

Science Notes

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Water right protects Great Sand Dunes National Park and Preserve

South Twin Lake, located near the remote southwestern corner of Great Sand Dunes National Park and Preserve, is an expression of the shallow unconfined aquifer.

By James Harte

ON 4 AUGUST 2008, WATER JUDGE O. JOHN Kuenhold signed a historic decree approving an in-place right to groundwater for Great Sand Dunes National Park and Preserve. The water right is the first of its kind in the state of Colorado and concludes more than a decade of work by the National Park Service, the state of Colorado, and the local community to protect water and water-dependent resources in the San Luis Valley.

Great Sand Dunes National Park and Preserve (Great Sand Dunes) is located in the San Luis Valley of south-central Colorado and has been threatened for years by proposals to export water to the Front Range of Colorado or to New Mexico. In 2000, with the support of the state, the Rio Grande Water

Conservation District, and the local community, Congress passed the Great Sand Dunes National Park and Preserve Act. The act was unique because Congress specifically recognized that surface and groundwater systems on and underlying the Great Sand Dunes and adjacent lands were necessary to the preservation of resource values, including the unique pulse flow characteristics of Sand and Medano creeks. In addition, Congress directed the Secretary of the Interior to obtain and exercise water rights to fulfill the purposes of the park by maintaining groundwater levels, surface water levels, and streamflows on, across, and under the park.

To accomplish this, the U.S. Department of Justice, representing the Service, filed a water right ap-

Little Spring Creek, located west of the main dune complex in Great Sand Dunes National Park and Preserve, arises from the ground where the shallow unconfined aquifer intersects the ground surface.



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During spring snowmelt runoff and intense summer thunderstorms, Sand Creek flows west from the Sangre de Cristo Mountains, along the north side of the main dune complex, and may eventually make its way into San Luis Lake, near the western boundary of Great Sand Dunes National Park and Preserve.

plication in December 2004 to claim a right to all unappropriated (available) water in the unconfined aquifer (shallow water-table aquifer) beneath the park. Following a short trial, during which the court heard testimony from experts in hydrogeology, herpetology, and wetlands ecology, the judge signed the decree entitling the National Park Service to an absolute water right to appropriate in-place all unappropriated groundwater in the unconfined aquifer beneath the park. The water right entitles the Service to specific water levels at 10 monitoring wells located near the western boundary and allows

the park to challenge any changed or expanded use of an existing water right and new rights junior to the park's.

Construction of the 10 groundwater monitoring wells was completed in October 2009. The wells will be outfitted with electronics to continuously measure, record, and report water table elevation in the shallow unconfined aquifer to the Colorado Division of Water Resources (CDWR). Following the first 10 years of data collection the court will revisit the 2008 decree and determine if the water table elevations listed in the decree are reasonable or if they will be adjusted to reflect the 10-year data record. The water table elevation data will be used by the CDWR to administer the park's in-place groundwater right.

With this water right, the streamflows, surface water, groundwater, and natural resource values at Great Sand Dunes National Park and Preserve will be protected for future generations.

About the author

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