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Public Comments Processing
Attn: Docket No. FWS-R5-ES-2020-0098
U.S. Fish and Wildlife Service Headquarters, MS: PRB/3W
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Red Knot Recovery: Designating Critical Habitat and Restoring Horseshoe Crab Abundance

We appreciate the opportunity to comment on the rufa Red Knot Recovery Plan (- Docket No.: FWS-R5-ES-2020-0098). The draft plan, and the recent record-low bird count in Delaware Bay where only 6,820 Red Knots were seen this year, underscore the urgency of saving this rapidly declining shorebird species.

We recommend that additional conservation measures and recovery actions be pursued to ensure and speed the Red Knot's recovery. While the recovery plan talks about likely negative impacts to stopover habitat, the Service is not recommending critical habitat designation, horseshoe crab harvest reductions, or other protective measures necessary to achieve recovery.

These actions include:

Designating Critical Habitat

We believe that all listing decisions should be based on best available science, and that critical habitat should be proposed at the time of listing as the law requires. Given the importance of the Red Knot's known stop-over areas, providing critical habitat protection to reduce potential disturbance and takes in these limited locations should be a priority.

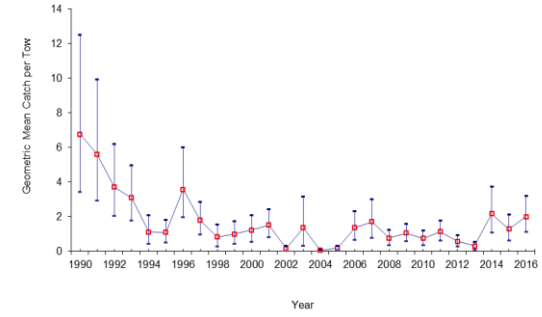
Recovering Horseshoe Crab Populations

Red Knot survival is tied to management practices associated with a key food source for the bird: horseshoe crab populations along the shores of New Jersey, Delaware, and Maryland. An abundant horseshoe crab population provides critical fuel for migration when the birds stop at Delaware Bay to feed on horseshoe crab eggs. Birds with higher weights have a better chance of reaching the Arctic to breed and survive into the next year.

When Red Knots leave Delaware Bay in poor condition due to the lack of horseshoe crab eggs, they either die before ever arriving in the Arctic or arrive in too poor a condition to successfully reproduce. As a result, adult birds are dying off without being replaced by juveniles, leading to a decline in population.

The 2015 status review refers to the importance of horseshoe crabs during Red Knot, inadequate conservation measures have been provided to date to ensure an adequate abundance:

A prominent departure from typical prey items occurs each spring when red knots feed on the eggs of horseshoe crabs, particularly during the key migration stopover within the Delaware Bay of New Jersey and Delaware. Delaware Bay serves as the principal spring migration staging area for the red knot because of the availability of horseshoe crab eggs (Morrison and Harrington 1992; Harrington 1996; Harrington 2001; Clark et al. 2009; Service 2014b), which provide a superabundant source of easily digestible food. Red knots and other shorebirds that are long-distance migrants, must take advantage of seasonally abundant food resources at intermediate stopovers to build up fat reserves for the next nonstop, long distance flight (Clark et al. 1993). Although foraging red knots can be found widely distributed in small numbers within suitable habitats during the migration period, birds tend to concentrate in those areas where abundant food resources are consistently available from year to year.



Horseshoe crabs have not recovered from past overharvest

We remain concerned that under current management regimes, horseshoe crabs will remain at approximately 30 percent of the historic population, thereby preventing any significant recovery of the Red Knot. The 2015 Status review reveals the downward population trend:

Comparing four different time periods, average red knot counts in Delaware Bay declined by approximately 70 percent from 1981 to 2012.

We strongly disagree with the Service's assessment in the listing decision and status review that:

> Under the current management framework, the present horseshoe crab harvest is not considered a threat to the red knot.

Recovering the Red Knot requires recovering the horseshoe crab's historic abundance. And, given potential increases in mismatched migration timing due to climate change, increasing crab abundance also is a necessary strategy to ensure a sufficient egg supply will be available when the birds are present.

Comparing Horseshoe crab eggs 1991 and 2017

	1991	2017
Moores Beach	>100,000	4,000
Reeds Beach	>100,000	7,000
Cooks Beach	75,000	6,000
Norburys Landing	75,000	3,000

In 1990 and 1991 Mark Botton and Bob Loveland completed a survey of horseshoe crab eggs on bay beaches from Moore's to Higbee Beaches and found average egg densities ranging from 100,000 eggs/m^2 to 50,000 eggs/m^2 on beaches that now range between 2,000 to 8,000 eggs/m^2.

Halting the harvest of female Horseshoe Crabs from every population in every state – both for bait and biomedical use.

Horseshoe crab eggs are a vital source of food for Red Knots, and female horseshoe crabs are more important ecologically and commercially than their male counterparts. Despite two decades of quota management by the Atlantic States Marine Fisheries Commission (ASMFC) the population of female horseshoe crabs has not improved in the Delaware Bay or any other location along the coast.

Improving estimates of bycatch and work to reduce it as well as illegal harvesting of Horseshoe Crabs.

The inability to publicly show regional biomedical collection and mortality data prevents a full understanding of the take of Horseshoe Crabs along the coast and derivative stock assessment results presents a material constraint to fully explaining stock assessment results. We believe alternative approaches to share mortality data, such as reporting biomedical and bycatch estimated mortality together, would strengthen our understanding. We are also concerned about Horseshoe Crab discards, which we fear may be equal or greater than combined mortality from other sources.

Protecting southbound Red Knot stopovers in the US by reducing the effect of disturbance on the species.

Most protection of Red Knots during migration is a secondary outcome of Piping Plover site access restrictions. The impact of disturbance is great, since most birds arrive at southbound stopover sites in July, which is peak vacation season along the Atlantic Coast. Recreational use during this time impacts the best foraging habitats, including shoals used by boaters to land and recreate without lifeguard or police presence. In coastal communities where creation of protected areas is not feasible, increased public education is needed to encourage beachgoers and boaters to "share the shore."

Stopping biomedical harvest of Horseshoe Crabs in the Shuster Reserve and all dredging in the reserve during the horseshoe crab wintering period.

The Shuster Reserve outside the Delaware Bay was established to create a population segment not influenced by harvesting. Unfortunately, this is not the current reality. Quotas can be met by harvesting crabs along the preserve's perimeter, thereby displacing the take but not effectively reducing it. Importantly, the preserve area is swept by clam and scallop dredgers who are estimated to impact bycatch by nearly 2 million crabs each year. Estimates of mortality range from 5% to 50%. Eliminating dredging and trawling in the reserve during the winter will prevent all bycatch issues because most crabs leave the reserve in March to breed in the Delaware Bay and do not return until October.

Urging the US Food and Drug Administration to remove all barriers to the adoption of the synthetic lysate known as recombinant Factor C in biomedical toxicity testing. Current testing methods involve bleeding of horseshoe crabs, and studies estimate that up to 30% of crabs die in the process.

More than 600,000 horseshoe crabs are captured annually for biomedical bleeding. After the blood is drawn, the crab is returned to the water. Estimates suggest that up to 30 percent do not survive the process. Additionally, a 2013 study also showed that after bleeding, Horseshoe Crabs had a 33-66

percent reduction in overall activity and the females demonstrated markedly lethargic behavior and failed to spawn entirely.

In 2019, biomedical harvest of Horseshoe Crabs for their blood in the United States increased 25 percent and total mortality increased 30 percent, close to double the ASMFC's Horseshoe Crab Fisheries Management Plan's mortality threshold of 57,500 horseshoe crabs. This threshold has been exceeded in 12 of the last 13 years. The most recent increase, resulting in a mortality estimation of more than 100,000 Horseshoe Crabs in 2019 alone, suggests a growing threat to Horseshoe Crabs as well as Red Knots and other species that depend on them.

Until the transition to synthetic lysate is complete, greater transparency, accountability and adherence to best management practices by biomedical bleeding companies must be obtained via oversight by the ASMFC.

Amending the Adaptive Management Framework to include egg monitoring as a key part of the evaluation of progress towards recovery and use eggs as a key metric to assess progress towards recovery for all Horseshoe Crab populations.

Horseshoe Crab eggs are the definitive resource for Red Knots, other shorebirds, and the Delaware Bay's ecological productivity. Eggs have been measured on the bay since 1986; it is one of the only measures of the fully stocked population before the 1990s overharvest. It is also the key metric for assessing the value of this stopover, or any stopover for shorebirds, including the Red Knot.

Moreover, in 2015, New Jersey biologists developed a much simpler technique using egg clusters, making it much easier to track egg densities rather than counting individual eggs. Still, ASMFC relies mostly on models that provide estimated populations of crabs and bird numbers that are fraught with assumptions that cannot be easily verified and a general inability to determine trend with any real assurance of accuracy. Egg counts can be directly compared to the relatively unharvested population of the 1980s and are robust enough to provide reliable trend information. They can be replicated in all Horseshoe Crab populations at minimal cost.

We believe that this series of urgent actions are necessary to recover the Rufa Red Knot. The steps outlined above are practical, achievable solutions that will help to stabilize their dwindling population and increase their chances of survival. We thank you for the opportunity to comment.

Sincerely,

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