

# 2019 Hawaiian Monk Seal Field Season

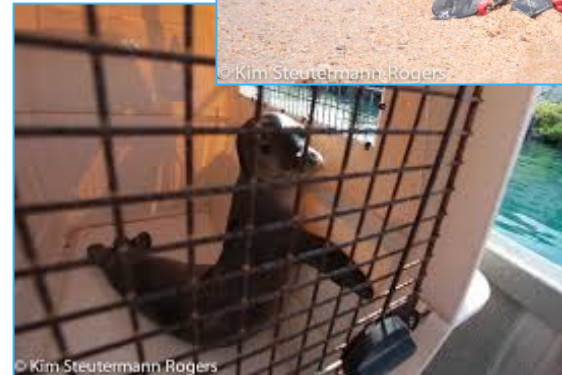


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NOAA Hawaiian Monk Seal Research Program

# 2019 Hawaiian Monk Seal Field Season

## 2019 NWHI Research & Recovery Activities

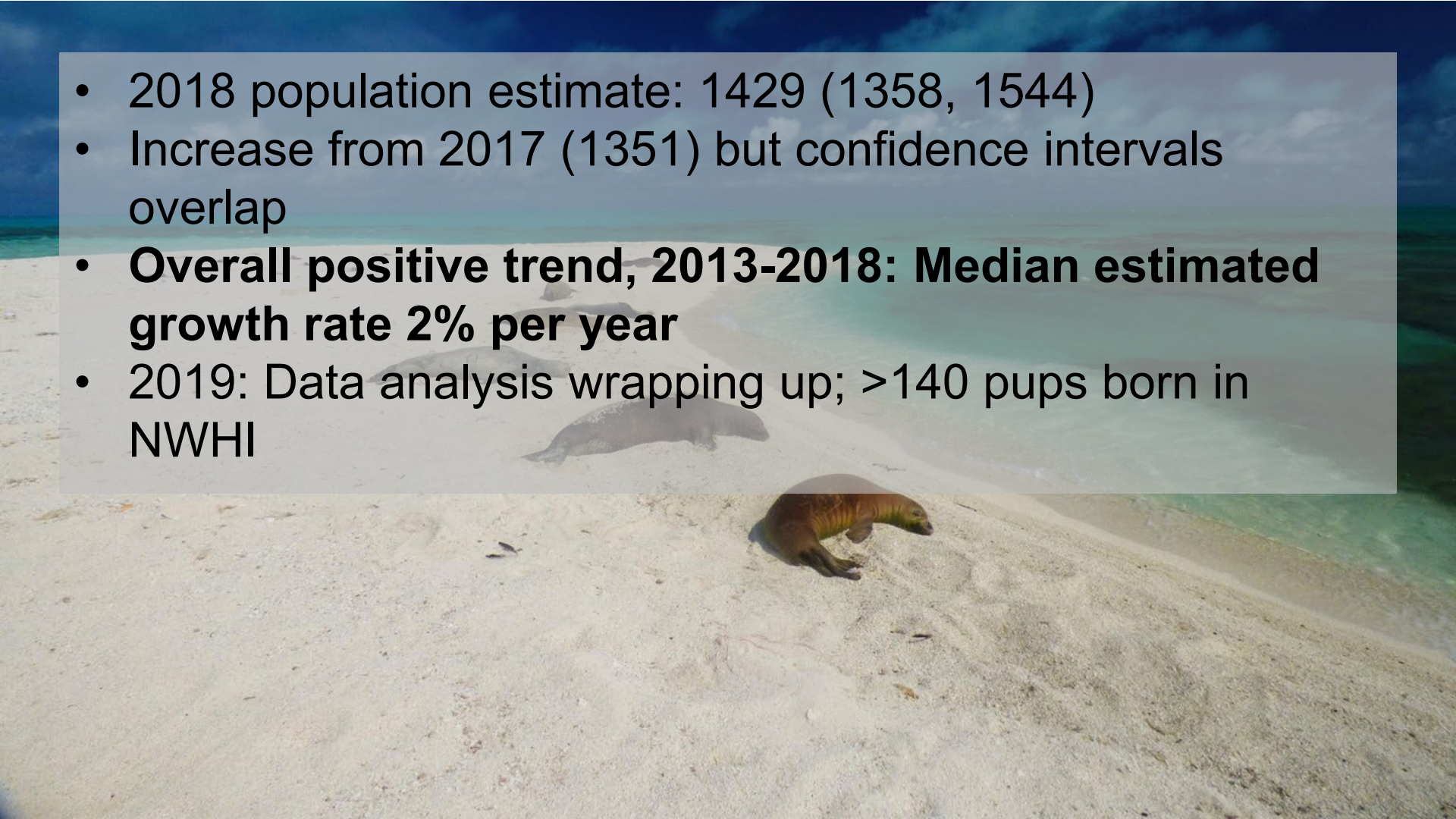
- Population assessment
- Individual marking
- Interventions
- Vaccinations
- Necropsy
- Debris removal
- Patient triage & transport to rehabilitation



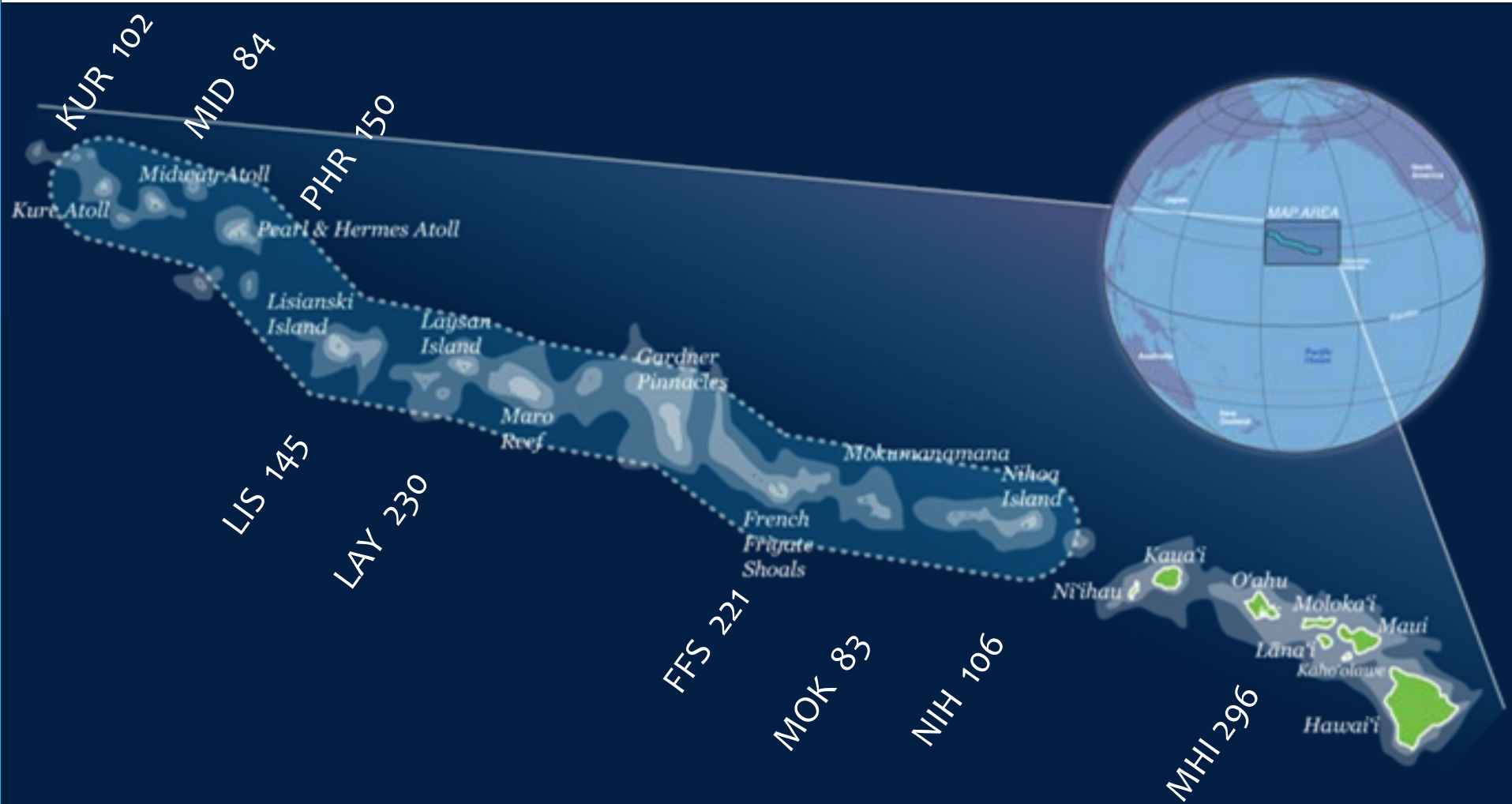


# Range-wide Population Update (2018)

- 2018 population estimate: 1429 (1358, 1544)
- Increase from 2017 (1351) but confidence intervals overlap
- **Overall positive trend, 2013-2018: Median estimated growth rate 2% per year**
- 2019: Data analysis wrapping up; >140 pups born in NWHI



# Range-wide Population Update (2018)





# 2019 Hawaiian Monk Seal Field Season

## 54 NWHI Interventions

- 14 FFS pups translocated from high shark predation
- 12 disentangled & 5 released from entrapment
- 8 pups translocated to avoid male aggression at PHR
- Mom-pups reunited
- 4 pups taken into care
- Wound treatment, etc.



## 34 MHI Interventions

- 7 dehookings (3 ingested)
- 2 disentangled
- Rehabilitation, health, other interventions



# Wild seals fully vaccinated: 2016-2019 (*Preliminary data*)

Total Population	# Seals Vaccinated	% Population Vaccinated	Herd Immunity (Estimated %)
1,400	764	54.6% of Population	60-90% <i>at most sites</i>



# 2019 Hawaiian Monk Seal Field Season

## Rehabilitation: Ke Kai Ola

- Public-private partnership with The Marine Mammal Center
- 32 seals rehabilitated since 2014
- Seals primarily from NWHI
- 4 seals rescued in August 2019 (PHR, LIS); awaiting release in April 2020





# 2019 Hawaiian Monk Seal Field Season

## Shark Mitigation at French Frigate Shoals

- 35 pups born
- 9 deaths/disappearances due to sharks
- 1 additional pup injured
- Predatory behavior observed at multiple islets
- Shark fishing effort relatively low
- 47 hook hours
- 1 targeted shark removed





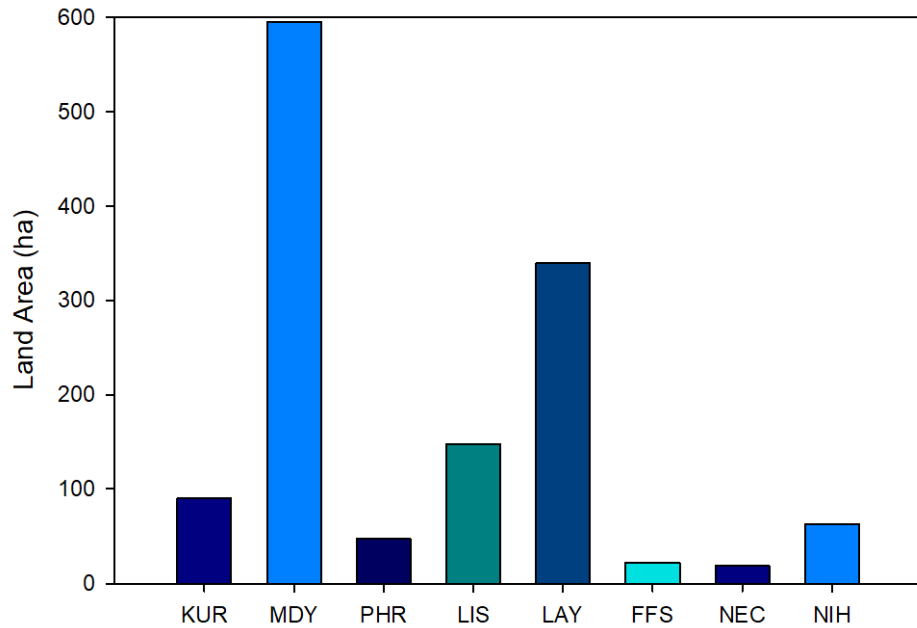
# 2019 Hawaiian Monk Seal Field Season

## Other concerns at French Frigate Shoals:

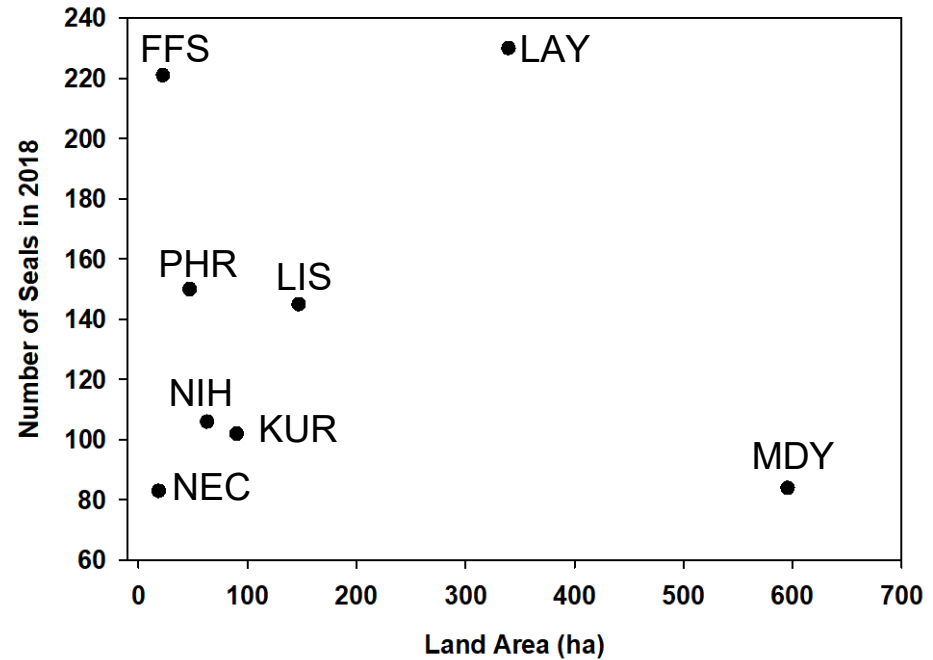
- Risks from degrading Tern Island infrastructure (destination site for translocated pups)
- Risks from sea level rise/habitat loss



# Shrinking habitat at French Frigate Shoals



Reynolds et al. 2012





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## Other concerns at French Frigate Shoals:

- Risks from degrading Tern Island infrastructure (destination site for translocated pups)
- Risks from sea level rise/habitat loss
- Some good news:  
Improved juvenile condition and survival



# FFS: Signs of encouragement

Survival and condition



# Hawaiian Monk Seals 2020 Season

## 2020 Assessment & Recovery Camps

- Deployment mission April 9-May 5
  - Monk seal & turtle camps
  - Release 4 rehabilitated seals
  - Foraging ecology studies
- Return mission Aug 9-Sep 4
- Midway, June-August (up to 6 wks)



MAHALO

