

PROTECTING THE ENVIRONMENT AND PUBLIC HEALTH

IN THE U.S.-MEXICO BORDER REGION



Overcoming Binational Environmental Challenges

The U.S.-Mexico border region is home to over 15 million people who share natural resources, watersheds, and air basins that transcend political boundaries. Binational pollution impacts both sides of the border and necessitates a coordinated response. To improve and protect the environment and public health, the La Paz Agreement was signed by the Governments of Mexico and the United States in 1983, thus providing the foundation for cooperative efforts to address the complex and intertwined environmental issues along the U.S.-Mexico border.



Opening ceremony of the Border 2020 Program in Tijuana, Baja California, on August 8th, 2012

A Diverse U.S.-Mexico Border Region



- 15 million+ people borderwide
- 26 federally recognized U.S. tribes
- 6 national parks
- 4 high priority river basins
- 40+ U.S. counties and 80 MX municipalities
- 4 transboundary rivers into the U.S.
- 2,000 mile shared border

1. Map shows subwatersheds delineated at the Hydrologic Unit Code 8 level.
2. Boundary set forth by La Paz Agreement (62 miles from border).

TIMELINE

1983

The Basis for Binational Cooperation — La Paz Agreement

Recognizing the need to cooperate binationally on environmental and public health challenges in the border region, the Governments of the United States and Mexico signed the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (the La Paz Agreement), in the city of La Paz, Baja California Sur, Mexico, in 1983.



President Reagan of the U.S. and President de la Madrid of Mexico sign the La Paz Agreement

Building from the La Paz Agreement, the United States Environmental Protection Agency (U.S. EPA) and Mexico's Secretariat of the Environment and Natural Resources (SEMARNAT) have implemented four successive binational programs to meet emerging environmental challenges in this dynamic region. Along the entire border, key stakeholders such as the 10 states, 26 federally recognized tribes and local partners have provided leadership and additional funding to implement projects that advance environmental protection and public health improvements while the population and economic activity have increased.

1992

Integrated Border Environmental Plan (IBEP)

The first binational border program, IBEP, focused on enhanced environmental regulation and resulted in significant investments in infrastructure along the border. Although the binational environment improved, many projects were implemented at a federal scale, and the Program recognized the need to address environmental and health concerns on the border with additional local stakeholder involvement.

1996

Border XXI

Border XXI established a five-year bilateral effort which included additional federal partners to achieve its goals, engaged the 10 border states and U.S. tribes, and included over 40 public meetings to solicit input and identify local priorities. Border XXI established nine borderwide workgroups to address transboundary environmental issues. While the workgroups implemented many pilot projects benefitting communities, the Program objectives remained broad in nature.



Local emergency response sister-cities were developed

2003

Border 2012

The Border 2012 Program set an ambitious ten-year plan that included specific and measurable environmental goals and objectives developed through public input. The Program took a bottom-up approach that continued engagement of state, tribal and local communities and operated through four new regional workgroups and numerous local taskforces to implement stakeholder-led projects.



Partnership with U.S. tribes and the Necua Indigenous Community in Mexico on waste management

2012

Border 2020

Border 2020 continues a bottom-up approach and tackles emerging environmental issues. Program goals were established binationally and seek to improve air and water quality, reduce waste, strengthen emergency preparation and response, promote environmental stewardship and address environmental health. These goals directly align with U.S. EPA's core programs, local priorities, and the original mandate from the La Paz Agreement to address the complex and on-going regional environmental challenges.



Improving water infrastructure in the Tijuana-San Diego region

Protecting Communities Borderwide

Improving the Air We Share

Many U.S.-Mexico border cities share binational air basins, where pollutants such as particulate matter (PM₁₀, PM_{2.5}) and ozone and its precursors (NO_x and VOC) travel across borders. Exposure to these pollutants can affect our hearts and lungs, triggering a variety of health problems, particularly to vulnerable populations with asthma. For example, in California, ozone is problematic in San Diego County, while both ozone and PM are concerns in the Imperial Valley. In El Paso, Texas, key challenges include PM, carbon monoxide and ozone.



Air quality monitoring inspection in San Diego-Tijuana border region

In response, local binational task forces formed to coordinate and implement solutions such as improving and/or expanding monitoring networks, increasing data availability, and expanding public outreach. Meanwhile states on both sides of the border have identified mitigation strategies in air quality improvement plans (State Implementation Plans in the U.S. and ProAire in Mexico).

The border region has reduced emissions at ports of entry by reducing wait times for idling vehicles. In addition, paving dusty roads and improving urban transport borderwide have resulted in the elimination of 170,000 tons per year of PM₁₀. Air monitoring from 2006-2014 identified a decline in ozone exceedances in the San Diego and Imperial Valley air basins and PM exceedances in the El Paso air basin.



Groundbreaking ceremony of water system improvements in Anthony, New Mexico

Enhancing Water Quality

The U.S.-Mexico border region shares numerous transboundary watersheds, with many rivers flowing from Mexico into the U.S., or even forming the border itself in some cases. Four have been identified as high-priority. Outdated infrastructure and extreme weather events can result in contaminated stormwater and sewage overflows entering the transboundary waterways and exposing communities living and/or working in or nearby the watersheds to contaminated water. The Border Programs have worked to address these environmental health challenges for over 20 years.

Since 1997, the Border Water Infrastructure Program (BWIP) and binational program partners have supported the construction and/or expansion of infrastructure projects that are eliminating over 350 million gallons a day (mgd) of untreated or inadequately treated sewage discharges.

The Border Program also carries out trash cleanup and waste reduction efforts to address illegal dumping that contaminates transboundary waterways, the Gulf of Mexico and the Pacific Ocean. To protect existing infrastructure, the Program partners with local businesses in Texas, Arizona and Tamaulipas to properly dispose of Fats, Oils and Grease (FOGs). Green infrastructure projects and trainings in Ambos Nogales have reduced impacts from stormwater runoff into the Nogales Wash and the Santa Cruz River in Arizona. In addition, more than 1,000 community members and municipal staff in southern New Mexico and west Texas received training on the health threats posed by improperly maintained septic tanks.



Household hazardous waste collection event in Nuevo Laredo, Tamaulipas, Mexico

Promoting Clean Land

When waste materials are improperly disposed of they can negatively impact our lands, transboundary watersheds and oceans and create habitat for disease-bearing vectors such as mosquitoes. As the population has grown in border communities, increased amounts of plastics, electronics, tires and other materials have overburdened the waste management infrastructure and services.

The Border Programs have improved collaboration among binational stakeholders to reduce waste through: 1) mitigating the impacts of plastic, tires, and other waste through cleanups and educational outreach and community actions; 2) reducing waste and increasing recovery and reuse of plastic, e-waste, tires, and other materials; and 3) building technical capacity among diverse stakeholders to adopt sustainable materials management practices.

Since 2005, communities in the U.S.-Mexico border region have carried out projects to properly dispose: over 8 million scrap tires, nearly 60,000 tons of household hazardous waste, and 264 tons of electronic waste.

Fostering Environmental Stewardship

Improperly managing hazardous materials can pose transboundary environmental health issues. Challenges such as illegal or improper crossing of hazardous wastes and material at the U.S.-Mexico ports of entry and the lack of community information on pollutant sources has called for improved enforcement efforts, compliance assistance and environmental stewardship.

Through Border Program efforts, environmental inspectors are now present at ports of entry and information is exchanged between Program partners

on transboundary compliance at binational workshops. Border communities are also benefitting from improved transparency of U.S. and Mexican pollutant discharge data (i.e. the U.S. Toxic Release Inventory [TRI] and the Mexican Registry of Emissions and Transfer of Contaminants [RETC]) reports. In addition, a binational public-private partnership led to enhanced environmental stewardship, through Environmental Management System (EMS) trainings for over 30 small and medium-sized companies in border communities.



Ojinaga, Chihuahua responders received HAZMAT training and equipment

Strengthening Emergency Response Capability

Binational emergency preparedness and response coordination is critical in the border region, because toxic smoke, contaminated water and other impacts from disasters and incidents pay no heed to local, state or international boundaries. Emergency preparedness efforts — training, exercises, equipment — have been tested in real-life emergencies and led to a more efficient coordinated response along the U.S.-Mexico border. Joint Response Teams (JRT) support these efforts and ensure timely binational reporting of incidents.

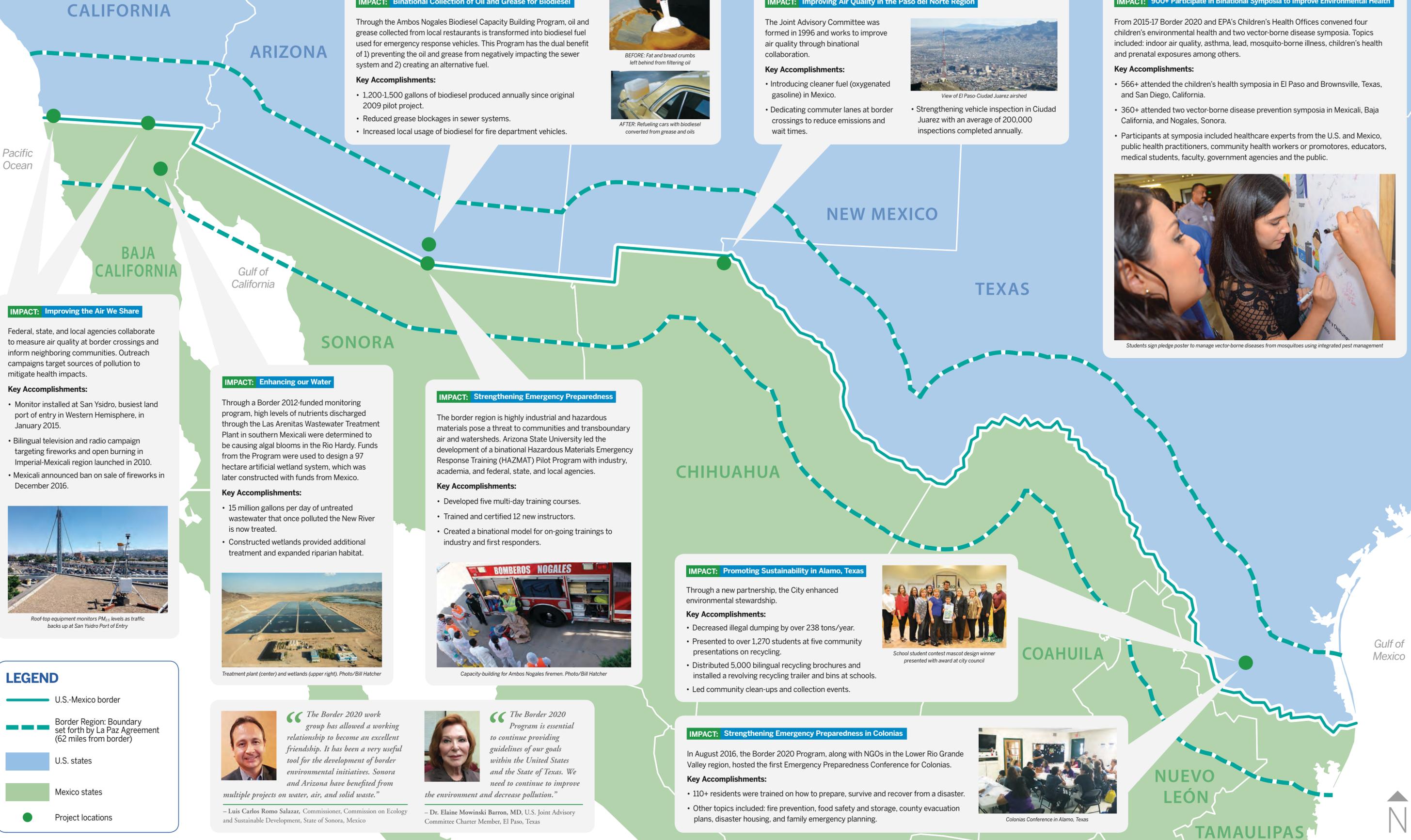
Since 2013, through the Border Program, more than 10,500 responders have received capacity trainings from over 140 training courses and over 25 binational exercises and 200 drill notifications between the U.S. and Mexico. These actions and resources have made the border region safer for residents, first responders and the environment.



Conducting truck stop inspection in Calexico, CA. Photo/Jessica Rodriguez

Partnering Binationally to Achieve Environmental Results

Tangible improvements along the entire 2000-mile border obtained through stakeholder-driven projects



IMPACT: Improving the Air We Share

Federal, state, and local agencies collaborate to measure air quality at border crossings and inform neighboring communities. Outreach campaigns target sources of pollution to mitigate health impacts.

Key Accomplishments:

- Monitor installed at San Ysidro, busiest land port of entry in Western Hemisphere, in January 2015.
- Bilingual television and radio campaign targeting fireworks and open burning in Imperial-Mexicali region launched in 2010.
- Mexicali announced ban on sale of fireworks in December 2016.



Roof-top equipment monitors PM_{2.5} levels as traffic backs up at San Ysidro Port of Entry

LEGEND

- U.S.-Mexico border
- Border Region: Boundary set forth by La Paz Agreement (62 miles from border)
- U.S. states
- Mexico states
- Project locations

IMPACT: Binational Collection of Oil and Grease for Biodiesel

Through the Ambos Nogales Biodiesel Capacity Building Program, oil and grease collected from local restaurants is transformed into biodiesel fuel used for emergency response vehicles. This Program has the dual benefit of 1) preventing the oil and grease from negatively impacting the sewer system and 2) creating an alternative fuel.

Key Accomplishments:

- 1,200-1,500 gallons of biodiesel produced annually since original 2009 pilot project.
- Reduced grease blockages in sewer systems.
- Increased local usage of biodiesel for fire department vehicles.



BEFORE: Fat and bread crumbs left behind from filtering oil



AFTER: Refueling cars with biodiesel converted from grease and oils

IMPACT: Improving Air Quality in the Paso del Norte Region

The Joint Advisory Committee was formed in 1996 and works to improve air quality through binational collaboration.

Key Accomplishments:

- Introducing cleaner fuel (oxygenated gasoline) in Mexico.
- Dedicating commuter lanes at border crossings to reduce emissions and wait times.
- Strengthening vehicle inspection in Ciudad Juarez with an average of 200,000 inspections completed annually.



View of El Paso-Ciudad Juarez airshed

IMPACT: 900+ Participate in Binational Symposia to Improve Environmental Health

From 2015-17 Border 2020 and EPA's Children's Health Offices convened four children's environmental health and two vector-borne disease symposia. Topics included: indoor air quality, asthma, lead, mosquito-borne illness, children's health and prenatal exposures among others.

Key Accomplishments:

- 566+ attended the children's health symposia in El Paso and Brownsville, Texas, and San Diego, California.
- 360+ attended two vector-borne disease prevention symposia in Mexicali, Baja California, and Nogales, Sonora.
- Participants at symposia included healthcare experts from the U.S. and Mexico, public health practitioners, community health workers or promotores, educators, medical students, faculty, government agencies and the public.



Students sign pledge poster to manage vector-borne diseases from mosquitoes using integrated pest management

IMPACT: Enhancing our Water

Through a Border 2012-funded monitoring program, high levels of nutrients discharged through the Las Arenitas Wastewater Treatment Plant in southern Mexicali were determined to be causing algal blooms in the Rio Hardy. Funds from the Program were used to design a 97 hectare artificial wetland system, which was later constructed with funds from Mexico.

Key Accomplishments:

- 15 million gallons per day of untreated wastewater that once polluted the New River is now treated.
- Constructed wetlands provided additional treatment and expanded riparian habitat.



Treatment plant (center) and wetlands (upper right). Photo/Bill Hatcher

IMPACT: Strengthening Emergency Preparedness

The border region is highly industrial and hazardous materials pose a threat to communities and transboundary air and watersheds. Arizona State University led the development of a binational Hazardous Materials Emergency Response Training (HAZMAT) Pilot Program with industry, academia, and federal, state, and local agencies.

Key Accomplishments:

- Developed five multi-day training courses.
- Trained and certified 12 new instructors.
- Created a binational model for on-going trainings to industry and first responders.



Capacity-building for Ambos Nogales firemen. Photo/Bill Hatcher

IMPACT: Promoting Sustainability in Alamo, Texas

Through a new partnership, the City enhanced environmental stewardship.

Key Accomplishments:

- Decreased illegal dumping by over 238 tons/year.
- Presented to over 1,270 students at five community presentations on recycling.
- Distributed 5,000 bilingual recycling brochures and installed a revolving recycling trailer and bins at schools.
- Led community clean-ups and collection events.



School student contest mascot design winner presented with award at city council

IMPACT: Strengthening Emergency Preparedness in Colonias

In August 2016, the Border 2020 Program, along with NGOs in the Lower Rio Grande Valley region, hosted the first Emergency Preparedness Conference for Colonias.

Key Accomplishments:

- 110+ residents were trained on how to prepare, survive and recover from a disaster.
- Other topics included: fire prevention, food safety and storage, county evacuation plans, disaster housing, and family emergency planning.



Colonias Conference in Alamo, Texas



— Luis Carlos Romo Salazar, Commissioner, Commission on Ecology and Sustainable Development, State of Sonora, Mexico

“The Border 2020 work group has allowed a working relationship to become an excellent friendship. It has been a very useful tool for the development of border environmental initiatives. Sonora and Arizona have benefited from multiple projects on water, air, and solid waste.”



— Dr. Elaine Mowinski Barron, MD, U.S. Joint Advisory Committee Charter Member, El Paso, Texas

“The Border 2020 Program is essential to continue providing guidelines of our goals within the United States and the State of Texas. We need to continue to improve the environment and decrease pollution.”



Two countries, ten states, twenty-six tribes **one environment**



Anza-Borrego Desert State Park in California. Photo/Jeremy Bauer



“ *The Border 2020 Program has allowed us to improve our relationship with EPA and more importantly they are accepting local input. That is important to develop long term relationships and really address U.S. – Mexico Border environmental issues.*”

– Dr. Hector F. Gonzalez, Director of the City of Laredo Health Department, Laredo, Texas



“ *The Border 2020 Program brings people together to better understand and coordinate emergency preparedness and response tactics. The result is first responders and communities on both sides of the Border who are better trained and equipped to protect human health and the environment.*”

– Mario Novoa, Fire Chief, Douglas, Arizona



U.S.-Mexico Environmental Program

www.epa.gov/border2020