IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 06 November 2014

Please note: this is an archived Conservation Outlook Assessment for Monarch Butterfly Biosphere Reserve. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Monarch Butterfly Biosphere Reserve

SITE INFORMATION

Country:
Mexico
Inscribed in: 2008
Criteria:
(vii)

Site description:
The 56,259 ha biosphere lies within rugged forested mountains about 100 km northwest of Mexico City. Every autumn, millions, perhaps a billion, butterflies from wide areas of North America return to the site and cluster on small areas of the forest reserve, colouring its trees orange and literally bending their branches under their collective weight. In the spring, these butterflies begin an 8 month migration that takes them all the way to Eastern Canada and back, during which time four successive generations are born and die. How they find their way back to their overwintering site remains a mystery. © UNESCO

SUMMARY

2014 Conservation Outlook

Critical

The conservation outlook for the property with respect to its outstanding natural phenomenon and flagship species is one of significant concern. While recent all time lows in wintering population sizes may have been aggravated by severe weather conditions, there are broader trends of loss and degradation of breeding habitat in the United States of America and Canada due to the expansion of industrial agriculture and land development associated loss of host plants. While some of these concerns require management responses at a scale beyond site and even national level, even the factors that can be influenced at site level are not fully under control. Challenges on location include illegal resource extraction, insufficiently regulated tourism and visitation and inadequate inter-institutional coordination. A team of authors behind a recent study concluded that the observable declines call into question the long-term survival of the monarchs' migratory phenomenon (Brower et al. 2012; Vidal et al. 2013). Clearly, a much stronger response is needed both locally and across the three range states, building upon encouraging existing efforts.

Current state and trend of VALUES

Critical
Trend: Deteriorating

While substantial progress has been achieved in reducing threats from logging and inappropriate tourism, threats in the summering habitats and along the migration corridors, as well as from inadequate coordination among the approximately 60 entities participating in management of the property are of high concern While recent all time lows in wintering population sizes may have been aggravated by severe weather conditions, there are broader trends of loss and degradation of wintering habitat, breeding habitat in the United States of America and Canada due to use of herbicides, expansion of industrial agriculture and land development associated loss of host plants. A team of authors behind a

recent study concluded that the observable declines call into question the long-term survival of the monarchs' migratory phenomenon (Brower et al. 2012; Vidal et al. 2013).

Overall THREATS

Very High Threat

The relatively small property consists of vulnerable and degraded fragments of once extensive montane conifer forests. Longstanding commercial logging into the recent past has transformed the landscape and illegal logging is still not fully under control. The combination of ongoing habitat loss and degradation, agricultural encroachment in the surroundings, insufficiently regulated and controlled tourism and visitation indicating capacity constraints and jointly amount to a very high degree of threat. Furthermore, there are concerns about the expected impacts of climate change and factors outside the property and beyond the control of management affecting the butterfly populations.
There are 3 primary threats to the monarch butterfly in its range in North America: deforestation and degradation of forest by illegal logging of overwintering sites in México; widespread reduction of breading habitat in the United States due to land-use changes and the decrease of this butterfly´s main larval food plant (common milkweed [Asclepias syriaca]) associated with the use of glyphosate herbicide to kill weeds growing in genetically engineered, herbicide-resistant crops; and periodic extreme weather conditions throughout its range during the year, such as severe cold or cold summer or winter temperatures. These threats combined are responsible for the dramatic decline over the last decade in the number of monarch butterflies in the hibernation colonies in México, which reached a 20-year low during the 2013-2014 season (Vidal et al. 2013).

Overall PROTECTION and MANAGEMENT

Some Concern

There are encouraging management efforts which have resulted in recent improvements regarding illegal logging. Mexican federal and state authorities are to be commended for the important enforcement, as well as financial (through payment for environmental services by the National Commission on Forests of SEMARNAT) efforts to protect the monarch reserve. Their efforts and the strategic, uninterrupted, decade-long financial support for generation of

alternative income and employment by committed Mexican and international philanthropists and businesses have dramatically reduced large-scale illegal logging in recent years. However, ongoing concerns include limited capacities to manage tourism and to support alternative livelihood options for local communities. Moreover, the forests in the buffer zones have been, and continue to be, degraded significantly by unsustainable forest exploitation, fires, grazing, and agricultural expansion, all of which would eventually play a key role in further degrading the already degraded and particularly vulnerable core zones. Inherent to any long-distance animal migration many critical challenges are beyond the control of site management and even the State Party and require consolidation of international cooperation.
The best conservation strategies to augment the capacity of the monarch butterfly to respond to unpredictable and changing climate-related conditions are to protect its habitat from direct human disturbances, such as illegal logging in México and habitat loss and degradation in the United States and Canada, and to restore its habitat in the 3 countries.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **The most dramatic known manifestation of the phenomenon of insect migration**
Criterion:(vii)

The overwintering concentration of the Monarch Butterfly in this serial property is the most dramatic known manifestation of long-distance insect migration and therefore recognized as a superlative natural phenomenon. Up to an estimated billion monarch butterflies return annually, from breeding areas in southern Canada and the United States, to land in close-packed clusters within 19 overwintering colonies in the montane oyamel fir forests of central Mexico. The property protects 14 of these colonies and an estimated 70% of the total hibernating population of the Monarch Butterfly's eastern population (SoOUV, 2008; Vidal et al. 2013).

Other important biodiversity values

▶ **Other international designations**

The Park lies within a Conservation International-designated Conservation Hotspot, a WWF Global 200 Eco-region, a BirdLife-designated Endemic Bird Area. The three components constitute the core zones of a UNESCO Biosphere Reserve (UNEP-WCMC, 2011).

Assessment information

Threats

Current Threats

Very High Threat

Current threats to the property’s OUV from large scale loss and degradation of forests, ongoing illegal small-scale logging, poorly managed tourism, challenges in terms of inter-institutional coordination and cooperation.

► Tourism/ visitors/ recreation

High Threat
Inside site
Outside site

The property is a major tourist attraction with a great potential for, local economic benefits, conservation financing and visitor education. The potential has not been fully realized and concerns about damage and disturbance caused by tourists persist. Tourists may also increase the risk of accidental fires. While progress has been achieved in managing tourism remaining constraints include insufficient specialized staff and capacity, inadequate visitor facilities and conclusive impact assessments (35com.Monarch.SPreport; Consultation form, 2012). Many communities benefit from monarch-associated tourism: 87,335 people visited (November to March) the different colonies in 2002-2003, 133,263 in 2003-2004, 126,896 in 2004-2005, 54,515 in 2011-2012 and 72,591 in 2012-2013 (Vidal et al. 2013).

► Logging/ Wood Harvesting

Very High Threat
Inside site
Outside site

From 2001 through 2013, 1254 hectares were deforested in the monarch

reserve, 934 ha were degraded, and 126 ha were affected by climatic conditions (Vidal et al 2013). Of the total 2195 ha of affected (deforested and degraded forest) area, 2066 ha were affected by illegal logging: 1507 ha by large-scale logging and 558 ha by small-scale logging. Mexican authorities effectively enforced efforts to protect the monarch reserve from illegal logging, particularly from 2007 to 2012. Those efforts, together with the decade-long financial support from Mexican and international philanthropists and businesses to create local alternative-income generation and employment, resulted in the decrease of large-scale illegal logging from 731 ha affected in 2005-2007 to 9 ha affected in 2013, although small-scale logging is of growing concern (Vidal et al. 2013)

► Livestock Farming / Grazing

High Threat
Inside site
Outside site

Agricultural use continues to threaten the property in multiple ways. Agricultural encroachment in the buffer zones reduces the extent of available forest habitat required by the butterfly colonies. Grazing and associated intentional burning increases the risk of forest fires. Furthermore, water diversion for agriculture is reported to be a concern (Brower, 2013; UNEP/WCMC, 2011). The situation is complicated due to the tenure arrangements which include land rights within the property. The forests in the buffer zones have been, and continue to be, degraded significantly by unsustainable forest exploitation, fires, grazing, and agricultural expansion, all of which would eventually play a key role in further degrading the already degraded and particularly vulnerable core zones (Vidal et al. 2013)

► Habitat Shifting/ Alteration

High Threat

Climate change is already affecting the property, but also the butterfly habitat across the US and Canada. In combination with the effects of longstanding commercial logging and illegal logging droughts and increased temperatures have contributed to insect infestations while severe storms have toppled trees; and provoked landslides, floods, erosion, and sedimentation of water courses (35COM.SPreport; Caranza Sánchez, 2010). From 2001 to 2013, floods, strong winds, and fire affected 125 hectares in

the core zone (Vidal et al. 2013)

Potential Threats

Very High Threat

It is important to understand that factors beyond the control of site management and even directly the State Party can fundamentally influence the key natural phenomenon making the site so exceptional. The Monarch Butterfly is susceptible to habitat change, climate change and agrochemicals throughout its range, including migration corridors.

► Other

Very High Threat

It is important to understand that factors beyond the control of site management and even directly the State Party can fundamentally influence the key natural phenomenon making the site so exceptional. The Monarch Butterfly is susceptible to habitat change, climate change and agrochemicals throughout its range, including migration corridors.

► Mining/ Quarrying

High Threat

There have been several attempts (April 2005, May 2007, and more recently in November 2013) by the mining company Industrial Minera Mexico (“Proyecto Angangueo”) to re-activate the exploitation of copper, zinc, silver and gold.

Protection and management

Assessing Protection and Management

► Education and interpretation programs

Some Concern

A large number of projects have been undertaken related to environmental education for local communities. Guide training has been an important

component (35COM.Monarch.SPreport; Consultation Form, 2012).

▶ Relationships with local people

Some Concern

Almost all of the property is located on communal lands or private property. Conservation and management programs must be implemented through cooperative activities with the landowners. Considerable efforts have been underway to promote alternative livelihood projects, environmental education and training, compensation schemes for conservation, reforestation, and voluntary surveillance to halt illegal logging (35COM.Monarch.SPreport). Conflicts remain in terms of the use of the "ejido" lands within the property. Given widespread rural poverty, incentives to log and collect firewood remain high. There are also concerns about benefit-sharing in the realm of tourism.

▶ Legal framework and enforcement

Some Concern

Building upon earlier national designations, in 2000, the "Reserva de la Biosfera Mariposa Monarca" was established and in 2007 the same area was formally designated as a biosphere reserve under UNESCO's Man and the Biosphere (MAB) Programme. In 2008, the cores zones of the biosphere reserve were inscribed as a World Heritage property. Law enforcement, especially with respect to illegal logging, has been an on-going challenge and has included the Army, Federal Environmental Police, State Police of Michoacán and Mexico, and local communities (UNEP?WCMC, 2011; 35COM.SPreport). Of 19 butterfly colonies reported to date, 14 are in the federal Reserve and thus protected, 3 are in a protected area in Estado de Mexico, and 2 are in Michoacán state and not protected

▶ Integration into regional and national planning systems

Some Concern

An Advisory Council, made up of 21 representatives of rural cooperatives, communities and NGOs, has been established to assist CONANP in implementing the Management Program and Annual Operational Plans. At a broader scale, a Regional Committee has been established to integrate the efforts of the States of Michoacán and México and 27 municipalities in

developing and implementing a regional land use plan. The work of the Advisory Council and Regional Committee was originally complemented by Annual Regional Fora, which include all interested stakeholders and serve to share information, coordinate activities, and inform Annual Operational Plans. However, at the time of evaluation no Regional Fora had been undertaken in the previous years (IUCN, 2008).

► Management system

Some Concern

The Monarch Butterfly Biosphere Reserve is managed by CONANP assisted by 46 federal and state agencies. In addition, 13 NGOs and academic institutions and the Monarch Butterfly Trust Fund provide inputs to management. Management is guided by a Management Program, a general document that lays out policies on sustainable development, wildlife management, public use, scientific research and monitoring, operations and law enforcement, rather than specific prescriptions for management. The document forms the basis for the Annual Operational Plans that are used to guide the day-to-day management activities of the many organizations involved (IUCN, 2008; 325COM.Monarch.SPreport; 35COM.Monarch.SOC).

► Management effectiveness

Data Deficient

Overall data on management effectiveness is not available, but the increasingly successful response to illegal logging serves as an indicator of recent enhancements in terms of management effectiveness (35COM.Monarch.SPreport; Brower, 2010)

► Implementation of Committee decisions and recommendations

Some Concern

As recently as 2010, a World Heritage Committee decision (34COM 7B.35) had noted with concern ongoing illegal logging within the property triggering a reactive monitoring mission. The subsequent Committee decision in 2011 (35COM 7B.32) requested the State Party to implement the recommendations of the above mentioned reactive monitoring mission. The focus of the implementation is on benefit-sharing with communities and

tourism (35COM.Monarch.SPreport; 35COM.Monarch.SOC).

► Boundaries

Some Concern

The property's boundaries are defined by Presidential Decree declaring a biosphere reserve at the national level in 2000. The three defined core zones of the biosphere reserve constitute the property while the two buffer zones of the biosphere reserve also serve as the buffer zones of the property. Jointly, the core zones cover 14 of the historically-recorded overwintering colonies of the eastern population of the Monarch Butterfly. The remaining populations hibernate outside the property where some colonies have been lost altogether (Brower, 2013; Vidal et al. 2013). While the boundaries of the property are adequate for the protection of 70% of the overwintering population of the monarch butterfly, the overwintering colonies outside the property should be considered as a serial extension in the future (IUCN, 2008). The boundaries of the small core zones of the biosphere reserve are not demarcated on the ground. This represents a significant problem for the protection and management of the core zones.

► Sustainable finance

Some Concern

Financing has been provided by several federal, state and international sources from governments, private sector, philanthropists and civil society. While the diverse funding sources are positive, challenges exist in terms of inter-institutional coordination. The Monarch Butterfly Fund (MBF) serves as a focal point for establishing a long term endowment which has been supported by the federal and state governments, civil society (international and national), and individual donors (35COM.Monarch.SPreport).

► Staff training and development

Some Concern

Several programs have contributed to staff training and development, but given the around 60 entities of federal and state government institutions, and civil society organizations that are involved in management), the training and development of staff remains a considerable challenge. This holds true in particular as regards specialized capacities for tourism and visitor

management (IUCN, 2008; 35COM.Monarch.SPreport).

▶ Sustainable use

Some Concern

Significant funding has been provided to work with local and indigenous communities in the core and buffer zones of the biosphere reserve to develop a wide range of activities as alternatives to logging of the core zones, i.e. the property (35COM.Monarch.SPreport).

▶ Tourism and interpretation

Some Concern

While coherent visitor programs and infrastructure are being developed and implemented, there is still a general lack of information available for visitors with respect to the basic natural history of butterflies and their environment, and appropriate behavior while approaching and viewing the butterfly colonies. It is of concern that the impacts of visitors on butterfly behavior are not fully understood and considered. The tourism season begins before colonies have had a chance to settle down in their selected hibernation areas and visitor movements can disturb them easily. While guide training programs are in place, there is no certification program and insufficient personnel are available to adequately manage and control tourism (35COM.Monarch.SPreport; Consultation form, 2012).

▶ Monitoring

Mostly Effective

Forest cover, forest condition, and monarch butterfly colonies are monitored on a regular basis by CONANP, WWF, jointly with scientists (IUCN Evaluation, 2008; 35COM.Monarch.SPreport; Caranza Sánchez, 2010).

▶ Research

Mostly Effective

The overwintering sites were a scientific mystery until 1975 when, after decades of butterfly tagging a site was last found on Cerro Pelón. Many studies have ensued, from North American universities. The nomination bibliography lists 120 papers and books on the subject. The butterfly species

has prompted research into migration ecology, pest suppression, geo-magnetism and other factors influencing orientation, and their use as environmental indicators over its migration range (UNEP/WCMC, 2011). However, it is of concern that the impacts of visitors on butterfly behavior continue to be poorly understood.

Overall assessment of protection and management

Some Concern

There are encouraging management efforts which have resulted in recent improvements regarding illegal logging. Mexican federal and state authorities are to be commended for the important enforcement, as well as financial (through payment for environmental services by the National Commission on Forests of SEMARNAT) efforts to protect the monarch reserve. Their efforts and the strategic, uninterrupted, decade-long financial support for generation of alternative income and employment by committed Mexican and international philanthropists and businesses have dramatically reduced large-scale illegal logging in recent years. However, ongoing concerns include limited capacities to manage tourism and to support alternative livelihood options for local communities. Moreover, the forests in the buffer zones have been, and continue to be, degraded significantly by unsustainable forest exploitation, fires, grazing, and agricultural expansion, all of which would eventually play a key role in further degrading the already degraded and particularly vulnerable core zones.
Inherent to any long-distance animal migration many critical challenges are beyond the control of site management and even the State Party and require consolidation of international cooperation.
The best conservation strategies to augment the capacity of the monarch butterfly to respond to unpredictable and changing climate-related conditions are to protect its habitat from direct human disturbances, such as illegal logging in México and habitat loss and degradation in the United States and Canada, and to restore its habitat in the 3 countries.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

Most threats originate outside the property. Of these, many can still be

considered local challenges, and these have been the focus of most protection and management activities. Other challenges (threats) originate elsewhere, including beyond national borders.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **The most dramatic known manifestation of the phenomenon of insect migration**

Critical
Trend:Deteriorating

While substantial progress has been achieved in reducing threats from logging and inappropriate tourism, threats in the summering habitats and along the migration corridors, as well as from inadequate coordination among the approximately 60 entities participating in management of the property are of high concern While recent all time lows in wintering population sizes may have been aggravated by severe weather conditions, there are broader trends of loss and degradation of wintering habitat, breeding habitat in the United States of America and Canada due to the use of herbicides, expansion of industrial agriculture and land development associated loss of host plants. (35COM.Monarch.SPreport; Brower, 2012; Consultation form, 2012). A team of authors behind a recent study concluded that the observable declines call into question the long-term survival of the monarchs' migratory phenomenon (Brower et al. 2012; Vidal et al. 2013).

Other important biodiversity values

▶ **Other international designations**

The Park lies within a Conservation International-designated Conservation Hotspot, a WWF Global 200 Eco-region, a BirdLife-designated Endemic Bird Area. The three components constitute the core zones of a UNESCO Biosphere Reserve (UNEP-WCMC, 2011).

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Critical

Trend: Deteriorating

While substantial progress has been achieved in reducing threats from logging and inappropriate tourism, threats in the summering habitats and along the migration corridors, as well as from inadequate coordination among the approximately 60 entities participating in management of the property are of high concern While recent all time lows in wintering population sizes may have been aggravated by severe weather conditions, there are broader trends of loss and degradation of wintering habitat, breeding habitat in the United States of America and Canada due to use of herbicides, expansion of industrial agriculture and land development associated loss of host plants. A team of authors behind a recent study concluded that the observable declines call into question the long-term survival of the monarchs' migratory phenomenon (Brower et al. 2012; Vidal et al. 2013).

► Assessment of the current state and trend of other important biodiversity values

Critical

Trend: Deteriorating

The values associated with the other international designations refer to the biodiversity in the whole of the biosphere reserve, including buffer as well as core zones. The threats to the biodiversity values include, in addition to those identified for the core zones (i.e. the property), growing human populations, high levels of unemployment, poverty, low levels of education and lack of security (Consultation form, 2012).

Additional information

Key conservation issues

▶ Illegal logging

Local

Sustained law enforcement efforts by a combination of the Army, Federal Environmental Police, State Police, and local communities have finally drastically reduced large-scale illegal logging, although small-scale (tala homiga) logging is of growing concern. However, given the widespread local poverty and unemployment and well-documented challenged in law enforcement, the threat has not disappeared (35COM.SPreport)
The best conservation strategies to augment the capacity of the monarch butterfly to respond to unpredictable and changing climate-related conditions are to protect its habitat from direct human disturbances, such as illegal logging in México and habitat loss and degradation in the United States and Canada, and to restore its habitat in the 3 countries. A strategy needs to be devised and implemented as a matter of urgency to address the socioeconomic and environmental problems and opportunities of both the monarch reserve and the region as a whole.

▶ Inappropriate tourism and visitation

Local

Though progress has been achieved in controlling and guiding tourism so that it causes less damage to butterfly colonies and their surrounding environment, four major constraints remain: (1) CONANP has only one person assigned to the tourism program, and this is clearly insufficient to provide the leadership, coordination, and oversight that is required. (2) Though planned, no visitor centers have yet been built to inform and orient visitors before they enter the Reserve. (3) While guides are offered the opportunity to attend training courses, there is no certification program for guides. This results in varying levels of knowledge and aptitude. (4) A definitive study on the effect of tourism on the butterfly colonies is needed to inform management decisions

(35com.Monarch.SPreport; Consultation form, 2012).

► Climate change

Local

Climate change is already affecting the property. Droughts have led to bark beetle infestations while severe storms have toppled trees; and provoked landslides, floods, erosion, and sedimentation of water courses (35COM.Monarca.SPreport; Caranza Sánchez, 2010; Brower, 2010; Vidal et al. 2013).

► Long-distance migration

Local

Although the concentrated nature of monarch use of wintering habitat makes it easy to quantify the loss of this habitat, it is important to remember that the majority of monarchs that winter in México depend on habitat in the United States and Canada for breeding and migrating. Concomitant with overwintering habitat loss, there have been large losses of breeding and migrating habitat. The direct relation between the loss of milkweed host plants in agricultural areas in the United States and the number of monarchs wintering in México was recently documented by Pleasants and Oberhauser (2012). Thus, it is important that citizens; local, state, and federal government agencies; nonprofit organizations; and private donors in the United States and Canada restore and protect habitat within their own territories (Vidal et al. 2013).
As any other animal migration the reliance on different seasonal ranges and migration corridors adds to the vulnerability of the species. In the case of butterflies, the intensification of agriculture and associated use of chemicals are considered critical issues for the longer term survival of the migration phenomenon.

Benefits

Understanding Benefits

► Is the protected area valued for its nature conservation?

The aggregation is an inspiring phenomenon appealing to the wider public in

the three countries and around the world.

▶ **Importance for research**

The numerous studies on the species and its migration have provided scientific insights into several fields, such as plant-animal interactions, migration ecology, including but not limited to orientation.

▶ **Outdoor recreation and tourism**

Visitation to the site is significant and growing, and is important as an additional source of income for local communities. Visitation to the site also benefits the regional and national tourism industry though its importance is relatively small compared to other tourism attractions.

▶ **Water provision (importance for water quantity and quality)**

The protection of watersheds upstream of communities and dams in the buffer zones is an important benefit, especially in the face of climate change (Caranza Sanchez, 2010).

Summary of benefits

The property provides major benefits through the conservation of a spectacular natural phenomenon, as a major touristic and scientific resource, and through watershed protection which is of importance to communities in the buffer zones of the property. Scientific importance

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects

1	Alliance WWF-Telcel and Alliance WWF-Carlos Slim Foundation WWF & Fondo Mexicano para la Conservación de la Naturaleza, A.C. (FMCN) WBF, Biocenosis	Supporting since 2003 numerous sustainable development projects on communal tree nurseries, reforestation, eco-tourism, communal local surveillance, making and selling of handicrafts, etc., as well as monitoring of forest cover and monarch butterfly colonies. Monarch Butterfly Trust Fund Training of guides; training of environmental education teachers.
2	MBF, CONAFOR	Payments to landowners as compensation for conservation of private lands within the property; and reforestation.
3	Fondo Mexicano para la Conservación de la Naturaleza, A.C. (FMCN)	Restoration of landslide and erosion areas.
4	FONATUR	Improvement of tourism infrastructure in the buffer zone of the biosphere reserve.
5	CONANP/ PROCODES, PET	Sustainable tourism program, which supports the development of infrastructure and training of local communities inside the property.
6	Commission for Environmental Cooperation of North America (CEC; U.S.A, Canada, and Mexico)	Development and implementation of the North American Monarch Conservation Plan with a focus on (1) prevention of threats, mitigation, and control; (2) innovative cooperative agreements; (3) research, monitoring, evaluation and development of reports; and (4) education, training, and capacity building.
7	PROFEPA, MBF, PROCODES	Development of voluntary surveillance brigades to halt illegal deforestation.
8	MBF, Aztec Movement	Alternative livelihoods for communities in the Monarch Butterfly Biosphere Reserve.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	Consolidation of Forest Restoration	The stunning rate of historic forest loss raises the question of reforestation and/or promotion of natural regeneration. The experience with reforestation is mixed and conventional efforts have often been met with limited success. Methods are needed to promote cheap and effective natural regeneration.	

№	Site need title	Brief description of potential site needs	Support needed for following years
2	Extension of the World Heritage property	The size of the property is small and it appears that the important additional wintering colonies of the Monarch Butterfly are highly vulnerable. Efforts to add the remaining wintering sites as components of an enlarged serial site deserve to be considered.	
3	Consolidating coordination and cooperation across the three range countries	Building upon existing agreements and cooperation, the consolidation of coordinated international efforts across North America is of critical importance.	

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