Captive feeding programs to increase juvenile monk seal survival: A case study and future applications

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Population Status

- Population is endangered and declining ~4% yearly
- Causes of mortality are numerous
- Juvenile survival in NWHI: < 1 in 5 seals survives to adulthood
Strategies to Increase Juvenile Survival

- Shark predation mitigation
- Aggressive males
- Relocation
- Worming
- Captive feeding and care
Objectives

• Will providing nutritional supplementation and protection enhance the survival of young female seals.
  - Would seals survive captivity?
  - Would seals gain weight?
  - Would seals forage normally after release?
  - Would seals survive post-release?

• Develop partnerships between Federal agencies and private organizations.

• Develop strategies for future applications of captive feeding programs.
Methods

• A total of seven Hawaiian monk seals (HMS) were held.
• Two seals were female fraternal twins born on Midway and were quarantined at Kewalo Research Facility – May 27–October 17, 2006.
• At Midway: held in temporary beach pens that were at least 30 x 130 ft with 1/4-1/3 of this being water area.
• Fed human-quality Atlantic herring two to three times per day. Multivitamin supplements were administered daily and the seals were weighed weekly.
Pre-Release Results

- Weaners were in captivity for 89 - 297 days.
- Change of body weight from 31 - 143%.
- PV02 (yearling) held for 23 days and eventually died.
Post-Release Monitoring

- Seals were tracked for between 38 - 96 days.

- Seals initially lost weight.
  - Two continued to deteriorate in body condition
  - Four stabilized or improved.

- The captive-fed seals foraged in shallow waters (< 20 m) after release and progressively dive deeper.
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• Four seals disappeared while in good condition.
  One continued to lose condition.
  One disappeared over the winter/spring.
Conclusions and Considerations

- Demonstrated that young seals could be held in captivity and successfully fed.
- Older juvenile seals (age 1-3 years) may be more susceptible to stress in captive care.
- Benefit to allowing seals time to free forage before capture.
- Low post-release survival. Issues of dealing with predation, continued nutritional stress, etc.
- Need for controlled environment.
- Partnerships work.
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