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SAN DIEGO
Campylorhynchus
23 October 19
Pima

Campylorhynchus



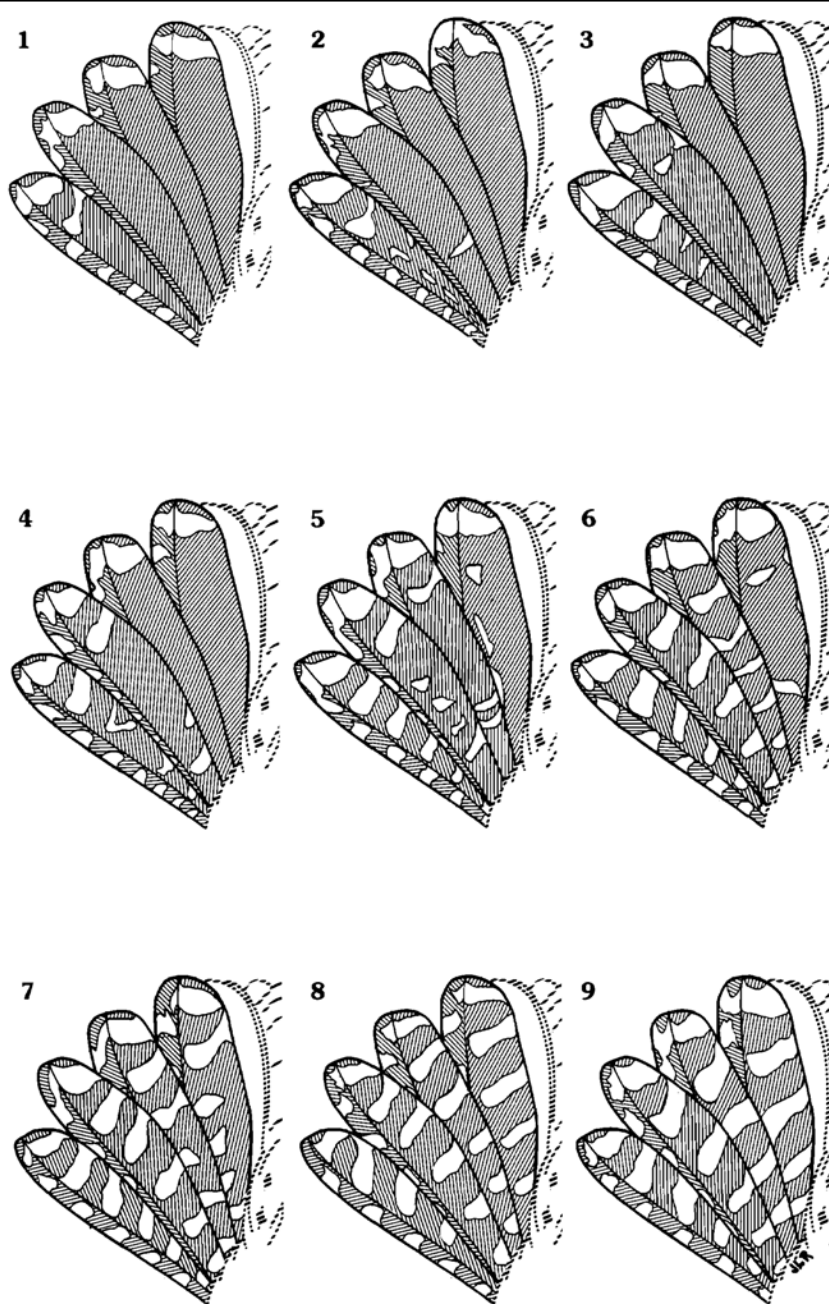


Figure 6. Variations in tail patterns of adult Cactus Wrens. Outer (6th) rectrix at left in each set. Character states correspond to descriptions in Table 3. States 1-3, continental deserts; 4-6, southern coastal sage scrub, San Diego area; 7-9, peninsular Baja California.





Figure 5. Chest-spot shapes in two groups of subspecies of the Cactus Wren. A, continental subspecies; B, peninsular subspecies.





Table 4 Pooled Characters of Coastal Cactus Wrens

Character	Sample Size	Index ^a
San Diego-vicinity population		
1. Chin/gular area	45	1.34
2. Chest spot shape	44	1.26
3. Abdominal spotting	46	1.49
4. Chest patch	46	1.50
5. Flank/abdomen color	46	1.46
6. Back color	43	1.22
7. Tail barring	45	5.18
Northern coastal population		
1. Chin/gular area	65	1.11
2. Chest spot shape	64	1.00
3. Abdominal spotting	67	1.06
4. Chest patch	65	1.03
5. Flank/abdomen color	55	1.22
6. Back color	59	1.03
7. Tail barring	54	3.44

^aFor characters 1–6, a value of 1.0 indicates the condition typical of *C. b. anthonyi*; a value of 2.0 indicates the condition typical of *C. b. bryanti*. For character 7, a value of 1.0 indicates the least barring, a condition found only in *C. b. anthonyi*; a value of 9.0 indicates the most barring, a condition found only in *C. b. bryanti* and *C. b. affinis*.

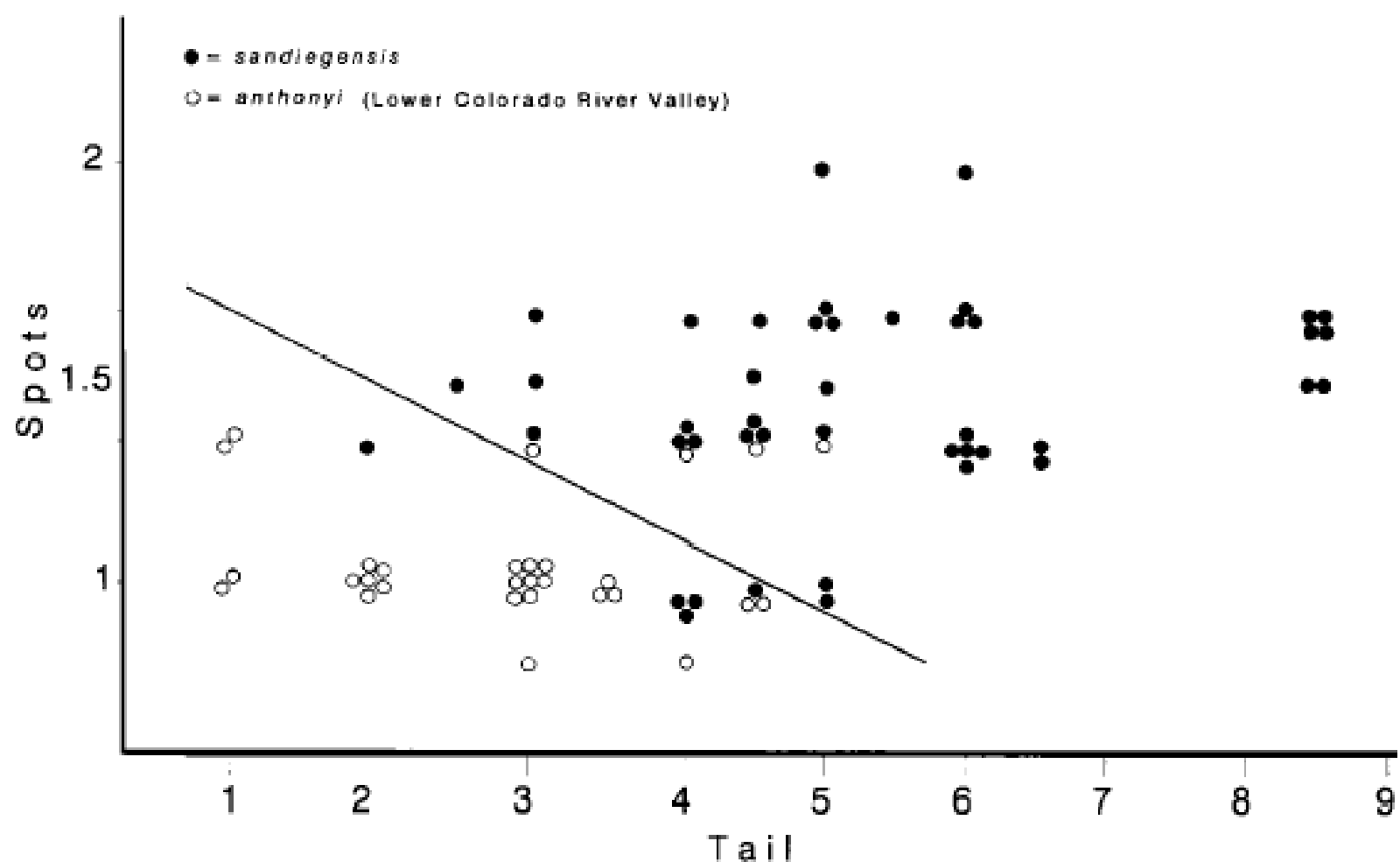
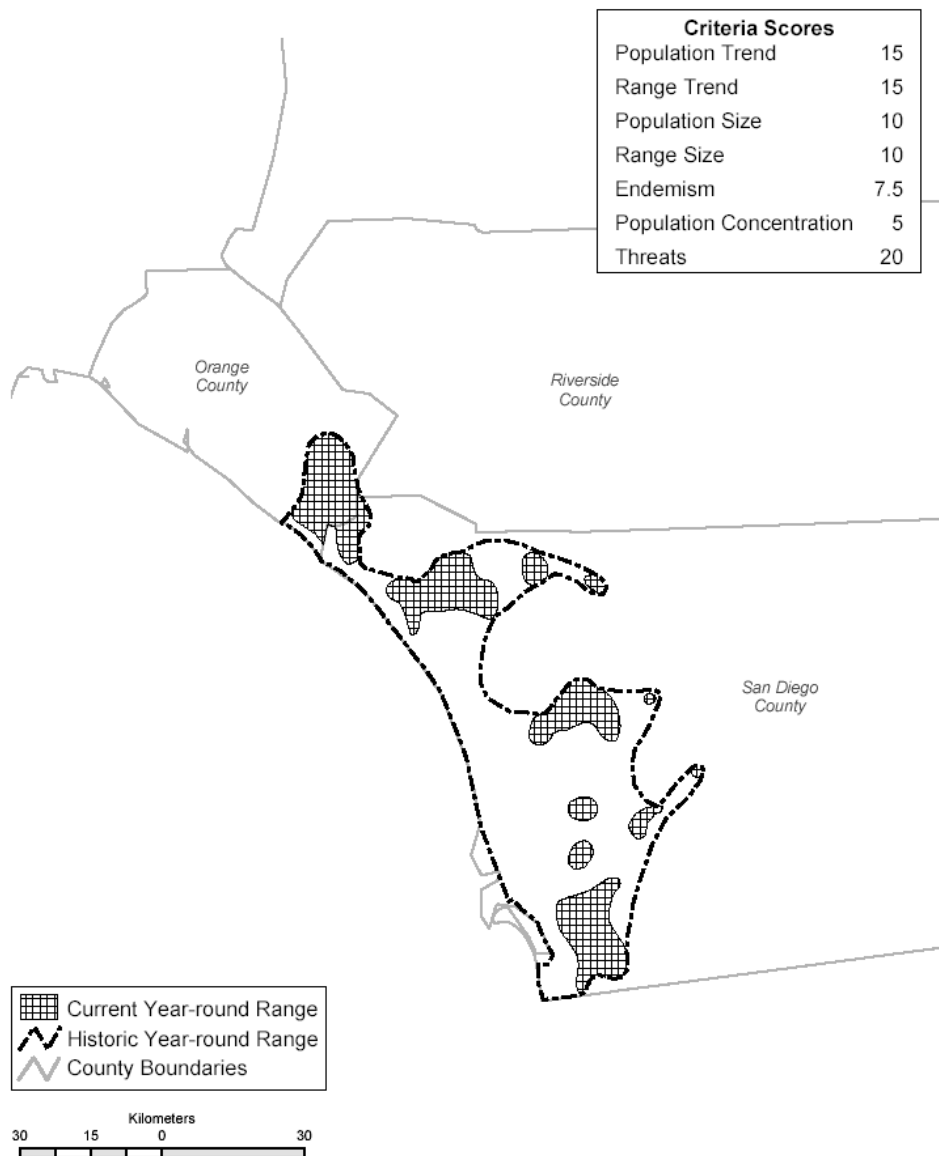


Figure 12. Scatter diagram of abdominal spotting (character 3) plotted against tail pattern (character 7) in two races of the Cactus Wren. All but five specimens of *C. b. sandiegensis* (89.1%) are separated from all but four specimens of *C. b. anthonyi* by the line effecting maximum separation. Northern specimens from Los Angeles and Ventura counties east to the Coachella Valley have been excluded; these show slight genetic influence of *sandiegensis*. For scoring of characters, see Tables 2 and 3 and Figure 6.

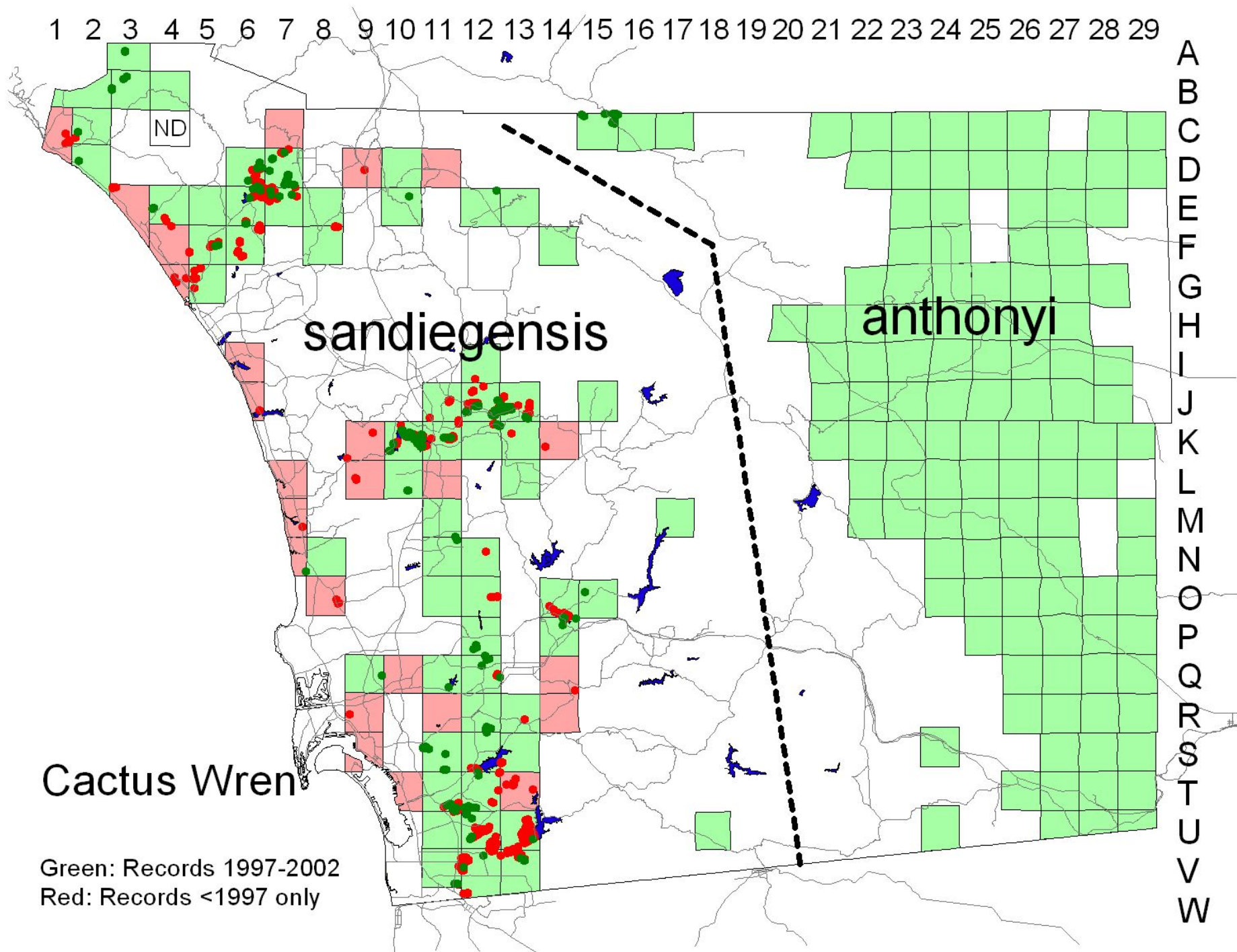
SAN DIEGO CACTUS WREN

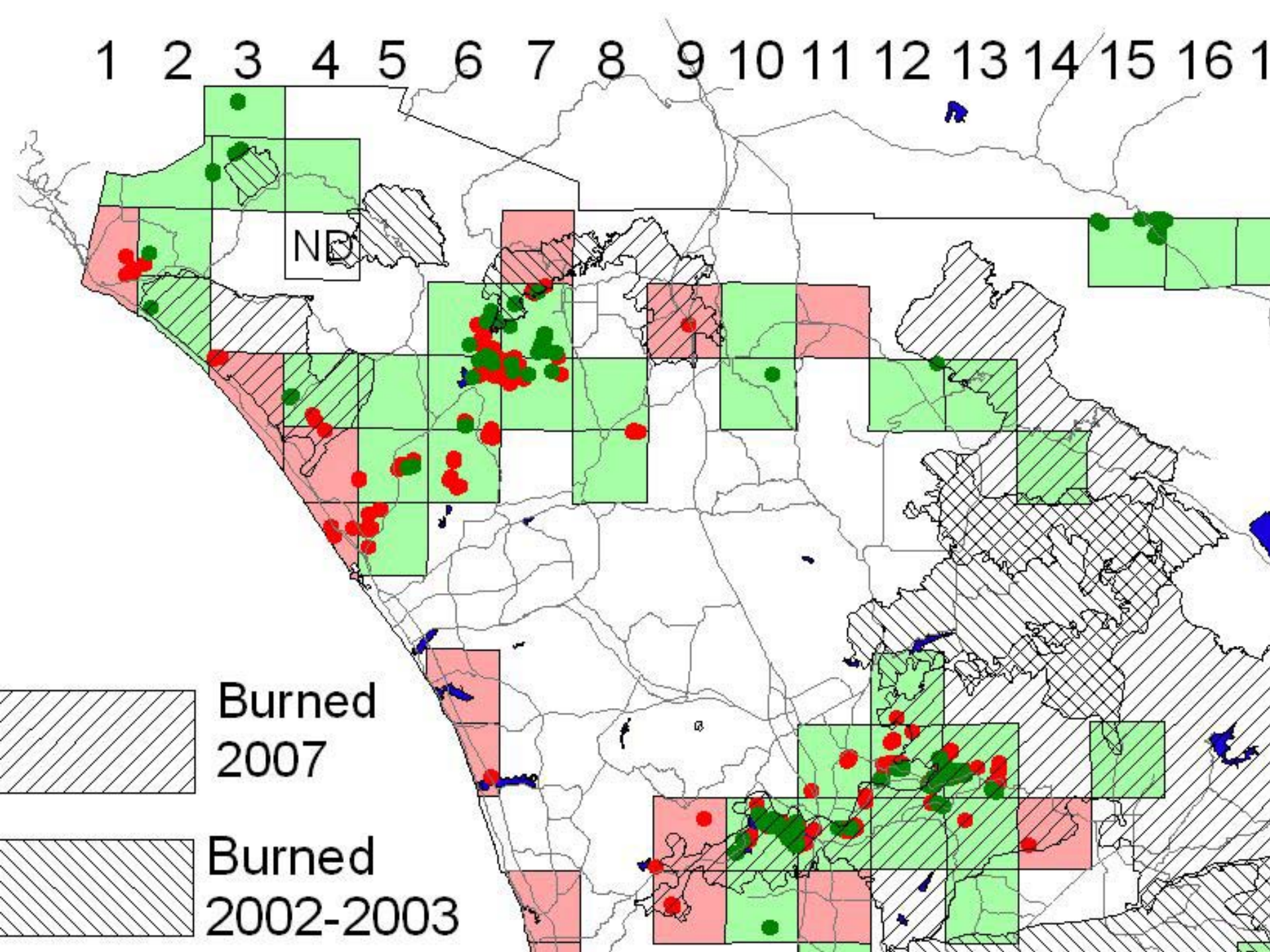
(*Campylorhynchus brunneicapillus sandiegensis*)

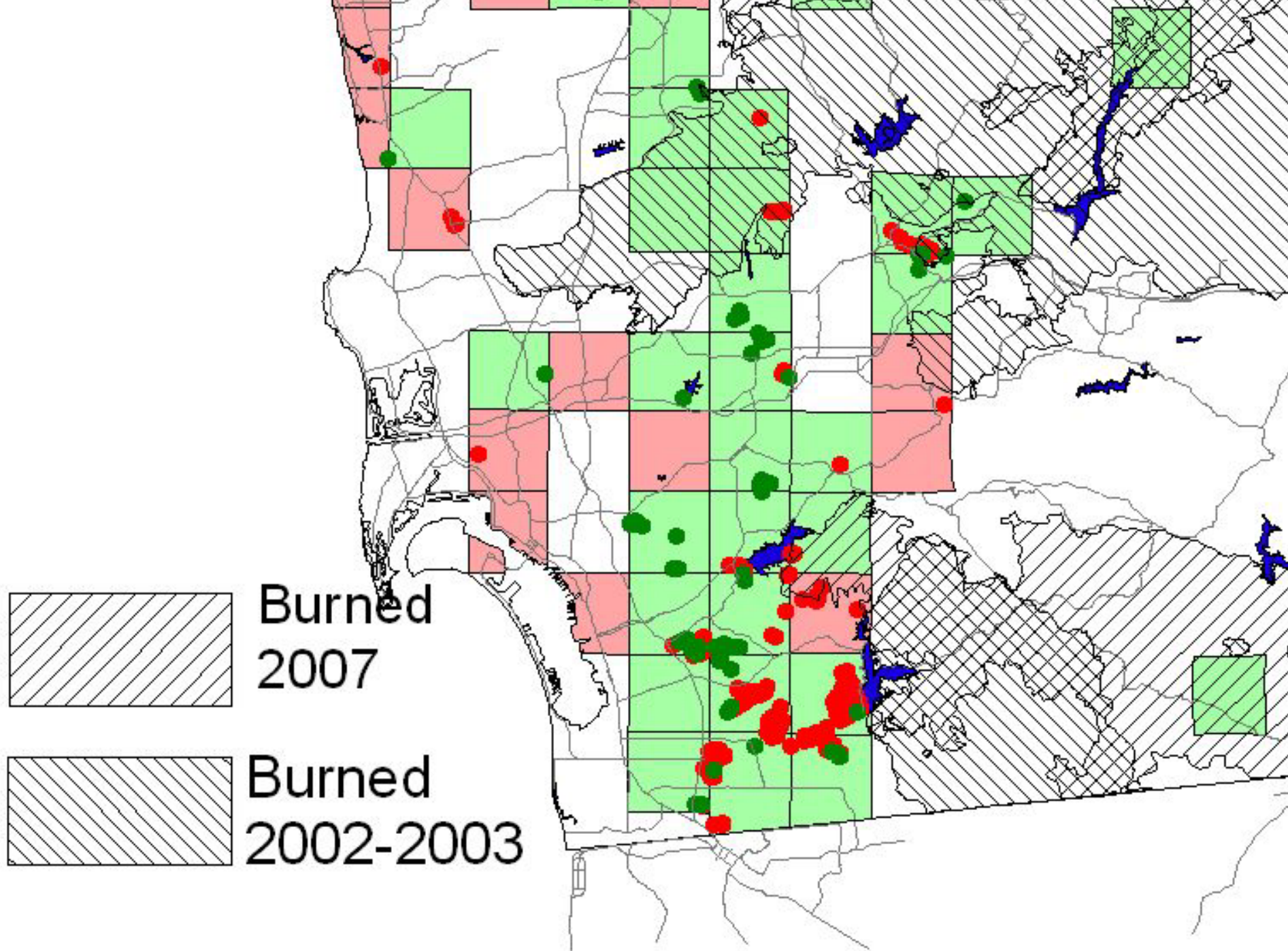
PHILIP UNITT



Current and historic (ca. 1944) year-round range of the San Diego Cactus Wren in California, where restricted to disjunct patches on the coastal slope of Orange and San Diego counties. The subspecies' range has retracted considerably in San Diego County, and overall numbers have declined greatly. The northern limits of the range, mapped here on the basis of assessment of birds in the field by K. L. Weaver, are uncertain because of the lack of specimens over most of Orange County.



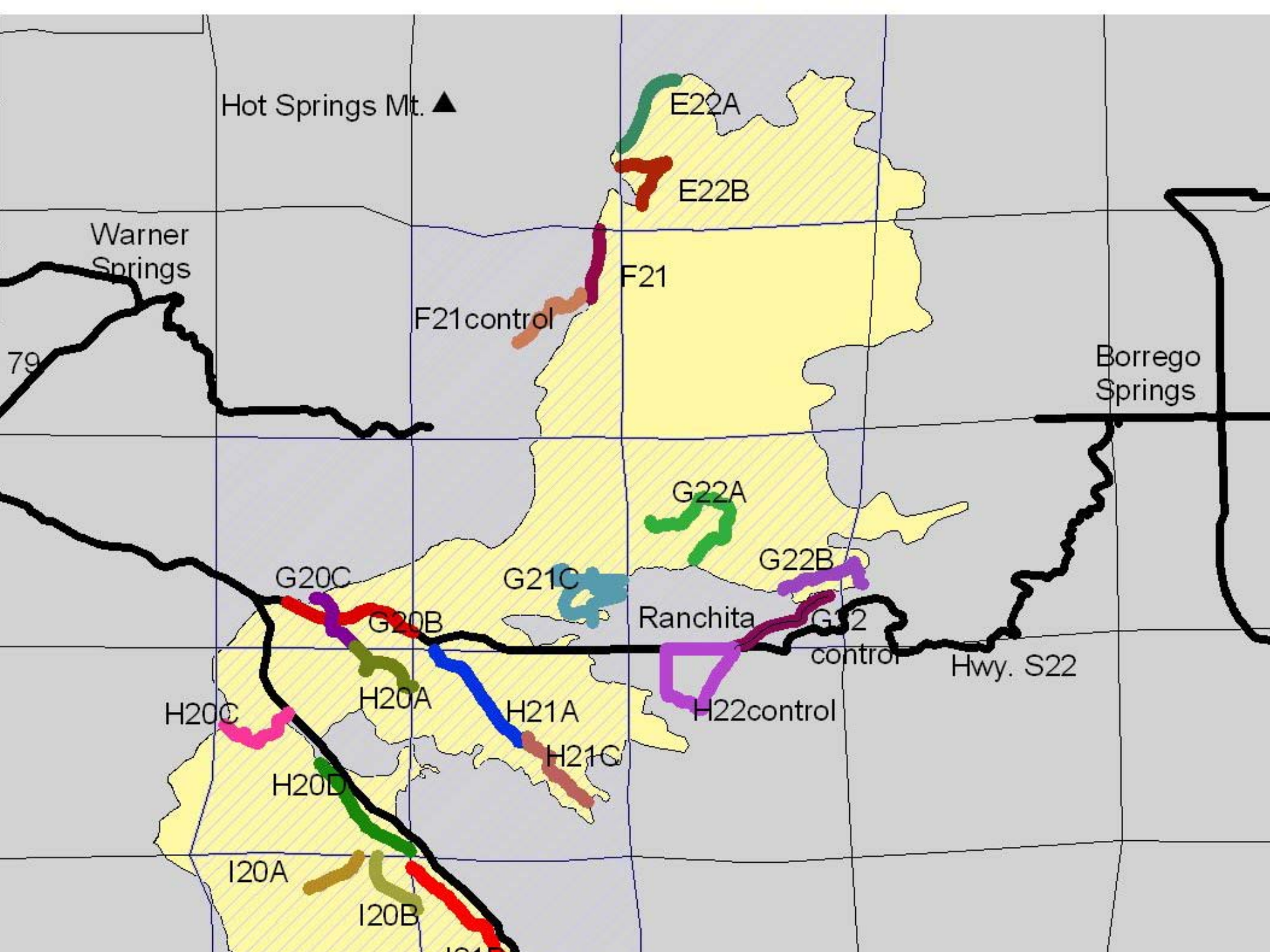








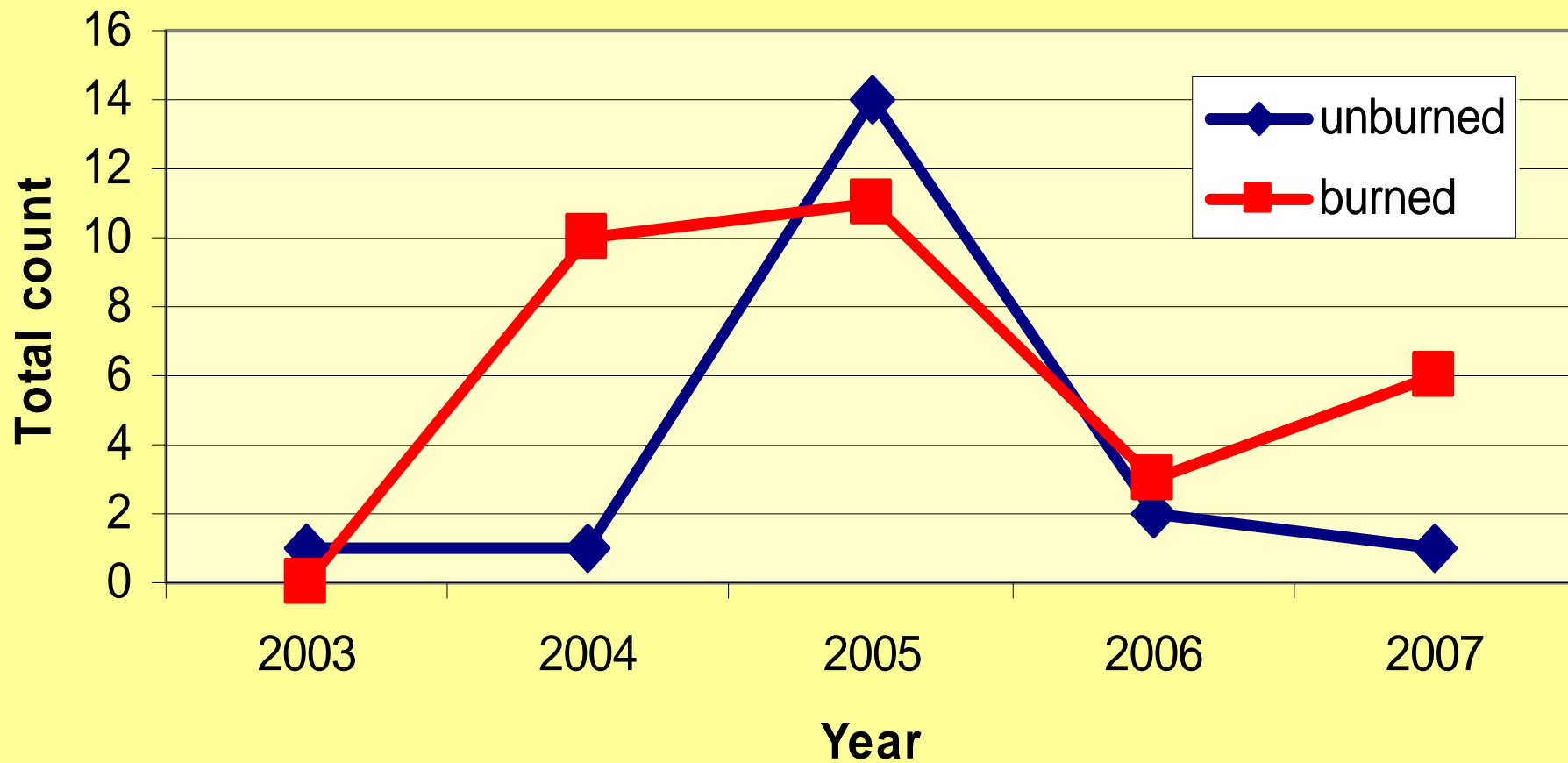




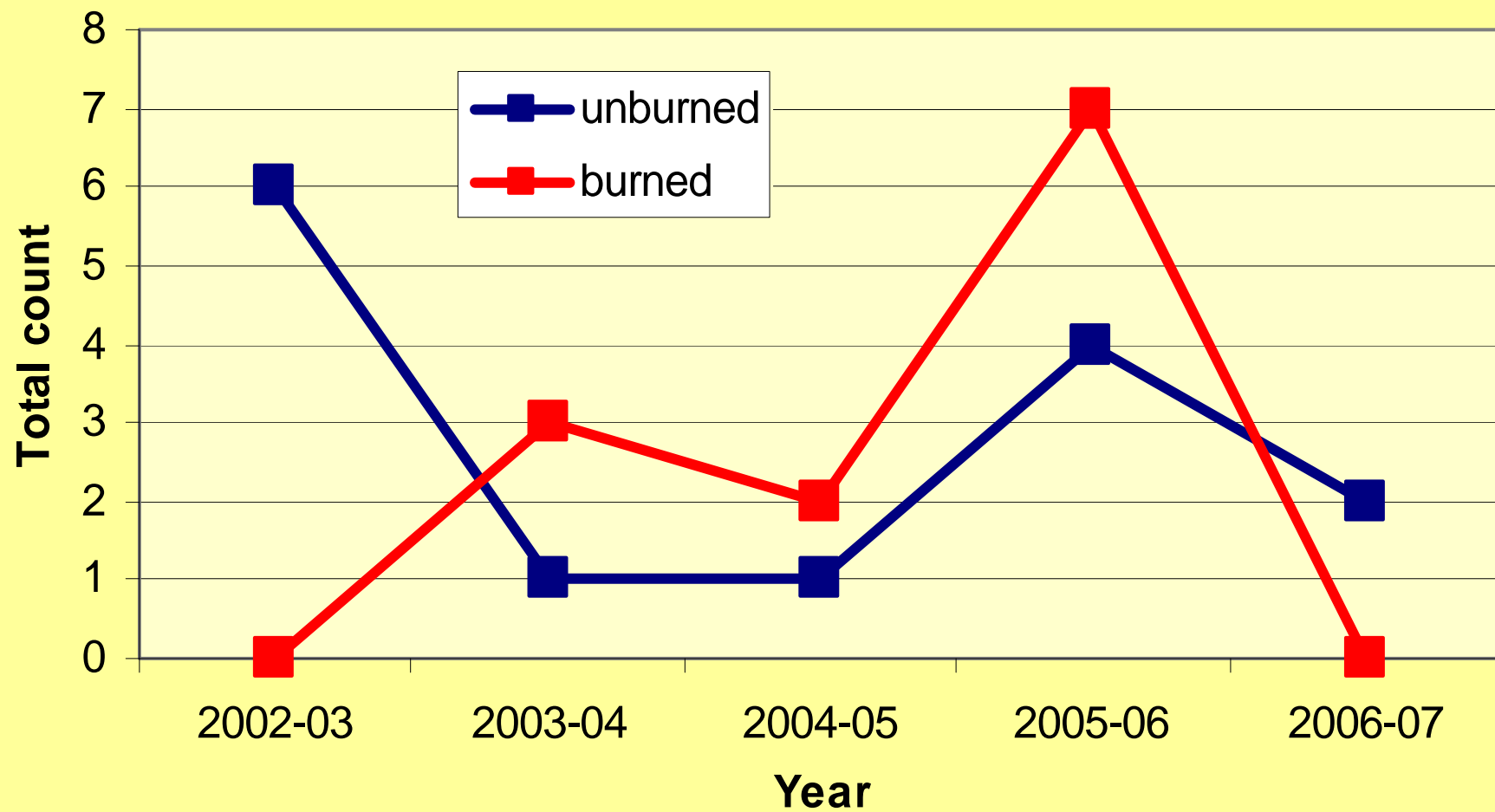




Cactus Wren (breeding season)



Cactus Wren (winter)



- Protect all remaining core sites, and as many others as possible, from urbanization and from highway building and widening, and compensate for any more lost habitat by restoring cacti in previously degraded areas.
- Restore and enhance (through planting of cacti) sage scrub around current sites.
- Develop a recovery plan that identifies all sites, determines the ownership status and conservation potential of each, and outlines a strategy for the conservation and management of these sites. Between the list of Rea and Weaver (1990), San Diego County bird atlas results, and surveys made by environmental consultants, probably all sites have already been identified, if the results of surveys on private lands can be extracted.
- Put occupied sites into public ownership or conservation easements, even though many of these will fall outside of the framework of San Diego's multiple-species conservation plan and will entail modifications of this plan.
- Experiment with cacti in landscaping at developed areas near occupied sites. Though the San Diego Cactus Wren appears far less adaptable to urbanization than the desert subspecies, its persistence in some isolated pockets of habitat suggests that conservation of patches of occupied habitat within urbanized areas may offer some conservation potential if preservation of large blocks of habitat fails.
- Conduct studies of the subspecies' breeding ecology, including nesting success and its relationship to habitat and landscape features, to better identify ideal habitat and thereby guide restoration efforts. Identify the minimum habitat patch size needed to support wrens in the long term, and determine juvenile dispersal distances so restoration sites are located close enough to source populations.
- Investigate rates of recovery of cactus and reoccupation by wrens in burned areas.
- Study the effectiveness of planting or transplanting of cacti and wrens' use of restored habitat.
- Conduct research in urban and suburban settings to assess the characteristics of sites that enable the long-term viability of wren populations.
- Investigate, ideally with whole specimens, the characters of the Cactus Wrens of Orange County. At a minimum, the material needed is rectrices 3–5 from one side of the tail as well as color photographs showing both the upperparts and underparts of fresh-plumaged birds (Oct–Dec), taken from directly above and below.