

# Traditional Knowledge in the Río Grande/ Río Bravo Basin

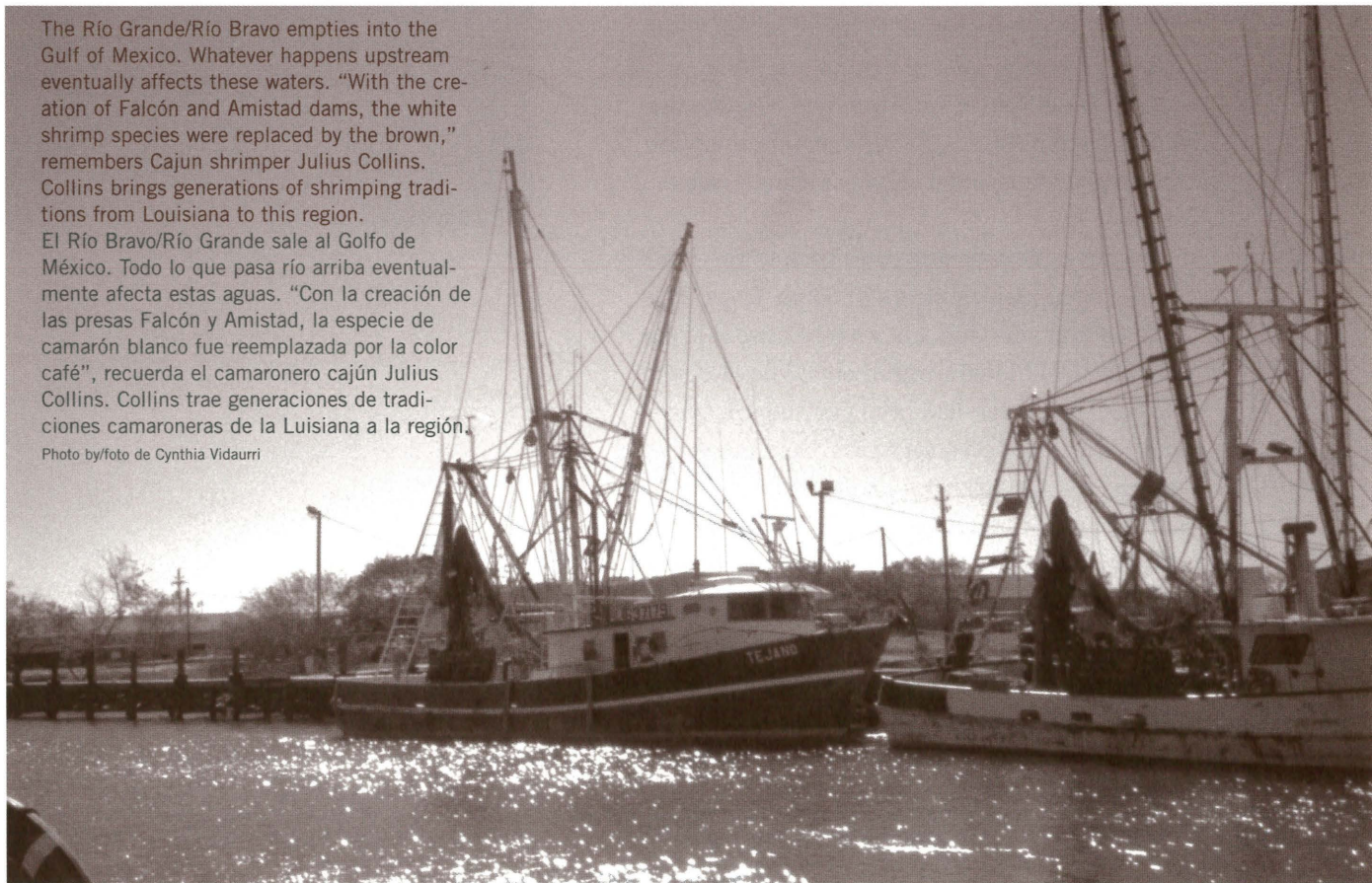
by Victor Hernández

From the headwaters to the mouth of the Río Grande/Río Bravo, the river basin's diverse environmental zones pose unique challenges in land and water management. Long-term experience of, and adaptation to, the river's various habitats have created a traditional

knowledge base with which local people effectively manage and maximize the region's natural resources. Time-tested traditional techniques combine with non-traditional approaches to provide basin residents with an effective water and land management repertoire.

The Río Grande/Río Bravo empties into the Gulf of Mexico. Whatever happens upstream eventually affects these waters. "With the creation of Falcón and Amistad dams, the white shrimp species were replaced by the brown," remembers Cajun shrimper Julius Collins. Collins brings generations of shrimping traditions from Louisiana to this region. El Río Bravo/Río Grande sale al Golfo de México. Todo lo que pasa río arriba eventualmente afecta estas aguas. "Con la creación de las presas Falcón y Amistad, la especie de camarón blanco fue reemplazada por la color café", recuerda el camaronero cajún Julius Collins. Collins trae generaciones de tradiciones camaroneras de la Luisiana a la región.

Photo by/foto de Cynthia Vidaurre







The Embudo Valley of northern New Mexico is home to centenary ranches (land owned by the same family for at least 100 years) created by lands deeded under the Spanish Land Grant ordinances. They are managed in riparian (river-bank) lots, 50 to 500 feet wide and 1 to 20 miles long. Introduced in the mid-1800s, this riparian system is designed to benefit from the different micro-environments of the region. The approach promotes practices which maximize the limited natural resources, and it adapts to what is sustainable in the diverse ecosystems found on any given ranch.

*Acequias*, or gravity-driven earthen-work irrigation ditches, effectively manage limited water supplies, and, beyond their functional value, they reinforce community identity and community collaboration. The spring cleaning of *acequias* is a functional and social task in which everyone is obligated to participate in order to maintain this resource. In many New Mexico communities, the first water flow of the year is celebrated with a blessing and a procession in honor of San Isidro Labrador, patron saint of agriculture. Today, these centuries-old Native American and Hispano *acequias* are combined with 20th-century irrigation systems to manage the region's precious water supply.

Private cattle ranching dates back to the 1750s on the open-plains ranches of South Texas. This isolated and arid land lent itself to very little else. Early settlers brought with them a knowledge for working cattle that had been evolving in Spain and Mexico for seven centuries. Here *rancheros* utilize land and livestock management knowledge and techniques developed over generations of trial and error, a vernacular form of scientific methodology, as well as strategies taught in universities. During periods of extreme drought, *vaqueros* employ a technique called "*chamusquear*" — burning off needles of the abundant nopal cactus and feeding it to cattle to provide a much-needed source of water and protein.

Rancher Lauro Gutiérrez uses modern watering





Rodeos are an opportunity for South Texas *vaqueros* to hone their ranching skills and to pass them on to the younger generation.

Los rodeos dan a los vaqueros del sur de Texas la oportunidad de perfeccionar sus habilidades con el ganado y de pasárlas a la generación más joven.

Photo by/foto de Javier Salazar

systems in conjunction with a hand-dug, turn-of-the-century *presa* (dam) to water the livestock at Rancho Niño Feliz. *Rancheros* incorporate new technology that eases the work, but not all modern improvements have worked as well as expected. The helicopter allowed for faster, more efficient roundups, but some ranchers have reported that the livestock soon became used to the helicopter and could no longer be herded by it. Consequently, some retired *vaqueros* have been called upon as consultants to work with helicopter pilots in search of wild cattle that evade the roundup. The *vaqueros*' extensive knowledge of the land and of animal psychology could not be replaced by technological advances.

Along the banks of the Río Conchos in communities like Valle de Zaragoza, Chihuahua, *rancheros* maximize the region's ephemeral resources. In addition to raising cattle, they have developed an intermittent, river-bank farming method that takes advantage of seasonal changes in the river's level. When the river recedes, it leaves behind rich sediment that forms natural *labores* (fields) on its banks. These fertile fields are ideal for raising watermelon, chiles, tomatoes, and beans. There is always a risk that the fields may be inundated during heavy rains or flash floods. Over time, *rancheros* have learned to gauge the river's ebbs and flows well enough to decide when to plant along its banks.

In the harsh and delicate environment of the Chihuahuan Desert, cultural knowledge is preserved through local crafts. The Department of Ecology of the State of Coahuila has partnered with local residents in an approach that utilizes the desert's natural resources, rescues a weaving tradition, discourages the use of polluting plastic shopping bags, and provides economic benefits. Traditional artists use the fibrous raw materials provided by desert plants such as the *lechuguilla* and *palma mandioca* to produce shopping bags, scrub brushes, place mats, and other items. Wax from the *candelilla* plant is processed and eventually finds its way to cosmetics and foodstuffs.





The mouth of the river is home to the country's largest shrimping basin, which was developed during the 1950s by Louisiana Cajuns who migrated to South Texas. This occupational group feels the impact of what has been done along the entire length of the river. The damming of the river has caused salinity changes in the Gulf of Mexico that have affected the shrimp living there. Today, shrimpers employ a variety of electronic technology for navigating and for detecting schools of shrimp, but the underlying organizational principles of running a shrimp boat are still those used in the earliest days of this occupation.

Managing the Río Grande/Río Bravo Basin's natural resources involves constantly responding to environmental changes. The lesson is that technological advancements do not necessarily equate with more effective practices or an improved quality of life. Effective management requires that we maintain a variety of options at our disposal; the loss of traditional knowledge means diminished options. As Arnold Herrera of Cochiti Pueblo says, "Traditional people have important lessons to offer industrial and post-industrial societies." There are lifetimes of knowledge out there that can be incorporated into public policy and practice.

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Thirty-six agricultural communities in the state of Coahuila, Mexico, harvest the new growth of the wild *lechuguilla*, an abundant, fibrous desert plant. Mrs. Martínez dries the processed fiber in the patio of her house. Treinta y seis comunidades agrícolas en el estado de Coahuila, México, cosechan el brote nuevo de la lechuguilla, una planta fibrosa que abunda en el desierto. La Sra. Martínez recoge la fibra de lechuguilla en el patio de secado que tiene en su casa.

Photo by/foto de Imelda Castro Santillán

