# United States Department of the Interior

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Ginger Kopkash, Assistant Commissioner
New Jersey Department of Environmental Protection
401 East State Street, 7th floor
Trenton, New Jersey 08625-0420
Attention: Jill.Aspinwall@dep.nj.gov

MAR 2 0 2020

Dear Ms. Kopkash:

The U.S. Fish and Wildlife Service's (Service) New Jersey Field Office (NJFO) is writing to thank you for inviting our participation in the March 2, 2020 Protecting Against Climate Threats Stakeholder Session and to follow up with our written comments. We understand that the New Jersey Department of Environmental Protection (NJDEP) is soliciting stakeholder input regarding potential rulemaking that would reform the State's land use regulations by ensuring that these rules promote resilience and assist communities in adapting to the unavoidable impacts of climate change such as sea level rise, extreme weather, and chronic flooding. Pursuant to the Governor's Executive Order 89 and the NJDEP Commissioner's Administrative Order 2020-01, the NJDEP is planning to propose specific updates to New Jersey's various land use regulations to address climate change by late 2020. The land use regulations being evaluated for updates include, but are not limited to, the Coastal Zone Management Rules (N.J.A.C. 7:7), the Freshwater Wetlands Rules (N.J.A.C. 7:7A), the Flood Hazard Control Act Rules (N.J.A.C. 7:13), and the Stormwater Management Rule (N.J.A.C. 7:8).

## AUTHORITY

The mission of the Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. The NJFO serves the State of New Jersey by protecting endangered species, supporting Federal planning, abating contamination, and partnering with landowners to restore wildlife habitats. The following comments are provided by the Service as technical assistance pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA); the December 22, 1993 Memorandum of Agreement among the U.S. Environmental Protection Agency, the NJDEP, and the Service (updated 2018); the Migratory Bird Treaty Act of 1918 (40 Stat. 755; 16 U.S.C. 703-712), as amended; Coastal Barrier Resources Act (P.L. 97-348) (96 Stat. 1653; 16 U.S.C. 3501 *et seq.*), as amended; and the National Wildlife Refuge System Improvement Act of 1997 (P.L. 105-57; 111 Stat. 1253); as well as numerous programs in place for Federal funding assistance and cooperation with the States.

## SERVICE RECOMMENDATIONS

The NJFO offers the following recommendations to conserve and restore New Jersey's fish and wildlife resources in light of climate change, with a focus on Federal trust resources such as migratory birds, species listed under the ESA, inter-jurisdiction fishes, wetlands, and Service lands. Our office climate change fact sheet is enclosed.

1. Prohibit or strongly discourage new hard structures and traditional engineering approaches (*e.g.* rip rap, geotubes bulkheads, groins, seawalls) in coastal areas. Such practices are incompatible with the habitat requirements for federally listed (threatened) species such as the piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), and seabeach amaranth (*Amaranthus pumilus*), and migratory birds such as least terns (*Sterna antillarium*) and black skimmers (*Rynchops niger*).

2. Develop State incentives for nature-based solutions to erosion and flood issues to protect and expand wildlife habitat while enhancing resiliency of human communities.
   - Streamline permitting for nature-based projects with genuine ecological benefits.
   - Establish criteria for planning, carrying out, and monitoring demonstration projects. Consider easing regulatory requirements for projects that implement and monitor novel methods for shoreline protection, flood mitigation, erosion control, marsh enhancement, and facilitated shoreline migration. Streamline permitting for Federal or State-sponsored projects that collect scientific data on novel approaches to issues related to sea level rise.
   - Consider increasing application fees for bulkheads and/or implementing a bulkhead tax, and using the funds to help municipalities engineer and implement nature-based solutions to erosion/flooding issues where practicable.
   - Consider property tax breaks, waived application fees, or other incentives to property owners using appropriate nature-based solutions.
   - Evaluate shellfish and submerged aquatic vegetation (SAV) regulations that encourage bulkhead construction over living shorelines (*i.e.,* by creating regulatory hurdles for nature-based solutions). If a nature-based alternative to a bulkhead is proposed, weigh the ecological uplift of the project against the likely impacts to shellfish/SAV. Update SAV maps to ensure macroalgae is not mapped as seagrass. Update shellfish maps.

3. Strategically plan for beneficial use of dredged material for beach, marsh, and community resilience, with sea level rise in mind. Benefits of this approach include increasing resiliency (*e.g.*, through beach nourishment, sediment enrichment, and marsh elevation enhancement); conserving sediment resources (*e.g.*, less reliance on non-renewable offshore shoals); and creation/improvement of wildlife habitat (*e.g.*, island creation, wetland enhancement) for the benefit of birds, fish, and human communities.
   - Encourage a systematic/programmatic approach for back bay dredging and beneficial use of clean dredged material in New Jersey. For example, New Jersey could draw on California's SediMatch[1] program, which helps coordinate areas in need of sediment with other areas that need to dispose of sediment.
   - Develop policies that encourage clean sediment (*i.e.*, sediment meeting NJDEP criteria for ecological risk) to remain in the system, and that discourage use of confined disposal

[1] https://www.sfei.org/projects/sedimatch-web-tool#sthash.A2h94Mir.dpbs

facilities or upland disposal for clean sediments. Consider policies requiring that sediment remain in the system when beneficial uses exist (*i.e.*, no contamination, ecological uplift).
   - Evaluate sediment confinement requirements and SAV/shellfish restrictions that may create hurdles to beneficial use.
   - Develop a comprehensive State-wide strategy/policy for sand borrowing from inlets for Atlantic Coast beach nourishment. This strategy might allow some "recycling" of sediments by placing them on updrift beaches while recognizing the importance of inlets to wildlife (including many federally listed species and migratory birds) and putting safeguards in place to maintain the natural coastal processes that create and maintain inlet habitat.
   - Partner with the Service and the U.S. Army Corps of Engineers to assess the effects of Atlantic Coast beach nourishment on coastal processes, land forms, and benthic invertebrate communities at the landscape scale.

4. Assess the cumulative impacts of mechanical beach raking on beach and coastal resilience (Nordstrom *et al.* 2012, Cathcart and Melby 2009, Nordstrom and Mauriello 2000). Consider enforcing N.J.A.C. 7:7-10.2(a)6, which limits raking to within 100 yards of a staffed lifeguard stand.

5. Adopt policies and regulations encouraging or requiring storm response planning that includes consideration of wildlife habitat. Many coastal species are highly dependent on storm-created habitats; habitat evaluation and protection should be part of the post-storm response (Maslo and Pover 2018).

6. Plan for shoreline migration using the best available sea level rise projections for New Jersey's coast. The human response to sea level rise will have a profound impact on the conservation and recovery trajectory of a whole suite of species over the next few decades (U.S. Fish and Wildlife Service 2018, Gieder *et al.* 2014, U.S. Fish and Wildlife Service 2014, Defeo *et al.* 2009).
   - Prohibit or discourage development that would block the landward migration of marshes, beaches, and tidal flats to ensure continued availability of high-quality habitats for focal species such as piping plover, red knot, seabeach amaranth, Eastern black rail (*Laterallus jamaicensis jamaicensis*), salt marsh sparrow (*Ammodramus caudacutus*), and black duck (*Anas rubripes*).
   - Where migration is already blocked by infrastructure, or not happening fast enough to keep up with sea level rise, facilitate and support nature-based projects to maintain habitat for marsh/beach species.

7. Identify areas where human retreat from coastal and other highly flood prone areas is inevitable and develop policies to ease the transition for communities and expedite the return of high-quality wildlife habitats.
   - Increase funding for Blue Acres buy-outs in high-hazard areas and factor climate change into the eligibility criteria.
   - Support local efforts to plan for strategic retreat from the most flood-prone areas.

8. Adopt policies and regulations that reflect the purposes of the Coastal Barrier Resources Act (P.L. 97-348) (96 Stat. 1653; 16 U.S.C. 3501 *et seq.*, as amended) (CBRA), which encourages the conservation of storm prone, biologically rich coastal barriers by restricting public expenditures that encourage development. As a Federal statute, CBRA only applies to Federal expenditures; however, New Jersey could adopt similar policies at the State level.

9. Assess private lands donation to Service refuges, and conservation easement requirements by the State that create encumbrance before Service can assume land titles. Do not require mitigation lands that are destined for Federal ownership to possess conservation easements. Currently, land use regulations require mitigation lands to possess a conservation easement to ensure that the lands remain as intended by NJDEP permits. The Service cannot accept lands for donation unless they are free of encumbrances. Work with the Service to identify parcels that may be acquired by applicants as mitigation and then promptly transferred to the National Wildlife Refuge system, thus, negating the need for a conservation easement.

10. Increase aquatic and terrestrial habitat connectivity. Continue and expand ongoing effects to increase connectivity, such as the New Jersey CHANJ project. Connectivity has long been recognized as a key component for ensuring healthy fish and wildlife populations, but is even more essential in light of climate change because many species distributions are expected to shift over the next few decades in response to changing temperature regimes. In addition, individual animals may have even more need for local/regional movements over shorter time scales in response to changing patterns of drought and flood.

11. Account for changing flood and drought regimes when updating regulations on stormwater, wetland buffers, and water allocation, particularly in areas with swamp pink (*Helonias bullata*), bog turtle (*Glyptemys muhlenbergii*) and other species that are highly reliant on groundwater-supported seeps and base flows.

**CONCLUSION**

The Service appreciates the opportunity to provide input to the NJDEP's Protecting Against Climate Threats initiative. The NJDEP and the Service have a long history of working cooperatively to advance natural resource conservation in New Jersey. We look forward to a continued partnership to address climate change impacts on Federal trust resources in New Jersey. If you have any questions or wish to discuss the Service recommendations provided in this letter, please contact Wendy Walsh at (609) 382-5274, or wendy_walsh@fws.gov.

Sincerely,

Eric Schrading
Field Supervisor

**Enclosure:** Climate Change in New Jersey: Possible Impacts on Fish and Wildlife

**REFERENCES**


Cathcart, T. and P. Melby. 2009. Landscape management and native plantings to preserve the beach between Biloxi and Pass Christian, Mississippi. Mississippi-Alabama Sea Grant Consortium Publication MASGP-08-024. 32 pp.

Defeo, O., A. McLachlan, D.S. Schoeman, T. Schlacher, J.E. Dugan, A. Jones, M. Lastra, and F. Scapini. 2009. Threats to sandy beach ecosystems: A review. Estuarine, Coastal and Shelf Science Vol. 81(1):1-12.

Gieder, K.D., S.M. Karpanty, J.D. Fraser, D.H. Catlin, B.T. Gutierrez, N.G. Plant, A.M. Turecek, E.R. Thieler. 2014. A Bayesian network approach to predicting nest presence of the federally-threatened piping plover (*Charadrius melodus*) using barrier island features. Ecological Modelling 276(2014):38-50.

Maslo, B. and T. Pover. 2018. Protocol for assessing beach-nesting bird habitat following coastal storms. North Atlantic Landscape Conservation Cooperative, United States Fish and Wildlife Service, Hadley, Massachusetts. 11 pp.

Nordstrom, K.F., N.L. Jackson, A.L. Freestone, K.H. Korotky, and J.A. Puleo. 2012. Effects of beach raking and sand fences on dune dimensions and morphology. Geomorphology: 179:106-115.

Nordstrom, K.F. and M.N. Mauriello. 2001. Restoring and maintaining naturally-functioning landforms and biota on intensively developed barrier islands under a no-retreat alternative. Shore & Beach 69(3):19-28.

U.S. Fish and Wildlife Service. 2014. Rufa red knot background information and threats assessment. Supplement to Endangered and Threatened Wildlife and Plants; Final Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*) [Docket No. FWS–R5–ES–2013–0097; RIN AY17]. Pleasantville, New Jersey. 376 pp. + Appendices. https://fws.gov/northeast/red-knot/

U.S. Fish and Wildlife Service. 2018. Species Status Assessment Report for the Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) Version 1.2. Region 4, Atlanta, Georgia, 151 pp. https://www.fws.gov/southeast/wildlife/birds/eastern-black-rail/

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# Climate Change in New Jersey

## *Possible Impacts on Fish and Wildlife*

**Climate change is real**

The unmistakable signs of a rapidly changing climate are everywhere:

- Global average air temperature has increased and excessive heat waves are on the rise
- Average sea level has risen
- Flowers are blooming earlier, lakes freezing later, migratory birds delaying their flights south
- The timing and interconnectedness of the wild food web is being disrupted

**Climate change is disrupting natural systems**

Natural systems—such as lakes, rivers, oceans, coral reefs, forests, grasslands—produce our oxygen, our water, our food, and provide jobs such as commercial fishing and timber harvesting. They also support outdoor activities, generating jobs and millions of dollars in revenue. Forests, wetlands and other natural landscapes help soak up greenhouse gases that trap heat and have been scientifically linked to global warming.

**Climate change is harming wildlife and wild places**

Climate change is the transformational conservation challenge of our time, not only because of its direct effects on species and habitats but because of its influence on other stressors. These include habitat loss and fragmentation, invasive species, and water scarcity.

These combined forces have substantial implications for management of fish and wildlife and their habitats in New Jersey:

- Across the continental U.S., climate change is affecting the migration cycles and body condition of migratory songbirds, causing decoupling of the arrival dates of birds on their breeding grounds and the availability of the food they need for reproduction. This may be more significant on sensitive species such as the red knot.

*Red Knot USFWS*

- Evidence is growing that higher water temperatures resulting from climate change are affecting cold- and cool-water fish populations in New Jersey.

*Brook Trout USFWS*

- Along coasts, rising sea levels have begun to affect fish and wildlife habitats, including those used by waterfowl, wading birds, and shorebirds that nest and winter on coastal National Wildlife Refuges

**Climate change impacts can be reduced**

The U.S. Fish and Wildlife Service's strategic plan is partnership-driven and science-based. The Service is committed to implement partnership-driven, results-oriented landscape conservation:

*Addressing habitat fragmentation* - The Service is providing recommendations and assess progress toward promoting habitat connectivity to support species population objectives. As habitats alter and species' ranges shift as a result of climate change, habitat corridors will become even more crucial to species' migration and ultimate survival.

*Reducing the Service's carbon footprint* - Across the agency, Service employees have begun documenting the Service's carbon footprint and instituting practices to avoid greenhouse gas emissions, minimize unavoidable emissions, and offset remaining emissions.

*Expanding biological carbon sequestration to create habitat for wildlife* - The Service is working with conservation partners to expand biological carbon sequestration techniques, restore habitat, and conserve wildlife. We will use landscape conservation planning approaches to determine where, when, how much, and what habitat types should be conserved to achieve population, habitat, and carbon sequestration objectives.

*E.B. Forsythe National Wildlife Refuge after Superstorm Sandy USFWS*

*Educating and Communicating* - Working closely with partners and stakeholders, the Service is working on a strategy to engage the American public regarding the significance of climate change for fish and wildlife. The Service will also pursue an aggressive internal and external communications effort designed to support its climate change and landscape conservation work with employees, partners, and others.

*Evaluating and targeting vulnerable and sensitive habitats* – The Service and its partners will work on identifying and focusing resources on habitats that are vulnerable and sensitive to climate change (e.g., bog turtle wetlands). This effort will target increasing resiliency and potential shifts in these habitats.

*Bog Turtle / USFWS*

## You can take action now

Small changes in our everyday lives can make a big difference for current and future generations of Americans. Here are a few ways you can help mitigate the effects of climate change and support wildlife conservation where you live:

- Plant native trees and shrubs that absorb carbon dioxide and slow the spread of invasive species
- Recycle paper, plastics, glass.
- Use recycled products that use less energy to manufacture
- Change to energy efficient light bulbs and appliances
- Reduce gasoline consumption; Walk or bike whenever you can
- Program your thermostat
- Give your time and energy to a national wildlife refuge, national fish hatchery or in your own community (see http://www.serve.gov/)
- Project BudBurst http://www.budburst.ucar.edu/ and the National Phenology Network, http://www.usanpn.org/ are just two places where you can become part of a nationwide network gathering data on climate change effects on plants and wildlife
- Teach the next generation about the importance of natural resources by taking them outside. Visit a National Wildlife Refuge or other protected land
- Talk to your neighbors, civic associations, local service groups to engage them in discussions and action
- Online and local libraries are filled with information. There are great books for young audiences on the subject of climate change.

*Planting Trees at Mannington Mills / USFWS*

## Additional Resources

For more information on how the U.S. Fish and Wildlife Service is working with others to conserve the nature of America in a changing climate, visit http://www.fws.gov/home/climatechange/

NASA Climate Change
http://climate.nasa.gov/

Earth to Sky Partnership
http://earthtosky.org

U.S. Global Change Research Program
http://www.globalchange.gov/

New Jersey Flood Mapper
http://slrviewer.rutgers.edu/SLR.html#

Rutgers Climate and Environmental Change Initiative
http://climatechange.rutgers.edu/

National Park Service Regional Impacts
http://www.nps.gov/climatechange/atlanticcoast.cfm

Environmental Protection Agency
http://www.epa.gov/climatechange/wycd/index.html

Seasons End
http://www.seasonsend.org/

## For additional information or questions contact:

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