

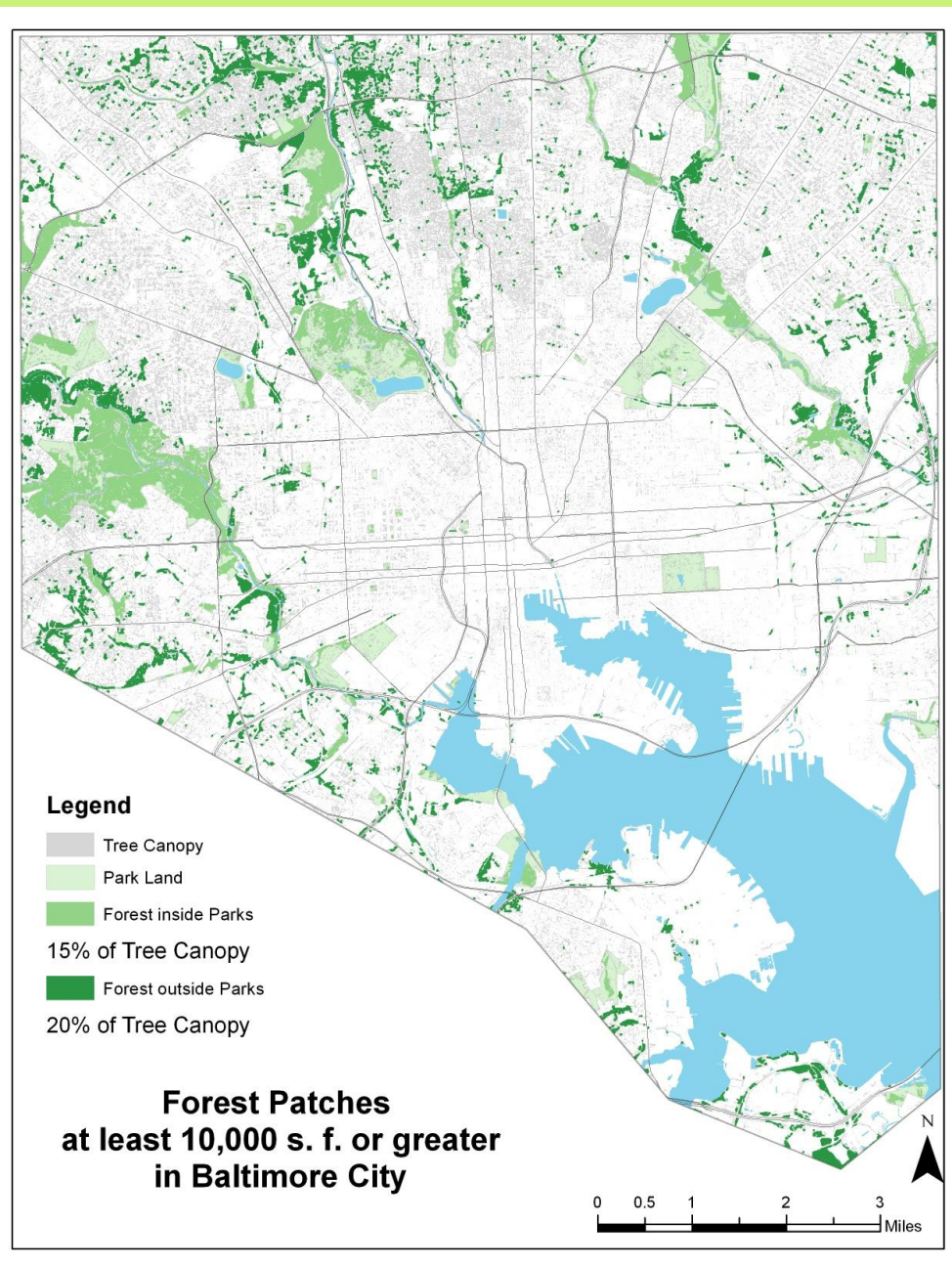
2,154 acres
of forest patch
outside parks
(20% of city's
tree canopy)

FOREST PATCH FIRST AID



CREATED BY KATIE LAUTAR

- **>1,000 forest patches**
- **100 on- the-ground surveys**
- **88 quick surveys**
- **45 in depth forest health protocol**



ASSESSING URBAN FOREST PATCH HEALTH: A PROTOCOL





Forest Health Assessments



Fairwood Forest



Location: White Ave & Belair Rd (Northeast Baltimore)

Size: Approximately 3.8 acres

Points Sampled: 12

Trees sampled: 124

Species identified: 23

Special tree fact: High amounts of native tree biodiversity

Fun Species: Swallowtail Butterfly (*Papilio* sp.) photographed at the park

Dominant Tree Species

Canopy dominated by White Oak (*Quercus alba*)
Tulip Poplar (*Liriodendron tulipifera*)

Understory Abundance

Hickory (*Carya* sp.) saplings
Flowering dogwood (*Cornus florida*)

Vegetation

17% native
79% non-native
4% were unknown species and could not be identified past genus

Groundcover

Dominated by English Ivy (*Hedera helix*)
Indicator species: Poison Ivy (*Toxicodendron radicans*)
abundance indicates high fertility soils₁
36% leaf litter
59% vegetation
5% bare ground

Soil profile: Silty clay with areas of higher loam and clay content.

Organic Matter: approximately 7.1% on a scale from less than 3.5% to greater than 13.50%.

Bulk Density: 1.2 g/cm³. This is within the ideal range of less than 1.1-1.4 g/cm³)₂

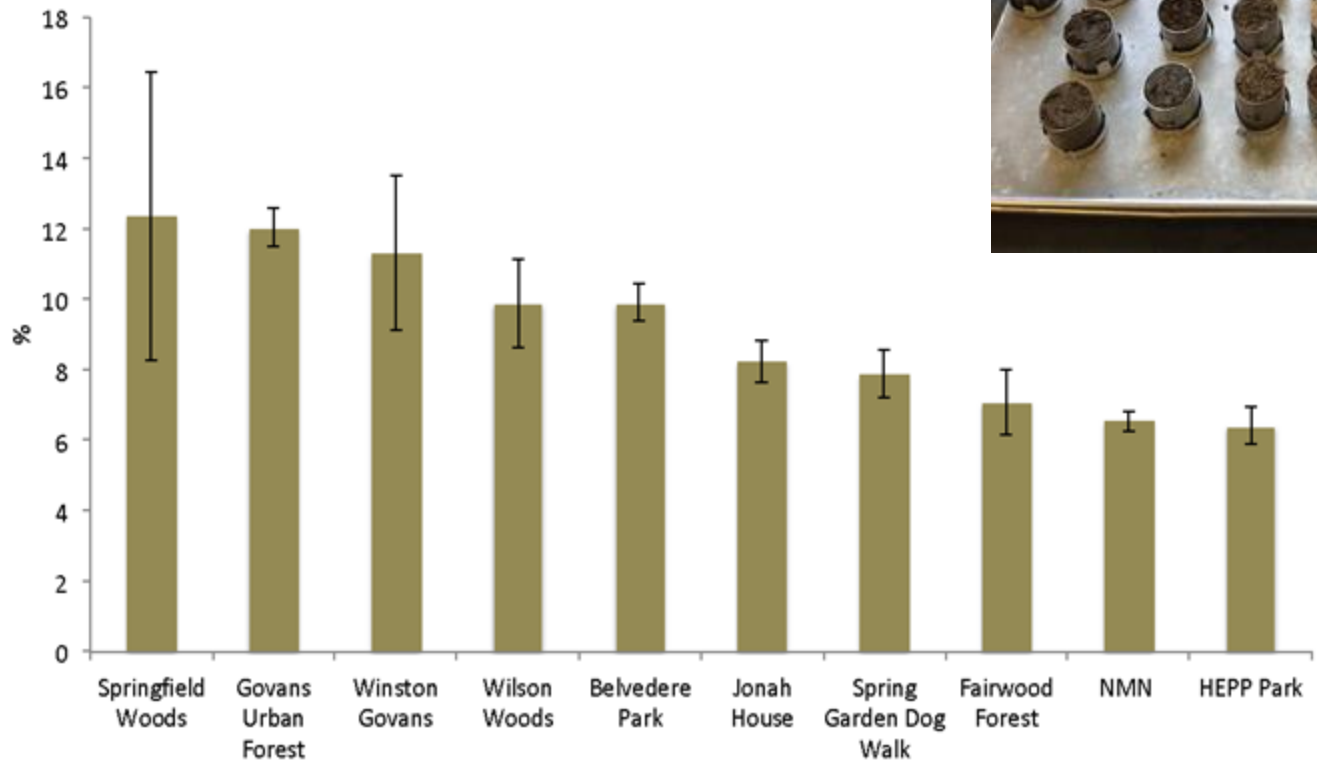
Invasive Warning

* 79% of your groundcover is non-native; this is of concern. Kudzu, a highly aggressive invasive species, was also sighted in your forest.

English Ivy (*Hedera helix*) - Aggressive vine that overtakes trees and ground space. Adds excessive weight and reduces photosynthesis of trees₄

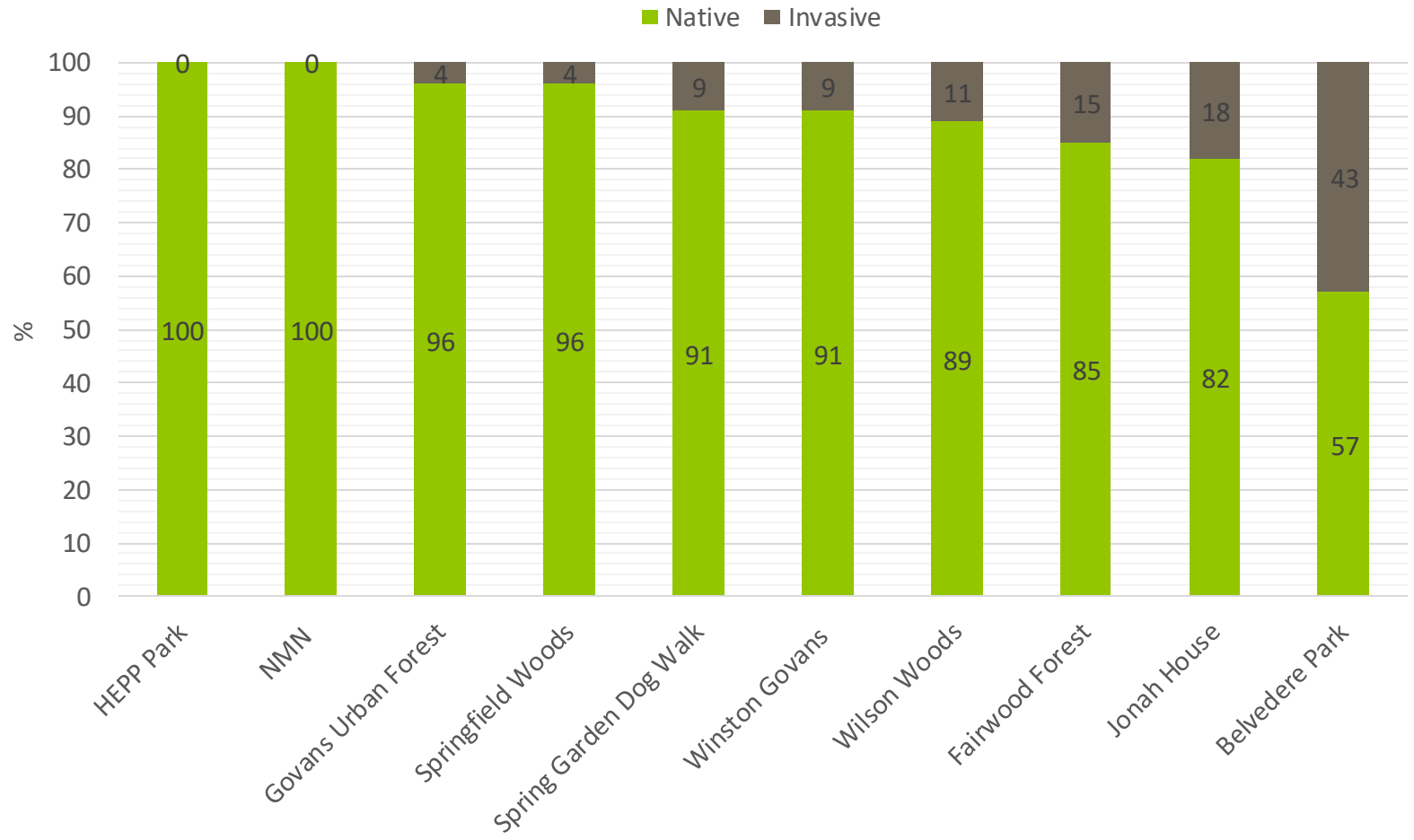
Japanese Honeysuckle (*Lonicera japonica*) - Aggressive vine that crowds out native species₅

2016 Stewarded Patches
Soil Organic Matter

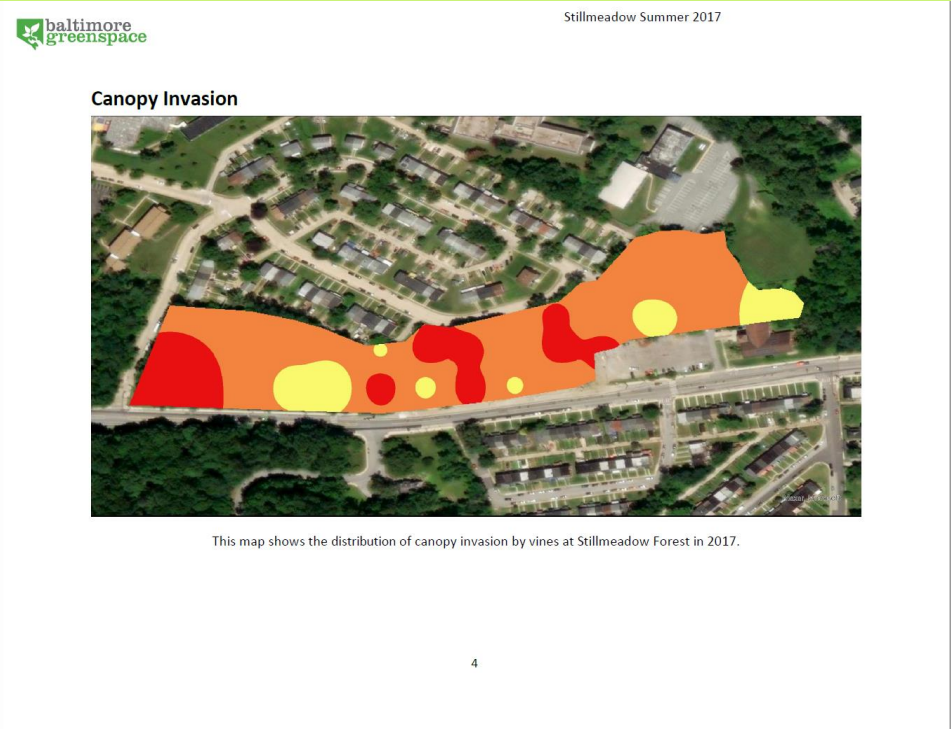


Previous research

2016 Stewarded Patches Proportion of Native and Invasive Trees

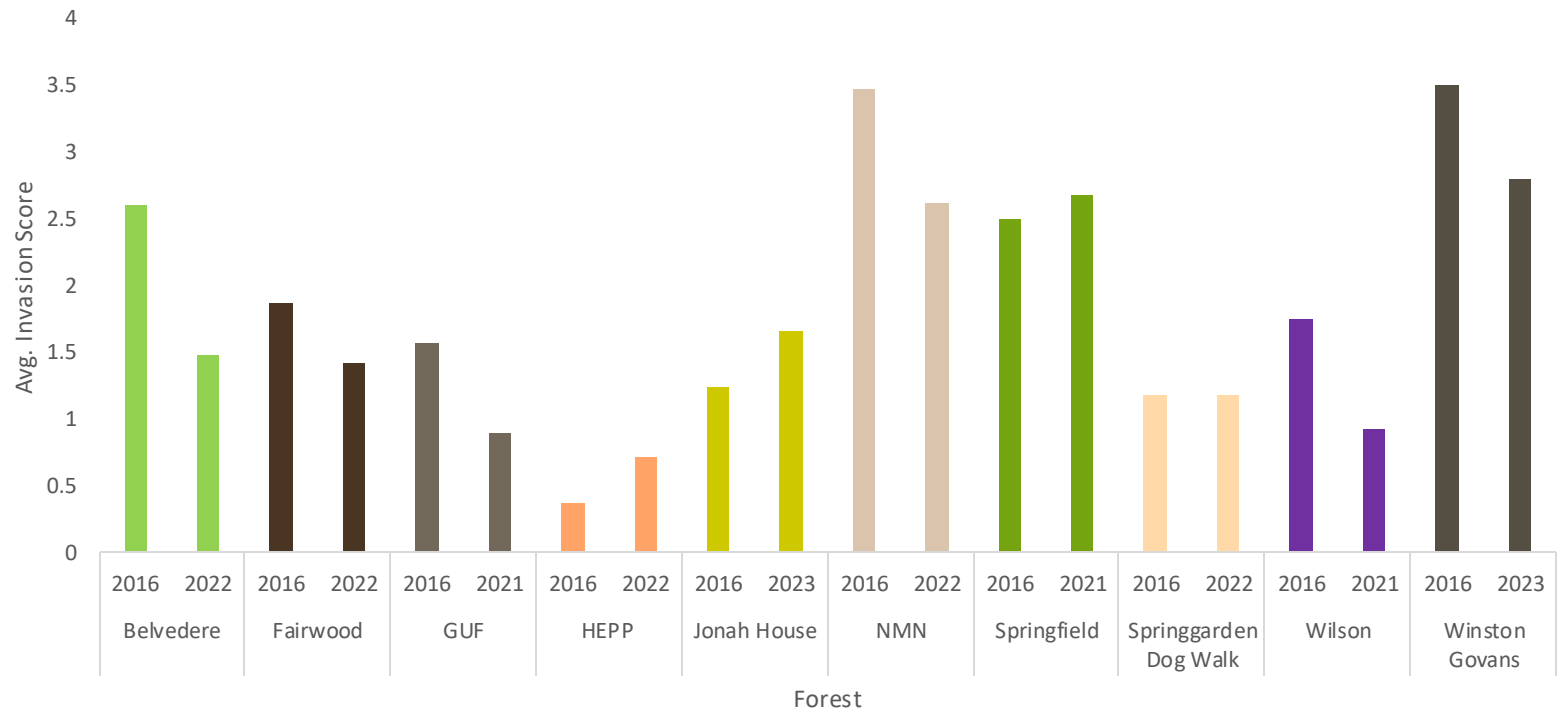






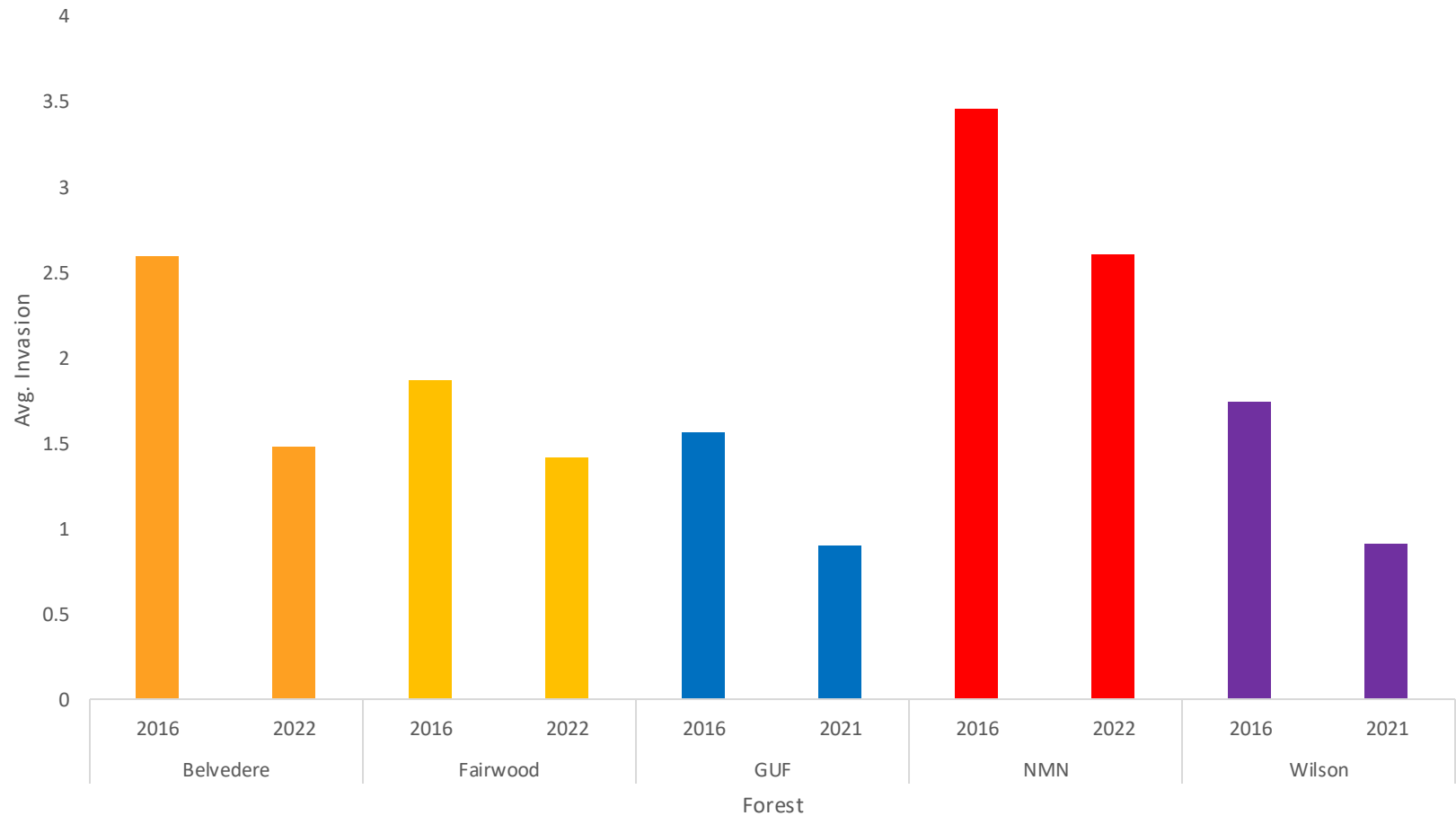
Canopy Invasion

Canopy Invasion



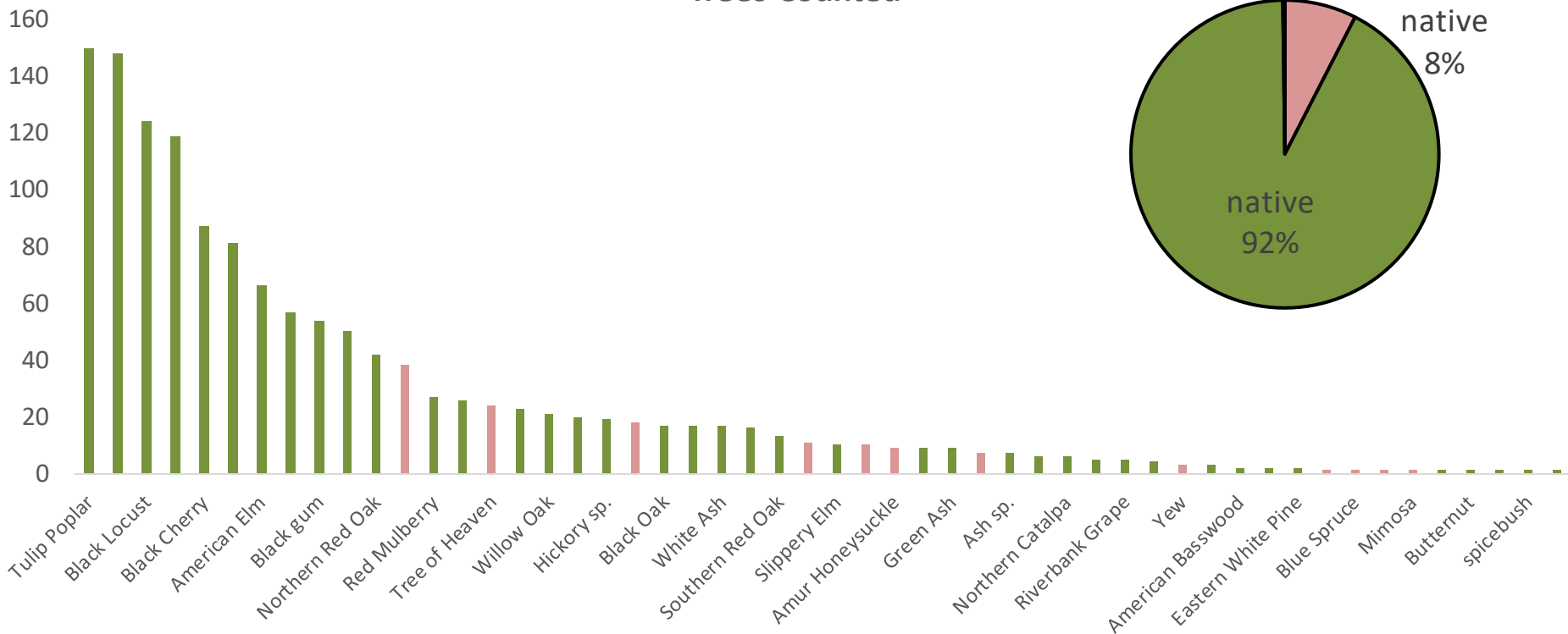
Canopy Invasion

Canopy Invasion: Active Stewardship



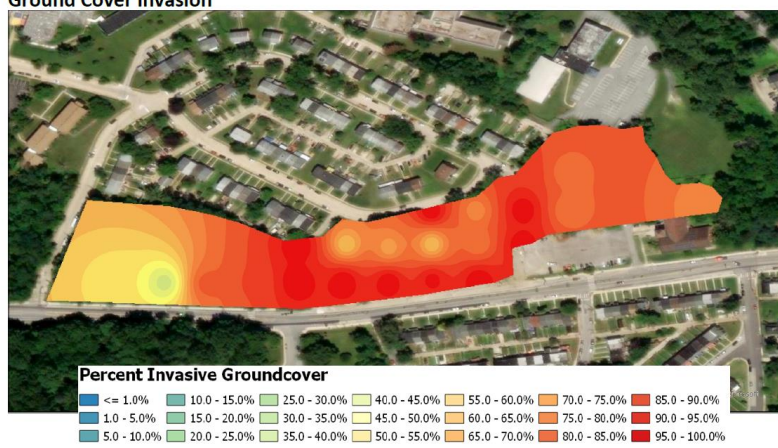
Canopy Invasion

Trees Counted



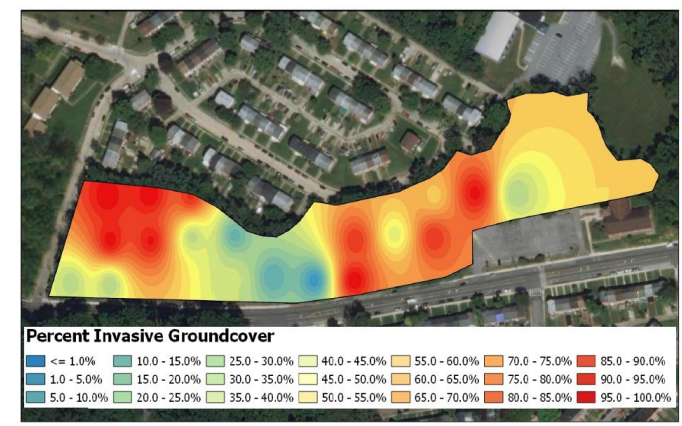
Canopy Composition: 16 Forests in 2021-23

Ground Cover Invasion



This map shows the distribution of non-native groundcover found in Stillmeadow Forest in 2017.

Ground Cover Invasion



This map shows the distribution of non-native groundcover found in Stillmeadow Forest in 2022.

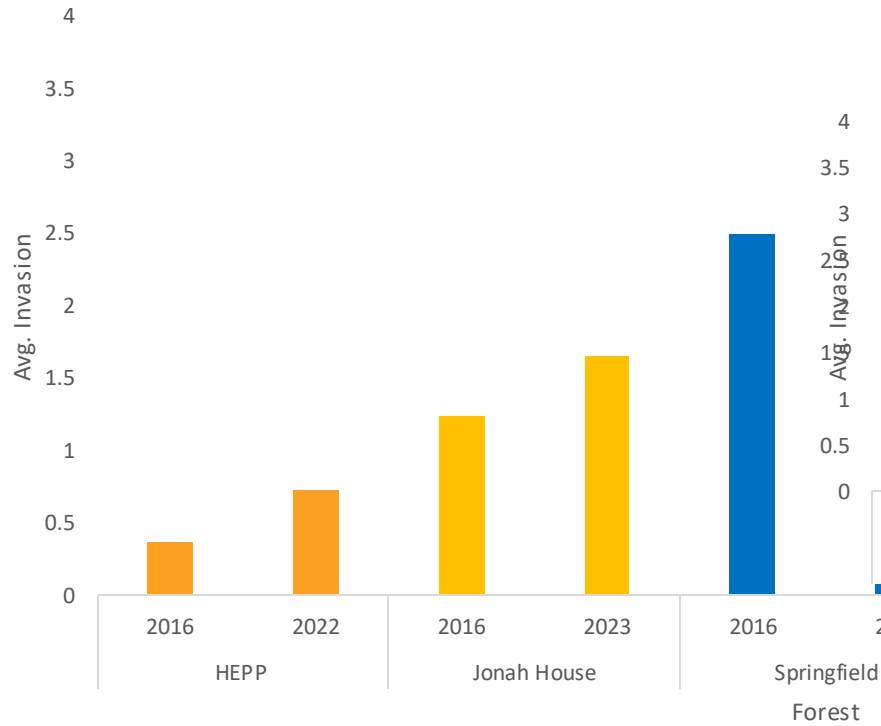
Ground Invasion: Stillmeadow

Ground Cover Invasion

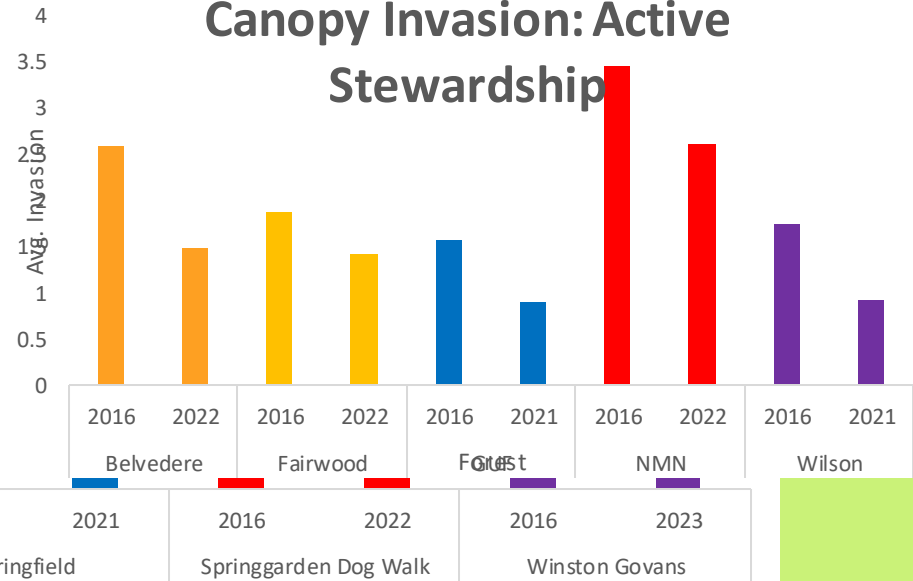


Ground Invasion: Fairwood Forest

Canopy Invasion: Faded Stewardship

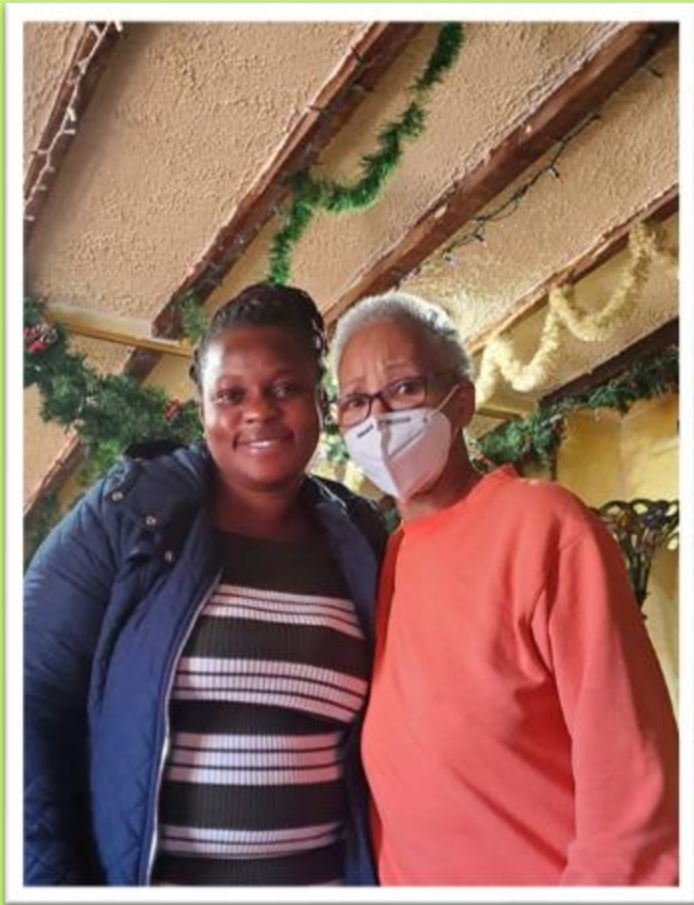


Canopy Invasion: Active Stewardship





Caution: Drop in stewardship: HEPP



Sharing with Community

Chinese Yam (*Dioscorea polystachya*)



a. Variable leaf shapes



b. Bulbils



c. Climbing mature trees



d. Forest Invasion



e. Flower

Identification: Leaves are pointed, heart-shaped often indented on the sides, opposite or alternate. Are slender vine that spirals counter-clockwise. The junction of the petiole and leaf blade often has a distinctive red-purple color. A small aerial tuber called a tubercle, is usually produced in each leaf axil. Tubercles present from June to September, resemble tiny potatoes.

Hazard: A climbing vine that rapidly invades undisturbed habitats, reduces biodiversity, and damages the branches of large trees and shrubs. It can form pure stands in upland disturbed habitats (cemeteries, home sites, and roadsides) and riparian corridors. This species is primarily a threat to woody plant establishment and the late summer-autumn herbaceous graminoids and forbs.

Removal: Using a digging tool, remove the entire plant, including all roots and tubercles (if present). Juvenile plants can be hand pulled depending on soil conditions and root development. Any portions of the root system not removed will potentially resprout.

Sharing with Community: Guides

Sharing with Community: Guides

Jewelweed (*Impatiens capensis*)



Introduction: An annual plant in the balsam family (Balsaminaceae) native to northern and eastern North America.

Description: Jewelweed is an herbaceous plant that grows 3-5 feet tall and blooms from late spring to early fall. The flowers are orange (sometimes blood orange or rarely yellow).

Other Common Names: Orange balsam, Orange jewelweed, Spotted jewelweed, and Spotted touch-me-not.

What Animal Eats Jewelweed?

Caterpillars of many types of moths and white-tailed deer feed on its leaves. Its seeds are consumed by a number of species of birds including northern cardinals and eastern towhee, as well as native mammals including white-footed mice.

Fun Facts: Typically grows near poison ivy, and it is the antidote for the itchy rash which occurs from poison ivy. The parts that grow above the ground are used to make medicine. Care must be taken not to confuse jewelweed with other similar plants

Habitat: Jewelweed grows in moist soils in semi shaded areas. It can often be found next to streams, springs, or creeks in forests

Jewelweed



a. Variable leaf shapes

c. Identification tips



d. Variable stages



e. Flower

Forests Patches and Temperature

Environ. Res. Lett. **16** (2021) 084028

M Alonzo *et al*

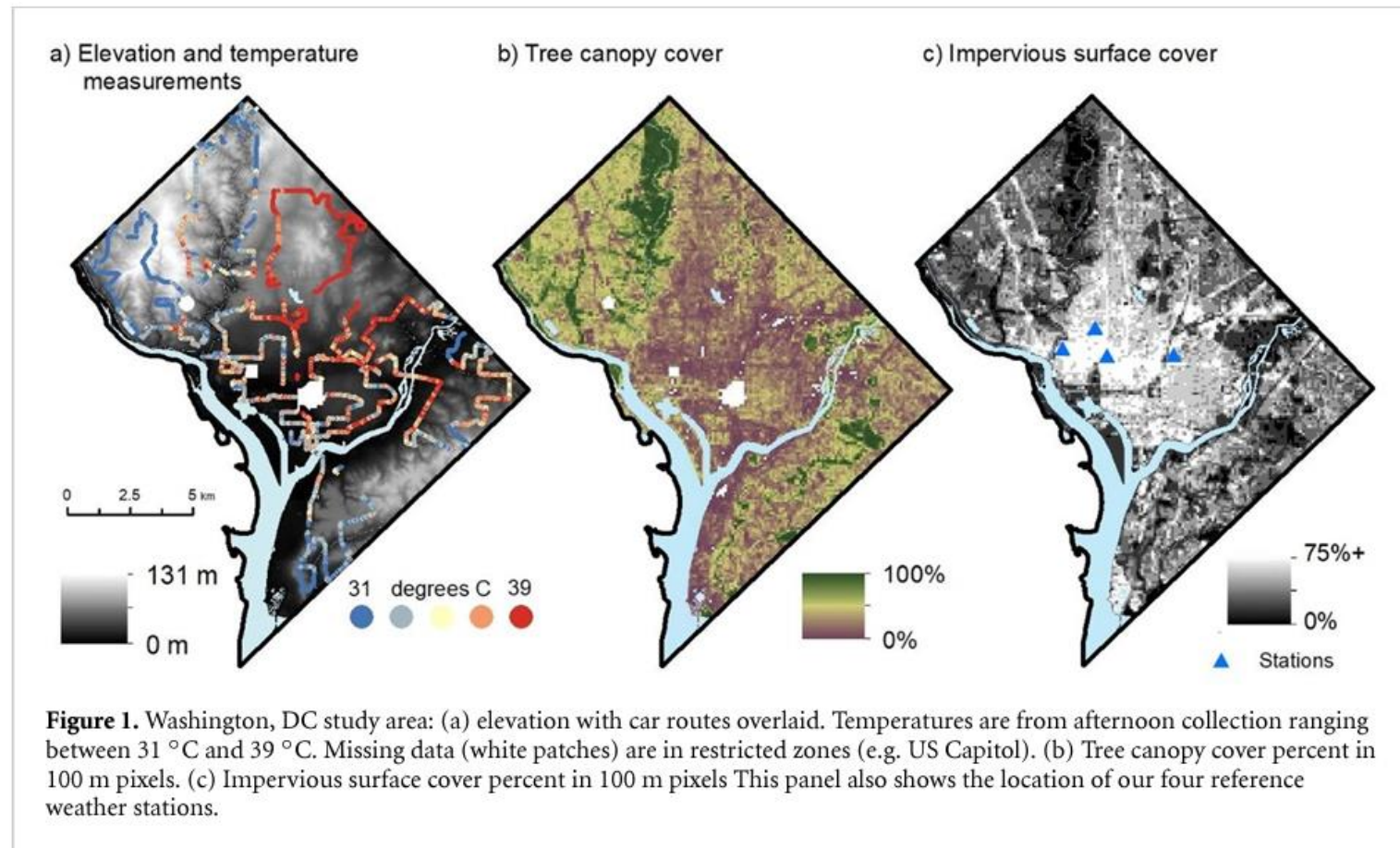
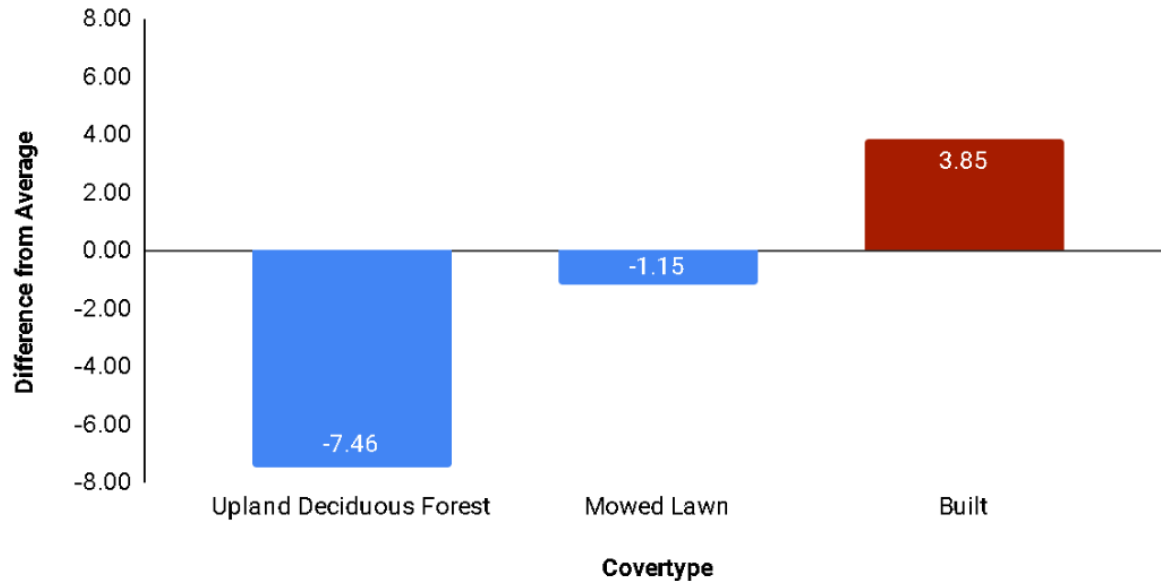


Table 1. Data descriptions.

Forests Patches in Baltimore

What landcover types are the coolest?

Baltimore, MD



MAX TEMPERATURES - Healthy/Degraded

Gwynns Falls - Leakin
Park: 89.14°F / 90.53°F

Fairwood Forest:
93.93°F / 93.93°F

Healthy Forest



94.08 °F

Degraded Forest



100.95 °F

Springfield Woods Max Temps

Thank you!



UMBC

