

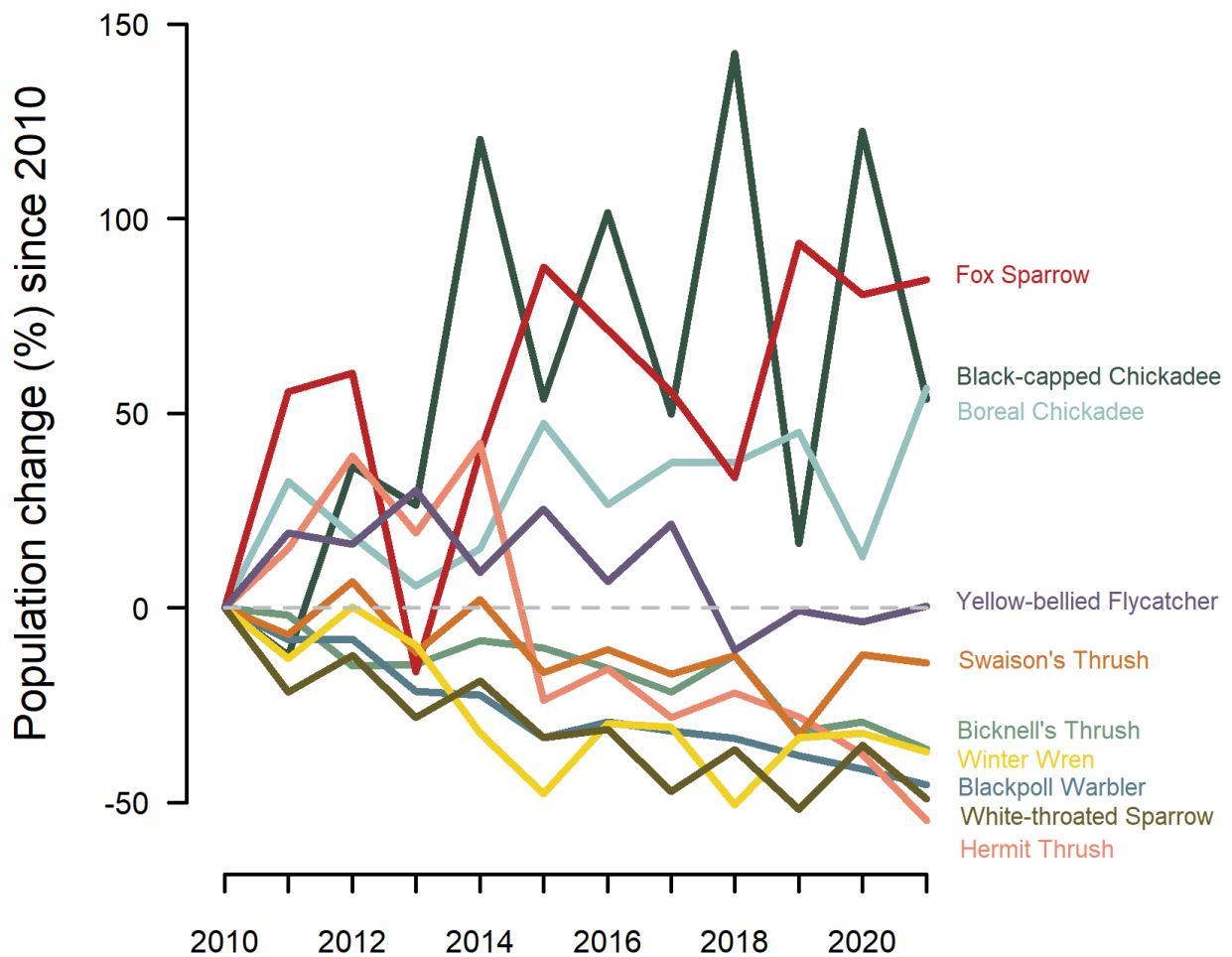
STATE OF THE MOUNTAIN BIRDS 2021 REPORT



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More than a decade of monitoring by many hundreds of community scientists has revealed that our mountain birds are facing challenging times in the northeastern United States. **More than half of the 10 bird species (Winter Wren, Bicknell's Thrush, Swainson's Thrush, Hermit Thrush, Blackpoll Warbler, and White-throated Sparrow) monitored by Mountain Birdwatch have experienced average declines of greater than -39% since 2010.**

Regionally, **the most persistent and widespread declines occurred in the Catskills, where 7 of the 8 monitored bird species declined by an average of -48% since 2010.** Note, Fox Sparrow and Boreal Chickadee do not breed in the Catskills, and only Black-capped Chickadees increased there. To view the trends of each species by region, visit the [focal species pages](#) on the State of the Mountain Birds website.



The estimated percent population change since 2010 for all 10 bird species monitored via Mountain Birdwatch. Positive values indicate a population increase, while negative values indicate a decline compared to 2010. For example, an increase of 100% indicates a doubling of the population size since 2010. The 95% Bayesian credible intervals are omitted for clarity.

The 2021 report is alarming, because it indicates substantial declines for most of the Mountain Birdwatch monitored species whose populations predominantly occur in the spruce-fir zone and indicates declines for Hermit Thrush whose core population occurs further downslope in the hardwood zone. **All bird species and population segments that nest within the high elevation spruce-fir zone, however, are highly susceptible to the effects of global climate change.** As temperatures continue to rise this century, quantitative ecologists predict that boreal species will shift their breeding ranges upslope and northward. By the end of this century, it is likely that the breeding ranges of most of our boreal forest breeders (e.g., Blackpoll Warblers and White-throated Sparrows) will be entirely restricted to the boreal forests of Canada and Alaska.

Given these forecasted changes, it is imperative that we continue to monitor these species through Mountain Birdwatch and document their responses to climate change, and other human-induced planetary changes like habitat loss and degradation. Without the baseline data of Mountain Birdwatch, we will not be in a strong position to fully understand how (or if) these management actions positively benefit these avian populations.

Ecologists predict climate change will diminish existing spruce-fir forest stands in the northeast U.S. by >50% as hardwood forests move up in elevation over the next 200 years.

Mean annual population trends and population change (with 95% Bayesian credible intervals [CRI]) for the 10 avian species and red squirrel monitored through Mountain Birdwatch from 2010 through 2021. The color of the dot preceding the mean annual trend estimate indicates the direction and confidence of the trend: ● (strong evidence for a negative trend), ● (weak evidence for a negative trend), ● (weak evidence for a positive trend), or ● (strong evidence for a positive trend).

Species	Mean annual trend (%)	Trend 95% CRI	Probability of decrease	Probability of increase	Population change (%) 2010-2021	Population change 95% CRI
Yellow-bellied Flycatcher	● 0.06	(-1.28, 1.44)	0.46	0.54	0.92	(-13.21, 17.04)
Black-capped Chickadee	● 4.02	(1.13, 6.96)	<0.01	>0.99	56.06	(13.20, 109.56)
Boreal Chickadee	● 4.19	(0.24, 8.48)	0.02	0.98	60.57	(2.70, 144.83)
Winter Wren	● -4.12	(-4.85, -3.36)	>0.99	<0.01	-36.98	(-42.11, -31.36)
Bicknell's Thrush	● -3.99	(-5.45, -2.46)	>0.99	<0.01	-35.88	(-46.02, -23.98)
Swainson's Thrush	● -1.38	(-2.06, -0.69)	>0.99	<0.01	-14.08	(-20.45, -7.29)
Hermit Thrush	● -6.92	(-8.97, -4.76)	>0.99	<0.01	-54.22	(-64.42, -41.53)
Blackpoll Warbler	● -5.34	(-6.04, -4.65)	>0.99	<0.01	-45.29	(-49.59, -40.78)
White-throated Sparrow	● -5.96	(-6.76, -5.17)	>0.99	<0.01	-49.07	(-53.67, -44.20)
Fox Sparrow	● 5.59	(2.34, 8.87)	<0.01	>0.99	84.51	(29.00, 154.79)
Red Squirrel	● 3.99	(0.40, 7.48)	0.01	0.99	56.43	(4.51, 121.09)

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