



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

New Jersey Field Office  
4 E. Jimmie Leeds Road, Suite 4  
Galloway, New Jersey 08205  
Tel: 609/646 9310  
<http://www.fws.gov/northeast/njfieldoffice/>



**IN REPLY REFER TO:**  
2016-TA-0498

Stephen Brown, Vice President for Shorebird Conservation  
Manomet  
P.O. Box 545  
Saxtons River, Vermont 05154  
[sbrown@manomet.org](mailto:sbrown@manomet.org)

**MAY 12 2016**

Dear Dr. Brown:

This is in response to your April 27, 2016 letter to the U.S. Fish and Wildlife Service (Service) transmitting comments on behalf of the Council of the U.S. Shorebird Conservation Partnership (USSCP) regarding our Programmatic Biological Opinion<sup>1</sup> (PBO) entitled *Biological Opinion on the Effects of Existing and Expanded Structural Aquaculture of Native Bivalves in Delaware Bay, Middle and Lower Townships, Cape May County, New Jersey on the Federally Listed Red Knot (*Calidris canutus rufa*)*. The Service issued the PBO to the U.S. Army Corps of Engineers, Philadelphia District (Corps) on April 1, 2016. This response is provided as technical assistance pursuant to the Endangered Species Act of 1973, as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA).

USSCP Comment: [The USCCP recommends] *thorough public review of plans to expand aquaculture activities in sensitive Red Knot habitats in Delaware Bay . . .*

Service Response #1: Please note it is not the Service that is planning to expand aquaculture in Delaware Bay. Rather, expansion plans have been advanced by individual aquaculture practitioners (“growers”) (*e.g.*, through permit applications) and by the New Jersey Division of Fish and Wildlife (NJDFW) (see PBO pp. 38–40). At this time, we are not aware of any Corps permit applications to expand aquaculture into new areas that that were not either already in operation, or already permitted, at the time of the PBO.

Any future expansion plans will need to comply with various Federal and State laws, regulations, and policies, the PBO being just one of the applicable regulatory documents. The role of the PBO is to establish, through the negotiated set of Conservation Measures (CMs), where and how new aquaculture operations might be established while avoiding the most severe impacts to red knots. Where expansion is actually pursued in the future will be determined—within the confines of the CMs and with site-specific (Tier 2) Service review—by the growers and the NJDFW.

---

<sup>1</sup> The PBO is available online at <http://www.fws.gov/northeast/njfieldoffice/endangered/>.

While public review of future expansion plans may be required under other applicable Federal or State regulations or policies, the ESA does not include any provision for public notice or a public comment period on documents prepared under the Section 7 consultation processes. However, in the course of conducting Tier 2 consultations, the Service will continue to fully consider best available data, including new information published or submitted by species or industry experts. Further, the PBO states that the NJDFW and other agencies responsible for adaptive management can, at their discretion, include other stakeholders or experts in meetings.

USSCP Comment: *We propose that [with input from the shorebird science and conservation community] a formal adaptive management system, with a well-conceived study design and sufficient funding for monitoring, evaluation, and formulation of effective management actions, be established before aquaculture development is expanded.*

Service Response #2: Adaptive management is already a binding provision of the PBO (pp. 49–50), and the Service has recommended that NJDFW adopt rigorous adaptive management practices incorporating clearly articulated hypotheses (PBO p. 137). Interested shorebird science and conservation experts can contact the NJDFW to offer their expertise to help structure and inform a collaborative and effective adaptive management program. The Service agrees that further studies will be valuable in informing the adaptive management process (PBO pp. 136–137), and we note that one study by Rutgers University is already in progress.

Any new or expanded aquaculture farms will be reviewed by the Service through the Tier 2 consultation process (PBO pp. 61–63). The Service will work closely with the NJDFW on early planning for any future expansion plans for the State-run Aquaculture Development Zone (ADZ), which is the single largest operation in the action area. However, once a complete Tier 2 consultation request is submitted (*e.g.*, to expand either ADZ or non-ADZ operations), the Service is obligated to conclude consultation in a timely manner based on the best scientific and commercial data available at the time. The Service may not postpone consultation pending additional studies except by the mutual consent of the Federal action agency and the applicant.

USSCP Comment: *We do not currently understand the potential impacts of the aquaculture infrastructure to horseshoe crab movement and reproduction, or to Red Knot weight gain . . . There are several untested assumptions in the proposed plans, including: 1) movement of crabs around impediments, 2) the ultimate effects of infrastructure and maintenance activities on egg densities, 3) effects of ATVs on sediment compaction and benthic communities supporting the crabs, and 4) the effects of excluding Red Knots from targeted areas on population size and body condition.*

Service Response #3: We have evaluated each of these potential effects in the PBO using best available scientific information. Throughout the PBO, we have noted where significant uncertainties exist in our understanding of likely effects. As per Service policy, our analyses have erred in favor of the species when faced with uncertainties. Key assumptions underpinning our analyses will be reassessed annually as part of the adaptive management process.

USSCP Comment: *We are writing to express our support for improved science and management approaches that minimize the potential adverse effects of near-shore intertidal oyster aquaculture infrastructure and related activities on recovering populations of Red Knots . . .*

Service Response #4: The CMs in the PBO were developed through negotiation between the NJDFW and the Service, with input from other agencies stakeholders. Based on best available information, the Service concludes that this framework of CMs substantially reduces the potential for adverse effects to red knots, primarily by eliminating the possibility of aquaculture in the most sensitive habitats during the birds' migratory stopover season. The PBO's requirement for adaptive management ensures that improved science and management approaches can be evaluated and adopted, as appropriate, over the next 10 years. As described in the PBO and accompanying Incidental Take Statement (ITS), the CMs significantly limit, but do not fully eliminate, adverse effects to red knots.

USSCP Comment: *It is not clear what impacts the proposed aquaculture expansion will have on Red Knot recovery . . . Because a Recovery Plan has not yet been completed, it is impossible to assess the potential impacts of expanded aquaculture on future recovery efforts. . . . Based on existing science, the risk to Red Knot recovery of the proposed expansion of aquaculture cannot be adequately predicted.*

Service Response #5: In the PBO (p. 130), the Service concluded that the proposed action is not likely to jeopardize the continued existence of the red knot. "Jeopardize the continued existence" of a species means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both survival and recovery in the wild by reducing the reproduction, numbers, and distribution of that species (50 CFR 402.02; emphasis added). Because the provisions and timelines under Section 7 of the ESA go into effect upon the listing of a species, the Service may not postpone consultation pending the preparation of a Recovery Plan. For those species for which Recovery Plans have not yet been developed, the Service is required to rely on our best professional judgment about recovery when applying the best available scientific and commercial data to the "jeopardy" standard.

Sometime in 2016 we expect to release a Recovery Outline, which will lay out a path for the eventual development of the red knot Recovery Plan. Each important development and milestone in the Service's recovery planning for the red knot will be considered relative to the provisions of the PBO as part of the adaptive management process. A key aspect of adaptive management will be annually revisiting the non-jeopardy determination, not only with regard to new information on the CMs, aquaculture impacts, and underlying assumptions, but also with regard to current information on the species' status and forthcoming recovery criteria.

USSCP Comment: *A key step to the recovery of the population is rebuilding [horseshoe crab] egg densities to levels required to support foraging red knots, which is estimated at 50,000 eggs/m<sup>2</sup>.*

Service Response #6: Various agencies and organizations have adopted different metrics to evaluate red knot recovery in Delaware Bay and elsewhere. The Service recognizes the key role of the Delaware Bay as the single most important red knot migration stopover. We expect Delaware Bay, including continued adequacy of the bay's food resources, will feature prominently in our forthcoming Recovery Outline and Recovery Plan. However, at this time, the Service has not yet adopted any numerical recovery criteria for red knot populations or the food supplies upon which they depend.

USSCP Comment: *The area where expansion is proposed is a 4.6-mile stretch of intertidal habitat in Delaware Bay that hosts tens of thousands of Red Knots during migration and accounts for >10% of the spawning beaches of horseshoe crabs. This concentrated use of a stopover site is critical to the Red Knot's recovery.*

Service Response #7: We agree that the action area supports very large numbers of red knots during migration and that this and other parts of Delaware Bay will be key to recovery. However, within the action area, red knots are not evenly distributed (PBO pp. 82–86). The framework of CMs has eliminated the possibility of new aquaculture, and will phase out existing farms, in the Northern Segment of the action area during the red knot stopover season. Since 1986, the Northern Segment has supported 2.5 to 4 times more red knots than the Southern Segment. It is only in the Southern Segment that aquaculture expansion may proceed following site-specific (Tier 2) review and with numerous other restrictions to limit adverse effects.

USSCP Comment: *Based on a number of published scientific papers, it is understood that human activity and aquaculture infrastructure could impede recovery of the Red Knot.*

Service Response #8: Based on our review of best available information, the Service agrees there is little uncertainty that human activity associated with aquaculture is likely to disturb red knots and/or displace them from otherwise suitable habitat. However, we found higher uncertainty regarding the effects of aquaculture infrastructure. Notwithstanding this uncertainty, and erring in favor of the species, we concluded that the proposed activity is not likely to jeopardize the existence or recovery of the red knot.

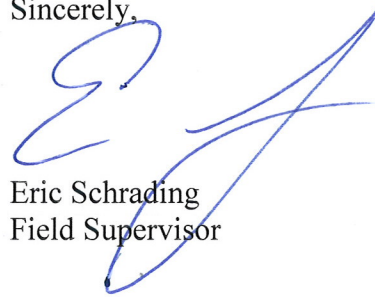
USSCP Comment: *Such a large-scale expansion of aquaculture in Delaware Bay could have significant impacts on the species' feeding and sheltering behavior.*

Service Response #9: As mentioned above, we are not currently aware of any Corps permit applications to expand aquaculture into new areas that were not either already in operation, or already permitted, at the time of the PBO. We have no information on when expansions are likely to be advanced by the NJDFW (ADZ) or individual growers (non-ADZ).

In the PBO, the Service acknowledges that aquaculture (both existing and future expansion) is likely to result in both harassment and harm including interference with feeding. Incidental take in the form of harassment and harm are projected and authorized in the ITS. For the vast majority of red knots subjected to harm and harassment, we expect the effects to be temporarily injurious but non-lethal. Even with the projected levels of (mostly non-lethal) incidental take, we have concluded that the proposed activity is not likely to jeopardize the red knot. This conclusion is tightly linked to the framework of CMs, which includes not only a seasonal prohibition of aquaculture in the Northern Segment, but also a cap on the total area of aquaculture in the Southern Segment and other important provisions to limit adverse effects.

We appreciate the concerns, interest, and expertise of the USSCP. We look forward to working with USSCP members, as well as the growers and other agencies, in a constructive and cooperative adaptive management process. If you have any questions or concerns, please contact Wendy Walsh of my staff at (609) 382-5274.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Eric Schradling', written over the typed name and title.

Eric Schradling  
Field Supervisor

**cc via email:**

sbrown@manomet.org  
James.N.Boyer@usace.army.mil  
Samuel.L.Reynolds@usace.army.mil  
paul\_phifer@fws.gov  
eric\_schrading@fws.gov  
ron\_popowski@fws.gov  
martin\_miller@fws.gov  
glenn\_s\_smith@fws.gov  
anne\_hecht@fws.gov  
pamela\_toschik@fws.gov  
scott\_johnston@fws.gov  
brad\_andres@fws.gov  
gregory\_breese@fws.gov  
genevieve\_larouche@fws.gov  
julie\_thompson@fws.gov  
brian\_braudis@fws.gov  
laurel\_wilkerson@fws.gov  
Meagan\_Racey@fws.gov  
richard.boornazian@dep.nj.gov  
Brandon.Muffley@dep.nj.gov  
russell.babb@dep.nj.gov  
Jenny.Tomko@dep.nj.gov  
craigtomlin@delawarebayoffice.com  
Dave.Jenkins@dep.nj.gov  
Amanda.Dey@dep.nj.gov  
amanda.wenczel@ag.state.nj.us  
monique.purcell@ag.state.nj.us  
Colleen.Keller@dep.state.nj.us  
Larry.Torok@dep.nj.gov  
Kristen.Symanski@dep.nj.gov  
Elizabeth.McShane@nj.usda.gov