Restoration, resource innovation & sustainability:

What's happening down on the farm?

Lynda Boyer, Heritage Seedlings Inc. March 2008

For more information on our native plants and restoration work visit:
www.heritageseedlings.com

“In every deliberation, we must consider the impact on the seventh generation”

Great Law of Peace of the Haudenosaunee

(Six Nations Iroquois Confederacy)

Why should Willamette Valley farmers restore natural areas on their land?

- Over 95% of the Willamette Valley is in private ownership [Defenders of Wildlife 1998]
- Oak woodland have been reduced by 80%, wetlands by 87%, bottomland hardwood forests by 70%, native prairie by over 99%!

  [Defenders of Wildlife 1998]
- The majority of open space and potential habitat is on farm land
- There are numerous programs to help with advise and money
- It will make them feel warm and fuzzy


Willamete Valley
Historic
Vegetation
NATIVE SEED
Legend
0
5
10
20
30
40
Miles

Willamete Valley Current Vegetation

Result of Declining Oak and Prairie Habitat
Decline of Numerous Animal Species

- Species Listed as Threatened, Endangered, or of Concern
  - Acorn woodpecker
  - White-breasted nuthatch
  - Oregon vesper sparrow
  - Western meadowlark
  - Western bluebird
  - Western pond turtle
  - Fender's blue butterfly


U.S. Fish and Wildlife

Result of Declining Oak and Prairie Habitat
Decline of Numerous Plant Species

- Species Listed as Threatened, Endangered, or of Concern
  - Willamette daisy
  - White-topped aster
  - Kincaid's lupine
  - Willamette Valley larkspur
  - Golden paintbrush

  (extirpated in Oregon)
  - Nelson’s checkermallow
  - Bradshaw’s lomatium

Habitat in Agricultural Landscapes
"Green" is good

- Wild Farm Alliance
  - Promote agriculture that helps protect and restore WILD NATURE
- Oregon Tilth
  - provides organic certification services to organic growers, processors, and handlers internationally
- Salmon-safe
  - Works with farmers to encourage ecologically sustainable agricultural practices that protect water quality and salmon habitat

Private Landowner Help

- Publications/Videos (available on-line)
  - Restoring Rare Native Habitats in the Willamette Valley (*by Bruce H. Campbell*)
  - A Landowner's Guide for Restoring and Managing Oregon White Oak Habitats and Companion Video *(book by David Vesely and Gabe Tucker, video by Fauna and Flora Video Production)*
  - Conservation Strategies for Landbirds of Western Oregon and Washington (American Bird Conservancy)
  - Wild Farm Alliance publications

- Programs/Grants
  - –Partners for Fish and Wildlife Program (USFW)
  - –Conservation Reserve Program (NRCS)
  - –Conservation Reserve Enhancement Program (NRCS)
  - –Wildlife Habitat Enhancement Program (NRCS)
  - –Private Stewardship Grant (USFW)
  - –National Fish and Wildlife Foundation
  - –Wildlife Conservation Habitat Management Plan (ODFW) [changes land status to open-space – removes requirement to farm]

Erosion

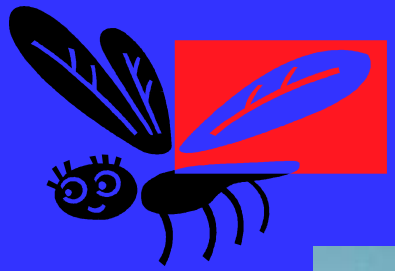
Low pollinator diversity

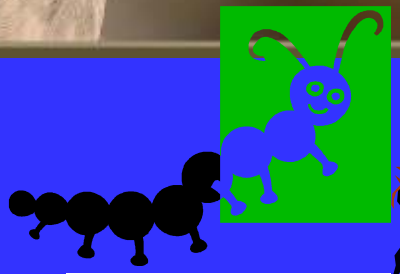
Erosion Control

High Pollinator Diversity

Native Plant Diversity
Insect Diversity
Bird Diversity

96% of terrestrial birds rear young on insects





Oak Savanna Restoration at Jefferson Farm

Current Land Use

- 118 acres grass seed production

(maintains Ag-deferral and helps pay taxes)

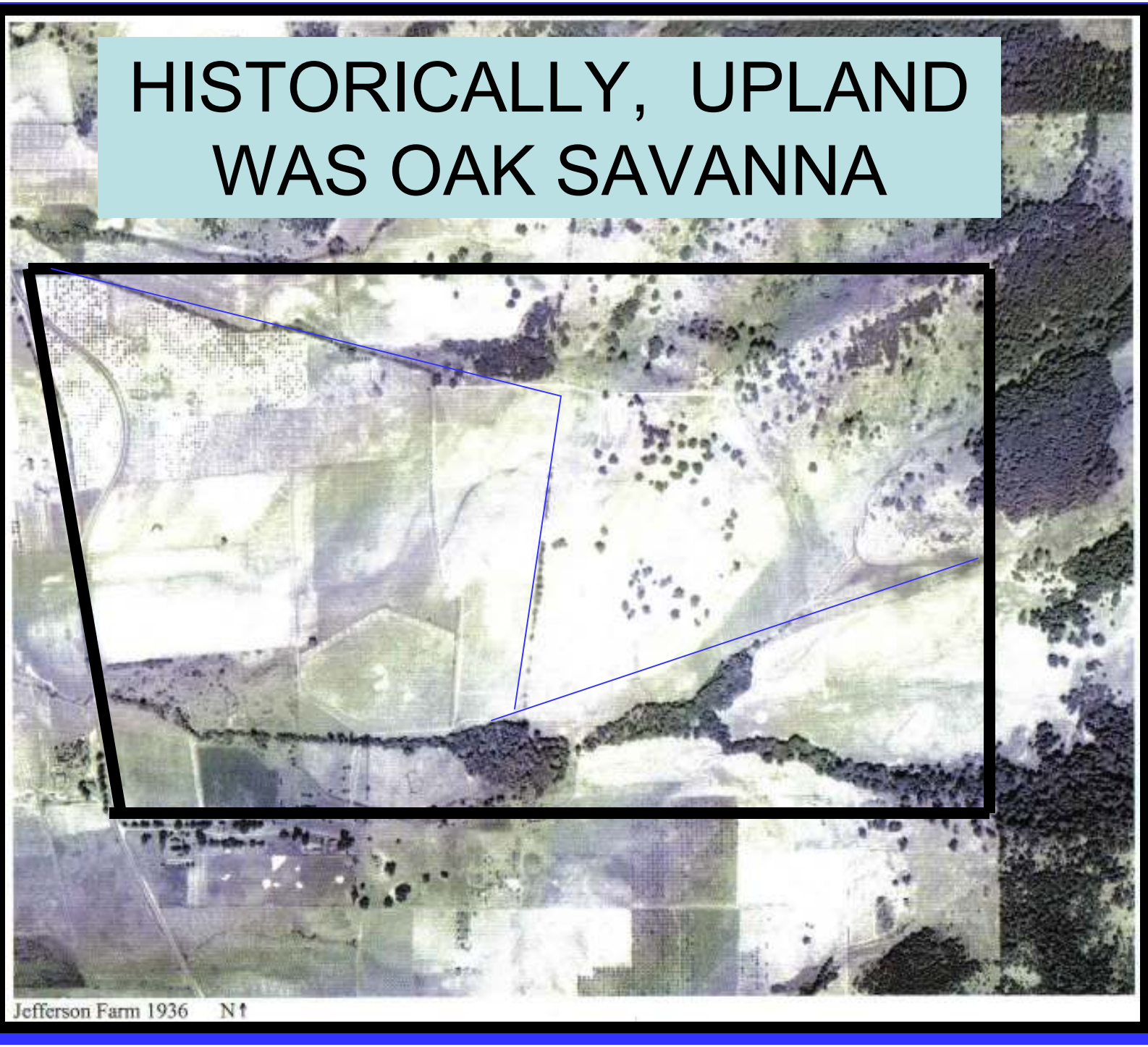
- 65 acres fallow bentgrass (Future Prairie, Ponds, Stock trees)
- 18 acres (photos) newly tiled for large, specimen trees for sale in future; drip irrigation, low labor input

KEY GOAL: Improve herbaceous community which supports associated animal species

Partnerships are the Key to a Successful Project

- USFW (funding and advise)
- ODFW (funding and advise)
- Willamette University Biology Department, (bird box survey)
- Wildlife Researchers (breeding bird survey)
- North Santiam Watershed Council Coordinator (grant writing and volunteer coordination)
- Student volunteers: Waldo Middle School, Jefferson Middle School, OSU Extension Sustainable Communities Program (planting and weed removal)
- Xerces Society (pollinator conservation)

HISTORICALLY, UPLAND WAS OAK SAVANNA




2000
USGS

Starting Condition Area1

60 acre old-growth oak savanna

Primarily, non-native pasture grasses and forbs and invasive shrub species

Area 1 – Site Prep

Mow brush and invasive hawthorn trees

Burn to see if native plants hiding under thatch

Survey produced a resounding “nope”

- Glyphosate application 2 full growing seasons
- Native seed needs clean area to germinate and grow (tiny, tiny plants first winter/spring)
- Broadleaf plants still an issue after 2 seasons

Area 1 – Planting

Native grass only fall 06

Retain bare patches for native pollinator habitat

Seeeee…. tiny, tiny

Broadleaf control 2007

Seed Diversity of Forbs Fall 2007

Bare Dirt + Flowers =

Happy Pollinators!!!!!

Starting Condition 2

- 90 acres of dense young oak and conifer
- Thick stands of invasive shrubs
- Mix of non-native AND native grasses and forbs

Area 2 – Site Prep

<u>CAT 277 Skid Steer</u>

- Rotary mower
- Hydraulic Tree Sheer (with spray attachment)
- Grapple forks

<u>Takeuchi TL 150</u>

- Rotary mower
- Grapple bucket

Savanna Structure Returning

- Mow blackberry, hawthorn, poison oak thickets
- Thin young oak stand – TREAT STUMPS!

- Retain oaks with lower branches
- Remove conifer or snag if larger than 12” diameter

Bare Soil – Yikes!!!!!

Area 2– Planting

•30 lb/acre oats (nurse crop)

•12 lb/acre native grass

•12 lb/acre native forbs

•¼ inch layer of hydromulch

<u>Hydroseeding</u>

•Wood fiber mulch

•Good Tackifier

Spinner Spreader

- $30/day rental from Wilco
- Cut seed with fertilizer or vermiculite [err on the side of more filler to ensure complete coverage]

Johnny Appleseed Method

- Cut seed with plenty of moist vermiculite [med-grade]

Prairie Management

Managed Ecosystem

- Burn sections 3-5 year rotation
- More frequent favors weedy annuals
- Maintains historic condition
- Reduces competition from woody vegetation and thatch

Oak Savanna Restoration at the Joseph St. Farm

Woody Production at Joseph Street Farm

Joseph St Farm - working farm but limited irrigation capacity

Before

After

(Two years after sowing)

Growing prairie takes

NO water!


Three years after seeding

Santiam Farm
Riparian Restoration

Stout Creek at confluence with N. Santiam River

- Improve rearing habitat for Winter Steelhead and Spring Chinook

- Low tree density along creek
- Reed canary grass only
- 2002, planted 4000 trees and shrubs on ¾ mile stretch

2005 very successful except for one thing……..

2005 very successful except for one thing……..

Beaver!

- Over ½ of the trees cut down
- Fencing remaining trees with wire fences

Lake Farm Riparian Restoration

Take Home Messages

- Advocate for agricultural practices that take the long-term view [7th generation]
- Value the land that gives us so much by giving back to the land
- We are only 1 species among so many
- Biodiversity leads to a healthy ecosystem and a healthy ecosystem leads to a healthy us