



UPPER SANTA CRUZ RIVER

Bird Monitoring on the Upper Santa Cruz River

Monitoring Avian Productivity and Survival (MAPS)

PROJECT SUMMARY



WILL TURNER

Yellow-billed cuckoo (*Coccyzus americanus*)

Introduction and Background

Across the globe, landbird populations are facing an increasing number of threats from habitat loss and invasive species to climate change and pollution. In 1989, the Institute for Bird Populations established the Monitoring Avian Productivity and Survival (MAPS) program, which created a network of mist-netting stations located across the nation providing data on the productivity and survivorship of landbirds.

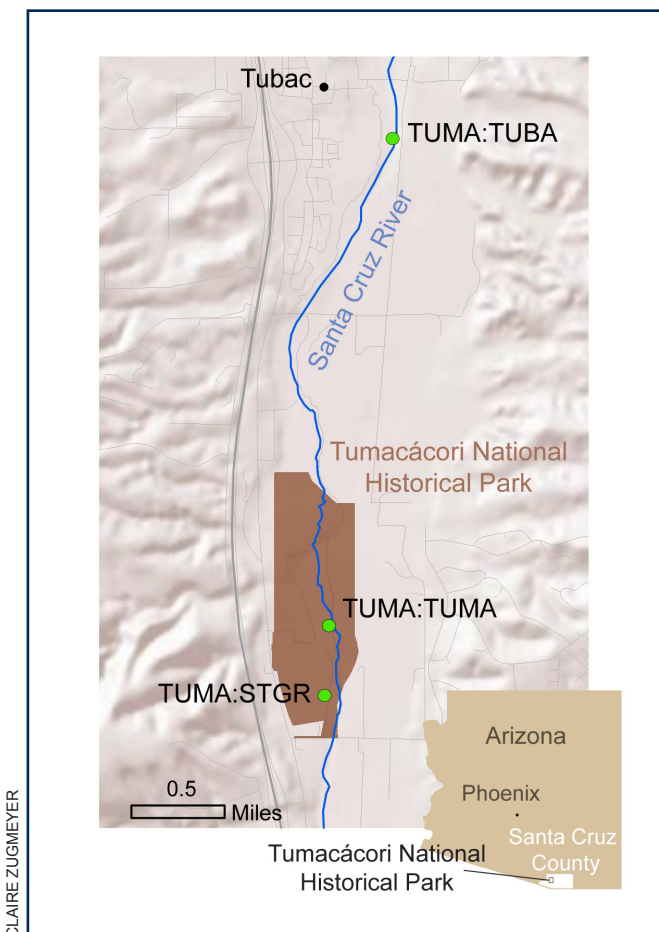
In 1997, the collaborative effort of several organizations established a MAPS station within Tumacácori National Historical Park (NHP) along the Upper Santa Cruz River in southern Arizona. Sustaining one of the country's largest cottonwood, willow, and mesquite riparian forests, the Santa Cruz River supports an important avian community comprised of breeding birds, winter visitors, long-distance migrants, and transients. This diverse avian community attracts thousands of visitors to this region every year.

Objectives

The MAPS network on the Upper Santa Cruz River is designed to measure recruitment, dispersal and spatial structure of the bird populations that include Tumacácori National Historical Park (NHP) within their ranges.

The primary monitoring objectives are to: a) determine annual estimates of survival - adult survival rate, adult population size, proportion of adult residents, recruitment into the adult population, and population growth rate; and b) determine annual indices of adult population size and post-fledgling productivity.

While data collected will help determine the population status of the birds along the Upper Santa Cruz River, involvement in a national program will also permit the data to contribute to large scale bird conservation and research efforts.



CLAIRE ZUGMEYER



WADE LEITNER

Activities at Santa Cruz River and partnering bird banding stations

Methods

The MAPS network on the Upper Santa Cruz River is comprised of three bird-banding stations. The first station, established in 1997, is located within the Tumacácori NHP in Santa Cruz County, Arizona (site name TUMA:TUMA). In 2010, two additional stations were established near the original station: one located 0.5 mile south near the southern boundary of Tumacácori NHP at Santa Gertrudis Lane (TUMA:STGR), and the second located three miles north near the town of Tubac (TUMA:TUBA).

All three bird-banding stations are operated using the standardized MAPS protocol. Stations operate mist nets at permanent sites on one day in each of a series of six to ten consecutive ten-day periods during the breeding season (between May and August). Mist nets (4m X 13m mist nets with 36mm mesh size) are suspended between two vertical sections (3.1m) of electrical conduit mounted on permanently installed stakes. In order to minimize thermal stress to the birds, 15 nets are run for 4 hours to get a total of 60 net-hours per session. Netting begins 30 minutes before sunrise.

Birds are banded using standard butt-end bands issued by the Bird Banding Laboratory of the United States Geological Service. All data collected are entered directly into a database program conforming to the MAPS protocol.

Results and Discussion

Since 1997, the MAPS network on the Upper Santa Cruz River has logged over 13,500 records, including 12,091 records accumulated during 14 years of data collection at the original station, TUMA:TUMA. Notable species that have been observed during the MAPS program include the endangered Southwestern willow flycatcher and the Yellow-billed cuckoo, two species of conservation interest.

Other notable accomplishments of the MAPS monitoring include:

- species richness and detailed life history information for several species,
- characterization of the bird community,
- observed use of Tumacácori National Historical Park by long-distance migrants,
- observations of between-site movement of 34 individuals,
- peer-reviewed publications characterizing molt migration for several species,
- and collaborations with other regional research projects.

Santa Cruz River MAPS data and analysis results are stored online at www.birdsci.com, permitting efficient updating, querying, and sharing of results.

Literature Cited

DeSante, D. F., K. M. Burton, P. Velez, D. Froehlich, and D. Kaschube. MAPS Manual 2010 Protocol: Instructions for the establishment and operation of constant-effort bird-banding stations as part of the Monitoring Avian Productivity and Survivorship (MAPS) Program. The Institute for Bird Populations. Point Reyes Station, California. (<http://www.birdpop.org/DownloadDocuments/manual/2010/MAPSManual10.pdf>)

Leitner, W. 2010. Bird Banding at Tumacácori National Historical Park, AZ: 2010 Report and Recommendations. A Desert Southwest Cooperative Ecosystem Studies Unit Project (SI-55).

Project Contacts

For more information regarding MAPS bird monitoring on the Upper Santa Cruz River go to Bird Works www.birdsci.com, or contact

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