
research notes

Editor's Note: Beginning with this issue, Park Science will be devoting a specially designated space to research projects contemplated or recently underway. The new section, entitled **Research Notes**, was suggested by Editorial Board Member Gary Davis in the interest of promoting better communication among scientists about research that is in the planning stage or still is being conducted.

Davis proposes that **Research Notes** might also make available space for those who wish to propose a research topic or who are asking for assistance in obtaining ideas, methods, literature, study sites, or whatever, for a particular project. For instance, Davis and William L. Halvorson, a research biologist at Channel Islands National Park, are considering writing a review article about long-term research in National Parks and would be interested in receiving information for such an article. Readers able to shed light, furnish answers, or otherwise respond to the information given or requested in the **Research Notes** space would respond directly to the individual who placed the Note. In this way, information asked, offered, given, and received will get fastest and widest circulation.

Erosion on Santa Barbara Island

Erosion is a serious problem on Santa Barbara Island, the smallest 260 hectares (or 642 acres) of the

Channel Islands off the coast of southern California. For approximately 80 years prior to its becoming part of Channel Islands National Monument in 1938, the island was heavily impacted by sheep, goats, rabbits, cats, farming (including plowing and burning) and the introduction of exotic plant species. Since 1980 when Channel Islands National Park was created, the NPS has been conducting an extensive inventory and monitoring program.

One aspect of the research/management program is a study of the erosion on Santa Barbara Island; its causes and feasible cures. Because of past land-use practices, the island vegetation is now primarily an exotic-species dominated grassland and interspersed with patches of shrubs, both native and exotic. These patches vary in size and density throughout the island, but both aspects are increasing now that the grazers have been removed from the island (rabbits were present until 1981). The erosion apparently was caused by a combination of the change from native vegetation cover to exotic species brought about by farming, and the burrowing rabbits, that caused further reductions of plant covering on the soil.

The island soils are primarily heavy clay vertisols and mollisols, which exhibit fairly strong shrink-swell characteristics. Burrowing and denuding of the area served to increase the soil's tendency toward tunnel erosion. The result has been an extensive pattern of gullies with occasional patches (up to 2.7 hectares or 6.6 acres) of sheet erosion where the top soil has

been completely removed.

This study is a joint effort on the part of Bill Halvorson (Channel Islands NP), Denny Fenn (CPSU, Texas A&M), and Lynn Whittig (UC-Davis). It includes analyses of the specific characteristics of the soil and of vegetation, and germination and growth experiments using indigenous seeds. The concern is that the Park be able to amend the soil by changing nutrient content, structure, and/or organic matter content as needed, and that a ground cover of native species be restored, all without introducing any new gene pools to the island. Understanding the soil-vegetation interrelationships will greatly enhance our ability to solve the erosion problem, and also will aid in our attempts to restore to the greatest extent possible, the native plant and animal communities of the island.

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