

DISTINGUISHING EFFECTS OF URBAN DEVELOPMENT AND HUMAN DISTURBANCE ON LANDBIRD COMMUNITIES IN THE CENTRAL SIERRA NEVADA

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Urbanization presents a suite of challenges to conserving biodiversity. Facets of urbanization that affect the amount and configuration of habitat are known to have clear consequences for native species, while other facets more closely tied to the presence of humans themselves, such as removal of dead wood and wildlife harassment by people and domestic animals, have received less attention in an urbanization context. As part of a multi-taxonomic research effort in the Lake Tahoe basin, California and Nevada, we investigated landbird species composition at 75 sites along an urban-forest gradient in 2003 and 2004 using point counts, habitat measurements, and documentation of human use. We used linear regression and hierarchical partitioning to determine the major urbanization, landscape, and local habitat features affecting various landbird community metrics. We found strong and diverse responses to many facets of urbanization. Nearly all species groups were negatively related to development, human presence, or vehicle traffic, although the strength of response varied by nesting, foraging, and dietary guild. The pervasive influence of development, human disturbance, and vehicle traffic on landbird communities highlights the importance of analyzing effects of urbanization by its components rather than as a single stressor that is less well defined.

WHERE AGENCIES FEAR TO TREAD: INCORPORATING SOCIOECONOMIC DATA INTO THE DESIGN OF MARINE PROTECTED AREAS IN CENTRAL CALIFORNIA

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While there is growing recognition that successfully addressing socioeconomic concerns during the process of designing marine protected areas (MPAs) is critical to their implementation and success, the practicalities and data requirements are daunting. Readily accessible information tends to be coarse scale and not originally intended for use in area-based management. We report here on an approach for collecting information on and analyzing commercial fishing use patterns, tying fishermen's expert knowledge to landing tickets, and other agency-collected datasets. We will discuss results from interviews with over 100 fishermen on the central coast of California for a project undertaken in support of California's Marine Life Protection Act Initiative. Using participatory geographic information systems (GIS), we elicited fishermen's knowledge of the fishing grounds and their relative importance for data layers that will be used to assess the viability of network proposal scheduled to be designated in the second half of 2006. We report on methodological and process lessons from this project.

GENETIC STRUCTURE IN THE ENDANGERED SOUTHERN POPULATIONS OF THE MOUNTAIN YELLOW-LEGGED FROG (*RANA MUSCOSA*)

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Populations of the Mountain Yellow-legged frog (*Rana muscosa*) have been declining rapidly in southern California and were listed as Endangered in 2002. Since that time, several populations have gone extinct or reached critically low population numbers. The possibility of reintroducing adult frogs from captive breeding or transplant programs is now being considered. Previous work involving mitochondrial DNA suggests very little genetic differentiation between populations in southern California. To improve this estimate of genetic diversity and to guide future management decisions, we analyzed eleven microsatellite loci for evidence of population differentiation. Our analysis includes over 200 adult and juvenile frogs from the San Gabriel, San Jacinto, and San Bernardino Mountains. We used Bayesian algorithms implemented in the programs STRUCTURE and BAPS 3.2 to estimate the number of distinct population clusters. Our results demonstrate that weak population differentiation has occurred between the three mountain ranges. We discuss possible biogeographic scenarios for the relationship of these populations and their connection to the Sierra Nevada.

RESTORING RESOURCES FOR AN ENDANGERED BUTTERFLY: WHAT DOES A DECADE OF MONITORING TELL US?

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Changes in land use have resulted in dramatic habitat loss for numerous species. More than 99% of the habitat for Fender's blue (*Icaricia icarioides fenderi*), an endangered Oregon butterfly, has been lost. In 1995, an experiment was initiated at two degraded sites near Eugene, Oregon to investigate methods to restore Fender's blue habitat. The experiment combined 5 soil treatments (tilling, reverse fertilization, solarization, burning, and a control) with 2 planting treatments (50% forb: 50% grass and 10% forb: 90% grass) and 2 weeding treatments (weeding or control). Seeds from 12 native plant species were field collected and sown in September 1995. Plant establishment and cover by native and non-native species was monitored annually from 1996-2005. Analysis of the first five years of the study indicates that solarization promoted sufficient nectar to sustain butterflies at both sites. No treatment provided adequate larval hostplant. We review earlier analyses and ask to what degree long-term conditions can be predicted from the first years of a restoration's progress. This experiment demonstrates a method to quantitatively link habitat restoration to the resource needs of focal species and highlights the importance of using long-term experiments conducted across a range of sites to test restoration methods.

ECONOMIC CLAIMS OF TRANSBOUNDARY CONSERVATION: REALITY OR RHETORIC? A CASE STUDY OF THE KGALAGADI TRANSFRONTIER PARK

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