

Virginia Rail (*Rallus limicola*) Distribution, Abundance, and Habitat Characteristics



Sara McCall – sjs199@humboldt.edu

Department of Wildlife, Cal Poly Humboldt, Arcata, CA, 95521



INTRODUCTION

- POI: Virginia rail **distribution**, **abundance**, and **habitat** characteristics
- Elusive marsh birds that are difficult to observe, audio callbacks for detection
- **At-risk wetlands** are critical habitat for many species, including Virginia rail
- Other Family Rallidae marsh birds are endangered, none reside in Humboldt County
- Hypotheses: Preference shown towards **shallow, emergent, unaltered** wetlands

METHODS

- **84** total surveys around Humboldt County
- 10-minute point-count surveys where I played **audio calls** for 3 minutes and listened for **callbacks**
- **Five wetlands**
Arcata Marsh and Wildlife Sanctuary
Humboldt Bay National Wildlife Refuge
Mad River Slough Wildlife Area
Aldergrove Marsh
Ma-le'l Dunes
- **Independent** variables: wetland type, vegetation, altered/unaltered
- **Response** variable: Virginia rail detections

RESULTS

- **34** Virginia rail detected at 22 points
- 31 **callback** detections
- 3 **visual** detections
- **Uneven distribution** across sampled wetlands (fig. 4)

Significant effect on occupancy	P-value
Shallow wetland	0.04
Emergent vegetation	0.005
Unaltered habitat	0.002

Table 1. Significant Virginia rail habitat characteristics

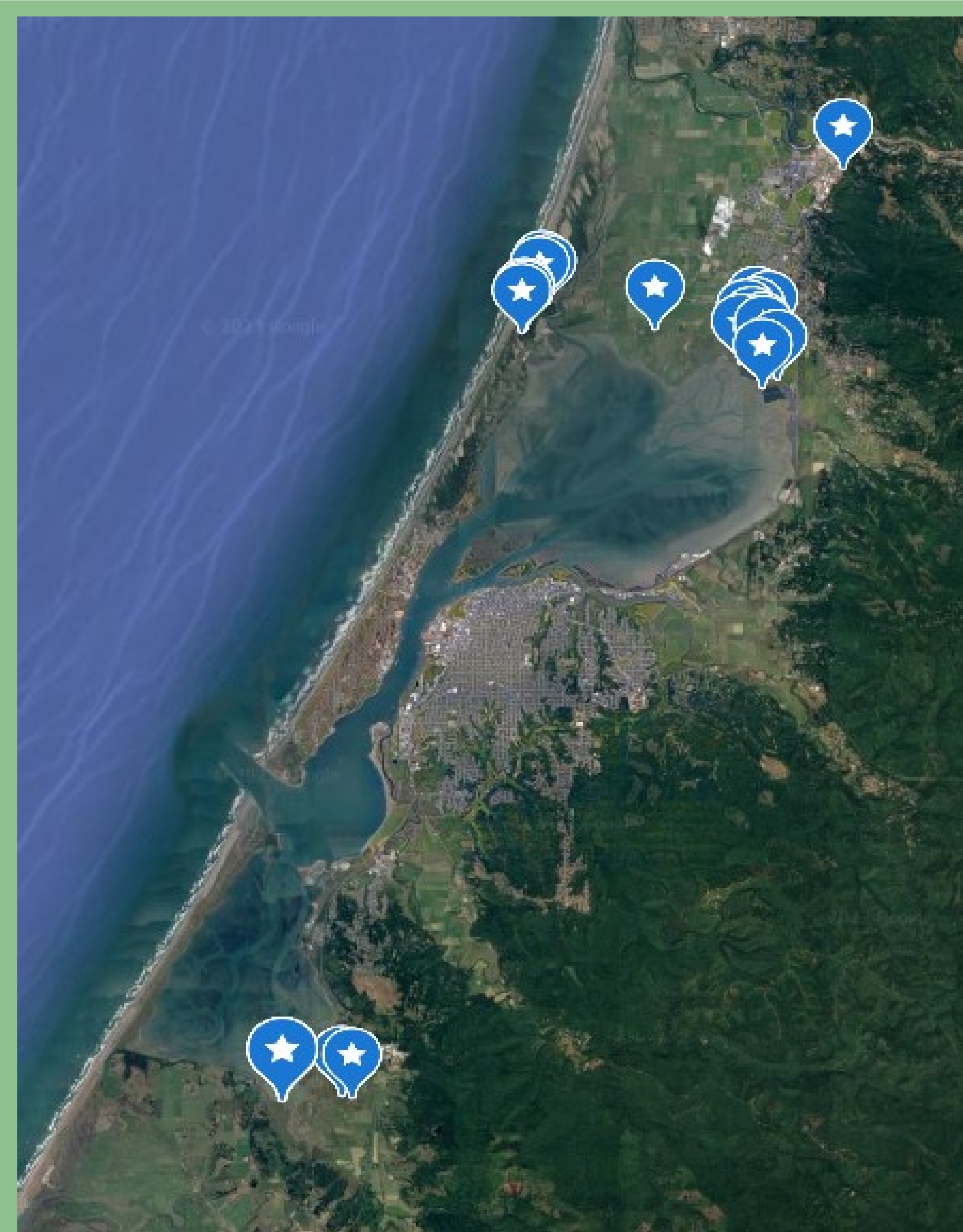
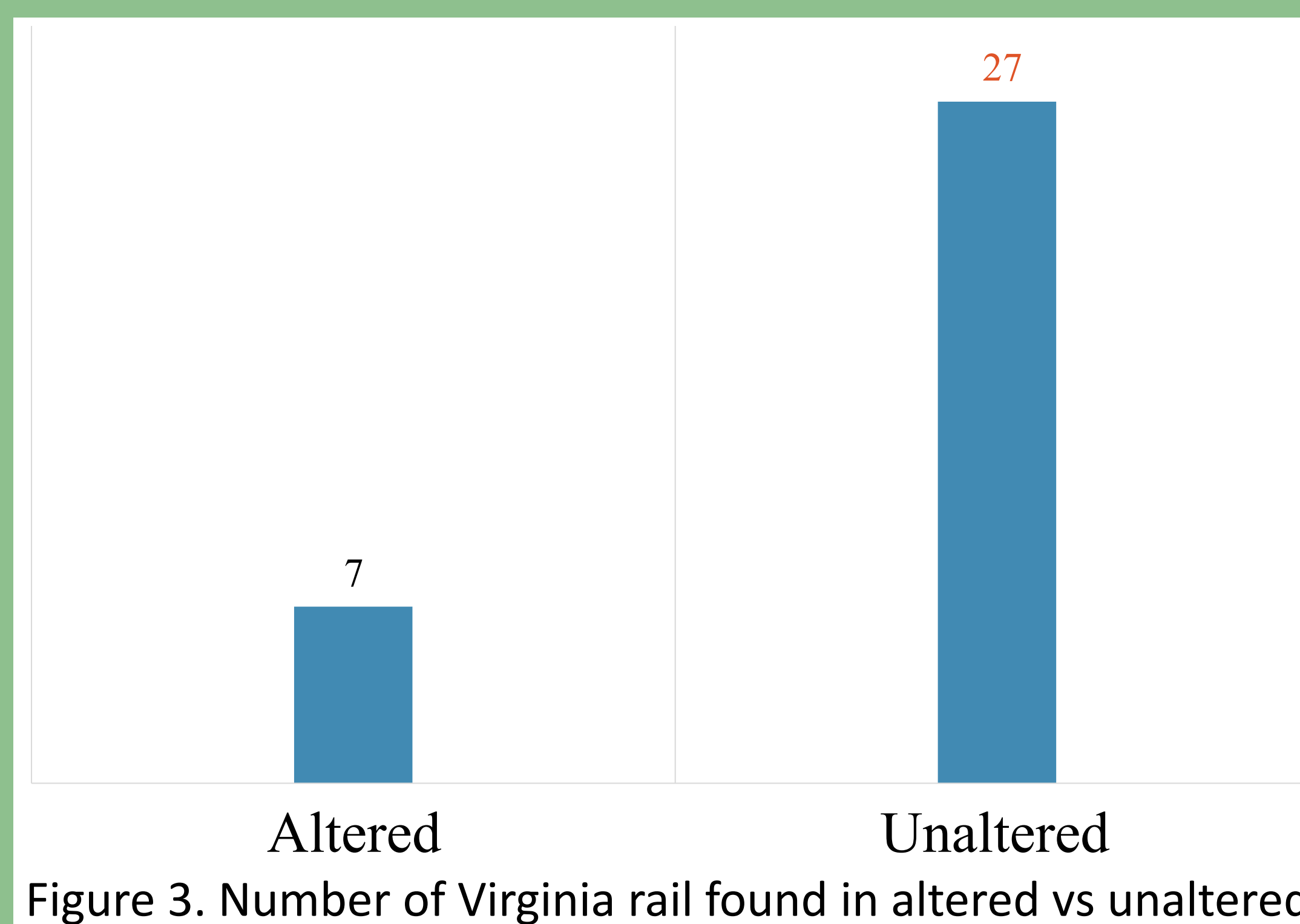
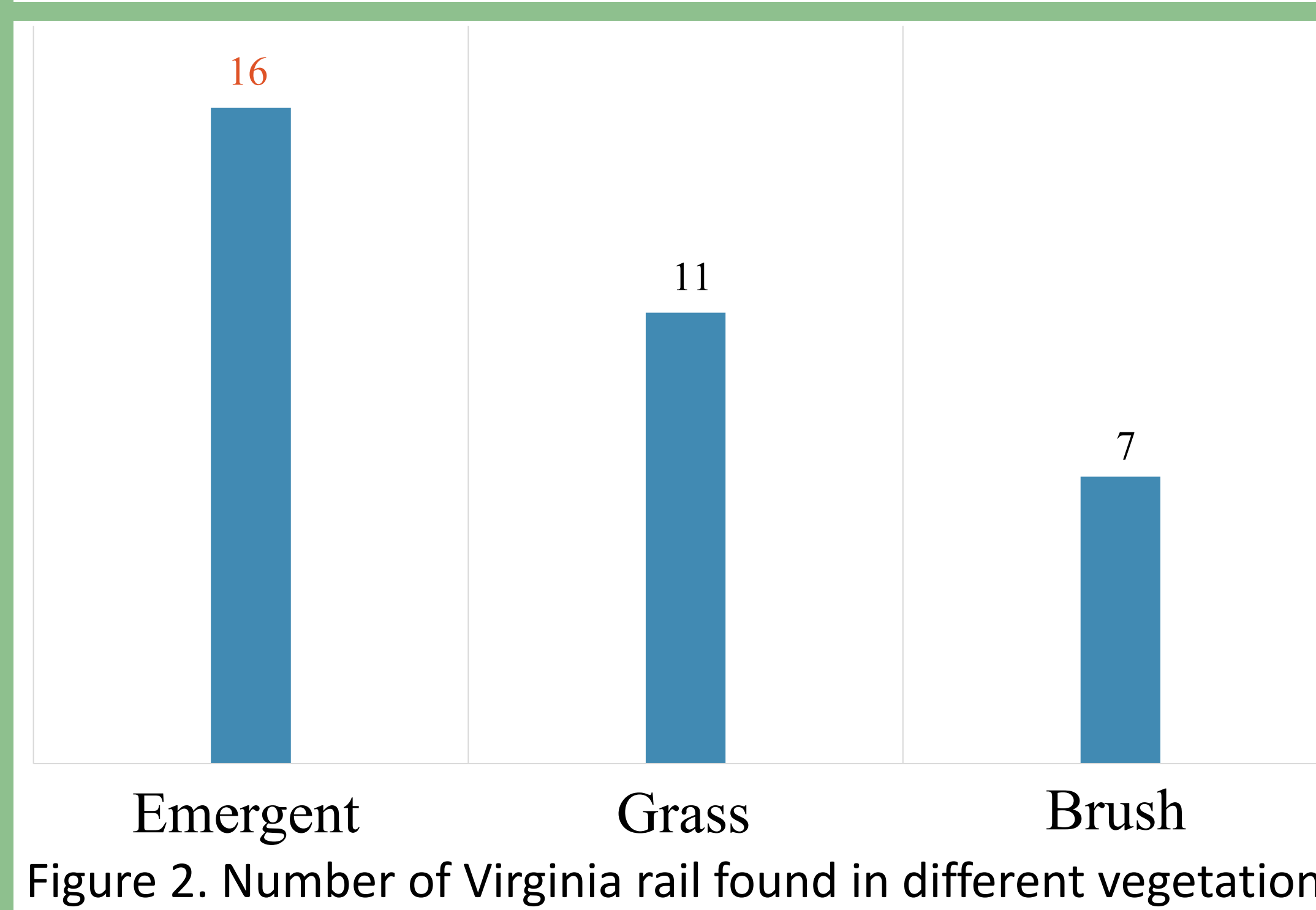
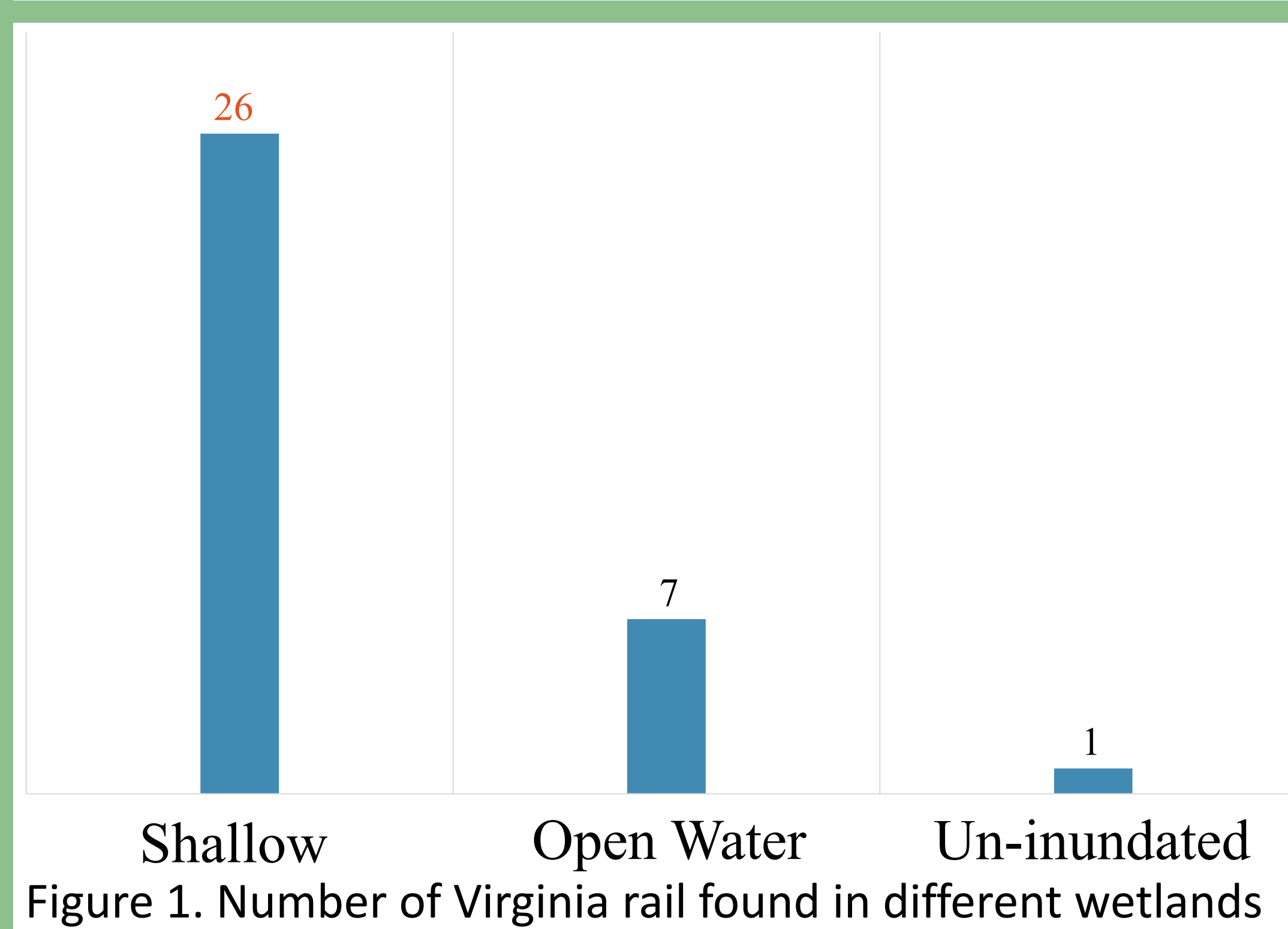


Figure 4. Distribution of Virginia rail in Humboldt County, CA. Individuals detected: Arcata Marsh and Wildlife Sanctuary (n= 14), Humboldt Bay Wildlife Refuge (n= 5), Mad River Slough Wildlife Area (n= 2), Aldergrove Marsh (n= 3), Ma-le'l Dunes (n= 10).



Figure 5. Virginia Rail in emergent vegetation and brush.

DISCUSSION

- **My hypotheses were supported**
- Virginia rail significantly use **shallow, emergent, unaltered** wetlands
- Results align with the literature for habitat characteristics
- Some detections were in blackberry brush even though emergent vegetation was nearby, so level of **cover** and **ground accessibility** for rails may be factors worth exploring
- Challenges: **detection accuracy**, removal of wetlands from the study, **audio calling is controversial**
- Confounding variables: weather, **noise**, human presence, **seasonal vegetation**, wetland **accessibility**
- A more thorough index of Humboldt County's less accessible wetlands should be undertaken
- Wetlands with shallow, emergent vegetation should be a **conservation focus** for Virginia rail

ACKNOWLEDGEMENTS

Rob Blenk for his guidance and expertise, **Frank Fogarty III** and **David Sinn** for their statistical knowledge, Cal Poly Humboldt **Wildlife Department** for their support and knowledge, and **Edwin Millard**, **Bridget Fest**, and **Noah Morales** for their support and assistance in data collection.