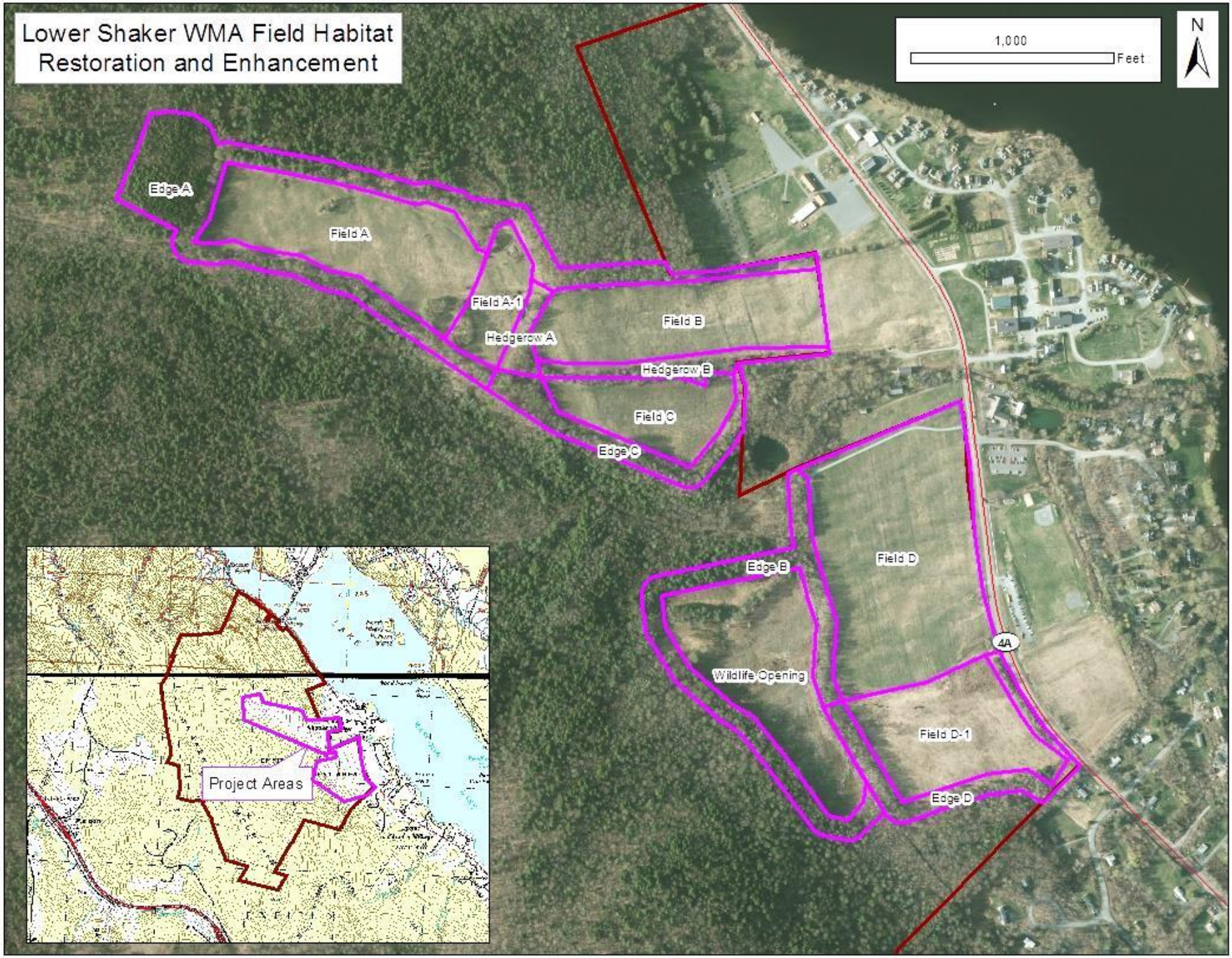

Lower Shaker WMA
Field Habitat Restoration and Enhancement


Lower Shaker WMA Field Habitat Restoration and Enhancement
1,000
Feet
N
Edge A
Field A
Field A-1
Field B
Hedgerow A
Hedgerow B
Field C
Edge C
Edge B
Field D
4A
Wildlife Opening
Field D-1
Edge D
Project Areas

Treatment Plan: Field A, B, D

- **Objective:**

  Restore Grassland

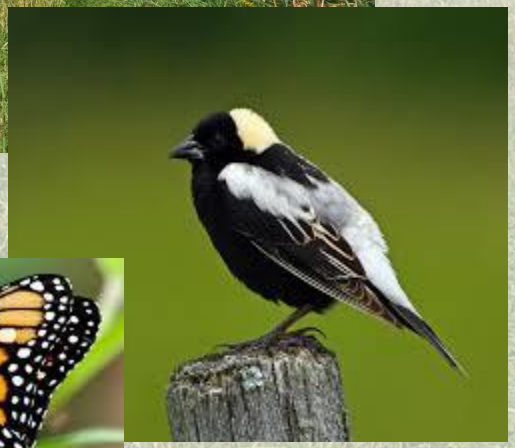
- **Treatment:**
  - Mow frequently
  - Invasives control
  - Soil amendments - ash
  - Seed grass/clover

Targeted Wildlife

Treatment Plan: Edges A & C, & Hedgerows

- **Objective:** Meadow
- **Treatment:**
  - Invasives control
  - Rotational mowing

Targeted Wildlife



Treatment Plan: Everything Else

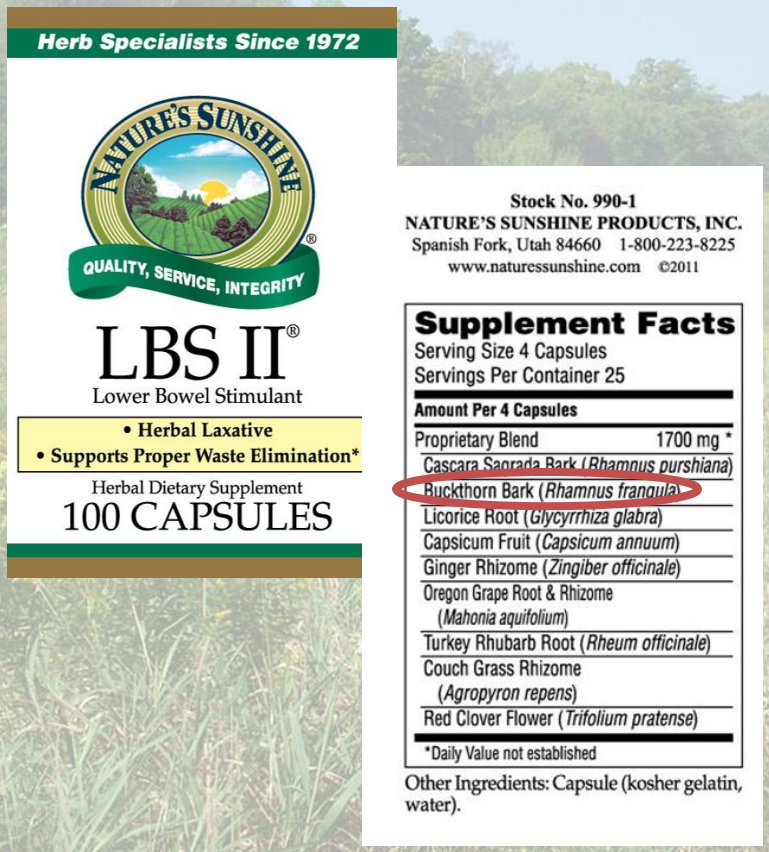
- **Objective**:
  Shrubland and Young Forest

- **Treatment**:
  - Invasives control
  - Harvest trees
  - Rotational mowing

Targeted Wildlife

Invasive Exotic Plant Control

Why Control?



Some poor food for birds (buckthorn - laxative)

Poor food source for mammals

Why Control?

Reduction in nesting success
(rose and honeysuckle)

Reduce plant diversity

- Nesting sites
- Food availability
  (insects and fruits)

Why Control?

Deter spread into managed habitats.

How to Control?

- **Targeted Herbicide Application**

- **Herbicides**:
  - 2.0% glyphosate
  - 1/4% imazapyr
  - < 0.01% metsolfuron methyl

- **In 100 gal mix – Approx 10 acres**
  - 2.5 gals glyphosate
  - 32 oz imazapyr
  - 3 oz metsolfuron methyl

State Lands Management Team

- Forest Management Bureau
- Division of Parks & Recreation
- Trails Bureau
- Fish & Game Department
- Natural Heritage Bureau
- Div. of Historic Resources
- Wetlands Bureau
- Nongame & Endangered Wildlife Program

Local Questions

- **Ingestion by Wildlife**
  - Most invasives aren't eaten by mammals
  - Low toxicity + low concentration = little to no impact
- **Slow to degrade**
  - Most = 5-30 days
  - Low end of range for warmer and moister climates
  - Imazapyr longer but low concentration (1/4%)
- **Soil mobility & accumulation**
  - Binds to soil particles (glyphosate)
  - Dense veg – unlikely to reach soil
  - Low concentration
  - Targeted application

Low Concentration – Low Toxicity

GLYPHOSATE

EYE –	Slight eye irritant. Undiluted product may cause pain, redness and tearing.
SKIN -	May be slightly irritating to the skin.
INGESTION -	No more than slightly toxic and no significant adverse health effects are expected to develop if a small amount (less than a mouthful) is swallowed.

SWIMMING POOL TABLETS

POTENTIAL HEALTH EFFECTS

EYES: DANGER: Highly Corrosive. Causes eye damage. Do not get in eyes.

SKIN: DANGER: Highly Corrosive. Causes skin damage. Do not get on skin.

INGESTION: May be fatal if swallowed.

INHALATION: Irritating to nose and throat. Avoid breathing dust or fumes.

Timing

- **Pink + Fields**
  - 50 acres
  - 2017 & 2019
- **Purple Outline + Fields**
  - 36 acres
  - 2018 & 2020

Enfield Shaker Museum

- **10 acres**
- **Green Area**
  - 6.5 acres
  - Selective herbicide
  - $1,465 in 2018
  - $1,300 in 2020
- **Pink Area**
  - 2.5 acres
  - Wellhead zone
  - Hand pulled by F&G
- **Permitting**
  - F&G