

**(c) Texas Sites**

Site Code	Site Name	Irreplaceability Index
<b>Terrestrial Areas</b>		
5	Big Bend	50.87
24	Davis Mountains	23.26
92	Sierra Vieja-Chinati Mountains	9.44
51	Marathon Basin Grasslands	7.36
39	Hueco Mountains	4.36
11	Bullis Gap	3.44
56	Musquiz Canyon	3.29
55	Monahans Sandhills	3.03
33	Glass Mountains	2.78
80	Salt Basin	2.75
49	Longfellow Grasslands and Mesas	2.28
27	Dryden/Sanderson	1.78
52	Marfa Plateau Grassland	1.68
45	Lake Toyah Basin	1.36
90	Sierra Diablo.	1.26
47	Langtry	1.19
28	Eagle Mountains	1.03
3	Apache Mountains	1.01
25	Devils River Megasite	1.00
44	Lake Amistad	0.83
103	Western Sierra Diablos	0.59
8	Border (in Mexico technically?)	0.53
104	Yeso Hills	0.53
100	Van Horn	0.51
53	Mesa/Pecos Plain	0.36
35	Hackberry Draw	0.36
16	Cedar Station/Dryden	0.36
79	Saddle Butte	0.36
1	Alamito Creek	0.34
57	Noelke Hill	0.34
66	Quitman Mountains North	0.33
74	Red Light Draw	0.28
7	Boracho	0.26
9	Borderland	0.15
19	Clint	0.15
77	Roberts Mesa	0.03
102	West of Fort Stockton	0.01
94	Sorcerer's Cave	0.01
21	Cornudas	0.01
<b>Aquatic Areas</b>		
NCD-Agua-28	Rio Grande Big Bend Lower Canyons	7.44
NCD-Agua-25	Diamond Y Draw/Leon Creek & Springs	4.58
NCD-Agua-24	Balmorhea Springs Complex	3.25
NCD-Agua-23	Little Aguja Creek	3.00

Site Code	Site Name	Irreplaceability Index
NCD-Agua-27	Devil's River	2.50
NCD-Agua-26	Lower Pecos	2.19
NCD-Agua-29	Rio Grande Ojinaga	1.52
NCD-Agua-30	Terlingua Creek	1.00
NCD-Agua-32	Hot Springs	0.50
NCD-Agua-31	Alamito Creek	0.46
NCD-Agua-22	Salt Creek	0.14

### Setting Priorities Among Portfolio Areas for Conservation Action

Rather than try to derive a single metric for the conservation priority of a site, we used a single, simple three-by-three matrix of Degree of Threat vs. Degree of Irreplaceability to identify those conservation areas considered of High, Medium and Low conservation priority (Table 19). We used natural breaks in the score metrics to identify high, medium and low threat and high, medium and low irreplaceability for each conservation area. Separate priority matrices were developed for Mexico, New Mexico, and Texas to avoid the obvious problems in comparing such data across political boundaries and because different conservation actors will be involved in taking conservation action within these three political divisions. In each table highest priority areas (high irreplaceability and high threat) are shown in bold red text. Secondary priority areas are shown in black bold text.

While this approach gives us a rough way of identifying what are probably the highest priority areas for undertaking site based conservation activities, it must be emphasized that our ability to identify, measure, and summarize the threats on individual areas within the vast Chihuahuan Desert Ecoregion is crude at best. A more intensive site-by-site analysis of threats is necessary before any actions should be taken on any individual site. In addition, our knowledge of the distribution of conservation targets on these areas is, in many cases, rudimentary and/or based on out-of-date field data. We have not provided threat or irreplaceability scores for the Secondary Terrestrial Portfolio because we lack any on-the-ground information on the state of these sites or even the actual presence of the biodiversity for which these areas were identified in the portfolio.

**Table 19. Priorities for Conservation Action among Conservation Areas**

**(a) Mexican Terrestrial Areas**

		Degree of Irreplaceability		
		High	Medium	Low
Degree of Threat	High	<b>Complejo de Cuatro Ciénegas</b>	<b>Corredor Saltillo Monterrey</b>	Palomas
	Medium	<b>La Perla El Tokio Complejo Mapimi 1 Pastizales de la Campana Complejo Maderas del Carmen, El Burro y La Encanta Pastizales de Janos/ Mesa de Guacamaya Sierra de la Paila</b>	Sierra del Viroliento/ Sierra de Hechiceros Cañon de Santa Elena Complejo Mapimi 3 Complejo Mapimi 4	Cerros del Colorados Samalayuca Villa Ahumada Complejo Mapimi 2
	Low	El Huizacle y Pa	Sierra de Alvare Organos Malpais Cuchillas de la Zarca Sierra de la Gloria Sierra Santa Fe del Pino	Pico de Teyra Yerbaniz

\* Note that we have manually ranked the Pastizales de Janos/Mesa de Guacamaya area as High irreplaceability. See the section, “Biological Irreplaceability of the Portfolio Conservation Areas”, above.

**(b) Mexican Aquatic Areas**

		Degree of Irreplaceability		
		High	Medium	Low
Degree of Threat	High	<b>Cuatro Ciénegas Media Luna/Rio Verde Muzquiz Potosi Rio San Pedro Ojo Solo</b>	<b>Rio Casas Grandes Ojo Julimes Sandia Rio Mezquital Rio Santa Catarina Rio Grande Ojinaga Venado-Moctezuma Rio del Carmen Rio Monclova Rio Nazus Guzman Basin Bustillos</b>	Cadena Chorro Ojo de San Gregorio Valle de Allende Illesces Rio Santa Maria Ocampo Sauz Basin Lower Rio Conchos Arroyo del Pino
	Medium	<b>San Diego de Alcala</b>	<b>La Concha Ojo de Villa Lopez Ojo de Dolores Rio Balleza Upper Conchos</b>	Upper Aguanaval Rio de Ramos Rio Guatimape Ojo de Galeana
	Low			Rio Torrero Lower Rio Nazas Arroyo El Nogal Rio Chuviscar

(c) New Mexico Terrestrial Areas

		Degree of Irreplaceability		
		High	Medium	Low
Degree of Threat	High	<b>San Andres - Oscura Mountains</b> <b>Organ Mountains</b>	<b>Mountains/Southern Jornada</b> <b>Franklin Mountains</b> <b>Mimbres Hot Spring</b> <b>Northern Jornada Basin</b> <b>Otero Mesa</b> <b>Tularosa Basin Desert</b>	San Vicente Wash/Walnut Creek
	Medium	<b>Guadalupe Mountains</b>	<b>Bosque del Apache</b> <b>Potrillo Mountains</b> <b>Seven Rivers</b> <b>Florida Mountains</b> <b>Sitting Bull Falls</b> <b>Black River Basin</b>	Chalk Bluffs Kenzin Remunda / Big Sinks Antelope Ridge Red Mountain Livingstone Ridge Crow Flats/Ishee Lakes Halfway South Northern Brokeoff Mountains Hagerman Lanark Robledo and Las Uvas Mountains
	Low		Hatchet and Alamo Hueco Mountains Caballo Hope TorC West	Sunland Border Doña Ana Mountains Caballo Lake Strauss Sinks Cedar Mountains Cook's Peak Crawford Ranch Nutt Grasslands

(d) New Mexico Aquatic Areas

		Degree of Irreplaceability		
		High	Medium	Low
Degree of Threat	High	<b>Blue Spring</b> <b>Black River</b> <b>Lower Hondo</b>	<b>Oscura Salt Creek</b> <b>Mimbres River</b>	Rattlesnake Springs
	Medium	<b>Bitter Lake</b> <b>Pecos River Delaware</b> <b>Pecos River Roswell</b>	<b>Lost River</b> <b>Tularosa Creek</b>	
	Low	Rio Grande Elephant Butte	Bottomless Lakes Pecos River High Plains Pecos River Carlsbad Rio Grande Caballo Rio Felix	Cottonwood Springs Sitting Bull Falls Clayton Basin Lakes Laguna Plata

(e) Texas Terrestrial Areas

		Degree of Irreplaceability		
Degree of Threat		High	Medium	Low
	High	<b>Big Bend</b> <b>Davis Mountains</b>	<b>Devils River Megasite</b> <b>Dryden/Sanderson</b> <b>Glass Mountains</b> <b>Marathon Basin</b> <b>Grasslands</b> <b>Marfa Plateau</b> <b>Grassland</b> <b>Musquiz Canyon</b> <b>Salt Basin</b> <b>Sierra Diablo.</b> <b>Sierra Vieja-Chinati</b> <b>Mountains</b>	Alamito Creek Borderland Clint Lake Amistad Sorcerer's Cave
	Medium		<b>Langtry</b> <b>Longfellow Grasslands</b> <b>and Mesas</b> <b>Hueco Mountains</b> <b>Monahans Sandhills</b> <b>Apache Mountains</b> <b>Eagle Mountains</b> <b>Lake Toyah Basin</b> <b>Bullis Gap</b>	Hackberry Draw Cedar Station/Dryden Red Light Draw Boracho Cornudas Quitman Mountains North Roberts Mesa Mesa/Pecos Plain Van Horn West of Fort Stockton Saddle Butte Western Sierra Diablos Yeso Hills
	Low			Border Noelke Hill

**(f) Texas Aquatic Areas**

		Degree of Irreplaceability		
Degree of Threat		High	Medium	Low
	High	<b>Rio Grande Big Bend</b> <b>Lower Canyons</b> <b>Diamond Y Draw/Leon</b> <b>Creek &amp; Springs</b> <b>Balmorhea Springs</b> <b>Complex</b> <b>Little Aguja Creek</b>	<b>Devil's River</b> <b>Lower Pecos</b> <b>Rio Grande Ojinaga</b> <b>Terlingua Creek</b>	Terlingua Creek Alamito Creek Salt Creek
	Medium			Hot Springs
	Low			

## 8. NEXT STEPS AND RECOMMENDATIONS

### Data Management and Archiving

A compiled species target occurrence database for the Chihuahuan Desert is not provided as part of this report. State Heritage programs and the Northeast Mexico Conservation Data Center (CDC) maintain element occurrence databases for their respective regions, and data from these Heritage Programs and the CDC used in developing this document were used under license agreement. Nevertheless, all species occurrence data used in developing the portfolio for the Chihuahuan Desert are available through these Heritage and CDC programs. All new occurrence data mined and developed for this study will be archived and submitted to the Northeast Mexico CDC, the New Mexico Natural Heritage Program, and the Texas CDC for quality checking and inclusion with their master data sets.

Other data sets developed for this study, including the DEM, landcover, biophysical model and fragmentation model, are included on the CD that accompanies this report. Questions regarding this data should be directed to Pronatura Noreste or The Nature Conservancy of New Mexico.

### Data Gaps

Ecoregional planning efforts can always be improved upon as more and better data become available. A lack of comprehensive data is always a stumbling block to such efforts, especially for such a large, complex, and incompletely understood region such as the Chihuahuan Desert. There are a number of areas where data are lacking or incomplete for the Chihuahuan Desert, and we encourage the collection and archiving of more comprehensive data by which the assumptions made in this plan can be checked and the results refined through future iterations. There are three main areas where data are lacking or incomplete – target occurrences, vegetation mapping, and an aquatic system classification.

Numerous data gaps were encountered for conservation targets. Data were completely lacking for some species. Occurrence data were out of date for others. In some cases we lack up-to-date taxonomic assessments of species or groups of species; for example the status of the trout (*Oncorhynchus* spp.) of the Sierra Madre Occidental has not yet been clarified. While many museums are now making their collection data available online, many occurrence locations have yet to be spatially referenced, and many collections from the Mexican portion of the ecoregion are very old.

Vegetation data for the ecoregion is incomplete and classification systems are often incompatible across political boundaries. The New Mexico and Texas GAP vegetation data sets both suffer from incomplete ground-truthing and a number of flawed delineations were discovered in the Chihuahuan portion of these datasets. The vegetation mapping for the Mexican portion of the ecoregion, developed by INEGI, was updated in time for this project, but lacks any resolution of some vegetation classes, most notably

grasslands. A better, seamless vegetation spatial dataset for the ecoregion is a top priority for improving upon future iterations of the plan.

An even greater limiting factor to this effort was the complete lack of an aquatic classification system for the ecoregion, or even access to adequate data sets to develop such a classification. The first priority in this regard must be a complete hydrologic spatial dataset for Mexico such as exists in the National Hydrologic Database (NHD) for the United States.

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## 10. ACKNOWLEDGEMENTS

This project could not have been completed without the generous support of The Nature Conservancy's Migratory Bird Program and Ian Cummings and the Conservancy's Ecoregional Planning Support Team. Special thanks go to Craig Groves, Laura Landon, and Renee Mullen for their advice and support. Funding also came from The Nature Conservancy's New Mexico, Mexico, and Texas Programs. Thanks to Rosario Alvarez, Juan Bezaury, Brian Houseal, Pat Patterson, Robert Potts, Bruce Runnels, James Sulentich and William Waldman for their institutional support. Some data and methodology used in this analysis was developed with the assistance of grant funding from the National Aeronautics and Space Administration (NASA). Thanks to Woody Turner of NASA for his support of our work in the Chihuahuan Desert.

Special thanks to the Conservation Data Center operated by Pronatura Noreste for Northeastern Mexico, the Texas Conservation Data Center and Texas Parks and Wildlife Department, Wildlife Diversity Program, as well as the New Mexico Natural Heritage Program. Locational data and other supporting information was provided by a host of experts in the United States and Mexico. Thanks to all those who participated in an experts workshop hosted by the World Wildlife Fund in Monterrey, Mexico, in October, 1997. We would especially like to acknowledge Ernesto Enkerlin, David Olson, and Chris Williams for their assistance. Pronatura Noreste coordinated the mining of additional locational data for Mexico. Experts providing data for that effort were Eduardo Estrada, Héctor Arturo Garza, Francisco González, Pablo Lavín, Arnulfo Moreno, Jesús Valdez, and Patricia Vela. Thanks also to Mauricio Cotera, María Elena García, Mario García, David González, and Cynthia Redendiz for their assistance with this effort.

We also thank the technical team members who assisted in the development and review of taxonomic target lists and to those who provided additional data on species distributions; David Anderson, David Baumgardner, Michael Bogan, David Bowles, Bill Carr, Steve Cary, Alberto Contreras-Arquieta, Miguel Angel Cruz, Eduardo Estrada, Jennifer Frey, Gary Garrett, Mark Goering, Chris Hoagstrom, Amber Hobbs, Denny Hugg, Rebecca Keeshen, Barry Knisely, Brian Lang, Robert R. Larsen, Juan Medel, Artie Metcalf, Angel Montoya, Charlie Painter, Steve Platania, Jackie Poole, Andy Price, Dave Propst, Christopher Rustay, Robert Sivinski, Richard Spellenberg, Phil Tonne, Jesus Valdes, Tom Wendt, and Kendal Young.

Linda Delay provided invaluable assistance in developing data layers for the biophysical model. Michael Heiner, Dan Dorfman, and Pat Comer assisted in developing the biophysical model and helped with other GIS problems. Russell Almaraz of NRCS helped build an ecoregion-wide soils map. Bob Unnasch assisted in developing metrics to measure threat and irreplaceability for conservation areas. Other GIS and technical assistance was provided by Tom Alnutt, Marilyn Altenbach, Debbie Benesh, Frank Biasi, Brooke Cholvin, Edwin Falconer, Chris Frasier, Steven Gilbert, Anne Gondor, Larry Gorenflo, Gordon Harris, Xaojun Li, Colby Loucks, Jason McNees, Cherie Moritz, Teri Neville, Paul Neville, Michael Schindel, Dorinda Scott, and Ryan Smith. Other assistance, advice, and support was provided by Barbara Adler, Susan Anderson, Sarah

Buckley, Wendy Dinner, Kristi Echols, Lee Elliot, Ingrid Etienne, Keene Haywood, Crawford Marginot, Patrick McCarthy, Patricia Mehlhop, Daran Moon, Deborah Nethers, Wayne Ostlie, Marco Antonio Paredes, Laura Paulson, Townsend Peterson, Christina Rhoe, Peter Russell, Jason Spensley, and Leni Wilsman.

We are grateful to Jennifer Hall, Steve Chaplin, and all the participants of the November 2000 Ecoregional Planning workshop in Colorado Springs, Colorado, hosted by The Nature Conservancy, for early input and assistance in developing this assessment. Thanks also to those who reviewed technical approaches, draft technical documents, and provided editorial advice on the final document.