

CASE STUDY: Monitoring & Implementing Recovery for Hawaiian Monk Seals

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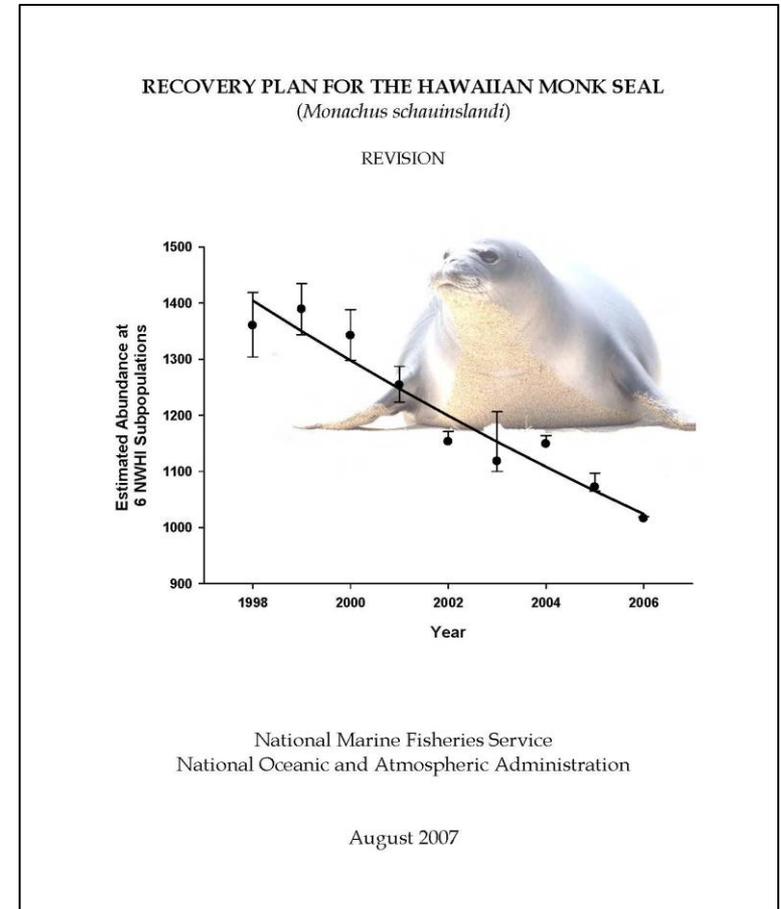
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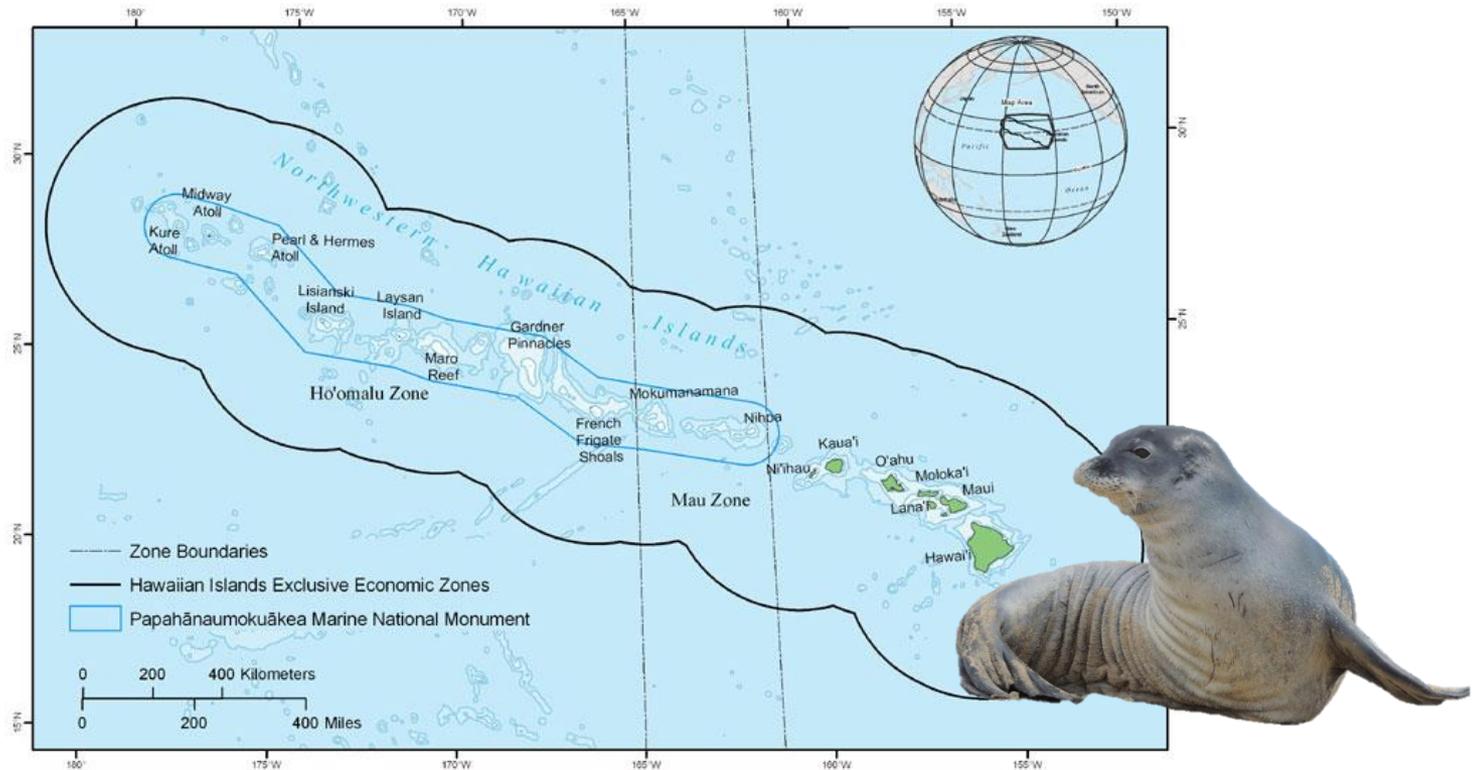
Introduction to the Plan

- Recovery Plan for the Hawaiian Monk Seal
(Monachus schauinslandii)
- August 2007, Revision
- Developed by recovery team and PIFSC
- Finalized by PIRO/PIFSC
- Based on solid science, continues to be good guidance

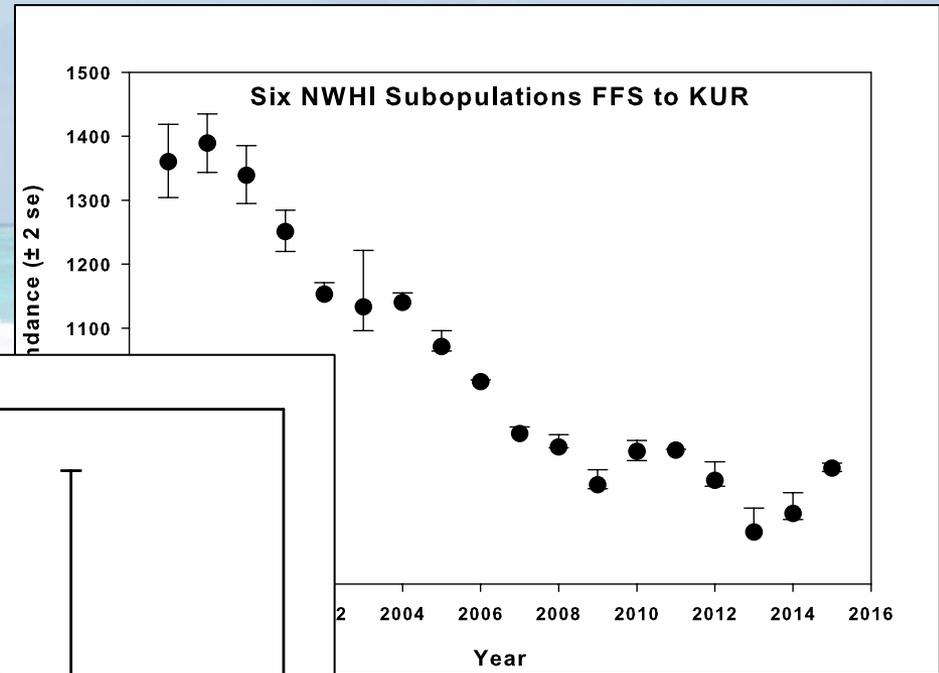
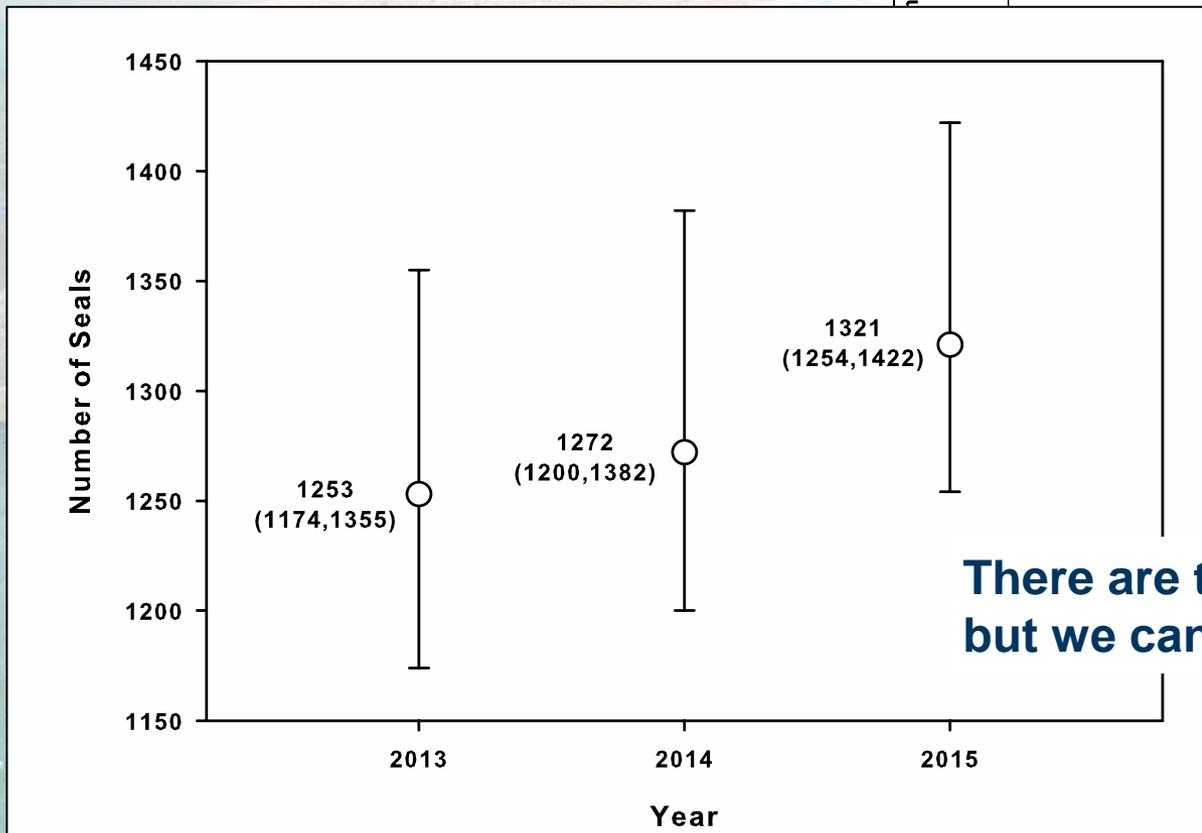


Status & Distribution

- Listed endangered
- Endemic to Hawaii
- Majority of population in NWHI; smaller, growing MHI population



Status & Distribution



There are things to be hopeful for, but we can't call it a trend just yet.

Hawaiian Monk Seal Recovery Team

- Team has existed since 1980
- Various forms, some time gaps
- Current team in place since 2014
 - Twelve members
 - Diversity of stakeholder groups
 - University professors
 - Cultural practitioners
 - Researchers
 - Environmental and fisheries advocates
 - Commercial and recreational fishermen
 - Development of MHI Management Plan
- Moving into implementation prioritization and assistance this year; too early to gauge success



Partner Engagement

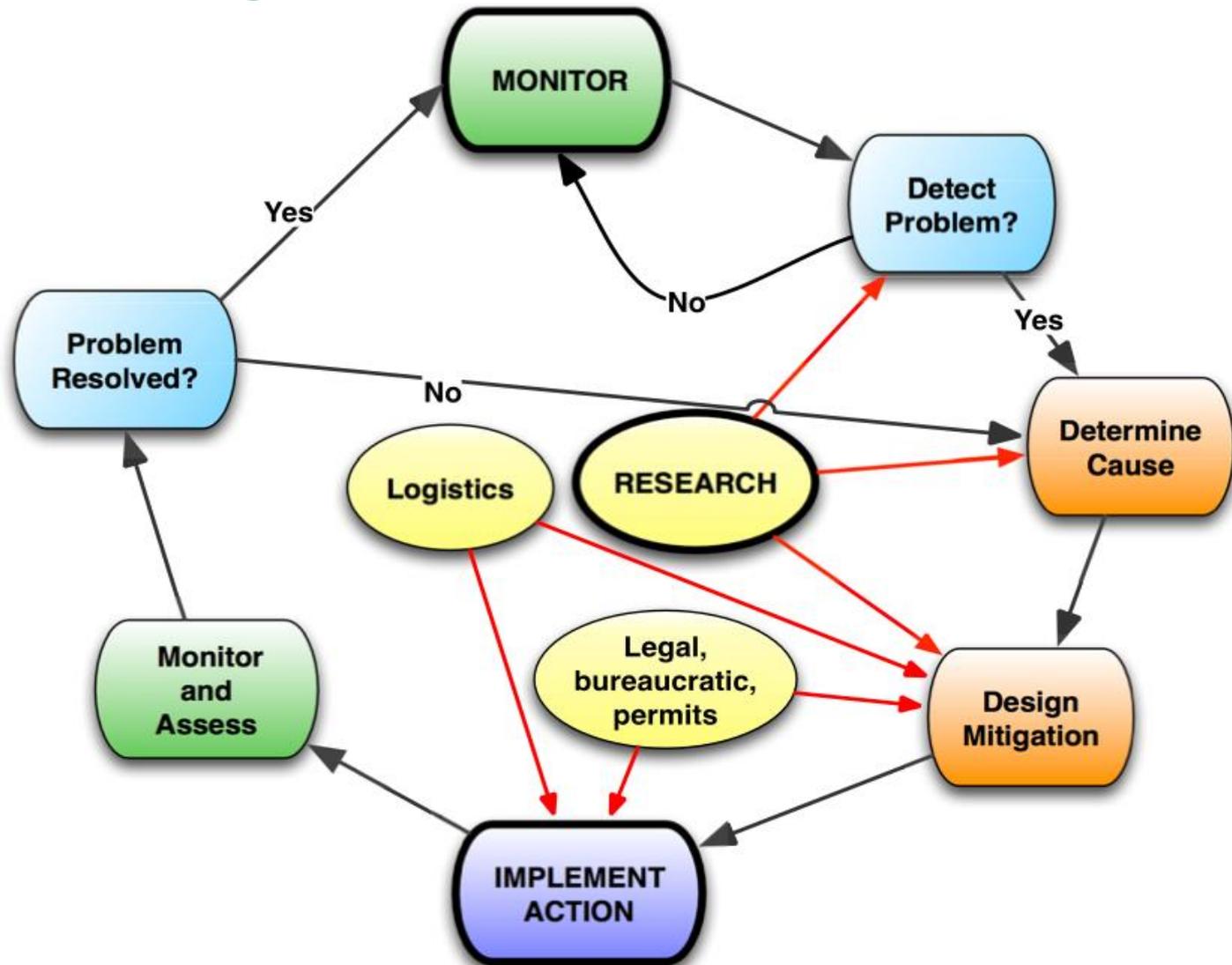


"The Ears and Voice of Hawaii's Fishermen"



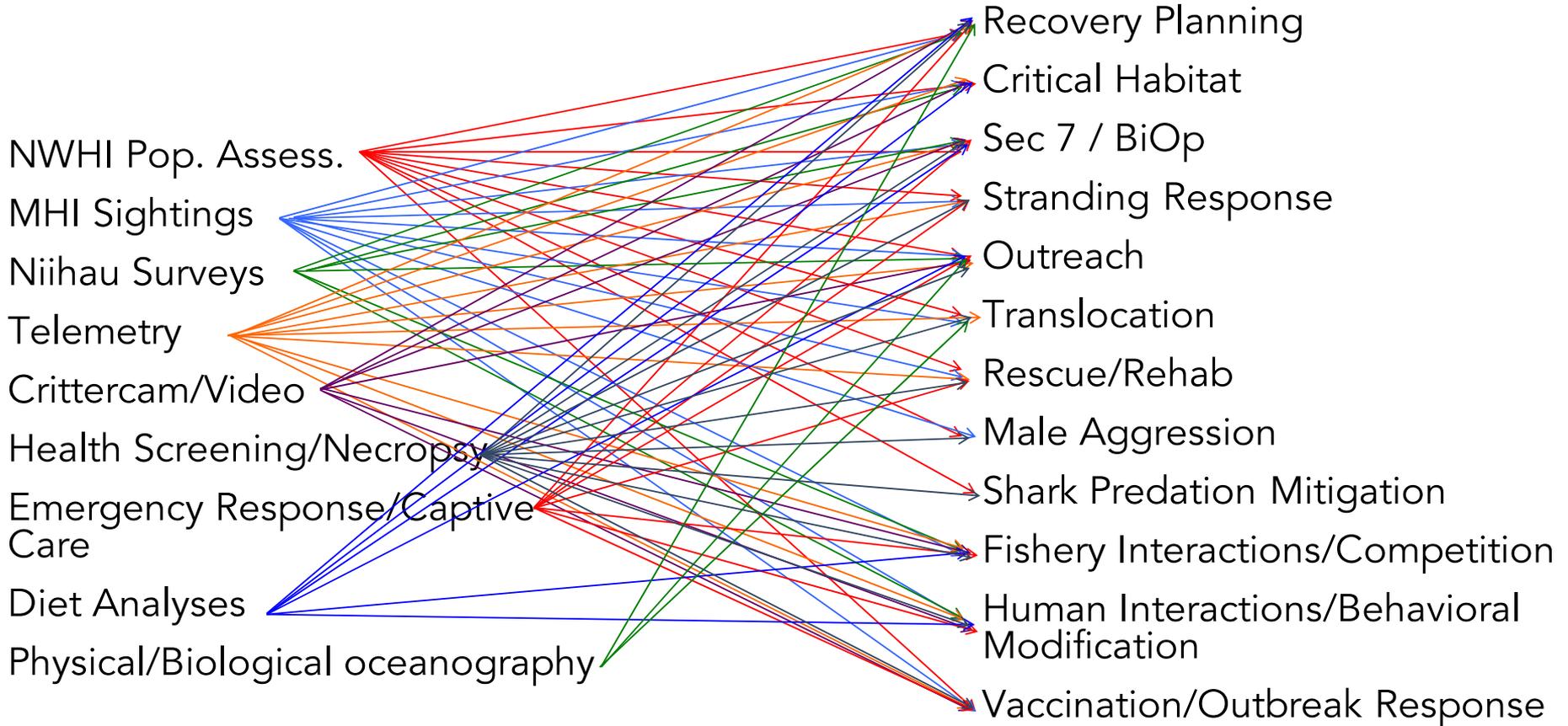
NOAA FISHERIES

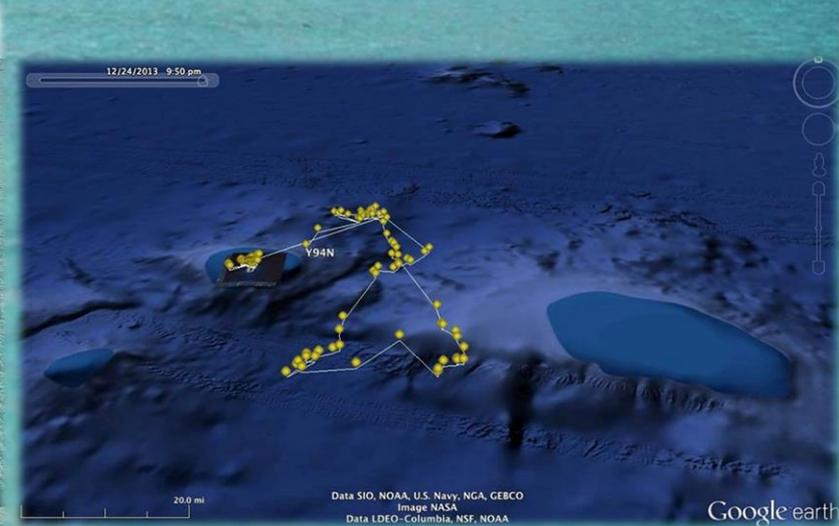
Recovery Monitoring



Data Streams

Recovery Actions





Benefits derived from opportunistic survival-enhancing interventions for the Hawaiian monk seal: the silver BB paradigm

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ABSTRACT: The cumulative benefits derived from historic small-scale, opportunistic interventions for the Hawaiian monk seal *Monachus schauinslandi* were assessed using multiple methods. The analysis focused on interventions undertaken to enhance survival of individual seals by reducing or eliminating immediate mortality risks. These interventions included dehookings, disentanglements, removing seals from high predation zones, medical interventions, and related activities. A total of 885 interventions occurred range-wide from 1980 to 2012. These included 645 interventions classified as mitigating medium- to high-risk threats, involving 532 different seals. In the Northwest Hawaiian Islands, where most of these interventions took place, we found a significant relationship between the number of interventions conducted annually and duration of field effort. The survival and reproduction of the intervention seals were tracked through multiple generations, using (1) known survival and reproduction of intervention seals, and (2) expected survival and reproduction as determined using demographic rates estimated for the population at large. This analysis indicated that 17–24% of the 2012 population comprised either intervention seals or descendants of intervention seals. If seals included in a multiyear (1984–1992) rehabilitation and captive care effort are also included, this proportion increases to 32%. These findings demonstrate the important link between the sustained population assessment field effort, the number of interventions that are enabled in association with those efforts, and the current status of the monk seal population. In contrast to a metaphorical ‘silver bullet’ whereby a result is achieved through a single (or a few) highly impactful tools, we liken our success in applying multiple interventions to a fusillade of many silver BBs.

KEY WORDS: Interventions · Hawaiian monk seal · Endangered species · Population recovery

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INTRODUCTION

The Hawaiian monk seal *Monachus schauinslandi* is among the most endangered marine mammals in the world. The species is listed as ‘endangered’ under the Endangered Species Act (41 Federal Register 51611), ‘depleted’ under the Marine Mammal

Protection Act, and ‘Critically Endangered’ by the IUCN. The demography, life history, and status of the monk seal have been investigated in the remote Northwestern Hawaiian Islands (NWHI) for over 30 yr and the litany of threats confronting the species in that portion of its range is well documented (e.g. Ragen & Lavigne 1990, Antonelis et al. 2006, Lowry et al. 2011). Despite this wealth of information, the species continues to decline in abundance at a rate of approximately 3.4% per year (Carretta et al. 2012).

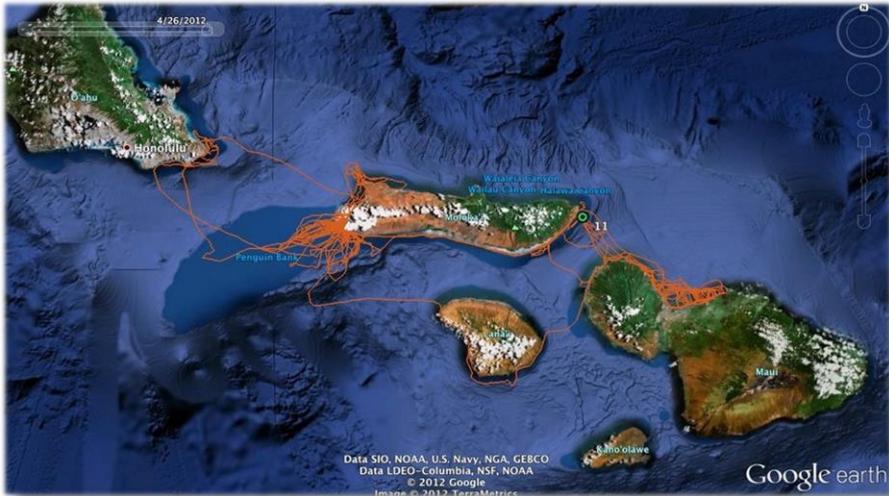
⁴BBs are small round ‘shot’ used in certain types of recreational guns.

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- 645 Interventions 1980-2012 to mitigate life-threatening risks
- 17-24% of 2012 population composed of intervention seals or their descendants.
- 32% if 1984-1992 captive care and release included.

Technology – Telemetry/Crittercam



UAS for assessing HMS

- ❖ Two platforms tested: Puma and APH-22 (hexacopter)
- ❖ Disturbance monitoring, mapping (photo and some LIDAR), monk seal assessment
- ❖ Flights at PHR, LIS, and LAY



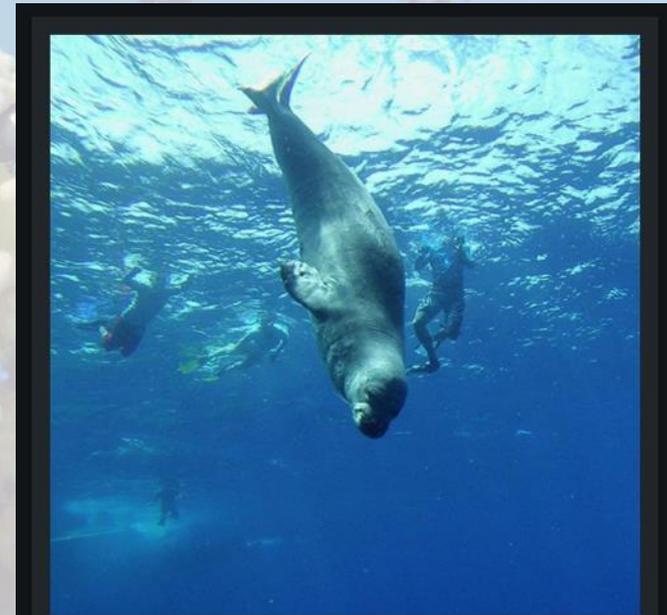
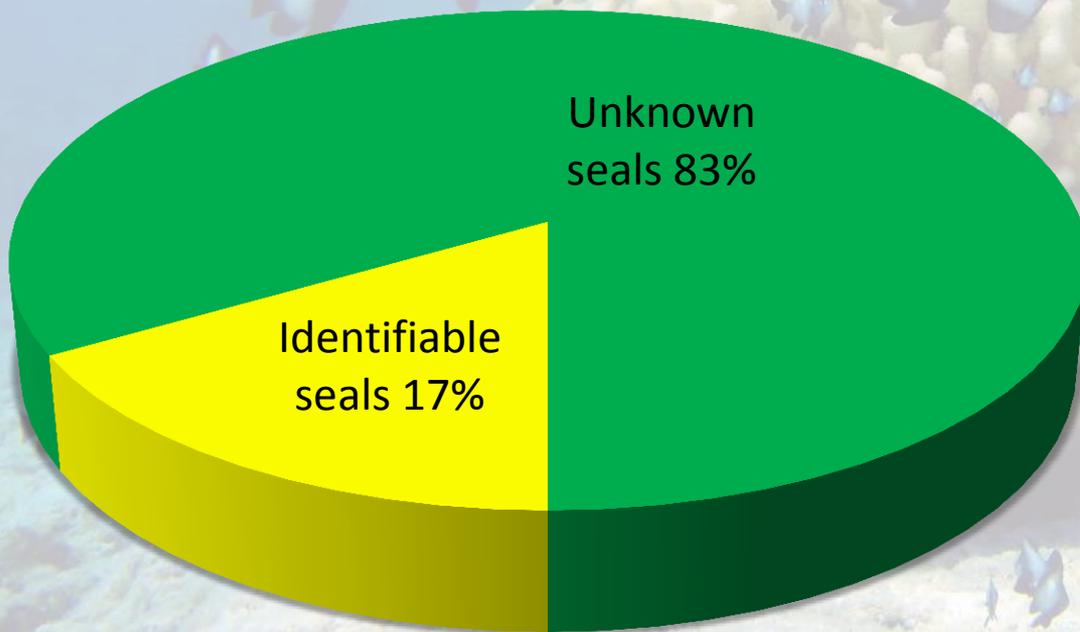
Instagram

- Supplements traditional data
- Heads up on “problem seals”
- Quantify human disturbance
- Improve public perceptions
- #monkseal
- 1 year
- 2,392 posts (wild seals)



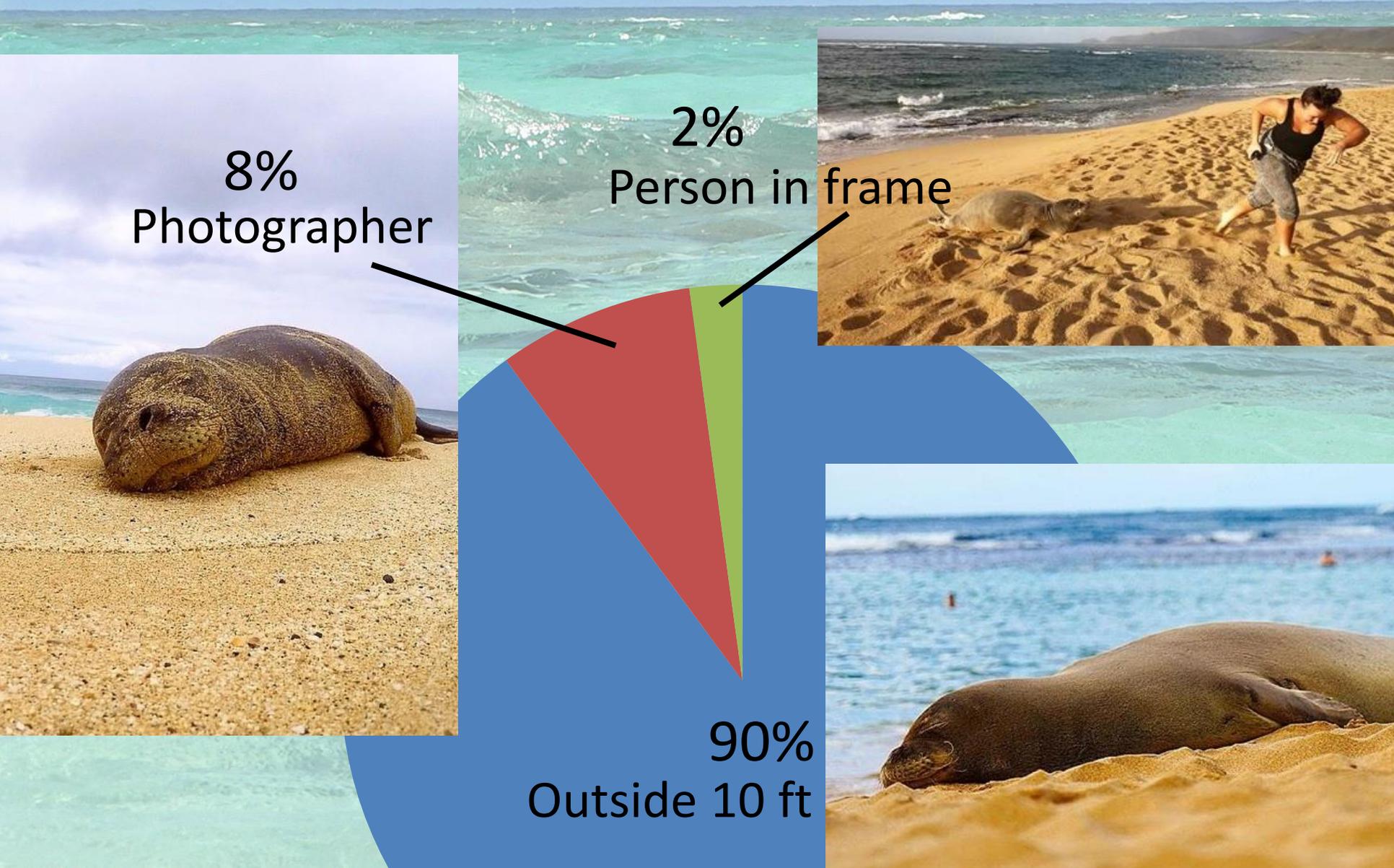
Sightings Data – Seal IDs

- 396 posts with identifiable seals
- 1996 posts with unidentifiable seals
- 68 unique IDs in all



This Hawaiian Monk Seal was definitely the star of dive. Its really rare to see these guys and it's always awesome when they stop by. #hawaiianmonkseal #endangered #monkseal #hawaii #water_of_our_world #wildlife #rsa_nature #tourtheocean #unrealhawaii #underwaterpig #ig_oahu #ourplanetdaily #planet_hd #povhawaii #aloha_outdoors #aroundtheworldpix #discoverocean #freediving #gopro #gopole #gopropacificislands #hawaiilife #hawaiiunchained #madeofocean #bg_underwater

People within 10 feet of seals



8%
Photographer

2%
Person in frame

90%
Outside 10 ft

Seal's reaction to disturbance



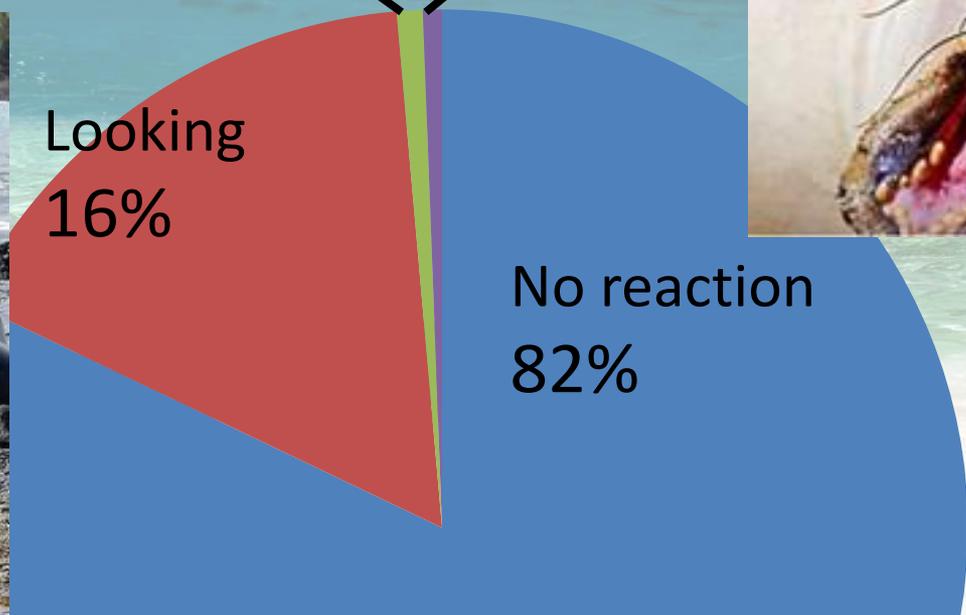
Mouthing
or barking
1%

Moving ~6ft
1%



Looking
16%

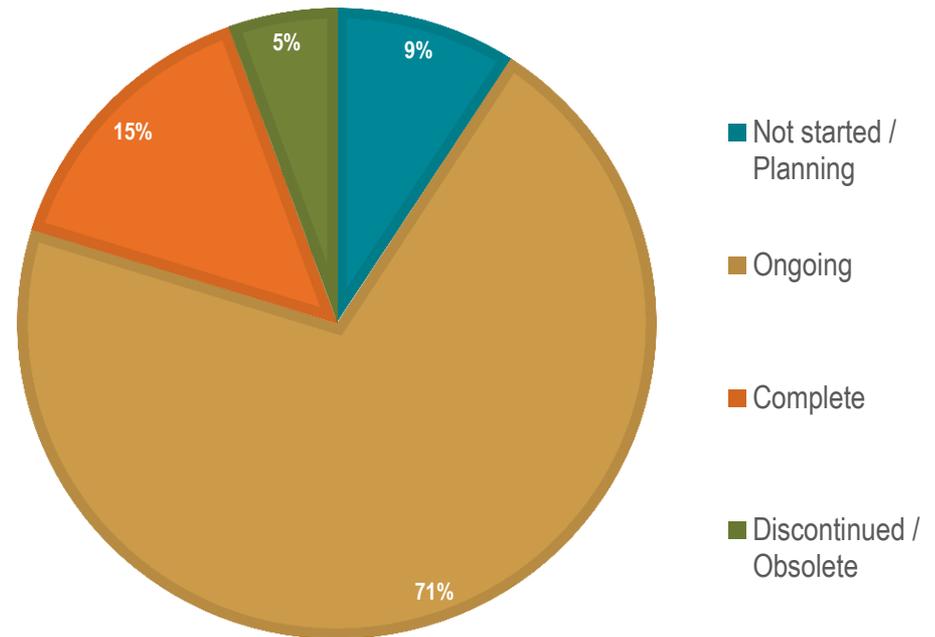
No reaction
82%



Recovery Plan Action Progress

- Highlights

- CritterCam diet studies
- Translocations
- Ke Kai Ola facility
- Field camps/population monitoring
- MHI Management Plan
- Morbillivirus vaccinations



Integration with other NMFS Programs

- Endangered Species Act
 - Section 7 consultations
- Marine Mammal Protection Act
 - Research and Enhancement Permits
 - Stranding Agreements
- Habitat Conservation Division
 - Coral Reef Conservation Program
 - Habitat Blueprint



Challenges Influencing Progress

- Ecological factors
 - Food availability
 - Shark predation
- Disease
 - Toxoplasmosis
- Human attitudes
 - Slow to change, but changing
- Instability of NWHI field camp funding
- Interagency cooperation



Summary

- Recovery Team to start assisting with prioritization and implementation in the MHI
- Continue to engage current partners, expand roles of current partners, seek new partnerships
- Incorporate robust monitoring dataset into next update/revision of Recovery Plan
- Incorporate new technology to improve efficiency, safety, and outreach
- Continue collaboration with Section 7 team, broaden MMPA program
- Keep moving forward on recovery actions!

A black seal pup is lying on a sandy beach, its mouth wide open in a yawn or call. The pup's fur is dark and speckled with fine white sand particles. It is positioned next to a large, textured rock that has some green algae or moss growing on it. The background is a soft-focus view of the ocean and sky.

Mahalo!