Forest Stewards Guild
putting the forest first

WILDLIFE CONSIDERATIONS IN ASSESSING OAK FOREST RESILIENCY

Assessment considerations compiled by:
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Photo credit Connor Hogan

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AGE STRUCTURE OF THE FOREST

Diversity in tree age classes increases resiliency and provides more habitat features for wildlife. Younger classes provide leaf and bud browse, for example, while older classes can offer tree cavities and high exposed perches. Look for age class diversity distributed throughout the forest or in patches.

ASSESS:

- **Is the oak forest principally even-aged, or are there multiple age classes of oak?**

TREE SPECIES DIVERSITY

Having more oak species present increases resilience by improving the likelihood of hard mast being available for wildlife in any given year, especially given possible increases in drought or insect defoliation. Species diversity beyond oaks also increases redundancy in food sources (including hard and soft mast as well as browse) and contributes to wildlife resilience.

ASSESS:

- **Is the forest almost entirely northern red oak?**
- **Are there multiple overstory oak species such as scarlet, black, white, and chestnut oak?**
- **Are there other tree species present such as hickories, cherry, birches, or pines?**

Photo credit Connor Hogan

SHRUB LAYERS

Shrub layers can increase resilience by providing alternative sources of browse and mast. They also provide cover and nesting opportunities.

ASSESS:

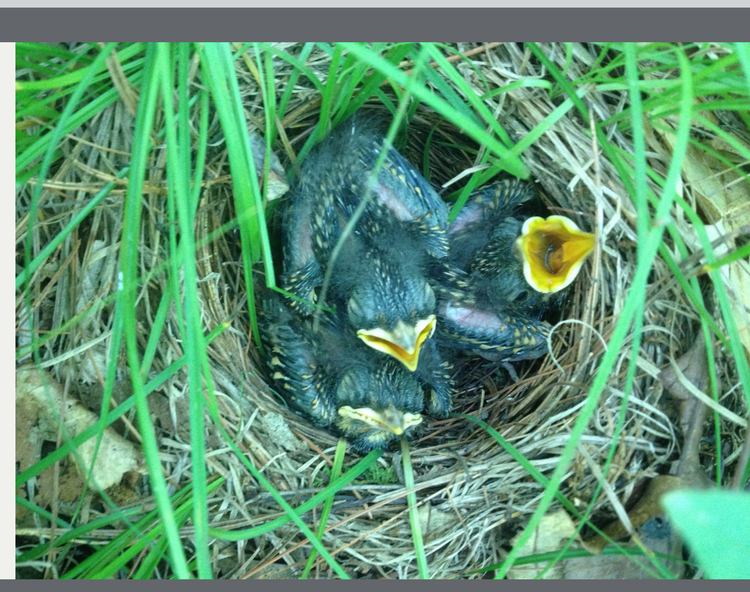
- **Is there one or more well-developed layer of native shrubs in the understory?**

HERBACEOUS AREAS

Herbaceous areas increase resilience by providing an early spring food source for wildlife and also serve as potential sites for tree regeneration.

ASSESS:

- **Are there areas where enough light reaches the forest floor for grasses, sedges, or forbs to grow?**



Overbrowsing

Too large a population of deer can decrease native plant diversity in the understory, prevent tree regeneration, favor the establishment of invasive plants, and interact with the presence of invasive plants and earthworms to reduce resiliency dramatically. This combination can result in a forest with little to no soil litter layer, a diminished organic soil horizon, and a proliferation of exotic invasive plants, which together can limit regeneration of native trees, shrubs, and herbaceous plant species.

ASSESS:

- How high is the density of browsers like white-tailed deer or moose?
- Is there a clear browse line?

Photo credit Christa Rittberg

Photo credit Leonora Pepper

Topographic, hydrological, and edaphic characteristics

Greater diversity in topographic, hydrological, and edaphic characteristics leads to greater resilience.

ASSESS:

- Is the forest all on a single soil type or on many?
- Is the underlying bedrock uniform or diverse?
- Is there a diversity of landforms such as slope, aspect, ridge, valley, etc.?
- Is there a single hydrological regime, or does the forest include wetlands, stream buffers, and uplands?

Disturbance history

The impacts of past land management regimes can continue to manifest in current forest hydrology and soil conditions. These in turn can affect forest species composition, growing conditions, and other resiliency factors.

ASSESS:

- Are the forest soils still recovering from past agricultural land uses such as cropping or pasturing?
- How did these past uses affect soil composition and diversity?
- Was hydrology impacted?

Invasive species

Invasive plants can reduce resiliency by out-competing native species and usually provide lower-quality or less palatable food sources for native wildlife. Invasive insects can reduce resiliency by impacting native plant species, often leading to increases in invasive plants. All terrestrial earthworms in the northeast are invasive; they reduce forest floor nutrient accumulation and forest productivity, decrease the species diversity among native herbaceous plants, and increase invasive plant cover, all of which reduce the resiliency of the forest.

Photo credit Hayley Anderson

ASSESS:

- Is the forest free of invasive plants?
- Is the forest free of invasive insects?
- Are the forest soils populated by invasive earthworms? Is the forest located beyond the invasion front, or are the earthworms approaching?
- Is there evidence of impact from non-native earthworms? Is there bare soil with no litter layer? Are tree roots and the bases of trees exposed?