

PROTECTING BAJA MEXICO'S MARINE LIFE: THE WHALE SHARK PROJECT

**Meeting Place: San Diego, CA
(8:00 am July 15, 2010 Location TBA)**

July 15 – July 31, 2010

4 semester system units (equivalent to 6 quarter system units)

Program Fee \$1195 plus \$150 Application Fee

Team members will take part in an exciting, on-site ecological investigation of the whale sharks that spend their summer months in the waters near Bahia de los Angeles, Baja California, Mexico. This bay is situated in the Bahia de los Angeles biosphere reserve, which encompasses the nearshore and marine areas, including numerous islands, surrounding the large bay of the same name, approximately 400 miles south of the U.S. border. In addition, this reserve borders on the Valle de los Cirios biosphere reserve, one of the world's largest, which encompasses much of the surrounding desert terrain in the middle of the Baja California peninsula. Remarkably, the bay is visited by approximately 20 to 30 whale sharks each summer, between late June and November, a seasonal phenomenon found almost nowhere else in the world. This provides an unparalleled field site for the study and research on these phenomenal sea creatures. Additionally, the marine life here is rich and diverse, with many species of large and medium sized whales, dolphins, sea turtles, and seabirds year round. The neighboring desert has many key flora species, including the Cirio (Boojum) and giant cardon cactus, and adjacent to the bay is a large mountain range with a variety of environments along an altitudinal gradient from sea level to almost 6,000 feet.

PROJECT GOALS & ACTIVITIES

Whale sharks are the largest fish in the world, but their unpredictable occurrence in most places, wide ranging movements, and large size make them difficult to study. Consequently there is relatively little known about them. The Bahia de los Angeles biosphere reserve is the only site in the world where whale sharks dependably arrive in large numbers every summer. Local researchers, including the Mexican federal agency responsible for the biosphere reserve (CONANP), have an ongoing program to study whale shark biology and to develop regulations for their protection in the reserve. Team members in our project will have the unique opportunity to assist these researchers in their important fieldwork and whale shark conservation efforts.

Participants will learn valuable field research techniques including how to use small boats, a face mask, snorkel, and fins to conduct visual surveys to estimate whale shark density, distribution, size, sex, and behavior. Students will learn how spot and safely approach whale sharks from a distance while they are feeding near the surface, and how to photograph whale sharks for key photo-identification documentation. This summer, we will also measure whale sharks for size estimates, and record spatial, temporal, and environmental data for occurrence records. Plankton samples will also be taken concurrently so that feeding preferences can be studied.

Most of the boat and in-water activities will occur in the morning when whale sharks are easiest to spot and observe. In the afternoons, students will learn how to match photographs, using specialized pattern-recognition software for identifying individual whale sharks. We will also use various techniques, such as how to use individual recurrence data to perform mark-recapture estimates of various population parameters. We will learn

how to statistically analyze plankton and other data to infer feeding preferences, and use survey data to estimate population size and distribution in time and space. Students will also read and discuss research literature on whale sharks and discuss their own observations and data, in both daily debriefings and in the data analysis sessions.

Aspects of whale shark biology will be explored through reading and discussions; and, importantly, conservation measures that are being adopted for the reserve will be examined in light of the findings of our research. Fieldstudy contributors will include the principal Mexican researcher on the project, and government scientists from the Mexican federal agency that manages the biosphere reserve. We will also take some time to study the diverse flora and fauna of the surrounding marine waters, islands, and desert near the bay. By the end of the project each of us will have gained first hand experience conducting onsite field studies of the magnificent Whale Shark, and be able to serve as knowledgeable stewards for their continued protection in the Sea of Cortez.

While our itinerary will depend in part on ocean and weather conditions, by the program's conclusion all of us will gain a heightened awareness of the bay's ecology and variety of habitats. **Please note that previous field experience is not required.** All necessary skills to conduct our studies of whale sharks and other marine life will be taught onsite during the program.

ACADEMIC CREDIT

Students will receive 4 semester units (6 quarter units) awarded through California State University Monterey Bay Extended Education. While students usually encounter no difficulties in transferring credit to their home campus, applicants should check with their advisors prior to enrolling. Our staff will be happy to explain the program in further detail to the applicant's advisor, if necessary. The Baja California whale shark field studies program gives credit in one course: ENVS 370, Environmental Field Studies (4 semester system units).

Team members wishing academic credit will be evaluated on the quality of fieldwork; discussion participation; a written analysis of field work; an oral presentation; and field notebooks. Team members are expected to conduct themselves in a mature and responsible manner. Wildlands Studies reserves the right to require any student to withdraw from the program if their conduct is detrimental to or incompatible with the interests, safety, or welfare of any course participants.

Reader and Lab Supplies: There is a one-time \$60 fee for field supplies and field station use. In addition, Visas will be purchased at the border (approximately \$20). Reading material will be supplied by email for free.

TEAM LOGISTICS

San Diego is easily reached by numerous airline flights, bus lines, and trains, as well as by car, so please make your individual arrangements to arrive by July 14. We will be departing by car caravan from San Diego on July 15, so you need to meet the group on that day at one of two meeting places in San Diego. If you arrive on July 14, try to book a night at the youth hostel HI-San Diego Point Loma, at 3790 Udall St., San Diego, CA 92107. Their phone number is 1+ (619)223-4778, FAX 1+ (619)223-1883, email pointloma@sandiegohostels.org website : <http://www.sandiegohostels.org/reservations.shtml#ptloma>.



Alternatively, you can make other arrangements and show up at the hostel on the morning of July 15. Be ready to go from the hostel at 9 am, when I will pick you up. The cab and shuttle fare from the airport are \$13 and \$8 respectively when booked through the hostel. That hostel should have enough space, but if that hostel is full, pick another near the airport, but be sure to let me know where you will be staying.

If you chose to ride in course provided vehicles, the cost will be **\$80 to cover vehicle expenses** (fuel, insurance, repairs, etc.). If you wish to drive your own car, you can meet the rest of the group at the hostel on the morning of July 15, and join the caravan (recommended). You can also drive down separately, but contact Stephen Shaner for directions and to make the appropriate arrangements. You will need to purchase Mexican auto liability insurance (about \$110, depending on the vehicle), and pay for your own fuel and expenses (as well as any repair expenses if necessary). If you arrive in San Diego by car and wish to leave it here until you return (2 weeks), you will have to make your own auto storage or parking arrangements.

PASSPORT INFORMATION (FOR U.S. STUDENTS)

Please be sure that you have your passport up to date and in order. Make sure that your passport is not going to expire while you are in Mexico. A visa (tourist card) is necessary for our stay during the program, and can be easily purchased at the border for about \$20 (good for 180 days). Make sure you are prepared to pay this. We recommend that you make a photocopy of your passport and bring it with you, keeping it separate from your passport. Make sure that your passport number is also recorded with someone you can contact in case you lose both the original and the copy.

FOOD, CAMPING AND IN-COUNTRY EXPENDITURES

During the course we will mostly be conducting our fieldstudies and staying at a remote base camp and field station on the shores of the bay, with only basic facilities. The base camp is approximately 4 miles by dirt road from the closest village (Bahia de los Angeles). Except for the border city of Tijuana (where we will not be stopping), Baja California is considered quite safe for travel. However, petty theft can occur there, as in almost anywhere in the world, so do not bring anything truly valuable with you.

You may want to bring your own small portable stove, because at times you may be cooking for yourselves or in small cook groups. **Do not carry full cooking fuel bottles on a plane.** Make sure they are empty. Propane is available in the nearby town. There is also a small basic kitchen available for us to use at the field station, with a refrigerator and small stove. Grocery supplies are easily bought in town, although the selection is sometimes fairly basic. You will need to bring at least **\$100 dollars for food expenditures** in the country. We can keep costs down by group cooking, but there will be opportunities to eat in the restaurants in town (most meals around \$5 - \$7). Optional purchases and expenses or “free-time” activities will cost you more. Be sure to plan accordingly.

We will be staying at a very basic field station with basic facilities (toilets, showers, water, kitchen), but with no special sleeping facilities. It is advisable to bring a tent, which can be pitched on bare ground on the beach. Be prepared to share your tent with someone who does not have a tent. A Baja program gear/equipment list will be provided later this spring. Some people there prefer sleeping outdoors on a sleeping pad or in a hammock without a tent, especially when there is little breeze. A mosquito net would be useful if you plan to do this, although mosquitos are not usually abundant (although other insects and some snakes are common in the area). The cost to each participants for **overnight accommodations** is \$80.

All participants are requested to bring binoculars, calculator, and a field notebook. The photographic opportunities are excellent on this program and we recommend you bring a camera, especially a waterproof camera. If you have them, bring a mask and snorkel and fins, which will probably fit you better than the few available at the field station. Wetsuits are usually not needed in summer, but bring a light one if you want.

CLIMATE

Daytime summer temperatures in this part of Baja California are usually hot, typically 90-100 degrees fahrenheit, and occasionally windy. There is also an occasional rain (though not often). Nights can be quite warm, so a relatively light sleeping bag should be sufficient. Daytime temperatures in the shade and with a little breeze are comfortable, but the direct sunlight can be intense, so it is best to bring a good hat and good sunscreen. It's easy enough to stay cool while in a boat or the water, but a small portable battery operated fan can be handy for times on shore when there is no wind, or for hot nights with no breeze. There is no air conditioning available.

PROJECT COSTS

Program Fee:	\$1195 plus \$150 Application Fee. Program fee due May 15, 2010 Enrollment on a space-available basis after the fee due date until the program is full.
Field supply costs:	\$140 per person (\$60 academic supplies & \$80 field station)
Food for Baja:	Approx. \$100
Money for visa at border:	Approx. \$20
Group Transportation	\$80
Personal Spending Money:	\$100 (varies according to taste - but don't be caught short)

Students should inquire at the financial aid office of their home campus regarding the use of their loans or grants for this course. CSU Monterey Bay Extended Education/ Wildlands Studies are not responsible for non-refundable airline or other tickets or payments or any similar penalties that may be incurred as a result of any course cancellation or changes.

PRE-TRIP PLANNING

Detailed information regarding gear/food, meeting plans, and academic preparations will be sent to all team members in a subsequent logistics letter about 8-10 weeks before the project initiates. In this Logistics letter, we will communicate with you to plan for sharing camping equipment, transportation to the site, how to order the book, wetsuit reservations and planning any last minute logistics. Between now and summer, stay in good shape and prepare for a wildlands adventure second to none!

PROJECT LEADER

STEPHEN SHANER is an ecologist and marine biologist who has worked on a wide variety of projects around the world as an environmental consultant. He is currently an extension instructor in Marine Biology for the University of California. He has spent over 30 years traveling and exploring throughout the Baja California peninsula, and taught the Wildlands program in Baja California in 2009.