

A REVIEW OF WATERFOWL MANAGEMENT IN CALIFORNIA

In recent years there has been a lot of discussion on the future of waterfowl and waterfowl hunting. There is a challenge--and a big one it is--in meeting man-made forces which constantly change the face of the earth, and the atmosphere for that matter. The future of waterfowling as we have known it depends on how successful we are in maintaining space for hunting and in maintaining and creating acceptable waterfowl habitat. This is a formidable undertaking requiring team work and understanding of all the public--the landowners, hunters, State and Federal authorities, all of the interested citizenry.

To prosper, even to survive, waterfowl must have suitable habitat available to them throughout the year. To pursue their sport and be happy with it, waterfowlers must have space to hunt, bird watchers a place to watch, photographers a place to photograph. Our job is to meet the needs, not only of waterfowl, but the considerable interested public. Basically this is what we are working together to try to do.

In recent years, the preponderance of effort and available monies for habitat acquisition have been spent in preservation and maintenance of production habitat. This was influenced in large measure by the fact that breeding habitat was in danger of elimination through drainage and other destructive forces. This continues as a major problem and we must continue to recognize it.

Presented by John S. Gottschalk, Director of the Bureau of Sport Fisheries and Wildlife at the National Waterfowl Council Meeting, San Francisco, California, March 12, 1967.

But there are other problems which also are of great concern. In part, I refer to the growing importance of wintering grounds in many areas. And what better place to start than California where the bulk of the Pacific Flyway birds find harborage during more than half the year.

California is well known as a State of many "firsts" and superlatives although some from Alaska and Texas may challenge this. California recently became the most populous State in the Nation, a dubious distinction in our business! Within 40 years it is expected to have almost twice as many people as New York State. Forty million people here at the turn of the next century can create all kinds of new challenges which tax the imagination.

Let's look at California from the viewpoint of a waterfowler. Since 1948 (with the exception of 1959) California has led the nation in duck stamp sales and has been among the top three every year since the inception of the duck stamp program in 1934. For recent years we have records of seasonal hunter success on a State-by-State basis, and California has ranked among the "top three" along with Louisiana and Arkansas.

Narrowing our range of view to the Pacific Flyway the significance of California becomes even more apparent. Each year Californians purchase more than 40 percent of the total duck stamps sold in the flyway. These hunters account for over 50 percent of the total flyway kill of ducks and 65 percent of the geese.

California has traditionally served as the primary wintering grounds for the bulk of the waterfowl of the Pacific Flyway. California normally accommodates 54 percent of the ducks and over 75 percent of all the birds in the flyway including those on the west coast of Mexico.

From the standpoint of total acreage of high and moderate value waterfowl habitat, California is also first in the flyway. Surveys in recent years show California with 35 percent of the permanent water, 30 percent of the wetlands, and 37 percent of the important upland acreage for an overall total of 34 percent.

Even with the high percentage of waterfowl habitat which exists in California, the State rates rather poorly on the basis of acres of habitat available per hunter: it is eighth among the 11 States which make up the Pacific Flyway.

If we could roll back the calendar a hundred years or so we could see that some startling changes in wetlands have occurred, and at an increasingly rapid pace. While many of these changes in wetland waterfowl habitat are not well documented, we can point to the U. S. Department of Agriculture inventory of 1906 which showed 3,420,000 acres of wetlands in California. A follow-up survey in 1922 showed 1,179,000 acres of wetlands. The Wetlands Survey by our Bureau in 1956 showed only 457,000 acres. In 50 years the total wetlands were reduced to less than 15 percent of their former extent. Additional wetland habitat has been lost since 1956 but these losses may have been roughly balanced by development of new habitat on State and Federal refuge areas.

It should not be inferred from this drastic loss of California wetlands during the past 50 years that the ability of the Central Valley to support ducks and geese has been reduced proportionately. Much of this natural wetland habitat is now devoted to rice culture which, for some species, serves as a highly acceptable substitute.

Aside from the permanent water areas and wetlands infeasible to drain, the private duck club owners and the State and Federal game agencies own or control the large share of the remaining high value wetland habitat.

To assess the importance of California waterfowl habitat and its relationship to the total waterfowl picture we must consider individual species or species of similar habitat preferences or requirements.

With some assurance we can point to certain changes in species which have occurred between the Gold Rush days and the present. Reclamation and stream clearance of lowland valleys have depressed local wood duck populations. Drainage of marshlands and conversion of these to agriculture have reduced habitat preferred by such species as teal, shovellers and ruddy ducks. Those species which have proven adaptable to upland and stubble feeding such as mallards, pintail, widgeon and geese have not been as drastically affected.

Waterfowl such as cackling geese, snow geese and the white-fronted geese appear to be most critically dependent on California wintering areas. Virtually the entire flyway population of these three important species are found only in California during the mid-winter period. Recognizing the requirements of these birds and

considering alternate available wintering areas it is inconceivable that substantial populations could be maintained in the absence of California wintering grounds.

Black brant populations in coastal California bays are another example of the impact such factors as human activity and disturbance can have on populations - even without a drastic reduction in habitat. Here we see clear evidence of a shifting of populations to areas in Mexico where conditions are more conducive to peaceful survival.

Since becoming Director of the Bureau, I have had an opportunity to visit waterfowl areas in many parts of the country. Nowhere in the United States, and I suspect nowhere in the world, do concentrations of waterfowl occur such as we find during the fall and winter in the Central Valley in California. The odd thing is that the acreage of wetland habitat in the Central Valley is not as large as the number of birds would lead one to suspect. It is obvious that the birds have adapted to a changed environment. This brings up an apparently simple but actually quite a complicated question: "What is waterfowl habitat?"

Most people immediately think of a marsh or possibly a swamp. Hunters of diving ducks think of a shallow lake or bay with submerged vegetation. Of great significance, however, is the fact that several species of waterfowl preferred by hunters accept and often seem to prefer another type of habitat during the fall and winter. I am speaking of water without food, such as a deep lake or a reservoir, in combination with nearby agricultural land. When proper conditions

are met, the carrying capacity of this type of habitat is sometimes astounding. Perhaps the most clear cut example of agricultural carrying capacity without benefit of traditional types of waterfowl habitat is the Columbia Basin in Washington. Here a large irrigation development with associated water storage reservoirs along the river attracts several million birds during the fall, and provides up to 2 million mallards with the necessities of life during the winter. The birds rest on the reservoirs and seeps during the day and feed in the harvested grain fields at night - at least feeding occurs mostly at night when the shooting season is in progress.

In very large measure, the present high carrying capacity of the habitat here in the Central Valley is related to waste grain and weed seeds associated with agriculture. It's a lush environment, and acre for acre it may equal--even exceed--the carrying capacity of good marshes.

In view of probable future developments, the problem of water plus agricultural land as waterfowl habitat is worthy of considerable study. In the first place, not all species accept this type of habitat. For example, it is of little or no value to diving ducks even though it is highly acceptable to many dabblers, especially mallards, pintails, and to a lesser extent, widgeons and others. Most geese are readily maintained on the combination of water plus agricultural land during fall and winter.

Furthermore, the extent of the water area need not be especially large if human disturbance can be controlled. With geese, for example,

the unit may be very small indeed. The Jack Miner Refuge in southern Ontario and Gaddy's Pond in North Carolina each have less than 10 acres of open water, yet they provide a resting place for upward of 10,000 geese each fall. Remington Farm in Maryland holds 10-15,000 Canadas during the fall and winter with a 6-acre pond. Here in California, 1-1/2 million ducks have been photographed on 600 acres of water on Gray Lodge Refuge. We must conclude that the amount of water necessary for resting can be surprisingly small providing disturbance can be held within suitable limits, and food is available.

The problem of disturbance as it relates to use of habitat by waterfowl is also worthy of discussion. I am sure you are all aware of instances in public parks and on refuges where both ducks and geese are very tolerant of human disturbance once the birds have become adapted. Conversely, in all but exceptional cases, waterfowl quickly learn to respect gunfire and will usually not concentrate in areas subject to even light shooting pressure. The distribution of birds within available habitat, the day before the shooting season opens as compared to the distribution the day after, clearly demonstrates the effectiveness of the gun in "driving" birds to areas comparatively safe from shooting. Further, the birds are amazingly sensitive to shooting pressure on a day to day basis. Here in California much hunting occurs on Wednesdays, Saturdays, and Sundays. On non-shooting days, the birds scatter widely throughout the Valley and the number on State and Federal refuges is comparatively small. Within a surprisingly short time after opening hour on a shooting day

the reverse is true. The net effect is a material reduction in the amount of habitat used by the birds during periods when hunters are active.

The practice here in California of shooting only three days a week on public and many private areas allows the birds to scatter and make use of habitat that would otherwise not be available. Undoubtedly, this increases the number of birds using the Central Valley during the fall and winter. The lesson to be learned here is that the number and arrangement of refuges (or areas that act as refuges) and the spacing of shooting and non-shooting days can have appreciable bearing on the use of potential habitat and on the amount of shooting it will sustain. Perhaps the ideal solution has not been attained here in the Central Valley but, as a duck hunter frustrated by the relatively scarce birds of the Atlantic Flyway, I wish that Washington, D. C., was located about 30 miles north of Sacramento.

With regard to food, it must be remembered that ducks and geese will range out from rest areas for distances up to 25 miles or more in search of a feeding area. This means that for all practical purposes most harvested grain fields in the country (or unharvested, for that matter) are within striking range of water areas with a potential for holding waterfowl. Certainly, most grain fields in California are within daily cruising range of ducks and geese. In many localities agricultural land has the potential for meeting most of the food requirements of large numbers of waterfowl during the migration and wintering periods and, except in years of late harvest, there is little in the way of a depredation problem.

What does this mean to the future of waterfowl in California? First, it may not be possible to preserve all the present wetlands. And yet, it is likely that distribution of water for irrigation, industrial, and domestic use will increase. It would appear then, that so long as grain continues to be grown and so long as there are enough reservoirs and other water areas to supply necessary resting places, the combination will support large numbers of field-feeding ducks and geese.

If you accept this line of reasoning, it leads to a logical question about whether or not we need be concerned about wetland habitat in California - or anyplace else within the wintering grounds. The answer is definitely yes. Although it would appear that a very large portion of the North American waterfowl population could be provided with food and shelter on ponds, lakes, and reservoirs, plus agricultural land, this would not provide habitat for all species, especially the divers. And it would not satisfy the need for providing hunters with places to hunt.

The hunting space is low in relation to the number of birds in these concentrations, which means that comparatively few hunters can participate. These hunters take advantage of the harvest by taking a larger number of birds during the season. It seems likely that as additional wetlands are lost, the amount of hunting space will be further reduced. This will result in a still higher seasonal take by a smaller number of hunters who will likely harvest all the surplus. Concentrating recreational opportunity among fewer people

hardly seems compatible with good waterfowl management. The solution, as we see it, is to make a determined effort to maintain all presently existing wetlands that provide hunting opportunity, and to increase the amount of wetlands where possible.

The ultimate end product of waterfowl management is human recreation, measured in part by the number of hunters participating. It is important that we take into consideration the relationship between wetlands and harvest opportunity. By the same token, it is important that we recognize all types of habitat that provide food and shelter necessary for the birds' welfare during the migration and wintering seasons. When the two aspects of the management problem are combined, I am much impressed with the possibility that in many locations along the migration routes and on the wintering areas our problem is as much one of acquiring and managing habitat to distribute birds and make them available to people as to provide for the welfare of the wild population. Put another way, experience has demonstrated that small amounts of wetland or water have surprising carrying capacity for some waterfowl if the areas are located in grain-growing regions. On the other hand, comparatively large amounts of wetland habitat is required if large numbers of hunters are to take part in the harvest. When viewed in this light it appears to me that acreages of wetland must be justified both in terms of the birds' welfare during the migration and wintering periods and the opportunity for enjoying them. Further, if we can provide sufficient habitat for large numbers of hunters the amount available for the birds is more likely to be adequate.

In California the problem of declining space for waterfowl hunting is apparent now. It will take major effort and cooperation of all to preserve what you now have.

California hunters kill between 1 3/4 and 2 million ducks annually. About 15 percent of this total occurs on State and Federal management areas. Over 40 percent is taken on private gun clubs and an additional 20 percent is taken on private lands which are similar to but not specifically defined as organized gun clubs. The remaining 25 percent of the kill is taken on public lands and waters open to free and unrestricted public hunting.

Looking to the future of each of these four broad categories of waterfowl lands (refuges, private clubs, private lands and public waters) we can anticipate major changes. It appears inevitable that private lands will become more intensively managed for purposes other than waterfowl as it becomes necessary to support a world's human population, and it is more likely that the economics of land ownership will exert greater pressures.

Public lands and waters likewise can be expected to deteriorate from the standpoint of waterfowl and hunter use - principally because of increased human activity and various types of urban and industrial development. San Francisco Bay perhaps is the prime example here in our immediate vicinity.

What of the future of the private gun clubs and the State and Federal waterfowl areas? Together these make up about 55 percent of the existing duck habitat in California and must be looked upon as the key to continuance of any semblance of waterfowling as we now know it.

I believe we must face the fact that State and Federal waterfowl habitat cannot completely support the entire wintering waterfowl population as it now exists much less supply needed places for hunters. The only alternative is to strive to maintain all lands and waters now important to waterfowl. Needless to say this will take a lot of "doing". Knowing that significant loss of habitat is inevitable in several important areas we must look toward more intensive development of the lands now managed for waterfowl. This will take up some of the slack but certainly not all that will ultimately be necessary.

We must recognize the potential and the interest of the privately owned duck clubs in the future of California waterfowling. California gun clubs play a vital part in the overall picture now, I would expect them to grow in importance in the years ahead.

We are exploring ways and means to maintain private waterfowl habitat on California's waterfowl wintering areas. At present the grasslands area of the San Joaquin Valley is of vital concern with increasing problems in the area of rising taxes and water management related to changing conditions.

It is too early to predict solutions to such situations but there is little doubt that if grasslands are permitted to deteriorate further there will be additional irreplaceable losses in key wintering waterfowl habitat.

I think we must recognize that the sport of waterfowling as we have known it faces a difficult future. The world wide population explosion and its demands for food, fiber, water, living space and transportation will put tremendous pressures on our natural resources. All indications are that North America will not escape the impact of the cancerous increase of humans. Our population is expected to double by the year 2000. If this prediction is correct we must act now to preserve all of the important existing waterfowl production, migration and wintering habitat to produce birds enough and furnish space enough to accommodate the present number of Canadian and American hunters. This is not to say that the number of waterfowl hunters will increase in proportion to the population.

Our population in the year 2000 will be around 90 percent urban and that most of the people will be in the 15 to 30 year age group. The question is--will these young urbanites know enough about waterfowling to be willing to support and make sacrifices to preserve it? Is it reasonable to expect a following for waterfowl conservation when the ratio of hunters to non-hunters continues to decline while the human population expands? I believe we can get enough backing to assure the welfare of waterfowl in sufficient numbers and in adequate distribution to meet the recreational demands of bird watchers. Far less waterfowl habitat and fewer birds are needed for this popular recreation than is needed for waterfowl hunting. I don't know if we can get enough support to guarantee good waterfowl hunting

opportunity in the year 2000. The answer to that I think depends on how successful we are in the present and immediate future in preserving all of the important habitat needed to maintain the present populations of waterfowl and waterfowl hunters. And equally important--on how successful we are in reaching the young urban people and convincing them that duck hunting is a fine type of outdoor recreation.

One thing is certain - those of us who are interested in the waterfowl resource cannot afford to be complacent over the present status of the waterfowl resource and the outlook for its future. It will take ingenuity, courage, patience, and a lot of devoted work by many people to keep pace with the changes which are on the horizon.