

ASSOCIATION OF FISH AND WILDLIFE AGENCIES AND STATE FISH AND WILDLIFE AGENCIES INTERNATIONAL COLLABORATIONS 2021-2022



ASSOCIATION OF FISH AND
WILDLIFE AGENCIES AND
STATE AGENCIES REPORT TO
THE EXECUTIVE TABLE

2022

XXVI MEETING OF THE CANADA/MEXICO/U.S.
TRILATERAL COMMITTEE FOR WILDLIFE AND
ECOSYSTEM CONSERVATION AND MANAGEMENT

Table of Contents

Global Forums	3
<u>Conventions on International Trade in Endangered Species (CITES)</u>	3
<u>Ramsar Convention on Wetlands</u>	3
<u>International Union for Conservation of Nature (IUCN)</u>	3
<u>The Convention on Biological Diversity (CBD)</u>	3
<u>The Convention on the Conservation of Migratory Species Wild Animals (CMS)</u>	4
Western Hemisphere	4
<u>Western Hemisphere Shorebird Reserve Network</u>	4
<u>Neotropical Migratory Bird Conservation Act (NMBCA)</u>	4
<u>Southern Wings</u>	4
<u>Conservation Business Plans for Birds</u>	5
North America	6
<u>Trilateral Committee for Wildlife and Ecosystem Conservation and Management</u>	6
<u>North American Bird Conservation Initiative (NABCI)</u>	7
<u>Fall Flights, North American Waterfowl Management Plan (NAWMP) and North American Wetlands</u> <u>Conservation Act (NAWCA)</u>	7
<u>Flyway Councils</u>	8
<u>Central Grasslands Roadmap</u>	8
<u>Monarch Butterfly Conservation</u>	8
Binational: Mexico-U.S.	9
<u>Mexico-U.S. Border State Wildlife Agencies</u>	9
Mexican Wolf Recovery	
Joint ventures	
Binational: Canada-U.S.	23
<u>Trapping Work with Canada</u>	23
<u>Canadian Wildlife Directors Committee</u>	24

State Fish and Wildlife Agencies work throughout the world on conservation issues as individual states and as members of the Association of Fish and Wildlife Agencies (Association). They understand that achieving conservation goals requires a local, regional, national and global scale approach especially for migratory species. This is not a comprehensive report but rather a summary of major ongoing international projects and action taken by state fish and wildlife agencies and the Association.

- Global Forums -

Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

International treaties, agreements and initiatives offer opportunities and challenges to state fish and wildlife agency management. Especially for CITES, the state agencies working relationship with the U.S. Fish and Wildlife Service (USFWS) is critical for both partners. The CITES Technical Work Group, comprised of one representative from each of the four Regional Associations (SEAFWA: Buddy Baker; NEAFWA: Scott Buchanan (RI); MAFWA: Carolyn Caldwell; WAFWA: Stewart Liley (NM)), has worked in partnership with the USFWS to engage on CITES issues since 1992 and has proven to be both effective and efficient. The CITES Technical Work Group (Team) represented the state fish and wildlife agencies and where applicable the Provinces and Territories at the 74th Standing Committee and on numerous CITES working groups. The working groups addressed topics such as the conservation and management of paddlefish, sharks, American ginseng, and corals. A summary can be found [here](#). The Team was also member of the working group on the role of CITES in reducing risk of future zoonotic disease emergence associated with international wildlife trade whose recommendations were submitted to the Standing Committee and adopted. They are working with the states, Provinces and Territories to gather information to develop positions and submit information for the current USFWS Federal Register Notice about species listings they are likely, unlikely, and undecided on for the CITES Conference of the Parties (CoP).

The Ramsar Convention on Wetlands

The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The U.S. is a signatory to the convention and has designated 41 Ramsar sites. The Association works with NGO partners and the U.S. State Department on issues around Ramsar that are important to the state fish and wildlife agencies.

International Union for Conservation of Nature (IUCN)

AFWA is a member of IUCN on behalf of the state fish and wildlife agencies. The IUCN World Conservation Congress was held in France in September 2021. The Association works with partners across the globe to influence decisions and discussions on topics such as waterfowl and otter conservation, hunting, climate adaptation, livelihoods, local communities, and one health/zoonotic diseases. The Association is an active member of the IUCN Sustainable Use and Livelihoods Specialists Group and participated in motion discussion and development, and the online voting that occurred in

2020/2021. One hundred and nine governance and topical motions were approved. The Association sits on the IUCN U.S. Committee's Executive Committee.

The Convention on Biological Diversity (CBD)

The [Convention on Biological Diversity](#) (CBD) a legally binding instrument that aims to promote "the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources." It entered into force in 1993. Sustainable use of biological diversity is one of the three objectives set out in the Convention. Since 2019, the Association participated in the Subsidiary Body on Scientific, Technical and Technological Advice and Subsidiary Body on Implementation meetings, became a partner to the CBD Advisory Committee on Subnational Governments, and provided input to the development of the Global Biodiversity Framework. In the last year, the focus has been on negotiating language for the Global Biodiversity Framework.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

AFWA works with USGS staff (IPBES U.S. Focal Point) to provide input on IPBES assessments and to get state fish and wildlife agency input into assessment development. Most recently, AFWA and the states reviewed and commented on the thematic assessment on sustainable use and its summary for policymakers.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS)

Because of international concern over the threats faced by migratory species, CMS, also known as the Bonn Convention, aims to conserve terrestrial, marine and avian migratory species throughout their ranges. The U.S. is not a party to CMS. However, the Association participates in Conference of the Parties and is a member of the American Flyways Framework Task Force.

- Western Hemisphere -

Western Hemisphere Shorebird Reserve Network

The Association sits on the Western Hemisphere Shorebird Reserve Network (WHSRN) Hemispheric Council to help conserve shorebirds. The Hemispheric Council last met in 2019. The Network aligns with the simple strategy that we must protect key habitats throughout the Americas to sustain healthy populations of shorebirds. The Network includes 114 sites in 18 countries to conserve and manage over 38 million acres of shorebird habitat from the Arctic to Patagonia. (<http://www.whsrn.org>)

Neotropical Migratory Bird Conservation Act (NMBCA)

Since 2002, the NMBCA partnerships have received nearly \$75 million in grants to support 628 projects in 36 countries. These projects have positively affected approximately 5 million acres of bird habitat and spurred partnerships on multiple levels contributing an additional \$286 million in matching funds. In 2021, 30 collaborative conservation projects in 23 countries across the Americas received more than

\$27 million in federal grants and matching funds. The NMBCA IMPACT Program targets 13 highly threatened Neotropical migratory bird species, with the goal of achieving a **measurable biological improvement** in these species over the next 5-10 years. The 13 species are all considered Species of Greatest Conservation Need in at least 15 and upwards of 32 states. Numerous state fish and wildlife agencies through Southern Wings or through their own projects are involved in conservation projects through the NMBCA. Arizona Game and Fish Department and Missouri Department of Conservation staff also review proposals.

Southern Wings

Southern Wings facilitates state fish and wildlife agency participation in conservation of migratory birds on their breeding, migration, and nonbreeding sites.

Southern Wings:

- offers an easy, transparent, and flexible process for states to effectively conserve their migratory bird species of greatest conservation need when they are not in the U.S.;
- is a critical complement to in-state investment on migratory bird stop over and breeding habitats;
- leverages limited state funds;
- can provide non-federal match for State Wildlife Grants and Pittman-Robertson funds;
- identifies strategic, biologically relevant projects with high quality partners that provide the most bang for your conservation buck;
- helps keep species off the Endangered Species Act (ESA) by addressing annual life cycle conservation needs; and
- provides an effective and efficient way to engage in successful conservation partnerships and the NMBCA, the North American Wetlands Conservation Act (NAWCA) and other funding sources.

Forty states participate in the Program (Arizona, Arkansas, California, Colorado, Indiana, Iowa, Kansas, Kentucky, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Carolina, Oklahoma, Pennsylvania, South Dakota, Tennessee, Wisconsin, NEAFWA [Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and DC], and the Pacific Flyway Council states). **Since its inception, state agencies have contributed over \$3,500,000 in funding to 24 projects in 11 countries.** All state contributions are matched at a minimum of 1:1 by non-state funds before supporting on-the-ground projects.

Conservation Business Plans for Birds

The bird conservation community has embraced annual cycle conservation of birds and is advancing the development of conservation business plans or investment strategies to guide bird conservation funding. Business strategies differ from standard conservation plans by focusing on a set of well-developed actions that link funding to specific, measurable conservation outcomes, rather than producing long lists of possible actions, some of which may not be clearly defined.

- **ATLANTIC FLYWAY SHOREBIRD BUSINESS STRATEGY:** All the state agencies within the flyway were involved in the development of the Atlantic Flyway Shorebird Business Strategy Phase I. The Strategy was finalized in 2015 and can be found [here](#). The goal of this conservation strategy is to create a long-term platform for stability and recovery of fifteen focal species identified. The cumulative impact of

the projects developed herein, will increase current shorebird population levels by 10%, by 2025, at a cost of approximately \$90 million. The National Fish and Wildlife Foundation's (NFWF) has developed an [initiative](#) to help implement the Plan.

- **PACIFIC FLYWAY SHOREBIRD CONSERVATION STRATEGY:** The Strategy focuses primarily on the Pacific coasts of North, Central and South America. The project area is subdivided into four focal geographic regions (e.g., Arctic/subarctic, North-temperate, Neotropical and South-temperate) that share broad habitat characteristics and similar conservation challenges and opportunities. Together, these regions encompass the suite of habitats used by 21 target shorebird species during their annual cycles along the Pacific coast of the Western Hemisphere. They were chosen as conservation targets because they are representative of specific habitats in the Flyway, populations of conservation concern or endemic to the Flyway. State agencies in California, Arizona, Nevada, Idaho, Utah and Washington were involved in its development. The Strategy can be found [here](#).
- **CONSERVATION INVESTMENT STRATEGY FOR THE FORESTS OF THE CENTRAL AND SOUTH AMERICAN HIGHLANDS:** Partners in Flight's Eastern Working Group is working in concert with partners from across Central and South America to develop an investment strategy. They recently conducted a virtual meeting with over 100 participants. Several state fish and wildlife agencies are involved in its development.
- **CHIHUAHUA GRASSLANDS CONSERVATION INVESTMENT STRATEGY:** In partnership with the Intermountain West Joint Venture and the Sonoran Joint Venture, the Rio Grande Joint Venture (RGJV) leads work with a diverse group of public and private partners to develop and implement a Conservation Investment Strategy for globally-important Chihuahuan Desert Grassland Priority Areas in the U.S. and Mexico. Across the globe and especially in the RGJV region, native grasslands are disappearing rapidly due to habitat conversion and unsustainable land management practices. Migratory bird populations (such as Sprague's Pipit, Chestnut-collared Longspur, McCown's Longspur, and Baird's Sparrow) that rely on these grasslands are declining at a faster and more consistent rate compared to other groups of birds. The Conservation Investment Strategy – currently underway - convenes experts and partners from both the US and Mexico to establish a better understanding of current populations and habitat status for these and other priority bird species, set goals for population stabilization, develop an action plan, implement the plan and track progress through on-going monitoring. Critical partners in this work include the US Fish and Wildlife Service, Bird Conservancy of the Rockies, Pronatura Noreste, Comisión Nacional de la Biodiversidad, Texas Parks and Wildlife Department, local community and ejido members and binational conservation groups.

The Conservation Investment Strategy will direct limited time and resources toward the most effective practices and outcomes – including managed grazing and adaptive management of rangelands - so they can support sustainable cattle production and benefit grassland birds, pronghorn, and other wildlife species, especially at-risk and threatened and endangered species. This is the highest priority for the RGJV management board, including the USFWS, Southwest Region, Migratory Birds program and TPWD. It is also a high priority for USFWS Headquarters, Migratory Bird programs such as the Neotropical Migratory Bird Conservation Act program and Partners in Flight. Conservation Investment Strategy development began in 2017. In late 2019, the RGJV hosted workshops in Texas, New Mexico, and Arizona to get input from partners on development of the Strategy. The 2020 pandemic halted progress until recently, when RGJV partners American Bird Conservancy, Bird Conservancy of the Rockies, and Pronatura Noreste began

again planning workshops to engage conservation partners and stakeholders in Mexico. These workshops are planned for Mexico Grassland Priority Conservation Areas in Fall 2022.

- North America -

Trilateral Committee for Wildlife and Ecosystem Conservation and Management

The Association and individual State fish and wildlife agency representatives actively participate in the Tables of the Trilateral Committee for Wildlife and Ecosystem Conservation and Management (Trilateral). This includes the Executive Table. Understanding the national policy directions in bilateral efforts enables the state fish wildlife agencies along the U.S.-Mexico border to support and strengthen the bilateral priorities presented at the Trilateral.

North American Bird Conservation Initiative (NABCI)

NABCI was facilitated and approved by the Commission for Environmental Cooperation in 1999 and serves as a tri-national partnership for the U.S., Mexico, and Canada to identify common bird conservation goals and collaborate on tri-national bird conservation issues. In the U.S., NABCI is a 30-member partnership of state and federal government agencies, private organizations, and bird initiatives working to ensure the long-term health of North America's native bird populations. The states are represented through the Association's Bird Conservation Committee and the National Flyway Council. The U.S. NABCI Committee creates a unique forum for federal and state agencies and non-governmental organizations to address shared bird conservation challenges and priorities. Its strength lies in its ability to directly engage conservation leaders and to collaboratively develop and express a collective voice that promotes integrated all-bird conservation. U.S. NABCI's International Subcommittee works on bird conservation issues on both a tri-national and a hemispheric scale.

Fall Flights, North American Waterfowl Management Plan (NAWMP), and the North American Wetlands Conservation Act (NAWCA)

State fish and wildlife agencies recognize the importance of taking a continental approach to conservation for migratory birds and have been addressing waterfowl conservation at the flyway level since the 1940s. In recognition of the importance of waterfowl habitat in the U.S., Canada, and Mexico, the state agencies also have been contributing funds through conservation organizations, like Ducks Unlimited and Delta Waterfowl, who match the money and put it to work on NAWCA funded wetland and waterfowl projects. NAWCA was passed in 1989 by the United States Congress and has resulted in the greatest wetland conservation achievements on this globe. It has provided \$2.03 billion in federal funding for habitat projects throughout North America. NAWCA requires non-federal funds as match, and this incentive has helped partners to invest more than \$6.1 billion for important waterfowl habitat projects across North America. The Association operates the **Fall Flights** program that encourages state agencies to invest in Canadian wetland and waterfowl projects.

Since 1986, state wildlife agencies have contributed almost \$100 million of non-federal match through the Association's Fall Flights initiative. In 2020-21, 43 states contributed a total of \$5.27 million. Ducks

Unlimited or Manitoba Habitat Heritage Corporation match funding from the state agencies, and these moneys are matched by NAWCA. Canadian partners provide additional match to multiply the impact of each state's contribution by at least four-fold.

Contributions continue to grow from states with many other states trying to reach their target goal. The Association reaffirmed the Fall Flights goal of \$10 million per year collectively from state agencies and revised the goals for each state based on its Task Force recommendations. The Association also established a standing Fall Flights Advisory Committee to help improve the program and to grow state investments in Canadian breeding grounds.

Since the North American Waterfowl Management Plan (NAWMP) was signed in 1986, it has been updated approximately every five years. A process is currently being developed to prepare the next update and it is anticipated that the U.S., Canada, and Mexico will collaborate to release a new Plan by the end of 2023. Migratory Bird Joint Ventures are critical to the implementation of NAWMP and to achieve international conservation objectives. For example, the Sonoran Joint Venture (SJV) is a binational Joint Venture between the U.S. and Mexico and was the first Joint Venture formed to address the needs of all birds—not just waterfowl. The Pacific Bird Habitat Joint Venture is an international Joint Venture focused on collaborative conservation between Canada and the U.S. along the Pacific coast from California to Alaska.

The JV8 Central Grasslands Initiative (JV8) involves eight Migratory Bird Joint Ventures — representing over 72 federal, state, provincial, non-profit, and industry conservation partners from the U.S., Canada, and Mexico. They are collaborating to stem grassland losses and the negative impacts to migratory birds. The JV8 is implementing grassland conservation programs across a landscape of 500 million acres with the goal of reversing or stabilizing the decline of bird populations in the central grasslands of North America.

Flyway Councils

The Pacific, Mississippi, Central and Atlantic Flyway Councils are international bodies that include members from both the U.S. state fish and wildlife agencies and the Canadian provinces. Each flyway is involved in international projects for waterfowl and other migratory bird conservation. For example, biologists from state, federal, and provincial agencies conduct surveys each year to determine the status of waterfowl populations, evaluate habitat conditions, and to estimate waterfowl harvest. Banding programs are used to estimate survival and migration patterns. Data are used cooperatively to manage migratory game birds and play a paramount role in the annual establishment of hunting regulations. Primary continental waterfowl habitats are monitored during the Waterfowl Breeding Population and Habitat Survey in May. Biologists from federal, provincial, and state agencies survey areas via fixed-wing aircraft to evaluate the conditions of habitats in the north-central United States and southern Canada.

Central Grasslands Roadmap

This is a collaborative [effort](#) to increase conservation of North America's Central Grasslands, which span 500 million acres across Indigenous Lands, Canada, the U.S. and Mexico. By bringing together 8 diverse sectors, (Indigenous communities and Nations, province and state-level agencies, industry, private land owners/managers/producers, academia, non-governmental organizations, foundations, and federal governments of Canada, the U.S. and Mexico), the Roadmap identifies common principles and

collaborative priorities for the people and organizations living, working on and influencing the Central Grasslands. The partnership met at the end of May 2022.

Monarch Butterfly Conservation

The listing decision of Monarch Butterfly was published in December 2020, and the finding of the USFWS was that the species was warranted for listing but was precluded due to other higher priorities on their work plan. As a result, the species is currently a candidate species for listing and its status will be reviewed again in 2024. This decision affords the species no protections under the Endangered Species Act but does provide an opportunity to continue on-the-ground efforts to benefit the species by federal and state agencies and partner organizations and municipalities.

A historic agreement between the USFWS and the University of Illinois-Chicago encourages transportation and energy partners to participate in monarch conservation by providing and maintaining habitat on potentially millions of acres of rights-of-way and associated lands. Thanks to the monarch agreement, more than 45 companies in the energy and transportation sectors and countless private landowners will provide habitat for the species along energy and transportation rights-of-way corridors on public and private lands across the country. Participants will carry out conservation measures to reduce or remove threats to the species and create and maintain habitat annually. Although this agreement specifically focuses on monarch habitat, the conservation measures will also benefit several other species, especially pollinating insects. Enrollment in the Candidate Conservation Agreement with Assurances has been most active in the Northeast and Midwest but remains open until a future effective listing date for the species.

The South Texas Grassland Restoration Incentive Program (GRIP), funded by NFWF's Monarch Conservation Fund, TPWD, and the San Antonio Quail Coalition Chapter, conducts grassland restoration on private lands in South Texas to restore and improve degraded grassland habitats for monarchs, other pollinators, quail, and other grassland birds. TPWD, NRCS and other partners worked with RGJV staff to develop the South Texas GRIP program modeled on the OPJV GRIP program. These private-public partnerships have improved management of 9,191 acres of degraded grassland and grass-dominated shrubland habitat. Despite a challenging year, in 2020 five more agreements were established bringing an additional 1,245 acres of grassland-dominated habitat land under improved management.

Arizona Game and Fish Department (AGFD) contributed to the preparation of the WAFWA's Western Monarch Butterfly Conservation Plan, published in January of 2019, to identify strategies and implementation actions for monarch butterfly conservation throughout the west. Entities in Arizona have formed the Arizona Monarch Collaborative. Rachel Williams, USFWS, leads this group with a steering committee that includes AGFD, and has formed subcommittees focused on plan implementation within the state of Arizona. The City of Flagstaff signed on to the Mayors' Monarch Pledge and committed to take steps within the city to further monarch conservation. The Arizona Monarch Collaborative's hopes that other cities will sign on as well. To further one of the conservation strategies, the Arizona Game and Fish Department has planned to create monarch "waystation" by planting over 5,600 milkweed plugs on 13 of our Wildlife Areas and Hatcheries. So far, over 1,700 native milkweed plugs have been installed by volunteers, with the rest to be planted by volunteers. Additionally, seed for native pollinators such as annual sunflower are spread in the areas where milkweed is planted. The waystations, developed through AGFD's collaboration with Southwest Monarch Study and the Gila Watershed Partnership, was made possible by a NFWF grant. Other land

management agencies and municipalities, such as the Tonto National Forest and Arizona State Parks, are creating "waystations" on their lands as well.

- Binational: Mexico-U.S. -

U.S.-Mexico Border State Wildlife Agencies

Arizona Game and Fish Department (AGFD):

WETLANDS TRAINING PROGRAM: Since 1996, the AGFD has been implementing wetlands conservation workshops in Mexico. Through the years, the Department has partnered with multiple agencies and groups from Canada, Mexico, and the U.S., such as the Canadian Wildlife Service, USFWS, Mexico's Commission of Natural Protected Areas (CONANP), Ducks Unlimited de Mexico A.C. (DUMAC), SJV, the Ramsar Convention, the Society of Wetlands Scientists, several of the Pronatura organizations, and others. On January 31-April 8, 2022, AGFD implemented the 25th wetland training course under a hybrid version (virtual and in person) focused on the wetlands of the State of Durango, Mexico. Thirty-five natural resource managers representing 23 municipal, state, and federal agencies from the State of Chihuahua, as well as universities, and conservation NGOs from northern Mexico, participated at the training course. Waterfowl, shorebirds, and waterbirds surveys were conducted at the Santiaguillo, San Bartolo, and Cienegas de Malaga wetlands. The 2022 wetlands training course was implemented in collaboration with the State of Durango and Pronatura Noreste A.C.

SONORAN PRONGHORN CONSERVATION: Sonoran pronghorn are endangered in both the U.S. and Mexico. As part of a binational effort in recovery, partners have implemented several successful binational efforts aimed at recovery of the subspecies in both countries. These activities include: conducting range-wide surveys in both countries on a two-year interval, equipping Sonoran pronghorn with GPS-based and VHF telemetry collars in Mexico and the U.S., implementing a captive breeding program in Arizona to provide offspring to augment wild populations in Arizona and Sonora, implementing forage enhancement and water projects, conducting genetic and diseases studies, and providing training efforts in survey methodology and other important wildlife management practices for collaborators in Mexico. In Arizona, the captive breeding programs at Cabeza Prieta NWR and Kofa NWR continue to do well.

We conducted our annual boma capture and release from the Cabeza pen on December 7-8, 2021. In total, 23 pronghorn were moved to the holding pen in the Sonoran Desert National Monument's Vekol Valley. For the first time in nearly a century, pronghorn began freely roaming the Vekol Valley on January 14, 2022. Additionally, five pronghorn were released from the Marine Range holding pen on February 2, 2022. The annual boma capture from the Kofa pen took place on December 13, 2021. All but 6 of the 40 pronghorns were captured in the bomas. Fifteen pronghorn were processed, fitted with either a GPS or VHF collar, loaded into the trailers, and moved to the holding pen in the Palomas Plains (YPG East Arm); fourteen pronghorn were released from the holding pen on the Palomas Plains on January 3, 2022. Additionally, on December 18-19, 2021 we captured, using a helicopter and net gun, wild bucks to move into the captive breeding pens to increase genetic diversity for breeding purposes.

We successfully moved one buck into the Kofa pen, and one each into the north and south halves of Cabeza pen.

The Arizona range wide survey was conducted November 20 – 28, 2021. On transects, 161 pronghorn were observed; therefore, our sighting rate model estimate resulted in an estimate of 232 Sonoran pronghorn. The range-wide survey in Sonora, Mexico took place January 4 – 7, 2022. In the Quitovac subunit (east of Mexico Highway 8), 324 pronghorn were observed in 53 groups. In the Pinacate subunit, the 80 pronghorn observed this year corresponds to the second highest ever observed; only the survey in 2015 with 96 pronghorn observed was higher. Applying the sighting probability model and associated correction factors, our estimates of the population in the Quitovac subunit, El Pinacate subunit, and total overall were 449, 102, and 552 respectively.

LESSER LONG-NOSED BAT: This species has been the subject of long-term monitoring and conservation by collaborators in Arizona and Sonora and beyond for over 20 years. During that time, collaborators have conducted annual simultaneous bat emergence counts at the largest maternity and late summer roosts in northwestern Mexico and Arizona. In 2013 in a joint statement, the National University Autonomous of Mexico (UNAM) and SEMARNAT announced the recovery and delisting of the lesser long-nosed bat in Mexico. Through binational partnerships, researchers have achieved significant breakthroughs thanks to the use of leading-edge telemetry technology not used previously in any other bat species. With miniaturized GPS tracking units, UNAM researchers have been able to follow movements of individual bats and demonstrate nightly cross-border movements into Arizona. Over the last few years, AGFD has provided financial assistance to Dr. Rodrigo Medellín, UNAM, to conduct a research study about foraging routes and distances traveled utilizing GPS tracking units deployed by UNAM.

MONARCH BUTTERFLY CONSERVATION: (see monarch butterfly section)

BLACK-TAILED PRAIRIE DOG IN NORTHERN MEXICO: Arizona continued collaborating with CEDES in northern Sonora and with the UNAM at the Janos Biosphere Reserve in northern Chihuahua, Mexico to implement conservation actions for the black-tailed prairie dog (BTPD). The Janos Biosphere Reserve is a unique grassland ecosystem containing the largest prairie dog complex in North America. There were monitoring activities carried out in the Janos Biosphere Reserve to evaluate distribution, abundance, and health status of BTPD. The complex occupied 8,150 acres (3,323 ha) inhabited by around 30,000 individuals. The results of the clinical examination indicate that BTPD have a good health status. Restoration and outreach efforts were also conducted in priority sites within the Janos Biosphere Reserve. Arizona is considering conducting joint conservation actions in Sonora in collaboration with CEDEES and Naturalia A.C. to evaluate the status of the only colony in northern Sonora and initiate the establishment of a second colony nearby.

BLACK-TAILED PRAIRIE DOG IN ARIZONA: AGFD continues working to re-establish black-tailed prairie dogs in southeastern Arizona. In addition to regular visual counts and colony perimeter mapping, two trapping events are held annually (one in March and one in September) to assess the population demographics and individual health at the re-established colonies. The populations continue to expand and contract in direct relation to natural rain cycles but have an overall upward trend in population numbers.

In 2021, AGFD created a 5th re-established black-tailed prairie dog colony. This colony marked a number of firsts for the program: the first colony added to private property, the first colony in Cochise

County, and the first time a colony was successfully created by translocating BTPDs from within Arizona. As of fall 2021, the minimum BTPD population in Arizona was 216 individuals on approximately 38 occupied acres. In addition to the five re-established colonies, the BTPD have dispersed to create 2 known small colonies on private land. These small colonies currently have landowner support and will continue to be passively monitored. In the future, the program will continue to seek opportunities for additional translocations of black-tailed prairie dogs in Arizona. AGFD will also work with partners to continue widespread grassland restoration in the BTPDs former range.

BIRD CONSERVATION PROJECTS: AGFD is collaborating with several partners in Northwest Mexico to support projects that benefit both shared migratory and resident bird species of concern. Other projects have contributed to clarify or prevent the need of listing a bird species. Both projects described below are supported as part of Southern Wings.

- **CONSERVATION AND MANAGEMENT OF NEOTROPICAL MIGRATORY BIRDS AND THICK-BILLED PARROTS (TBPA) IN OLD-GROWTH FORESTS OF THE SIERRA MADRE OCCIDENTAL, MEXICO:** For Neotropical migrants and TBPAs, OVIS and other partners are working to conserve habitat (through protection, restoration, and integration of beneficial forest management practices) across the Sierra Madre Occidental (SMO) that benefit migratory and resident birds. The project also implements conservation actions and monitoring of breeding populations of TBPAs in the protected areas of Tutuaca, Papigochi, Campo Verde, Mesa de Guacamayas and Madera. This project is one of Arizona's longest-running bird conservation collaborations in Mexico, having initiated the collaboration with Pronatura Noroeste and ITESM over 20 years ago. The AGFD annually meets with OVIS and San Diego Zoo Wildlife Alliance to develop annual work plans and define medium- and long-term conservation strategies. OVIS field staff monitored the main known TBPA breeding areas to estimate flock sizes, track reproductive success, and reduce predator impacts. In 2021 a total of 108 breeding pairs across the five primary nesting sites were documented, with a productivity of 1.6 ± 0.89 fledglings per nest. Predation by bobcats on nesting parrots was mitigated by installing metal barriers on trees with active nests (and adjacent trees). Recent research on migratory patterns of TBPAs (through deployment of satellite radio transmitters) has provided new information on their complete life cycle. Breeding populations migrated south along the SMO on very similar migratory routes, travelling between 60 and 150 kilometers per week. The maximum distance of their migration to the south was 648 km from Tutuaca, although on average it was a distance of 612 km and ± 49.8 km, with the southernmost range extending into Nayarit. Most of the time the wintering range centered within Durango. Based on this new understanding of migration patterns, OVIS staff conducted exploratory visits in Durango to verify and characterize wintering areas used by TBPAs. In the area of habitat conservation, OVIS held a virtual workshop for decision makers in Durango on beneficial forestry practices for TBPAs and also worked with partners to integrate these practices into ejido El Largo's Forest Management Plan.
- **THE PACIFIC FLYWAY SHOREBIRD SURVEY: IDENTIFYING THREATS AND CONSERVATION HOTSPOTS IN NORTHWEST MEXICO:** The PFSS and the Migratory Shorebird Project (MSP) work to fill gaps in Pacific Flyway species population status and trends, assess threats, and identify priority sites for conservation. Mexico is particularly important because globally significant populations of shorebird species spend the winter on the Pacific Coast. Primary species recorded during the annual winter survey in Mexico include western sandpiper, dunlin, marbled godwit, willet, black-

bellied plover, sanderling, greater yellowlegs, dowitcher spp., snowy plover, black-necked stilt, and American avocet. The main conservation concerns for shorebirds in the region are human disturbance and habitat loss or degradation. The AGFD and the Pacific Flyway Council collaborated with Terra Peninsular and other partners in supporting midwinter Pacific brant surveys in all major wintering sites in northwest Mexico (21 sites) and nonbreeding midwinter shorebird and waterfowl surveys at 21 sites. Partners also conducted breeding shorebird and rail surveys at coastal wetlands and sandy beaches (targeting breeding snowy plover, Wilson's plover, American oystercatcher, and Ridgway's rail). Survey data was analyzed and published via several scientific articles and 5 technical reports provided to Mexico's National Commission of Natural Protected Areas to inform species and habitat management. Habitat protection activities included a) establishing temporary barriers around nesting grounds of snowy plovers and California least terns, b) conducting soil restoration, trail maintenance and trash removal in protected areas, and c) signing a co-management agreement for a beach easement important to nesting snowy plovers.

- **BALD EAGLE POPULATION ASSESSMENT IN NORTHERN SONORA:** CEDES continued surveying the confluence of the Bavispe and Yaqui rivers, as well as the Pinacate Biosphere Reserve. AGFD provided training to CEDES staff on Arizona's bald eagle productivity monitoring program. Training consisted of classroom presentations and Q&A discussions as well as field training in Arizona. In addition, CEDES and AGFD installed a trail camera near a successful bald eagle nest in the Sahuaripa area, within the Yaqui River basin.

In the past, other projects included: 1) Establishment of Breeding Bird Survey routes in Sonora, 2) Masked Bobwhite monitoring and habitat assessment, 3) Cactus Ferruginous Pygmy-Owl population estimates and genetic analysis, 4) Yuma Ridgway's Rail surveys in the Colorado River Delta, and 5) Gould's Turkey reintroductions.

Chihuahua

- Assisted in the organization of the 2021 Wetlands Training Course in collaboration with Arizona, Pronatura Noreste A.C. and WWF-Mexico.
- Is implementing a wildlife exchange project with New Mexico.
- Continued implementing feral swine control efforts in the Ojinaga-Manuel Benavides border region and other areas of the state.

Coahuila

- Continued to play a major role in feral swine control efforts.
- The Desert Museum, a natural history museum and a zoo, continued participating in the SSP for Mexican wolf by holding and reproducing some wolves in their facility.

New Mexico Department of Game and Fish (NMDGF)

New Mexico has worked over the years with Mexico under an ongoing MOU to facilitate capture and exchange and technical guidance between Mexico and New Mexico. NMDGF has exchanged New Mexico pronghorn for Mexican bighorn sheep and biologists continue to communicate on the status of

the animals exchanged. In 2017, the NMDGF proposed an exchange of animals to strengthen Pronghorn populations in the state of Chihuahua, and Gould's turkey populations in New Mexico. In 2018, parties developed a project to identify and assess the potential sites and conditions in order to determine the best sites in which pronghorns could be released and obtained the necessary approvals from the landowners in Chihuahua to prepare the reception of the animals. As a result, in November 2018, a group of 100 pronghorns were captured in Colfax County in the state of New Mexico, and released in Hacienda Corralitos and in Rancho Ojo de Federico, in the State of Chihuahua.

NMDGF continues to work with the Mexican Government of CONANP, USFWS, and AGFD on bi-national Mexican wolf recovery efforts. This includes working to streamline the permitting process (both CITES permits and health certificates) when moving Mexican wolves from the United States to Mexico to help bolster recovery efforts in the state of Chihuahua.

Sonora

- CEDES and the Forestry and Game Department have had an active participation in the wildlife inventory project in two private ranches in northern Sonora. New records of several Species of Greatest Conservation Concern, ocelots, and a possibly new species of leopard frog have been found in these ranches.
- Continued monitoring the Sonoran pronghorn population in the Quitobac area and played a critical role in the implementation of the 2021 aerial population surveys in northern Sonora. We initiated an environmental education and outreach program directed at the local communities, particularly to K-9 school children to learn about the importance of conserving the pronghorn.
- Continued a mangrove restoration project at El Soldado wetlands, near the City of Guaymas, Sonora, with the assistance of Arizona and private donors. What it used to be a heavily impacted area, it is now an oasis of recovered habitat that locals enjoyed for birdwatching and other outdoor recreational activities. It is also a stopover for many migratory birds.

Texas Parks and Wildlife Department (TPWD)

TPWD AND MEXICAN WILDLIFE AGENCIES: Texas and four adjacent Mexican states share habitats and ecosystems, and institutional development collaboration is a priority for them. During the Binational Wildlife Forum hosted by Chihuahua in late 2019, the Mexican state wildlife agencies proposed Biodiversity Conservation as the topic for the 2020 workshop, but it was not held due to the pandemic. At least one annual workshop has been held since 2005 when Mexico's federal government decentralized wildlife management functions to the border states and the Border Governors Conference Wildlife Worktable was established. Federal agencies are routinely invited to the states' activities to promote intergovernmental cooperation. Mexico's decentralization involved game species so TPWD's sister state wildlife agencies had been focused on game management but are now working with CONABIO to develop their Biodiversity Plans (called Estudio de Estado). Chihuahua has developed its plan and Nuevo León and Tamaulipas are in the process of developing theirs. In the case of Tamaulipas, its Wildlife Commission has been restructured into a Hunting and Fishing Commission and a Parks and Biodiversity Commission, which has invited TPWD to collaborate in the development of the Tamaulipas Biodiversity Plan. Workshops at Wildlife Management Areas (WMA) or State Parks are the preferred format so that field techniques can be demonstrated. When the meetings are held in Mexico, organizers also schedule field time at private ranches or protected areas. WMA seminars are open to Mexican

colleagues and landowners and whenever possible, TPWD has reserved slots for Mexico in training sessions for staff.

NAWCA: Texas is the first state to contribute to wetland and waterfowl projects in Mexico since 2016-2017 through partnerships with Ducks Unlimited and DUMAC. Projects in Mexico include wetland restoration along the southern part of the Laguna Madre in Tamaulipas. TPWD is again contributing \$50,000 in 2018-19. The Rio Grande Joint Venture Management Board is currently inviting Mexican NAWCA applicants to make a presentation in front of the Board before the grants are submitted.

BINATIONAL WILDLIFE CONSERVATION INFORMATION EXCHANGE: Because Texas ecosystems extend into Mexico and four Mexican states are adjacent to Texas, the institutional development of the new sister wildlife agencies in those states is a priority for TPWD. Hence, TPWD will continue to invite its Mexican colleagues when it holds new training for its wildlife staff. TPWD will also continue to accommodate requests from Mexico for workshops on special topics. The Wildlife Management Areas (WMA) under TPWD administration served well for these workshops so that field techniques and results can be demonstrated. Federal colleagues also participated in some of these activities. Regularly scheduled WMA workshops are open to Mexican colleagues and landowners.

Texas Parks and Wildlife Department and Texas Commission on Environmental Quality signed a Memorandum of Cooperation with Chihuahua, Mexico as part of the Joint Advisory Committee for the Improvement of Air Quality in the Ciudad Juárez, Chihuahua/El Paso, Texas/Doña Ana County, New Mexico Air Basin in February of 2022, and with Neuvo León in April of 2022. Previously, as an implementation activity of the Memorandum of Cooperation that Chihuahua, Texas Commission on Environmental Quality and TPWD signed in May 2019, Chihuahua Wildlife Department hosted the Binational Chihuahua-Texas Wildlife Forum in October 2019 in collaboration with Universidad Autonoma de Chihuahua and Pronatura Noreste and Rancho El Palomino. The Forum focused on habitat restoration and management of shared big game species, development of wildlife management plans by land managers, especially private landowners, and administrative process to make the plans official under Mexico's UMA system. TPWD also discussed the internships for volunteers and seminars available at Wildlife Management Areas in Texas and invited participants to propose joint research projects. TPWD looks forward to additional opportunities for cross-border information exchange and technical assistance in the coming years.

EXCHANGE TAMAULIPAS-TPWD FISHERIES MEMORANDUM OF AGREEMENT IMPLEMENTATION: Tamaulipas Hunting and Fishing Commission attended the Toyota Bassmaster Texas Fest in May at Lake Conroe as a special guest to have access to behind the scenes operations and equipment, especially best practices for bass tournament fish care. The Tamaulipas Fisheries Department and Universidad Tecnológica del Mar de Tamaulipas (UTMarT) are proposing striped bass culture as the next research and exchange topic.

IMPLEMENTATION TAMAULIPAS-TPWD STATEMENT OF COOPERATION is an updated document to account for the restructuring of the Wildlife Commission into a Hunting and Fishing Commission and a Parks and Biodiversity Commission. Proposed projects include coordination in the development of the Tamaulipas Biodiversity Plan and information exchange on wildlife survey methods and turkey restoration.

INTERNSHIPS AT WILDLIFE MANAGEMENT AREAS: Mexican universities have expressed interest in internships for their students at Wildlife Management Areas. TPWD developed a bilingual fact sheet to introduce Mexican colleagues to internship opportunities and distributed it at the workshops held this past year.

INTERNATIONAL HUNTER EDUCATION ASSOCIATION (IHEA)-MEXICO CHAPTER, established in 2008 through a partnership with Mexico's Hunting Federation (FEMECA), the Border Governors Wildlife Table and Safari Club International, continues to coalesce a united front against anti-hunting initiatives in Mexico. TPWD and IHEA-Mexico work closely, and last year, TPWD reintroduced IHEA-Mexico to the International Bowhunter Education Program (IBEP) board so that IHEA-Mexico could manage IBEP in Mexico. Interest in bowhunting is growing in Mexico.

RIO GRANDE JOINT VENTURE: TPWD helped to establish and co-chairs the RGJV. Partners from Mexico include CONABIO, CONANP, DUMAC, Pronatura Noreste, and Pasticultores del Desierto, AC. State wildlife agencies participate in the technical committees and are welcome to attend board meetings. TPWD contributes funding support to initiatives such as the South Texas Grassland Restoration Incentive Program (GRIP), which is also funded by the NFWF Monarch Conservation Fund and the San Antonio Quail Coalition Chapter and is discussed above under "Monarch Butterfly Conservation." In addition, TPWD staff contributes substantial technical support to RGJV activities and participates in projects such as in Red-crowned Parrot monitoring in South Texas and the Chihuahuan Desert Habitat Conservation initiative. Current cooperative projects are described below.

FERAL SWINE CONTROL: TPWD's feral swine publication was translated to Spanish with the help of the USDA APHIS Office in Mexico City, Nuevo León Parks and Wildlife, and Tamaulipas Hunting and Fishing Commission. TPWD maintains a bilingual fact sheet on feral swine control responsibilities in Texas to help Mexican colleagues identify Texas partners for cross border feral swine control projects. TPWD continues to work in several collaborative research projects with Australian partners, National Wildlife Research Center, and USDA Wildlife Services associated with the registration of a feral swine toxicant. Current work focuses on deployment and effectiveness of test products in pasture settings after the Environmental Protection Agency granted an experimental use permit in summer of 2017. In 2013, Consejo Estatal de Flora y Fauna de Nuevo Leon (CONEFF) conducted a feral swine control workshop and launched a website. In 2014, TPWD organized a binational feral swine control workshop in Laredo, Texas, and made available a DVD of all feral swine control technical publications in Spanish by Texas A&M AgriLife Extension, which continues to be available to anyone conducting these workshops. The binational workshop enabled Chihuahua to refine its control techniques in the Ojinaga area, and Coahuila conducted a workshop in 2015. CONEFF and the USDA-APHIS Mexico City office conduct these workshops throughout Mexico. Mexican colleagues recommended that TPWD organize another feral swine control workshop to review results and explore ways to increase these efforts. TPWD continues to work in collaborative research projects with Australian partners, National Wildlife Research Center, and USDA Wildlife Services associated with the registration of a feral swine toxicant. Work focuses on deployment and effectiveness of test products in pasture settings after the Environmental Protection Agency granted an experimental use permit.

OTHER CHIHUAHUAN DESERT PROJECTS

- **CHIHUAHUAN DESERT CONSERVATION PARTNERSHIP** is a coalition of conservation partners that includes TPWD, RGJV, USFWS Partners for Fish and Wildlife Program, universities, non-profits and other conservation stakeholders. These partners collaborate to plan, prioritize, and implement grassland,

riparian, and aquatic restoration and conservation in the Chihuahuan Desert region. TPWD programs for landowners such as the Landowner Incentive Program and Technical Guidance Program are cornerstones of this effort. More information above under Rio Grande Joint Venture.

- **NATIVE FISH CONSERVATION NETWORK (NFCN)** (<http://nativefishconservation.org/>) is a partnership of conservation professionals from non-profits, universities, TPWD and other state and federal agencies who cooperate on landscape conservation assessments, watershed-based conservation planning, and delivery of strategic, science-based actions to protect and restore native fishes and their habitats. NFCN would like to strengthen Mexico's participation in conservation assessments, planning, and delivery within the Chihuahuan Desert ecoregion (<http://nativefishconservation.org/plans/chihuahuan-desert-texas/>). Efforts are a holistic, habitat-oriented approach to conservation of focal species, restoration and protection of aquatic habitats, restoration of habitat connectivity, and management of non-native species. Cross border threats that require collaboration include habitat fragmentation, loss of natural flow regimes, reduced stream flow, channel narrowing and sedimentation, and groundwater pollution. The National Fish and Wildlife Foundation Southwest Rivers Program (www.nfwf.org/swrivers) awarded funds to TPWD and partners for multi-year projects that restore streams, riparian buffers, and grasslands in the region to benefit focal fish species, several of which have native ranges that extend into Mexico. Contingent upon continued funding, restoration efforts are expected to continue through at least 2026.
- TPWD participates in the **Desert Fishes Council**, a binational group that engages agencies, universities, non-profits, and other stakeholders to conserve desert fish and associated habitats. The Desert Fishes Council's annual scientific conference was hosted by TPWD in Alpine, Texas in November 2019 and brought together professionals and students to share research, restoration, and conservation efforts in the U.S. and Mexico. This Council also funds a small grants program focused on supporting conservation and research for U.S. and Mexico projects.
- TPWD is collaborating with Texas A&M University and the University of Texas at Austin on research projects to assess the taxonomy and life histories of several binational species. These studies will inform species status assessments and better inform conservation efforts on a binational level. TPWD will share this information with conservation professionals from Mexico at the 2021 Desert Fishes Council Meeting in Utah and Mexico.

PAST PROJECTS INCLUDE:

- In 1977, Mexico donated 6 desert bighorn sheep to Texas.
- In 1996, former Governor George W. Bush and SEMARNAT signed a cooperative agreement to facilitate wildlife exchanges. Since the 1970s, Texas had donated to Mexico white-tailed deer, and the cooperative agreement facilitated those donations plus donations of Rio Grande turkey and mule deer.
- In 1985, TPWD and the National Park Service launched the Border States Conference on Recreation, Protected Areas and Wildlife, which was held every couple of years with the venue alternating between the U.S. and Mexico. Capacity building workshops evolved from the networking at this conference. With the creation of the Border Governors Wildlife Table in 2004 and of the Rio Grande Joint Venture plus ongoing work by the Sonoran Joint Venture, the conference was considered duplicative and was discontinued.

- In support of Tamaulipas and Nuevo Leon fish hatchery programs, TPWD has donated brood fish, fry and hatchery equipment.

Mexican Wolf Recovery

From December 2015 to February 2017, state wildlife agencies from Arizona, New Mexico, Utah, and Colorado participated in recovery planning workshops for the Mexican wolf, sponsored and lead by the USFWS. The purpose of these workshops was to provide, analyze, and review the most up-to-date scientific information available on habitat suitability, population demographics, and prey availability for the recovery of the Mexican wolf. Representatives from Mexico's Wildlife Office (Dirección General de Vida Silvestre-SEMARNAT) and the Priority Species Office of CONANP, as well as independent scientists from the US and Mexico, also participated in these workshops. Information gathered during these workshops was used to produce three important documents in November of 2017: 1) the Mexican Wolf Recovery Plan, First Revision; 2) the Mexican Wolf Recovery Implementation Strategy; and 3) the Mexican Wolf Biological Report: Version 2, that included a) Population Viability Analysis for the Mexican Wolf Integrating Wild and Captive Populations in a Metapopulation Risk Assessment Model for Recovery Planning, and b) Mexican Wolf Habitat Suitability Analysis in Historical Range in the Southwestern U.S. and Mexico.

Arizona is contributing \$75,000 annually to support Mexican wolf conservation actions in Mexico that include 1) monitoring the extant Mexican wolf packs (including terrestrial, satellite, and camera trap monitoring of individuals living in the wild which includes home range analysis, habitat use, births, and mortalities); 2) management actions undertaken in the project (including new releases, diversionary feeding, and coexistence techniques); and 3) outreaching to local ranchers and communities to build positive relationships for the acceptance of the reintroduction program. This effort is closely coordinated with the Mexican Government through the Priority Species for Conservation Office within CONANP. Arizona's contribution has been critical to maintaining essential conservation actions in Mexico. In 2018, the USFWS contributed with \$150,000 for recovery efforts in Mexico to complement existing funds over a 5-yr period. In 2019, NMGFD also contributed with \$50,000 for Mexican wolf conservation actions in Mexico.

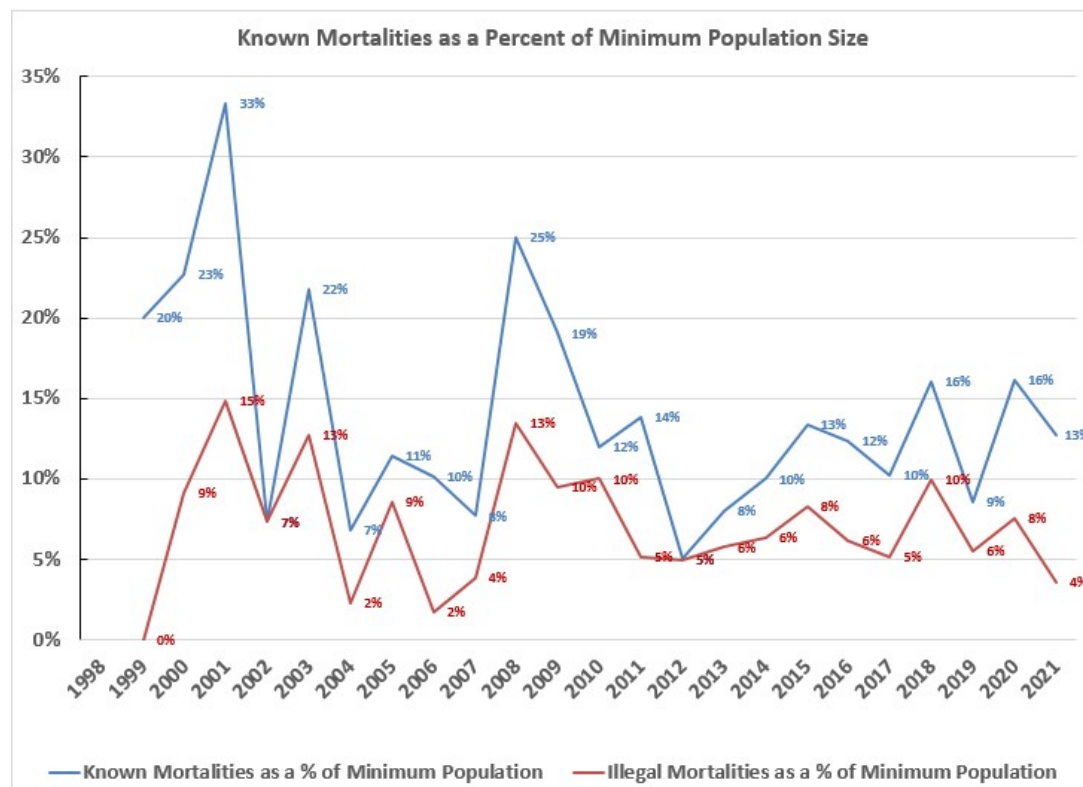
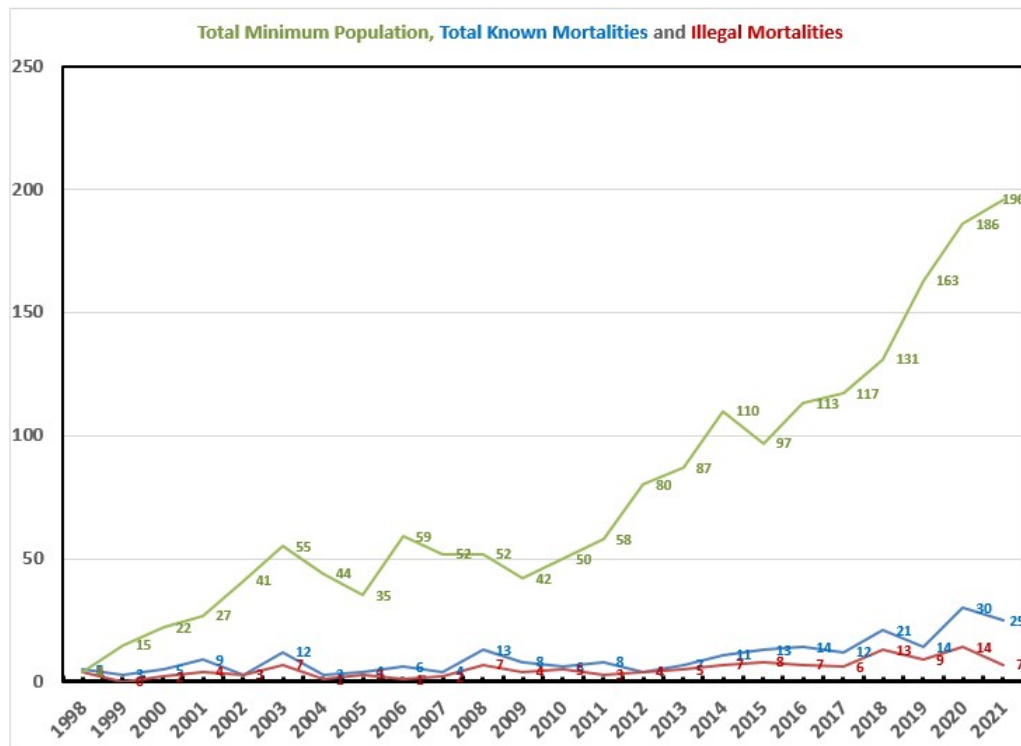
Arizona and New Mexico participated at the Mexican Wolf Species Survival Plan (SSP) program master planning meeting held on July 10-12, 2019 in El Ocotal Park, Estado de Mexico, Mexico. Comprehensive genetic and demographic analyses of the captive Mexican Wolf SSP population was performed during this meeting. New Breeding and Transfer Plans for this species were completed in July of 2019. A central topic of discussions during this meeting was the importance of cross fostering as a conservation tool for the Mexican wolf. A series of virtual SSP meetings took place in July and August 2020.

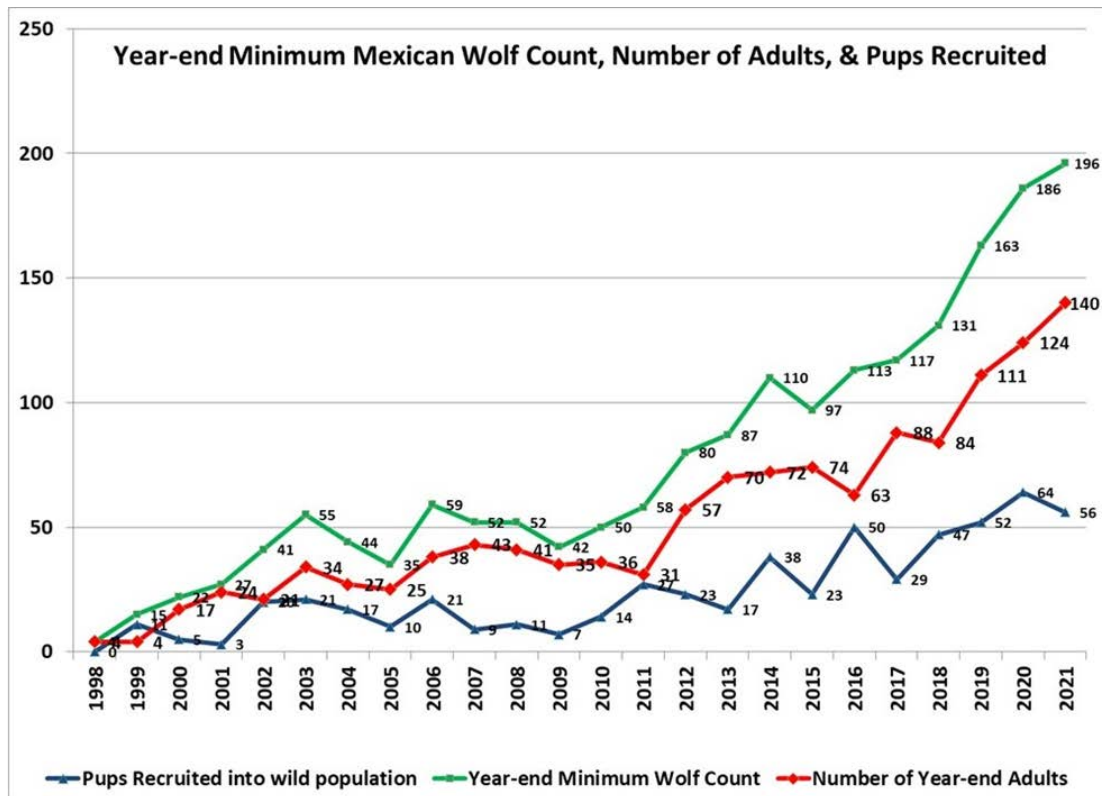
The year-end 2021 Mexican wolf count shows the population of Mexican wolves has continued to increase for the sixth consecutive year, raising the minimum number of wolves in the wild to a minimum of 196 animals. The wolves are distributed with 84 in Arizona and 112 in New Mexico. Annual surveys are conducted by the Interagency Field Team (IFT) in the winter as this is when the population experiences the least amount of natural fluctuation (i.e., in the spring the population increases dramatically with the birth of new pups and declines throughout the summer and fall as pup mortality generally occurs in this period). Thus, the IFT summarizes the minimum number of wolves in the winter

at a fairly static or consistent time of year. Counting the population at the end of each year allows for comparable year-to-year trends at a time of year when the Mexican wolf population is most stable. At the end of 2021, there were a minimum of 45 packs of wolves. A wolf pack is defined as two or more wolves that maintain an established territory. A minimum of 25 packs were documented by the IFT to produce pups that survived to the end of the year. A minimum of 144 pups were born in 2021, and at least 56 survived to the end of the year. The year-end 2021 count represents all-time records in minimum number of wolves, minimum number of adult wolves, packs producing pups, and number of pups produced.

The IFT documented 25 mortalities in the wild U.S. population of Mexican wolves in 2021. The trend in known illegal mortalities as a percent of the known minimum population has been stable (5-10%) for the last 10 years and dropped to 4% in 2021. The number of documented mortalities as a percent of minimum total population has also been stable (5-16%) for the last decade. To date, there have been only three mortalities documented as of late May 2022; all three were human caused with one attributed to a vehicle strike. Human-caused mortality has been a concern, but is not seriously impacting recovery as the population has increased an average of 14% annually since 2009.

Between April and May 2021, biologists from the AZGFD, NMDGF, USFWS, and Mexican Wolf SSP worked together to cross-foster 22 genetically valuable wolf pups from captive facilities across the U.S. into litters of wild wolf packs. Cross-fostering is a very important conservation tool to increase genetic diversity in the wild Mexican wolf population. Cross fostering involves placing genetically valuable pups less than 14 days old from captive adults into wild dens with similarly aged pups to be raised as wild wolves. The IFT has documented that cross-fostered pups have about the same survival rate as wild-born pups in their first year of life. To date, 72 captive-born pups have been cross-fostered into wild dens and 13 have attained breeding age which exceeds genetic diversity goals (benchmark for the end of 2022 is 9 reaching breeding age). Of these 13, four or five have bred and produced at least 7 litters of genetically valuable pups in the wild population. Direct measurements of genetic diversity in the wild population show cross fostering is improving the genetic health of that population in three of four metrics being monitored (genetic diversity, population mean kinship, and founder genome equivalents).





Joint Ventures

State wildlife agencies have an active role in supporting international partnerships in many of the Bird Habitat Joint Ventures, by sitting on management boards, providing technical expertise, or, in some cases, collaborating in specific projects.

The Sonoran and Rio Grande Joint Venture are bi-national Joint Ventures that continue to work collaboratively across the U.S./Mexico border. Other Joint Ventures like the Appalachian Mountains Joint Venture (AMJV) and the Pacific Coast Joint Venture (PCJV) have formal international collaborations with partners in Mexico. State fish and wildlife agencies sit on the boards of and participate actively in all Joint Ventures.

The Sonoran Joint Venture (SJV) is a partnership of diverse organizations and individuals from throughout the southwestern United States and northwestern Mexico that share a common commitment to the conservation of all bird species and habitats within this range.

- Arizona finished its term as chair the SJV Management Board with representatives from the USDA Forest Service International Programs, USFWS Region 2, BLM, Point Blue Conservation Science, Bird Conservation of the Rockies, Sky Island Alliance, Northern Arizona University, Sierra Club, CONABIO, Pronatura Noroeste A.C., CICESE, Grupo de Ecología y Conservación de Islas, A.C., among others. In addition, Arizona is an active member of the Science Working Group which provides the Management Board and SJV staff with expertise regarding biological planning, prioritization, monitoring, and evaluation for bird and habitat conservation.
- SJV Coordinator Recognized for Contributions to Conservation Community - Dr. Jennie Duberstein, SJV Coordinator, was named 2020 Innovator of the Year for the U.S. Fish and

Wildlife Service Southwest Region. This award recognizes an innovative individual or team who has creatively resolved an issue in their program, the region, or the U.S. Fish and Wildlife Service that has changed the way business is done, with an impact larger than themselves. Dr. Duberstein was also the recipient of the 2022 Eisenmann Medal, by The Linnaean Society of New York (LSNY). The Eisenmann Medal was established in 1983 in memory of Eugene Eisenmann, an “amateur” ornithologist and long-time member of LSNY who passed away in 1981. Each year the Society awards The Eisenmann Medal to an individual who has made substantial contributions to contemporary ornithology, and who has helped amateurs by taking time to help young naturalists/students who express an interest in birds or to help broaden their experience

The Rio Grande Joint Venture (RGJV) developed a cross border 5-Year Strategic Plan in 2018 to guide conservation planning, design, implementation, monitoring, and communications. The RGJV board will update and build on the Strategic Plan in 2022, using it to strengthen collaboration and define programmatic objectives for the next 5-year period from 2023-2027.

- Texas co-chairs the RGJV board and Mexico’s board members include CONABIO, CONANP, DUMAC, Pronatura Noreste, and Pasticultores del Desierto, A.C. Mexican state wildlife agencies participate in the technical committees and are encouraged to participate in board meetings.
- **RGJV implements the South Texas Grassland Restoration Incentive Program (GRIP)**, funded by the National Fish and Wildlife Foundation’s (NFWF) Monarch Conservation Fund, TPWD and the San Antonio Quail Coalition Chapter, and in collaboration with Pheasants Forever and Quail Forever, to restore and improve habitats for monarchs, other pollinators, quail, and other grassland birds. With GRIP funding, from 2020-2021 landowners improved 4,400 acres of grassland-dominated habitats in South Texas, benefitting such species as Northern Bobwhite, Cassin’s Sparrow, and Eastern Meadowlark.
- In 2021, TPWD - with matching funds from Conoco-Phillips - established funding for the new RGJV science coordinator and the impetus for a monitoring program that has long been anticipated. In collaboration with Oaks and Prairies JV, the RGJV Science Coordinator began implementing Grasslands Effectiveness Monitoring on GRIP sites in South Texas just this year. This Fall monitoring will take place on restored grassland sites in the Chihuahuan Desert as well.
- **The Chihuahuan Desert Habitat Partnership** integrates RGJV watershed restoration efforts and TPWD’s Landowner Incentive Program in the Big Bend region, to accomplish habitat improvement projects for grassland and riparian migratory birds of conservation concern to Mexico and the U.S. From 2019 to 2021, the partnership implemented and/or coordinated technical assistance on projects covering 10,215 acres of grassland and riparian habitats and 8.41 miles of stream habitats in the Chihuahuan Desert of Texas. In addition, the RGJV Conservation Delivery Specialist provided and coordinated technical assistance on more than 478,000 acres of private and public land that is likely to lead to improvements in land management and/or future projects funded by RGJV partners. RGJV staff also lead workshops and training for landowners and community members in low-tech, process-based restoration techniques which use local materials to enhance stream functioning, adjacent grasslands and groundwater recharge.
- RGJV staff continue to participate and provide assistance to the **Midcontinent Shorebird Conservation Initiative**. The Initiative’s goal is to establish a comprehensive, strategic framework for the midcontinent regions of North and South America that provide critical

breeding, migration stopover and nonbreeding habitat for numerous resident and migratory shorebirds, many of which have demonstrated long-term declines. This will provide an integrated approach to guide management and conservation actions throughout the Midcontinent Americas Flyway, which will complement conservation initiatives developed in the Atlantic and Pacific Americas Flyways and complete a comprehensive approach to shorebird conservation in the Americas. Critical roles for the RGJV include (a) working with the steering committee in the planning and implementation of the strategy in the Gulf of Mexico, particularly in the Laguna Madre de Tamaulipas and the Yucatan peninsula, and (b) assisting the steering committee in keeping a balanced membership by making sure key Mexican representation and participation exists. The initiative's framework or conservation plan is expected to be finished by mid-year 2022.

- The RGJV Management Board has identified the need to increase capacity and funding for science and monitoring for binational coordination related to freshwater and riparian habitats, including working with conservation partners in the U.S.
- The RGJV continues active collaboration with Mexican and international partners to develop conservation actions for the Reddish Egret throughout its range of distribution, particularly in México and the U.S. RGJV staff collaborated with Pronatura Noreste in the implementation of Mexico's Reddish Egret Conservation Business Plan, which served as a model for the U.S. business plan completed in 2022.
- The RGJV continues active collaboration with TPWD and Mexican partners to monitor Red-crowned parrot populations, their habitat use, and threats in central Tamaulipas. USFWS supported a two-year project to identify priority nesting, feeding and roosting sites which informed development of a conservation action plan for the species. In 2021 the RGJV, ABC, Pronatura Noreste and the Tamaulipas state government collaborated on projects to implement on-the-ground conservation actions recommended in the Red-crowned Parrot conservation action plan in three rural communities near Ciudad Victoria.
- The RGJV continues to support NAWCA and NMBCA management and conservation projects proposed and implemented by partners in Mexico.

- Binational: Canada- U.S. -

Trapping work with Canada

The U.S. and Canada continue to collaborate to improve the welfare of furbearers captured in traps through the Best Management Practices for Trapping program in the U.S. (BMPs) and the Agreement on International Humane Trapping Standards in Canada. In 2021, the U.S. published some of its findings through the BMP program: [Best Management Practices for Trapping Furbearers in the United States-Wildlife Monographs-207:1](#). For the U.S., Canada has provided invaluable data and research results, primarily on body grip traps, which have been used toward the development of BMPs. The U.S. has provided extensive data to Canada on restraining traps to allow certification of various foothold, foot encapsulating and cage traps through the Canadian program. Researchers collaborate annually on research agendas and field and lab results. Data sharing prevents the need for duplicating research efforts and provides for the efficiency of the respective programs. The two countries have plans to continue this important partnership as they continue working to evaluate and develop capture devices that meet international animal welfare standards. Since the

start of the respective testing programs in 1997, over 600 types of commercially available traps have been evaluated for 23 furbearer species. Reports and resource material are available for the U.S. testing program on the AFWA website <https://www.fishwildlife.org/afwa-inspires/furbearer-management> or for the Canadian testing program at <https://fur.ca/>

Canadian Wildlife Directors Committee

The Canadian Wildlife Directors Committee (CWDC) is composed of the wildlife directors and agency leads representing the jurisdictions/agencies (13 Provinces and Territories and Environment Canada, Parks Canada Agency, and Fisheries and Oceans Canada) with responsibility for wildlife conservation in Canada. The role of the CWDC is to provide leadership in the development and co-ordination of policies, strategies, programs and activities that address wildlife and habitat issues of national concern and contribute to the conservation of biodiversity. The Association and state fish and wildlife agency representatives attend this meeting each year.