



PAPA HĀNAUMOKUĀKEA  
Marine National Monument

*A World Heritage Site*

# USFWS AGENCY UPDATE

NHICRER Reserve Advisory Council  
Virtual Meeting  
21 September 2021

Presented by: Amanda Boyd



# KAPOU (LISIANSKI) VEGETATION SURVEYS



# MARINE DEBRIS CLEAN-UP EFFORTS



# SEA WALL PROJECT



# NEW RADAR SYSTEM AT MIDWAY



# NEW PUBLISHED ARTICLE

## Fly on the Wall: Comparing Arthropod Communities Between Islands With and Without House Mice (*Mus musculus*)<sup>1</sup>

Wieteke A. Holthuijzen,<sup>2,8</sup> Susan L. Durham,<sup>3</sup> Elizabeth N. Flint,<sup>4</sup>  
Jonathan H. Flisener,<sup>5</sup> Kaylee J. Roenberger,<sup>6</sup> Coral A. Wolf,<sup>7</sup> and Holly P. Jones<sup>2,7</sup>

**Abstract:** Invertebrates are key to island ecosystems but impacts from invasive mammalian predators are not well documented or understood. Given this knowledge gap, we studied terrestrial arthropod communities in the presence of a common invasive rodent (house mice, *Mus musculus*) on a subtropical atoll—Midway Atoll National Wildlife Refuge (MANWR). Here, invasive mice recently began to attack and depredate nesting seabirds, prompting planning for a future mouse eradication. However, uncertainty remains regarding the ecosystem's response to mouse removal. As part of a pre-eradication investigation, we conducted a baseline survey of MANWR's arthropod community structure and diversity (at order level), comparing islands with and without mice. From April 2018 to February 2020, we used pitfall traps to monitor ground-dwelling arthropods on MANWR's Sand Island (mice present) and Eastern Island (mice absent). During our study, we captured over 450,000 specimens from 24 taxonomic units. Arthropods on MANWR form six community clusters and differ between islands and habitats. Richness is relatively similar among clusters and islands, but diversity of common and dominant arthropod taxa is significantly higher on Sand Island, as well as in anthropogenically-built habitats. Weather is not a strong environmental driver of arthropod communities; community structure and diversity vary only slightly throughout the year. Additionally, anthropomorphic landscape-level alteration of MANWR may still influence arthropod communities today. Continued monitoring and research will provide better insight into how arthropod communities recover following invasive mouse eradications. Our study contributes to the body of knowledge of arthropods in the Northwestern Hawaiian Islands, arthropod community ecology, and potential mouse impacts on islands.

**Keywords:** arthropods, islands, invasive rodent, pre-eradication, community structure, diversity, pitfall traps, subtropical atoll

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<https://muse.jhu.edu/article/805231>

# NIHOA CENCHRUS ERADICATION



# QUESTIONS?

