Midpeninsula Regional Open Space District

Memorandum

DATE: December 8, 2021

MEMO TO: Board of Directors

THROUGH: Ana Ruiz, General Manager

FROM: Julie Andersen, Senior Resources Management Specialist and Alex Casbara, Planner III

SUBJECT: Alma Bridge Road-Related Newt Mortality Study Results and Update on Beatty Parking Lot and Trails Project

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SUMMARY

In September 2020, the Midpeninsula Regional Open Space District (District) Board of Directors (Board) authorized the General Manager to enter into a Funding Agreement with Peninsula Open Space Trust (POST) to conduct a Newt Mortality and Population Study along Alma Bridge Road in collaboration with partners. POST contracted with H.T. Harvey (Consultant) to build upon newt mortality data collected by community scientists to determine the level of impact on the local newt population from road mortalities (vehicle strikes) based on estimates of the adult newt breeding population and the proportion of adult newts successfully crossing Alma Bridge Road to breed. The overall intent of the study was to better understand the issue, provide additional perspectives on existing conditions, facilitate collaboration with the underlying landowners, and to identify the appropriate scope and scale for addressing the newt road mortality issue. A total of six "arrays", including drift fences and associated pitfall traps, were successfully installed on the western edge of Alma Bridge Road and inspected daily to systematically count newts during the study period (November 4, 2020- March 31, 2021).

BACKGROUND

Partners and their roles in the Study included:

- Advocacy groups – Audubon Society, Sierra Club, Center for Biological Diversity and UC Davis Road Ecology Center worked with public agencies to apply for Wildlife Conservation Board (WCB) funding in 2020 to reduce road-related newt mortality on Alma Bridge Road. While the WCB did not select this project for funding, these groups continued to urge public agencies and officials to work toward reducing Alma Bridge Road-related newt mortality.
- Community Scientists – this group has been recording the number of Pacific newts (genus *Taricha*) killed on Alma Bridge Road since November 2017. They worked with the Consultant to ensure no duplication of efforts and that data was shared between the two groups.
- California Department of Fish and Wildlife Service – approved the Consultant as Principal Investigator and the study methodology; authorized the population study; received and reviewed the final report.

- Santa Clara County Roads (County Roads) – provided a traffic counter and permits to conduct the study within the Alma Bridge Road right-of-way.
- Santa Clara County Parks (County Parks) – contributed staff time and volunteer hours to install study materials (drift fences, study arrays etc.,) and assisted the Consultant researcher with the population study.
- H.T. Harvey & Associates (Consultant) – Principal Investigator hired under a funding agreement between the District and POST to conduct the study.
- District – contributed $150,000 in funding, provided an additional traffic counter, and provided staff and volunteer time to assist with and review the study.
- POST – contributed $65,000 in funding; oversaw the Consultant contract (with H.T. Harvey & Associates) and provided staff and volunteer time for the study;
- Valley Water – provided a permit and biological field support to implement the population study on Valley Water lands adjacent to the County Roads right-of-way.
- US Geologic Survey (USGS) – provided technical review of the study.

The District, POST, and County Parks also worked collaboratively to provide ongoing volunteer opportunities throughout the study to assist the Consultant. A total of 12 volunteers attended the mandatory training, assisted with the study, and logged a total of 217 hours. San Jose State University offered class credit for students to participate in the study, which was a unique hands-on experience during the pandemic when many class options were only available online. The District and Valley Water biology staff also participated in the study.

DISCUSSION

Study Results:

Researchers and volunteers found a total of 2,302 newts in the pit fall traps: 1,333 newts were in the upslope or roadside traps, and 969 newts were in the downslope or reservoir side traps. Of the newts found in traps, 98% were California newts (*T. torosa*) and 2% were rough-skinned newts (*T. granulosa*). Of the California newts, 42% were adult males, 49% were adult females, and 9% were juveniles. Of the rough-skinned newts captured, 40% were adult males, 44% were adult females, and 16% were juveniles. In addition to newts, a total of 104 individuals from 9 different species of wildlife were also observed in the traps. All trapped animals (newt and non-newt) were removed from the traps and released nearby.

The study estimated that 13,786 adult California newts attempted to cross Alma Bridge Road during the survey period (daily, November 2020 - March 2021). Most newts found in traps or observed as road mortality occurred during and after rainy days. Newt counts decreased (with a few exceptions) as the number of consecutive dry days increased following a rain event. All rain events plus two dry days after the last rain day (to include a lag time of newt movement after a rain event) encompassed 81 days (or 55% of the survey period) and 91% of the newt movement observed across the road at the arrays. So, approximately 50% of newt movement occurred during 8% of the survey period, and 91% occurred during 55% of the survey period associated with rain events. Peak newt movement periods occurred in February and March 2021.

The direction of newt movement changed throughout the survey period. From November to December 2020, most newts crossing the road were moving away from the reservoir (as they had most likely bred during the previous year). However, from mid-December to mid-February 2021, most newts were crossing the road toward the reservoir to breed. From mid-February to the end of the survey period, most newts were again crossing the road away from the reservoir after

having bred during the 2020/21 breeding season. Peak migration of newts moving toward the reservoir to breed occurred around February 2, 2021. Peak newt migration away from the reservoir occurred on March 3, 2021.

The study also reviewed daily levels of vehicular traffic and precipitation data and how these levels compared with levels of newt movement. The traffic counters tallied 83,757 vehicles on Alma Bridge Road from November 8, 2020 to March 31, 2021. Daily traffic volume dropped off substantially in the evenings and there appeared to be a general trend of increasing traffic during the survey period. Unfortunately, the peak of newt reverse migration on March 3, 2021 had a high traffic count resulting in high vehicle-related mortality.

Similar to past community scientist observations, the areas of highest road mortality in the 2020/2021 breeding season were in order of highest mortality as follows: the sections of Alma Bridge Road just south of Limekiln Creek south to the Priest Rock Trailhead, from south of the Los Gatos Rowing Club to before the Miller Point parking lot, and south of Soda Springs Creek.

The study found a 39.2% road-based mortality rate of newts during migration to and from the reservoir for breeding. Through modeling, the study predicts that this level of mortality may result in a reduction of the population and even possible local extinction in approximately 57 years. The study recommends numerical objectives to reduce road mortality to ensure persistence of the local newt population over time.

Stakeholder Review

The draft report was first reviewed by POST and the District as funders, and then shared with public agency partners and underlying landowners/managers (County Roads, County Parks, Valley Water). Once these agencies had reviewed and commented on the report, it was circulated to advocacy groups, community scientist collaborators, CDFW, and other collaborative researchers (USGS). All stakeholders were provided the opportunity to review and comment and their comments were either responded to directly and/or incorporated into the study report. The final report for the study is now available on the District's webpage.

NEXT STEPS

The final report will be presented to the larger scientific community at the Wildlife Society Conference in 2022 and the Consultant has already been invited to submit a manuscript for publication in a special issue of *Frontiers of Ecology and Evolution on Reptile and Amphibian Road Ecology*. As the study and methods are more widely circulated and peer reviewed, project stakeholders will have the opportunity to further refine the study as new information is learned from additional scientists.

District staff and the General Manager have met with leadership and staff from County Roads and County Parks to discuss results from the Study and the next steps for this fiscal year. All agencies were satisfied with the study report and agreed to partner to provide a long-term solution to reduce mortality and provide safe passage for newts across the roadway. These agencies are working to develop a partnership agreement to identify roles for the project going forward.

In the near term, the District is working with review and input from County staff to release a Request for Proposals and Qualifications (RFPQ) for an engineering and environmental review

team to develop design options for newt protection measures that can be installed/constructed along the roadway to reduce the current newt mortality. The goal is to reduce mortality at minimum to numerical objectives identified in the final report, thereby ensuring persistence of the local newt population over time.

Potential protection measures may include, but are not limited to:

1) at-grade amphibian crossing(s) embedded in the road surface;
2) retrofitting existing culvert(s) to enhance newt movement;
3) elevated road section(s) to allow passage of migrating newts beneath the roadway;
4) directional fencing to guide animals to potential crossing-improvement(s); and/or
5) other feasible options (built or non-built) that have not been previously described.

Based on feasibility and cost, one or more of the above may be selected to move forward from preliminary design into environmental review, final design, and implementation. The District is working with partners to identify and secure funding for future work beyond this fiscal year.

Beatty Parking and Trail Project

Alma Bridge Road travels adjacent to the former Beatty Trust property, which was purchased by the District as an addition to Sierra Azul Open Space Preserve (Preserve). The property is located on the easterly side of Alma Bridge Road and Lexington Reservoir, approximately two miles east of the Alma Bridge Road exit from Highway 17. The County of Santa Clara (County) contributed to the original property purchase (R-08-14) in exchange for a conservation easement obligating the District to construct a trail from the property to the Priest Rock Trail in the Preserve. This commitment became the Beatty Parking Area and Trail Connections Project (Beatty Project) under Measure AA Portfolio #22 (Sierra Azul: Cathedral Oaks Public Access and Conservation Projects).

During initial feasibility assessments of potential Beatty Project trail and parking area locations, the District received comments regarding ongoing newt mortality along Alma Bridge Road. On January 13, 2021, the Board received a presentation about the planned Newt Mortality and Population Study and potential implications to the Beatty Project. The Board directed staff to defer the Beatty Project until completion of the newt mortality study. Given the results of the Newt Mortality and Population Study and anticipated next steps, the District will continue to defer the Beatty Project until the District and partner agencies identify a design solution to reduce newt mortality along Alma Bridge Road.

The County's conservation easement associated with the former Beatty Trust property required implementation of the trail connection by March 11, 2023, 15 years after the March 11, 2008, easement recordation date. The District is coordinating with the County to extend this agreement timeline to accommodate both the newt mortality design solution and the Beatty Project.

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