

The importance of transitions and connectivity in our managed landscapes

With the mission of the Maryland Native Plant Society to promote awareness and conservation of Maryland's native plants and their habitats, our organization focuses our efforts on preserving wild spaces. But we are also acutely aware of the impacts that landscaped lands have on our wild spaces. This issue of *Marilandica* highlights how we can better steward the land in our care to help foster biodiversity.

With over 90 percent of the land in Maryland privately owned (<https://www.nrcm.org/documents/publiclandownership.pdf>), private lands are critical for the state's biodiversity and can also impact adjacent wild spaces either positively or negatively, depending upon how that land is managed. In Maryland, private land is frequently farmed or turfed and adjacent to wild space that is forested. This transition between distinct ecological communities is an 'ecotone' which typically host a high degree of biodiversity. When the bordering habitats are in good ecological condition, this zone of varying characteristics represents a boon to biodiversity.

Fireflies are a species that thrive in an ecotone. When a forest abuts a grassland managed with wildlife in mind, i.e., one that is mown annually, you will find large populations of fireflies. Fireflies spend 95% of their lifecycle in leaf litter. But during their mating phase, they spend their days hiding in tall grasses and rise up into the tree canopy at dusk, where they can flash and attract mates. Fireflies need all these habitats to live. Heavily mown turf and/or pesticide use reduce firefly populations. I share this example because I am lucky enough to witness magical firefly light shows in my own yard, while my neighbors with standard turf have far fewer fireflies.

In addition to contributing to healthy ecotones, high-quality habitat on private land can provide connectivity between



A common eastern firefly, *Photinus pyralis*, on common milkweed, *Asclepias syriaca*, in Lauren's field. Photo by Lauren Hubbard.

otherwise isolated wild spaces. Research continues to show that providing habitat corridors, even small ones, helps fragmented habitats recover biodiversity more quickly, saves local populations, and reduces the rates of extinction. Damschen et al., *Science* 365, 1478–1480 (2019). Building and managing high-quality habitat corridors will help buffer against species losses.

Habitats, connectivity, and ecotones only support biodiversity if the spaces are filled with appropriate species. Within the continental USA, Maryland has some of the highest densities of exotic species per area (bonap.org), making it especially challenging to develop and maintain high-quality habitats. I have frequently witnessed invasives creeping into wild areas, such as Rachel Carson Conservation Park, where *Miscanthus* grass from neighboring properties is making inroads along the edge of the park, and in Rock Creek Park, where Japanese Barberry is found in abundance due to spillover from adjacent residential landscapes.

It is in the wonderful wild spaces that many of us find peace amidst a chaotic world. Protecting them will require participation from both private and public land managers. There is work to be done on many fronts: controlling invasives, promoting native plants, citizen observations, research, lobbying on behalf of our leafy friends, and protecting habitat. Without significant contributions from private landowners, our chance of successfully maintaining or improving biodiversity is significantly diminished. I hope this issue of *Marilandica* will provide you with the inspiration to do this good work.

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