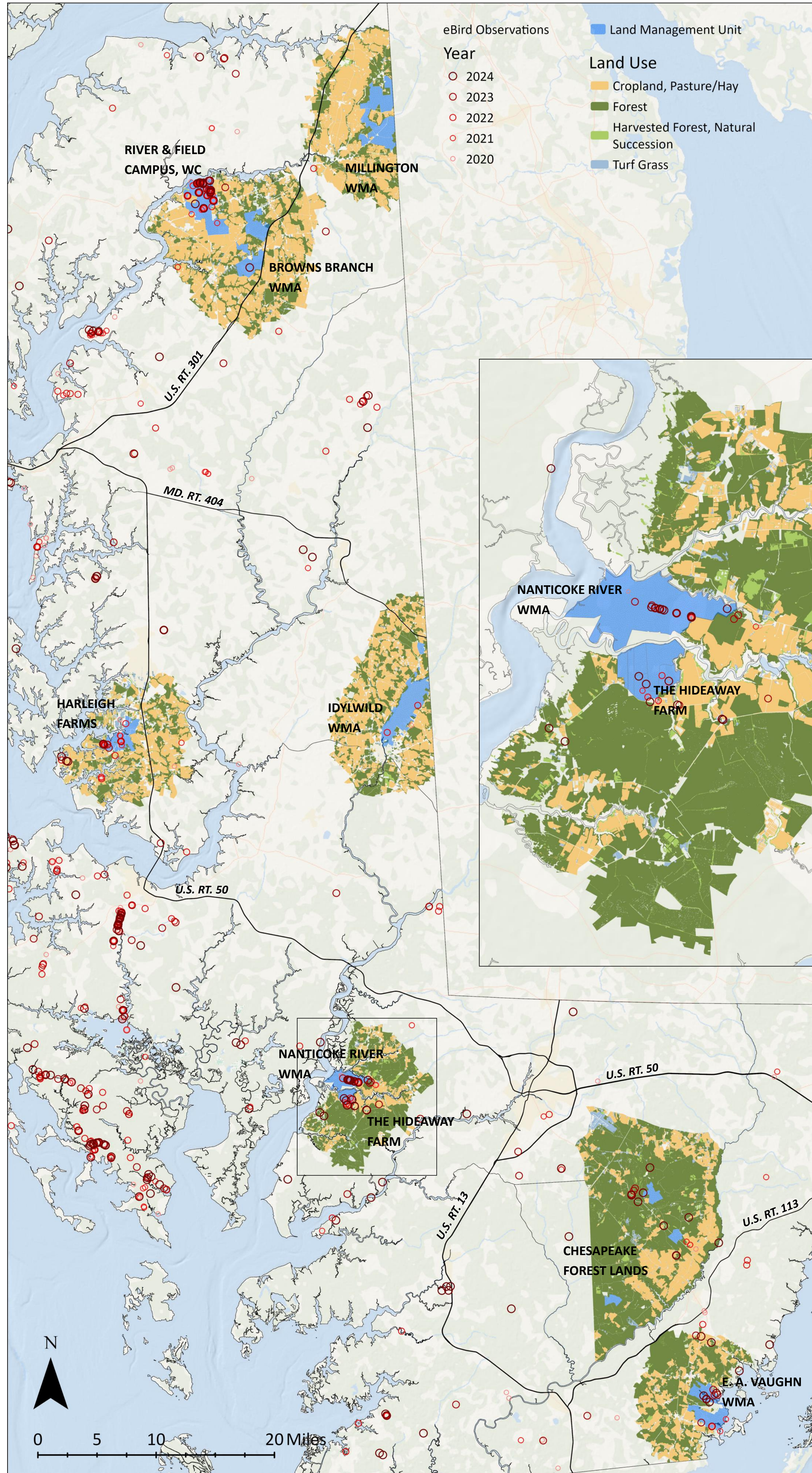


Early Successional Habitat

Beyond Northern Bobwhite Quail: Co-benefits of Targeted Habitat Restoration



Succession is the process of an ecosystem changing in composition (flora, fauna) and structure (height, layers) over time. Succession is ‘reset’ when there is a disturbance that clears the land of vegetation, e.g. timber harvest, wildfire. The first stage of growth after disturbance is known as *early successional habitat*, categorized by low, dense growth of grasses, forbs, and shrubs. Many of Maryland’s native species depend on this highly biodiverse habitat type for some or all of their needs.

However, there is not a balanced portion of early successional habitat on our landscape. Early successional habitats here in Maryland begin to transition into forest after about 10 years. According to Maryland’s Forest Assessment, only 8% of the state’s timberland is younger than 20 years; about 15-20% is ideal. Development pressure, suppression of natural disturbances, and reduced capacity for timber harvesting are the main factors limiting early successional habitat. Active land management is key to restoring a balanced landscape.

The northern bobwhite quail is a charismatic small game species. Bobwhite quail populations have been in decline since the mid-1900s, as much as 4% per year from 1966 to 2014, according to the University of Maryland Extension. Habitat loss is the biggest driver of this decline. Bobwhite quail:

- Forage and nest in areas of dense low cover — grasslands or meadows with some shrubby growth — during the spring and summer;
- Shelter and forage in hedgerows around fields and open woodlands with a low understory during the fall and winter when meadow grasses die back.

It is important that these habitat types be within a quarter to half-mile of each other, as bobwhite quail spend most of their time on the ground, rarely taking flight except to evade predators. Restoration often focuses on maintaining a mosaic of meadows, hedgerows, and open woodlands across a landscape.



A pair of northern bobwhite quail (*Colinus virginianus*) rests in a patch of purple flowers. Feather coloration on the head distinguishes the birds: the female has light brown feathers (left), while the male has bold black and white feathers (right).

Goals

1. Consider eBird data as an indication of where bobwhite quail are on the Shore.
2. Identify land management units focused on building early successional habitat for bobwhite quail.
3. Assess opportunities to amplify habitat efforts in the areas surrounding land management units — i.e. *focal areas*.

Process

1. Download eBird data for northern bobwhite quail on the Eastern Shore of Maryland (Kent, Queen Anne’s, Caroline, Talbot, Dorchester, Wicomico, Somerset, and Worcester counties).
2. Talk to experts about factors taken into account when planning expansion of quail habitat.
3. Buffer land management units by 3 miles. New projects within that proximity to an existing project will be most likely to attract and support new quail populations.
4. Retrieve land use data for properties within the 3 mile buffer.

Limitations

1. Biases of eBird data collection — identifications reported by users may not represent the actual distribution of bobwhite quail.
2. Pen-raised birds released for sport or in hopes of re-establishing the species are not shown to survive long-term and cannot be distinguished from wild birds.
3. Complexity of bobwhite quail habitat — wildlife experts consulted stated that quail habitat opportunity is difficult to assess by data and mapping alone; field knowledge is essential.

Conclusion

These focal areas may represent the best opportunity for maximizing the impact of resources. Building early successional habitat near current strongholds can promote movement and population growth. As the focal areas are mostly privately-owned land, fostering partnerships with private landowners will be key to expanding habitat for bobwhite quail. Outreach, technical support, and cost-share programs will be our best tools.

Expanding habitat for bobwhite quail has many co-benefits, including:

- Diversifying the landscape fosters resilience, allowing ecosystems to better adapt to changes.
- Early successional habitat is great for the pollinators that support agriculture.
- Early successional habitat enhances nature recreation including bird-watching and hunting.

References & Further Learning

Cornell Lab of Ornithology. eBird. <https://ebird.org/home>

Maryland Department of Natural Resources. (December 2020). Forest Action Plan, Part 1: Forest Resource Assessment. <https://dnr.maryland.gov/forests/Documents/Maryland-State-Assessment-2020FINALpages.pdf>

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Maryland Department of Natural Resources. Northern bobwhite quail. https://dnr.maryland.gov/wildlife/pages/plants_wildlife/bobwhitequail.aspx

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Focal Area Anchor	Private Ownership within Focal Area	Viable for Restoration (acres)	Percent of Viable for Restoration: Land Use
Millington WMA	99%	27,659.40	67% Cropland, 30% Forest, 2% Natural Succession, 1% Turf Grass
RAFC & Browns Branch WMA	99%	41,781.43	67% Cropland, 30% Forest, 2% Turf Grass, 1% Natural Succession
Harleigh Farms	99%	23,334.11	58% Cropland, 32% Forest, 6% Turf Grass, 4% Natural Succession
Idylwild WMA	96%	32,712.43	59% Cropland, 37% Forest, 2% Natural Succession, 2% Turf Grass
Nanticoke River WMA & The Hideaway Farm	76%	23,183.73	72% Forest, 22% Cropland, 4% Natural Succession, 2% Turf Grass
Chesapeake Forest (Nassawango area)	65%	35,510.49	76% Forest, 21% Cropland, 2% Natural Succession, 1% Turf Grass
E. A. Vaughn WMA	83%	23,212.52	60% Forest, 37% Cropland, 2% Natural Succession, 1% Turf Grass