er Lake, on the other hand, is virtually unknown. Walker Lake will undoubtedly produce as many or more species, including the many fish-eating species not found on Mono Lake, if it ever receives regular censusing.

It was November 1988 that a small group of us were driving up Route 95 from Las Vegas toward Death Valley when we came upon the town of Indian Springs. We started driving the streets through this oasis of a town and soon found a fine series of pastures, an abandoned weedy orchard, small ponds, and large cottonwood trees. It looked fantastic. No birder we knew had ever visited there before. And although that first visit produced nothing rarer than a group of Inca Doves, many subsequent visits by many birders have produced such gems as Purple Gallinule, Red Phalaropes, several Ruddy Ground-Doves, Philadelphia Vireo, Golden-winged, Blue-winged, and Hooded Warblers, Dickcissel, and Le Conte's Sparrow.

Several more sites were stumbled into during the ensuing years. The Amargosa Valley southeast of Beatty (Ruddy Ground-Doves, Smith's Longspur, Lark Bunting, Orchard Oriole, etc.) was first checked in September 1989. Nearby Ash Meadows National Wildlife Refuge (Arctic Tern, Brant, Oldsquaw, Red Phalaropes) was first visited only because we stumbled into the refuge manager while getting gas nearby on our way out of Death Valley. The Miller rest-stop ten miles west of Tonopah is a classic mini-oasis that has been made famous over the past number of years by the many rarities found there by John Brack et al. The oasis is small and is irrigated daily; it has with superb visibility in all directions so that birds can easily see it from many miles around. We visited it (and the Warm Springs highway maintenance yard farther to the east) by chance in November 1990, when we took a slightly different route out of Dyer to the east, and saw a Rusty Blackbird and Red-breasted Sapsucker. But I always wondered what would have been seen there during the previous decade if somebody—anybody—visiting the Dyer region or driving along Route 95 from Reno to Las Vegas had just happened to have stopped there, found many migrants and some rarities, and had spread the news. If people knew of its potential back then, that information was not widely disseminated.

Our long-time friends Jim and Marian Cressman of Las Vegas introduced us to the Pahranagat/Ash Springs/Hiko area located well north-northeast of the city. We were able to visit the area in November 1990 and were rewarded with Eurasian Wigeon and a Northern Parula in the falling snow, plus Winter Wrens and an American Tree Sparrow. The more recent Red-headed Woodpecker seen there is certainly one of the area's stellar finds.

Lastly, there is northeastern Nevada, which truly receives very limited coverage. Even with the recent surge in interest in finding the Himalayan Snowcock in the Ruby Mountains, few visiting birders have explored sites away from the snowcock area and Ruby Lake National Wildlife Refuge. Our one attempt at finding migrant oases in that region occurred in late May 1991, when our best "find" was the small town of Montello and a large ranch complex to its north. (Red-eyed Vireo and 4 Bobolinks were the rarest birds seen, but there were 50 Western Tanagers and 50 Lazuli Buntings present as well.) And just across the border to the east, the tiny "hamlet" of Lucin, Utah, first discovered by Utah birder Craig Kneedy, was excellent.

Hopefully this article does not come across as merely a summary of many of the best birding sites and rarities we have seen and found over the years. Instead, it is an attempt to show just how superb the birding potential is in many parts of the Great Basin, and how just a few interested people can discover a great deal. Although more and more fine birding areas continue to be discovered in Nevada, Utah, and Idaho, and many of the now-known sites are producing more and more records of migrant concentrations and rarities, there is still a great deal of additional exploration needed. Most sites could use much more regular coverage. Some others are undoubtedly still waiting to be discovered. The true status and distribution of many species in the Great Basin are still poorly known. Such areas as eastern and northern Nevada (has anyone tried checking for migrants in the Gerlach area? At Denio?), southwestern Idaho, and western Utah are in particular need. Observers are encouraged to get out and explore. They should study the status of species in better-worked surrounding states for possible clues as to avian status and seasonal occurrence in these under-worked areas. And lastly, observers are encouraged to bird in other regions such as along the Pacific coast and back East, so that they may see large numbers of what are potential vagrant-species to the Great Basin. Taking such trips is certainly the best way to learn plumages and calls of many hard-to-identify species such as shorebirds, jaegers, gulls, *empidonax* flycatchers, and fall warblers.

In 1994, Shawneen and I moved from California to Cape May, New Jersey, a superb place to study migration. We are very happy here. But when people ask us what we miss most about leaving the birding scene in the West, we don't hesitate in our answer: oasis birding in the desert Southwest and Great Basin!

P.O. Box 379, CapeMay, New Jersey 08204

Status of the Southwestern Willow Flycatcher in Nevada *Empidonax traillii extimus*

Ken Voget

The Southwestern Willow Flycatcher, *Empidonax traillii extimus,* is one of five recognized sub-species of Willow Flycatcher (*E. traillii)* occurring in North America, and is one of ten recognized North American species of *Empidonax.* First described in 1948 by A.R. Phillips, from a collection

from the lower San Pedro River in southeastern Arizona, this small flycatcher has undergone numerous taxonomic, ecological, morphological, as well as song-type analysis, to validate its existence as a separate subspecies among the other subspecies of Willow Flycatchers.

Willow Flycatcher (the species) is widely distributed in North America, primarily within the United States, from southern British Columbia south to northern Baja California and east to the Atlantic coast. Five subspecies of *E. traillii* are recognized within this area, three of which occur within Nevada and the western United States (*E. t. brewsteri, E. t. extimus, E. t. adastus).* Differentiating between these subspecies has become critical in the accurate assessment of status, particularly of breeding populations, for *E. t. extimus* in southwestern U. S. where the bird is a known riparian obligate. Although populations of *E. traillii* remain common (more so in the east than in the west), breeding populations of *E. t. extimus* in Arizona and southern California were thought to have been "virtually extirpated" by 1981. Additional information gathered by Hunter (Hunter, et al. 1987, and Hunter, et al. 1988), Unitt (1987), Whitfield (1990), Harris (1991), and Rosenberg (1991), prompted the US Fish and Wildlife Service (USFWS) to designated the Southwestern Willow Flycatcher as a candidate category I species in 1991. In July 1993, the USFWS proposed to list *E. t. extimus* as endangered and to designate critical habitat under the Endangered Species Act of 1973, as amended. The Southwestern Willow Flycatcher (*Empidonax traillii extimus)* was formally listed as an endangered species on March 29, 1995, however, critical habitat designation was not included at that time.

In the United States, the breeding range of Southwestern Willow Flycatcher is known to occur from southern California (south of the South Fork of the Kern River and south of the Santa Ynez River), throughout Arizona, western New Mexico (from the Rio Grande), southern Utah and extreme southern Nevada. Population declines have occurred throughout this range and have generally been attributed to habitat loss from urban, recreational and agricultural development, water diversion, channelization and impoundment, livestock grazing, and hydrological changes over time resulting from these and other land uses. Brood parasitism by the Brown-headed Cowbird has also contributed to the endangered status of this bird. Being a riparian obligate almost automatically puts this subspecies at risk in the desert southwest due to competing uses and associated demands on desert riparian habitats.

The Southwestern Willow Flycatcher is considered a riparian obligate. This could further be described as a willow riparian obligate, and in the southwest, Goodding Willow (*Salix gooddingii)* has more often than not, been present. We can assume that with the advent of modern man in the desert southwest, significant alterations of native habitat have occurred through hydrologic manipulations and land use. These actions have compromised the integrity of natural biological communities and systems, and have allowed for the advance of exotic species such as *Tamarisk sp* to form a different habitat, not necessarily conducive to the perpetuation of indigenous species.

In Nevada, early documentation of *E. t. extimus* is limited, being recorded from only three locations: Indian Springs, Clark Co. (Linsdale, 1932 and 1936); Corn Creek Field Station, Desert National Wildlife Range, Clark Co. (1962); the extreme southern tip of Nevada on the Colorado River, Clark Co. (1953). At these historic locations there was one common factor - the presence of dense mature willow and water. Recently, other areas within southern Nevada are being investigated for a breeding presence of Southwestern Willow Flycatcher. A few locations remain where the presence of willow (primarily *S. gooddingii*) in suitable mass and form still occur: Pahranagat Valley in southern Lincoln County; Ash Meadows in southern Nye County; Virgin River in eastern Clark County. Other areas, where native vegetation has been replaced by exotic species (primarily *Tamarisk sp.*), are also being investigated (Las Vegas wash, Lake Mead, and the lower Colorado River) as there are recent indications that *E. t. extimus* is utilizing alternative habitat types in the absence of historic native habitat where vegetation density may meet the species' requirements.

Through established monitoring and survey practices utilized at Ash Meadows and Pahranagat National Wildlife Refuges during 1993 to 1997, Willow Flycatchers were known to occur. Through small bird banding studies conducted from 1994 through 1997, this occurrence has been substantiated and has verified limited breeding occurrence. In 1995 juvenile Willow Flycatchers, along with adult females with brood patches were captured at Ash Meadows in early, to mid-August, suggesting breeding in the local area. In 1996, USFWS staff of the Desert National Wildlife Refuge Complex in Las Vegas contacted Mark Sogge of the Colorado Plateau Research Station at Northern Arizona University, with the information about Willow Flycatcher being present and possibly breeding at Ash Meadows. Service staff also felt that due to the geographical location, these flycatchers could be *E. t. extimus.*

Pahranagat National Wildlife Refuge in southern Lincoln County, is situated at the southern end of Pahranagat Valley, a north to south oriented valley fed by natural spring systems that historically was once connected to the Virgin River watershed, both geologically and hydrologically. Within Pahranagat Valley and on the refuge, riparian willow stands still exist which were considered suitable for *E. t. extimus* occupation. After a preliminary site visit by Mark Sogge and others, an investigator visited Pahranagat NWR in June of 1997 and found at least five breeding pair of Willow Flycatcher whose song dialects gave a strong indication that flycatchers present were indeed, *E. t. extimus.* Researchers are currently awaiting DNA analysis to more positively categorize the Pahranagat flycatchers. If verified, the breeding population of Southwestern Willow Flycatcher in the Pahranagat Valley could represent the most northern breeding occurrence of this subspecies. Ash Meadows, as well as other locations in southern Nevada, are scheduled for more intensive surveys in 1998.

Through the USFWS listing process, and the now more widely recognized precarious status of the Southwestern Willow Flycatcher, more opportunities for study, investigations and monitoring exist along with better funding availability. A survey protocol for *E. t. extimus* has been devel-

oped by the USFWS and the Colorado Plateau Research Center to standardize survey and monitoring methods which will give added credibility to research efforts. These are based upon established techniques utilized by various State and Federal agencies and coordinated through Partners-in- Flight programs in Arizona and New Mexico, non-governmental organizations and individuals associated with conservation efforts for neo-tropical migratory birds.

References:

Alcorn, J.R., 1988, The Birds of Nevada, Fairview West Publishing. Fallon, Nevada.

Sogge, M., 1996-1997, (pers. comm.)

Sogge, M., R.M. Marshall, S.J. Sferra, T.J. Tibbitts, May 1997, A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol: Technical Report NPS/NAUCPRS/NRTR-97/12. Colorado Plateau Research Station at Northern Arizona University, Flagstaff, Arizona.

Suckling, K., D. Hogan, R. D. Silver, 1992, Petition to List the Southwestern Willow Flycatcher *Empidonax traillii extimus* as a Federally Endangered Species: The Biodiversity Legal Foundation.
January 25, 1992.

Unitt, P. 1987, *Empidonax traillii extimus*: An Endangered Species: Western Birds, Vol. 18; Number 3.

U.S. Fish and Wildlife Service, 1995, Final Rule Determining Endangered Status for the Southwestern Willow Flycatcher: Federal Register 60:10694 (February 25, 1992)

U.S. Fish and Wildlife Service, Desert National Wildlife Refuge Complex - Refuge Files: 1994 - 1997.

Submitted by: Ken Voget, U.S. Fish and Wildlife Service, Desert Refuge Complex Office, Las Vegas, NV.

Willow Flycatchers on the Western Edge of the Great Basin

Elizabeth Bergstrom, U.S. Forest Service

Two subspecies of Willow Flycatcher are found within the Sierra Nevada Range. It is believed that *Empidonax traillii brewsteri* breed from Fresno County north, from the coast to the Sierra Nevada crest; it primarily occurred throughout the river systems of the central portion of California. Emipidonax traillii adastus breed east of the Sierra/Cascade axis from Oregon into Modoc County and possibly into northern Inyo County. This

subspecies, range extends across the Great Basin eastward into Utah (Browning 1993). Both subspecies are listed by the state of California as endangered. Within the Sierra Nevada small populations of *E. t. adastus* appear to persist as demographically unstable remnants within Perazzo Meadows in the Truckee River drainage, Warner Valley on the Lassen National Forest, and the Red Lakes area in the Carson River drainage. Due to the lack of survey information the status of this subspecies across the Great Basin is not well understood.

Habitat for *E. t. adastus* has been described as predominantly montane meadows containing well established willow communities and which are seasonally saturated with water at least during early summer (Sanders and Flett 1989, Harris et al. 1987). Willow thickets interspersed with open spaces are utilized while large contiguous willow thickets are avoided. For nesting, dense foliar cover is required within the first six feet of shrub structure. Nests are typically placed within deciduous riparian shrubs such as willow and alder.

Similar to the Southwestern Willow Flycatcher, habitat degradation is a key factor contributing to the absence of these birds within areas they once occupied. Cattle grazing and trampling within willow stands can cause highlining of individual plants, creating an umbrella shaped appearance and loss of nesting habitat. Also parallel to the southwestern subspecies, cowbird nest parasitism has contributed significantly to Willow Flycatcher declines. An exception to this occurs within the higher elevations of the Sierra where the nesting cycles of the two species do not overlap (Sanders and Flett 1989).

Currently, graduate work is being conducted by Helen Bombay of California State University at Sacramento, to assess habitat selection and reproductive success of *E. t. adastus* within the Sierra Nevada. Surveys conducted by biologists with the U.S. Forest Service and California Department of Fish and Game are planned for occupied and potential habitat areas. These efforts need to be expanded across the Great Basin to more completely understand the current status of E. t. adastus.

References:

Browning, R.M., 1993, Comments on the Taxonomy of Empidonax traillii (Willow Flycatcher). Western Birds 24:241-257.

Harris, J.H., S.D, Sanders, and M.A. Flett, 1987, The Status and Distribution of Willow Flycatchers in the Sierra Nevada: Results of the 1986 Survey: Wildlife Division Administrative Report 88-1. 32pp.

Sanders, S.D. and M.A. Flett, 1989, Ecology of a Sierra Nevada population of Willow Flycatchers (Empidonax traillii), 1986-1987: State of California, Department of Fish and Game, Nongame Bird and Mammal Section. 27pp.

Elizabeth Bergstrom, U.S. Forest Service, Toiyabe National-Forest, Carson Ranger District, Carson City, NV.