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RESULTS OF THE CALIFORNIA SHOREBIRD SURVEY

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ABSTRACT.—A statewide shorebird survey program was conducted in California from July 1969 to June 1974. The objective of the program was to gather current data on the occurrence and abundance of shorebirds in selected wetland habitats throughout the state. California Department of Fish and Game established and coordinated the survey as part of its California Shorebird Study. Observers, mostly volunteers, counted shorebirds at established sites periodically during each year.

From one to five years of survey data were collected at 57 sites, and more than 2200 census reports were received. Computer tabulation of data was completed for the first three years of the survey. The data document the value of California's wetland habitats to shorebirds and provide baseline information for determining long-term population trends.

Wetlands in California support millions of migrating and resident shorebirds through the year. Economic development of these wetlands since the turn of the century has resulted in an alarming reduction in suitable shorebird habitat. By the mid-1960's, there was widespread concern for the future of shorebird habitats and populations in the state. This concern prompted an intensive statewide research program on shorebirds directed by California Department of Fish and Game. The need for this program was expressed in the Department's 1965 California Fish and Game Wildlife Plan.

Studies were initiated in July 1968. A six-member Shorebird Advisory Committee, composed of ornithologists, was appointed to provide technical assistance to this program. Members were Dr. Howard L. Cogswell, Dr. Mary M. Erickson, Dr. Stanley Harris, Dr. Joseph R. Jehl, Jr., Dr. L. Richard Mewaldt, and Dr. Frank A. Pitelka. The program was funded by the Federal Accelerated Research Program for Shore and Upland Migratory Game Birds and by Federal Aid in Wildlife Restoration, Project W54R.

The study was conducted in two major phases: a shorebird trapping, banding, and marking program and a shorebird survey and census program (Jurek 1973, 1974a). In addition, funding assistance was provided for several shorebird ecology studies (Gerstenberg 1972, Carrin 1973, Holmberg 1975), and an extensive literature review was compiled (Gerstenberg and Jurek 1972). The survey phase of this program, the California Shorebird Survey, is the subject of this paper. It consisted of a statewide network of census sites. The program was designed to provide current information on the occurrence and abundance of shorebird species in selected habitats in the state.

METHODS

In 1968–69, shorebird censusing methods were developed in studies at Point Reyes Peninsula (Sibley 1970), Humboldt Bay (Gerstenberg 1972) and San Diego Bay (Jehl and Craig 1971). Reporting forms and guidelines for census procedures were developed, and statewide censusing began in July 1969.

Sites were chosen in known shorebird concentration areas or in areas where information was needed on shorebird occurrence, abundance, species composition, and habitat use.

For each site, competent birders were recruited from local communities to volunteer their time and abilities as censusers. Participants were provided with basic survey instructions, specific site survey instructions, and reporting forms. Observers were also requested to search for and report color banded shorebirds which had been marked in the concurrent banding program.

Censusers conducted counts from established census routes or observation points at their sites.

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They scheduled counts at their convenience within the framework of their specific site instructions. They were requested to census at least twice each month. Counts were recorded on forms as to species abundance and habitat use. Also, weather and water conditions were recorded. The completed report forms were submitted to the department after each count. Reports received in the first three years of the survey were programmed for computer processing and tabulation.

RESULTS

More than 200 observers, mostly volunteers, participated in the survey program from 1969 to 1974. Their efforts yielded from one to five years of year-round count data at 57 sites, and more than 2200 census reports were received. Three or more years of data were collected at 28 of these sites. There were 21 inland and 36 coastal sites. Survey site descriptions and summaries of counts were reported by Jurek (1974b).

DISCUSSION

Shorebird species composition and abundance in a given area change frequently in response to seasonal migrations, tidal cycles, disturbances, restlessness in flocks, and many other factors that influence the daily movements of shorebirds. Shorebird census sites were too small and counts conducted too infrequently to adequately monitor these frequent population changes. However, the data provided useful information on habitat preference, relative abundance, distribution, and seasonal occurrence of species at selected sites over a wide area. This information has been incorporated into many reports in the Department of Fish and Game's Coastal Wetlands Series and in various environmental impact analyses. These data also provide a baseline for determining long-term populations trends. A recommendation resulting from the survey is that a similar statewide survey be initiated in 1978 in an attempt to assess long-term changes in shorebird populations in California.

The survey was subject to certain censusing problems, partly because of the variety of census sites and census conditions and the dependence on volunteer observers. Counts were not always conducted as regularly as requested or according to established procedures for the site. Also, censusers often experienced difficulties in identification of some species and in enumerating birds in large, mixed flocks. Despite some censusing problems, the performance of volunteer observers was outstanding. Many participated in three, four or all five years of the program. Without the volunteer assistance, the program would not have been possible.

By encouraging public participation, the survey program also stimulated local interest in shorebirds and helped focus public attention to the need for obtaining resource data on shorebirds and their habitats.

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