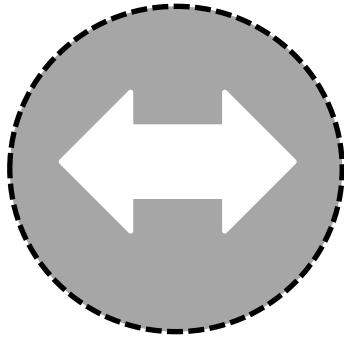


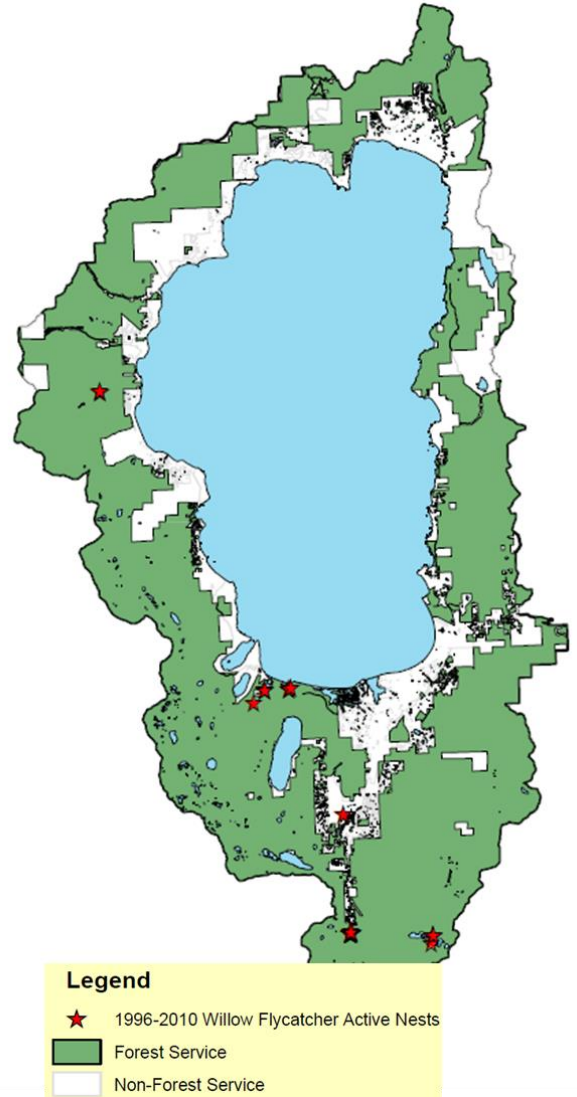
Upland Species: Willow Flycatcher

Reporting Icon

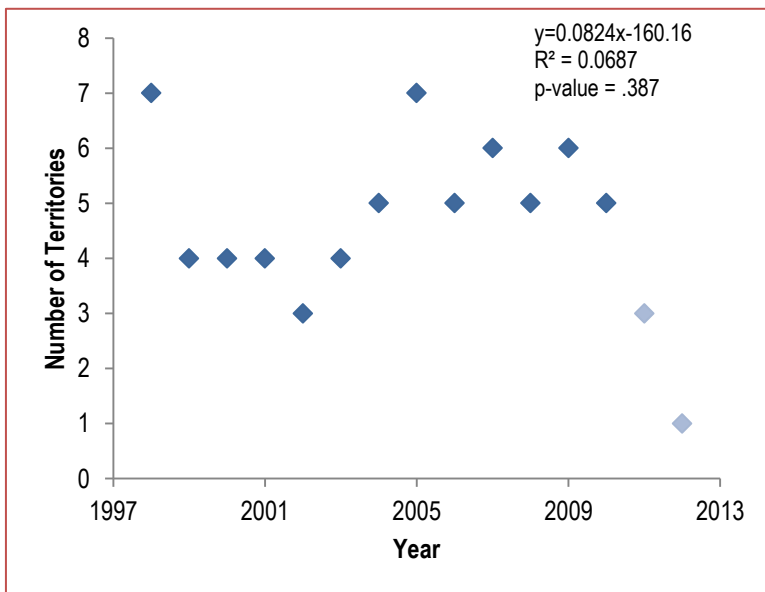


Status: No Target Established
Trend: No Trend determined
Confidence: Low

Map



Trend



Total number of willow flycatcher territories detected in the Tahoe Basin from 1998 through 2012. There is currently no target for the species and the confidence in the linear regression is too low for a trend determination. The data points for 2011 and 2012 are depicted in a lighter blue because less monitoring was conducted in these years, which likely caused less territories to be detected.

Locations of willow flycatcher surveys and detections, 1996-2012 (Map by Debra Scolnick, LTBMU). Surveys for willow flycatcher were conducted by the Lake Tahoe Basin Management Unit and its partners.



Interpretation and Commentary

- **Importance** – The willow flycatcher (*Empidonax traillii*) is a small songbird that breeds in marshy, shrubby areas with standing or running water; their presence is indicative of riparian ecosystem health. Unlike most songbird species, the flycatcher's songs are innate and not learned. The willow flycatcher is a Forest Service Sensitive Species in the Lake Tahoe Basin.
- **Status** – No threshold standard or target has been adopted for the willow flycatcher. The long-term (1998-2012) and five year (2007-2012) average number of willow flycatcher territories detected are 4.6 and 4.0 respectively. The average number of adults detected (1998 – 2012) is 6.5. The 2007 Pathway Technical Working Group proposed a willow flycatcher target of a 5-year mean of 4.4 active territories detected per year.
- **Trend** – The number of willow flycatcher territories detected has fluctuated over the long term and over the past five years, which resulted in part from inconsistent monitoring efforts. A trend in the number of willow flycatcher territories detected was calculated relative to the mean number of territories. Data collected after 2010, when there was a rapid decline in territories detected after The Tahoe National Forest Willow Flycatcher Demography Study ended, were excluded from the trend analysis. Excluding 2011 and 2012, the confidence in the linear regression was still too low to make a trend determination ($R^2 = 0.069$ and $P = 0.39$).
- **Confidence** – The overall confidence in the data is low because the confidence in status and trend are low.
 - Status Confidence: Confidence in the species data collected is low because of variability in the protocols used for monitoring and lack of data continuity and resolution. The Lake Tahoe Basin Management Unit (LTBMU) of the U.S Forest Service has conducted surveys following “A Willow Flycatcher Survey Protocol for California” (Bombay et al., 2003) since 2009; however, their monitoring partners have followed different protocols. The monitoring efforts have varied over the reporting period and the results therefore likely do not accurately characterize regional conditions of the willow flycatcher.
 - Trend Confidence: The confidence in the trend is low because of a high P-value (0.39) and a low R^2 (0.069).
- **Human and Environmental Drivers** – Destruction and degradation of meadow habitat and overgrazing of livestock are the major causes of the willow flycatcher population decline. Dams built for flood control may affect nesting success since willow flycatchers prefer nesting sites with flowing water. High snow levels late in the season as well as the delayed leafing out of vegetation such as willow (*Salix* spp.) and mountain alder (*Alnus incana* ssp.) can undermine the suitability of habitat for the willow flycatcher (Bombay, 1999).
- **Monitoring Approach** – Willow flycatchers require species-specific monitoring because they may occur only in a small area within a larger riparian system and are unlikely to be detected during general bird surveys. LTBMU conducts surveys following “A Willow Flycatcher Survey Protocol for California” (Bombay et al., 2003) with additional data provided by monitoring partners. The protocol is based on the use of repeated tape-playback surveys during predetermined periods of the breeding season, to confirm presence or absence at a site. The objectives of the surveys are to determine the status (presence or probable absence) of willow flycatchers and provide an estimate of the number of singing willow flycatchers at a given site during the year. Detection of the willow flycatcher's unique “fitz-bew” song is required for identification. At each site, observers broadcast recorded willow flycatcher songs, look and listen for responses, and record willow flycatcher locations for 6 minutes at survey points spaced 50/30 m apart.
- **Monitoring Partners** – U.S. Forest Service, Willow Flycatcher Demography Study, AECOM

Supporting Information

REFERENCES

1. **Monitoring and Evaluation Program.** [Analysis Excel File, available from M&E Program Manager]
2. **USDA Forest Service.** Lake Tahoe Basin Management Unit Monitoring Program Annual Reports (1997-2011):
 - 2010/2011: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5348784.pdf
 - 2009/2010: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5350166.pdf
 - 2007/2008: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_045826.pdf
 - 2006/2007: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_045889.pdf
 - 2005/2006: http://www.r5.fs.fed.us/ltbmu/documents/ecd/2005_2006%20Annual%20Monitoring%20Report.pdf
 - 2004/2005: http://www.r5.fs.fed.us/ltbmu/documents/ecd/Annual_report_2004_Final.pdf
3. **Bombay, et. al.** 2003. A Willow Flycatcher Survey Protocol for California.
4. **Bombay, H. L.** 1999. Scale perspectives in habitat selection and reproductive success for willow flycatchers (*Empidonax traillii*) in the central Sierra Nevada, California. Masters thesis, California State University, Sacramento.
5. **USDA Forest Service.** 2004. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement, Record of Decision. U.S. Forest Service, Pacific Southwest Region.

ADDITIONAL INFORMATION

6. N/A