

Report to the Legislature (January 1, 2011)

California Department of Fish and Game

GAME REFUGES (Fish and Game Code 10820-10838, 10841, 10842)

EXECUTIVE SUMMARY

As directed by the Legislature, the Department of Fish and Game (Department) conducted outreach and solicited public input on the potential for elimination of the "State Game Refuge" designation for 19 areas in the state. These areas were established in the 1910s over existing ownerships and prohibited hunting to protect and repopulate deer and other heavily hunted game species to areas outside the refuges. They were established at a time when game regulations and wildlife management were in their infancy.

Evaluations and study of deer over the decades indicated that deer do not behave or move to new areas as hoped for in the 1910s and led to the conclusion that the refuges were not serving the intended purpose. Additionally, deer hunting and all game species hunting is much more highly regulated than in the past.

From July to December 2010, the Department solicited public input and comment on the refuges and received more than 5,000 responses by e-mail, telephone, letter, survey response, or web blog. Some "action alerts" from anti-hunting interests generated the greatest number of responses. Approximately 90 percent of letter/e-mail respondents were against elimination of refuge status, while approximately 65 percent of survey respondents were against elimination of refuge status. About 34 percent of survey respondents felt some or all of the refuge designations could be eliminated for a variety of reasons. Hunters in California comprise less than one percent of the population.

One of the most interesting findings was the high public interest in refuge areas (and misunderstanding of what a state game refuge is) for human recreation such as hiking, bicycling, camping, and horseback riding. While public input was polarized with the anti-hunting versus pro-hunting perspective, there were some recommendations such as eliminating some refuge designations, particularly those furthest from population centers. At the same time, some refuges were highly recommended for retention by interest groups, organizations, or landowners for a variety of other reasons than the original purpose.

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INTRODUCTION

With the passage and signing of SB 1166 (Cox), Ch. 389, Statutes of 2008 (now Fish and Game Code Section 10844) the Legislature directed the Department of Fish and Game (Department) to prepare and submit this description of the public education and outreach effort undertaken regarding the potential closure of 19 state game refuges; and to provide a summary of information provided by the public that is relevant to potential closure.

10844. (a) The department shall undertake appropriate education and outreach regarding the current location of existing game refuges, agency contacts for statutory notices in Sections 10506 and 10507, and the potential closure of all state game refuges, except the California Sea Otter Game Refuge and the Farallon Islands Game Refuge. The department shall provide an opportunity for public comment concerning the potential elimination of game refuges. The department shall provide information about game refuge boundaries, including, but not limited to, maps available both on the department's Internet Web site and in hardcopy format. The department shall also provide Internet Web site contact information for the public to contact the department in accordance with state law. The department may conduct regional workshops as it determines to be necessary to provide public information about the proposed elimination of game refuges.

(b) The department, on or before January 1, 2011, shall prepare and submit to the Legislature a description of the public education and outreach effort undertaken pursuant to subdivision (a), and a summary of any information provided by the public that is relevant to the potential closure of all state game refuges except the California Sea Otter Game Refuge and the Farallon Islands Game Refuge.

“When the 49ers rushed in, small restaurants, boarding houses, and hotels blossomed overnight throughout the mining region and in San Francisco. Feeding the masses of immigrants swarming to San Francisco became good business. Market hunting emerged in response to the need for food; California's abundant wildlife gave new meaning to the term fair game. In 1854 John Audubon described the phenomenon called market hunting: Many of the miners, indeed, turned their attention to killing deer, elk, bear, antelopes, geese, ducks, and all sorts of game and wildfowl, by which they realized considerable sums from selling them in San Francisco.

This lethal multi-barreled gun killed dozens of birds with a single shot. Eventually laws were passed to protect migratory birds, and Oakland's Lake Merritt became the nation's first game refuge in 1870.”

Source: <http://museumca.org/goldrush/fever14-ma.html>

BACKGROUND

Establishment of State Game Refuges

Lake Merritt, now surrounded by downtown Oakland, California, was established as the first game refuge in 1870. By the early 1900s, it became more apparent that wildlife resources were limited and that increased regulation and protection

was needed to conserve them. Purchase of hunting licenses had only begun in 1907, regulations were in their infancy, there were few law enforcement personnel to enforce laws, market hunting of game had been significant since the gold rush days, there had been no scientific work on game species populations or the driving forces regulating them, and consequently, many species were in decline. Market hunting did not abide by modern game regulations that restrict the age, sex, and number of animals that can be killed by a hunter each year. Populations of deer and other hunted species were being hard hit—tule elk for example, were nearly exterminated.

State Game Refuges were designed and established primarily to enhance big game populations with an emphasis on deer beginning in 1917. Additionally, it was believed they would enhance the population of black bear, waterfowl, quail, grouse, and other game species. **The intent of the refuges was to provide a protection zone where hunting was prohibited that would allow these heavily hunted game species to increase in number and then expand their population out to hunted areas.** Other states also established game refuges and included the capability for hunting in the refuge (an internet search quickly indicated Minnesota and North Dakota as examples that permit hunting).

Several of the refuges that had been established in the early 1900s have come-and-gone through the legislative process. For example, of 26 initial refuges described in 1922 (California's Game Refuges, Harold Bryant, 1922, *California Fish and Game* 8:1-34), it appears that 15 have since been eliminated and at least seven more were added later to comprise the current 19 refuges addressed in this report. The current refuges comprise approximately 1 million acres of wildland.

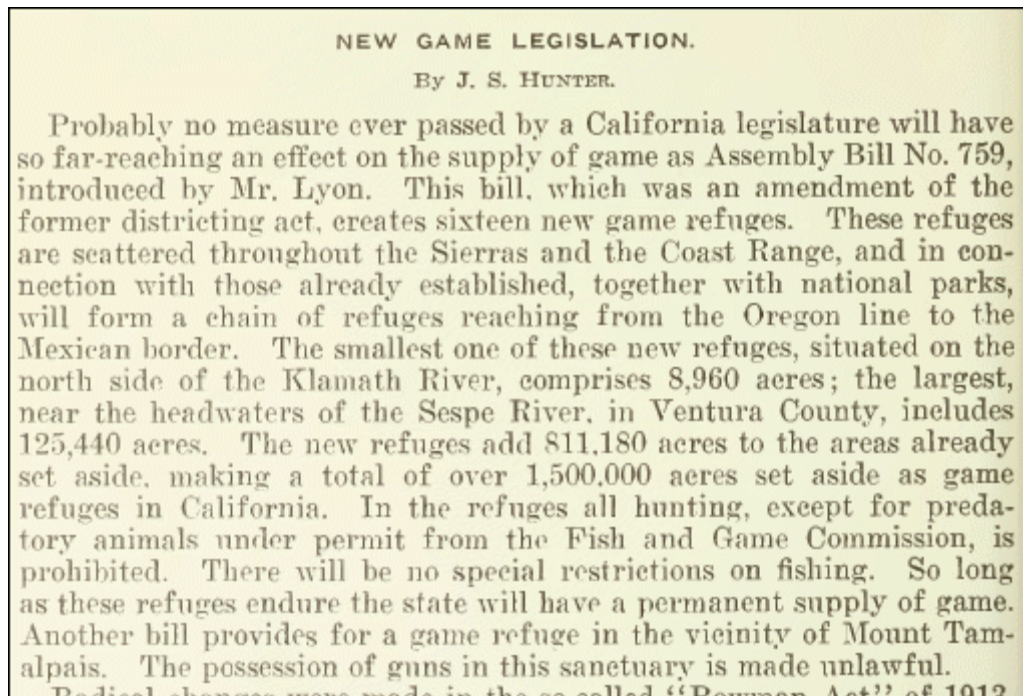


Figure 1. 1917 information clip in *California Fish and Game journal*.

Within California, there are other types and classes of refuge for wildlife and their habitats that are different than these State Game Refuges. Those acquired and administered by the state for example may be wildlife areas, ecological reserves, or state parks. At the federal level, the U.S. Fish and Wildlife Service administers and runs the National Wildlife Refuge system, while the National Park Service administers the national parks, grasslands, monuments, and recreation areas.

State Game Refuges are not Department of Fish and Game Wildlife Areas, Ecological Reserves, U.S. Fish and Wildlife Refuges, State Parks, or National Parks. State Game Refuges may include Department of Fish and Game administered lands, but most of the land comprising the refuges is owned by other entities such as the U.S. Forest Service, Department of Parks and Recreation, counties, National Park Service, private timber companies, and private landowners.

Purpose and Use of Lands within a Game Refuge

The purpose in designating the State Game Refuges as no hunting areas (however, hunting may be specifically authorized by the Fish and Game Commission) was to allow game a place to breed and then repopulate areas outside of the refuge. This was the thinking at the time (early 1900s) when a high proportion of people hunted, when game laws were in their infancy, when hunting

was not well regulated, and when subsistence hunting and market hunting was prevalent. These factors contributed to the need for no hunt areas.

In regard to the term “refuge”, the Department considers these areas as “no hunting” areas, as the lands are not necessarily managed for wildlife as traditional refuges are, and do not restrict other land use or management activities. For example, some of the refuge areas have experienced land development since they were established (e.g., the Bay Area refuges and Smith Peak area in Plumas County).

The word “sanctuary” is also frequently used to describe these areas. However, while the areas are a sanctuary from hunting, they are not a sanctuary from other mortality or risk factors; nor are they a sanctuary from improvements/decreases in habitat quantity and quality that regulate and control wildlife populations.

Most of the lands under refuge designation were public lands administered by the U.S. Forest Service and later the new Bureau of Land Management (BLM). Additionally, there was a significant amount of private land within the refuge boundaries, particularly commercial forestlands. The originating refuge legislation encouraged the Commission to accept or purchase, as was possible or feasible, the lands available within these areas designated as refuges (Section 10503 Fish and Game Code), however little acreage was transferred to the state except for some notable State Park exceptions (Mt. Diablo and Calaveras Big Trees for example). Some of the lands are owned by the state. The public agencies (USFS and BLM) manage their lands for multiple uses such as timber, grazing, and recreation. Managing for wildlife habitat is also one of their multiple uses. The private lands are managed by landowners for their own purposes, whether it be companies involved in timber harvest and management; individuals involved in ranching; or other purpose.

There are no specific regulations that require management of the lands for refuge purposes, other than hunting in these areas is not permitted unless specifically authorized by the Fish and Game Commission (the Commission specifically authorizes all hunting in California). In California, the Department estimates about 45 percent of the states deer range is currently public land available for hunting. Certainly, a good deal of private land may also available for public use, or be used for hunting by landowners, but the Department has no way to accurately estimate these dynamic numbers.

Evaluation of Game Refuges After Establishment

Game Laws and Game Population Management

The science and practice of wildlife management and wildlife law enforcement has changed dramatically since the refuges were established. We now rely on

scientifically based annual surveys of game populations to regulate hunting levels, and we rely on a statewide force of game wardens to enforce hunting laws both on/off of refuges and other wildlands in the state. For example, prior to requiring a hunting license in 1907, and prior to more active law enforcement by game wardens, deer were killed regardless of age or sex; males/females/young (bucks/does/fawns).

For more than 90 years, bucks, and typically only certain bucks (forked horn or better), have been allowed to be legally hunted and killed. Does and fawns have been protected except in the few cases where local overabundance has resulted in limited does hunts. Consequently, the number of bucks in relation to number of does in a population is typically 10-20 bucks per 100 does—a range known in traditional game management to allow for sustained hunting of the buck population (and includes recruitment of young bucks into the population). All of the population modeling, compensating mortality factors, and recruitment potential of the population results in at most six percent or so of a deer population being authorized for harvest. Of course, harvest success in California is typically less than 10 percent among hunters, meaning that approximately 15,000-30,000 deer are annually harvested/killed out of an annual population that is currently estimated at 500,000-600,000 animals.

Examination of game laws for example indicates that in 1921, it was a felony to kill an elk, and there was no hunting season on antelope or mountain sheep. Two deer bucks per season were allowed, and the season was less than two months in length. Quail hunting was allowed for 2.5 months, with a limit of 15 birds/day. Killing a sea otter was a \$1,000 fine.

Evaluations of Refuges Over Time

As mentioned above, several of the refuges that had been established in the early 1900s have come-and-gone through the legislative process, presumably based on some evaluation of their merit. It was prudent to evaluate them and in the first 10 years or so, and the refuges were praised for their promise to provide future game and repopulate the state. At the same time, with regulatory and habitat changes, deer populations increased and likely doubled between the early 1900s and the 1960s:

(<http://www.dfg.ca.gov/wildlife/hunting/deer/population.html>). The reasons for the deer population increase during this period are multiple—game laws, world war, extensive timber harvest/management increasing habitat quality, predator control, reductions in livestock grazing, and decreased availability of hunting land through development, protection (e.g., the refuges), or reduced private land access. It is unlikely that the refuges comprising slightly more than one (1) percent of the state's deer range, contributed significantly to the population increases of the early decades when habitat change was occurring on national forests at the scale of tens of millions of acres.

The success or failure of a refuge is dependent on the objective or purpose for establishing the refuge. Aldo Leopold, considered the “father” of wildlife management in America, on the subject of game refuges in his classic book *Game Management*, stated that the successful use of refuges “depends on knowing when not to try. A tragic waste of enthusiasm and funds has often followed blind reliance on refuges.” Leopold indicated where hunting is not “hard to control” or is in “full control” there is no need for the refuge. When established there was that need, however for the past many decades, deer hunting has been carefully managed in California (limited entry and tag quotas in the X zones, limited seasons, “bucks only” harvest, fewer deer hunters than in the past, and no more than two deer per season) based on intensive and costly annual population surveys and monitoring by wildlife biologists.

In 1943, F.P. Cronemiller (Figure 2), a U.S. Forest Service employee instrumental in creating many of the refuges, concluded: “...refuges have demonstrated ... little positive evidence of their effectiveness and have shown much that is negative...” Cronemiller cited examples of refuges opened to hunting that yielded harvests similar to adjacent areas. Similarly, kill rates adjacent to refuge boundaries have not necessarily been better than areas far away from the refuge, indicating that the initial “spreading out into neighboring territory” concept failed to consider deer behavior. Like Leopold, Cronemiller cited examples of where these types of refuges could prove to be effective, and for which purposes.

DEER REFUGES UNDER THE BUCK LAW ¹

By F. P. CRONEMILLER

U. S. Forest Service

Throughout the west, a system of refuges has been considered an essential part of big-game management. The first two decades of the twentieth century found big-game numbers far below those the environment could support. It was generally thought that recovery of the herds from the days of unrestricted hunting was not sufficiently rapid, and that other measures were needed in addition to the closed seasons, bag limits, and sex restrictions that had been placed in effect. This view was strengthened by the feeling that the law-enforcement organizations were insufficient to make the existing regulations fully effective.

During this period an extensive system of big-game refuges was started, on the underlying theory that the animals would increase within them and that they would serve as reservoirs to restock adjoining territory. The theory evidently presupposed—

1. That hunting would keep numbers down in the territory open to shooting.
2. That game would increase within the refuges.
3. That the lack of balance and the resulting population pressure would cause an overflow of animals from the refuges.

Typical of the western states, California has set aside a large number of sizeable big-game refuges during the last 25 years. These are principally for deer, since these animals form over 95 per cent of the State's big-game population. The writer had an important part in recommending many of these areas.

Figure 2. 1943 introduction of a paper by F.P. Cronemiller on the intent and purpose of establishment of State Game Refuges for big game management. *Calif. Fish and Game Journal*. 1943.

By the 1940s and with the further evolution of modern wildlife management, it became evident that the intended purpose was not becoming a reality in these refuges that comprised about 1.5 percent of California's deer range. Subsequently, in the past 40 years, deer populations have declined largely due to development on winter ranges, increased fire suppression and aging of conifer forest habitats, and non-native species increases such as wild pigs in the Coast Range, or cheatgrass in the Great Basin where fire is detrimental to deer habitat.

In 1952, another critical review of game refuges was published by William Longhurst, a pioneering deer and range ecologist with the University of California. He stated: "An embarrassing carryover from the days of deer 'restoration' is the system of state refuges..." partly because "natural refuges (steep canyons, brush thickets, remote areas) are also abundant in most deer range."

The Department evaluated the utility of the remaining refuges in 1993 and followed up in 1997, and concluded that the majority were no longer relevant to deer management or their intended purpose for at least a couple of reasons. First, the Department had no management authority over these lands, and many allow activities such as logging, grazing and development. Secondly, they do represent patrol work for wardens that serve little purpose other than enforcing largely functionless boundaries.

Lastly, in 2008, Department's Law Enforcement Division led Department discussions on the elimination of the refuge designations with the concurrence of the Wildlife and Fisheries Division for all of the above reasons, for cost efficiencies in terms of posting areas, outdated refuge boundaries, and to try and be more efficient with the Department's law enforcement workload.

Overview of Refuge Evaluations

California's conservative hunting regulations made the need for the refuges a moot issue which was the primary reasoning for suggesting the removal of the designation—to let them be managed consistent with other areas because hunting is carefully regulated and vetted through the Administrative Procedure Act and the California Environmental Quality Act (CEQA) processes. The Department's CEQA documents on hunting proposals describe the environmental consequences of proposed hunting regulations and those impacts are negligible to the populations based on surveys and monitoring.

The annual monitoring and surveying of deer populations in California over the decades has shown that populations are not increased because of the refuge system that protects a few buck deer from being killed, but are regulated by other processes and protections that are in effect as described previously. Our modern wildlife telemetry work in California to define deer populations, learn about movements, migrations, and behavior patterns has confirmed that the refuges do not produce game to fill areas outside of the refuges. Instead, deer are well known to exhibit high "fidelity" to traditional ranges, moving to and from traditional summer and winter ranges for migratory herds such as in the Sierra Nevada, to seasonal shifts in habitats for non-migratory herds such as in the Central Coast Range. Consequently, the refuges established before 80 deer herd populations in the state were identified and mapped (as a consequence of Legislation known as the "Hill Bill" or Deer Herd Management Plan and Implementation Program in the 1980s) were not located in areas representing a population of deer on a summer or winter range, but of groups of deer such that any response, positive or negative, to refuge protection could not be detected a population level. As related to deer herd management, the areas have been ineffective in achieving the desired goals of restoring deer populations.

As it relates to potential elimination of the refuges, nearly 100 years of experience has demonstrated the fundamental objective has not been realized,

primarily because the game species in question do “not understand” what they are supposed to be doing, because management of the majority of those lands is not for the benefit of wildlife or their habitat, data and population trends have not shown any benefit of these areas, and our regulatory processes results in adequate protection of game populations from hunting of a very small percentage of the population whether inside/outside a refuge boundary. The fact refuges are not serving the purpose for which they were established and are not needed for it indicates the success of effective regulations and effective enforcement of game laws despite a greatly understaffed Department in both the enforcement and biological areas.

To state that the refuges do not meet their intended Legislative purpose anymore (which assumes they did in the first few years of existence), does not mean that all the refuges do not serve a purpose—just not the purpose for which they were intended. In the next sections, the Department captures other purposes for the refuges that have been articulated by the Department as well as by the public.

PUBLIC EDUCATION AND OUTREACH

Public Education and Outreach Regarding Potential Elimination of Game Refuges

“The department shall provide an opportunity for public comment concerning the potential elimination of game refuges. The department shall provide information about game refuge boundaries, including, but not limited to, maps available both on the department's Internet Web site and in hardcopy format. The department shall also provide Internet Web site contact information for the public to contact the department in accordance with state law. The department may conduct regional workshops as it determines to be necessary to provide public information about the proposed elimination of game refuges.”

Following is a description of the Department's effort to provide for public comment and provide information on the refuges.

Internet

The Department began to provide the public opportunity and information related to the State Game Refuges in July 2010 with the intent to conclude receiving comments and input by December 1, 2010, a period of approximately 5 months. Additional input continued to be received at least through December 2010. Following is a list of information and maps posted to the Department's publicly accessible website including contact information:

- State Game Refuge webpage information posted on Department of Fish and Game Website, July 8, 2010

- Online Survey made available to the public, July 8, 2010
- August 2, 2010, Notification of website posted to “Public Notices” on DFG homepage
- Letters mailed to County Fish and Game Commissions, September 2010
- Agenda Item informational presentation, State Fish and Game Commission Meeting, September 2010
- Agenda Item, Fish and Game Commission’s “Al Taucher Preserving Hunting and Fishing Opportunity Advisory Committee” September 2010 and each of the two previous meetings in 2010.

Media

Stories and media reports that the Department was inviting public input/comment were printed in the press. To the Department’s knowledge, the following were online versions of the refuge evaluation:

- Sonora Union Democrat Sept. 28, 2010
- Contra Costa Times, November 5, 2010
- San Jose Mercury News November 5, 2010
- Sacramento Bee, November 8, 2010
- Other websites such as those of Non Governmental Organizations (NGOs) including hunting/firearms organizations and animal protection organizations

In addition to the Department’s outreach, numerous organizations picked up on the comment/input opportunity through “action alerts” on their own websites (see Appendix B). While it is impossible for the Department to discern unique respondents from the variety of input received, there were well over 5,000 responses received through email, web blog, letter, phone call, survey response, and in-person comment.

Landowner Contact

The Department did not have the resources or staffing to identify and contact individual private landowners (nor was it required) within the affected State Game Refuge boundaries although several landowners were aware of this evaluation and provided comment. Landowners should be made aware of the potential for eliminating/retaining a State Game Refuge that may affect them directly if the Legislature pursues this effort further.

Regarding government ownership lands, agencies such as the Department of Parks and Recreation and U.S. Forest Service were in contact with the Department about implications they foresaw related to potential elimination of game refuges. The Department anticipates specific input from affected agencies would be a part of any further evaluation of the refuges by the Legislature.

Criticism Received: Why didn't the Department engage in more outreach and public meetings?

The Department received some comments and press that it was "secretly" or "quietly" evaluating the refuges in an effort to quickly do away with them. Factually, the concern/accusation is not well-founded as described in the above internet/press information. The level of outreach was consistent with many other Department actions and/or proposals that solicit public input. Additionally, the Legislature, and not the Department, has the authority for any decision on the fate of the refuges and it would require legislative action (a public process) to do away with the refuges. As the Department received over 5,000 pieces of input from California and other states and countries, it should be apparent the effort was not secretive.

The legislative direction for outreach unfortunately came at a poor time as Department biological/scientific staff were subject to two (2), then three (3) furlough days per month during this period. Budget/travel constraints and lack of a state budget for the first three months of the 2010-11 fiscal year further compounded and precluded Department staff from organizing a more coordinated program for outreach presentation as the time to conclude the effort drew to a close. Initially, the Department believed that outreach could adequately be conducted by existing staff using existing resources, however once the implications of furloughs became more of a factor there were no biological/scientific staff to redirect from their existing important activities to develop and promote outreach efforts. Despite these limitations, numerous Department staff in regions and headquarters were provided information and in turn, provided information on the refuges at public meetings they attended, such as state Fish and Game Commission meetings, commission advisory meetings, and county fish and game commission meetings.

The Department role is to provide input to the Legislature. It is the Department's understanding that any Legislative action or proposal would certainly include ample opportunity for public dialogue, and would provide for public input.

SUMMARY OF PUBLIC INPUT

The following sections summarize the input received from the public, first assessing some of the misconceptions about the evaluation and about State Game Refuges. Certainly some of these misconceptions could have been addressed with more outreach and public meetings even though a large amount of public input came in from across the country, rather than solely from California.

Misunderstandings about State Game Refuges

One of the biggest misunderstandings of the refuge designation by the public is that the land itself is a refuge like a national park, state park, or a federal wildlife refuge and that elimination of the designation would mean wildlife are no longer protected. This is untrue in most cases. This legislation has nothing to do with other protected areas such as national/state parks (protected areas or sanctuaries) where hunting is prohibited, or with national/state wildlife refuges (managed areas) where hunting is allowed. Where other restrictions are in place that prohibit hunting within designated game refuges, those restrictions remain in place regardless of designation. The refuge lands are mostly wildlands that are managed for whatever purpose the landowner implements, with the exception that hunting on that land is not allowed. As the Department has pointed out, most of these wildland areas are “no hunting” areas and all state and federal laws protecting wildlife and their habitats remain in place.

Another misunderstanding, and perhaps a significant change in society from the 1910s when the refuges were established, is the perception that the refuges were established for people to enjoy hiking, bicycling, horseback riding, camping, backpacking, and other outdoor activities. Much of the public input valued the refuges for these activities without recognizing the consequences of their presence and activities on wildlife. This perception by many members of the public, interestingly, further advocated precluding the possibility of hunters being able to enjoy that recreational activity. This perception exists despite the fact that hunting occurs throughout the nation on public lands administered by the U.S. Forest Service for example, where millions of people may simultaneously engage in all the above-mentioned activities.

A too common sentiment was that hunters are crazed and irrational people who would shoot any animals as well as people in the refuge areas and increase public risk. The Department is unaware of any data to support this stereotypical perception, although it does demonstrate how the hunting/no hunting issue is typically polarized, and extremely so, based on emotion rather than biological/ecological fact.

Misunderstandings about the Department and Current Wildlife Management Activities

There were several misunderstandings about wildlife management, the Department’s regulated management of game animals, and overall management of wildlife and its relation to hunting. These indicated the Department needs to continue to improve its job of informing California about our natural resources and our conservation, enforcement, and management programs.

A common misunderstanding was that California’s wildlife species need this no hunting refuge status for protection from extinction. This is untrue. All wildlife species are either carefully managed as a hunted species or are fully protected

from hunting. Those species that are hunted, are done so under regulated seasons and quotas such that their populations remain productive (otherwise hunting would not be sustainable). It is not in the interest or mission of the Department, or hunters to drive a species to extinction. Under modern wildlife management principles, there is no game species that has been driven to extinction or is at risk in California as a consequence of legal recreational hunting. Additionally, there are no nongame species that have been placed at risk because of regulated hunting in this state.

Because deer were the focal management species of concern in the establishment of refuges, it is critical to understand that in California, it is illegal to kill fawns, and hunting of female (doe) deer is very limited and highly regulated and a minor mortality factor. Therefore, nearly all of California is a “refuge” or sanctuary for the deer population because more than three-fourths (75 percent) of the population cannot legally be hunted and are protected. Annual statewide deer surveys have been conducted for decades. California’s deer populations are regulated by the environment comprising all wildlands of the state, not the approximately one (1) percent of wildland in the state that is in a state game refuge. At a scale of tens of million acres, the deer habitat quality in California has been in decline on both public and private lands, on state game refuges, parks, sanctuaries, as well as on public lands open to hunting (<http://www.dfg.ca.gov/wildlife/hunting/deer/habitatassessment.html>).

The refuges are not meeting the intention behind their establishment because hunting is not what is limiting deer populations or preventing them from increasing. It is other factors, primarily lack of early successional habitat established through wildfire and other disturbances in forest environments; and impacts of development on winter ranges that regulate the deer population.

Many comments urged the protection of mountain lions as well as other species such as black bear. Since hunting of mountain lions is prohibited in California, state game refuges add no protection. The mountain lion population in California is considered thriving as is the black bear population that has increased nearly fourfold in the past 30 years and expanded its range, having nothing to do with the presence of state game refuges. Other species are also very well protected by laws and regulations. Of course illegal poaching of wildlife by people does occur, and occurs whether the refuge designation is retained or eliminated.

Another example illustrating that such refuges are not necessary for wildlife conservation success applies to two species, California’s unique tule elk, and the desert bighorn sheep. These species were nearly extirpated from the state as a consequence of unregulated and/or un-enforced regulations to protect them a hundred years ago or more. Both have successfully been brought back through conservation and management activities to restore them to historic ranges. Both species are managed and now support sustainable carefully regulated hunting

programs that generate revenue for conservation and support maintaining these species for both ecological and intrinsic values.

One refuge, Dixie Mt. in Plumas County was recommended by some commenters to be retained to protect a non-native species, the Merriam's turkey. This is a game bird that was introduced into forested areas of California in the 1990s by the Department to create hunting opportunities. While turkeys are not considered to have a significant negative effect on the environment, the population in California (for the most part the subspecies is Rio Grande turkeys) has exploded from 10,000-20,000 in the early 1990s, to an estimated 200,000-250,000 today.

Numerous public comments perceived this evaluation as an economically driven exercise; that the Department wanted to sell the lands for development or to sell more licenses for hunting, or charge more for hunting, or other means to increase revenue during the ongoing budgetary problems faced in the state. However, the Department does not own any lands that it would sell within these refuge boundaries, has no intention to sell more tags in any of the hunt areas that refuges occur in, and there was no intent to do anything but make the regulations for these areas consistent with surrounding hunting lands based solely on their failure to achieve the primary purpose for which they were intended—to grow game populations for replenishment outside the refuges.

Online Survey and Results

The population of California is estimated to be about 37.2 million in 2010. There are an estimated 290,000 hunters in California (2009 statistics), of which approximately half purchase deer tags. By comparison, there are approximately 1.1 million fishing licenses sold in California. Consequently, about 0.7 percent of the residents of California are hunters. The number of pro-hunting or anti-hunting citizens of the state; and those who are neither for or against hunting, is unknown.

In July 2010, the Department posted and noticed an online survey seeking input from the public on the refuges. We received more than 2,150 responses assumedly from around the world and consider the response a significant amount of public input regarding this topic. The survey is unscientific however, in that there is no knowledge about how representative the responses are of public opinion. It is merely a compilation of opinion of those who chose to take the survey and it is noteworthy that there were action alerts posted by both pro-hunting and anti-hunting websites regarding this topic. Because of the lack of scientific rigor, the numbers derived from the survey are not particularly insightful (although we present them below).

While the survey statistics cannot accurately interpret the sentiment of Californians, the comments, arguments, and recommendations on particular refuges are of value in understanding the diversity of public opinion. As a result, the Department believes there is more relevance in the some of the specific arguments made for a particular refuge, rather than the numbers of generic responses pro-hunting or anti-hunting, as it related to elimination or retention of a refuge.

Our survey could not detect true responses from those that may have been misleading. For example, a number of anti-hunting respondents wrote that the question on whether they were supportive of/opposed to hunting was irrelevant and they suggested the Department might use that response information to invalidate their input (the Department did not). With the above caveats, online survey respondents were slightly more opposed to hunting than supportive of hunting (Figure 3).

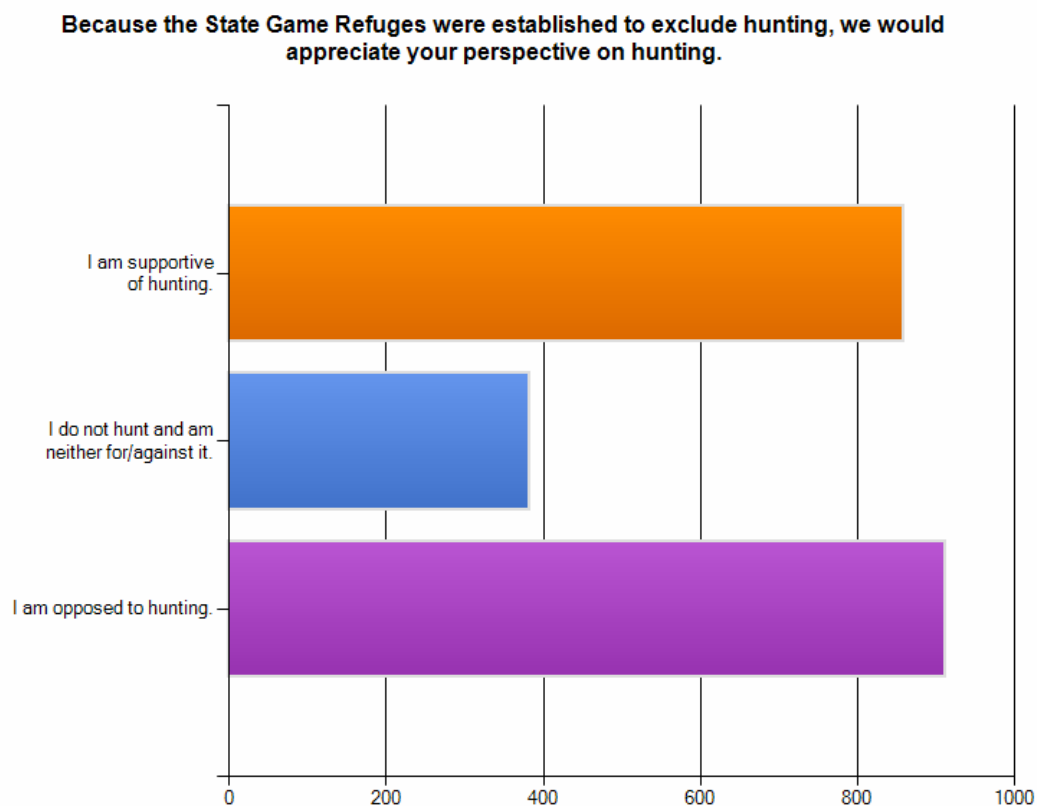


Figure 3. Number of survey respondents who indicated their support or opposition to hunting.

Familiarity with State Game Refuges

Most respondents (66 percent) indicated they were familiar or somewhat familiar (32 percent) with the State Game Refuges, however, as with the previous metric on support of/opposition to hunting, it is impossible to verify the accuracy of these responses. For example, if one is taking a survey and wants to express an opinion about an area, it gives a bit more credibility to indicate some knowledge of the subject. It seems likely from the generic nature of the majority of responses that few people are knowledgeable about all the refuges more are a bit knowledgeable about a refuge near them, and most do not know the refuges specifically. Supporting this supposition, there were surprisingly few specific comments received on individual refuges. Most respondents both for/against, made generic responses for all refuges. Had they been familiar with the specific refuges, we would expect more specific and reasoned responses on a particular refuge.

The most discussed (most familiar) refuge was the Mt. Tamalpais area refuge, and it involved the public misconception apparently based on an “action alert” that elimination of refuge status would result in hunters and/or development. Mt. “Tam” enthusiasts commented that they enjoyed the refuge area for hiking, bicycling, and other recreational activities, but believed hunting would be inconsistent with those uses. Other refuges receiving similar levels of specific interest and response were Mt. Diablo, Stanford, San Jacinto, and Tuolumne.

The percentage of survey respondents who expressed opinion on whether a refuge designation should be retained or eliminated is illustrated in figures 4 and 5. The number of responses was between 2,000-2,100 for each of the refuges. Overall, more than 64 percent (64 to nearly 68 percent) of survey respondents thought all the refuge designations should be retained, while between 28-31 percent of respondents thought the designations should be eliminated. The percentage of responses thinking that the designations should be removed was higher than expected considering the low percentage of people who hunt in California, and the presence of the action alerts that were against eliminating the designations. This result seems to suggest that action alert responders (email responses received) tend to quickly send the email without following up on the detail of a proposed action (as represented by the survey responses).

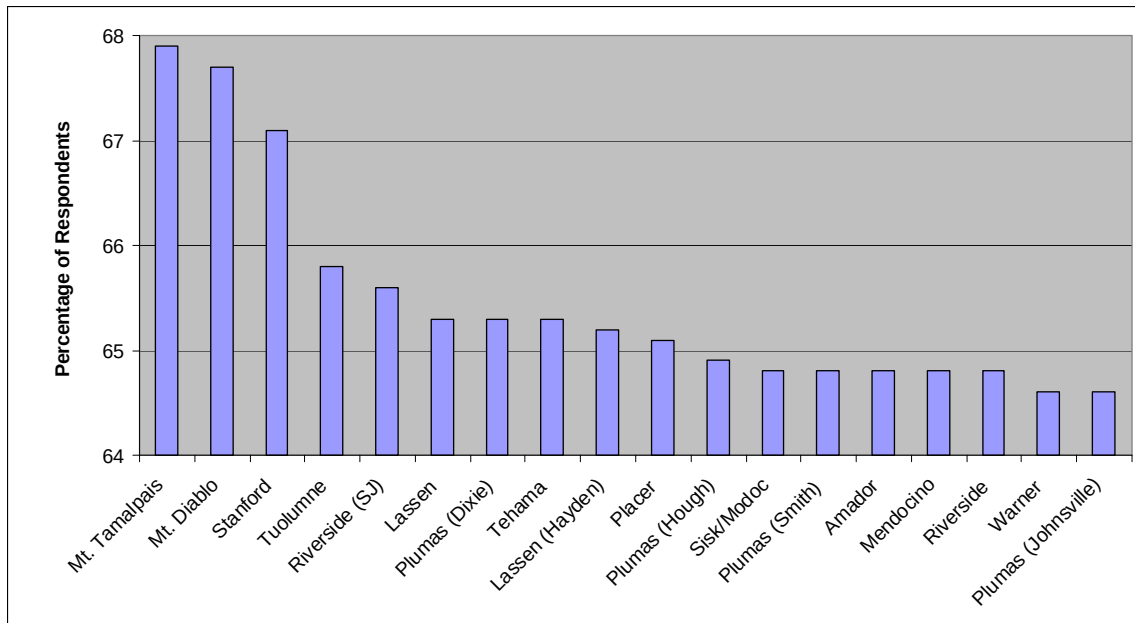


Figure 4. Percentage of respondents who wanted to retain refuge designation for each of the listed refuges. The highest three, Mt. Tamalpais, Mt. Diablo, and Stanford are all in the San Francisco Bay area and are not areas where hunting would occur even if the refuge designation were removed, 2010.

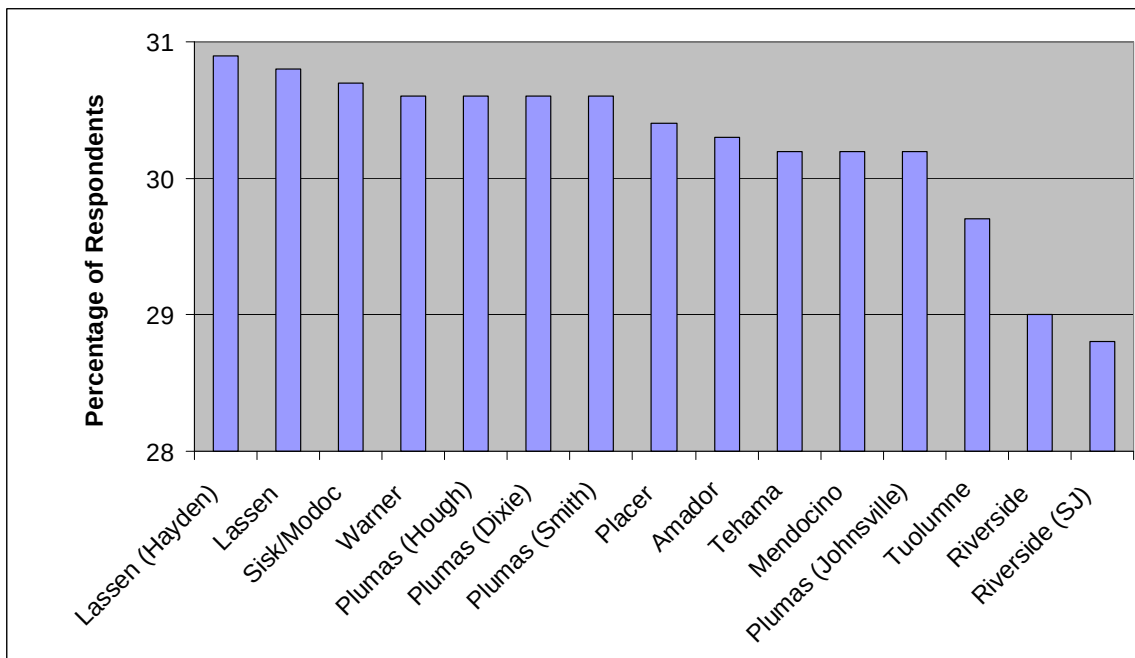


Figure 5. Percentage of respondents who wanted to eliminate the refuge designation for each of the listed refuge areas. The highest four are all in northeastern California. The lowest ranked refuges in Southern California. (Mt. Tam, Mt. Diablo, and Stanford removed from this graphic), 2010.

Summary of Information Provided by the Public

Public input to the DFG was received in person, by surface mail, by email, by telephone, and by an electronic online survey.

- Online survey responses = 2,170
- Mailed postcards/letters = 150+
- Emails from individuals and action alerts = 2,500+
- Phone calls = several dozen
- Testimony at Commission meeting or other public forums = several individuals

There were several action alerts from organizations against elimination of the refuges that generated over 2,500 emails and written letters/postcards. There were also an estimated 100-200 responses that may have been based on action alerts from pro-hunting organizations, or simply from individuals. While the online survey responses were nearly balanced in their support/opposition to hunting and about 65 percent in favor of retaining game refuges, the responses among written submitted correspondence by email/letter were quite different. The Department estimates about 90 percent of the public comments received by email/mail were opposed to changing the status of the refuges.

It was not possible to determine the number of unique responses/input from the public as individuals could have provided input in up to five different ways. In total though, the Department received approximately 5,000 pieces of input. The Department considers this amount of input received over the five month period to be a significant amount of public input and contradicts the claim that the Department was “quietly studying” the refuges—the public determined whether it was a quiet comment period or not based on their level of interest/involvement.

Written comments received by respondents to the online survey were captured and downloaded to an EXCEL spreadsheet. This information will be made available by sending an email to wildlifestrategy@dfg.ca.gov with the phrase “refugesurvey” typed in the subject line.

Summary of Comments in Support of Retaining State Game Refuges

The main themes of comments, or reasons, received in support of retaining the refuges were:

- Against hunting
- Serve as sanctuaries for all wildlife and prevents extinction
- Quiet places near urban areas, peaceful to visit

- Eliminate hunting and shooting
- Reduce damage to roads, reduce trash
- Protect valuable migration corridors
- Will reduce development of land
- Will reduce law enforcement needs as the areas are strictly no hunting
- Will increase the costs to landowners and agencies such as the U.S. Forest Service
- Hunting would be incompatible with horseback riding, bicycling, hiking, and camping
- Fear of hunters and fear of being shot by a hunter
- An economic attempt because of the state budget crisis to sell land and/or raise additional funds
- Catering to the pro-hunting lobby, and effort was driven by hunters
- Fawns and mountain lions should not be killed
- Hunters already have enough land to hunt on
- Opposed except perhaps for hunting considered absolutely necessary by the Department of Fish and Game
- Elimination of refuge designation would require CEQA process
- It will not increase enforcement problems

Some of the themes are reasonable and/or reflect individual opinion, others may not be factually supported, or are misconceptions by the public. An interesting theme that seemed to dominate public opinion to retain the refuge designations is that the refuges serve a purpose for people in modern society, rather than for wildlife populations. These comments were provided through emails, detailed letters, and survey responses.

Summary of Comments in Support of Eliminating State Game Refuges

The main themes of comments, or reasons, received in support of eliminating some or all of the refuges were:

- Open some (a few) as a trial on limited/permitted basis
- Existing regulations can provide for regulated hunting activity
- Open refuges for which the designation is not relevant
- Increase the economic viability of America's, and the world's, wildlife
- The refuges did not succeed at achieving their purpose
- Refuges are poorly posted
- Presence of legal hunters would curtail poaching and other illegal uses (marijuana grow)
- Provides young people more chance to participate in hunting
- Provide more hunter access for California hunters
- Hunters contribute a lot of monies toward the refuges and conservation and should have access for legal uses

- Opens additional land for hunting which takes pressure off other areas
- Wildlife become an asset rather than a nuisance for landowners worth managing for additional income
- Higher income via increased sale of hunting licenses and tags
- Provide for well managed, responsible wildlife habitat
- California hunting license fees continue to rise every year yet hunting area opportunities lessen
- Refuges in the deer X zones aren't needed because the quotas are so highly limited and controlled
- It seems all of the recent legislation and proposals have favored the anti-hunting community
- It will decrease enforcement problems

Some of the themes are reasonable and/or reflect individual opinion, others may not be factually supported, or are misconceptions by the public. An interesting theme that seemed to dominate public opinion to eliminate the refuge designations is that hunters directly pay for wildlife conservation, while the larger public generally does not, and hunters should derive some benefit for that economic support.

Comments Relating to Specific Refuges

Below, and particularly in Appendix C, the Department has further captured sample or summary representative comments on particular refuges and whether the designation should be retained. Additionally, the Department has email and detailed comment letters from several individuals and organizations on file. General comments are those considered to reflect input on any of the refuges, while specific comments directly mention the particular refuge in question and reasoning for the comment.

Refuge 10821- 1C, Warner Mountains (Modoc County): This refuge occurs primarily on public land administered by the U.S. Forest Service. There is some private land. In the information received from the public, the Department is aware of general comments, but unaware of specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10822- 1F, Lassen County: Blacks Mt. Refuge encompasses both public (USFS land including Blacks Mt. Experimental Forest) and private lands. In the information received from the public, the Department is aware of general comments, but unaware of specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10823- 1G, Tehama (Tehama County): This refuge encompasses both public (USFS land) and private land. In the information received, the Department is aware of general comments as well as specific arguments on

whether this refuge should be opened or closed. Local government officials, fish and game commissions, and NGOs expressed particular concern about opening up this refuge because part of it encompasses a key migration route that locals believe would make migrating deer overly susceptible to hunting if the designation were removed.

Refuge 10824- 1H, Mt. Hough (Plumas County): This refuge encompasses both public (USFS land) and private land. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed. Unique comments were both for and against removal of the designation to allow more hunting, or to protect deer and other wildlife, respectively.

Refuge 10825- 1I, French Meadows Reservoir area (Placer County): This refuge encompasses both public (USFS land) and private land. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed. There was local concern about opening this refuge.

Refuge 10826- 1J, Salt Springs (Amador County): This refuge encompasses both public (USFS land) and significant private land, including Sierra Pacific Industries timberland. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed. Included was information from timberland owners voicing serious concerns should the refuge status be eliminated.

Refuge 10827- 1N, Long Bell (Siskiyou/Modoc counties boundary): This refuge encompasses both public (USFS land) and private land. In the information received from the public, the Department is aware of general comments, but unaware of specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10828- 1P, Dixie Mt. (Plumas County): Dixie Mt. is largely public land administered by the USFS; with small acreage of State Lands Commission and private lands. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed. There was concern that removing the designation would endanger a population of non-native turkeys and be detrimental to deer in the area.

Refuge 10829- 1R, Tuolumne (Tuolumne County): Includes area of Calaveras Big Trees State Park, significant private land including Sierra Pacific Industries timberland, and U.S. Forest Service land. In the information received from the public, the Department is aware of general comments, as well as

specific comments that were unique to whether this refuge should be opened or closed. Included was information from timberland owners voicing serious concerns should the refuge status be eliminated as well as overlap with a state park and proximity to Yosemite National Park.

Refuge 10830- 1S, Hayden Hill (Lassen County): Hayden Hill Refuge encompasses both public (BLM and USFS land) and private lands, including a small acreage of State Lands Commission lands. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10831- 1V, Smith Peak (Plumas County): Smith Peak area is largely public land administered by the USFS. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10832- 2A, Sheet Iron Mountain (Mendocino, Lake counties): falls in the midst of National Forest. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10837- 4D, unnamed (Riverside County): This refuge falls within a checkerboard of public lands, Department of Fish and Game ecological reserve, conservation easement lands, and private lands that is bighorn sheep habitat and would not have too much deer hunting opportunity. There would be some confusion with multiple land owners as well as City ordinances prohibiting hunting. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10838- 4G, San Jacinto (Riverside County): This refuge overlaps much of Mount San Jacinto State Park, some private lands, and public lands (USFS). There could be some increase in hunting opportunity in the areas adjacent to the State Park. It would open a very small area of deer habitat and quail hunting opportunity. There could be some issues for enforcing hunter trespass violations, but it should not be a huge increase in enforcement effort. In the information received from the public, the Department is aware of general comments, as well as specific comments that were unique to whether this refuge should be opened or closed.

Refuge 10842- 1K – Johnsville (Plumas County): This refuge falls within the boundary of Plumas-Eureka State Park. No hunting is allowed or would be allowed if the refuge designation were removed.

Refuge 10833- 2B, Mt. Tamalpais: A change in status would not have any effect as this area is already within a federal national monument, state park, National Recreation Area and local (city) jurisdiction and would not be open to hunting. No hunting is allowed or would be allowed if the refuge designation were removed.

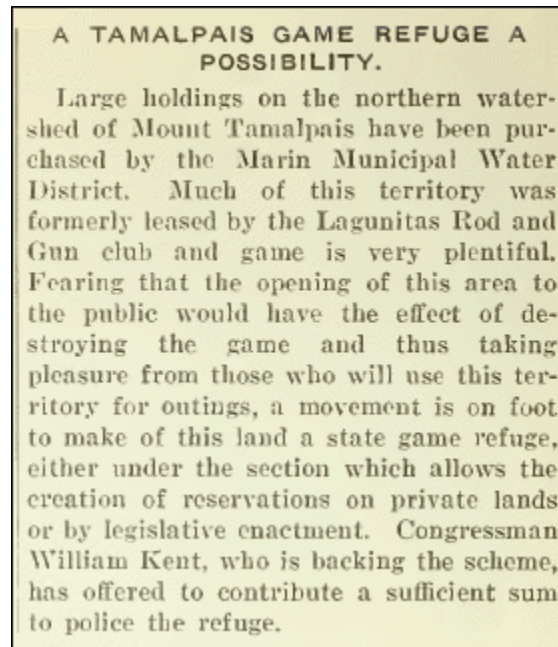


Figure 6. 1917 clip regarding Mt. Tamalpais (*California Fish and Game journal* 1917).

Refuge 10835- 3F, Mt. Diablo: This refuge falls largely within the boundaries of a State Park and private land on the eastern side; there would be no increased public hunting opportunity without consent of landowners on the eastern side.

Refuge 10836- 3G, Stanford: This refuge falls within the Stanford University property. No hunting is allowed or would be allowed if the refuge designation were removed.

Refuge 10841- Preston School of Industry (Ione, Amador County): This refuge is a reservoir within a publicly owned California Youth Authority facility. No hunting is allowed or would be allowed if the refuge designation were removed.

DEPARTMENT OBSERVATIONS REGARDING PUBLIC COMMENTS

Input from landowners and affected agencies is desirable, if not necessary. As the refuge designation has been in place for nearly 100 years, it would be prudent to assess the benefits/costs to landowners before any change in status is made. The Department received some formal as well as informal input from major landowners and agencies.

The public values wildlands for their recreational purposes and their contribution to "peace of mind" as well as for wildlife value.

While the refuges have not been successful in meeting the original intent, numerous public comments (including input from hunters) believe some refuges should be retained.

Public recommendations included removing the designation of some refuges (such as those in the most rural areas of the state) as a trial effort while retaining the refuge designation in others near population centers.

The public comments included recommendations that the state purchase lands comprising the refuges, and make them true managed refuges.

Although the refuges have not been effective at their intended purpose, to repopulate game species, most of the public comments were supportive of them as a sanctuary from hunting.

Comments included the recommendation that the Fish and Game Commission specially permit limited hunting in certain state game refuges (as per sections 10500 and 10501 Fish and Game Code).

Recommendations included changing the names of the areas from refuges to recreation areas or sanctuaries.

Many respondents did not want the disturbances from hunters, but were supportive of their own activities that may disturb wildlife, such as horseback riding, dog walking, and mountain biking.

Modifying the size/area and boundaries of some refuges to allow hunting where appropriate was recommended by some commentors.