DRISI

CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

Research Notes

Stone Lagoon U.S. 101 Elk Electronic Detection System

Install an Elk Electronic Detection System (EDS) and test the system's efficacy, reliability, and reproducibility.

Environmental

MAY 2024

Project Title:
Stone Lagoon U.S. 101 Elk Electronic Detection System

Task Number: 4054

Start Date: April 1, 2023

Completion Date: December 31, 2027

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WHAT IS THE NEED?

The state highway system is an impediment to big game migratory, seasonal, and daily movement patterns and reduces wildlife fitness by decreasing habitat quality and availability and disrupting natural movements. Attempts by big game species, such as elk, to cross state highways result in wildlife-vehicle collisions that affect human and wildlife safety and damage property. On the Northern California Coast, U.S. Highway 101 (US 101) has long been recognized as an impediment to the daily and migratory movement of wildlife. Habitat fragmentation along this stretch of highway has resulted in direct harm and reduced fitness to wildlife, property damage, and decreased human safety. Roosevelt elk (Cervus canadensis roosevelti) vehicle collisions have increased dramatically in this region in the past 20 years, owing to the recent population growth of multiple herds. The highway bisects important corridors for elk inhabiting adjacent coastal forest, prairie, lagoon, and marsh habitats. Much of the land immediately adjacent to the highway is protected land that includes Humboldt Lagoons State Park, the Redwood National and State Park (RNPS) system, and habitat conservation plans associated with private timber management. The fragmentation of these high-quality elk habitats not only indirectly reduces the health and productivity of the herds but leads to high rates of direct harm from elk-vehicle collisions.

WHAT ARE WE DOING?

The California Department of Transportation (Caltrans), in collaboration with the California Department of Fish and Wildlife (CDFW) will install an Elk Electronic Detection System (EDS) along an approximately one-mile-long segment of US 101 in Humboldt County, near Stone Lagoon. The project will determine the efficacy of the system in reducing elk-vehicle collisions, as a result of warning drivers of elk along the highway. If the system is

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successful, elk-vehicle collisions and near-misses in the area would be reduced or eliminated and habitat permeability would be enhanced, thereby reducing fragmentation.

WHAT IS OUR GOAL?

The primary goal of this project will be to install an EDS along U.S. 101 in Humboldt County and test the system's efficacy, reliability, and reproducibility to determine success in decreasing elk/vehicle collisions and habitat fragmentation.

WHAT IS THE BENEFIT?

This system will be the first of its kind in California and will provide insight into its efficacy of alerting drivers to the presence of wildlife on the road, reducing vehicle collisions, and increasing habitat permeability and wildlife survivorship. This study is expected to have implications for both Northern California and the entire state highway system. Data on system effectiveness will increase the potential for using similar systems throughout California and could be applied to a variety of wildlife populations. If successful, the study would be a cost-effective example of reducing wildlife/vehicle collisions.

WHAT IS THE PROGRESS TO DATE?

A research team from Cal Poly Humboldt has been selected and the project started on April 2023. The project is progressing well as planned and the associated Minor B funding has also been secured.