

chapter 35. Principal Deputy Assistant Secretary for Community Planning and Development, James A. Jemison II, having reviewed and approved this document, is delegating the authority to electronically sign this document to submitter, Nacheshia Foxx, who is the Federal Register Liaison for HUD, for purposes of publication in the **Federal Register**.

Nacheshia Foxx,

Federal Register Liaison for Department of Housing and Urban Development.

[FR Doc. 2021-12994 Filed 6-23-21; 8:45 am]

BILLING CODE 4210-67-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R8-ES-2021-N008; FF08EVEN00-FXES111608MSSO0]

Marine Mammal Protection Act; Stock Assessment Report for the Southern Sea Otter in California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability of final revised stock assessment report for the southern sea otter in California; response to comments.

SUMMARY: In accordance with the Marine Mammal Protection Act of 1972, as amended (MMPA), and its implementing regulations, we, the U.S. Fish and Wildlife Service (Service), announce that we have revised our stock assessment report (SAR) for the southern sea otter stock in the State of California, including incorporation of public comments. We now make our final revised SAR available to the public.

ADDRESSES: *Document Availability:* You may obtain a copy of the SAR from our website at <https://www.fws.gov/ventura/endangered/species/info/sso.html>. Alternatively, you may contact the Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, CA 93003; telephone: 805-644-1766.

FOR FURTHER INFORMATION CONTACT: For information on the methods, data, and results of the stock assessment, contact Lilian Carswell by telephone (805-677-3325) or by email (Lilian_Carswell@fws.gov). Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.

SUPPLEMENTARY INFORMATION: We are announcing the availability of the final revised SAR for the southern sea otter

(*Enhydra lutris nereis*) stock in the State of California.

Background

Under the MMPA (16 U.S.C. 1361 *et seq.*) and its implementing regulations in the Code of Federal Regulations (CFR) at 50 CFR part 18, we regulate the taking; import; and, under certain conditions, possession; transportation; purchasing; selling; and offering for sale, purchase, or export, of marine mammals. One of the goals of the MMPA is to ensure that stocks of marine mammals occurring in waters under U.S. jurisdiction do not experience a level of human-caused mortality and serious injury that is likely to cause the stock to be reduced below its *optimum sustainable population* (OSP) level. OSP is defined under the MMPA as “the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element” (16 U.S.C. 1362(9)).

To help accomplish the goal of maintaining marine mammal stocks at their OSPs, section 117 of the MMPA requires the Service and the National Marine Fisheries Service (NMFS) to prepare a SAR for each marine mammal stock that occurs in waters under U.S. jurisdiction. Each SAR must include:

1. A description of the stock and its geographic range;
2. A minimum population estimate, current and maximum net productivity rate, and current population trend;
3. An estimate of annual human-caused mortality and serious injury by source and, for a strategic stock, other factors that may be causing a decline or impeding recovery of the stock;
4. A description of commercial fishery interactions;
5. A categorization of the status of the stock; and
6. An estimate of the *potential biological removal* (PBR) level.

The MMPA defines the PBR as “the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its [OSP]” (16 U.S.C. 1362(20)). The PBR is the product of the minimum population estimate of the stock (N_{min}); one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size (R_{max}); and a recovery factor (F_r) of between 0.1 and 1.0. This can be written as:

$$PBR = (N_{min})^{(1/2 \text{ of the } R_{max})}(F_r)$$

Section 117(c)(1) of the MMPA requires the Service and NMFS to

review the SARs (a) at least annually for stocks that are specified as strategic stocks, (b) at least annually for stocks for which significant new information is available, and (c) at least once every 3 years for all other stocks. If our review of the status of a stock indicates that it has changed or may be more accurately determined, then the SAR must be revised accordingly. (16 U.S.C. 1386(c)(2)).

A *strategic stock* is defined in the MMPA as a marine mammal stock “(A) for which the level of direct human-caused mortality exceeds the [PBR] level; (B) which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act of 1973 [as amended] (16 U.S.C. 1531 *et seq.*) [the “ESA”], within the foreseeable future; or (C) which is listed as a threatened species or endangered species under the [ESA], or is designated as depleted under [the MMPA].” (16 U.S.C. 1362(19)).

Stock Assessment Report History for the Southern Sea Otter in California

The southern sea otter SAR was last revised in 2017 (82 FR 40793, August 28, 2017). Because the southern sea otter qualifies as a strategic stock due to its listing as a threatened species under the ESA, the Service reviewed the stock assessment in 2018. The review concluded that the status had not changed, nor could it be more accurately determined. However, upon review in 2019, the Service determined that revision was warranted because its status could be more accurately determined. Before releasing our draft SAR for public review and comment, we submitted it for technical review internally and for scientific review by the Pacific Regional Scientific Review Group, which was established under the MMPA (16 U.S.C. 1386(d)). In a January 27, 2020, **Federal Register** notice (85 FR 4696), we made our draft SAR available for the MMPA-required 90-day public review and comment period. Following the close of the comment period, we revised the SAR based on public comments we received (see Response to Public Comments) and prepared the final revised SAR. Between publication of the draft and final revised SARs, we have not revised the status of the stock itself (the southern sea otter continues to retain its status as a strategic stock). However, we have updated the SAR to include the most recent information available.

Summary of Final Revised Stock Assessment Report for the Southern Sea Otter in California

The following table summarizes some of the information contained in the final

revised SAR for southern sea otters in California, which includes the stock's N_{min} , R_{max} , F_r , PBR, annual estimated human-caused mortality and serious injury, and status:

SUMMARY: DRAFT REVISED STOCK ASSESSMENT REPORT FOR THE SOUTHERN SEA OTTER IN CALIFORNIA

Southern Sea Otter Stock	N_{min}	R_{max}	F_r	PBR	Annual estimated human-caused mortality and serious injury	Stock status
Mainland	2,863	0.076	0.1	10.88	Figures by specific source, where known, are provided in the SAR.	Strategic.
San Nicolas Island	99	0.192	0.1	0.95		
Summary	2,962	12		

Response to Public Comments

We received comments on the draft SAR from the Marine Mammal Commission (Commission), the California Department of Fish and Wildlife, and a consortium of environmental groups consisting of Defenders of Wildlife, Friends of the Sea Otter, the Humane Society of the United States, Humane Society Legislative Fund, Earthjustice, Center for Biological Diversity, Ocean Preservation Society, Animal Welfare Institute, Earth Island Institute, and Earth Law Center. We present substantive issues raised in those comments that are pertinent to the SAR, edited for brevity, along with our responses below.

Comment 1: The Commission recommends that the Service review and revise the “Current and Maximum Net Productivity Rates” section of the SAR and provide a rationale for using an R_{max} that is consistent with the numbers used in the calculation of PBR. Further, the Commission recommends that the Service consider the theory behind use of R_{max} in the PBR calculation and whether 0.13 (or the default value of 0.12 for sea otters) is appropriate for a single range-wide calculation of PBR.

Response: We have revised the “Current and Maximum Net Productivity Rates” section of the SAR to clarify our reasons for using particular R_{max} values. We have considered the theory behind the use of R_{max} in the PBR calculation and added a brief discussion of the relevance of the PBR calculation to the southern sea otter stock. We have not adopted a single range-wide value of R_{max} for the reasons described in the SAR. However, we will present the issue for further consideration by the Pacific Scientific Review Group upon our next revision of the SAR.

Comment 2: The Commission recommends that, at a minimum, the Service correct the mainland PBR

estimate in the SAR using the mainland minimum population estimate. Further, the Commission recommends that the Service follow the guidance provided in the Guidelines for Assessing Marine Mammal Stocks (NMFS 2016) for rounding the PBR estimate and report the PBR to one decimal place.

Response: We have corrected the mainland PBR estimate and have followed the rounding guidance provided in NMFS (2016).

Comment 3: The Commission recommends that the Service make its stock assessment reviews available yearly to the appropriate Scientific Review Group (SRG) and the Marine Mammal Commission from this point forward.

Response: We typically provide a presentation to the Pacific SRG on the status of the southern sea otter. We will continue to make such presentations and explain our stock assessment review process to the Pacific SRG and Commission.

Comment 4: Per the **Federal Register** notice, since the southern sea otter stock is considered strategic, the Service is to evaluate the stock annually and develop the SAR based on the best scientific information available. This draft SAR was presented for public review in January 2020 and does not include evaluation of 2019 data readily available on population abundance and distribution.

Response: We review the SAR, based on the best scientific information available, annually to determine whether the status of the stock has changed or can be more accurately determined. If such findings are made, we revise the SAR. Delays in publication of the draft SAR in the **Federal Register** resulted in the notice of availability being published after additional census data had been reported. We have updated the SAR with the latest available information.

Comment 5: Adult females with pups do utilize open-water, soft-bottom

habitats. Decades ago, it was rare for this demographic to be observed in these habitats. We know pups are challenging to spot during aerial surveys and are often missed and therefore not well documented in the standard survey method for these habitats. More recent ground-based survey work and incidental boat-based observations have confirmed the presences of mom-and-pup pairs in these open-water habitats.

Response: We have eliminated excessive detail on habitat use.

Comment 6: Although the pattern of migration to the range peripheries was well documented in the past, it has not been observed in over a decade.

Response: We have eliminated outdated data on habitat use.

Comment 7: A line should be added to Figure 2 to denote the current targeted recovery goal.

Response: We have not added a line representing the threshold for delisting consideration for two reasons. First, we do not wish to detract from the purpose of this report under the MMPA, which is primarily to assess the progress of the stock toward its OSP level and toward a zero-mortality goal for commercial fisheries interactions, not to evaluate progress toward recovery goals under the ESA. Second, as we explain in text that has been added to the Status of Stock section, the threshold for delisting consideration was based on assumptions regarding the relationship between effective population size and actual population size that are now known to be inaccurate.

Comment 8: If the report is not updated to reflect 2019 data, we suggest that references in the report to “the past 5 years” identify the specific 5-year period under consideration.

Response: We have updated the SAR to include the most recent available information and have identified the 5-year period under discussion.

Comment 9: The paradigm shift in understanding the reason for slow population growth rates in California

was 6–7 years ago and is not a recent development. The previous speculation regarding the reasons for slow growth focused on the difference in survival, not reproduction.

Response: We have revised the discussion of the effects of habitat configuration on growth rates.

Comment 10: There is no explanation why 13 percent was selected as R_{\max} for the San Nicolas Island subpopulation.

Response: We have updated R_{\max} for the mainland and island subpopulations and added citations to identify the source of these numbers.

Comment 11: The **Federal Register** notice provides an explanation of the intent and scale of the recovery factor. We suggest this explanation be included in the report with some explanation of how 0.1 was selected.

Response: We believe the SAR adequately explains how a recovery factor of 0.1 was selected because it cites Taylor et al. (2003) and lists the factors from that discussion that apply to the southern sea otter stock. We have not added further explanation.

Comment 12: There is no evidence the California yellowtail, barracuda, and white seabass or California thresher shark/swordfish drift gillnet fisheries have sea otter incidental take because it is unlikely there is any overlap of these fisheries and sea otter habitat. We suggest these be deleted.

Response: We have removed these drift gillnet fisheries due to a lack of habitat overlap.

Comment 13: We suggest the squid purse-seine fishery be presented as a potential risk.

Response: We have added the California squid purse seine fishery to the SAR based on analogy with the California purse seine fishery for northern anchovy and Pacific sardine.

Comment 14: Mortality of sea otters in traps set for crabs, lobsters, and finfish is likely under-reported due to the challenges of identifying drowning as a cause of mortality in marine mammals.

Response: We have added this information.

Comment 15: If possible, the hook-and-line fishers should be separated from this discussion of trap fishers. The “stick gear” used by some hook-and-line commercial fishers likely presents a different risk (entanglement).

Response: These fisheries are grouped together in one category in the List of Fisheries, and separate data for the different fishery components are not available.

Comment 16: How has “unknown hook and line” been confirmed as commercial versus recreational fishing

activity such that it is included in Table 1?

Response: Because it is often not possible to make a definitive determination whether entanglements are due to commercial or recreational gear, we have included here all known strandings caused by entanglement in unidentifiable gear. As a result, mortality in commercial fishing gear may be overestimated for these categories. We have added a note to this effect to Table 1.

Comment 17: Some shootings are related to fishery interactions, and this cause of death is likely under-reported due to the lack of systematic radiographs of all carcasses.

Response: We have added language to this effect to the SAR.

Comment 18: The SAR does not include mention of Gagne et al. (2018), who concluded that the suppositions underlying the effective population size and the delisting threshold in the Final Revised Recovery Plan for the Southern Sea Otter (2003) were flawed.

Response: We have added a reference to Gagne et al. (2018) to the SAR. However, we note that the species status assessment process we are undertaking under the ESA is distinct from our obligations under the MMPA.

Additional References Cited

- Gagne, R.B., M.T. Tinker, K.D. Gustafson, K. Ralls, S. Larson, L.M. Tarjan, M.A. Miller, and H.B. Ernest. 2018. Measures of effective population size in sea otters reveal special considerations for wide-ranging species. *Evolutionary Applications* 11:1779–1790.
- Gobler, C.J., O.M. Doherty, T.K. Hattenrath-Lehmann, A.W. Griffith, Y. Kang, and R.W. Litaker. 2017. Ocean warming since 1982 has expanded the niche of toxic algal blooms in the North Atlantic and North Pacific oceans. *Proceedings of the National Academy of Sciences of the United States of America* 114:4975–4980.
- Harvell, C.D., D. Montecino-Latorre, J.M. Caldwell, J.M. Burt, K. Bosley, A. Keller, S.F. Heron, A.K. Salomon, L. Lee, O. Pontier, C. Pattengill-Semmens, and J.K. Gaydos. 2019. Disease epidemic and a marine heat wave are associated with the continental-scale collapse of a pivotal predator (*Pycnopodia helianthoides*). *Science Advances* 5, eaau7042. <https://doi.org/10.1126/sciadv.aau7042>.
- Hatfield, B.B., J.L. Yee, M.C. Kenner, and J.A. Tomoleoni. 2019. California sea otter (*Enhydra lutris nereis*) census results, spring 2019. U.S. Geological Survey Data Series 1118, Reston, Virginia, USA. <https://doi.org/10.3133/ds1118>.
- Jeffries, S., D. Lynch, J. Waddell, S. Ament, and C. Pasi. 2019. Results of the 2019 survey of the reintroduced sea otter population in Washington State. Washington Department of Fish and Wildlife, Lakewood, Washington, USA.
- Larson, S., R. Jameson, M. Etnier, T. Jones, R. Hall. 2012. Genetic diversity and population parameters of sea otters, *Enhydra lutris*, before fur trade extirpation from 1741–1911. *PLoS ONE* 7, e32205. <https://doi.org/10.1371/journal.pone.0032205>.
- Marshall, K.N., I.C. Kaplan, E.E. Hodgson, A. Hermann, D.S. Busch, P. McElhany, T.E. Essington, C.J. Harvey, and E.A. Fulton. 2017. Risks of ocean acidification in the California Current food web and fisheries: ecosystem model projections. *Global Change Biology* 23:1525–1539.
- Miller, M.A., M.E. Moriarty, L.A. Henkel, M.T. Tinker, T.L. Burgess, F.I. Batac, E. Dodd, C. Young, M.D. Harris, D.A. Jessup, J. Ames, P.A. Conrad, A.E. Packham, and C.K. Johnson. 2020. Predators, disease, and environmental change in the nearshore ecosystem: mortality in southern sea otters (*Enhydra lutris nereis*) from 1998–2012. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2020.00582>.
- Moriarty, M.E., M.T. Tinker, M.A. Miller, J.A. Tomoleoni, M.M. Staedler, J.A. Fujii, F.I. Batac, E.M. Dodd, R.M. Kudela, V. Zubkousky-White, and C.K. Johnson. 2021. Exposure to domoic acid is an ecological driver of cardiac disease in southern sea otters. *Harmful Algae* 101. <https://doi.org/10.1016/j.hal.2020.101973>.
- Moxley, J.H., T.E. Nicholson, K.S. Van Houtan, S.J. Jorgensen. 2019. Non-trophic impacts from white sharks complicate population recovery for sea otters. *Ecology and Evolution* 9:6378–6388.
- National Marine Fisheries Service. 2016. Guidelines for Preparing Stock Assessment Reports Pursuant to Section 117 of the Marine Mammal Protection Act. National Marine Fisheries Service Instruction 02–204–01. <http://www.nmfs.noaa.gov/op/pds/index.html>.
- Nichol, L.M., T. Doniol-Valcroze, J.C. Watson, and E.U. Foster. 2020. Trends in growth of the sea otter (*Enhydra lutris*) population in British Columbia 1977 to 2017. Research Document 2020/039. Fisheries and Oceans Canada, Ottawa, Ontario, Canada. http://publications.gc.ca/site/archiver-archived.html?url=http://publications.gc.ca/collections/collection_2020/mpo-dfo/fs70-6/Fs70-6-2020-036-eng.pdf.
- Nicholson, T.E., K.A. Mayer, M.M. Staedler, J.A. Fujii, M.J. Murray, A.B. Johnson, M.T. Tinker, and K.S. VanHoutan. 2018. Gaps in kelp cover may threaten the recovery of California sea otters. *Ecography* 41:1751–1762.
- Tinker, M.T., S.M. Espinosa, M.M. Staedler, J.A. Tomoleoni, J. Fujii, R. Eby, R. Scoles, M.C. Kenner, B. Hatfield, C. Fuentes, J.K. Lindsay, T. Nicholson, M. Murray, M. Young, K. Mayer, E. Dodd, S. Fork, and K. Wasson. 2018. The population status and ecology of sea otters in Elkhorn Slough, California: final report for California Coastal Conservancy and U.S. Fish and Wildlife Service. U. S. Geological Survey, Santa Cruz,

- California, USA.
- Tinker, M.T., V.A. Gill, G.G. Esslinger, J. Bodkin, M. Monk, M. Mangel, D.H. Monson, W.E. Raymond, and M.L. Kissling. 2019a. Trends and carrying capacity of sea otters in Southeast Alaska. *Journal of Wildlife Management* 83:1–17.
- Tinker, M.T., J.A. Tomoleoni, B.P. Weitzman, M. Staedler, D. Jessup, M.J. Murray, M. Miller, T. Burgess, L. Bowen, A.K. Miles, N. Thometz, L. Tarjan, E. Golson, F. Batac, E. Dodd, E. Berberich, J. Kunz, G. Bentall, J. Fujii, T. Nicholson, S. Newsome, A. Melli, N. LaRoche, H. MacCormick, A. Johnson, L. Henkel, C. Kreuder-Johnson, and P. Conrad. 2019b. Southern sea otter (*Enhydra lutris nereis*) population biology at Big Sur and Monterey, California; investigating the consequences of resource abundance and anthropogenic stressors for sea otter recovery. U.S. Geological Survey Open-File Report 2019–1022. U.S. Geological Survey, Reston, Virginia, USA.
- Tinker, M.T., J.L. Yee, K.L. Laidre, B.B. Hatfield, M.D. Harris, J.A. Tomoleoni, T.W. Bell, E. Saarman, L.P. Carswell, A.K. Miles. 2021. Habitat features predict carrying capacity of a recovering marine carnivore. *Journal of Wildlife Management* 85:303–323. <https://doi.org/10.1002/jwmg.21985>.
- Wellman, H.P. 2018. Applied zooarchaeology and Oregon Coast sea otters (*Enhydra lutris*). *Marine Mammal Science* 34:806–822.
- Wellman, H.P., R.M. Austin, N.D. Dagtas, M.L. Moss, T.C. Rick, and C.A. Hofman. 2020. Archaeological mitogenomes illuminate the historical ecology of sea otters (*Enhydra lutris*) and the viability of reintroduction. *Proceedings of the Royal Society B: Biological Sciences* 287, 20202343. <https://doi.org/10.1098/rspb.2020.2343>.

Authority

The authority for this action is the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*).

Signing Authority

The Director, U.S. Fish and Wildlife Service, approved this document and authorized the undersigned to sign and submit the document to the Office of the Federal Register for publication electronically as an official document of the U.S. Fish and Wildlife Service. Martha Williams, Principal Deputy Director Exercising the Delegated Authority of the Director, U.S. Fish and Wildlife Service, approved this document on June 17, 2021, for publication.

Krista Bibb,

Acting Regulations and Policy Chief, Division of Policy, Economics, Risk Management, and Analytics, Joint Administrative Operations, U.S. Fish and Wildlife Service.

[FR Doc. 2021–13209 Filed 6–23–21; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R7–ES–2018–N051;
FXES111607MPB01–189–FF07CAMM00]

Marine Mammal Protection Act; Stock Assessment Reports for Two Stocks of Polar Bears

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability; response to comments.

SUMMARY: In accordance with the Marine Mammal Protection Act of 1972, as amended, we, the U.S. Fish and Wildlife Service, after consideration of comments received from the public, have revised marine mammal stock assessment reports for each of the two polar bear stocks in Alaska. We now make the final revised stock assessment reports for the Southern Beaufort Sea polar bear stock and the Chukchi/Bering Seas polar bear stock available to the public.

ADDRESSES: Document Availability: You may obtain a copy of the Southern Beaufort Sea polar bear and Chukchi/Bering Seas polar bear stock assessment reports by any one of the following methods:

- **Internet:** <https://www.fws.gov/alaska/pages/marine-mammals/polar-bear> (for both polar bear stocks).
- Write to or call (during normal business hours from 8 a.m. to 4:30 p.m., Monday through Friday) Dr. Patrick Lemons, Chief, U.S. Fish and Wildlife Service, Marine Mammals Management Office, 1011 East Tudor Road, MS–341 Anchorage, Alaska 99503; telephone: (800) 362–5148.

FOR FURTHER INFORMATION CONTACT: Dr. Patrick Lemons, Marine Mammals Management Office by telephone (800) 362–5148 or by email (fw7mnmcomment@fws.gov). Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at (800) 877–8339.

SUPPLEMENTARY INFORMATION: We announce the availability of the final revised stock assessment reports (SARs) for two stocks of polar bears (*Ursus maritimus*).

Background

Under the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*) and its implementing regulations in the Code of Federal Regulations (CFR) at 50 CFR part 18, the U.S. Fish and Wildlife Service (Service) regulates the taking; import; and, under certain conditions, possession; transportation; purchasing;

selling; and offering for sale, purchase, or export, of marine mammals. One of the goals of the MMPA is to ensure that stocks of marine mammals occurring in waters under U.S. jurisdiction do not experience a level of human-caused mortality and serious injury that is likely to cause the stock to be reduced below its *optimum sustainable population level* (OSP). The OSP is defined under the MMPA as “the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element” (16 U.S.C. 1362(9)).

To help accomplish the goal of maintaining marine mammal stocks at their OSPs, section 117 of the MMPA requires the Service and the National Marine Fisheries Service (NMFS) to prepare a SAR for each marine mammal stock that occurs in waters under U.S. jurisdiction. A SAR must be based on the best scientific information available; therefore, we prepare it in consultation with an independent Scientific Review Group (SRG) established under section 117(d) of the MMPA. Each SAR must include:

1. A description of the stock and its geographic range;
2. A minimum population estimate, current and maximum net productivity rate, and current population trend;
3. An estimate of the annual human-caused mortality and serious injury by source and, for a strategic stock, other factors that may be causing a decline or impeding recovery of the stock;
4. A description of commercial fishery interactions;
5. A categorization of the status of the stock; and
6. An estimate of the *potential biological removal* (PBR) level.

The MMPA defines the PBR as “the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its OSP” (16 U.S.C. 1362(20)). The PBR is the product of the minimum population estimate of the stock (N_{\min}); one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size (R_{\max}); and a recovery factor (F_r) of between 0.1 and 1.0, which is intended to compensate for uncertainty and unknown estimation errors. This can be written as:

$$PBR = (N_{\min})(\frac{1}{2} \text{ of the } R_{\max})(F_r).$$

Section 117 of the MMPA also requires the Service and the NMFS to review the SARs (a) at least annually for