OrniLogic

# Quarterly Report

**Agency/Organization:** OrniLogic, LLC

**Project Name:** Subsidized Raven Management at the BCCE

**Project Number:** 2023-ORNILOGIC-2362B

**Reporting Period:** July 1, 2025 – September 30, 2025

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**QUESTION 1: What did you accomplish during this reporting period? How did these accomplishments help you reach the goal of your project? If relevant, what indicators or benchmarks were used to determine your progress?**

This quarterly report documents the status of the Subsidized Raven Management at the BCCE conducted by the OrniLogic, LLC for project number 2023-ORNILOGIC-2362B; July 1, 2025 to September 30, 2025. The third quarter of progress on this project has been characterized by the collection of data generated from the previous quarter's field activities. These actions have included:

1. Collecting SD cards from the field cameras and PATS units deployed over the spring and summer of 2025.
2. Compiling and cataloging the data accumulated on the SD cards.
3. Operation and troubleshooting of the newly built SMART user interface.
4. Collection of field gear and inventory of existing systems.

Project Goals and Objectives:

- Implementing a comprehensive, multi-pronged approach to address challenges posed by predator subsidies encompassing a complex interplay of factors, including human behavior, choices, and desires, compounded by the resourcefulness of ravens.
- Reduce raven access to demonstrated subsidies to reduce their overall numbers and the spillage of the problems they cause from Boulder City facilities into adjacent Mojave desert tortoise habitat.
- Refine methods of raven management in an urban area, surrounding support facilities, and adjacent desert tortoise habitat.
- Use acquired data and techniques to build upon and refine the recommendations for reduction of desert tortoise predation by ravens in the BCCE Predator Management Plan.
- Apply these lessons and techniques to the large-scale subsidy site of Apex Landfill.

Objectives Completed this Quarter:

- OrniLogic has continued implementing a comprehensive, multi-pronged approach to address challenges posed by predator subsidies surrounding BCCE. This approach includes the operation of two remotely controlled laser systems at both the landfill and wastewater treatment facility, the retrieval of 9 PATS units, 18 field cameras, and all the SD cards contained within the field gear. These cards were uploaded to a shared database and organized for analysis.

**QUESTION 2: What, if any, problems were encountered? Briefly describe those problems and the manner in which they were dealt.**

Field Cameras

As SD cards were pulled and data was compiled, it became apparent that not all of the field cameras deployed were operating consistently. Some units were not capturing imagery at the same rate as others and there seemed to be some degree of sensitivity variability between cameras despite all having the same settings. An additional challenge presented by this scale of data collection was the sheer volume of imagery produced and how to effectively store it. The cameras were spread out across the BCCE and so inherently required a large investment of field time in order to service all the units.

OrniLogic field staff worked hard to streamline the data collection process and minimize its impact to the budget and used secure cloud storage to share the data collected for inspection and analysis.

The Ornilogic team is committed to efficient data collection and analysis and is investigating alternate technologies for the 2026 season, including cellular cameras with built in cloud storage, as well as the implementation of Fulcrum forms for field surveys and camera analysis.

PATS Units

The current version of the PATS units deployed on BCCE are highly engineered with some fragile electronic components. These units have not been deployed to date for such an extensive duration and when combined with significant weather events in May and June 2025, several units experienced disruptions in performance, requiring additional field visits by OrniLogic staff. While these visits did ultimately return the units to service, they ate into the budget for field time.

SMART Laser

The new user interface for the SMART lasers deployed at two different locations for the project received extensive operation over the summer and experienced challenges with latency and video feed quality. These challenges have been carefully documented and our engineering team is working on improving the system for more dependable operation going forward.

An additional unforeseen problem encountered specifically at the landfill site was the constantly

shifting location of work which equated to a shifting focus for target ravens. As crews opened and closed different faces of the landfill, the stationary SMART laser was unable to follow, requiring again for OrniLogic staff to enter the field and manually move the system. The current SMART Laser platform is in prototype and requires two personnel to move, so keeping up with the movement of the hazing zone was an unforeseen hurdle this quarter.

**QUESTION 3: What, if any, proposed activities were not completed? Briefly describe those activities, the reasons they were not completed and your plans for carrying them out.**

SMART Laser

Due to the aforementioned movement of the active face of the landfill (and associated zone of laser hazing), Ornilogic experienced periods where laser hazing was not being completed successfully. This experience has catalyzed the development of a new system to make the SMART laser mobile. We are looking forward to rolling out this system in the near future, ideally at the Boulder City landfill to showcase an additional development in this technology.

Data Analysis

Images captured on the 18 wildlife cameras in BCCCE were manually gathered at the end of the season and uploaded to cloud storage for analysis. The initial analysis was completed in September 2025, but discrepancies in the data set were detected, prompting a secondary review. This second analysis is underway and will be completed on or before October 17, with delivery of results following shortly thereafter.

**QUESTION 4: What is the calculated percent of work completed?**

Approximately 61% of the project milestones have been met at this point in the project's new timeline.

**QUESTION 5: Do you foresee any upcoming problems with future project activities? If so, how do you propose to overcome those problems?**

OrniLogic continues to push the envelope of what our technology can do and the conditions which it can withstand. As our new laser systems experience the extremes of summer in the Mojave Desert, it is possible there will be temporary failures of electronic components or lapses in connectivity. However, we have developed systems for quickly identifying and remedying problems as they arise and the specialized products and services we provide will only be better because of it.

This project is highly complex, with several emerging technologies being deployed. In order to maximize efficiency and make the best use of a limited budget, Ornilogic intends to review and revise the current survey and monitoring protocols, as well as implement digital data streams to reduce the number of field visits required.

**QUESTION 6: Is there anything else you want to tell the DCP about this project?**

We would like to discuss in more detail the proposed large-scale project in Apex Landfill and begin the planning for a rollout of this work.

It also would be appropriate to explore what an expanded egg oiling effort could look like and how to fund such additional work. The current BCCE budget does not support the scale that would likely be necessary to expand nest searching and egg oiling drone flights outside of the currently prioritized transmission line right-of-ways. Expanding this effort would be the logical next step in reducing the presence of raven nesting across the entire BCCE and protecting the tortoises who call it home.

OrniLogic is also exploring updating our fleet of field cameras to equip them for wireless transfer of files via a cellular network. This upgrade would directly benefit the BCCE project but carry a price tag which would far outstrip the budget of this project. We are currently investigating other ways of funding this upgrade and would welcome any suggestions from Clark County on how to support this effort.

**QUESTION 7: What was produced during the reporting period?**

72 separate data logs from the PATS devices along with thousands of photos from the accompanying field cameras were generated and collected. Out of these images, approximately 25 were observed to be documenting wildlife interacting with the PATS units including jackrabbits, kit foxes, coyotes, and common ravens. In addition to this, roughly 180 hours were logged operating the SMART laser system at full capacity.

These data sets and trials of the new technologies will examined and analyzed and all lessons learned will be incorporated into the next quarter of this project and our efforts going forward.

**Please report on the status of each Milestone and Deliverable, indicate whether they are not started, in progress, or completed and provide comments on the status as necessary**

**APPENDIX 1 – BASIC SERVICES**

**Milestone/Deliverable/Invoicing Schedule Table**
Subsidized Raven Management at the BCCE
2023-ORNILOGIC-2362B

| Date Due | Deliverable / Milestone # | Deliverable / Milestone Title | Status |
|---|---|---|---|
| PO issue date (March 19, 2025) | M01 | Contract Award and Mobilization | Complete |
| April 3, 2025 | M02 | Project Kick-off Meeting | Complete |
| 30 days after PO issue date (April 18, 2025) | D01 | Permits | Complete |
| 30 days after PO issue date (April 18, 2025) | D02 | Work Plan | Complete |
| 30 days after PO issue date (April 18, 2025) | D03 | Data Management Plan | Complete |
| May 1, 2025 | M03 | Fixed lasers installed and functioning | Complete |
| May 1, 2025 | D04 | First Quarterly Data Deliverable | Complete |
| April 5, 2025 | D05 | Quarterly Progress Report (January 1, 2025 – March 31, 2025) | Complete |
| May 15, 2025 | M04 | First Quarterly Project Status Meeting | Complete |
| May 30, 2025 | D06 | Egg oiling operations complete - 2025 | Complete |
| June 30, 2025 | D07 | Biennium Progress Summary Report | Complete |
| July 1, 2025 | D08 | Second Quarterly Data Deliverable | Complete |
| July 5, 2025 | D09 | Quarterly Progress Report (April 1, 2025 – June 30, 2025) | Complete |
| July 15, 2025 | M05 | Second Quarterly Project Status Meeting | Complete |

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| TBD, August 2025 | M06 | 2025 Annual Project Review Presentation (If requested) | Canceled |
| October 1, 2025 | D10 | Third Quarterly Data Deliverable | Complete |
| October 5, 2025 | D11 | Quarterly Progress Report (July 1, 2025 – September 30, 2025) | Complete |
| October 15, 2025 | M07 | Third Quarterly Project Status Meeting | Not Started |
| January 5, 2026 | D12 | Quarterly Progress Report (October 1, 2025 – December 31, 2025) | Not Started |

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|---|---|---|---|
| April 5, 2026 | D13 | Quarterly Progress Report (January 1, 2026 – March 31, 2026) | Not Started |
| May 31, 2026 | D14 | Egg oiling operations complete - 2026 | Not Started |
| June 15, 2026 | D15 | Final Project Data | Not Started |
| June 15, 2026 | D16 | Final Project Report | Not Started |
| June 20, 2026 | M08 | Debrief Meeting | Not Started |
| July 15, 2026 | D17 | Final Biennium Progress Summary Report | Not Started |
| 20 Days Prior to End Date | M09 | Receipt Submittal (As necessary) | Not Started |
| August 15, 2026 | D18 | Final Project Review Summary Form and Project Claim Release | Not Started |
| September 15, 2026 | | Project Closeout | Not Started |