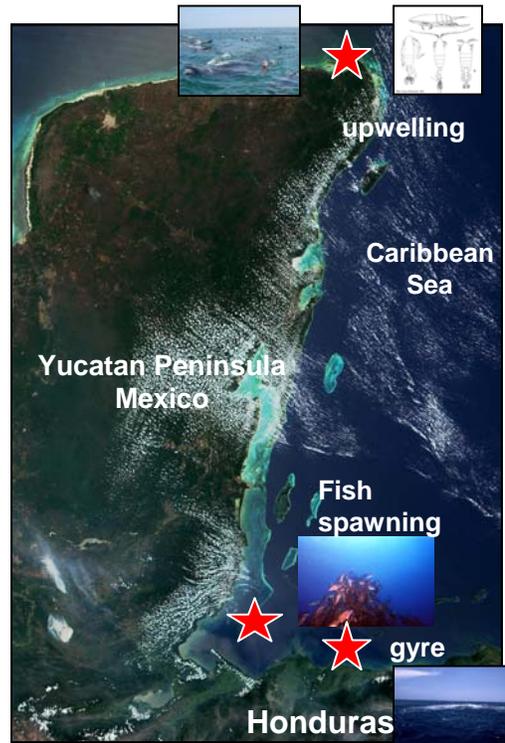




Proceedings of the Workshop

“Whale shark tourism management: exchanging information,
networking and developing guidelines for best practices in the
Mesoamerican Reef Region”
Placencia, Belize, September 25-27, 2006



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Executive Summary

The Nature Conservancy, the Wildlife Conservation Society and the Friends of Nature held a workshop entitled “Whale shark tourism management: exchanging information, networking and developing guidelines for best practices in the Mesoamerican Reef Region” to address the rising importance and potential impacts of whale shark tourism in the region.

The meeting brought together 31 participants from the Mesoamerican Barrier Reef countries. A review of whale sharks research and tourism from each of the three feeding sites in the Mesoamerican Reef provided the basis for assessing the effectiveness of current site-based tourism guidelines and identifying commonalities, which could be used to draft a regional whale shark tourism charter. The biophysical characteristics of each site and aggregation are remarkably different, having led to differences in approach to the research and tourism management. Participants agreed upon basic common guidelines governing human and boat interactions with whale sharks yet differed broadly on several issues that they deemed site-specific such as permitted numbers of visitors, guides and boats as well as a blanket recommendation for only snorkeling versus a mix of snorkeling and diving. Encounter guidelines from Mexico and Belize are well formulated, having been through an iterative improvement process over the past few years. Consequently, much of the formulation of guidelines and use of gathered best practices will primarily assist Honduras in the development of its regulations for whale shark tourism. Several recommendations were gathered to augment research, policy-making and management in the region and all agreed on the creation of a regional whale shark committee to provide a mechanism by which to articulate or facilitate the decisions.

This workshop represented the first regional meeting that addresses whale sharks as a shared non-consumptive economic resource. The results from this meeting and the follow-on activities will likely be applicable to other regions worldwide where whale sharks are increasingly becoming an important element of marine tourism.

Acknowledgements

Support for this meeting was provided primarily by the United States Agency for International Development. We are grateful to the many stakeholders, primarily the local tour guides and fishers, for providing the basic information on sightings and distribution that has made whale shark research possible, but also the researchers that have contributed with data and insight to the biophysical conditions of whale shark aggregations. Finally, we thank the region’s whale sharks for providing both local and visitors with such unique nature experience, and a valuable economic opportunity for coastal communities. We hope to succeed in protecting this wonderful species and resource for present and future generations.

Acronyms

BAS	Belize Audubon Society
BICA	Bay Islands Conservation Association
CCAD	Comisión Centro-Americana de Desarrollo
COHDEFOR	Corporación Hondureña de Desarrollo Forestal
CONANP	Comisión Nacional de Áreas Naturales Protegidas
FON	Friends of Nature
MAR	Mesoamerican Reef
MBRS	Mesoamerican Barrier Reef System
PROFEPA	Procuraduría Federal de Protección al Ambiente
SEMARNAT	Secretaría del Medio Ambiente y los Recursos Naturales
SERNA	Secretaría de los Recursos Naturales
CINVESTAV	Centro de Investigación y Estudios Avanzados, Instituto Politécnico Nacional
TASTE	Toledo Association for Sustainable Tourism and Empowerment
TIDE	Toledo Institute for Development and Environment
TNC	The Nature Conservancy
USAID	US Agency for International Development
WCS	Wildlife Conservation Society
WSORC	Whale Shark Oceanic Research Center
WWF	World Wildlife Fund

1. Introduction

Whale sharks (*Rhincodon typus*) are rapidly becoming an important draw for tourists at several aggregation sites worldwide (Davis et al. 1997, Davis 1998, Newman et al. 2002, Graham 2004, Graham accepted). The Western Caribbean's Mesoamerican Reef, extending over 900 km from the Bay Islands of Honduras to the NE tip of Mexico's peninsula, possesses three predictable whale shark visitation sites where seasonal sightings show limited temporal overlap. Several studies have indicated that whale sharks are highly migratory (Eckert and Stewart 2001, Eckert et al. 2002, Wilson et al. 2006, Graham and Roberts 2007, Graham accepted) and the whale shark population frequenting the Mesoamerican Reef is no exception with movements logged between the three sites using conventional, acoustic, and satellite tagging as well as photo identification (Graham 2003, Graham and Roberts 2007, Graham accepted). Whale sharks appear to aggregate at all sites primarily to feed although congregations and environmental conditions may further enable reproduction. Each site possesses different biophysical characteristics, which underpins the different nature of each aggregation. In the Bay Islands, whale sharks are encountered feeding on pelagic sprat in relation to traveling schools of little tunny (*Euthynnus alletteratus*), blackfin tuna (*Thunnus atlanticus*) and yellowfin tuna (*Thunnus albacares*). At Gladden Spit off the Belize Barrier Reef, whale sharks target the spawn of reproducing snappers as well as schools of pelagic sprat located more offshore with schools of little tunny and blackfin tuna (*T. atlanticus*). In the NE end of the Yucatan Peninsula, whale sharks feed primarily on plankton (Graham accepted). All three sites have been subjected to rapid increases in visitation, which has raised concerns over the potential impact of tourism on whale sharks. As a precautionary measure, Belize developed encounter guidelines for whale shark tourism, which were complimented by a course developed by the University of York and the Friends of Nature to train and license local fishers and dive guides as whale shark guides. The Área de Protección de Flora y Fauna Yum-Balam, the institution managing the Holbox marine protected area and its nearby whale shark visitation site undertook a similar effort in 2003 and developed the initiative into a management plan for the species (SEMARNAT 2006). The Bay Islands Conservation Association (BICA) in Utila, Honduras, is currently working with the Honduran Government and tour operators to develop and implement a national set of whale shark encounter regulations. Meanwhile and as a precautionary measure, several dive operators have developed and implemented guidelines that they have developed autonomously¹. These efforts have developed through cross fertilization with visits from whale shark researchers in Belize to Mexico in 2000 and 2003 to assist with guideline preparation and by BICA staff to Belize and Mexico to increase the chances of a rapid start up and project success.

Whale shark research on populations and behaviour began in the Mesoamerican region in 1998 at Gladden Spit, Belize and in Utila, Honduras, followed in 2003 by research in Holbox, on the Yucatan Peninsula in Mexico. There are considerable advances in the region that further scientific understanding of whale shark movements and site fidelity (Graham 2003, Graham et al. 2006, Graham accepted), populations (Graham and Roberts 2007) and tourism (Graham 2003, Graham 2004). However, the site-specific information gathered to date is not sufficient to understand the long-term dynamics of movements between feeding aggregations, use of feeding sites and the impact of tourism and research observations on site fidelity. In the absence of this long-term data set, the governments of Honduras, Belize and Mexico established precautionary measures early on in the development of the species and site-based tourism. Honduras protected whale sharks in its territorial waters, Belize created the Gladden Spit Marine Reserve that

¹ See the Whale Shark and Oceanic Research Center guidelines at: <http://www.wsorc.com/research/research.htm>

encompasses the feeding and aggregating site followed by total protection of whale sharks (GoB 2000, GoB 2003) and Mexico drafted a management plan for whale sharks (SEMARNAT 2006).

The expansion of whale shark observation tourism and the potential threat of unregulated operations to its sustainability coupled with the need to transition traditional fishers towards more benign, sustainable and profitable economic activities have prompted stakeholders to develop best practices for encounter tourism. As such, stakeholders consider that improvements to the local codes of conduct, where they exist, are necessary for the successful continuation of whale shark tourism. Moreover, understanding and monitoring the tourism and its target species requires continued investments in research, training, outreach as well as policy and business development. As the Mesoamerican whale shark population represents a common or shared resource, stakeholders need to work together to define whale shark tourism and research needs to ensure continued visitation of the world's largest fish in the region's ecologically and economically important feeding sites. The Nature Conservancy, the Wildlife Conservation Society and the Friends of Nature are contributing to whale shark conservation and sustainable encounter tourism along the Mesoamerican Reef through the organization of this workshop in Placencia, a pioneer community of whale shark encounter tourism and its management in the region and worldwide.

2. Workshop objectives

The workshop participants aimed to:

1. Share research information obtained in the three countries on the aggregation behavior and migratory movements of whale sharks along the MAR region;
2. Exchange experiences on whale shark tourism, both visitation and management at each site;
3. Review current codes of conduct for whale shark encounters and where necessary, revise or develop guidelines to strengthen the regulations in each country; and
4. Establish a network of whale shark conservation scientists and managers (researchers, educators, government planners and regulators, protected areas staff and stewards, enforcement authorities, tour operators) to facilitate information exchange and encourage collaborative efforts to reach the common goal of sustainable whale shark tourism and whale shark conservation.

2.1 Participants

Thirty-one stakeholders from SE Mexico (5), Belize (21) and Honduras (5) and Guatemala (1) participated in the workshop (Annex 1) including researchers, marine protected area managers, tour operators and representatives of natural resources governmental agencies and conservation NGOs .

2.2 Agenda

The agenda (Annex 2) included 13 presentations on whale shark research and conservation (Annex 3 for presentation summaries), tourism management and policy from Mexico, Belize,

and Honduras. Participants discussed issues pertinent to the regional whale shark conservation and tourism in question and answer sessions, three break-out groups and several plenary sessions in order to generate the main workshop products: draft guidelines for whale shark tourism management.

3. Results of group discussions

Participants were acquainted on the status of knowledge and the characteristics of whale shark tourism activities in each country through the presentations. This information exchange provided the basis for the break-out session where three groups discussed the primary issues/topics regarding whale shark research and conservation in the region (summaries below).

3.1 Research needs and conservation opportunities

Group1: *Facilitator: Rachel Graham; Rapporteur: Julianne Stockbridge; Participants: Oscar Reyes, Dan Castellanos, Renata Ferrari, Kelly Schratwieser, Eloy Cuevas, James Leslie, William Muschamp*

- *Create a regional GIS system to map large scale temporal and spatial distribution of whale sharks in relation to bio-physical and anthropogenic data. Map layers should include the following attributes:*
 - Whale shark abundance and distribution in relation to size and structure (there is a need to agree on what constitutes mature individuals);
 - Distribution of tagged and identified sharks (also per tag type);
 - Location of acoustic receivers;
 - Movement paths or degree of site fidelity (using satellite and acoustic markers & photo identification);
 - Critical habitats;
 - Distribution of preferred food;
 - Genetic structure;
 - Geostrophic currents; sea surface temperature; chlorophyll a; bathymetry; and salinity.
 - Other attributes to be mapped include: distribution and abundance of tourism visitation; economics (US\$ generated per site); shipping lanes; sightings – separate out personal, tour operators, scientists, aerial sightings; distribution of scarred animals.

- *Assess the socioeconomic importance of whale sharks through surveys and studies determine the value of tourism to local communities, to host countries, as well as the distribution of benefits and ownership of tourism (derived from tourism and stakeholder surveys, willingness to pay, focus group meetings, tourism statistics);*

- *Further research on the ecological role, biology and behaviour of whale sharks:*
 - Assess the ecological role of whale sharks in the MAR;
 - Identify cues prompting whale shark movements and aggregations;
 - Define versus coarse scale movement patterns;
 - Define the MAR migratory corridor in relation to shipping pressures;

- Establish a regional acoustic array to determine multi-site patterns of site fidelity, timing of movements and exchange between feeding sites;
 - Adopt a standardized method for photo ID;
 - Standardize sizing and assessment of maturity;
 - Identify and map critical habitats;
 - Define impacts on the food source at all 3 sites;
 - site fidelity (lunar, seasonal; dynamic nature of feeding zones (temporal and spatial);
 - Assess pollution levels (POPS, heavy metals);
 - Characterize differences in trophic levels at each feeding site that are tied into the movement patterns;
 - Identify the biophysical basis of visitations of Utila.
- *Identify conservation opportunities:*
 - Establish a framework for standardized monitoring at the regional level;
 - Identify and engage the private sector to fund conservation activities; potential impacts of research activities;
 - Engage traditional users in the research activities and analysis;
 - Promote transparency and fairness;
 - Include the agreement signed by the MAR countries at Tulum +8 for the conservation of whale sharks and other key stakeholders not present at the workshop;
 - Investigate including MAR countries in the Convention on the Migratory Species;
 - Consider existing co-management agreements, projects and initiatives as conservation opportunities, e.g. include whale shark conservation in the Tulum Action Plan;
 - Implement carrying capacity studies taking in account local differences to support any regulation proposed;
 - Include whale shark conservation in the site-based or protected areas conservation and management plans.

3.2 Political will, institutional framework, funding, enforcement and compliance

Group 2: *Facilitator: Nestor Windevoxhel; Rapporteur: Diana Bermúdez; Participants: Brian Young Jr., Francisco Remolina, Carla Carcamo, Shane Pech, Dennis Garbutt, Roberto Pott*

- *Assess and promote political will:*
 - Interest and support of the communities and stakeholders critical;
 - Encourage support of existing or proposed legislation within each country;
 - Foster support from regional bodies such as the Central American Commission for Environment and Development (CCAD);
 - Incorporate whale shark conservation in the Tulum +8 Regional Action Plan;
 - Continue to use a bottom-up approach and highly participatory process to build national policies regarding whale shark and associated tourism, conservation and research;
 - Identify and engage mechanisms to promote coordination between government agencies at national and regional level;
 - Promote communication between government authorities at the regional level in order to take advantage of existing political will in Mexico and Belize;
 - Support expansion and/or consolidation of MPAs in order to include WS areas (Mexico and Honduras);

- Implement research addressing social and economic value of WS conservation and reach out to higher levels of government in order to create impact at the political level.
- *Institutional framework: assessment and needs*
 - Institutional weakness to supervise and enforce WS activities identified. Also, various agencies are involved at the national level: Mexico (SEMARNAT - PROFEPA, Vida Silvestre, CONANP); Belize (Belize Tourism Board, Ministry of Natural Resources, Ministry of Fisheries, FoN, TIDE, TASTE); Honduras (Secretaría de Agricultura y Ganadería, Secretaría de Recursos Naturales y Ambiente, COHDEFOR, Instituto Hondureño de Turismo);
 - Mechanism to ensure inter-institutional coordination;
 - Create regional and national working group;
 - Coordinate conservation and management actions with the Mesoamerican Barrier Reef project;
 - Include Guatemala as a representative of whale shark actions.
- *Enforcement and compliance*
 - Ensure that local authorities and guides are properly trained (workshops, exchanges, etc.);
 - Promote voluntary standards and guidelines and create incentives for users that comply with the rules and regulations (ex: Belize lottery system);
 - Develop printed materials that can be shared and used by enforcement officials and users, e.g., CONANP boat sticker with suggested guidelines as agreed to by meeting participants;
 - Develop regulatory framework for different users (tourism, research, others) in Honduras;
 - Work with users and researchers to design an enforcement methodology at the national level;
 - Share the Norma Mexicana with others in the region
 - Funding
 - Develop different and innovative fundraising initiatives including seeking government funding for research, local cooperatives of guides and community livelihoods;
 - Develop common marketing strategies for operators or community-based businesses at the site level;
 - Establish a mechanism where funds from fines are invested in WS conservation;
 - Identify and develop financial mechanisms for WS conservation and management, e.g., park entrance fee;

3.3 Networking and communication, capacity and orientation, and threat assessment

Group 3: *Facilitator: Calina Zepeda; Rapporteur: Lisa Carne; Participants: Patty Ramirez, Dwight Neal, Rafael de la Parra, Juan Rico, Leonardo Consuegra, Steve Fox, Glenn McCullough*

- Broad outreach of guidelines in mass media: radio, TV, internet, printed materials; use celebrities to raise the profile of whale sharks (Nicolas Cage, Leonardo de Caprio);

- Create regional working group and mechanisms of communication (research, economics, policy) for communication and dissemination of research information and best practices;
- Include dive shops and government agencies in stakeholders;
- Create children' programs (materials- coloring books, posters, swimming classes, videos, activities, games – snap, research, curriculum).

4. Results of plenary discussions

4.1 We agree to disagree: unresolved issues

During the plenary sessions, participants discussed topics raised during group sessions and while developing a common set of guidelines for whale shark guiding identified several issues that remained unresolved at the regional level. These include:

- The wearing of life jackets in the water while swimming with whale sharks is a decision to be made at the site level and is obviously not applicable to most of Gladden's tours which are based on Scuba diving.
- No decision was reached regarding depth allowed for freediving with whale sharks. Scuba depth of 80ft at Gladden was still considered too deep and perturbs the courting and spawning fish. Many site based differences are due to turbidity in Mexico, scuba diving at Gladden and good visibility but rapid encounters in Honduras. Regulating the depth of freedivers was considered difficult although some noted that it was better for people and sharks to swim on the surface. There was no consensus on banning diving at Gladden so that visitors at all sites engage in snorkeling.
- Time limits to encounters with individual or groups of whale sharks could not be agreed upon due to dramatic site-based differences. Encounters are long in Mexico and occasionally in Belize yet the average encounter in Utila is approximately 1 minute. Usually only 1-5 encounters per day.
- Consensus was not reached on a regional ban on marker tagging in light of the many advances presented by photo-identification. Photo ID was considered preferable in Belize and Honduras and recommended for Mexico as means of standardizing research approaches and minimizing invasive tagging.

4.2 Consensus!...*Or how we agreed on a regional code of conduct for whale shark tourism*

Participants reached consensus on the following points (some noted from above section), many of which can be posted on a pictorial poster or brochures on the tour boats. These points should be included in the whale shark tour briefing:

- No touching, chasing, cutting off the path of whale sharks.
- Minimum distance between people and sharks is 2m (current range is 2-3m).
- No flash photography allowed.
- No underwater scooters allowed.

- Urge visitors to undertake a controlled entry by slipping into the water feet first, no splashing.
- Use a diagrammatic/pictorial form and a complete written list for the guidelines in all boats, e.g., mix of Mexico and Belize's approach.
- Wipe off sunblock with a towel before getting in the water and use a lycra skin; if sunblock must be used, choose biodegradable or PABA free that could be made available at whale shark tour locations. This may be expanded to biodegradable or green products to be used throughout the MAR.
- Minimum distance between boats and whale sharks 10m, but variation exists between sites, e.g., Mexico – 10m, Belize – 15m, Honduras – 200m. Noted that a mechanism is needed to maintain minimum distance between boats.
- Maximum boat size no more than 15.5m with site-based differences, e.g., Belize – 14.5m, Honduras – 15.5m, Mexico – 10m.
- No fishing during tours.
- No littering, ensure that all boats have a mechanism for rubbish collection and disposal.
- Don't touch corals or marine creatures.
- Don't remove anything from the sea.
- Don't feed marine animals.
- Enter whale shark areas at idle speed; definition of whale shark area differs at each site.
- Each boat must have a guide. Site differences exist in visitor to guide ratio and maximum number of visitors per boat, visitors per whale shark and numbers of boats with whale sharks undecided.
- Develop regional safety guidelines.
- Develop a regional whale shark tour-guiding course with site-specific aspects; attempt to include such training within national guide training frameworks or mechanisms.
- In order to show our regional pride we can have a regional whale shark flag in addition to the "divers down" flag.

Several of the agreed upon issues further included specifics:

- Boats should possess a whale shark tourism specific flag (like the dive flag) that can be used to let others know that there are people in the water observing whale sharks. James suggested coming up with a regional flag. Use the diver flag (red and white), which is already internationally recognized.
 - **Agreement:** Develop a regional WS flag in addition to the "divers down" flag to identify member as part of a regional conservation effort
- Regarding the issue of noise and how it might impact whale sharks and or the spawning fish, revving of motors is a problem, as are underwater scooters, but not music. However, participants noted that engines are revved to get a boat away from another craft, people or difficult seas. In Belize, it is mandatory for captains to take whale shark training courses.
 - **Agreement:** Captains will only be able to reverse their engines when they need to get out of trouble.
 - **Agreement:** Prohibit the use of underwater scooters to prevent chasing of whale sharks.

- Important to have a uniform consent form signed by visitors who agree to abide by the guidelines. In Belize and Mexico, they are already using consent forms (*carta responsiva*) that are signed by the tourists before departing the mainland.
 - **Agreement:** Develop a regional consent form.
 - **Suggested best practice:** suspend the entire tour if someone voluntarily touches a whale shark. However, this has proven very difficult to enforce. The \$10,000 USD fine in the regulations in Belize has never been applied and originally came from Australia.

4.2 Best practices: site based differences and areas of improvement

After a thorough discussion that identified several commonalities, participants agreed that best practices should be locally-driven and produced and proposed the following for each country:

Mexico

- *Best practices*
 - The most important lesson learned is that participation of all stakeholders and working very proactively with the local community will lead to better compliance and successful whale shark tourism. Holbox has witnessed huge participation from the local community.
 - Key stakeholders are empowered through ownership and receive credit for their role in the tourism.
 - Tour operators and guides provide tours of a high standard showing professionalism and providing informative briefings when departing the pier.
 - Management holds meetings with tour guides, communities, port authorities, etc. to ensure that all are updated on research and management policies on a regular basis.
 - Scientific information is disseminated to local stakeholders (guides, local community, etc).
 - Tour operator involvement in research is beginning, e.g., photo identification, filling out observation form to describes sex, tag number if applicable, size, and behavior.
- *Areas for improvement*
 - Identify mechanisms to place responsibility for enforcement in the managers hands. CONANP is responsible for the aggregation site, but possesses no authority for enforcement which is under the aegis of PROFEPA.
 - Ensure that the primary aggregation site is encompassed by a protected area. Currently, most of the whale sharks aggregate outside of the protected area. Legally-sanctioned expansion of the parks is currently pending review.
 - Provide additional outreach with tour operators outside of the Holbox area. CONANP works with local communities in Holbox, but still need to work with other communities outside the protected area, such as Isla Mujeres. It is critical to raise awareness in Isla Mujeres, where people are not as sensitive to the protection of whale sharks.
 - Raise awareness with private yacht owners from Cancún.
 - Communicate with other sectors (business? schools?) and improve outreach and environmental education at the local and regional levels.
 - Require additional information on the socio-economic importance of whale sharks to foster political will and ensure implementation of regulatory and management

measures such as the Norma Oficial Mexicana, Norma Mexicana, the management plan, and the planned expansion of the protected area boundaries.

- Seek additional financing to cover research, outreach and management of the aggregation and tourism.
- Acquire additional information regarding the whale shark population to define appropriate management strategies and practices.

Belize

▪ *Best practices*

- Establishment of whale shark tour guide course and multi-media information dissemination.
- Establishment of whale shark working group and multi-stakeholder participation.
- Involvement of guides and fishers in the research (until 2003) and return of research information on a regular basis to stakeholders through several media.
- Restriction on the number and types of boats, visitors and time permitted at the site.
- Mechanisms that enable control over visitation.
- Patrolling of park rangers and enforcement of regulations.
- Delegated authority for enforcement/arrests by the Department of Fisheries to Friends of Nature.
- Declaration of Gladden Spit as a multi-user MPA in 2000 as a precautionary measure before visitation increased dramatically.
- Issuing of Trading Fisher License for traditional fishers using the site (still pending review)
- Stakeholder support for whale shark conservation
- Collection of socio-economic data from visitors at the aggregation site

▪ *Areas for improvement*

- Increase the number of scientists and conservationists in the whale shark working group as it has a strong bias towards businesses.
- Establish additional moorings under the reef to accommodate day boats waiting to visit the aggregation site
- Provide additional training to captains to increase safety and ability to navigate in rough conditions that often prevail at Gladden Spit
- Increase awareness and participation of local fishers and guides in the research and monitoring.
- Reward top students or scholarship winners with whale shark tours.
- Improve compliance of regulations and encounter guidelines by guides and tour operators.
- Regulate photography and video at the site and ensure that actions are not infringing guidelines or impacting the experience of others. Professional photographers should make a significant contribution to whale shark conservation. Visitors and professionals alike should provide the managers with copies of their images – this could be a requirement of the encounter compliance sheet signed by all visitors. All photographers must be appropriately credited by the managers and the images only used for research purposes unless photographer consents otherwise.

Honduras

▪ *Best practices*

- Passed a national law in 1999 protecting whale sharks
 - Development of preliminary whale shark guidelines.
 - The number of people in the water at one time is currently restricted on an informal and compliance basis only
 - Planned expansion of the MPA that encompasses whale shark feeding area.
 - Process underway to establish regulations for whale shark tourism management.
 - There is now an opportunity for a fresh start – working with BICA, government agencies, researchers, dive operators, etc.
- *Areas for improvement*
 - Expand awareness to other Bay Islands and the Honduran Coast.
 - Define and implement regulations and regulatory framework.
 - Establish mechanisms for enforcement
 - Hire and train rangers to enforce regulations
 - Increase participation and communication with local community, between tour operators, dive shops, NGOs, etc. through a broad outreach program
 - Create an accredited training program for whale shark guides.
 - Review research permits carefully to ensure that proposed activities conform with management needs
 - Inform decision makers and local authorities of changes and
 - Separate research efforts from whale shark tourism

4.3 Regional working group

Participants viewed the creation of a regional whale shark working group as a key step to accomplishing collaborative regional whale shark research and conservation. The role of the working group was debated and general aspects were agreed upon (see below). Discussion over the size of the regional whale shark working group took two views: small versus large. A small group was viewed as more efficient, easier to conform and effective regarding responses to pertinent issues. A larger group would enable greater participation across stakeholder groups but could prove unwieldy, slow in decision-making and expensive with respect to regular meetings. Participants decided that a smaller group than the workshop would be most effective and could sufficiently represent all stakeholders. All interested participants can be informed of events will have the opportunity to make comments through a list-serve or web-page based framework.

Roles:

- Provide follow-up for agreements made during this workshop.
- Exchange research ideas and results, techniques, best practices, etc.
- Fundraise for whale shark conservation.
- Catalyze and promote political will

Composition:

- Suggested size: maximum 12 people
- Group members responsible for disseminating information to other stakeholders in country and suggest other members of the group.
- Meet twice a year if funding is available
- Large meeting once a year with Honduras proposed as the location of the next workshop

5. General recommendations and follow up

- Prepare the proceedings of the workshop and disseminate them together with the rest of the materials presented to all participants. Post the proceedings in the MPA web page.
- Create an internet group and establish a forum for discussion and information sharing.
- Use the network for catalyzing and promoting political will. This will help countries such as Honduras (where policy is being developed and needs the support of other countries) and Mexico (where the process for the Norma Oficial Mexicana and the expansion of the Yum Balam protected area in Mexico is delayed and needs the support at the regional level).
- Actively disseminate workshop results to a broader circle of stakeholders such as policy-makers and managers, in the three countries to promote policy development. Workshop participants will provide names to build such list.
- Reach out to managers and decision makers (governmental) in Belize to facilitate policy development and compliance.
- Incorporate regional mechanisms such as the MBRS project and CCAD among others into the dialogue.
- Compile and disseminate (via email and internet forum) information available in the three countries.
- Develop programs to increase awareness catered to both the public at large, and more specifically, the tourism sector (operators and tourists).
- Develop an exchange program for representatives of Mexico and Belize to contribute to Honduran process for the development of policy on whale shark research and tourism encounters (a follow up of some activities previously implemented).
- Compile and distribute information on similarities and differences among the three countries' whale shark management guidelines or codes of conducts.

Annexes

Annex 1. List of participants

No.	Names	Institution	Position or responsibility	Country	City	email
1	Roberto Pott	Belize Audubon Society	Marine protected areas coordinator	Belize	Belize City	marineparks@belizeaudubon.org
2	William Muschamp	Friends of Nature (FON)	Data technician	Belize	Placencia	wmuschamp2004@yahoo.com
3	Brian Young Jr.	Seahorse Dive shop	Tour operator	Belize	Placencia	seahorse@btl.net
4	Eloy Cuevas	Monkey River fisherman	Fisherman	Belize	Monkey River	Cuevas_elay@yahoo.com
5	Dennis Garbutt	Toledo Institute for Development and Environment (TIDE)	Port Honduras Reserve manager	Belize	Punta Gorda	dennis@tidebelize.org
6	James Leslie	Splash Dive Shop	Dive instructor	Belize	Placencia	splashbelize@yahoo.com
7	Lisa Carne	independent	Dive instructor	Belize	Placencia	lisas@btl.net
8	Janet Gibson	Wildlife Conservation Society (WCS)	Exec. Director, Belize Program	Belize	Belize City	kgibson@btl.net
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10	Lindsay Garbutt	Friends of Nature	Exec. Director	Belize	Placencia	lindsaybz25@yahoo.com
11	Dwight Neal	Friends of Nature	Technical coordinator	Belize	Placencia	dwrightneal@gmail.com
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27	Carla Cárcamo	COHDEFOR, Dept. Áreas Protegidas y Vida Silvestre	Technician	Honduras	Tegucigalpa	cpcomartinez@yahoo.com
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29	Steve Fox	Deep Blue Divers	Owner	Honduras	Utila	deepblueutila@gmail.com
30	Nestor Windevoxhel	TNC MAR Program	Director	Guatemala	Guatemala	nwindevoxhel@tnc.org
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Annex 2. Workshop agenda

Monday, Sept. 25

7pm Participants arrive
Dinner reception

Tuesday, Sept. 26

8:30-8:45am **Opening remarks.** *Janet Gibson, WCS, Director Belize Marine Program*

8:45-9:00am **Workshop objectives and outline.** *Néstor Windevoxhel (TNC MAR director)*

9:00-9:20am **The Nature Conservancy’s Mesoamerican Reef Conservation Program: objectives, projects.** *Néstor Windevoxhel*

9:20-9:40am **Ecological importance and conservation of the whale shark *Rhincodon typus* in the Mesoamerican Reef region.** *Dr. Rachel Graham, WCS Belize*

9:40-11:00am **Research data, management experiences, conservation issues and economic importance of whale shark observation tourism in Mexico**
(no coffee break, participants can get snacks/coffee during the session)

Presentations:

- *The whale shark project* -, Francisco Remolina, CONANP, Director del Área de Protección de Flora y Fauna Yum Balam (15 min)
- *Results of the research project “Distribución espacio-temporal y caracterización del hábitat del tiburón ballena en la zona norte del Caribe Mexicano”*-Oscar Reyes, Pronatura Península de Yucatán, Natali Cárdenas, CINVESTAV (15min)
- *Research results on the biology and ecology of the whale shark in the N portion of the Mexican Caribbean* - Rafael de la Parra (15min)
- *Whale shark observation tourism in Yum Balam* -José del Carmen Sabatini (15 min)
- *Conservation and management of whale shark in the Área de Protección de Flora y Fauna Yum Balam (regulations, fees, relationship with tour operators, etc.)* - Francisco Remolina (15 min)
- *Questions and answers*

11:00-12:00am **Research data, management experiences, conservation issues and economic importance of whale shark observation tourism in Honduras (Utila, etc.)**

Presentations:

- *Consulta nacional para la elaboración del marco regulatorio de observación del tiburón ballena en Honduras* – Calina Zepeda
- *The Whale Shark & Oceanic Research Center, Utila, Bay Islands, Honduras* – Kelly Schratwieser
- *Whale Shark Research at Deep Blue Resort, Utila, Bay Islands* - Steve Fox
- *Questions and answers*

12:00-1:30pm Lunch

1:30-3:00pm **Research data, management experiences, conservation issues and**

economic importance of whale shark observation tourism in Belize (Gladden Spit, etc.)

Presentations:

- *Research and Conservation of the Whale Shark at Gladden Spit, Belize* –Rachel Graham (WCS)
- *Whale Shark experiences at Gladden Spit* – Dwight Neal (FON)
- Questions and answers

3:00-5:00pm
(coffee will be available at the meeting room)

Drafting of commonalities and improved guideline/code of conduct for whale shark for the region and each country (Mexico, Belize and Honduras) based on existing materials and participants' input.

Wednesday, Sept. 27

8:30-10:30

Working session addressing regional issues. (*Attendees break out into 3 groups*)

- Group 1: *Research Needs & Conservation Opportunities* – Facilitator: Rachel Graham, Rapporteur: Julianne Stockbridge
- Group 2: *Political Will, Institutional Framework, Enforcement and Funding* – Facilitator: Nestor Windevoxhel, Rapporteur: Diana Bermúdez
- Group 3: *Networking & Communication, Capacity & Orientation and Threats assessment* – Facilitator: Calina Zepeda, Rapporteur: Lisa Carne

Presentation of the group results and discussion.

Facilitated by Rachel Graham

10:30-12:00pm

Development of a draft proposal for a regional program on whale shark sustainable management that includes research, training, stakeholders' communication, implementation of best practices and policy development. (*led by Rachel Graham and Francisco Remolina, with the contribution of Nestor Windevoxhel*).

12:00-1:30pm

Lunch

1:30-4:00pm

Continuation of morning's activities

4:00-5:00pm

Recommendations and follow-up (*Nestor Windevoxhel, Rachel Graham*)

3pm

Adjourn

Thursday, Sept. 28

Departure of participants

Annex 3. Summary of presentations

Title	Presenter, institution	Country	Main content
Proyecto Domino (Ecología, dinámica poblacional y manejo del tiburón ballena en el Atlántico) mexicano	Francisco Remolina, Director Área Natural Protegida de Flora y Fauna Yuma Balam (Holbox)	México	Description of the current research project; guidelines recommended by the Mexican working group training (2003) implemented; data of tour operations (2005), tagging; seasonal sightings; flow chart of the tourism management; proposed enlargement of Yum Balam protected area, etc.
Estudio de la distribución espacio-temporal y caracterización del hábitat del tiburón ballena (<i>Rhincodon typus</i>) en la zona norte del Caribe Mexicano: herramienta para la toma de decisiones de manejo	Rafael de la Para, Comisión Nacional de Áreas Naturales Protegidas de México	México	Research results on feeding, size and sex composition, photo-identification, aerial census, vulnerability to visitation, satellite tagging, migration Yucatán Channel - Gulf of Mexico, population genetics (haplotypes in Caribbean-G. of Mexico and Gulf of California)
“Sustainable management of the whale shark resource (<i>Rhincodon typus</i>), in the zone bordering the Natural Protected Area of Yum Balam: generating basic technical information and transferal to the communities	Oscar Reyes, CINVESTAV, Mérida	México	
Whale shark tourism and research. Opening remarks	Janet Gibson, Wildlife Conservation Society (WCS), Director, Belize Marine Program	Belize	General overview of the tourism activity and existing problems; needs to improve and harmonize guidelines conserving local specificities but applying all countries’ commonalities; importance of the workshop
Ecology and conservation of	Rachel Graham,	Belize	Regional overview of existing research information: existing research

whale sharks on the Mesoamerican Barrier Reef	WCS		tools, data and gaps; management issues and threats.
Research and conservation of the whale shark at Gladden Spit, Belize	Rachel Graham, WCS	Belize	Research data (aggregation behavior, site fidelity and migration patterns through tagging and observations, visitation data (1998-2004); economic value; incentives to promote activity; history of tourism activity; recommendations
Experiences on whale shark management	Dwight Neal, Friends of Nature	Belize	History of tourism visitation and tourism operations; monitoring
Nation-wide consultation process for development of a policy framework for whale shark observation tourism regulation	Calina Zepeda, BICA, Director	Honduras	Policy development: background, rationale, objectives (problem assessment, methodology, stakeholders, training needs, regulation).
The Whale Shark Oceanic Research Center, Utila, Bay Is.	Kelly Scratwieser, administrator and marine ecologist, Whale Shark Oceanic Research Center, Utila	Honduras	History and objectives of the Center and its whale shark research; research facilities; partnerships, data collected (tagging, photo identification); visitation demographics, code of conduct; educational programs.
Whale shark research at Deep Blue resort, Utila	Steve Fox, Owner Deep Blue	Honduras	The resort characteristics, whale shark aggregations; tourism visitations; research data collection, ECOECEAN Library (whale shark data collection and processing, information available; etc.)

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