

File No. 16632 Appendix B: Take Tables

Table 1. Proposed annual takes of Hawaiian monk seals in the Hawaiian Archipelago and Johnston Atoll. Hawaiian Archipelago = Main Hawaiian Islands (MHI) and adjacent islets, and Northwestern Hawaiian Islands (NWHI). **MHI**=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. **NWHI**=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles.

Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
1. Monitoring (Research)	Any	Both	250	5	Disturbance from visual observation and photo-identification during ground monitoring (including terrestrial/amphibious unmanned vehicles), vessel and aerial surveys (including unmanned aerial vehicles); and from installation and repair of remote video cameras	MHI	Annually at any time of year.
			100	3		Nihoa Is.	
			75	3		Necker Is.	
			250	5		French Frigate Shoals	
			10	1		Gardner Pinnacles	
			400	5		Laysan Is.	
			275	5		Lisianski Is.	
			400	5		Pearl and Hermes Reef	
			150	5		Midway Atoll	
			200	5		Kure Atoll	
			5	3		Johnston Atoll	

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
2.a Tagging (Research)	Any except most nursing pups, lactating or obviously pregnant females.	Both	60	3	Restraint, tagging (flipper and PIT), collect flipper plugs, vibrissae, morphometrics (length and girth), ultrasound	MHI	Annually at any time of year (predominantly during summer field camps). Seals may also be taken by Tasks 1 and 3. Seals may also have ultrasound performed concurrent with flipper tagging At French Frigate Shoals, 35 weaned pups of either sex may have a sonic tag deployed on a third flipper tag. Any remaining nursing pups at end of field season may be tagged.
			25	3		Nihoa Is.	
			15	3		Necker Is.	
			100	3		French Frigate Shoals	
			75	3		Laysan Is.	
			70	3		Lisianski Is.	
			70	3		Pearl and Hermes Reef	
			50	3		Midway Atoll	
			50	3		Kure Atoll	
			5	3		Johnston Atoll	
			2.b Retagging (Research)	Any except most nursing pups, lactating or obviously pregnant females		Both	

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3. Marking (Research)	Any	Both	150	3	Temporary bleach marking	MHI	Annually at any time of year. All of the animals may also be taken by disturbance (Task 1) and tagging (Task 2).
			60	3		Nihoa Is.	
			30	3		Necker Is.	
			250	3		French Frigate Shoals	
			250	3		Laysan Is.	
			250	3		Lisianski Is.	
			250	3		Pearl and Hermes Reef	
			100	3		Midway Atoll	
			150	3		Kure Atoll	
			5	3		Johnston Atoll	
4.a Health Screening and Instrumentation (Research)	Any healthy seal excluding lactating females with pups and nursing pups	Both	100	2	Restraint, sedation, tagging, sampling (blood, swabs, blubber biopsy, vibrissae), weight, morphometrics, ultrasound, instrumentation	Hawaiian Archipelago and Johnston Atoll	Annually any time of year. Sixty (60) healthy seals may be instrumented. Recaptures for instrument removal and sampling. All animals may have been taken by Tasks 1-3.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
4.b Health Screening, Treatment, and Instrumentation (Research and Enhancement)	Any unhealthy seal excluding lactating females with pups and nursing pups	Both	30	2	Restraint, sedation, tagging, sampling (blood, swabs, blubber biopsy, vibrissae), bleach marking, treatment if needed (lance abscesses, administer long-acting antibiotic), weight, morphometrics, ultrasound, instrumentation, humane euthanasia or incidental mortality of 10 moribund animals	Hawaiian Archipelago and Johnston Atoll	Annually at any time of year. Includes humane euthanasia of up to 10 moribund or severely injured seals at discretion of veterinarian over a five-year period. All animals may have been taken by Tasks 1-3.
4.c Health Screening, Treatment, and Instrumentation (Enhancement)	Any unhealthy seal excluding lactating females with pups and nursing pups	Both	As warranted (est. < 30)	As directed by vet	Restraint, treatment (lance abscesses, administer long-acting antibiotic), sedation, vibrissae, bleach marking, and instrumentation	Hawaiian Archipelago and Johnston Atoll	Annually at any time of year. All animals may have been taken by Tasks 1-3. May also occur during health screening of unhealthy seals.
5.a Intestinal Parasite Treatment (De-worming Research and Enhancement)	Pups \geq 120 days post-weaning and juveniles up to age 3	Both	300	8	Restraint, weight, morphometrics, ultrasound, fecal collection (voided feces or fecal sample collected via fecal loop or digital extraction); up to 4 deworming treatments using oral or injectable drugs; up to 4 post-treatment monitoring takes at regular intervals (visual assessments and recapture for weight, morphometrics, and fecal sampling)	Hawaiian Archipelago and Johnston Atoll	Annually, year-round. Treatments may be combined with other activities requiring restraint and sedation Medical treatments authorized at discretion of consulting/attending veterinarian.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
				4	Restraint, weight, morphometrics, ultrasound, fecal collection (voided feces, fecal loop, or digital extraction), and topical anti-helmintic treatment		If monthly treatment determined effective during research phase, capture/restraint for follow up sampling and morphometrics would be discontinued and only topical treatment would be administered.
				8	Additional topical anti-helmintic treatments via topical application without capture and restraint (up to 12 monthly treatments annually via topical anti-helmintic);		
6.a Translocation to Save Abandoned Pups (Enhancement)	Nursing pup	Both	As warranted (est. < 20)	6	Capture, restraint, and relocation by hand to natural mother or prospective foster mother	Hawaiian Archipelago, Johnston Atoll	Establishing/re-establishing maternal association. Annually at any time of year but predominantly during summer field camps. Most takes will occur in the NWHI (intra-island/atoll).
6.b Translocation to Alleviate Risks (Enhancement)	All	Both	As warranted (est. < 60)	3	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation, temporary holding, and relocation from high risk areas via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Risk alleviation. Annually at any time of year. Translocations within or between any subpopulations in the species range allowed. Pups near weaning (e.g., within a few days of the mother leaving) and that are at high risk of mortality may be translocated. Seals may also be hazed away from dangerous locations.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
6.c Two-Stage Translocation (Enhancement)	Weaned Pup	Both	20	3	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation, temporary holding, translocation from areas of low survival via boat, ship, vehicle, or aircraft	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 1 st stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. Translocations within the NWHI or from the MHI to the NWHI, are allowed, but not from the NWHI to MHI. Details to be determined through application of decision framework in Appendix A.
	Juvenile and Sub-adult	Both	30	3	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation, temporary holding, translocation via boat, ship, vehicle, or air craft Surviving juveniles that had been translocated as weaned pups returned to their natal or other suitable site (includes seals from 1 st stage of translocation that remained at recipient site until at least age 2 yr).	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 2 nd stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. Translocations within or between any subpopulations in the species range allowed. Note that seals originally born in the MHI and previously taken to the NWHI may be returned to the MHI. Details to be determined through application of decision framework in Appendix A.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
6.d Translocation for Research	Juvenile, sub-adult and adult	Both	6	3	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation, temporary holding, translocate between subpopulations	Hawaiian Archipelago, Johnston Atoll	Research to determine survival of translocated juveniles to inform two-stage translocation enhancement. Annually at any time of year. Translocations within or between any subpopulations in the species range allowed. Seals with unmanageable behavior in the MHI may be translocated to the NWHI as part of this study.
7.a Adult Male Removal (Enhancement)	Adult	Male	20	2	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation/translocation, permanent captivity, or euthanasia	Hawaiian Archipelago; Johnston Atoll	Up to 20 males may be removed annually, but only 10 lethal removals over a five-year period. Taste aversion testing may occur on adult male seals brought into captivity.
7.b Adult Male Hazing (Enhancement)	Adult	Male	As warranted (est. <10)	As warranted (est. <10)	Haze	Hawaiian Archipelago; Johnston Atoll	Aggressive males may be hazed away from conspecific victims in cases of immediate risk of injury or death or when specific males repeatedly attack conspecifics.
8. Disentangle and Dehook (Enhancement)	Any	Both	As warranted (est. < 75)	As warranted	Disentanglement and dehooking (with or without capture, sedation, and release); collect vibrissae	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year. All animals may have been taken by Tasks 1-3.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
9. Conduct Necropsies (Research)	Any	Both	As warranted	1	Necropsy any seal found dead, that died during restraint, or that was euthanized. After, use seal tissue as bait for permitted shark removals	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year.
10. Opportunistic Retrieval of Samples (Research)	Any	Both	1,100	Unlimited samples	Collect parts (placentae, scats, spews, and molted fur/skin) from haul out areas	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year but predominantly during summer field camps.
11. Import and Export Parts (Research)	Any	Both	Unlimited import/export	Unlimited samples	Import/export/receive	World-wide (including but not limited to Canada, the Netherlands, Scotland, Greece, Australia)	Annually at any time of year. Export (and re-import) Hawaiian monk seal samples collected under the authority of this permit. Import (and re-export) Mediterranean monk seal specimens for research related to monk seal conservation.
12. Supplemental Feeding (Enhancement)	Pup or Juvenile	Both	12	Unlimited	Supplemental feeding of post-rehabilitated seals	NWHI	Annually at any time of year seals may be fed at daily or longer intervals for up to one year.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
13. Behavioral Modification (Research and Enhancement)	Any	Both	20	As warranted (est. <20)	Intentional harassment for behavior modification. Aversive conditioning and other methods including but not limited to: Capture restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), instrumentation, translocation, temporary holding; hazing using visual, audible and tactile means; impeding movement with barriers, etc. Chemical taste aversion with lithium chloride in captivity only.	MHI	Annually at any time of year. Prevent seals from socializing with humans; alter behavior of seals socialized to humans or behaving in a manner dangerous to the seal or public safety. Seals may be brought into temporary captivity for taste aversion research. Experimental protocols to determine optimal methods.
14. Vaccinations (Research and Enhancement)	Any	Both	1,100	4	Capture, restraint, sedation, sampling (blood, swabs, blubber biopsy, vibrissae), and administration of vaccine	Hawaiian Archipelago	Annually at any time of year.
15. Incidental harassment of monk seals (Research and Enhancement)	Any	Both	400	3	Incidental harassment during any research and enhancement activity including opportunistic sample collection	Hawaiian Archipelago; Johnston Atoll	Total incidental harassment over all activities.

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Task	Size (Age)	Sex	No. Seals Taken/Year	No. Takes/Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
16.a Unintentional Mortality (Research)	Any	Both	2	1	During any research activity	Hawaiian Archipelago; Johnston Atoll	Four unintentional mortalities over a five-year period not to exceed two deaths in any one year.
16.b Unintentional Mortality (Enhancement)	Weaned pup	Both	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four unintentional mortalities over a five-year period not to exceed two deaths in any one year.
	Juvenile/subadult	Both	4	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Eight unintentional mortalities over a five-year period not to exceed four deaths in any one year.
	Adult	Male	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four unintentional mortalities over a five-year period not to exceed two deaths in any one year.

Table 2. Proposed annual takes of non-releasable captive Hawaiian monk seals. Activities may take place at any of the following locations in the U.S.: NOAA NMFS Ford Island Facility, Honolulu, HI; Long Marine Laboratory, University of California at Santa Cruz, CA; Sea Life Park Hawaii, Waimanalo, HI; Sea World San Antonio, TX; Waikiki Aquarium, Honolulu, HI; or any other APHIS-approved facility. Includes current non-releasable captive seals and future non-releasable seals.

Task	Size (Age)	Sex	No. Animals Taken/ Year	No. Takes/ Individual/ Year	Type of Takes	Locations	Dates/Time Period And Details
1. Chemical Behavioral Modification of Adult Males (Research)	Adult	Male	10	6	Capture, restraint, sedation, biomedical sampling, and administration of testosterone reduction agent; follow up sampling to monitor testosterone and behavior	Any facility permitted to hold adult male monk seals including but not limited to those listed above.	Annually at any time of year
2. Behavioral Modification (Research)	Any	Both	20	20	Intentional harassment for behavior modification. Aversive conditioning and other methods including but not limited to: hazing using visual, audible and tactile means; impeding movement with barriers.	Any facility permitted to hold monk seals including but not limited to those listed above	Annually at any time of year. Prevent seals from socializing with humans; alter behavior of seals socialized to humans or behaving in a manner dangerous to the seal or public safety. Experimental protocols to determine optimal methods.
3. Vaccinations (Research)	Any	Both	20	5	Vaccination on day 0 and day 14; Serum and nasal sampling for vaccine antibody study on days 0, 24, 42, 365	Any facility permitted to hold monk seals including but not limited to those listed above	Seals injected 2x/year and sampled 4x/year (first sampling combined with initial vaccine) for total of 5 takes per animal per year.

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Task	Size (Age)	Sex	No. Animals Taken/ Year	No. Takes/ Individual/ Year	Type of Takes	Locations	Dates/Time Period And Details
4. Validation Studies (Research)	Any	Both	20	As warranted	Capture, restraint, sedation, marking (flipper tagging, PIT tagging), biomedical sampling, de-worming, instrumentation	Any facility permitted to hold monk seals including but not limited to those listed above	Annually at any time of year to validate or test field methods
5. Adult Male Removal (Enhancement)	Adult	Male	10	1	Temporary holding under this permit until such time as another facility is permitted to permanently maintain the seals	Any facility meeting APHIS standards to hold monk seals	Removal of adult males to permanent captivity; temporary holding at Ford Island or other facility

Table 3. Proposed annual incidental takes of small cetaceans. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, and Northwestern Hawaiian Islands (NWHI). MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles.

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1. Incidental harassment of spinner dolphins	Any	Both	500	5	Disturbance from vessel surveys of monk seals and transiting lagoons between monk seal ground surveys	Hawaiian Archipelago	Annually at any time of year.
2. Incidental harassment of bottlenose dolphins	Any	Both	20	1	Disturbance from vessel surveys of monk seals and transiting lagoons between monk seal ground surveys	Hawaiian Archipelago	Annually at any time of year.