

CONSERVATION CONCERNS

The hope of many of us investing our energy toward the San Diego County Bird Atlas is that it be used as a tool for effective bird conservation. How might this happen? How might such a tool be used? The answer to these questions comes through understanding of the role of levels of scale.

One can look at a range map in a field guide or read the American Ornithologists' Union Check-list of North American Birds to get a fairly accurate idea of a species' general status in San Diego County—the coarsest level of scale. On the other hand, a regulator may require a developer to hire a consultant to delineate the territory of a single pair of endangered Bell's Vireos—the finest level of scale. Each of these levels has its uses. Between these extremes, however, lie the answers to many questions that can be addressed only at intermediate levels of scale. Our bird atlas grid represents the finest scale on which it is possible to achieve thorough coverage of all of San Diego County, with the time, money, access, and number and expertise of the participants available.

Here are some questions most appropriately addressed at this level of scale:

What areas support greatest bird diversity? (See Figures 8 and 9.) If the goal is to conserve maximum diversity, such areas would logically be targeted first. What areas support low bird diversity? What factors have operated to lead to this outcome?

Where are the biggest populations of species X? Do they lie in areas already managed as wildlife habitat or are they in areas subject to development or degradation? Which populations lie adjacent to the urban growth front and which are more secluded, possibly allowing more time and greater flexibility for effective management?

Is species X adapting to the urban environment? Does it persist in enclaves of natural habitat within cities or only in broader expanses beyond?

Is species X of legitimate conservation concern or not? Our effort has already shown that some native species (Nuttall's Woodpecker, Western Flycatcher, Cooper's Hawk) are thriving in nonnative environments. Some species (Downy Woodpecker, Tree Swallow), even though scarce and requiring rare habitats, are faring well in spite of themselves. But others (Grasshopper Sparrow, Chipping Sparrow, Snowy Plover, Burrowing Owl) are

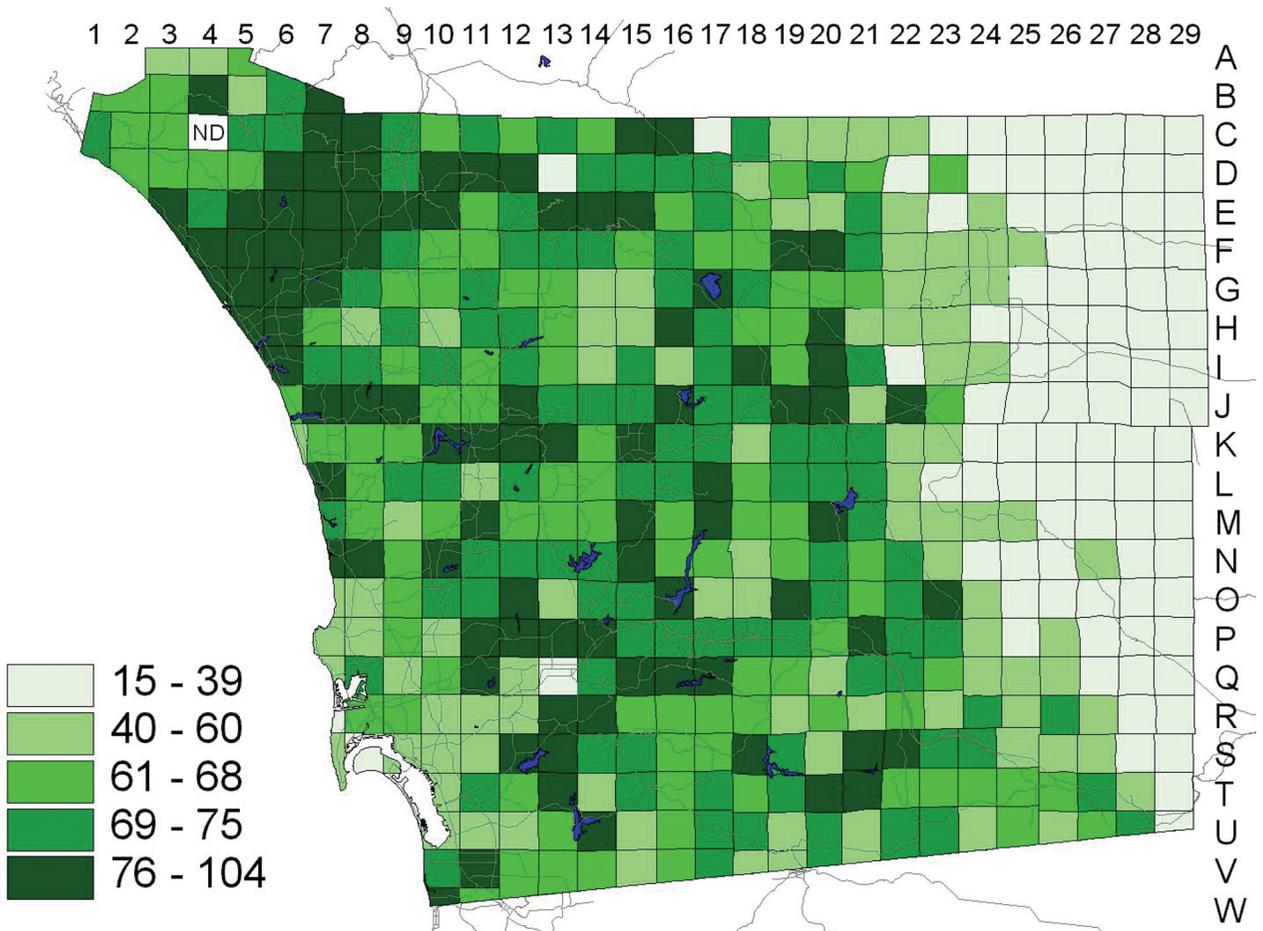


FIGURE 9. Number of breeding species (confirmed, probable, and possible) by atlas square, 1997–2001.

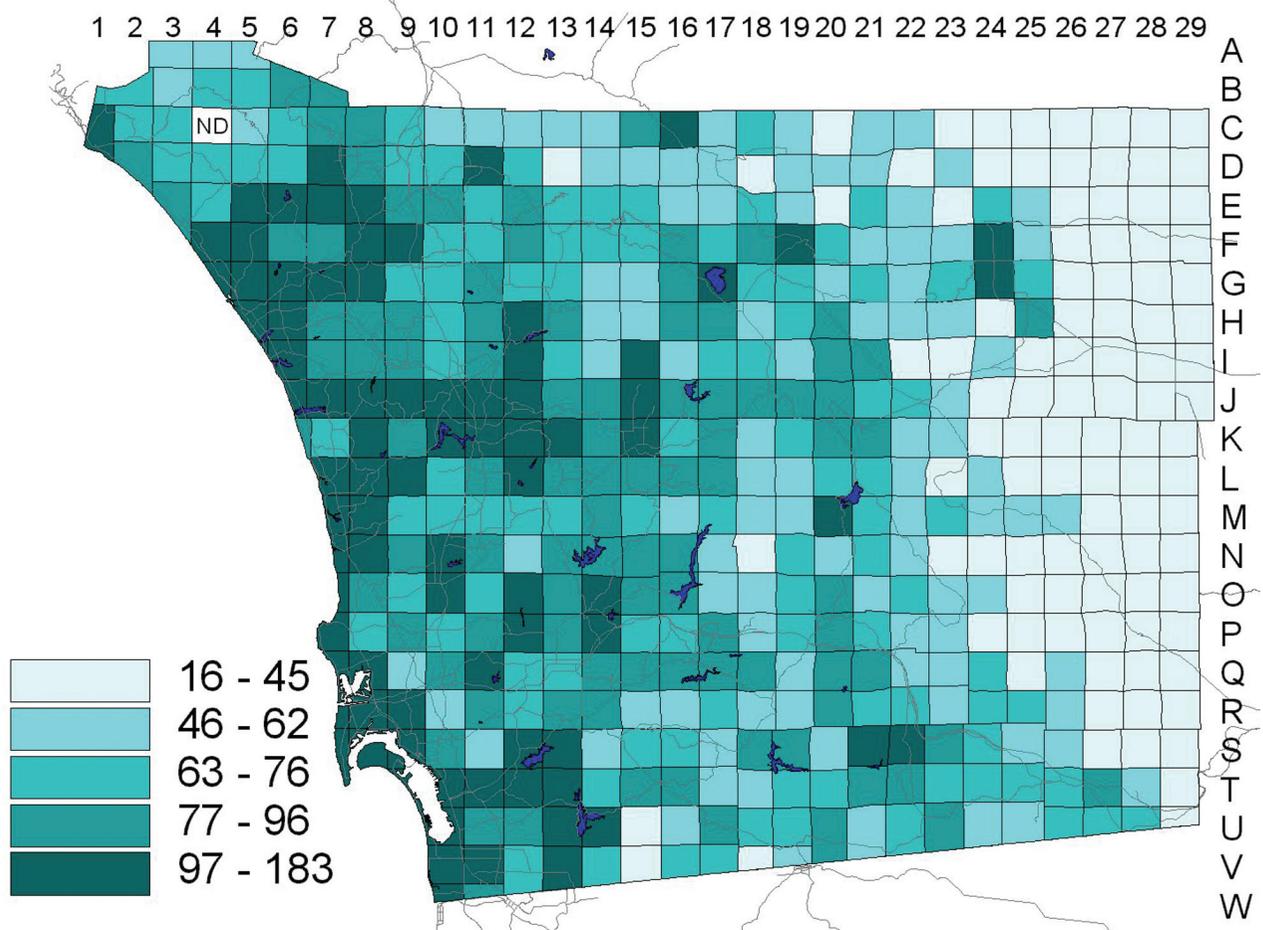


FIGURE 10. Number of winter species (December–February) by atlas square, 1997–2002.

revealed as, if anything, even more rare or restricted than I suspected before the project began.

What factors affect the distribution of species X? Is habitat type or vegetation community sufficient to explain it or are less conspicuous factors important too? Elevation, slope gradient or aspect, soil type, rainfall, fog versus sun, minimum winter temperature, maximum summer temperature, postfire succession, nearness of surface water may all play a role. Even if the exact role of various factors isn't clear, there will be enough to alert us that there may be more than meets the eye.

Some applications will be farther into the future. Twenty, 50, 100 years from now our successors will be able to look back at our results and compare them with current conditions. They will be able to ask whether multiple-species conservation plans are working for species X but not for species Y—and possibly respond in time to make a difference. No one will be able to claim that the species had already been extirpated from an area before the management plan went into effect if our data show otherwise.

In San Diego County natural ecosystems face an especially difficult challenge: a human population grow-

ing at third-world rates but consuming resources at first-world rates. Despite all the wrangling over endangered species and conservation plans, grading for new developments continues at a frightening pace. Our wildlife is destined to compete for fewer and smaller patches of open space. Will the species living in these patches in 2000 still be surviving in 2050 or 2100? Will we have to accept an environment without Sage Sparrows, Roadrunners, and California Quail in exchange for getting one with California Gnatcatchers? Questions like these look back at me as I look into the maps our effort generates.

The analysis of our data in this atlas barely scratches the surface of what is possible. By making more information available via a website, by making the database searchable, by offering as many maps of environmental variables as possible, and by enabling those maps to be overlaid with the distribution of any species, I hope to unleash the power of the atlas method. I hope this tool will help lead to new insights in ecology and will help identify conservation needs that can be met while there is still time.