UNITED STATES DEPARTMENT OF THE INTERIOR
U. S. - MEXICO BORDER FIELD COORDINATING COMMITTEE

UNITED STATES-MEXICO BORDER AREA, AS DELINEATED BY A SHARED-WATER RESOURCES PERSPECTIVE

Fact Sheet

INTRODUCTION

The 1983 La Paz Agreement defined the United States-Mexico border area as a corridor extending 100 kilometers on each side of the international boundary between the two nations. From a variety of different perspectives, this somewhat pragmatic definition of the border area may have been reasonable. Recent passage of the North American Free Trade Agreement (NAFTA) and the subsequent establishment of the North American Development Bank and the Border Environment Cooperation Commission indicate the importance each country places on the U.S.-Mexico border region. NAFTA-related development has affected, and will continue to affect, the border resources we share. However, for describing and assessing the shared-water resources of the border region, the arbitrary delineation of the "border area" defined in the 1983 agreement is not sufficient; relevant hydrologic and hydrogeologic criteria must be used to delineate the extent of the border area.

APPROACH

Surface-water drainage basins were used as the primary basis for defining and delineating the extent of the border area from a shared-water resources perspective. Those drainage basins either directly adjacent to or crossing the international boundary were automatically included in the border area, those basins containing unconsolidated aquifers that extended to or across the international boundary also were included, and finally "protected areas" adjacent to included basins were selectively added to the border area.

Delineations of the drainage basins in the United States were obtained from digital coverages of hydrologic units derived by the U.S. Geological Survey (Seaber, Kapinos, and Knapp, 1984). The digital coverages were obtained at a 1 : 250,000 scale. Delineations of the drainage basins in Mexico were digitized from 1 : 250,000-scale Hydrologic Maps of Surface Water produced by the Direccion General de Geografia del Territorio Nacional (1981); this series of maps presents the same information at the same map projection as the 1 : 250,000-scale maps produced for the United States by the U.S. Geological Survey. The maps for Mexico show the locations of surface-water drainage basins, stream gages, climatological stations, and contours of equal temperture and precipitation. Small adjustments to a few basin delineations were made to provide basin continuity across the international boundary.

The drainage basins associated with the lower reaches of the following rivers were used to define the border area: Colorado, Gila, Rio Grande, Rio Conchos, Pecos, Rio Salado, and Rio San Juan. For each of these regional rivers, a nearby discharge gaging station was used as the basis for delineating the extent of the downstream drainage basin.

EXTENT OF THE BORDER AREA

As defined in this report, the border area contains about 157,600 square miles (408,185 square kilometers), and extends nearly 1,920 miles (about 3,090 km) between the Gulf of Mexico and the Pacific Ocean. The limits of the hydrologic border area, as presented in this report, range from 4.5 to 285.2 kilometers from the international boundary. In size, the border area is similar to California (which is 158,693 square miles, or about 411,000 square kilometers), and is larger than the combined area of the twelve smallest states in the U.S. In order to better categorize the water-related issues, the border area has been divided into 8 subareas that have similar hydrologic and physiographic features.

The Pacific Basins/Salton Trough subarea (subarea 1) contains 7 basins that drain either to the Pacific Ocean or to inland seas. The Colorado River/Sea of Cortez subarea (subarea 2) contains 11 basins that drain either to the Colorado River below the gaging station at Parker Dam, to the lower Gila River below the gaging station at Painted Rock Dam, or to the Sea of Cortez. The Mexican Highlands subarea (subarea 3) contains 14 basins that drain to rivers in southern Arizona, southwestern New Mexico, northern Sonora, or the extreme northwestern tip of Chihuahua. The Mimbres/Animas Basins subarea (subarea 4) contains 5 basins that drain internally in southern New Mexico and northern Chihuahua. The Rio Grande--Elephant Butte Reservoir to above Rio Conchos subarea (subarea 5) contains 14 basins that drain to that reach of the Rio Grande below the gaging station at Elephant Butte Dam. The Rio Grande--Rio Conchos to Amistad Reservoir subarea (subarea 6) contains 32 basins that drain either to that reach of the Rio Grande, to the lower reach of the Rio Conchos below the now suspended Falomir gaging station, or to the lower reach of the Pecos River below the gaging station at Girvin. The Rio Grande--below Amistad Reservoir to Falcon Reservoir subarea (subarea 7) contains 13 basins that drain either to that reach of the Rio Grande, or to the lower reach of the Rio Salado below the gaging station at Las Tortillas. And finally, the Lower Rio Grande Valley--below Falcon Reservoir to the Gulf of Mexico subarea (subarea 8) contains 11 basins that drain either to that reach of the Rio Grande, to the lower reach of the Rio San Juan below the gaging station at Santa Rosalia, or to Arroyo Colorado in southern Texas. The areal extent of the subareas is listed in the table shown on the back page of this report.

The U.S-Mexico Border Area is populated and large--it contains approximately 9.5 million people in an area of 157,600 square miles, about the size of California.