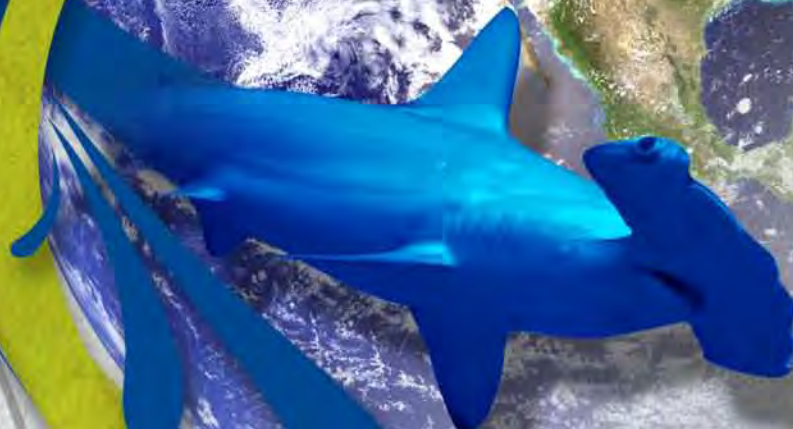


# MIGRATORY SPECIES:

BIOLOGICAL, CULTURAL AND ECONOMIC ASSETS OF THE AMERICAS



WHMSI





*Migratory species travel thousands of miles in a cycle that guarantees their survival.*



# MIGRATORY SPECIES:

## BIOLOGICAL, CULTURAL AND ECONOMIC ASSETS OF THE AMERICAS

It is thought that they have biological clocks and are good geographers because many recognize rivers, mountains and cities; some even say that they are great astronomers because they guide themselves by means of the sun, the stars and even the Earth's magnetic field; others recognize chemical odors and marine currents. What is certain is that every year, millions of migratory species, whether by water, land or air, travel enormous distances over the American continent and beyond in search of better climatic conditions, more abundant food or a suitable site for reproduction, which generally coincides with the warmer season.

These odysseys are not exempt from great challenges; some species travel up to 20,000 miles round-trip. This happens with species of whales, bats, birds, fish, sea turtles and even insects like the monarch butterfly. Most flee the North American winter to seek food in the southern part of the continent, and then return to their feeding grounds in the north when their favorite foods sprout anew in the spring. But there are also migrations that are made from the east to the west of the continent and vice versa, from conti-

mental to coastal zones, along rivers and streams, and others that are altitudinal in nature; in other words, some creatures go up and down the mountains, like the quetzal, which in a certain season of the year migrates to lower lands to find food.

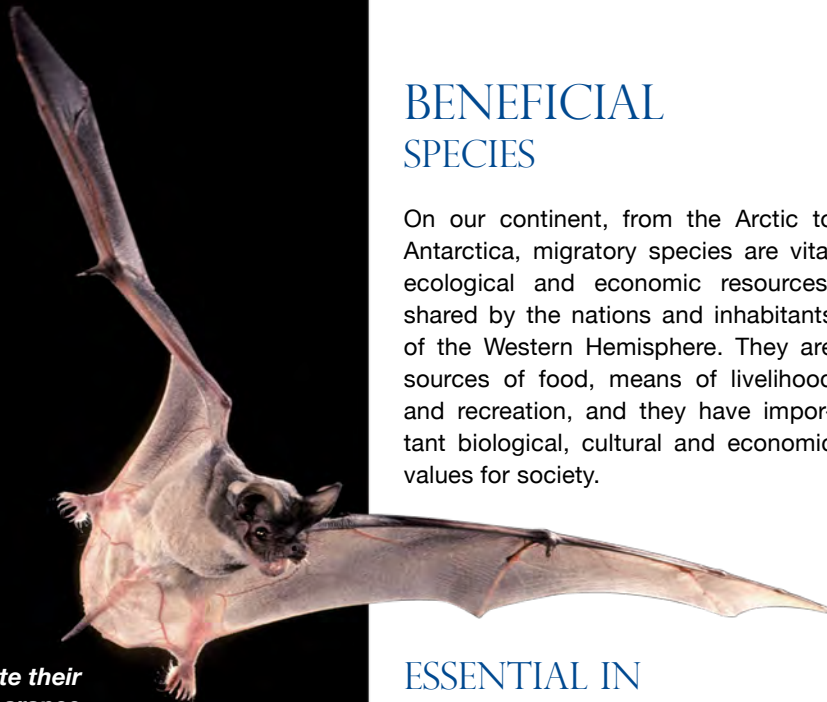
Very small species like ruby-throated hummingbirds (*Archilochus colubris*), which measure only 10 cm, fly non-stop for 26 hours from Canada and the United States to Central America at a velocity of 28 mph for a voyage of 652 miles that even includes crossing the Gulf of Mexico. If the blackpoll warbler (*Dendroica striata*), only 13 cm long, were to burn gasoline instead of body fat, it would get 715,852 miles per gallon.

The abilities of many of these admirable travelers can even compete with those of commercial aviation, if not in time, then in altitude. For example, Swainson's hawks, which on their voyage from North America to the Southern Cone only migrate during the day taking advantage of rising warm air currents to reach altitudes above 19,680 feet and traveling distances of up to 37 miles without losing altitude. They travel a total of 6214 miles in a little more than two months.

The leatherback (*Dermodochelys coriacea*) is one of the most surprising sea turtles for its huge size with a carapace length of up to 6 feet and weighing up to 885 lbs, and because it travels the longest distances ever recorded for a reptile, a journey that it makes between its feeding areas and the nesting beach where it was hatched in order to lay its eggs. For example, a female found nesting in June 2005 on Samsambo Beach in Surinam traveled around the Atlantic Ocean, visiting the coasts of Africa and Europe for a trip of over 9,000 miles, before beginning her return to Surinam.

And the most extensive individual migration known for a mammal was that of a humpback whale (*Megaptera novaeangliae*), initially spotted off the Antarctic Peninsula and then seen off the Santa Elena Peninsula of Costa Rica, for a total trip of 7,130 miles.





**Despite their appearance and the myths about them, bats are animals that offer many benefits to human beings.**

Swainson's hawks feed on animals that are harmful to agriculture along their migration route.



## BENEFICIAL SPECIES

On our continent, from the Arctic to Antarctica, migratory species are vital ecological and economic resources, shared by the nations and inhabitants of the Western Hemisphere. They are sources of food, means of livelihood and recreation, and they have important biological, cultural and economic values for society.

## ESSENTIAL IN NATURE

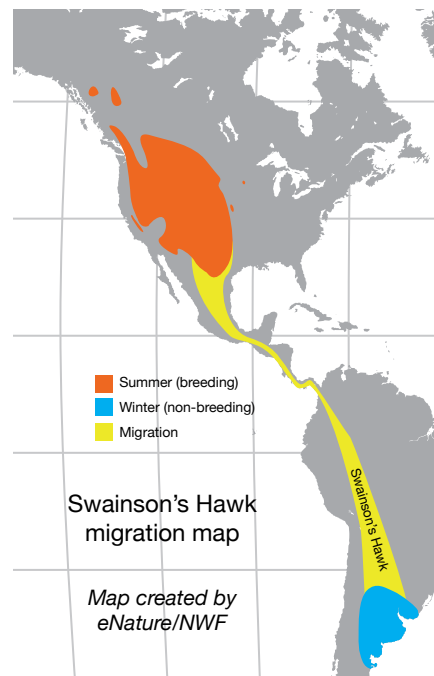
Bats are one example of the biological value of migrations. Despite their appearance and the myths about them, they play key roles in ecosystems. Not only do they disperse the seeds of a great variety of plant species and maintain and restore forests by helping many plants to survive in arid ecosystems, they are also important pest control agents for crops. The free-tailed bat (*Tadarida brasiliensis*), which lives in Mexico in winter and in the United States in summer, feeds on moths that attack corn, cotton and other economically important crops. A protected colony of 100 thousand of these bats can consume up to a ton of insects per night.

As happens with many bird species that migrate, Swainson's hawks (*Buteo swainsoni*) also feed on animals that are harmful

to agriculture, but even so they are persecuted in many countries and suffer from the application of pesticides in open fields in the southern part of the continent, where they concentrate in large populations.

There are around 200 species of Neotropical migratory birds that reproduce in North America during the summer and in winter they travel to Mexico, Central America or the Caribbean islands where they feed on nectar, among other things, at the same time pollinating hundreds of plants that are useful to Americans for food, medicines and decoration.

Therefore, protecting migratory species not only helps their survival, it also helps maintain balance in food chains and the proper functioning of the ecosystems and the services that these natural environments offer to other species and human beings.





## International Conservation of Butterflies

In 1986, the Monarch Butterfly Biosphere Reserve was created in the Mexican hibernation area of this butterfly that comes from the US and Canada, where illegal logging had placed this important habitat at risk. In 2000, the reserve area was expanded by 16,110 hectares to a little more than 56,000 hectares and the Monarch Conservation Fund was created, a financial scheme that offers economic support to the communities as compensation for the loss of income from logging, as well as for their conservation projects. Scientific research, education, and habitat restoration and protection are also carried out. This has allowed the monarch butterfly to become a symbol of identity and success for the Mexican communities located near the butterfly's habitat, making them the butterfly's main allies.



**Monarch butterflies make a major contribution to the local economy as a tourist attraction.**

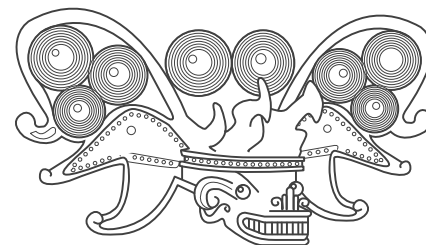
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## SYMBOLS OF LOCAL CULTURES

Many migratory species have important cultural value for local populations on the continent, even representing a symbol of their identity. This is the case of the monarch butterfly (*Danaus plexippus*), native to the northern United States and southern Canada, which offers one of the most notorious migration spectacles when some 120 million of these insects travel approximately 3,100 miles every fall to the mountains with pine-oak and fir forests between the borders of the states of Michoacán and Mexico, where they spend the northern winter. Thanks to this unique spectacle, the local economy has been flourishing with the many tourism services that are offered to the more than 250,000 visitors that come to the region to witness this natural phenomenon.

The common tern (*Sterna hirundo*) is a symbolic species for Samborombón, Argentina. A school environmental education program in this region of Argentina has students identify with this species that travels from North America, by having them participate in bird-banding activities with the scientists, beach clean-ups and artistic contests to learn and raise awareness about the importance of conserving migratory birds such as the tern. Cultural exchanges are also carried out with schools in other provinces that coincide with other bird species during their migration.

In American mythology bats were notable deities and were frequently represented as such in Mayan steles, codices and ceramic vessels. They also had a strong presence in other indigenous cultures; for example, they appear forged in gold pieces of Peruvian artistic treasure and in zoomorphic representations of the pre-Columbian cultures of Santo Domingo and Cuba.



Bats appear in Mayan culture as deities.

## ANIMALS THAT HELP THE ECONOMY

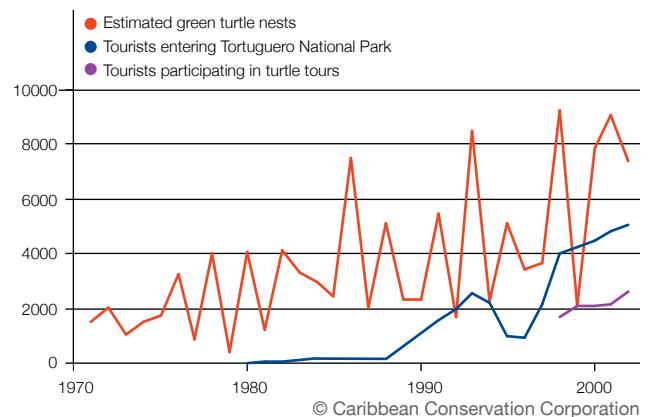
Many migratory species, as is the case with birds, sea turtles and whales, are highly valuable tourism attractions for developing country economies. The observation of sea turtles by tourists generates local income almost three times higher than income derived from the sale of turtle products, most of which are illegal. At Tortuguero beach in Costa Rica, the conservation efforts carried out for more than 50 years by NGOs, the government and the local community, have given rise to tourism based on green turtles and leatherbacks that today generates around 7 million dollars per year. In the Brazilian littoral zone, sea turtle conservation and tourism projects give jobs to more than 1,200 local people, 60% of whom are women.

Bird-watchers are a growing tourist segment that spends millions of dollars each year in nations of the continent. Many of

the species that these tourists seek make stops during their migrations to feed, gain strength, and restart their flights. They do this in natural environments rich in nutrients, such as estuaries and wetlands, which are often degraded and require protection. Because species do not recognize borders, their resting, feeding and reproduction areas throughout the hemisphere must be protected in order to safeguard the local income that is generated by the bird-lovers.

Similarly, more than 15,000 people per day in at least 87 countries watch cetaceans, whose migratory species include blue whales (*Balaenoptera musculus*), southern right whales (*Eubalaena australis*) and humpback whales (*Megaptera novaeangliae*). It is estimated that there are 500 communities involved in commercial activities to watch these charismatic species. According to a recent report only in Latin America, between 1998 and 2006, the whale watching presented a strong growth, with an average rate of 11.3% per year. Currently the

*Whale-watching is a tourism activity that is growing year after year and benefiting coastal communities.*



*Conservation efforts pay-off: the green turtle nesting population in Tortuguero, Costa Rica, is on the rise. And so are the numbers of tourists that visit this national park and take part in guided turtle tours that boost the local economies.*



activity in this region involves 91 communities in 18 countries, with 885.679 persons that annually watch whales and dolphins. In Costa Rica alone, there are more than 62 tour operators in this business, whose activity is now controlled by a regulation for responsible whale-watching. Several environmental organizations are promoting responsible and educational observation of whales and dolphins in the Americas in order to benefit both the species and the communities

Dive tourism also leaves millions of dollars each year in the Wider Caribbean and the Tropical Eastern Pacific. One of the migratory species that generates the most fascination in this market is the hammerhead shark (*Sphyrna lewini*), which in America is found from the California coasts to possibly northern Peru. Its distribution includes world-famous dive destinations, including the marine protected areas of the Galapagos Islands (Ecuador), Cocos Island (Costa Rica), Malpelo and Gorgona (Colombia) and Coiba (Panama).

Satellite-tracking projects, supported by different NGOs and research institutes, are carried out in the protected areas of the Eastern Pacific to determine the daily movements and migrations of the hammerhead shark and refine conservation measures. There is a theory that volcanic islands have magnetic fields that the sharks use like a compass for orienting themselves around the zone where they are feeding. What is certain is that this shark can travel up to 372 miles in two weeks in schools of 30 to 200 individuals, a sight that no diving tourist would want to miss.

Many of the fish that reach our tables, such as tuna, mahi-mahi, and swordfish, also migrate. When they mate, some travel to the edge of the continental platform where they deposit their eggs to protect them from possible predators. The young fish swim to mangrove areas on the coast to feed and when they develop they go to deeper waters or even to the open sea, where they continue with their cycle. Protecting this cycle is also guaranteeing food security and the economic value of fisheries of the Americas.

### *Southern Right Whale Project*

*Along the coast of the province of Santa Cruz in Argentina, studies on southern right whale (*Eubalaena australis*) population status and habitat use, show that an area more than 500 km off the Valdés Peninsula (Chubut Province) is the southernmost zone for this species in Argentina. Besides developing scientific research, the project works with the local community on educational proposals and trains tour operators on whale spotting, among other activities.*

*From 1991 to 2004, the number of tourists participating in whale-watching tours at Valdés Peninsula grew from 17,400 to 96,400, an increase of 14% per year.*



*Responsible fishing is essential for ensuring that commercially valuable species continue to reach our tables*



**The hammerhead shark, a large predator, is a highly migratory species.**



# HEMISPHERIC COMMITMENT

## FOR THE PROTECTION OF MIGRATORY SPECIES

Despite their great biological, cultural and economic value, many migratory species are endangered in the western hemisphere. They have been placed in grave danger by human actions such as over-exploitation, water pollution, alteration and destruction of breeding and hibernation habitats such as forests and wetlands, illegal trade, use of pesticides and, more recently, climate change that is modifying terrestrial and marine habitats.

Since migratory species do not recognize borders, the conservation of these species, their habitats and migration routes, as well as the multiple benefits they offer to Americans can only be achieved through joint efforts of the hemisphere's nations. There are international conventions that precisely seek this work and joint commitment.

### THE WESTERN HEMISPHERE MIGRATORY SPECIES INITIATIVE (WHMSI)

The Western Hemisphere Migratory Species Initiative (WHMSI) is a mechanism to facilitate cooperation among governmental officials responsible for migratory wildlife in the Western Hemisphere while at the same time engaging the broader non-governmental community as equal partners in this conservation effort. The mission of WHMSI is to significantly enhance the conservation of shared migratory species throughout the Americas by strengthening political commitment, cooperation and public-private

partnerships at regional, national and local levels. WHMSI's main mechanism for achieving this mission is through facilitation and coordination among people, communities, sites and initiatives as they relate to migratory species and their habitats across the hemisphere.

WHMSI is based upon recognizing that all countries of the Western Hemisphere are parties to international conventions, treaties and accords through which they are committed to the conservation of migratory species. WHMSI aims to assist countries in fulfilling these commitments.

The initiative was developed by wildlife agency directors and other senior officials from Western Hemisphere countries who gathered in Chile in 2003 to develop a cooperative hemispheric mechanism to conserve shared migratory species. At that time an Interim Steering Committee was established to facilitate work towards this end.

Based on the priorities identified in Chile, WHMSI seeks to:

- Build country capacity to conserve and manage migratory wildlife;
- Improve hemispheric communication on conservation issues of common interest;
- Strengthen the exchange of information needed for informed decision-making; and
- Provide a forum in which emerging issues can be identified and addressed.

WHMSI is a non-binding mechanism that in no way addresses claims of sovereignty over disputed territories among any interested States. Its principles and objectives represent a consensus of all participants. Being non-prescriptive and created to facilitate cooperation among both governmental and non-governmental interests spanning the breadth of the hemisphere, WHMSI focuses only on migratory species conservation matters of broad common interest, particularly those which will deliver positive results on the ground.

### Second WHMSI Conference

The Second WHMSI conference took place in 2006 in Costa Rica, with a focus on identifying partnerships for capacity building and training. Capacity building was selected as the theme due to it being:

- a specific priority identified by the countries of the hemisphere
- an issue at the root of delivering effective conservation
- a concern which has received limited attention despite its importance

The 2006 conference served as part of the planning process to develop a hemispheric strategy to address capacity building and training needs for migratory wildlife conservation in the region. Participants representing 30 countries in the hemisphere and 60 NGOs and



international conventions identified and prioritized their training needs. These needs have been integrated into a comprehensive capacity building implementation plan that will seek to train wildlife decision-makers, government officials, and managers (including protected areas managers) under the WHMSI framework.

### Support to Regional Projects

In 2006, WHMSI provided support for the regional project: “Building Capacity to Care for Sick and Injured Sea Turtles: Standard Guidelines and Criteria for the Wider Caribbean Region”, implemented by the Wider Caribbean Sea Turtle Conservation Network (WIDECAST). This project addresses the call from more than 30 Caribbean States and territories which unanimously agreed that a “Sea Turtle Trauma Response Corps” be created to strengthen and coordinate the efforts to respond to endangered sea turtles in crisis, whether at sea or stranded on the shoreline. The Field Manual supported by WHMSI will feature a user-friendly guide to “first responders”, including guidance on triage and field treatment of various traumas, including hooking, entanglement, oiling, boat strikes, and predator attacks.

### WHMSI Interim Steering Committee

WHMSI’s Interim Steering Committee (ISC) is unique among international governing bodies. It is comprised of representatives from governments, non-governmental organizations, and from interested international treaties and

conventions. ISC members include: U.S. (Chair), Colombia, Costa Rica, Saint Lucia, Uruguay, Organization of American States (OAS), Convention on Wetlands of International Importance (Ramsar Convention), Convention on Migratory Species (CMS), Inter-American Convention for the Protection and Conservation of Sea Turtles, Protocol on Specially Protected Areas and Wildlife of the Wider Caribbean (SPAW Protocol), American Bird Conservancy, Birdlife International, Western Hemisphere Shorebird Reserve Network, World Wildlife Fund.

### Memoranda of Understanding with Partner Organizations

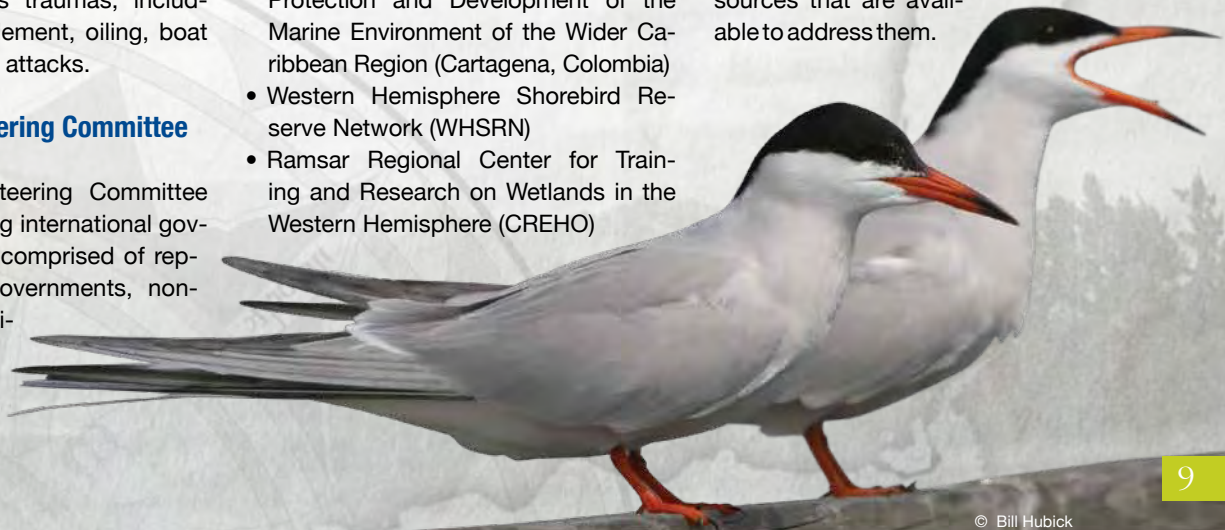
Following upon a plenary decision at the Second WHMSI Conference in 2006 to strengthen relations with partner organizations, Memoranda of Understanding (MOUs) have been signed with a number of important organizations active in the field of wildlife conservation, including:

- U.S. Committee of the North American Bird Conservation Initiative (U.S. NABCI)
- Secretariat of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena, Colombia)
- Western Hemisphere Shorebird Reserve Network (WHSRN)
- Ramsar Regional Center for Training and Research on Wetlands in the Western Hemisphere (CREHO)

- Society for the Conservation and Study of Caribbean Birds (SCSCB)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- The Manatee Conservation Trust of Trinidad and Tobago
- MOUs with other organizations are under development.

### Eco-Index WHMSI Pathway

The Eco-Index’s bilingual WHMSI Pathway ([www.whmsi-pathway.org](http://www.whmsi-pathway.org)) supports WHMSI’s goal of conserving migratory species through international cooperation and communication. The WHMSI Pathway aims to create a cohesive, international community of governmental and non-governmental entities that work together to conserve migratory species by providing a bilingual space where stakeholders can easily share valuable data, best practices, and publications across geographic and language barriers. The WHMSI Pathway features nearly 500 listings in its “Projects & Tools” section, which matches priority migratory species conservation needs that WHMSI stakeholders have identified with the resources that are available to address them.







*The degradation of natural environments, such as wetlands and forests, harms not only migratory species but human communities as well.*

### Third WHMSI Conference

The Third Western Hemisphere Migratory Species Conference was held in Asuncion, Paraguay in July 2008, hosted by the Paraguayan Ministries of Environment and Tourism, and Guyra Paraguay. The Conference brought together government wildlife officials and representatives from non-governmental organizations and conventions with interest in international dialogue and cooperation on migratory species. The objectives of the event were to:

- Update activities since the 2006 Conference in Costa Rica;
- Take further steps towards establishment of a permanent forum for the conservation of migratory wildlife;
- Conduct thematic sessions of interest to the region, including issues such as adaptation to climate change, marine turtles conservation, and migratory birds conservation.

The Conference was open to all entities interested in the conservation of migratory species in the Western Hemisphere. Proceedings from the WHMSI Conferences are published on the WHMSI website.

All countries in the Western Hemisphere will benefit from strengthened cooperation among nations and other stakeholders in migratory species conservation – the animals in question range throughout the Americas. To this end, WHMSI provides an effective forum for dialogue and partnerships focused on the conservation of our shared migratory species.

## OTHER INTERNATIONAL CONVENTIONS

WHMSI is an overarching initiative which helps the states deliver on various international commitments pertinent to the conservation of migratory species. It bridges between some of various international instruments in the region to create synergies and efficient collaboration between states, as well as between local and regional non-governmental organizations. An illustrative, short selection of such instruments is shown below.

At the global level, there is a specific convention for the conservation of migratory species, known as the CMS or Bonn Convention, under the auspices of the United Nations Environment Program (UNEP). Its purpose is to contribute to the conservation of terrestrial, marine and avian migratory species throughout their ranges, and also considers measures for the conservation and sustainable management of their habitats. The CMS entered into force in 1983 and as of February 2008 it has 110 member nations, with 13 signatories from the Western Hemisphere.

The Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific (Lima Convention) came into force in 1986 and executes its mandate through the Permanent Commission for the South-East Pacific (CPPS). In addition to protocols to combat marine pollution and managed protected areas, it has developed specific regional action plans for marine turtles (2007) and marine mammals (1991). Chile, Peru, Ecuador, Colombia and Panama are the signatory Parties.



CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) sees to it that international trade in wildlife specimens, including many migratory species, does not constitute a threat to their survival. CITES entered into force in 1975 and has currently 172 member states.

The IATTC (the Inter-American Tropical Tuna Commission) is a specific agreement for organizing and conserving fisheries for tuna and other species captured by tuna boats in the Eastern Pacific Ocean. It was established as an

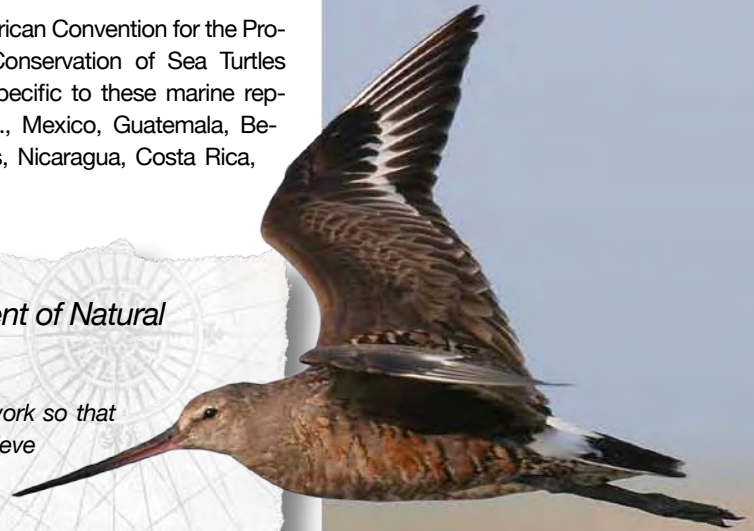
international convention in 1950 and Colombia, Costa Rica, Ecuador, El Salvador, Spain, the United States, France, Guatemala, Japan, Mexico, Nicaragua, Panama, Peru, Republic of Korea, Vanuatu and Venezuela are members. Belize, Canada, the Cook Islands, the European Union and China serve as cooperating fishing entities.

The Inter-American Convention for the Protection and Conservation of Sea Turtles (CIT IAC) is specific to these marine reptiles. The U.S., Mexico, Guatemala, Belize, Honduras, Nicaragua, Costa Rica,

### ***Conservation and Sustainable Management of Natural Resources in the Wider Caribbean***

*In 1986, the Cartagena Convention created a framework so that the nations of the Wider Caribbean Region could achieve a balance between development and the protection of the marine environment. With this objective, the contracting Parties, individually or jointly, adopt measures to prevent and control contamination and guarantee sound environmental management, including the preparation of protocols and agreements that promote enforcement of the Convention. The convention has been ratified by 23 member states of the United Nations in the Wider Caribbean Region.*

*Since 2000, the SPAW Protocol of that convention has been aiming to provide protection to wild animals and plants, including several migratory species, such as marine mammals, shorebirds and sea turtles. It also establishes exceptions for traditional subsistence and the cultural needs of local populations and also for scientific, educational or management purposes. The protocol protects fragile ecosystems and habitats in the Gulf of Mexico, the Caribbean Sea, and areas of the Atlantic Ocean adjacent to Florida. It also includes inland freshwater areas. To date, 16 Caribbean nations have signed on to the SPAW Protocol. The contracting Parties are: Barbados, Colombia, Cuba, Dominican Republic, France, The Netherlands, Panama, St. Lucia, St. Vincent and The Grenadines, Trinidad and Tobago, the United States and Venezuela.*



***The Hudsonian Godwit (*Limosa haemastica*) migrates from the sub-Arctic to the tip of South America, more than 15,000 kilometers away—and back. Few stopover sites or migration routes are known. Conservation actions include protecting nonbreeding sites in Chile and Argentina; defining annual migration routes; and abating threats on breeding grounds. Global climate change is of great concern to this species' future.***



Venezuela, Ecuador, Peru, Brasil and Uruguay are signatory states to the IAC. The convention entered into force in 2001 and has meanwhile issued resolutions towards the protection and conservation of leatherback and hawksbill turtles, as well as to address fisheries bycatch, among others.

One instrument for the sustainable management of marine and coastal resources of the Wider Caribbean is the Protocol Concerning Specially Protected Areas and Wildlife (SPA/W), which is part of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (better known as the Cartagena Convention). According to the United Nations Development Program, more than 70% of the 80 million inhabitants of the Wider Caribbean Region live in coastal areas and a large part of their economy depends on coastal resources for tourism and the fishing industry. The natural resources of the Caribbean are being reduced at an alarming rate – 35% of the fish resources are overexploited and 22% of the region's coral reefs have been lost, while others are

threatened by natural and anthropogenic causes. Although 300 protected areas have been established in the last 20 years, only around 30% of them have adequate management and protection.

The protection of habitats of migratory species is essential for their survival. The Ramsar Convention on Wetlands is an inter-governmental treaty adopted on 2 February 1971, which entered into force in 1975 and recognizes the value of wetlands, not only as habitat for waterbirds, but also as ecosystems of great importance for the conservation of biodiversity and the wellbeing of human communities, thanks to the environmental services and resources they offer. Its mission is the conservation and wise use of wetlands through local, regional, national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world. Currently the convention has 158 member states. As a result, more than 1,743 wetlands have been

designated as having international importance meriting protection, encompassing a surface area of 161,177,358 hectares. There are 284 Ramsar sites or wetlands of international importance on the American continent, consisting of 48 million hectares corresponding to 41% of the total area of Ramsar sites in the world.

## CONSERVATION CHALLENGES AND SOLUTIONS

Protecting migratory species is not easy due to the many threats they confront and their extensive geographic ranges. In addition to compliance with international agreements, local and regional initiatives must be developed to achieve their effective conservation.

Habitat destruction by human activities such as logging, deforestation, dredging, dumping and the advance



*Protecting migratory species also means protecting their habitats, which offer many benefits for human beings.*



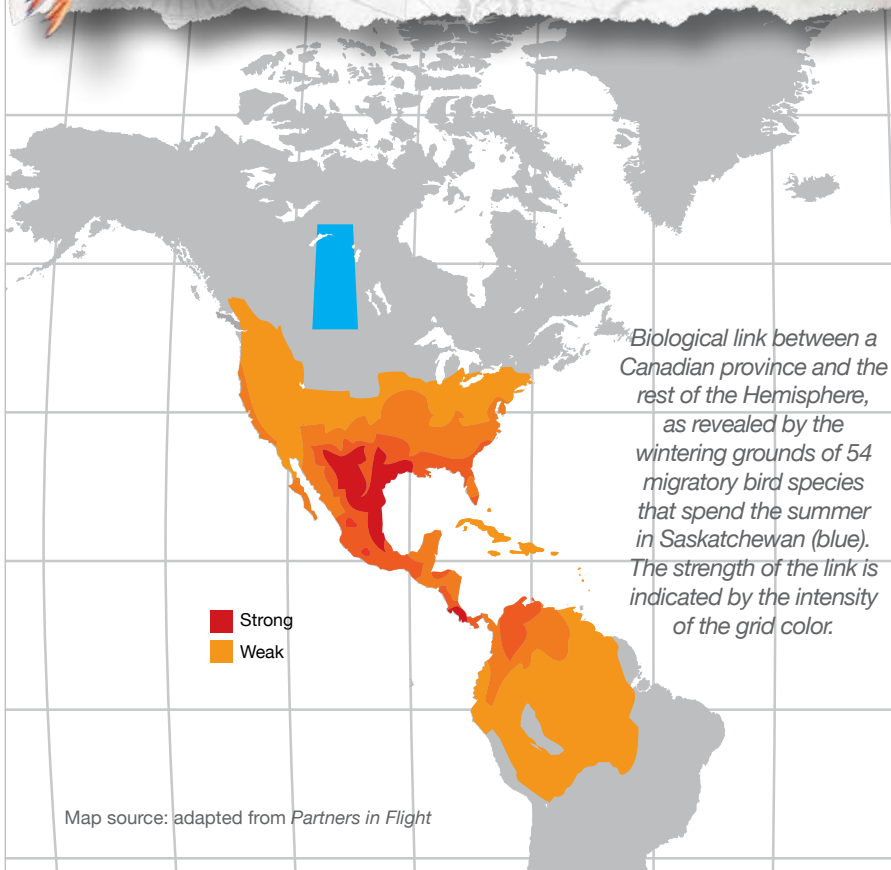
of the agricultural and urban frontier toward the interior and the coasts, has put many migratory species at risk. Since these animals do not recognize borders, joint initiatives among countries of the hemisphere are necessary.

Protected areas along migration routes are vital to ensuring resting and feeding sites for different species. There are various initiatives in the Western Hemisphere aimed to protect the habitat of migratory species in a comprehensive way. In order to specifically protect shorebirds and their habitats, for example, the Western Hemisphere Shorebird Reserve Network (WHSRN), launched in 1984 as a conservation strategy. During the last 20 years, more than 8 million hectares of shorebird habitat have been placed in a network of reserves. This has ensured healthy populations in key sites on the Americas through their migration flyways along the continent.

In 1990, the Partners in Flight initiative (PIF) was created for the Western Hemisphere, which aims to combine, coordinate and enhance resources and actions among public and private organizations in North and South America to achieve the conservation of birds of the hemisphere through a collaboration network. The initiative first focused on Neotropical migratory birds, (those that reproduce in North America and spend the winter in Central and South America), but now their work has been extended to other bird species and many organizations have become allies.

## *Multi-national Conservation of Birds in the Northern Andes*

A multi-national effort specifically aims to avoid degradation of migratory bird habitat in the northern Andes region, home to more than 100 species that travel through Central America every fall to spend eight months in the mountains that extend from Venezuela to northern Peru. The initiative is an alliance of conservation organizations from U.S., Ecuador, Colombia and Peru. Together, these organizations have developed a bird monitoring and conservation program and they manage around 70,000 acres in 20 natural reserves. They have more than 100 field personnel in the northern Andes. They also hold regional festivals that involve the three countries, environmental education activities with the communities near the reserves, and training workshops aimed at people in the fields of agronomy, tourism and biology.



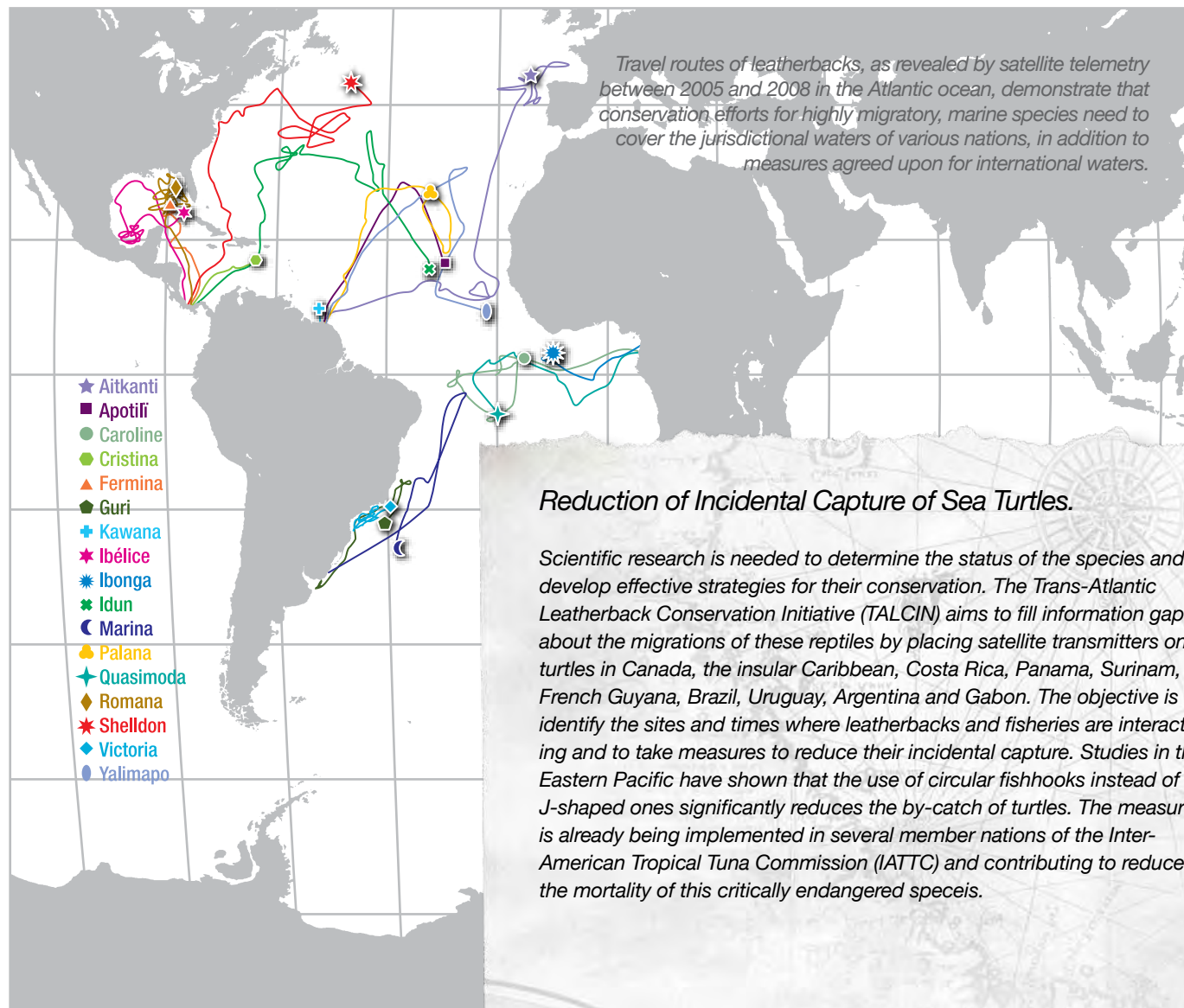


Climate change has become another threat to migratory species. It can affect migration cycles due to increases in temperature, rising sea levels, more frequent and intense extreme weather events such as storms and droughts, and the propagation of diseases, among others. While several habitats are being modified and displaced, some high mountain ecosystems may even be disappearing. To anticipate

these events in the sea, a Sea Turtle and Climate Change Program for Latin America and the Caribbean, promotes adaptation measures, tested in at least six sea turtle conservation sites in the region as a part of the management plans and development policies. Sea turtles are some of the species most vulnerable to climate change due to, among other reasons, alterations to their nesting beaches and feeding

grounds, which threaten their survival. The program also advocates for a worldwide reduction in emissions that would diminish the consequences of global warming.

With joint actions and shared resources and experience, we will be able to ensure that migratory species, with their ecological, social and economic benefits, remain with us now and in the future.







#### Acknowledgements:

Many governments, organizations and individuals are the driving force behind conservation efforts for migratory species in the Western Hemisphere. It is impossible to make explicit recognition of the work of each of them in this brief document. We would like nonetheless to thank some organizations who contributed directly to improving the contents of this booklet, either with project information, graphic material and/or with edits to the manuscript: American Bird Conservancy, Asociación Ecosistemas Andinos, Bat Conservation International, Caribbean Conservation Corporation, CI, CMS, Fundación Cethus, Fundación Jocotoco, Fundación ProAves, MANOMET, Mexico Nature Conservation Fund, PROMAR, Ramsar Secretariat, SPAW Secretariat, TAMAR Brazil, TELMEX foundation, Western Hemisphere Shorebird Reserve Network, Whale and Dolphin Conservation Society, USFWS and WWF.

For any questions about WHMSI, please contact Herb Raffaele, Chair of WHMSI's Interim Steering Committee, at [herb\\_raffaele@fws.gov](mailto:herb_raffaele@fws.gov) [www.whmsi.net](http://www.whmsi.net)

Published with the support of:



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**Concept and text:** Katiana Murillo, Soledad Prado, Marta Pesquero and Carlos Drews

**Design and layout:** Jeffrey Muñoz

**English translation:** Lucinda Taft

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#### Cite this document as:

Murillo K., Prado S., Pesquero M. y C. Drews 2008. *Migratory Species: Biological, cultural and economic assets of the Americas*. WHMSI, USFWS and WWF, San José, Costa Rica.

**ISBN: 978-9968-825-35-1**