The Compounding Threat of Climate Change

Consideration of the implications of climate change for SGCN is a requirement that the USFWS places on all State Wildlife Action Plan submittals. Climate change – perhaps more than any other threat – exacerbates the consequences of many other threats in addition to posing direct problems of its own.

The NJ Department of Environmental Protection (NJDEP) led a comprehensive effort to synthesize the latest and most reliable scientific research on the current and predicted future impacts of climate change. The result is the first state-led *Scientific Report on Climate Change* (2020). The following bullet points are taken from the summary of the report and Executive Summary.

The current state of climate change in New Jersey

- New Jersey is warming faster than the rest of the Northeast region and the world (Northeast 2.1° F, NJ 3.5° F). Increasing temperatures are felt more strongly in New Jersey because of our highly urbanized landscape (more concrete and asphalt than forests and open spaces).
- New Jersey can expect an average annual increase by as much as 10° F warmer.
- Heatwaves are expected to impact larger areas with more frequency and longer duration.
- Winters will be warmer with fewer sub-freezing days and less snow accumulation.
- Due to the expected changes in precipitation patterns, droughts may occur more frequently. Droughts lasting 3-6 months or longer may also increase in the Northeast.
- Over the last 50 years, storms that delivered extreme rain increased 71% faster than anywhere in the US. Warming temperatures from climate change are likely to increase the intensity and frequency of rain events, including tropical storms.
- New Jersey's average annual precipitation is expected to increase by between 4% and 11% by 2025.
- Sea levels are rising at a greater rate in New Jersey than any other parts of the world. By 2050, there is a 50% chance sea-level rise will meet or exceed 1.4 feet.
- Coastal areas will face increased flooding from storm surge and an increase in the intensity of coastal storms.
- Ocean pH levels are expected to fall, creating an ocean that is more acidic than has been seen for the past 20 million years.
- Surface and groundwater quality will degrade from increased nutrients and contaminants entering waters from increased run-off and intense rain events.

- Air quality will decrease due to changes in the meteorological conditions.

Why it matters: Implications for NJ's Habitats and SGCN

- Projected habitat losses in the Delaware Bay estuary by 2100:
    - 92% of brackish marshes
    - 32% of tidal swamps
    - 6% of tidal freshwater marshes
- 29% of NJ's bird species are vulnerable to climate change.
- Marine invertebrates, especially mollusks, will suffer from increased ocean acidity by growing thinner shells. Ocean acidification also impacts success of breeding (hatching and larval development) and development of marine species.
- Climate change will likely increase the expansion and invasion of non-native terrestrial and aquatic plants and animals (including marine and freshwater species).
- Freshwater wetlands may be lost from saltwater intrusion. Atlantic White Cedar is expected to lose habitat from sea-level rise.
- Freshwater fish and invertebrates that require cold waters, like Brook Trout and mussels, are expected to lose habitat and be replaced by warmwater species as temperatures rise.
- Vernal pools may be lost due to increased droughts.
- Reptiles and amphibians may experience shifts in range and distribution. Breeding behavior and success may decline with increased temperature.
- Rare plant communities may disappear or shift range or distribution.
- The species composition of New Jersey forests will change, resulting in shifts or losses of bird and wildlife habitat, migratory corridors, and breeding areas.
- Warmer winter temperatures may result in an increase of invasive pathogens and insects that threaten the state's natural systems as many of these organisms are limited by cold winters. There are cases where climate change has already affected forest insect species' range and abundance.
- Diminished water recharge within watersheds leads to decreased water availability for native vegetation, with consequent impacts on habitats and wildlife.
- Shifts in the timing of migration and hibernation could put these crucial life history events out of sync with the availability of important food resources, leading to mistimed reproduction and reduced population success.

Taking Climate Action

As outlined above, climate change is New Jersey's greatest long-term threat--impacting every habitat and the health of our wildlife, and people. Recognizing that no single institution can make the changes needed to reduce and respond to climate change, NJDEP made it a goal of all Departmental programs and actions. In 2020, NJDEP launched the New Jersey Protecting Against Climate Threats (NJPACT) initiative. "Through NJPACT, NJDEP advanced state specific climate science to ground planning and policy actions, invested in clean energy and climate resilience solutions, and pursued regulatory reform efforts to modernize dated aspects of environmental governance". NJPACT led to the development of NJDEP's Strategic Climate Action Plan (SCAP) released in June 2025.

While the actions outlined in SCAP are not completely focused on wildlife, every strategy to reduce the effects of climate change will also improve the conditions for plants and wildlife and improve their resiliency to a changing landscape. In fact, there are many overlapping actions. SCAP presents actions that are also priority actions in SWAP's Statewide and Region levels. Threats like habitat connectivity are a serious concern, and both SCAP and SWAP include actions that address this connectivity. In the Atlantic Coast Region, both plans prioritized several actions tackling marsh loss due to sea level rise.

Collaboration beyond state lines is key to addressing climate change. New Jersey participates in ongoing regional and federal adaptation initiatives such as the:

- Northeastern States for Coordinated Air Use Management collaborating on region-wide adaptation issues.
- National Oceanic & Atmospheric Administration's Climate Ready Estuaries Program to address climate change in coastal areas and watersheds.
- U.S. Environmental Protection Agency's State and Tribal Climate Change Council to address climate change adaptation issues relating to water.
- Northeast CASC (Climate Adaptation Science Centers)