

*Wetland Habitats of North America*

Edited by Darold P. Batzer and Andrew H. Baldwin

**Chapter 23**

**DESERT SPRING WETLANDS OF THE GREAT BASIN**

COMPLETE TEXT OF PARAGRAPHS SPANNING PAGES 329 AND 330. *The text highlighted in yellow below was omitted from the printed book.*

GREAT BASIN WETLANDS

Scientists and the public identify typical wetlands as expansive marshes, swamps, and bogs where wildlife is abundant and vegetation relies on the presence of water through much of the year. These impressions typify wetlands in more mesic regions, but they poorly describe some of the more unique Great Basin wetlands—the desert springs. Other wetland types such as playas, wet meadows and marshes occur within the Great Basin and are not unlike those that occur in other western North America areas. Many of these wetland types are discussed elsewhere in this book; however, desert springs remain largely undescribed and are the focus of this chapter.

Appreciation of Great Basin desert springs evolved over several periods that can be delineated by early exploration of the region, taxonomic studies, and the contemporary interest in conservation. The first detailed description specific to Great Basin wetlands and their aquatic life came from the Death Valley Expedition in 1891, led by C. Hart Merriam. This expedition provided plant and animal collections for description of fishes and mollusks, many of which occupied only spring-fed systems (Gilbert 1893; Stearns 1893). The next phase of discovery began during the early 1900s, when C.L. Hubbs and R.R. Miller began describing regional fishes. Their pioneering biogeographic studies postulated that fish entered the region when aquatic connectivity with adjacent basins occurred during pluvial periods that were suggested by I. Russell, and that fish speciation was attributed to decreased inter-basin connectivity

and isolation in aquatic habitats that occurred in springs with drying climates (Miller et al. 1991). Similar to impressions given by work from the Death Valley expedition, many of these new species were found only in desert spring systems. Work by Hubbs and Miller brought focus to Great Basin aquatic endemism associated with springs, changing the perception that small wetlands had little value. During their taxonomic and biogeographic work they also documented decreasing fish abundance and distribution caused by habitat alteration and provided a foundation for modern-day fish conservation. Though fish conservation programs have prevented extinctions and extirpations of many species (Sada & Vinyard 2002), they have focused primarily on larger systems that include only a small portion of Great Basin wetlands.