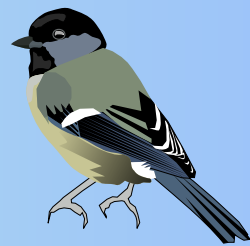




How do birds help us?



This piece shows an unrecognizable bird with three different types of feathers, representing three out of more than 300 bird species that live in Massachusetts every year (Mass Audubon 2025): the **American robin**, the **crow**, and the **black-capped chickadee**. You have probably heard their calls before! These three species represent only a sample of the large species diversity that the Sanctuary has.

These birds enhance conservation of the Sanctuary in ways like acting as **natural pest controllers**, **contributing to pollination**, and **excreting waste**. Birds' role in controlling insect populations is significant; a recent study shows that birds eat **400-500 million insects per year** (Law 2019). Controlling insect populations helps maintain biodiversity by preventing the insects from exhausting the resources and plants they eat. Birds like hummingbirds can also pollinate, and others spread seeds by eating and excreting them through droppings. This increases the biogeographic diversity of the Sanctuary by **spreading the distribution of plants** throughout the different areas (Law 2019). Therefore, from an ecological perspective, bird feces increase biodiversity by supporting plant reproduction.

The birds' control over insect populations demonstrates their role in a **top-down ecosystem structure**. Insects like bees, beetles, and butterflies are also key pollinators in the Sanctuary (Mass Audubon 2025). Despite their benefits, birds and other predators must ensure that these natural insect populations do not mass produce and deplete all the resources in the Sanctuary.

Birds can benefit primary producers by excreting their waste (poop), which transports the indigestible seeds that they eat. Not only does poop allow plants to distribute throughout the Sanctuary, but it also **benefits plant growth**. Bird poop also contains compounds like uric acid, ammonia, and urea (Alltech 2021), all which contain **nitrogen**. Nitrogen is a vital component of the chlorophyll molecules in plant cells which perform **photosynthesis**—the process of using sunlight to produce sugars from water and carbon dioxide. In turn, nitrogenous compounds in bird poop enhance photosynthesis and increase plant growth, while also aiding processes like **carbon sequestration**, which helps fight the effects of global warming.

Ecosystem services that birds provide include

- **regulating services** like pollination, air purification, carbon sequestration
- **(indirect) provisioning services**. For example, around 5% of plants humans use for medicine are pollinated by birds (Law 2019)
- **cultural services/non material benefits**

These are just a few of the services that birds provide, but there is definitely more emphasis on cultural services in recent years. Many people love birdwatching, and protected areas like the Sanctuary house different bird species, providing these recreational opportunities for the public. However, there's convincing evidence that birds can even benefit our **mental health**! A 2017 study in *BioScience* revealed that bird abundance in urban neighborhoods was positively associated with **lower levels of depression, anxiety, and stress** of the people living there (Law 2021). With their signature and sometimes nostalgic calls, birds can even boost our **attention span** and help us destress. A 2013 study in the *Journal of Environmental Psychology* found from interviewing twenty participants that birdsong often helped them recover from stress and restore their attention to the natural world (Law 2021). There are so many benefits from birds that fulfill our lives—many of which we don't even realize.



I encourage you to either make your own art of a bird with natural materials or photograph any birds that you see. Post your art to your Instagram account (if you have one) and tag @agreenerblue to share your work!

Use this tag in your post!
#DrawnToEarth

