

THE GRAY LODGE WILDLIFE AREA:

HISTORY AND NOTES ON WILDLIFE POPULATIONS, 1931-1978

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Abstract.

The Gray Lodge Wildlife Area was purchased by the State Division of Fish and Game in 1931. When the 2540 acre Gray Lodge Gun Club was acquired, it was the first wildlife area established in the Sacramento Valley. Three separate additions brought the present acreage to 8400. It is one of the most highly developed wildlife areas in the nation. Developments include: 62 miles of roads, 35 miles of field levees, 40 miles of drain ditches, 10 miles of water supply ditches, 19 deep well pump units (plus three presently under contract), 20 ditch pump units and six domestic water systems. Good soils generally characterize the 92 field units which are, for the most part, rotated in diverse farm and marshland use. Observed changes in some wildlife populations are presented. Mule deer (Odocoileus hemionus), for example, have been residents only since 1965. Red fox (Vulpes fulva) have apparently now replaced Grey fox (Urocyon cinereoargenteus) on Gray Lodge. This changeover took place from 1965-1975. Beaver (Castor canadensis), opossum (Didelphis marsupialis) and coyote (Canis latrans) are newly established animals, while Badger (Taxidea taxus) have disappeared. Total numbers of waterfowl may be somewhat stable, but some species show downward trends. Though never a major nesting ground, fewer waterfowl nest today on Gray Lodge than 25 years ago. Avocet (Recurvirostra americana) and Stilt (Himantopus mexicanus) nesting has decreased, apparently due to the leaching out of preferred alkaline marsh pond nesting areas. The area has had just two designated managers during its 47 years of state ownership.

INTRODUCTION

The Gray Lodge Wildlife Area has been a significant unit in the California Department of Fish and Game's marshland conservation effort for over 46 years. This paper presents some of the history associated with the area and some field notes of wildlife that have had noteworthy population changes. Somewhat unique is the fact that the area has had only two designated managers since becoming a state installation. Mr. Lawrence H. Cloyd was the manager from 1932 until November 1947. The author of this paper has been manager since November, 1947.

Changes have occurred, not only in wildlife, but also in operational functions, programs, staff and budgets. In the beginning, the area was a sanctuary for waterfowl, which limited public visitation. Over the years, public use activities increased to include

birdwatchers, nature groups, sightseers, hunters, fishermen, youth and school groups, college classes and others. From less than 1000 per year, public users have increased to more than 100,000 annually. Through the years, various field and research studies have been conducted at Gray Lodge. Some studies were done by the staff, some in cooperation with universities and governmental agencies. A Field Research Station was established at Gray Lodge about 1952. This station is administered through the Central Office of California Department of Fish and Game. Major studies of the field station include the waterfowl banding program, the pheasant and upland game studies, marsh management, and upland habitat studies.

However, through all the changes, the basic purpose of the area has remained the same. That purpose is to so manage the area as to enhance its suitability for wildlife. Maintenance and improvement of the habitat - food, water, cover, space - for local and migrating species is the aim of the management.

HISTORY

Gray Lodge Refuge was acquired in 1931 at a cost of \$51.00 per acre. Funds for the purchase of the former 2540 acre Gray Lodge Gun Club were available by an act of the 1928 State Legislature. This was the first refuge established in the Sacramento Valley. The primary purpose was to provide a place where waterfowl could loaf and rest without being disturbed or shot. Prior to purchase, the Gray Lodge Gun Club was mainly pasture land for cattle, with low ground ponds flooded in the fall and winter for duck hunting. Since the club house building was painted gray, the name evolved into the Gray Lodge Gun Club. When purchased by the state, it was called the Gray Lodge Refuge.

From 1931 through 1952, the area was maintained as a complete sanctuary for waterfowl. In 1948, management work included some pre-nesting predatory animal control trapping. Target animals were feral house cats (Felix domestica), striped skunk (Mephitis mephitis) and raccoon (Procyon lotor). Initially, this trapping work was carried out in coordination with an intensive three year Ring-necked pheasant (Phasianus colchicus torquatus) nesting study on the area by the State's Pheasant Research Project. Results showed that pheasant nest destruction in 1947 was 40 percent, a year in which no predator control was carried out. In 1948, the year when predator control work was started, nest predation loss was 29 percent and in 1949, nest predation dropped to 13 percent. Moderate predator control has continued annually prior to and sometimes during the nesting season. The opossum (Didelphis marsupialis) and Norway rat (Rattus norvegicus) were added to the list of target predator species along with cats, skunks and raccoon. Some fox were taken.

THE AREA ADDITIONS

Gray Lodge Refuge originally contained 2540 acres. During the 1940's and early 1950's, the growing of rice increased considerably in the Sacramento Valley. Damage to rice

and other crops by waterfowl during this period became severe. Proposals for state and federal areas to grow crops to help feed and manage the early-arriving northern birds were made. The proposals, however, were not without considerable opposition from some farmers who believed "the only good duck is a dead one." Following many hearings and study, funds were provided by the State Wildlife Conservation Board for the enlargement and further development of the Gray Lodge Refuge. Actually, two areas were proposed at the time. They were called the Upper and Lower Butte Creek areas with the enlargement of Gray Lodge being called the Lower Butte area. Farmer opposition killed the upper area, but conservationists and others including Seth Gordon, at the time Director of the Department of Fish and Game, held firm and the Gray Lodge enlargement proposal proceeded.

From 1952 through 1955, 4160 acres in twelve separate parcels of adjoining farm and duck club lands were acquired. All but two gun club parcels were willing sales. By late 1955, Gray Lodge totaled approximately 6700 acres.

Intensive management and development plans were prepared for the renamed Gray Lodge Waterfowl Management Area. Major basic functions of the area were set forth as follows: (1) To provide attractive marshland and pond habitat for waterfowl and other wildlife of the area; (2) To produce wildlife food such as agricultural crops of rice (Oryza sativa), millet (Setoria italica), wheat (Triticum aestivum), barley (Hordeum vulgare), milo (Sorghum ssp.) and to encourage the growth of native aquatics and other plants of food value for wildlife, the feed to be left for the birds in order to help lessen crop damage to adjacent farmlands; (3) To provide regulated public hunting for waterfowl, pheasants and other selected wildlife resources; (4) To provide a closed zone (sanctuary area) where waterfowl and other wildlife could escape hunting and other interference. Today, 2200 acres of the original refuge make up the Gray Lodge sanctuary.

In 1970, again with funds from the State Wildlife Conservation Board, the Marion Brady addition was purchased. This property, located along one and three-fourths miles of the Gray Lodge south boundary, contained 760 acres. Existing on the Brady property were several major drain ditches with easements already connected to Gray Lodge waterways. Development costs, therefore, were relatively minor. The name of the area was changed to Gray Lodge Wildlife Area in order to indicate a broader wildlife interest.

In 1974, the Cassady Bros. ranch, totaling nearly 920 acres, was purchased. This addition brought the Gray Lodge Wildlife Area up to the present total of 8400 acres. The Cassady ranch was bounded on three sides by Gray Lodge lands. Consequently, ditches and access facilities were easily tied into the existing Gray Lodge developments.

WILDLIFE FOOD PRODUCTION

In 1948, the first agricultural crops were grown on Gray Lodge for bird feed. Three fields containing approximately 120 acres were planted to winter wheat. Eighty acres of watergrass (Echinochloa spp.) were grown in 1949, along with the wheat and drought resistant milo. In order to increase the amount of feed produced for waterfowl, approximately 500 acres were land leveled via contract in 1950 and 1951. This, plus the 4160 acre enlargement program, during 1952-55, moved Gray Lodge, with added

personnel, into rather intensive wildlife food crop activity. Approximately 300 more acres of land were leveled during the mid-1950's by staff personnel. Crop production increased as rice was grown along with barley, wheat, milo, millet safflower (Carthamus tinctorius) and sudan (Sorghum sudanense). Rice production was deleted from the crop program in 1960 as more effort went into growing increased acreages of millet. This served to decrease operational costs, yet keep up the total crop yields.

From 1960 to the present, crop acreages grown annually have averaged 1000 acres of millet (watergrass-marsh), 300 acres of wheat or barley and 250 acres of milo - which often included field patches of sudan, corn and safflower.

Studies in aquatic marsh plants have been conducted by the Department since the late 1950's. Where feasible, marsh areas are managed so as to enhance production of desirable natural aquatic wildlife food plants.

LAND AND HABITAT DEVELOPMENTS

A major function of the area has always been the development and maintenance of desirable marshland/wildlife habitat. This entails the construction of levees, roads, ditches, dams and various water control structures and water supply systems. The latter are primarily ditch pumps and deep well pump units with regulating basins. Land and habitat developments actually have been carried out in varying degrees continuously since the late 1930's. A review of the developments completed up to the end of 1977 shows there are 62 miles of roads including: 11 miles of two-way graveled public use roads, 24 miles graveled for year around operational use and 27 miles non-graveled operational use roads. There are approximately 50 miles of ditches; forty miles are major drain ditches and ten miles are primarily water supply ditches. Most roads are on levees which also serve to impound water. In addition, there are approximately 35 miles of field levees. These permit the regulation of field or pond water depths at levels desirable for aquatic plant growth.

One hundred acres were leveled on the Brady addition. Approximately 300 acres were leveled on the Cassady property prior to acquisition. A total of 1200 acres of Gray Lodge lands, therefore, have had some degree of leveling work accomplished.

WILDLIFE NOTES

The comments on the following selected wildlife species are from field notes, observations and recollections this author has had during his association with the Gray Lodge Wildlife Area for more than 30 years. In addition, knowledge of some wildlife emanates from those who have carried out studies here and reported on their work.

When wildlife are successful in re-establishing a population and/or demonstrate their ability to adjust to borderline habitat, this often goes unnoticed. The same is generally true of less prominent species whose numbers gradually decrease. Gray Lodge does have some heartwarming wildlife successes. These are most likely related to the development and improvement of the various habitats in addition to the increase of

the overall area of Gray Lodge which now totals 8400 acres.

MAMMALS

MUSKRAT (Ondrata zebethica) These animals were introduced into the Sacramento Valley about 1936 or 1937 and probably became established on the Gray Lodge Refuge by 1940. They flourish well in tule-cattail ponds and ditches. A common life style practice is their habit of burrowing holes through levees. These burrows often cause levee washout damage. Consequently, muskrats are trapped to keep their numbers down. Prior to 1962, only intermittant and moderate effort was made to trap them. In recent years, the catch by trappers working under bid permit varies from 1200 to the record 2600 muskrats caught in 1977.

BEAVER (Castor canadensis) Historically, beaver were of importance in the Sacramento Valley. Trapping of these animals became extensive, consequently they were reduced to near extinction in the Butte Sink and upper Sacramento Valley. The first record of their occurrence on Gray Lodge was in 1969. A small colony of beaver had existed about two miles from Gray Lodge in the Butte Sink for some years, but remained few in numbers until recently. Their numbers now may total 15 or more on Gray Lodge where they have constructed lodges and also built dams in our water control structures. The beavers idea of a proper pond level differs from ours and we are not presently sure who will prevail in maintaining desired water levels. In just one night, they can build a new beaver dam on our flashboard water control structure.

DEER (Odocoileus hemionus) No deer were seen on Gray Lodge until 1965 when one was observed, They became established about 1968 and have now built up into a herd numbering 130 or more. Tule patches seem to be the main source of cover used. The destruction of riparian habitat along Butte Creek and the Sacramento River and the improvement of semi-riparian habitat at Gray Lodge apparently brought about the establishment and the population increase.

ALBINO DEER (Odocoileus hemionus) A strain of albino deer have existed for at least 30 years from the vicinity of Chico south along Butte Creek and the Sacramento River and up into the Sutter Buttes. Two albino fawns have been born on Gray Lodge. One in 1969 and the other in 1977. Each apparently shares a common problem of poor eyesight, but otherwise seem healthy.

GREY FOX (Urocyon cinereoargenteus) and RED FOX (Vulpes spp.) The Grey fox has been the native resident fox on Gray Lodge. A population of Red fox were established in Glenn and Colusa counties - introduced in the 1877's or 1880's, apparently from the east. The first record of Red fox on Gray Lodge occurred in 1958 when one was trapped and released. A second one was caught in 1965. Then for the next ten years, the Red fox gradually increased. Evidently they now have replaced the Grey fox, which have not been seen here in the last three years.

OPOSSUM (Didelphis virginiana) These animals are now fairly well spread out over the state. First knowledge of their existance on Gray Lodge came in 1950 when one was trapped during the pre-nesting predator trapping work. They have been recorded here every year since, though not in excessive numbers.

BADGER (Taxidea taxus) These animals were somewhat common in the Sacramento Valley in loam soil areas. One was trapped on Gray Lodge in 1950 and another one in 1965. One or two others, however, were reported on adjacent property about 1966. None have been seen or reported on Gray Lodge for over twelve years.

RING-TAILED CAT (Bassariscus astutus) The Ring-tail is another relatively new addition on Gray Lodge. Though they were known to live in the Butte Sink just several miles away, they were never recorded here until January, 1972 when one took up residence in our headquarters woodshop building for the winter. They have been seen and reported every year since, consequently, ringtail cats are now considered resident.

COYOTE (Canis latrans) The coyote has been a resident of Gray Lodge only since 1973. Two young were observed in 1975 and intermittent staff reports indicate the coyote's continued presence. The only previous record of these animals on Gray Lodge was in 1959 when one was trapped and then escaped. Coyotes, however, have been reported and trapped on the nearby Sutter Buttes, but apparently seldom move to Gray Lodge.

BIRDS

ROSS' GEESE (Chen rossi) The Ross' goose has made the best population come back of all our North American waterfowl. The Gray Lodge Wildlife Area and vicinity is and has been one of their most important wintering grounds. During the late 1940's and early 1950's, the Ross' goose population totaled somewhere between six to ten thousand birds. A gradual increase, starting about the mid-1950's, and progressing lately into healthy increases brings the present population to not less than 80,000. Protective and restrictive measures on hunting were aids toward their population buildup, as was their broadening of the nesting range and subsequent improved nesting success.

LESSER CANADA GEESE (Branta canadensis leucoparctica) These geese were never common here, but a few were generally around and seen relatively often in the late 1940's and early 1950's. Presently, Lesser Canada geese are rarely seen at this locality or taken by public hunters from which accurate records are kept.

CAKCLING GEESE (Branta canadensis minima) These small Canada geese were seen on and around the Gray Lodge Refuge in relatively fair numbers until the early 1950's. Cackler numbers have decreased here or else they choose not to frequent this locality, as this observer noted in past years. Estimates indicate that cacklers total only 25 percent of the numbers seen here in the late 1940's.

BLACK-CROWNED NIGHT HERON (Nycticorax nycticorax) In 1957, there was an estimated 25 pair on Gray Lodge. They were nesting in thick tules over a somewhat isolated stable water pond. A close protective surveillance was kept, along with maintaining adequate stable water ponds for foraging. This proved beneficial, for their population has gradually increased during the past 20 years. Today they number here between 600-800 birds. However, without an area such as Gray Lodge during this time, these heron could easily have disappeared from the upper Sacramento Valley. Each year during the nesting season, their nesting area has been closed to the public.

SNOWY EGRET (Leucophoyx thula) These birds readily associate with the Black-crowned night heron on Gray Lodge - particularly during the nesting season. They too, experienced an alarming drop in numbers during the mid-1950's. They also have made a gradual population increase, though not as spectacular as that of the Black-crowns. A 1958 nest census totaled around 30 pair. In 1974, a nest survey indicated the nesting colony had increased to approximately 175 pair. The preservation and management of the Gray Lodge marsh ponds was the main factor contributing to their increase.

COMMON EGRET (Casmerodius albus) These all white, beautiful birds experienced a critical population dive in 1956. They seemed to be at a fair population level on Gray Lodge and vicinity in prior years, but a widespread overuse of the pesticide "dieldrin" to control leaf miner in rice fields left few of these birds around. During the last three or four years, however, they have shown they are making a gradual comeback around Gray Lodge.

AVOCET (Recurvirostra americana) These shore birds prefer shallow open water alkali ponds that are free of plant growth. Good open water shallow ponds of this kind were available on Gray Lodge until the early 1960's. Avocets, consequently, were more numerous then, in migration groups and in numbers nesting here. The decrease in Avocet use is attributed to the leaching out of the alkali ponds which encouraged plant growth in those ponds. This discouraged use by Avocets as well as the Black-necked Stilt (Himantopus mexicanus).

MOURNING DOVE (Zenaidura macroura) Dove have apparently found Gray Lodge to their liking. They have shown moderate increases over the years. Intensive studies on their habits have been completed. Several pairs carried out as many as six consecutive successful broods during a nesting season. Use of wire cone nests by dove was over 75 percent during the first two months of nesting, and for the entire season, wire cones were selected more often than all other nesting sites combined. For best results, wire cone nests should be installed during February, March or April.

RING-NECKED PHEASANT (Phasianus colchicus) The wild pheasant population on Gray Lodge is generally known to be the highest in California. Pheasant numbers fluctuate considerably, however, Fall populations during good production years may average one bird per acre. Past records on hunter harvest of roosters showed season tallies varied from 1100 to 2600 within a four year period. The wet years, those that maintain good humidity and soil moisture for extra plant growth and consequent nesting and escape cover, are most conducive to high pheasant numbers.

BALD EAGLE (Haliaeetus eucocephalus) Our national bird did not make his recorded presence on Gray Lodge until March, 1971. Since then he has been observed here or in the general vicinity yearly. The Bald Eagle's presence has likely been enhanced by the establishment of Lake Oroville and the afterbay. Golden Eagle (Aquila chrysaetos) are not uncommonly seen on the area, particularly during the winter and spring months. Two pair presently are known to be nesting in the nearby Sutter Buttes.