



CATALINA ISLAND CONSERVANCY

Conservation. Education. Recreation.

Catalina Island Conservancy & CDFW Private Lands Management Program
Current Program Period 2018-2022

2022 Annual Report



Appropriate Citation:

CIC (2023). Catalina Island Conservancy Private Lands Management Program 2022 Annual Report. Conservation Technical Report CON/2023-01. Santa Catalina Island Conservancy, Avalon, California. Unpublished report submitted to California Department of Fish and Wildlife.

INTRODUCTION

The Catalina Island Conservancy (hereafter, Conservancy) is a non-profit charity whose mission is to be a responsible steward of its lands through a balance of conservation, education, and recreation. Founded in 1972, the Conservancy holds title to approximately 88% (170.37 km²) of Santa Catalina Island (hereafter, Catalina) and engages in a wide variety of resource management and public use programs. Over 1,000,000 people visit the Island each year.

In 1998, the Conservancy first became a licensee of the California Department of Fish and Wildlife (CDFW) to steward its portion of Catalina as a Private Lands Wildlife Habitat Enhancement and Management Area (PLM). Over the years, this relationship and the hunting opportunities provided through the PLM have allowed the Conservancy to better address the various human dimensions of having a population of mule deer on the island and to manage the deer herd in accordance with overall conservation goals.

Over the past 200 years, numerous non-indigenous species have been introduced to Catalina (e.g., sheep, goats, black buck, pigs, cattle, bison, and mule deer). Over time, the majority of introduced ungulate species have been completely removed from the island, except for deer and bison. With these two exceptions, Catalina is now the only California Channel Island with introduced ungulates, following the removal of elk and mule deer from Santa Rosa Island.

Like the other Channel Islands, Catalina represents a substantial reservoir of biodiversity with a high degree of endemism. Some evolutionary adaptations in its plant and animal communities are due to a lack of large, natural predators and ungulate herbivores (the 2 kg island fox is the top mammalian predator and the California Ground Squirrel is the largest native herbivore).

The Conservancy's ongoing land management activities are focused on achieving a healthy, sustainable deer herd while ensuring the overall ecosystem health of the island. The Conservancy implements invasive and native plant and wildlife management programs to achieve these ecosystem goals. The non-native mule deer population has had a devastating effect on the native plant population on Catalina Island.

This report has been prepared to meet the requirements for the annual report of a Private Lands Wildlife Habitat Enhancement and Management Area License as outlined in Section 601, Title 14, California Code of Regulations and issued by the Department of Fish and Wildlife. It reports on deer hunting activities that occurred during 2022, presents the current status of management activities and progress toward conservation goals on Santa Catalina Island as outlined in the 5-year (2023-2028) PLM agreement with CDFW, and provides a summary of proposed actions and the Conservancy's recommendations for 2023.

HARVEST SUMMARY

Season Structure

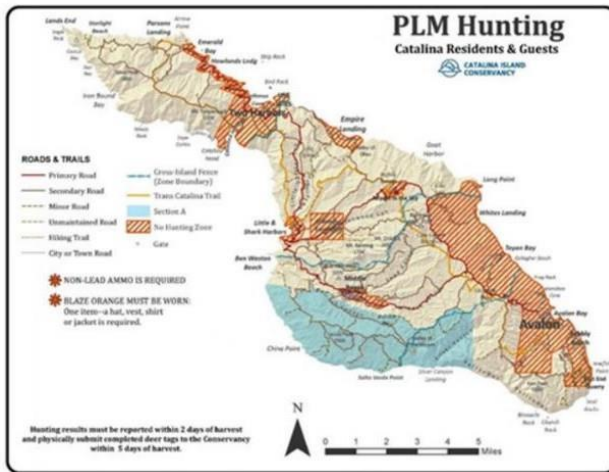
In 2022, we maintained our contract with the hunting outfitter Wildlife West, Inc. to maximize hunting opportunities for off-island hunters to visit Catalina for guided hunts, and to generate revenue for the program and the Conservancy. In addition, we continued to offer hunting seasons for Catalina residents and their guests (Table 1). As in prior years, the island was divided into hunting zones. These zones take into account safety for all land users, respect property boundaries of the various island stakeholders, and attempt to maximize opportunity and minimize hunter conflict. A map illustrating the zones and season dates (Fig. 1) was distributed to each licensed hunter participating in the PLM hunt, as well as to the various island stakeholders.

Harvest Data

The 2022 season resulted in a total harvest of 207 deer (102 bucks, 105 does) from a combination of guided hunts, local hunters, and guests (Table 2). Overall harvest numbers decreased from 2021 by a total of 38 deer. Buck harvest decreased by 22 and doe harvest decreased by 16. The number of tags issued in 2022 was 437, which is an increase of 52 tags and the success rate decreased by 17%. The success rate was 47% in 2022. This is the lowest success rate documented in the last 10 years.

Table 1. 2023 Season structure and dates.

Figure 1. 2022 Catalina PLM hunting zone map.



RESIDENTS AND GUESTS

Archery and Crossbow Hunting:
July 15 - September 13

Rifle Hunting:
July 15 - September 13
November 5 - December 26

WILDLIFE WEST INC.

September 18 – November 21

Table 2. Annual Catalina Private Lands Management Plan harvest data since 2010.

| YEAR | POP ESTIMATE | TOTAL DEER HARVESTED | PERCENT TAG SUCCESS | HUNT MORTALITY (% OF POPULATION) |
|----------------|--------------|----------------------|---------------------|----------------------------------|
| 2010 | NA | 180 | 66% | NA |
| 2011 | NA | 282 | 79% | NA |
| 2012 | 2387 | 310 | 80% | 12.99% |
| 2013 | 2541 | 309 | 77% | 12.16% |
| 2014 | 1227 | 225 | 66% | 18.34% |
| 2015 | 1474 | 217 | 68% | 14.72% |
| 2016 | 2372 | 244 | 71% | 10.29% |
| 2017 | NA | 207 | 65% | NA |
| 2018 | 2061 | 223 | 66% | 10.82% |
| 2019 | 1341 | 181 | 57% | 13.50% |
| 2020 | NA | 221 | 65% | NA |
| 2021 | 1771 | 245 | 64% | 13.80% |
| 2022 | NA | 207 | 47% | NA |
| AVERAGE | 1915 | 235 | 67% | 13.36% |

Table 3. Annual Catalina Private Lands Management Plan Buck:Doe harvest ratio data since 2010.

| YEAR | BUCKS | DOES | BUCK:DOE HARVEST RATIO |
|------|-------|------|---------------------------|
| 2022 | 102 | 105 | 49:51 |
| 2021 | 124 | 121 | 51:49 |
| 2020 | 117 | 104 | 53:47 |
| 2019 | 108 | 73 | 60:40 |
| 2018 | 114 | 109 | 51:49 |
| 2017 | 116 | 91 | 56:44 |
| 2016 | 107 | 137 | 44:56 |
| 2015 | 114 | 103 | 53:47 |
| 2014 | 96 | 129 | 43:57 |
| 2013 | 162 | 147 | 52:48 |
| 2012 | 157 | 153 | 51:49 |
| 2011 | 141 | 141 | 50:50 |
| 2010 | 60 | 120 | 33:67 |

POPULATION ESTIMATE

Due to lack of resources, Conservancy Wildlife Biologists completed 2 of 5 spotlight routes between June 27 and July 1st, 2022. Both spotlight routes showed a decrease in number of observations. The Cape/Empire/Escondido route decreased from 151 to 72 individuals. This is the lowest number of deer documented on this route since 2012. 2022 is the second year that the Avalon Town Route was conducted, and the observations decreased from 284 to 82 individuals. Although we were not able to conduct a population estimate with this little data, it is likely the observed density on Catalina is lower.

Fig. 2. Spotlight transects surveyed for mule deer between 27 June and 01 Jul 2022 on Catalina Island, California. Only the Cape/Empire/Escondido and Avalon Town route were surveyed on 2 occasions during this period.

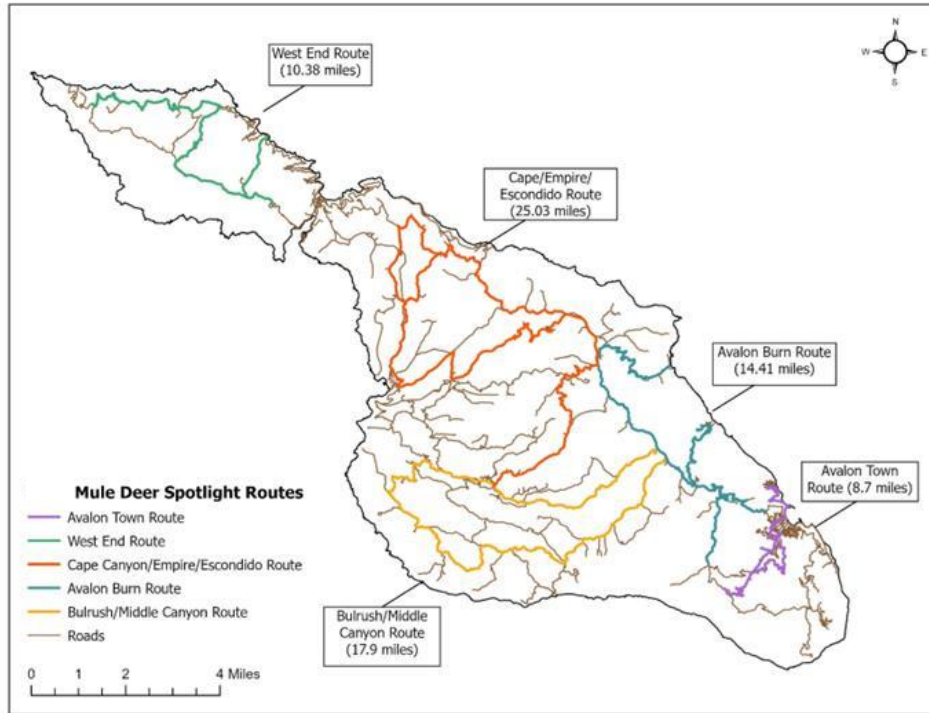
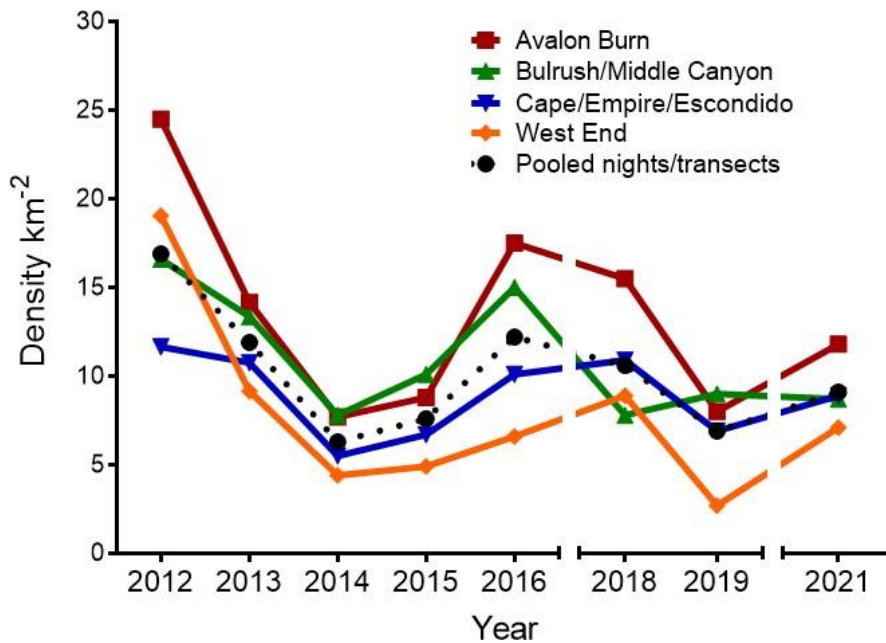


Fig. 3. Changes in density (deer km^{-2}) of mule deer from 2012-2021 along 4 interior spotlight transects sampled for 2 nights each in late June or July on Catalina Island, California. In 2022, only the Cape/Empire/Escondido and Avalon Town routes.



WILDLIFE AND HABITAT IMPROVEMENT AND MANAGEMENT PRACTICES

The goal of our PLM activities is to achieve a healthy sustainable deer herd, not subject to significant density-dependent mortality events. We aim to achieve this through maintaining the overall ecosystem health of Catalina. In the context of deer habitat and food sources, maintaining intact island plant communities, as opposed to degraded habitats which produce less forage over time and potentially type-convert to even less desirable habitat, is a primary goal. By working on this goal we will support wildlife and plant diversity and maintain or increase the landscape's ability to support long-term ecosystem health. We monitor trends in native, endemic, and rare plants populations to determine when we are achieving success toward these goals. The mule deer population has had a devastating negative effect on the native plant population. The success of these plant species, in light of impacts (i.e. browse intensity), are directly tied to deer numbers. As discussed in our previous PLM, hunting does not adequately control deer populations on Catalina Island since they are a non-native species, which is why we will renew our PLM for one more year and then terminate the contract. We are working closely with CDFW to determine the best management actions moving forward.

Native Plant Nursery

Native plants have been maintained and propagated for outplantings and as an educational resource. The nursery's seed bank continues to be updated and managed and has been used for *in situ* restoration/mitigation. The seed conservation inventory, which totals over 2,390 accessions and represents 245 species, is estimated at 240 million seeds. Our native plant nursery program continued its active restoration projects in 2022 restoring a 0.04 acre coastal sage scrub enclosure.

Invasive Plant Management

In 2022, the Conservancy continued its efforts to control and eradicate invasive plant species from its lands. These efforts are carried out through the Catalina Habitat Improvement and Restoration Program (CHIRP). CHIRP also treated 21 different invasive species on 1.11 km². The primary species treated include flax-leaf broom (*Genista linifolia*), milk-thistle (*Silybum marianum*), fennel (*Foeniculum vulgare*), and tamarisk (*Tamarix spp.*).

Deer Exclosure Program

The Conservancy retains approximately 20 exclosures that attempt to protect individual species and plant communities from damage due to deer over-browsing (Fig. 10). Ongoing breaches to this fence line have allowed for regular deer breaches into these exclosures. These range from the large Wild Boar Gully exclosure (0.40 km²) to exclosures as small as 0.0008 km². The majority of these protected areas are within the area of the 2007 Island Fire. In addition to these larger exclosures, the Conservancy also employs many individual plant cages among various outplanting and restoration sites that are necessary to protect young plants from ungulate browsing.

Mule deer have been an ongoing issue in the City of Avalon. Avalon residents have expressed that the mule deer are out of control within the city limits, and the City Council has been vocal about the damaging effects that these deer have caused in Avalon.



Figure 4. Photos of exclosure fences on Catalina show the difference in habitat regeneration between the protected areas and areas accessible to deer and bison.

Bison Herd Management

Since 2009/2010 the introduced population of bison on Catalina has been maintained at or below 150 individuals through the application of the immunocontraceptive vaccine porcine zona pellucida (PZP). Due to the success of the contraception program PZP was withheld from 10 cows in 2013 and five additional cows in 2014. Due to the absence of new calves since 2013, and the apparent persistence of PZP antibodies after four or more consecutive years of treatment, PZP treatments were withheld from all 57 breeding aged cows present on the island from 2015 - 2022. Moving forward PZP will be applied as needed to maintain the population at or below 150 individuals.

Island Fox Recovery Program

We continued biweekly aerial monitoring of ~40 - 70 radio collared Catalina Island foxes (*Urocyon littoralis catalinae*), annual vaccinations against rabies and canine distemper virus, and collaborative disease research. The 2021 all-ages population estimate was 2,372 (95% CI: 2,005-2,807) foxes and the 2022 estimate will be available at the end of February 2023.



Figure 5. Raccoon removed from Avalon Harbor on August 2018.

Prevention and management of accidental introductions of raccoons (*Procyon lotor*) from the mainland to the island arriving as stowaways on boats has been a long-term focus of Fox Recovery Program staff. Fourteen individuals were successfully removed between July 2007 and December 2022. The most recent stowaway was found on a dingy of a yacht in Catalina Harbor in summer 2022. One juvenile raccoon was detected and removed from a sailboat in Avalon harbor August 25, 2018 (Fig. 9). The raccoon did not disembark and was returned to the mainland by a local resident. Monitoring via remote cameras and immediate response to sighting reports continued.

Avian Research and Conservation

The Conservancy continued its work on the island's birds in 2022, with projects focused on seabirds (Scripps's Murrelet and Leach's Storm-Petrel) to inform conservation and habitat management actions including installing artificial nest structures. The Institute for Wildlife Studies continued to manage the Bald Eagle (*Haliaeetus leucocephalus*) and Peregrine Falcon (*Falco peregrinus*) recovery and conservation work that has been occurring on the island. The USGS National Breeding Bird Survey route on Catalina (#14099) was completed for an eleventh consecutive year by Conservancy staff in June 2022. During the survey, 30 species and 819 individual birds were observed.

2023 PROPOSED SEASON DATES AND SUGGESTED HARVEST STRATEGY

In 2023, the Conservancy will engage the services of Wildlife West, Inc. to conduct the following activities:

1. Advertise to off-island hunters and engage their participation in guided hunts.
2. Advertise the hunting program in appropriate media.
3. Assist the Conservancy in the management of sensitive areas (management hunts) within the parameters of the PLM.

Wildlife West will provide experienced, professional, insured, and knowledgeable staff to conduct these hunts.

The 2023 hunting season on the island will begin on 13 July and end on 31 December. Island residents and their guests are allowed to hunt starting 13 July through 17 September and then again 9 November through 26 December. Guided hunters will hunt 18 September through 20 November. Guided hunts will be managed by Wildlife West, Inc., the same outfitter that has successfully conducted the 2011-2022 guided hunts. Hunting will be primarily by rifle, however, the majority of the Island will be open to archery hunts for residents and guests during July, August, and early September. All hunting will be coordinated with Conservancy staff to ensure safety of Catalina residents, the general public, and hunters. Selected dates and/or portions of the island may be closed from time to time to hunting to allow for other recreation, education, or management activities.

The Conservancy would like to request a total of 500 deer tags (500 either-sex). Initially we would request 300 deer tags (300 either-sex) for the period of July 5 to December 31. The Conservancy would submit in writing a request of up to an additional 100 either-sex tags toward the total authorized request. Any tags not requested during this request-period would be rolled over into and allocated during the next request period. Upon written request the Conservancy would like to be issued up to an additional 100 either-sex tags to accomplish the full authorized issuance of 500 mule deer tags for the Catalina PLM (Table 7). We are requesting either-sex to provide a more enjoyable final hunt for Catalina hunting enthusiasts. We believe that with our plan to fully manage deer, the chance for our long-time hunting outfitter Wildlife West and the local community for a chance to hunt easily would be a great opportunity to build social capital with many of our land agencies.

Table 7. Proposed seasons, harvests, and habitat improvements for 2023.

| PLM Area | Proposed Season and Harvest | Habitat Improvement Program |
|--------------------------------|--|--|
| SOUTH COAST REGION 2023 | | |
| Santa Catalina Island | <p>Authorized Harvest: 500 deer: 500 either-sex deer. 1 Issue 300 tags, 300 either sex deer tags for the period of July 13, 2023 to December 26, 2023. 2 Upon written request of the licensee on or before October 1, 2023, issue up to an additional 100 either-sex deer tags to accomplish the authorized harvest. Any tags not requested during this request-period can be rolled over into and allocated during the next request period. 3 Upon written request of the licensee on or before December 1, 2023, issue up to an additional 100 either-sex deer tags to accomplish the authorized harvest.</p> | <ul style="list-style-type: none"> • Continue annual Catalina Island fox recovery activities including: census, vaccination of 300 individuals against CDV/rabies, and monitoring 50 radio collared individuals. • Continued monitoring of island for non-native mammals (e.g., raccoons). • Continued bison herd management through contraception (maintain <150). • Continue animal and plant baseline monitoring activities. • Continue to optimize weather data collection and analysis. • Continue invasive plant removal through the Catalina Habitat Improvement and Restoration Program (CHIRP). • Continue monitoring and maintenance of deer exclosures erected post-fire and for rare species. • Continue and expand education and outreach through Naturalist Training, Kids in Nature, Island Scholars, Families in Nature, and Nature Works programs. |

REFERENCES

Stapp, P., and D.A. Guttilla. 2006. Population density and habitat use of mule deer (*Odocoileus hemionus*) on Santa Catalina Island, California. *Southwestern Naturalist* 51:576-582.