the 1960s. Without enforcing the already existing 50 mile no commercial fishing zones they will not recover.

Just as the North Atlantic cod fishery, once of the richest fisheries in the world was destroyed by overfishing - first by foreign fleets, and then by local operators. Even putting aside the environmental devastation, the social impact has been incalculable as tens of thousands of families have been left destitute. So too will follow the billfish in the Sea of Cortez. ([click here to see interviews](#))

Here are the grim statistics from the Atlantic-wide populations. From the website of Jim Chambers and Assoc. www.chambers-associates.org

Stock (as of year)	% Decline	% of MSY
Western At. Bluefin Tuna ('96)	95	6-12
Atl. White Marlin ('99)	90	15
Atl. Blue Marlin ('99)	80	40
Atl. Bigeye Tuna ('98)	72	60
North Atl. Swordfish ('98)	64	65
Western Atl. Sailfish ('91)	54	62
Large Coastal Sharks	50-80	30-36

It is not comforting to know that as a population declines rapidly, stock assessments consistently paint a much more optimistic picture than actually exists (for confirmation, see p. 8 of the December 2000 issue of "Fisheries" magazine published by the American Fisheries Society)


Today, fish stocks in the Sea of Cortez are down on the average of about 95% from thirty years ago. As Dr. Russell Nelson observed fishing interests "have attempted to achieve maximum harvests in the face of stock biomass declines with little regard to future sustainability." (Link Thoughts and Notes on the Sea of Cortez by Russell Nelson, 2001)

The solutions are simple: Keep the big boat longliners and drift gillnetters outside 50 miles as the current law says, and address the local (riberano) fishing problem by removing the inshore gillnets. It is the only chance the sea has. If the government won't do that the Sea of Cortez has no chance.


Without enforcing the already existing 50 mile no commercial fishing zones they will not recover.

Today, fish stocks in the Sea of Cortez are down on the average of about 90% from thirty years ago.




 If sportsfishing were a corporation, it would rank 13th on the U.S. Fortune 500



 Sportsfishing in the Sea of Cortez is under threat from commercial overfishing.



 One commercial boat can catch 7,000 marlin on a single trip.

Sportsfishing

A group of six sportsfishermen visiting the Sea of Cortez from Los Angeles for a five day trip will spend, more or less, \$1,800 on airfare with Aero California, \$350 a day on a boat, \$250 a day on hotels, \$50 a day on food, and \$40 a day on tips. The total spent for a five day trip is approximately \$5050. Multiply this time the [x] active sportsfisherman in southern California alone and you have a total market of [x].

However, if there are no fish, these fishermen will not come. One sportfisherman recently told SeaWatch that after forty years of coming to La Paz he was considering taking his business elsewhere. In the three months that he is La Paz, he spends \$100,000 U.S.

We must implement a sound management plan based on a candid acknowledgement of the present devastation of the sea. That plan must

- 1.) Enforce the 50 mile no take zone in the Sea of Cortez by implementing [VMS](#)
- 2.) Remove the gillnets from the Sea of Cortez, in part through [the Guardianas del Mar program](#)

From 1994-2001, SeaWatch interviewed approximately fifty-five Mexican and American fisherman. Those fisherman, who had been working in the Sea of Cortez for the last twenty to thirty years report a severely depleted sea. The anecdotal data collected in these interviews mirrors the recent study by [Myers and Worm](#), which shows that within 15 years of the start of commercial exploitation, a fishery is reduced by 90%.

The people who fish daily in the oceans know when sea life disappears. Their job requires them to look carefully for signs of fish in the oceans. When those signs disappear, it is the fisherman, not the scientists who notice first. For the last twenty five years in Mexico the scientists and fishery management agencies have been controlled by commercial interests, and thus refuse to acknowledge the true depletion of the fisheries lest they offend their sensitive benefactors. Meanwhile politicians call for new studies to establish "baseline data" but the baselines no longer exist.

In order, to not only create a sustainable fishery, but also attempt to restore the Sea of Cortez to pre-industrial fishing levels we must rely on the empirical data that these fisherman report. We must enforce the current Mexican regulations establishing a 50 mile sportfishing conservation zone by the implementation of [VMS](#) and [Guardianas del Mar](#).

Dr. Russel Nelson of the Billfish Foundation postulates that if the current Mexican regulations were enforced, such as the 50 mile sportfishing conservation zone, and the use of longline and gill net gear in these waters was reduced substantially, the recovery of billfish and other non-shark migratory species stocks in the Sea of Cortez could occur within a decade.

The following is a brief summary of the interviews with the Mexican and American fisherman, including their views on the percentage decrease in billfish over the fifteen years prior to when the interview were taken. Remember that these interviews were done from 1996-2001, and commercial interests continue to prevail,

If there are no fish to catch, the sportsfishermen will not come.



Dr. Russel Nelson: With the right regulations and enforcement, billfish could recover.

gillnets and shrimp trawlers still sweep the sea, and the regulations are still not enforced, the situation has only worsened since these interviews.

[For links to complete interviews text, scroll down.]

Name and Interview Date	Years Fishing and Main Fishing Area	Percent Decrease in Billfish Over Last 15 Years	Percent Decrease in All Fisheries In Last 15 Years Including Shark, Billfish, Pargo, Cabrilla and Grouper
Francisco Cota Ruiz 2000	15 - 20 years - Cabo	40%	Fishes billfish daily (250 days a year)
Juan Jose Arce 2000	15 years - Cabo	45 to 50%	Fishes billfish daily
Roberto Sandes 2000	15 years - Cabo	" a lot more than 50%"	Fishes billfish daily
Esteban Ortiz 2000	22 years - Cabo	50 to 60%	Fishes billfish daily
Juan Perez 2000	25 years - Cabo	50% - especially in billfish	50%
Abraham Marquez 2001	12 years - Los Brailles	30% in last 12 years	30% in the last 12 years
Jesus Banaga 2001	27 - 28 years - La Playita	50%	50%
Marco Guluarte 2001	25 years - La Playita	"The billfish are almost gone."	more than 50%
Eric Briesen 2001	15 years - La Playita	50%	50%
Amadeo Marquez 2001	10 to 15 years - La Playita	"literally nothing"	40%
Julio Castro 2001	19 years - Cabo	70%	- -
Benito Agundez 2001	20 years - Sea of Cortez	50 - 70%	sharks - 75 to 80%
Ricardo Agundez 2001	10 years - Cabo	30 to 70%	sharks - 90%
Antonio Castro 2001	7 years - La Playita	- -	50%
Marco Antonio Guluarte 2001	15 years - La Playita	- -	20 to 30%
Jose Cruz Gonzalez 2001	46 years - La Playita	- -	about 60%
Monico Galban 2001	10 years - Los Barilles	- -	has seen decrease
Eduardo Castro 2001	- -	- -	20 to 30% in last 10 years
Amador Talamantes 1996	10 years - Sea of Cortez	- -	A panga 10 years ago, would catch 200 to 300 kilos/day then, now takes 10 pangas to do the same thing.
Manuel Salvador Alvarez 1996	- 15 year - Sea of Cortez	- -	His fishing village has gone from 10 tons per day to 200 to 300 kilos per day.

Miguel Cota 1994	many years - Sea of Cortez	- -	"There has been a decrease."
Fernando Reyes and Castro Navarro 1994	at least 15 years - Sea of Cortez	- -	70 to 80%
Valentine Romero Murrillo 1994	at least 10 years - Sea of Cortez	- -	80%
Pantaleon Calderon 1994	30 to 40 years - Sea of Cortez	- -	"Fish are very scarce now." Before you would catch a ton a day, now it takes 10 days to catch a ton.
Manuel Valdez 1994	30 to 40 years - Sea of Cortez	- -	"You can't compare now with then. Now you have to work hard just to eat."
Francisco Javier de la Toba 1994	at least 10 to 15 years - Sea of Cortez	- -	"The catch is much smaller now."
Cruz de la Toba Amador 1994	35 years - Sea of Cortez	- -	"At first, there were a lot of fish. Now there is almost nothing."
Rafael Iglesias 1996	50 years - Sea of Cortez, fishes on a converted shrimper and is from Topo.	- -	Noticed a big decrease last 10 years. Our boat would could catch 1.5 tons/day then, now we catch 2 tons in 10 days
Javier Magaña 1996	- -	- -	"Yes, it has gone down a lot."
Abraham Marquez - 2001	12 years in Sea of Cortez	- -	Fishing has decreased by 30% in last decade
Eduardo Castro - 2001	20 years in Sea of Cortez	- -	20% to 30% decrease in last twenty years
Jesus Banaga - 2001	25 years in Sea of Cortez	- -	Fishing has decreased 50%
Jose Cruz Gonzalez - 2001	46 years in Sea of Cortez	- -	Fishing has declined about 60%
Marco Guluarte - 2001	15 years in Mexico	- -	Fishing has decreased by more than 50%
Marco Antonio Guluarte - 2001	15 years in Mexico	- -	All fisheries down at least 20% to 30%
Eric Briesen - 2001	15 years in La Playa	All have declined	Fishing has been reduced by 50%
Antonio Castro 2001	7 years in Mexico	- -	Fishing is down 50%
Amadea Marquez - 2001	10 to 15 years in Mexico	60%	Literally left of some fisheries for us
Julio Castro - 2001	20 years in Sea of Cortez	70%	Fish sizes have dropped in half

Benito Agundez - 2001	20 years in Sea of Cortez	50% to 70%	Pelagics are much smaller in size
Ricardo Agundez - 2001	10 years in Sea of Cortez	30% to 70%	Sharks have decreased by 90%

Interviews with American Fishermen and Divers The full American Interviews

Name and Interview Date	Years Fishing or Diving And Area Commented Upon	Percent Decrease in Billfish Over Last 15 Years	Percent Decrease in All Fisheries In Last 15 Years Including Shark, Billfish, Pargo, Cabrilla and Grouper
Tony Berkowitz	17 years - Sea of Cortez	50% - 60%	Tuna populations have dropped 25% - 40%, Sharks 40% - 60%
Terry Maas	35 years - Mexico and So. California	- -	Tuna populations have dropped 50% - 70%, blue sharks in So. Cal 99%
Richard Hoffman	23 years - Panama to California	30% - 75%	Tuna populations have dropped 20% - 40%, mako sharks 40%
Ron Mullins	30 years - Mexico and So. California	- -	Yellowtail now much smaller in size
David Purcell	boat captain 10 years - Sea of Cortez	25% - 50%	Tuna populations have dropped 25% - 40%, mako sharks 60% in So. Cal.
Jim Mabry	45 years Mexico, Cal. and Hawaii	- -	Shark population has dropped 50% - 75%
Steve Murphy	20 years Baja and So. California	40% - 50%	All populations down 20% to 70%
Robert Caruso	40 years in So. California	- -	Tuna populations have dropped 50% - 70%, blue sharks 60%
Brian Quinn	10 years at Revillagigedo Islands	- -	Wahoo and tuna smaller and lower in number
Brian Yoshikawa	10 years at Revillagigedo Islands	- -	No really big fish anymore
Gerald Lim	10 years at Revillagigedo Islands	- -	Wahoo and tuna smaller and lower in number
Dave Elm	30 years in So. California	50%	Sharks have decreased 90%
Carl Robbins	40 years around San Diego, Ca.	30% - 60%	Most fisheries depleted in both numbers and size

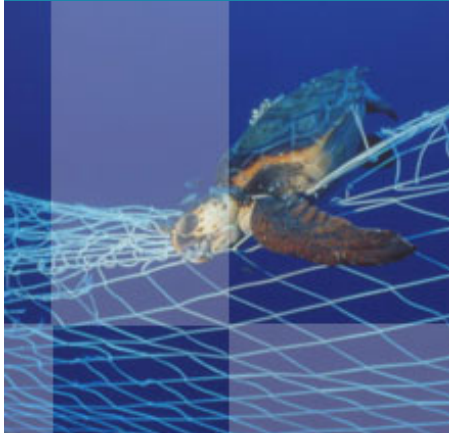
Jeff Kingsley	20 in So. California, 15 years in Mexico	50% - 60%	Sharks reduced 50% to 60%
Burleigh Brewer	40 years in So. California and Mexico	30% - 40%	Pelagics are much smaller
Charlie Johnson	50 years	90%	Average striped marlin 25 pounds lighter
Dean Plant	20 years in So. California and Mexico	50%	Shark populations down 60% to 90%
A. Michael Moutlon, M.D.	40 years in So. California	40% to 50%	All fisheries down 15% to 70%
Doug Wright	35 years	50%	Sharks 80% to 99%
Greg Stotesbury	35 years in Mexico and Pacific	major decline in last decade	Other fisheries 50% to 90% reductions
Frank Adler	38 years in So. California and Mexico	50% - 75%	Shark populations reduced 50% to 75%
Steve Behrens	30 years in So. California and Mexico	50% in California	Shark population decline 30% to 50% in last decade
Robert Hetzler	30 years in So. California	50% in last decade	Number of smaller fish increasing
John Willis	40 years in So. California and Mexico	- -	Everything down 25% to 30%
Bill Shedd	30 years	- -	Blue sharks have declined 90%
Bill Byler	25 years in So. California and Mexico	- -	Blue sharks down 95%, yellowtail a shadow
Marty Snyderman	30 years - Southern California	- -	shark population has dropped almost 90%
Howard Hall	30 years - Sea of Cortez	- -	shark population has dropped 80% or worse
Pete Groesbeck	30 years - Southern California	50% - 60%	shark population has dropped 95%

These interviews include the observations of fisherman whose livelihoods depend on fishing, as well as interviews with several of America's most well known photographers and film-makers:

[Interviews with Mexican Fisherman](#)

[Interviews with American Fisherman](#)

[Interviews with American Fishermen \(the Revillagigedo Islands\)](#)



→ Despite popular myths to the contrary, gillnets are not selective in what they kill.



→ Drift gillnets can completely devastate an area almost overnight.

Gillnets

Starting in the mid 1970's monofilament drift gillnets have been used commercially to catch pelagic fish along the west coast of Baja and the Sea of Cortez. These nets, indiscriminate and destructive, kill an enormous amount of bycatch along with the targeted species. So thin they are difficult to see underwater - any animal which swims into a gillnet will fall victim, including whales, dolphins, turtles, birds, sea lions and manta rays. These nets, along with longlines, are culpable for almost all of the killing of 95% of the predatory fish species in the Sea of Cortez.

Now that pelagic fish in the Sea of Cortez are scarce, it is no longer commercially viable to use drift gillnets. Instead, a new young generation of fishermen has discovered an efficient - yet illegal - method to decimate the few remaining fish - the reef fish. The young fishermen and their new fleet of boats are armed with new, 225 meter long inshore monofilament gillnets. They also have new, large Yamaha motors, new dive compressors and the latest diving gear. Examples of these type of boats are the 5 Flor de Maldiva and the 4 Bahia de La Paz boats that have been working the Islands of San Jose, Santa Cruz and San Diego in June and July of 2003. These boats don't even have permits.

Gillnets are finishing off the reef fish at the rate of 1,000 to 1,500 reef fish per boat per day. With a gillnet and this equipment, it takes a boat just over 3 hours to kill over a ½ ton of small reef fish (1000-1500 reef fish). They do this by setting their nets along 200 meters of reef and then two to four divers, breathing out of hookas connected to the compressor, and drive the fish into the nets. Each boat can repeat set nets twice daily, in a process that is being repeated many times daily along the shores of the southern gulf Islands between Loreto and Cabo San Lucas.

According to local fishermen, the commercial fishermen operating from Playa Blanca in the Loreto Marine Reserve are the worst offenders.

ECONOMIC CONSEQUENCES

At one time these islands and the nearby seamounts were a major attraction to divers from around the world. Though the major dive community long ago moved on due to depleted fisheries, sportfishermen, novice divers, snorkelers, and kayakers continue to enjoy the tropical waters around these Islands. These divers and sportfishermen spend a lot of money. A group of six fisherman on a five day fishing trip from Los Angeles will spend over \$5000 in Baja California Sur. **However, if there are no fish, these fishermen will not come.** Kozy Boren, an American yachter and fisherman, recently told us that after forty years of coming to La Paz he was considering taking his business to Costa Rica because of the lack of fish here. This summer he can't even catch enough fish to feed the people on his boat. In the three months that he is in La Paz each year, he spends over \$100,000.

THE ONLY SOLUTION

Monofilament gillnets threaten the entire social and economic future of Baja California Sur.

Over 5,000 of the few remaining reef fish are dying in gillnets each day.

A group of six fishermen on a five day trip will spend over \$5,000.

The short-sighted exploitation of these few remaining fish continues. There will be major economic impact. The local fisherman are not the problem, they are only a symptom. The total lawlessness (anyone can use any method, anytime, anywhere catch anything and in any quantity they want) and indiscriminate use of gear types, including nets are the problem. **If there is any chance to save the few remaining fish and to start rebuilding fish stocks in BCS, there must immediately be a total ban on monofilament gill nets and that ban must be strictly enforced.** As one fisherman from San Evaristo told SeaWatch, "We don't waste our time anymore reporting illegal fishing because no one does anything." If BCS is not ready to ban all inshore gillnets in their territorial waters, then they shouldn't waste their time trying to stop any of the destruction.

Nothing less than a total ban on gillnets will start to stop the destruction and give impetus to doing things like setting up no take zones and other measures to ensure a rebuilding of fish stocks in Baja California Sur.

Gillnets started the major fisheries declines in the Sea of Cortez in the mid 1970s. Without the political will to remove them from the Sea of Cortez entirely, they will also mark the end of the fisheries and inaugurate the start of more serious social economic problems - problems that will be much more difficult to solve.

For more on these destructive nets, watch "[Nets that killed the Sea of Cortez](#)" (Note: 15 MB)

SeaWatch



→ A panga at San Juanico full of juvenile verdillos (most of them are probably six to eight inches or so in size) with an occasional 18 to 24 inch fish. The fish trap in the foreground is what was used to catch these baby verdillos.



→ A panga containing fish traps, and surrounded by gillnets, at El Datil.



→ Three pangas at La Fridera (a large fish camp on the south shore of San Ignacio), with traps in the foreground. Since almost all fish have been gillnetted out of Laguna San Ignacio, the fisherman primarily fish with traps for lobster, dive for scallops, and gillnet at the mouths of the lagoon for halibut and various types of corvina when there are runs.

Fishtraps

In [Dr. Russell Nelson's 2001 report for SeaWatch](#), he stated that "the only good news was that fish traps hadn't arrived yet. The introduction of fish traps in the reef fish fishery of the Sea of Cortez would likely be the final stage in a serial depletion which would leave the ecosystem with little appeal to tourism and little to offer in terms of sustainable fish production for domestic consumption."

On August 8, 2002, SeaWatch received a discouraging report from a fisherman who had been spearfishing and freediving in the area for the past 10 years. "First, they killed all the sharks," the fisherman who wished to remain anonymous explained, "and now they are decimating the reefs." For the past 18 months there has been a large and growing fish trapping operation in Bahia San Francisquito. This operation is run by a man named Javier, who was once the part-time care-taker of the fly-in resort. Javier is catching 600 kilos of small fish per day in his fish traps. "I have been diving and spearfishing in this area before the fish trapping operations existed" Our source laments, "I can tell you that under the water the **fish life is being exterminated.**"

These fish traps are at least as deadly as gillnets, because the traps catch the very small, immature fish. The fisherman reported that, "whole oceans look as though a vacuum has inhaled all of the cabrilla, ocean whitefish, spotted bay bass, golden spotted bass and small snapper. When I dive the areas around San Francisquito, I am horrified at how quickly and how much of the sea life has vanished in just the past year and a half. The southwest corner of Isla San Lorenzo used to look like an aquarium and now **all the fish have been removed.**"

The Midriff Islands are the spawning ground for most of the Sea of Cortez and these fish traps are devastating the area. If left uncontrolled these traps will take the last 10% of what is left on the reefs in the Sea of Cortez.

More and more, fisherman are using fish traps around the islands because traditional fishing is no longer an economically viable career. **The traps represent one of the last attempts to make a few dollars from taking what little remains in the sea.** However, even this will be futile. There is no financial future in fish traps, and if the fish traps are allowed to persist there is no future for tourism in the Sea of Cortez.

The Sea of Cortez has entered the terminal phase of fish depletion at the same time the government is talking about adding dozens of new marinas to attract tourists. But the **Sea of Cortez is at least 90% depleted.** The government must manage its fisheries in order to attract tourists and the dollars they spend. The equation is simple: no sea life, no tourists. .

The Baja California Sur and federal governments must make fish traps illegal in the Sea of Cortez. However, this legal action alone will have no effect without enforcement. With a program like


Fish traps are at least as deadly as gillnets, because the traps catch the very small, immature fish.



[Guardianas Del Mar](#), privately-funded fish and game workers will monitor coastal areas and islands to ensure that these laws are not being broken.

If you see fish traps being used, take pictures and report it to SeaWatch. Only through public concern will the laws ever change.

[Report Illegal Activites to SeaWatch](#)

 600 kilos or 1400 pounds of small fish per day are caught in fish traps from the San Francisquito area and Isla San Lorenzo!

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 SeaWatch founder Mike McGettigan

SeaWatch Newsletter Archive

Since its founding in 1995, SeaWatch has produced a number of newsletters for its membership and others interested in protecting the Sea of Cortez from destructive fishing practices. Each newsletter has tried to bring into focus as many of the relevant issues as possible. Articles and commentaries have addressed the massive threats brought to bear on the Sea's health. At the same time, every attempt has been made to stimulate a sensible debate among the interested parties about the kinds of solutions that simply have to be put in place if there is any hope of ever returning the Sea of Cortez to its former glory.

All the newsletters have been converted to a Adobe Acrobat format, for easy downloading and convenient reading.

[SeaWatch Newsletter, Fall 2001, Volume 6, Issue 1:](#)

The major stories from this issue were: beginning the process of creating a second artificial reef in the Sea of Cortez, the brewing battle to keep longliners out of the Sea of Cortez and Mexican Pacific Ocean and the 2001 SeaWatch Survey on the Health of the Sea of Cortez. Also included were two stories concerning illegal fishing in the Sea and more.

[SeaWatch Newsletter, Fall 1999, Volume 4, Issue 1:](#)

The major stories from this issue were: details of the SeaWatch Trip through the Sea of Cortez, final plans for the first artificial reef in the Sea of Cortez, reports on illegal fishing and SeaWatch's influence in getting protection for several fish species and the Mexican Navy to patrol the no-fish zone around the Revillagigedos Islands. There are also articles concerning the Loreto Marine Park and more.

[SeaWatch Newsletter, January 1998, Volume 3, Issue 1:](#)

The major stories from this issue were: the destruction of the shark fishery, the marlin population and the huge drop in the number of Giant Pacific Mantas in the Sea of Cortez; a report on the progress of the first artificial reef in the Sea of Cortez; an update on the situation at the Loreto Marine Park; more reports on illegal fishing at the Revillagigedo Islands and various observations and news accounts that turned out to be all too prophetic as to what new outrages would occur in the Sea of Cortez.

[SeaWatch Newsletter, January 1995, Volume 1, Issue 1](#)

The major stories from this issue were: the Saint Valentine's Day Massacre, a description of the wanton slaughter of Giant Pacific Mantas that first brought SeaWatch worldwide attention, articles by Terry Maas, world renowned diver and under sea photographer (and SeaWatch board member) and Carlos Eyles on a Sea in danger and already falling; a detailed report from the first SeaWatch Research Cruise in the Sea of Cortez. This newsletter was created

**Selected By
The Rolex
Awards For
Enterprise as
One of the Top
100 ecological
projects
worldwide.**

**A Popular
Denunciation is
a instrument
initiated by the
public that
requires
specific
government
action.**

before we could take advantage of computerizing its data, so the file downloading will take longer because it is a scan of the actual newsletter itself. But, the wait to get this document is well worth it. This is the first documentation of the crisis faced by the Sea of Cortez and the hard data and observations by those who know it best are hard hitting and essential reading in gaining a perspective on the conditions the Sea of Cortez faces in the future.

If you don't have Adobe Reader, [click to get it here](#).

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Advisory Board

The Sea Watch Advisory Board is made up of Mexicans and Americans with a strong working knowledge of the fisheries problems in the Sea of Cortez and the Eastern Pacific Ocean.

The SeaWatch Advisory Board:

• **Barbara Gomez Morin**

Barbara Gomez Morin was born and raised in Mexico City. Although she has a degree in Art History, her passion has always been the conservation of nature. In 1994, she went to work for Pronatura, as fundraising director and started and funded the Pronatura Northeast Chapter. In this capacity, she worked on the first artificial reef project in the Sea of Cortez, which was a joint venture between Pronatura and Sea Watch. Barbara helped fund the project, oversaw the environmental studies and was the liaison with the Navy, coordinating the cleaning, preparation, towing and sinking of the first two large boats in the underwater marine park in La Paz, Mexico. In 1999, Ms. Morin helped form a travel company with Miguel Sánchez Navarro and Mariana García-Bárcena that specialized in environmental trips within the country. In early 2002, Ms. Morin moved to Cabo San Lucas started working for SeaWatch as the Director in Mexico. She presently serves as a SeaWatch advisor.

• **Hans Herrman**

Hans Hermann received a bachelor of Engineering in Biochemistry Engineering & Marine Resources Management. Mr. Herrman, then went on to receive a Masters of Science in Oceanography specializing in Marine Ecology, Coastal Natural Resources Management and Economy. Mr. Herrmann has since made innumerable contributions to the conservation of Mexico's natural resources and the Sea of Cortez.

Mr. Herrmann served since 1998 as head of Biodiversity Conservation. Commission for Environmental Cooperation In this capacity, he led development of a long term agenda & strategic approach for the Conservation of Biodiversity program, which included the identification of North America's most important regions for biodiversity conservation.

As Executive Director of Pronatura from 1991 to 1998, Mr. Herrmann

negotiated with the Mexican Senate & Government in order to achieve the recognition of Conservation Easements within Mexican Environmental Law and achieved the first Conservation Easements in Mexico, as well as many other environmental contributions including participating in the creation of the Calakmul Biosphere Reserve, Cabo Pulmo Marine Park, and Loreto Marine Park.

Mr. Herrman also authored and co-authored of fifteen papers in international journals and two book chapters in the fields of: phytoplankton ecology, taxonomy, primary productivity, chemical oceanography and conservation. These papers include "The role of NGO's in Mexico's Coastal Management" and "Mexico's Coastal



→ Barbara Gomez Morin



→ Hans Herrman



→ Miguel Sanchez Navarro

Management in the International Context.”

• **Miguel Sanchez Navarro**

Biography to be added soon.

• **Russell Nelson, PhD**

Russell Nelson has a doctorate in Marine Fisheries Ecology and over twenty years experience in marine fisheries research and management. He has served as a research biologist for the National Marine Fisheries Service, Director of Marine Fisheries for the State of Florida, and fourteen years as a member of both the South Atlantic and Gulf of Mexico Fishery Management Councils. Dr. Nelson is currently a chief scientist and director of Nelson Consulting, a firm specializing in international marine fisheries science, management and policy development. Dr. Nelson has particular expertise in coastal and highly migratory pelagic species and reef fish assemblages. He has worked on management plans for over three hundred species of marine resources at the state, national and international levels.

• **Howard and Michele Hall**

Howard and Michele Hall are underwater documentary film producers specializing in marine wildlife films. Howard has received six cinematography Emmys for films produced for television. Michele has received one Emmy award. Howard holds a degree in zoology from San Diego State University. His interest in marine wildlife has led him to author numerous articles about marine life. He is a "Roving Editor" for International Wildlife Magazine and a Contributing Editor for Ocean Realm Magazine and Fathoms Magazine. Michele's underwater photographs have been published in numerous books and magazines around the world.

In 1990, Howard Hall produced, directed and photographed Seasons in the Sea, a one hour film which aired on the PBS series Nature in the U.S. This film was judged best of show at Wildscreen 1990 receiving the Golden Panda Award, the most prestigious award in natural history film making. Seasons in the Sea also won the Festival Choice Award at the Jackson Hole International Film Festival.

Shadows in a Desert Sea was produced by Howard Hall in 1992, also for the PBS series Nature and the BBC, in conjunction with Partridge Films. Shadows won a Golden Panda Award at Wildscreen 1992, as well as five other top awards at other major film festivals.

Jewels of the Caribbean Sea was co-produced by Howard and Michele Hall and appeared as a National Geographic Special in 1994. Jewels of the Caribbean Sea won nighttime Emmys for best cinematography and best music in the News and Documentary category.

In 1997, Howard and Michele completed production of a 5-part series of hour-long television programs, which focused on marine wildlife behavior from around the world. Secrets of the Ocean Realm aired as five specials on PBS during 1998. As a companion to the television series, Howard and Michele also produced and authored a coffee table book, also titled Secrets of the Ocean Realm.

Howard made his directorial debut in the IMAX® format in 1994 with Into the Deep, an IMAX 3D film which opened at the Sony IMAX Theater on Broadway in New York City and has played widely in IMAX 3D theaters throughout the world.



→ Russell Nelson



→ Howard and Michele Hall



→ Michel and Barbara Meyer
Stinglhamber



→ Terry Maas, D.D.S.



→ Robert Rubin PhD.



→ John Jackson

In the spring of 1999 Howard and Michele completed production on the IMAX film *Island of the Sharks* about the marine wildlife at Cocos Island, Costa Rica. *Island of the Sharks* has won numerous awards, including a Cine Golden Eagle, the Special Jury Award of Merit at Jackson Hole International Film Festival, Best Underwater Film at Japan Wildlife Film Festival, and Motion Picture Sound Editors' Special Venue Film Award.

Howard directed the underwater cinematography for the popular MacGillivray Freeman film, *The Living Sea*. He was also underwater DP for the recently released IMAX film, *Lost Worlds: Life in the Balance*.

Howard and Michele just finished *Coral Reef Adventure*, an IMAX film, being produced by MacGillivray Freeman Films, with Howard as director of underwater photography and Michele as line producer. *Coral Reef Adventure* explores coral reef ecology, the marine wildlife that makes coral reefs their home. It also profiles Howard and Michele and provides glimpses from 'behind-the-scenes.' The film was released in February 2003.

• **Michel and Barbara Meyer Stinglhamber**

Barbara Meyer de Stinglhamber, currently works at the INAH, (National Institute of Anthropology and History) of La Paz, B.C.S.. As an art historian, she is an expert on the missions of Southern Baja and just finished writing the book "Arte Sacro en B.C.S. Siglos .XVII - XIX. During her spare time she is dedicated to learning about marine life and marine conservation. She enjoys diving in the Sea of Cortez. Ms. Meyer de Stinglhamber narrated and helped write the film *Tesoro sin Protección*, produced by SeaWatch to inform Mexican citizens about the devastation of their natural heritage.

Michel Stinglhamber is chairman of Umicore, Mexico, (a branch of Umicore Belgium, ex. Union Minière), a company devoted to trading and refining minerals and precious metals; and the largest European copper refiner. He is on the advisory committee of "Pronatura" for Baja California Sur and of "Niparaja NC". Michel is also a member of the World Organization of the Periodical Press. In his spare time, Michel accompanies his wife Barbara on her cultural trips and shares the same interest in conservation of the Sea of Cortez.

• **Terry Maas, D.D.S.**

Terry Maas studied marine biology as an undergraduate at the University of California. He also holds three advanced degrees; Doctor of Dental Science from University of the Pacific, Resident in Oral Surgery from the University of Southern California and Masters of Business Administration from Pepperdine University.

Terry Maas is a veteran freediver. He started diving when he was 14 years old and has been freediving steadily for the last 43 years. In his early years, Terry won the individual U.S. National Spearfishing championships 4 times. His team won 10 championships. In 1982, Terry's interests turned to blue water hunting. For the next 10 years he captured 3 world records for spearing yellowfin and bluefin tuna. His 398-lb Pacific bluefin tuna record still stands. In 1995, Terry published his first book, *BlueWater Hunting and Freediving*. This book is richly illustrated with pictures and stories from Mexico. Several years later he published his second book on the subject of freediving, *Freedive*.

Mr. Maas is also an accomplished videographer. His rare footage of wild yellowfin tuna taken at Socorro Island is displayed in two sections of the Monterey Bay Aquarium open water exhibit. He has produced two commercial videos, *The Joy of Freediving* and *Freediving Made Easy*.

His 1992 video, *Bluewater Hunters* for PBS has been viewed by over 25 million people and has helped introduce the sport of bluewater spearfishing to the world. Terry Maas' diving has been featured in such publications as *Sports Illustrated*, *American Airlines magazine*, *The Miami Herald* and the *Los Angeles Times*. He lectures nationally using his slides and video presentations to educate those interested in the adventure of bluewater hunting and marine resource conservation. Terry also documents the underwater world on still film and in magazine articles. His article documenting the natural history of manta rays was featured as the front-cover exhibit in *Mexico Desconocido* (July 2002). His articles and photographs have been featured in such US magazines as *Sport Diver*, *Skin Diver*, *Scuba Times*, *Western Diver* and *California Diving News*. Internationally, his articles appear in *Sterne* (Germany), *Focus* (Italy) and *Australian Freediving and Spearfishing News*.

While Terry remains an avid hunter, he is very selective in his take and is deeply concerned with conservation of the ocean's bounty. He shares his underwater images of sea creatures captured in commercial poaching nets and on hooks with many environmental organizations. He is an active supporter of Sea Watch and in 2000 he was inducted as a fellow into the Explorers' Club of New York.

• **Robert Rubin PhD.**

Robert Rubin received his Ph.D. in Comparative Physiology and Marine Ecology from the University of California at Irvine. Dr. Rubin presently is a faculty member in the Department of Biology at Santa Rosa Community College, where he teaches courses in Marine Biology and The Biology of Marine Mammals. In addition, he has taught at the University of California Irvine and Santa Cruz, University of Maryland, Sonoma State University and The Huntsman Marine Laboratory in New Brunswick, Canada.

Dr. Rubin has conducted field and laboratory research on several species of marine mammals, including: hooded and harp seals in the Arctic, elephant seals in California, harbor seals in the Atlantic, Alaska and California, and sea otters in California and in Russia at the invitation of the Russian government and the Russian Academy of Sciences.

Dr. Rubin's research interests in the Gulf of California have spanned over two decades and have included field and laboratory studies of the physiology of salt and water metabolism in fish eating bats at Isla Partida and the population ecology of sea birds at Isla Raza. Beginning in 1990, he has been conducting field research on the population and community ecology of manta rays. The study is focussed in the Revillagigedos Islands, and includes comparable work on the species at Yap, Cocos Islands and Hawaii.

Dr. Rubin has served as an educational program consultant to the US Department of Energy, The National Science Foundation and to the California of Education. He has been awarded several faculty and teaching awards, including but not limited to: Distinguished Teaching Award from University of California, Irvine, Alumni Professor of the Year from Santa Rosa Community College, Excellence in Education Recognition from the California State Senate and Special Congressional Recognition for Educational Excellence from the United States Congress.

• **John Jackson**

Biography to be added soon.



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How SeaWatch Money is Spent

Sea Watch in its first five years has been able to help accomplish some great things and it's been done on a budget of under \$30,000 a year. **Every dime donated goes directly into the projects we are involved in. There are no salaries paid to anyone!** Everything is donated down to the printing costs, which are donated by Super Printers and Web hosting by Aracnet both located in Portland, OR. The graph below breaks out the disbursement of all moneys received.

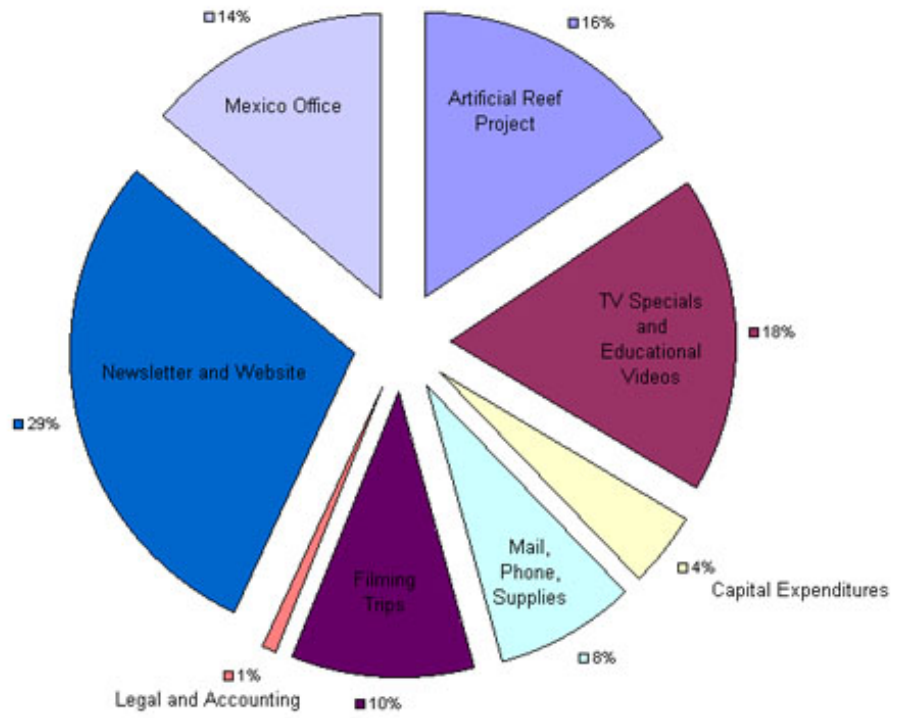
Thanks to all of you, the first artificial reef program in the Sea of Cortez is a reality. Two large boats (150 and 200 feet) were sunk outside La Paz Mexico in November of 1999, to create the first artificial reefs in the Sea of Cortez. The Secretary of the Navy and Julia Carabias the Secretary of the Environment, Ecology and Fisheries dedicated these first two boats. They said it was the beginning of an era to rebuild the fisheries in the Sea of Cortez. This project was the brainchild of SeaWatch and we were primary contributors in the developmental stages of the project, putting in 3 years of work and approximately 20% of the monies needed for the sinking of the first two boats.

I've listed some of our other accomplishments below:

- Brought to the attention of Mexico and the world the destruction of the Giant Pacific Mantas of the Revillagigedo Islands. As a result, the Islands are now a reserve where no commercial fishing is allowed within 12 miles and there is a \$10,000 fine for killing a giant Pacific Manta.
- Caught and filmed over 25 boats illegally fishing in the Revillagigedo reserve. Our special reports on Televisa (100,000,000 viewers worldwide) caused 12 of these boats to be arrested and the Navy now has put a frigate on patrol within the reserve to further reduce illegal fishing.
- Produced over 60 special reports that have been aired on Mexico's most watched evening news. These 3-5 minutes reports are hard hitting and have made Mexicans aware of many destructive practices taking place in the Sea of Cortez and it's surrounding waters. Photographed the killing of Whale Sharks and spearheaded a petition drive to stop the killing of Whalesharks and Giant Pacific Mantas in the Sea of Cortez. Over 3000 petitions have been delivered to Mexican officials and there is now legislation being drawn up to protect these magnificent creatures in the future.
- Though a series of articles and television special reports we were able to give the Mexican officials a clear view of the problems in the Loreto area, which has now been turned into a marine park. We are currently producing a series of television reports showing the continuing destruction in the Marine Park. Our original work created interest from the world press and brought in writers from around the world to chronicle the destruction of the Sea of Cortez. Their work has helped Mexico to focus on stopping the destruction.
- We are currently very active in trying to stop the proliferation of longliners on the Pacific Coast of Mexico and the United States.

Thanks again for your continued support!

Sea Watch Expenses 1995-2000





Dedicated to a Healthy Sea of Cortez



 SeaWatch founder Mike McGettigan

Newsroom

Welcome to the SeaWatch newsroom! Getting the word out about the destruction currently taking place to Sea of Cortez is at the core of the SeaWatch mission and we are here to help you with your story. In fact, one reporter we spent many months with even one a Pulitzer Prize for his series on the Sea of Cortez. We are also happy to discuss the issues with you directly as well as put you in touch with our extensive network of scientific experts, business leaders, local, state, & federal politicians, and non-governmental organizations. We can also provide your media organization with television b-roll and magazine-quality photographs. Some photographs are already available online in our [Photo Library](#). So please contact us today and let us help you put together a story about what is really happening here.

Email **Mike McGettigan**, SeaWatch founder at mmcgett@aol.com

A large, semi-transparent version of the Sea Watch logo, with the words "Sea" and "Watch" in a bold, sans-serif font. To the left of the text is a stylized white map of California on a dark background.

We have made the following photographs available for the media and general public. Though they are license-free, we simply ask for a photo credit for "Seawatch.org". If you have any questions or would like more information, please send an email to mmcgett@aol.com.

Note: File sizes are quite large so as to facilitate high-resolution reproduction for newspapers and magazines.

Marine Life



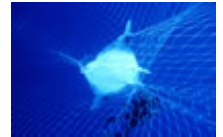
Tiger Shark at Revillagigedo Islands (900KB)



Yellowfin Tuna at Revillagigedo Islands (904KB)



Whale Shark at Revillagigedo Islands (900KB)



A mobia manta caught in a net (300KB)



A hammerhead caught in a net (300KB)



Manta Wing (733KB)



Schooling hammerhead sharks - now a rarity (357KB)



Drying shark fins (800KB)



Manta filleted for nearly worthless meat (1.02MB)



Hammerhead (431KB)



Whale Shark with a diver (459KB)



Whale shark with divers (376KB)



Schooling Hammerheads (381KB)



Two hammerheads caught in a net (223KB)



Sea Lion caught in a net (509KB)



Whale shark (629KB)

Commercial Fishing



Tiger Shark at Revillagigedo Islands (900KB)

Industrial Fishing Boat (830KB)

Industrial Fishing Boat (1.33MB)

Illegally caught fish for sale in the La Paz Market (856K)

People



Barbara Gomez Morin, SeaWatch Advisor (800K)



Armando Figaredo, Televisa Reporter (900K)



Guillermo Alvarez, Billfish Fund (790K)



Kozy Boren, SeaWatch Supporter (900K)



Dr. Russ Nelson, SeaWatch Advisor (900 KB)



SeaWatch Founder Mike McGettigan (51KB)



Howard & Michelle Hall (1 MB)

Misc



Artificial Reef Sinking Sequence (1.08MB)

Chart Showing 50 Mile Limits (208KB)