MONARCH BUTTERFLY FUND
Conserving the Migration

Monarch Butterfly Fund
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monarchconservation.org

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Inside this issue:

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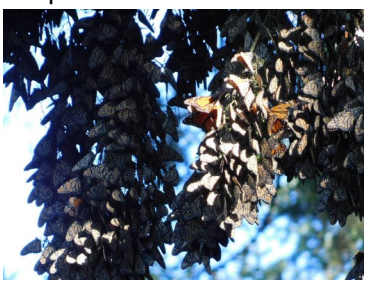
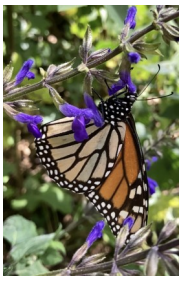
A Different Tourist Season at the Monarch Reserve

November 10th was a very special day at the Monarch Butterfly Biosphere Reserve (MBBR). The year 2020 celebrates the twentieth anniversary of the expansion of the MBBR to 56,259 hectares and the establishment of an innovative conservation plan (the Monarch Butterfly Conservation Fund, also known as the Monarch Fund) to pay local communities for environmental services provided by the forests where the monarchs overwinter. This was the culmination of efforts from government authorities, communities, and non-profits. At that time, MBF had not yet been established, but several of our board members and collaborators actively participated and supported this initiative. More details on how this new Reserve and payment mechanism were established can be found at https://tinyurl.com/y3w3agj5. There is also an article on page two of this newsletter describing a documentary currently being developed to commemorate the Fund. While a festive celebration of this event has been postponed due to the COVID-19 pandemic, activities at the Reserve continued with some accommodations for everyone's safety.

Monarchs started to arrive in late October and were seen in large groups flying around the sanctuaries and feeding in neighboring agricultural fields. By mid-November colonies were already established, and on the last weekend of November, Sierra Chincua and El Rosario sanctuaries were opened to tourism. Unfortunately, Cerro Pelón and La Mesa will not open this season.



Cluster of monarchs at C. Morales



Monarch nectaring at C. Pelón

Monarchs bask on clear, sunny day at S. Chincua

Photos: Isabel Ramírez

Fewer tourists are expected this season and activities will be more organized. Throughout October, personnel from the Health and Tourism Ministries, along with the Reserve's Directorship, trained the different groups that guide visitors to avoid spreading COVID-19. In addition to the general health regulations (mask-wearing, hand-sanitizing and physical distancing), this year small children and the elderly will not be allowed to enter. Large groups and buses will only be allowed access with an appointment and during the week. Weekends will be reserved for small groups and families.

MBF and all the partners whose research and conservation activities we support will be observing how this overwintering season develops and the impact a reduced number of tourists will have on the monarchs.

Alternare Plants More Than 21,000 Trees in 2020!

With support from MBF, Alternare worked with nine indigenous communities to reforest 23.6 hectares with 21,040 pines, oaks, birches, oyamels and ash trees in the MBBR's buffer zone! Around 500 women, men and children participated, averaging 25 people per reforestation effort due to the physical distancing requirements necessary to comply with the COVID-19 pandemic restrictions. The seedlings were grown and maintained in 21 school nurseries and others were raised in seven community nurseries. Most tree nurseries were maintained by the teachers and Alternare's team due to school closures for the pandemic. A map of the reforestation is on the habitat conservation page of our website at https://tinyurl.com/y6edrzhp.

More Than 21,000 Trees, *cont.*

Our ongoing monitoring strategy to evaluate survival rates in our reforestations has shown good results. Three evaluations of the reforestations during 2010-2014, 2015-2017 and 2018 were carried out. Survival rates for the three periods were 77.41%, 85% and 70.8% respectively. Survival rates have been quite steady but were lower in 2018 due to that year's drought conditions.

Photos: Alternare

Children from José María Morelos Elementary School planting trees

Awards Among Alternare's 2020 Achievements

Photos: Alternare

Food preparation with vegetables workshop

Despite the challenges of the COVID-19 pandemic, Alternare was able to conduct 41 conservation workshops! Topics included the production of organic fertilizer, vegetables, and forest trees, as well as solid waste management and the construction of fuel-efficient stoves, cisterns, and dry latrines. A total of 277 women and 36 men participated building 11 rainwater capturing cisterns, 12 fuel-efficient stoves and five latrines in 11 ejidos and six indigenous communities.

Additionally, 14 environmental education sessions about the importance of the monarch butterfly, taking care of the forest, soil, and water, were held in schools that Alternare worked with before they closed due to the pandemic.

Last, but not least, during this year, Alternare was awarded three prizes from Fundación Compartir, Fundación Luis Elizondo and the Interamerican Development Bank to acknowledge their excellent work and the extraordinary achievement for conservation and sustainable development in and near the Monarch Reserve. You can also be part of this successful partnership by supporting Alternare through MBF's GlobalGiving page at https://tinyurl.com/nlc7a9n.

Natural Resource Analyses Workshop

Food preparation with vegetables workshop

Photos: Alternare

Organic fertilizer production workshop

Monarch Fund Documentary

Photo: Ambiente Cielo Rojo

Interviewing authorities fom Ejido Rincón de Soto

Established in Mexico in the year 2000 by several non-profits with private funds and donations from the Mexican federal and state governments, the Monarch Fund for the Conservation of the Monarch Butterfly, has been successfully operating with the support of local communities who own the forest. This year, the Fund is celebrating 20 years of work in the Monarch Butterfly Biosphere Reserve (MBBR), conserving the forest and supporting environmental services in the core zone of the protected area.

With funding from MBF, Fondo Mexicano para la Conservación de la Naturales (FMCN), and the U.S. Forest Service, a documentary titled "Monarch Fund: 20 Years of Synergy for Conservation" was begun. The documentary will show the how the Monarch Fund was established through interviews with the people involved in its development and those who currently operate it. In addition to providing a historical perspective, the film recognizes the effort and commitment shown by the government authorities, non-profits and communities that own the forests. These diverse groups are working together to establish a permanent conservation mechanism - giving payments for environmental services, thus decreasing illegal logging and increasing forest cover in the MBBR's core zone. MBF is looking forward to the finished documentary and will share with all of you when it is done!

Monitoring Restoration of Illegally Logged Area

In 2015, 10 hectares in Sierra Chincua were illegally logged and MBF funded the construction of a fence to protect the area from cattle grazing. Additionally, a severe winter storm hit the area in March 2016 and through a collaborative effort (academics, government agencies, the MBBR staff and neighboring ejidos of the affected site) a restoration plan was defined and implemented. The plan included maintaining the area fenced, aligning woody debris to retain soil, reforestation (active restoration) and leaving some areas to regenerate naturally (passive restoration). Since then, both restoration processes have been continuously monitored. As part of the task force that is implementing this plan, Dr. José Arnulfo Blanco García is studying the restoration process on the 10 -hectare site and will continue to do so with funding from MBF.

Photo: Sinai Avalos Montes

Barbed wired fencing being placed

Dr. Blanco García and his students made three field visits to quantify the fence damage, determine the presence of seedlings as an indicator of natural regeneration (passive restoration) and to setup a seed-scattering experiment. With support from the Monarch Butterfly Biosphere Reserve's's staff and people from Ejido Hervidero, approximately 250 meters of barbed wire were replaced.

Most importantly they noticed that natural regeneration by dominant tree species in the adjacent forest is absent. After five years no oyamel, pine or other species have successfully established on the 26 parcels that have been monitored since 2016 in the logged area. Fortunately, the areas that were reforested (active regeneration) in that year have had good survival rates. Finally, 64 seed traps were established at different distances and directions to try to find seed dispersal patterns to determine possible reasons why seedlings are absent.

Scientific research will help MBF determine the best conservation practices for the present and future

Photos: Cecilia Manuto Mendoza

Seed traps being placed at various locations by Dr. Blanco García team

This site will serve as an excellent place to determine whether reforestation or natural regeneration or a combination of both is more effective. The results of this monitoring will help guide MBF, the MBBR and the communities support an improved forest conservation strategy.

Monitoring Monarchs in the West

This year, a new and exciting initiative came our way to support a monitoring project in Baja California! Not much is known about the monarch migratory route along the coasts of California and Baja California. However, in 2016, the Northwest Monitoring Network was established to learn more about the western migration. Terra Peninsular, a conservation organization that works in the Baja California peninsula, is going to engage communities through virtual workshops (due to COVID-19) to join the monitoring efforts. They will select sites where monarchs are present and count butterflies as they fly by in intervals following the National Monarch Butterfly Monitoring Network protocols. We are pleased to support this study of monarchs in northwestern Mexico which opens up a new part of the understanding the monarch migration.

Photo: Gonzalo de León

Monarch nectatring in Baja California

Photo: Saúl Ruiz

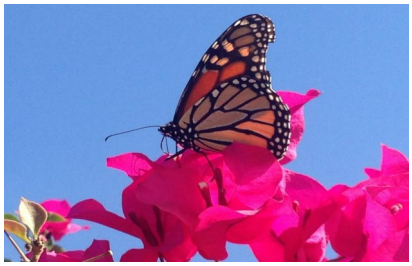


Photo: Fabian Dávila

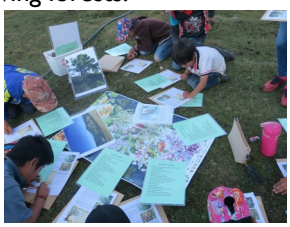
Monarchs in Baja California

Lincoln P. Brower Award

Thanks to your support this year we granted the Lincoln P. Brower Award to two deserving students. Both of them are researching important issues related to monarchs and their habitats, thus continuing Lincoln's legacy for learning and conservation. A description of their projects follows on the next page.

Beyond the Mexico Book Project

The Environmental Alliance of Georgia (EEA) is making progress with their book project with the help of Journey North's Estela Romero. With the pandemic, schools remain closed, but once a week or every other week, teachers meet with students at the school to collect homework, exams, and answer questions. Taking advantage of this opportunity, Estela is making plans to deliver her lessons to students and meet with small groups in open areas in the communities. Teachers and parents from Sierra Chincua, El Rosario, and Macheros (near Cerro Pelon) enthusiastically received Estela. At the writing of this newsletter, she has already begun her lessons. She is writing about her experiences on her Journey North blog at https://symbolicmigration.org/. MBF provided the funds to purchase the materials for the lessons, which cover topics such as the benefits of trees and the importance of conserving forests.



Photos: Estela Romero

Books purchased with MBF Funds

Photo: Estela Romero

Children happy with the new books!

Monarch Network

Red Monarca (Monarch Network - www.redmonarca.org) continues updating its digital platforms, including the Geographic Information System and the Documentation Center. MBF is an active partner and supporter of this work. Activities, maps, scientific papers, and student theses have been uploaded, including the latest information from all the network's partners.

One of these partners, Ambiente Cielo Rojo, continues working on the network's audiovisual communication project. During the past year, they have been working on a documentary titled "Maize Guardians: A Struggle for Food Security" which will be broadcast to the general public as well as local farmers, who are the major players in the conservation of the region's natural heritage.

The documentary is expected to be completed by Spring of 2021. By promoting, motivating, and highlighting the importance of the work of farmers in maintaining the production of Creole maize, it will contribute to the conservation of Creole maize and the "milpa"-crop growing system used in Mexico. As part of this project five video capsules (in Spanish with English subtitles) have been developed and can be viewed at https://redmonarca.org/capsulas_cielorojo/.

Assisted Migration – Thinking of the Future

Dr. Cuauhtémoc Sáenz-Romero, his colleagues and students continue their MBF-funded experiments of reciprocal transplants of oyamel (*Abies religiosa*) seedlings at contrasting altitudes. Having found that when seeds are transferred to warmer sites, oyamel tree mortality is higher, they are continuing their research through experiments geared towards gaining more information that will scientifically support establishing altitudinal limits for monarch butterfly overwintering sites in the future. In the coming year, they will continue with the assisted migration and field and common garden transplant experiments to see what effect obtaining oyamel seedlings from different origins and planting them at different altitudes makes. Additionally, experiments on whether seedling survival and growth is best under shade will help improve reforestation. The overall goal is to help optimize reforestation strategies as well as determine the viability of assisted migration to compensate for climate change, with the goal of establishing human assisted monarch butterfly overwintering sites for climate change scenarios in 2060 or 2090.

Photos: Cuauhtémoc Sáenz's lab

High altitude (3400 m) at Llano Grande Intermediate altitude (3000 m) at La Mesa Low altitude (2600m) at Tlalpujahua

Common garden tests of seedlings planted at different altitudes

Lincoln P. Brower Award, *cont.*

Identifying Critical Nectaring Sites for Migrating Monarchs

Libesha Anparasan, a graduate student at the University of Western Ontario, is investigating the source and allocation patterns of essential and nonessential fatty acids in reproductive and migratory monarchs using fatty acid assays and compound-specific isotopic analysis. Surpassing the COVID-19 challenges of summer, she has reared a series of experimental cohorts raised on different diets and will begin fatty acid extraction for analysis in the near future. Her findings will aid in determining the environmental source of critical nutrients obtained at the larval and adult (migratory) stages in the life of migratory monarchs. This knowledge could then be used to aid in conservation of monarchs by better identifying nutritional needs throughout the annual cycle.

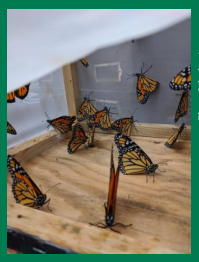


Photo: Libesha Anparasan

Sample of monarchs a few hours after emergence before being grouped into diet treatments.

Capacity of Milkweed in Arizona and the Arid West to Support Monarch Populations

Natalie Melnikoff, graduate student from Arizona State University and Desert Botanical Garden is exploring how western milkweed species will support monarch butterflies under warmer and drier future climate conditions. She is in the process of constructing a milkweed common garden with four Arizona milkweed species where milkweed physiological responses, reproductive performance, and defense traits will be evaluated. Since monarchs tagged in Arizona have been found in Mexico and California her work can help us learn valuable information for future restoration.

Photo: Steve Blackwell Desert Botanical Garden

Natalie tilling the common garden plot

More Monarch News

MBF is supporting the Monarch Joint Venture (MJV), Journey North and monarch research at the University of Michigan. Due to the COVID-19 pandemic, this year the MJV annual meeting was cancelled but you can review their activities at (https://tinyurl.com/y3h5wo43). Journey North's program continues, and they are working with the Environmental Education Alliance of Georgia. Their websites are https://journeynorth.org/ and https://www.eealliance.org/ respectively.

The University of Michigan's research group continues to make good progress on developing a tag to track migrating monarchs, and soon they will be testing their tags on live monarchs. Information about their project is available at https://tinyurl.com/y3r7tg33.

MBF Zoom Webinar - Monarchs in Mexico: People Care!

Join us on January 27, 2021 at 06:30 PM Central Time (US and Canada) for "Monarchs in Mexico: People Care!" an exciting MBF webinar on Zoom! Find out how the overwintering monarch colonies are doing, how the population is measured every winter and how we support community development projects. MBF board members Dr. Isabel Ramírez and Dr. Alfonso Alonso will tell us all about the monarchs in Mexico and how the big count of monarchs is done every year! The presentation will include an update about MBF's support for local communities given by our partner, M.S. Guadalupe del Río, President of Alternare. To reserve a space please click on the following link: https://uwmadison.zoom.us/webinar/register/WN_KEmmS0c7SSaf3syrhTCz_g

Receive the Newsletter Online!

The physical isolation we are all experiencing with the COVID-19 pandemic has made us realize how important digital technology has become. Printed media is increasingly turning digital as we all turn to our computers and smart phones to stay connected and informed. In that venue and to decrease or ecological footprint, MBF is heading in that direction and would like to eventually phase out the printed version of our newsletter. If you would like to start receiving an electronic version please write your email address in the form on the last page of this newsletter or send an email to oyamel@yahoo.com with the words "PLEASE SIGN ME UP TO RECEIVE DIGITAL NEWSLETTER" on the subject line and we will add you to our subscriber list. Once you sign up, you will stop receiving the printed version. Thanks for helping us reduce our environmental impact!

globalgiving

Another option to support MBF's community projects in Mexico is to donate through GlobalGiving. Thanks to your generosity we are still part of this global community that helps raise funds for meaningful causes. GlobalGiving has visited our project in Mexico ,verifying and vetting the site and we are among their top-ranked organizations! MBF currently ranks 857 out of 6,935 organizations!

http://www.globalgiving.org/projects/reforestation-monarch-butterfly-conservation-mexico/

GlobalGiving is an online fundraising platform that gives social entrepreneurs and nonprofits from anywhere in the world a chance to raise the money they need to improve their communities. Since 2002, GlobalGiving has raised $531 million dollars from 1,023,997 people like you who have supported 28,330 projects in 170 countries.

Healthy Ecosystems and Sustainable Communities to Preserve the Monarch Butterfly Migration

MONARCH BUTTERFLY FUND
Conserving the Migration

MBF Mission: To foster the conservation of North American monarch butterflies and their migration through habitat restoration, research, monitoring, education, and support for sustainable community development in and near the monarch overwintering areas in México.

MBF Vision: Healthy ecosystems and sustainable communities that preserve North American monarch butterflies and their spectacular migration in perpetuity.

Thank you for considering a gift to MBF

MBF is a 501(c)(3) tax exempt organization and all donations are tax deductible to the full extent of the law

Donations to MBF support reforestation, research that is directly related to monarch and monarch habitat conservation, and economic development activities in México. Please consider donating today through our secure on-line site:

https://monarchconservation.org/donate-donar/

or by sending a check to the following address:

Monarch Butterfly Fund
c/o Karen Oberhauser
4038 Cherokee Drive
Madison WI 55113

All donations will be acknowledged with a letter, and donations over $50 will be acknowledged with a certificate, if requested.

We also list donations larger than $100 in our newsletter. If you wish to remain anonymous, please put a check mark here: _____

Dedications:

On behalf of ___ In honor of ___ In memory of ___ A gift to___
Send a dedication announcement ___

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Make a direct contribution towards the conservation of the monarch butterfly!

$50: Buys 350 seedlings for a community/school-run tree nursery.

$100: Plants 100 new trees in the monarchs' threatened forest areas, which includes seed collection, raising the young seedlings, and the distribution and planting of the seedlings. Our goal is to plant high quality seedlings in a community-led process to help restore critical over-winter habitats for monarch butterflies.

$750: Pays for one month of professional staff services of trained personnel who ensure that relevant expertise is available to community and private landowners working to restore their property to viable monarch locations.

This holiday season you can order your gifts through Amazon Smile and they will donate .5% of the purchase price to MBF!

http://smile.amazon.com/ch/94-3299134

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