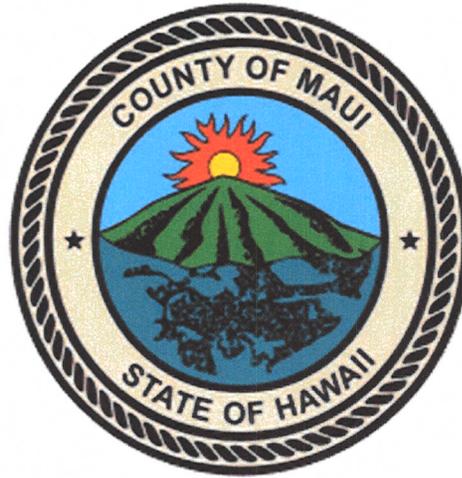


# Maui Nui Seabird Recovery Project

## County of Maui

GRANT OF COUNTY FUNDS  
UNIVERSITY OF HAWAII 'I  
GRANT NO. G5537

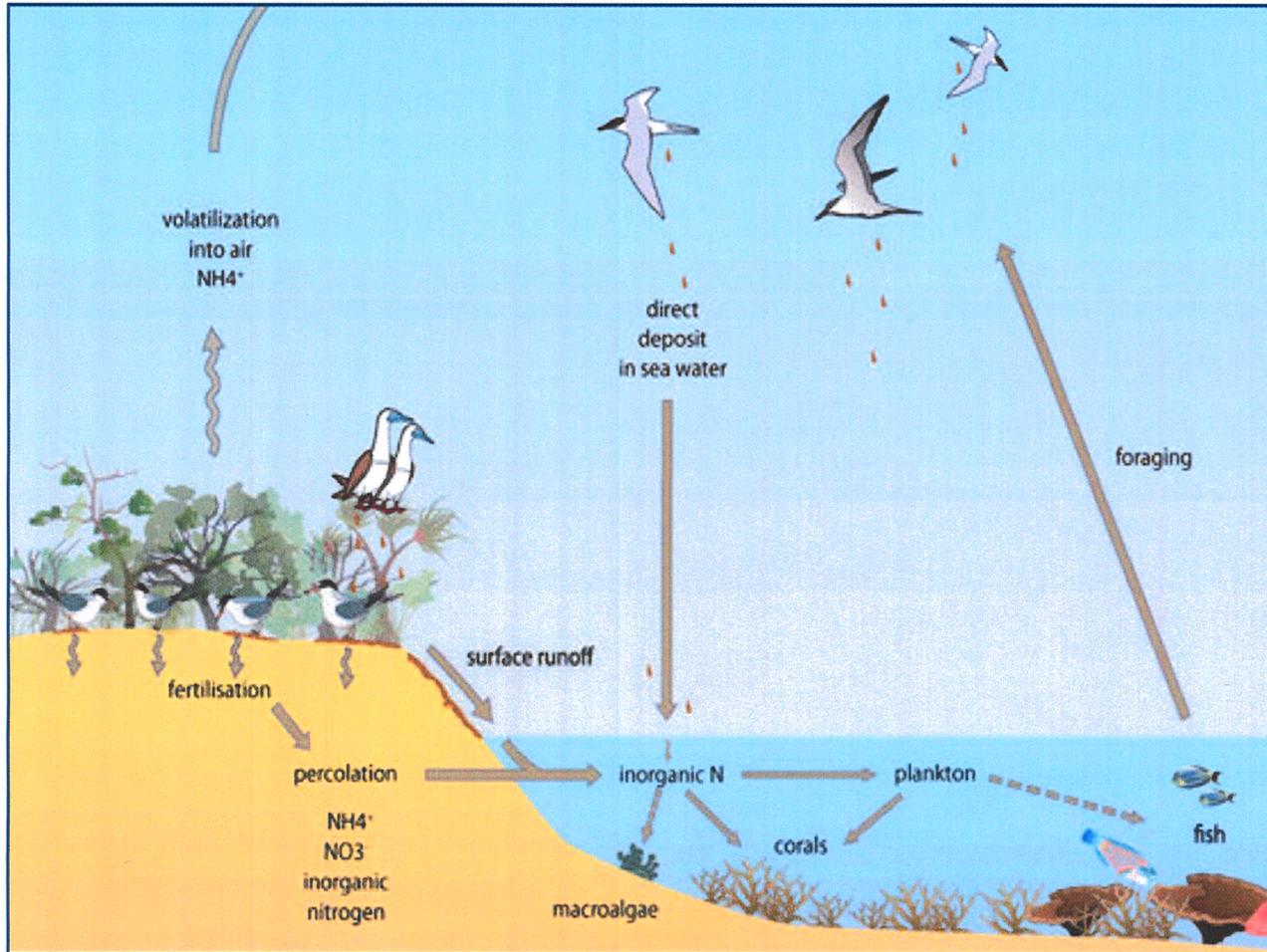


## Building Coastal Resilience Through Seabird Protection & Raising Public Awareness



RECEIVED AT CARE MEETING ON 3-14-2022  
RECEIVED BY JAY Penniman (CARE-01)

# What roles do seabirds play in coastal habitats?



Seabirds bring essential nutrients from the sea to the land.

**Guano** contains organic nitrogen and phosphorus.

**Fertilisation** happens on land and in near-shore waters.



# Creating A Culture Of Coexistence At A Strategically Managed South Maui Wedge- Tailed Shearwater Colony

Cheryl King, Mike Ing, Jennifer Learned, Martin Frye, Cecelia Frisinger, Skye Anderson, Mariah Rivera, & Jay Penniman

Maui Nui Seabird Recovery Project: working to locate, protect, & enhance seabird populations & habitats in Maui Nui [MauiNuiSeabirds.org](http://MauiNuiSeabirds.org)



## Introduction

Similarly to regions around the world, coastal seabird colonies in the Main Hawaiian Islands, USA have drastically decreased since historical times. Regardless, conservation efforts have proved successful in reviving embattled colonies in suboptimal habitats amidst urbanized areas. Kāma'ole III in Kihei, Maui is an example of such a nesting habitat for the indigenous wedge-tailed shearwater (*Ardenna pacifica*, 'ua'u kani). Its Hawaiian name means "calling or moaning petrel" since this shearwater species is known for its vocalizations that many think resemble crying babies- an eerie surprise to unexpected passersby. These seabirds return from their developmental years at sea to their home colony at ~5 years of age to breed. They mate for life and the oldest known shearwater has been recorded at 29 years of age. Each pair creates their nest, where they'll lay one egg per season, along the coast in sandy substrate amongst rocks and vegetation by digging with their beaks and feet. Despite some of them being ~3 feet long, these fragile burrows can easily be crushed by foot traffic, making them extremely vulnerable during the nesting season (March-December).



## Balancing Seabird and Human Activities

User groups are numerous: boaters, dog walkers, exercisers (yoga, swimming, walking, jogging, biking, one-wheeling, lawn games), film makers, fishers, homeless, musicians, partiers, photographers (photo shoots and drone flyers), snorkelers/divers, sunset seekers, surfers, and wildlife viewers (seabirds, sea turtles and humpback whales).



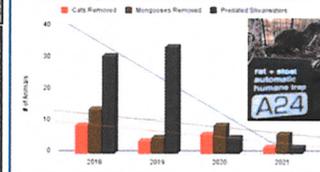
## Overview of Colony Protection/Enhancement Activities

- Artificial nest tunnels (to prevent burrow destruction)
- Educational outreach (protect what you love)
- Predator control (mice, rats, mongooses, and feral dogs)
- Signage (handmade and official)
- Trail delineations (post and rope fencing, coral ways)
- Vegetation restoration (remove invasives and plant natives)



mid-2018. In 2019, a high proportion of recaptured adults (65.7%) and predated adult birds (n= 34) were counted, suggesting predators were still having an impact. Invasive grass/plant removal started in 2019 to eliminate vegetative cover for predators. Reflecting trapping and habitat restoration progress, in 2021 the highest number of chicks were banded (n= 144) and only 2 adult predated carcasses were found. A native plant nursery was started in 2020 on the periphery of the colony to create better habitat and to block the nearby disorienting lights.

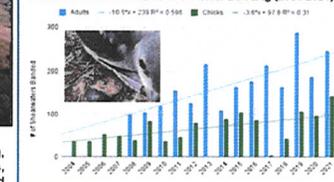
## Cats & Mongooses Trapped & Dead Shearwaters Found



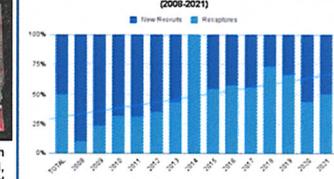
## Colony Population Monitoring

Chick and adult banding efforts began in 2004 and 2008 respectively. From 2008-2021, 50.6% of the 2,387 adults banded were recaptures. The total chicks banded/year ranged widely from 37 to 105 until 2017 when only 3 live chicks were found. Burrow counts have more than doubled from 376 in 2018 to 1,069 in 2021, with inland expansion to available habitat, so carrying capacity has not been reached.

## Kama'ole III Adult & Chick Shearwater Banding (2004-2021)



## Kama'ole III Adult Shearwater Banding of New Recruits & Recaptures (2008-2021)



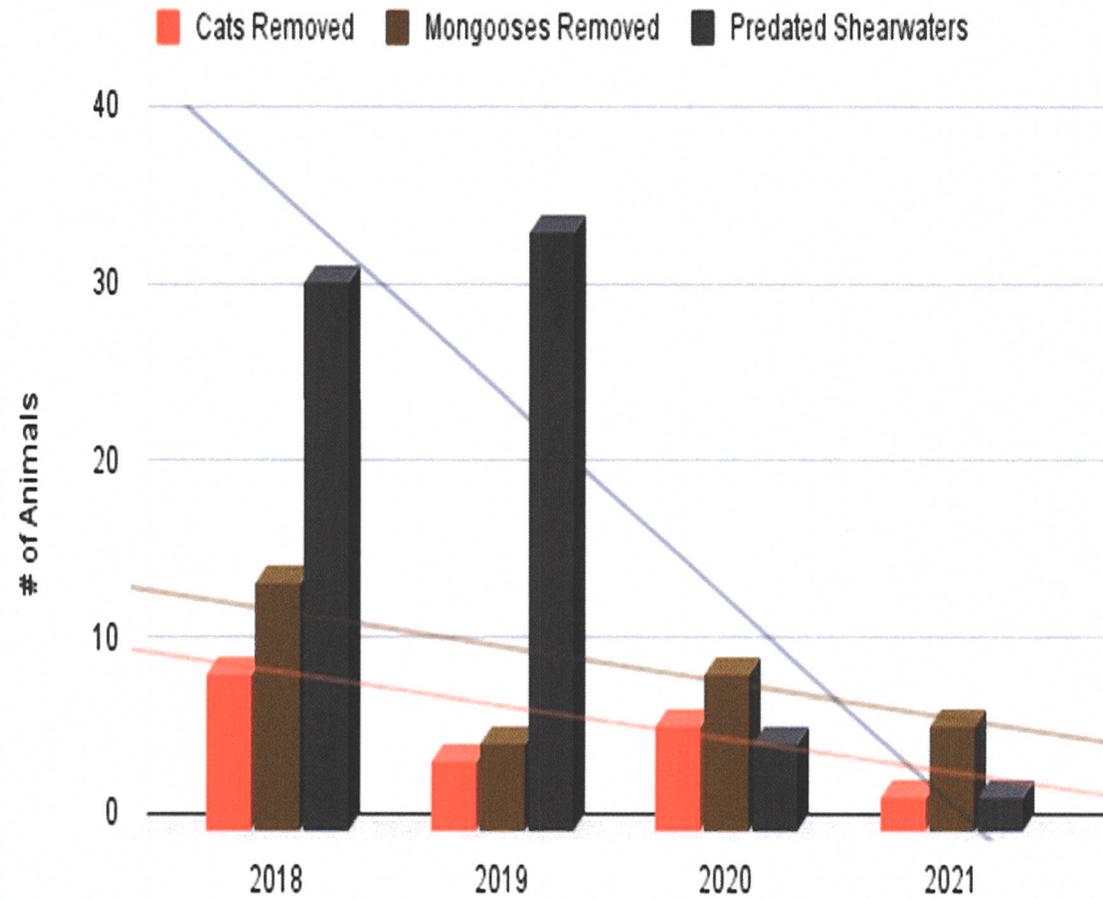
This shearwater colony has persisted for generations, but has gone unstudied and unmanaged until this century. Ecologically-driven colony management strategies urging community coexistence are needed for these encouraging trends to continue!



Mahalo nui loa to all of the community members and visitors who have supported this project!



## Cats & Mongooses Trapped & Dead Shearwaters Found

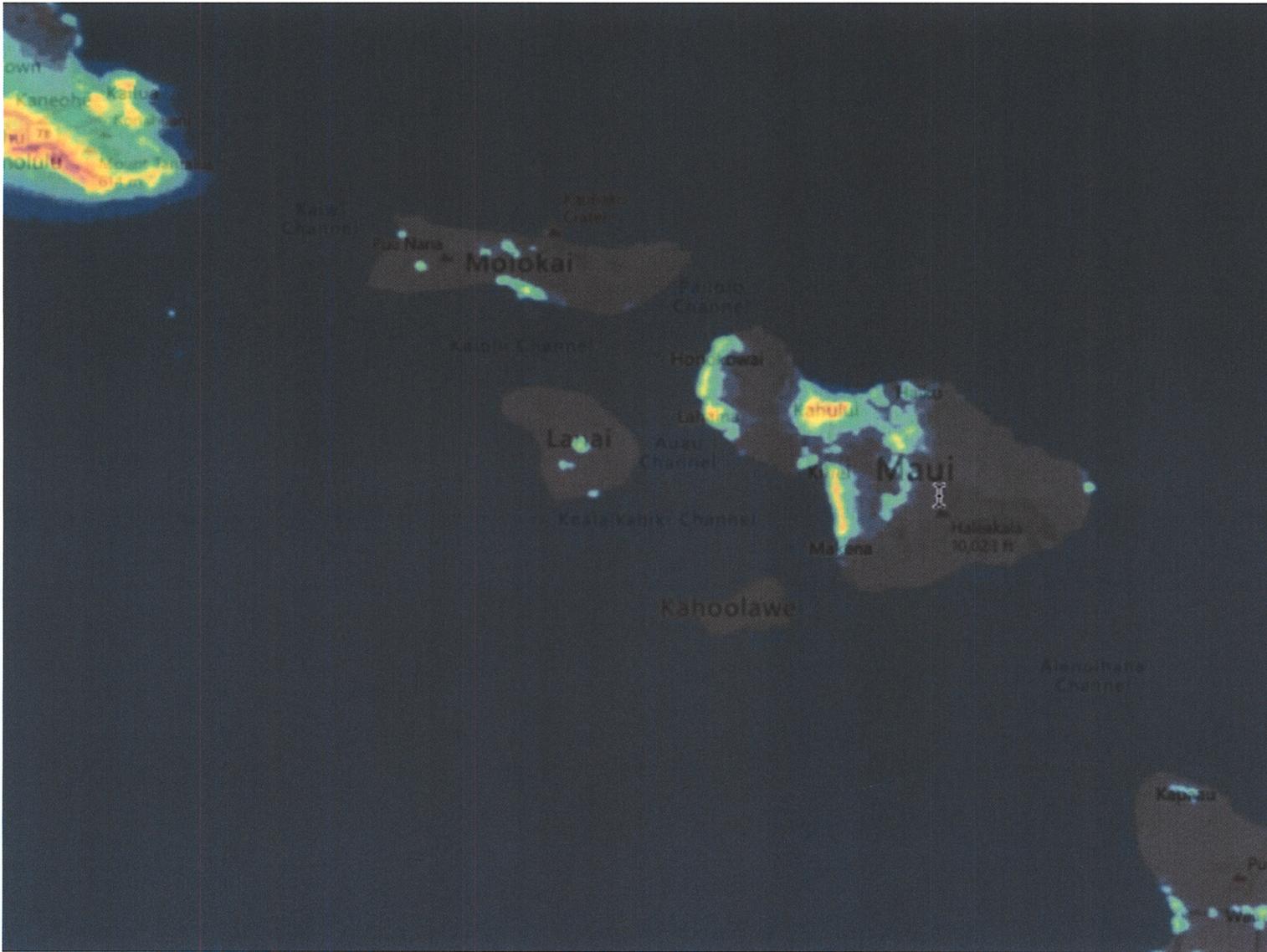


Seabird and Dark Skies Outreach and Education	Occurance	Description
<i>Recurring general advertisements</i>		
Radio Ad	Annually, Sep - Dec	Description of fallout and what to do with downed seabirds, including best light practices
SOS flyer	Annually in HECO billing statement	
Maui News Press Release	Annually at the start of fallout season	

<b>Seabird and Dark Skies Outreach and Education</b>	<b>Occurance</b>	<b>Description</b>
<i>Events: past and current</i>		
Maui Town Party Fridays	weekly (no longer occurring)	Tabling at events involves 2 or more staff engaging the public, answering questions, and distributing educational materials. Exhibits on display include seabird field guides, seabird models, interactive games for children, and pamphlets and other handouts with contact information. Invited talks are 30-60 minute educational presentations given by staff.
MNBG Ulu day	annually	
MNBG Arbor day	annually	
MECO Energy Fair	annually (no longer occurring)	
Rotary club meetings	various, upon invitation	
Hana Limu fest	annually	
Whale Day Kihei	annually	
Maui Ocean Center	weekly, also Seataks upon invitation	
UH Maui College Earth Day	annually	
Lana'i festival of aloha	annually	
Molokai Earth day	annually	
Whale Tales Kapalua	annually	
Maui Mauka training	various, upon invitation	

Seabird and Dark Skies Outreach and Education	Occurance	Description
<i>Targeted outreach</i>		
School visits	various, upon invitation	Staff interact with small groups to educate about seabirds and fallout specific to the location. We have curriculum tailored for all grade levels, and programs for hotel and resort staff regarding seabird and lighting awareness.
Kamehameha teachers	annually	
Resort and hotel visits	various, whenever possible	
Canvassing at local shopping centers	annually during fallout season	

Seabird and Dark Skies Outreach and Education	Description
<i>Pamphlets: distributed among local businesses, card racks, and at events</i>	
Maui Nui Seabird Recovery Project	About the activities of MNSRP
'Ua'u kani: Wedge-tailed shearwater	About the biology and threats to three most studied and managed Maui seabirds
'Ua'u: Hawaiian petrel	
'A'o: Newell's shearwater	
Dark Skies	About best lighting practices
SOS: Save our seabirds	About seabird fallout and recovery
Downed seabird instruction card	About seabird fallout and recovery



## FOUND A SEABIRD??? CALL 808-573-BIRD

Catch bird using gloves or by placing towel over bird



Place bird in a ventilated box with a towel at the bottom



Don't give the bird any food or water



Call Maui Nui Seabird Recovery Project at (808) 573-BIRD



### WHICH SEABIRD HAVE YOU FOUND???



For more information please visit our website at [www.mauiuseabirds.org](http://www.mauiuseabirds.org)

## PRINCIPLES FOR MINIMIZING SEABIRD DISTRACTION

Intensity: Use the **minimum** necessary to achieve lighting goals

- : Turn **lights off** when not needed
- : Use motion detection switches and timed lighting

Direction: Direct light **down** on to surfaces requiring illumination

- : Never allow light to shine above the horizontal

Shielding: Use to **direct light** to where it is needed for safety and aesthetics

- : Prevent light from shining above the horizontal

Wave Length: Keep it **LONG**

- : Eliminate short wave length light from luminaires
- : Strive for most light to be **>550 NM**
- : Use color temperatures less than **2700 Kelvin**, preferably **2200 Kelvin**