BULLETIN SYNOPSIS

Climate Change and Wildlife

PART II: SPECIES HIGHLIGHTS

SYNOPSIS / MARCH 31, 2016 / BY JENNIFER HUSHAW, SI BALCH, & ERIC WALBERG

There is a great deal of uncertainty about how climate change will affect specific wildlife species. The challenge is that organisms higher up the trophic chain often have many complicated interactions that determine their vitality and geographic range—factors that can be influenced directly and indirectly by changing climate. Although, more robust predictions can be made for species that have particularly climate-sensitive life history traits.

The mobility of wildlife species allows them to respond quickly to changing conditions—shifts in their behavior, distribution, or population are early indicators of climate change in the field. This also allows managers to observe the effectiveness of their management strategies within decades, rather than the longer timescales needed to observe shifts in vegetation. Any effort on the part of forest owners or managers to maintain, improve, or increase habitat for climatically-vulnerable species will help buffer against shifts in wildlife.

Species Highlights

DEER, MOOSE, ELK – *Climate change will affect population dynamics, range limits, habitat selection, browsing/foraging behavior, and disease outbreaks*. Deer populations will likely increase, but changing conditions may increase the extent and severity of hemorrhagic disease outbreaks. Moose will likely exhibit northward range contraction, some population declines, and behavioral changes (e.g. habitat selection) to alleviate heat stress in the southern parts of their range. Changes in snowpack will alter the browsing patterns of moose and elk.

CANADA LYNX – *Climate change will affect the population dynamics, distribution and abundance of prey species, hunting success, connectivity with peripheral populations, and range margins of lynx populations*. We will likely see loss of smaller, peripheral populations and contraction of the southern range boundary.

BATS – *Climate change may affect bat population distributions, reproductive success, hibernation behavior, and access to food*. The biggest on-going concern for bat populations in the U.S. is white-nose syndrome—climate change has the potential to further stress the populations decimated by this disease, which is a cause for concern.

FOREST SONG BIRDS – *Climate change will alter migration patterns, population sizes, and the quality/availability of habitat*. Some birds have already shifted their spring arrival dates several days to a week early (depending on the species).

GAME BIRDS – *Climate change may affect habitat suitability and availability, breeding success, and population dynamics—positive and negative projections vary from species to species*. Several grouse species are projected to decrease or shift northward, while Wild Turkey, Northern bobwhite, and Sage Grouse may increase in the future.

FISH – *Climate change has already led to increased temperatures in freshwater systems, putting cold-water fish species at risk of physiological stress or extirpation in certain waterways, while some warm-water species may experience increased growth rates and northward expansion*. Sizing stream crossings to simultaneously accommodate changing flows and fish passage is a key management strategy (*see bulletins on streams crossings, Part I & Part 2, for more information*).

AMPHIBIANS – *Climate change will drive changes in habitat availability and suitability for amphibian species, which are highly sensitive to changes in temperature and precipitation*.

Note: The full bulletin includes more specific examples of climate impacts and some management recommendations.

Click on the sub-headings to go directly to the corresponding section of the full bulletin, or read the complete bulletin online: http://climatesmartnetwork.org/2016/03/climate-change-wildlife-impacts-part-2/