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Teacher Connection

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Conservation without Borders

When humans began dividing the earth into political regions of kingdoms, countries, states, etc., the distribution ranges of many wildlife species were found to occur in more than one country. This simple geographical fact could be a life or death problem for some species, because some are protected or even revered in one geopolitical region but not protected or maybe even hunted just across the border!

In more recent times, species population declines have led to different conservation efforts within different range countries. However biologists realized that causes of decline could not be assessed within one country if a species occurred in different countries or migrated across international borders. Thus international conservation was born.

In this issue we talk about Conservation without Borders. By this we mean, "What are the joint conservation efforts for shared resources of two or more nations?" There are two categories of species that require this type of conservation: those whose distribution ranges include more than one country; and those whose migration takes them across international borders.

On the other hand are migratory species and their international requirements. Animals move on a seasonal basis, mainly to find food or to avoid harsh weather. Those migrations sometimes include the movement across international boundaries. Such is the case of the Neotropical migrants (songbirds) about which Ellen Paul, Executive Director of The Ornithological Council, writes.

Not all migratory species migrate over land; many migrate through water, and when doing so visit the coasts of several countries or travel through international waters. Such is the case of marine turtles that Alonso Aguirre, Director of Medicine at Wildlife Trust writes about. Some of the protection efforts for international species also include the work with local residents and that is what Patricia Luevano from the Department of Marine Turtle Protection in Tamaulipas Mexico shares with us.

Research on some marine species involves great effort.

Such is the case of the Northern Right Whale Research Project that Buddy Powell, Director for Aquatic Conservation of Wildlife Trust, writes about.

You can find more information in this issue or by visiting our websites at: www.wildlifetrust.org, and www.thewildones.org.



Mexican Chickadee (*Parus sclateri*) by Esteban M., 9 Ms. Laura Ayala Art School, Monterrey Mx

For example, our colleague Sharon Matola, Project Leader in Belize, writes about the challenges for the conservation of the Northern Central American Scarlet Macaw, an endangered species whose population extends into Belize, Guatemala and Mexico.

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Conservation without Borders

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and more at...
www.thewildones.org

Marine Turtle Monitoring in the Long Island Sound and Peconic Bay Estuaries

We currently know that the Northeastern coastal habitats in the United States are very important for the development of young sea turtles from Northwestern Atlantic Ocean. We know this, in part, because over 10 years ago, Dr. Stephen Morreale from Cornell University studied the Long Island Sound and the Peconic Bay Estuary ecosystems. These studies were successful because of a network of researchers and commercial fishermen, who, working together, were able to cover most of New York's coastal estuarine systems, monitoring the distribution, essential ecology, and health of sea turtles. As a result of this extensive mark-recapture project, it was determined that most of the annual migrants into coastal New York waters are young loggerhead (*Caretta caretta*) and Kemp's ridley turtles (*Lepidochelys kempii*), which come mainly to feed on crabs and mollusks, while the less numerous green turtles (*Chelonia mydas*) which feed mainly on

attached algae. Additionally, the young turtles there were noted to grow fast and with excellent health while foraging in the area.

Although the turtles may return each year to their foraging areas, their near shore habitats have been experiencing persistent and insidious pressures that have degraded them. The coastal corridor that encompasses Philadelphia, New York, and Boston hosts more than 34 million people who work and live there. Their daily activities, as well as recreational boating and commercial fishing, contribute to general environmental deterioration, such as shoreline hardening, groundwater contamination, surface runoff and noise pollution. Such major changes within important developmental habitats can have serious consequences to regional sea turtle populations.

In order to assess current human impacts, and to closely monitor the health, status, and trends of the sea turtle populations, Cornell University and Wildlife Trust have renewed our intensive studies on the sea turtle populations that use the waters of these estuarine systems as foraging grounds. Work was carried out between July and November with 9 commercial fishermen. After a gap of nearly a decade we will be able not only to assess and compare the current health of sea turtles, but also to track the success of previous recovery plans for these endangered and threatened turtles.



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*Alonso Aguirre, DVM, MS, PhD
Director of Conservation Medicine
of Wildlife Trust, has developed a
protocol to determine the health
status of these turtles that includes
a physical exam and blood and skin
sample analyses for pollutants,
pathogens (viral or bacterial), and
other health threats to these charis-
matic species.*

North Atlantic Right Whales

by James "Buddy" Powell, Director of Aquatic Conservation, Wildlife Trust



The North Atlantic Right Whale (*Eubalaena glacialis*) is a critically endangered species that once number in the thousands, but today only about 300 individuals exist. The whales could be extinct within 200 years! Northern right whales are typically found in five areas: Canada's Bay of Fundy and Browns and Baccaro Banks (south of Nova Scotia), and portions of the coasts of Florida, Georgia, and Massachusetts.

What happened to the right whale? In the early 1900's, they were hunted commercially for oil, baleen and other products. Today they are protected by United States law under the Marine Mammal Protection Act and the Endangered Species Act, but their populations never recovered. In fact, every year since 1991 the population of Northern rights whales gets smaller. What is the threat today, to this large, migratory mammal? They are very vulnerable to human disturbance on the shores and in the oceans. They collide with ships, get tangled in fishing nets, and suffer from the effects of ocean pollution.

One very important region for northern right whales is the waters off the Georgia and Florida coast of the USA. This is the only known area where rights whales have their young (calving grounds). It is essential that measures be put into place quickly and efficiently to minimize human related mortality of this species.

Right whales move slowly through the water, especially when accompanied by a calf, and are not easily seen when at the water surface. Ship captains cannot easily see them in time to steer clear of them. The winter calving grounds off Georgia and northern Florida, the area designated as critical habitat for right whales in the Southeastern United States, includes four major shipping ports of the southeast, with the potential for ship/whale conflicts existing each day. In an effort to decrease the risk of

collision with right whales, the Early Warning System was created to inform military and commercial ships in the area of the presence of right whales.

Wildlife Trust is assessing and monitoring the number of highly endangered Northern Right Whales that winter off the coasts of Florida and Georgia. The project also evaluates the survey methodology itself.

Buddy Powell, Monica Ross, Cindi Taylor, and the rest of the team conduct daily aerial surveys to locate North Atlantic right whales in the central portion of their critical habitat in the Southeast United States, from 1 December 2002 through 31 March 2003. They report these locations in near real-time via the Early Warning System sighting network. Right whale locations are then sent to mariners operating commercial, military, and other vessels in these areas so they may elect to take actions to reduce the likelihood of collisions with right whales. Wildlife Trust will also recommend additional protection and detection measures to the regulatory agencies (like the National Oceanographic and Atmospheric Agency) which should improve the effectiveness and efficiency of right whale detection and mitigation of possible vessel collisions.

The Wildlife Trust study evaluates whale survey methods to provide estimators for the proportion of whales detected at different survey intervals and widths. This study has two major goals: 1) to determine if the test transect interval results in a significantly higher pro-

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Protection of a Landscape Species, the Northern Central American Scarlet Macaw

by Sharon Matola, Wildlife Trust Project
Leader in Belize

The third largest species of all Macaw parrots is the astonishingly beautiful Scarlet Macaw (*Ara macao*). While the populations of the nominate species in the southern portions of its range are currently not considered to be threatened, the Northern Central American Scarlet Macaw (*Ara macao cyanoptera*), reflects a much different profile.



(*Ara macao cyanoptera*)

a future for a species. As in many cases, natural resources play a vital role in the economic stability of their home countries, and the Scarlet Macaw is no exception. People from around the world, as well as the region, travel here to catch glimpses of this brilliant, rare parrot. However, those who venture into these areas for superior bird-watching opportunities receive another bonus, as well.

This forest is also a vibrant area of cultural history. Cities of the ancient Maya can be found within the forested landscape. Tikal, Caracol, Dos Pilas and other Maya sites are the target destinations for people of the region and for visitors from far away.

In Mesoamerica, combining the rich cultural heritage with dynamic

natural resources positions the region on a positive economic level. The nature-based tourism industry is the fastest growing facet of Tourism, in itself, the largest industry in the world. People will continue to travel to this part of the world to view these unmatched resources, and without reservation, it can be said that the Scarlet Macaw has value, not just for its intrinsic beauty and exquisite natural history regime, but for the economic role it contributes to the healthy socio-economic state of a region.

Protecting the species is a challenge. The Scarlet Macaw is a habitat-specific bird, seeking out river valleys where it reproduces and forages to sustain its remaining populations. Poaching of young is still a major threat, and while protected as CITES Appendix 1 since 1986, the local trade poses a serious situation.

In Belize, Central America, this subspecies of endangered parrot exists in an unaltered forest, and studying it there provides the baseline of research information minus any human intervention. No poaching occurs, as the area where Scarlet Macaws thrive is remote and hard to access. No logging occurs and no tourism activities take place. Obtaining data about the bird's natural history results in an important data base which reflects a profile minus aspects of any adaptations due to activities of the human species.

These studies, sponsored by Wildlife Trust, can be used as a comparative measure when noting the strategies necessary to sustain the populations in other regions of the Maya Forest. This work has

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contributed to publications and meetings of a Tri-National Coalition, “Guacamayas Sin Fronteras” (Scarlet Macaws Without Borders), and researchers from all three nations are committed to seeing that the species continues to survive into the future.

While the populations of the Northern Central American Scarlet Macaw are unstable and Endangered, the commitment to protect them for future generations is firm and diligent. Continuing to work together through research, education, and proactive conservation measures, the three nations of Guatemala, Mexico and Belize will undoubtedly be successful in securing a future in the Maya Forest for this exquisite species.

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portion of whale sightings compared to the established protocol and 2) to determine what proportion of whales are missed per transect and per survey for the two transect intervals.

Wildlife Trust will then provide recommendations to the managing agencies for changes in right whale aerial survey intervals and design to increase detection of right whales at minimal increased survey cost. Buddy and his team will then be able to determine reproduction and identify individuals by analyzing aerial photographs taken in the area. Through an existing communication network, they are alerting ship traffic to the presence of whales with the intention of reducing the possibility of ship/whale collisions.

Sharing and Caring for the Birds of the Americas

*by Ellen Paul Executive Director of
The Ornithological Council,*

About 400 of the bird species in the western hemisphere go north to breed in the temperate regions (Canada and the United States). When the northern summer turns to fall, these birds return to Mexico, the Caribbean, and Central America. Some even travel far into South America. Millions and millions of birds make these long journeys every year.



Townsend's Warbler (Dendroica townsendi) by Ernesto Enkerlin

About twelve years ago, people who worried about declining bird populations realized that to save these neotropical migratory bird species, they would have to take action to conserve both habitats; where the birds breed and where they live during the non-breeding season. There were already many groups in many countries, working to save birds, but they were not working together. Because of these winged ambassadors, all these people realized that they would have to work together to help wild birds. So they formed a group called Partners in Flight. [<http://>

www.partnersinflight.org/ - most of this website is in both Spanish and English].

Hundreds of different groups, individuals, and government agencies throughout the western hemisphere are the partners who collaborate on conservation programs for wild birds and the habitat needed by them. Together, they develop plans to fix the problems that are causing

wild bird populations to decline. First, they determine which bird populations are getting smaller. They do this by counting birds in a variety of ways.

Usually, people go in the woods and fields, and even out into the

oceans in boats, counting all the birds they see and hear. Sometimes, they fly over in airplanes, estimating the numbers of birds in big flocks. This method works for ducks, geese, and other waterfowl. Some kinds of birds are very difficult to count, because they live in marshes and are hard to see. It is also hard to count nocturnal birds, like owls and nightjars.

After the birds have been counted, and it is determined which species are becoming less common, scientists try to figure out why this is happening. They study the birds and the way they live. This science

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is called ornithology - a word with the Greek root *ornis* meaning “bird” and the Greek suffix *ology* meaning “study of.”

The scientists have identified many problems for wild birds. The biggest problem is loss of habitat - which means that the places the birds live are taken away or changed so that they are no longer suitable. For instance, some birds need marshes, but people often drain the water from marshes so they can build towns or plant crops. Although people don't mean to harm birds, sometimes people do things that cause problems. When people let their cats roam freely, the cats kill and eat birds and nestlings (baby birds). So the next thing the scientists do is figure out ways that people can help to stop or even reverse these problems.

Some solutions are easy - like keeping cats indoors. Others are much more difficult. After all, people need to grow crops, raise livestock, live in houses, and work in buildings. Finding ways that people can do all these things in ways that won't hurt birds and other wild animals is very hard. But that's what Partners in Flight is doing - all across the Americas. They have plans and programs to save habitat, restore habitat that has been damaged, and reduce or eliminate the other problems that are causing

wild bird populations to decline. And along the way, something very



Solitary Vireo (Vireo solitarius) by Ernesto Enkerlin Enkerlin

interesting happened. At first, Partners in Flight focused on the birds that actually migrate from one country to another. But when all these people from all these countries came together to talk and work together, they realized that they also had to worry about the many, many bird species that never leave their own countries. So now, they are also working to save the birds that don't cross national borders - the “resident” species. Partners in Flight concentrates on the birds that live and nest on land. There are three other groups like

Partners in Flight that are also working internationally to save birds. One is called the North American Waterbird Conservation Plan. It covers most of the birds that live in and around water - birds like herons, cranes, and flamingos. The birds that live at sea are also included.

Another group - called the North American Waterfowl Management Plan (NAWMP) - covers ducks and geese. It was established in 1986, with an agreement between the United States and Canada. Mexico joined NAWMP in 1994.

Finally shorebirds (birds that live mostly on or near coasts, but that can also live inland), are covered by the U.S. Shorebird Conservation Plan. You might think, from this name, that this

plan only concerns the birds when they are in the United States, but actually, the name is misleading. There are also shorebird conservation plans in Canada and Mexico, and all these groups work together to help protect shorebird populations and shorebird habitat.



Kemp's Ridley Turtle Binational Conservation Project

Young Kemp's ridley turtles swim in the warm waters of the Atlantic Ocean all the way up to northeastern U. S., in bays, coastal lagoons, and river mouths. Adults gather in their feeding areas in the bays of Florida, at the Mississippi River Delta, and in the coast of Campeche. These characteristics make Kemp's ridley turtle a truly "international" species.

Sharks are their predators at sea. On land, skunks, pigs, dogs, crabs, ants and fly larvae attack the eggs in the nests; and hatchlings are eaten on their way to sea by skunks, dogs, crabs, birds, and some fish. However, just like other sea turtle species, Kemp's ridley turtles have been mostly affected by human activities such as incidental catch by shrimp trawlers, habitat destruction, nest poaching, and more recently, water pollution. All these factors make Kemp's ridley the most endangered sea turtle species.

Conservation programs

In 1978 a binational program between Mexico and the United States was developed to help the species recover its populations. Government and non-government agencies, university students, and volunteers from both countries participate in the program that includes working with the species and also the people who live near nesting areas.

The species

Twenty-two years ago, researchers knew very little of the biology of the species. After having patrolling almost 100 kilometers of shoreline thousands of times over, scientists now know that most turtles nest every other year. They also know that females can have up to four nests per season (and sometimes on different beaches!). Large numbers of females arrive on the beaches on cool days with strong winds. Females lay from 80 to 140



Young hatchlings heading to the sea

round, white eggs that measure from 3.5 to 4.5 cm across. Incubation period lasts from 45 to 58 days, depending on the weather conditions.

Researchers have found turtles that were captured and tagged on the east coast of the U.S. nest on Mexican beaches. They have also found that captive-bred turtles released on south Texas beaches, socialize with and nest with wild turtles on Mexican beaches.

How are turtles monitored?

Trained sea turtle biologist lead groups of organized field assistants from the United States and Mexico. They patrol the beaches and mark turtles with a metallic tag on the outside part of the front flipper. Sometimes they implant a microchip (or PIT tag) in the upper muscle of the front flipper to identify an individual turtle. That way their activities and movements are monitored. On land, eggs are protected in the nests on the beach (*in situ*) or are carefully moved to protected nests or to special Styrofoam boxes where they will hatch out in safety.

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Kemp's ridley turtle arrives on the shore

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During the 2000 breeding season, 6,181 nests were protected! From 590,055 eggs, 395,150 turtles hatched and were released on the beach. Today, hundreds of turtles use this beach to nest. It will take thousands of nesting turtles to insure the survival of Kemp's ridleys. All efforts must continue to reach the goal.



Volunteer working with school children at a nesting shore.

Adelita



Loggerhead turtles (*Caretta caretta*) reproduce in Japan, and juveniles feed in Baja California México. This photo shows Adelita, the first released, rehabilitated turtle with a satellite radio-transmitter attached to her shell. Adelita proved that loggerhead turtles have a transoceanic migration. The species is declining due to poaching and incidental catch by fishing boats. Its protection requires the collaborative work between Japan and Mexico.

Read more about the remarkable journey of Adelita, the loggerhead turtle in WiLDCOAST International Conservation Team: <http://www.turtles.org/adelita.htm>

People.

Volunteer students from Mexican and North American universities visit schools and give talks and workshops on the importance of environmental protection to the survival of turtle species. Public activities as well as radio and TV shows have focused on Kemp's ridley turtles. In addition a local museum will be built to provide educational outreach to students as well as tourists.

Another successful activity has been the training of local residents and fisherman in making clay objects with the Kemp's ridley motif. These items include clay candleholders, vases, and piggybanks decorated with turtles. They are sold to visitors or exported for sale in the U. S. A tag is attached to each piece, providing the buyer with natural history information about the turtle species.



Local resident making clay turtles at the workshop

As this program is starting to yield positive results, and it is being studied for its application to the conservation and recovery of other species of marine turtles that nest in Mexican beaches.

Information and photos provided by:

DVM Patricia G. Luevano Martinez, Department of Marine Turtle Protection, Natural Resources Department of the State of Tamaulipas, Mexico.

More information at:

SEMARNAT <http://www.semarnat.gob.mx/especies/tortuga/lora.shtml>

Gladys Porter Zoo <http://www.gpz.org/conserv/ridley/turtleproj.html>



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