Land Policy Regulations and Human and Wildlife Behavior in Endangered and Threatened Bird Habitat

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Introduction

- The Santa Ana River Mouth, located in Newport Beach, CA, is owned by four agencies: the California State Lands Commission, California State Parks (CASP), the County of Orange (OC), and the City of Newport Beach (CNB)
- OC Flood Control channel: sensitive wildlife area that is home to the endangered California Least Tern and the threatened Western Snowy Plover.
- Monitoring and outreach project established in 2021 since overlapping jurisdictions led to confusion in enforcement → lack of bird protection from humans and dogs → use data to encourage action
- Flushing events: when a bird or group of birds are forced to flee the beach after being chased by a human or dog
- Hypothesis: more humans and off-leash dogs will result in more flushing events and lower bird presence

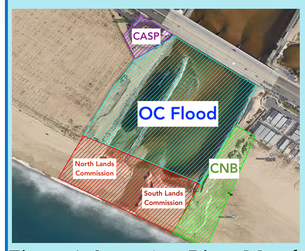

Figure 1: Santa Ana River Mouth Jurisdictions

Figure 2: Sensitive Wildlife Area in OC Flood

Methods

- Volunteers, interns, and staff members collected 2803 surveys from January 2023 to June 2024
- Research surveys are 5-minutes each, split by the differing jurisdictions→ make clear which section requires more enforcement.
- Materials included binoculars, long-range cameras, survey sheets, and standard operating protocols.

Figure 3: Santa Ana River Mouth Monitoring Project Data Sheet

Results

Figure 4: Flushing Event by Off-Leash Dogs in OC Flood

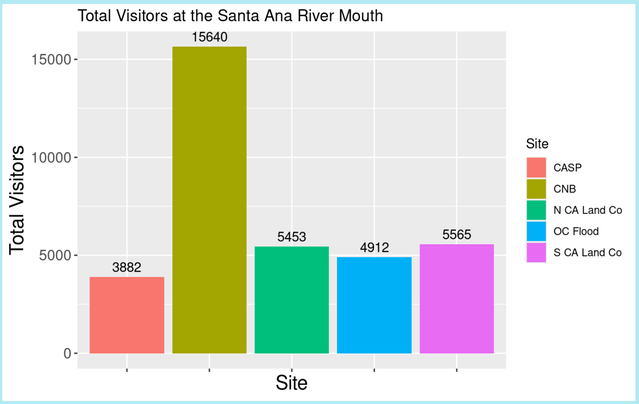

Figure 5: Total Amount of Visitors Recorded

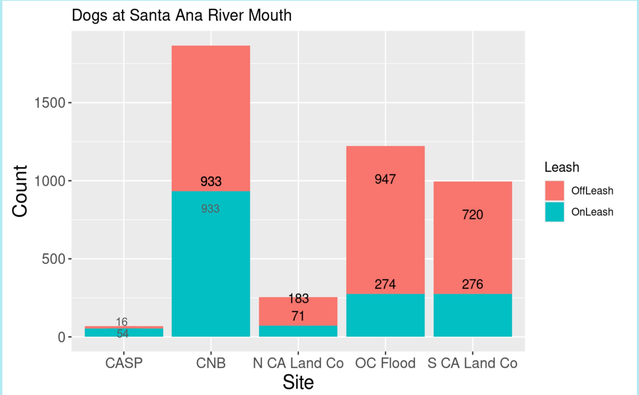

Figure 6: Total Amount of Dogs Recorded

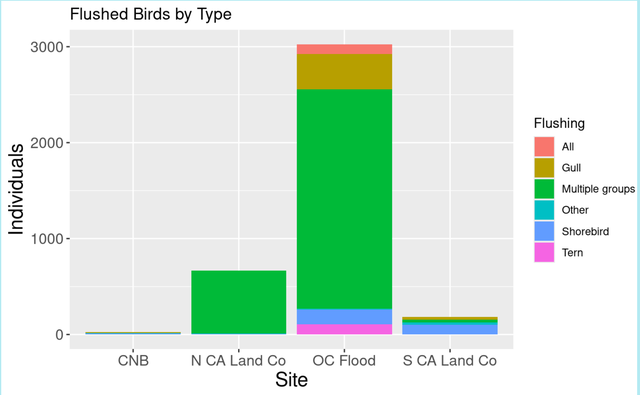

Figure 7: Flushed Birds by Type

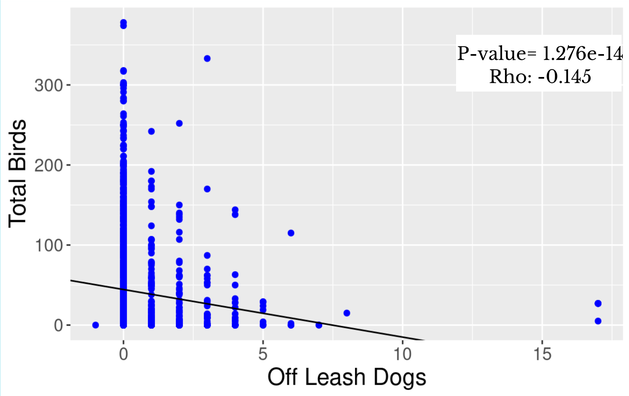

Figure 8: Correlation Analysis of Off-Leash Dogs and Bird Presence in OC Flood

Bird abundance decreases with increased off-leash dogs

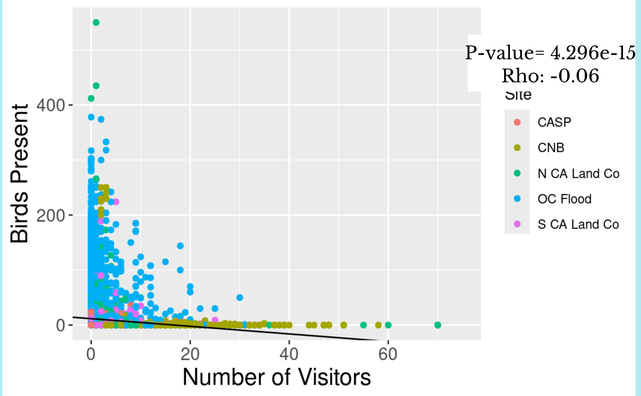

Figure 9: Correlation Analysis of Visitors and Bird Presence in All Sites

Bird abundance decreases with increased visitors

Discussion

- High amounts of visitors and off-leash dogs are correlated with lower amounts of birds in the Santa Ana River Mouth
- Due to predation behaviors, more off-leash dogs pose a threat to the birds that inhabit this area
- Evaluated data taken within sensitive wildlife area (OC Flood boundary) in Figure 5 since that is where most birds were spotted
- Confusing jurisdictions: some birds not located on human-accessible sand bar within channel but still considered in OC flood if they were on the jetty on the other side
- So, if there were humans/dogs on sand bar, birds on the jetty will be considered the same jurisdiction even if they fled the sand bar due to human/dog presence

Conclusion

- High human and dog presence → more bird disturbances → birds may not return to the sensitive wildlife area
- Off-leash dogs, and humans who trespass the sensitive wildlife area, put these birds in unnecessary stress and cause them to lose opportunities to forage, mate, or nest
- We share annual and semi-annual data reports with law enforcement and land jurisdictions to incite more protection in the sensitive wildlife area

Acknowledgements

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