Hidden Habitats: a shared landscape
Oregon sits along the Pacific Flyway, a primary north-south migration route (residents + migrants)

- 498 bird species spend part or all of their lives in Oregon
- 219 species spend some portion of their life cycle in the greater Portland Metro area
Birds disperse seeds, pollinate plants, & help control pest populations
Metro area biodiversity

367 native species of fish and wildlife

- 47 Fish
- 18 Amphibians
- 15 Reptiles
- 219 Birds
- 68 Mammals
- 10,000+ Insects

* L Hennings, Metro
Ever-expanding urbanization makes habitat conservation imperative in urban as well as rural areas.
### Why do we need conservation measures?


**Oregon Species with >50% Declines over 40 Years**

<table>
<thead>
<tr>
<th>Species</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olive-sided flycatcher</td>
<td>American goldfinch</td>
</tr>
<tr>
<td>Northern pintail</td>
<td>Mourning dove</td>
</tr>
<tr>
<td>Ring-necked pheasant</td>
<td>Redhead</td>
</tr>
<tr>
<td>Barn swallow</td>
<td>Willow flycatcher</td>
</tr>
<tr>
<td>Northern shrike</td>
<td>Western sandpiper</td>
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<tr>
<td>Western wood-peewee</td>
<td>Ruffed grouse</td>
</tr>
<tr>
<td>Killdeer</td>
<td>White-winged scoter</td>
</tr>
<tr>
<td>Mountain chickadee</td>
<td>Rufous hummingbird</td>
</tr>
<tr>
<td>Chipping sparrow</td>
<td>House wren</td>
</tr>
<tr>
<td>Western meadowlark</td>
<td>Pacific-slope flycatcher</td>
</tr>
<tr>
<td>Golden-crowned kinglet</td>
<td>Horned lark</td>
</tr>
<tr>
<td>Fox sparrow</td>
<td>Rock wren</td>
</tr>
<tr>
<td>Purple finch</td>
<td>Orange-crowned warbler</td>
</tr>
<tr>
<td>Evening grosbeak</td>
<td>White-crowned sparrow</td>
</tr>
</tbody>
</table>

Data from Christmas Bird Counts and Breeding Bird Surveys
Portland Special Status Species (58)

American Bittern
American Kestrel
American White Pelican
Bald Eagle
Band-tailed Pigeon
Black-throated Gray Warbler
Brown Creeper
Bufflehead
Bullock’s Oriole
Bushtit
Chipping Sparrow
Common Nighthawk
Common Yellowthroat
Downy Woodpecker
Dunlin
Great Blue Heron
Green Heron
Hammond’s Flycatcher
Hermit Warbler
Hooded Merganser
House Wren
Hutton’s Vireo
Loggerhead Shrike
Long-billed Curlew
Merlin
Nashville Warbler
Northern Harrier
Olive-sided Flycatcher
Peregrine Falcon
Pileated Woodpecker
Purple Finch
Purple Martin
Red Crossbill
Red-eyed Vireo
Red-necked Grebe
Rufous Hummingbird
Short-eared Owl
Sora
Streaked-horned Lark
Swainson’s Hawk
Swainson’s Thrush
Thayer’s Gull
Varied Thrush
Vaux’s Swift
Vesper Sparrow
Western Meadowlark
Western Sandpiper
Western Wood-pewee
White-breasted Nuthatch
White-tailed Kite
Willow Flycatcher
Wilson’s Warbler
Winter Wren
Wood Duck
Yellow Warbler
Yellow-breasted Chat

*USFWS
*ODFW
*PIF
*ABC
*Audubon
Anchor habitats

- City Parks
- State Parks
- Metro
- ODFW
- NWR’s
- IBA’s
- Land trusts

+private lands

Ross Island*
Oaks Bottom*
Forest Park
Mt. Tabor
Goat Island
Pier Point Park
Kelley Point Park
Vanport Wetlands
Government Island*
Tryon Creek SP
Wapato Greenway*
Killin Wetlands*
Smith & Bybee
WNA*
Sauvie Island*
West Hayden Island
Ridgefield NWR*
Tualatin River NWR*
Jackson Bottoms
WNA
Private lands restoration

- Expands value of parks & natural areas
- Increases available habitat
- Improves connectivity
- Movement corridors
- Reduces fragmentation
### The Plant Food Groups

<table>
<thead>
<tr>
<th>Type</th>
<th>Native Sources</th>
<th>Birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuts</td>
<td>Oak, hazelnut</td>
<td>Woodpeckers, nuthatches, jays</td>
</tr>
<tr>
<td>Seeds</td>
<td>Conifers, maples, alder, asters, goldenrod, grasses</td>
<td>Woodpeckers, grosbeaks, finches, pine siskins, chickadees, jays, nuthatches, junco, sparrows</td>
</tr>
<tr>
<td>Fruit</td>
<td>Dogwood, serviceberry, cherry, elderberry, viburnum, raspberry, currant, Oregon grape, huckleberry</td>
<td>Thrushes, waxwings, bluebirds, sparrows, woodpeckers, tanagers, junco, grouse, wrens, flickers, vireos, warblers</td>
</tr>
<tr>
<td>Nectar</td>
<td>Tubular flowers: columbine, penstemon, native honeysuckle, currant</td>
<td>Hummingbirds, orioles</td>
</tr>
</tbody>
</table>

Specialists, ominvores, insectivores, predators, & scavengers

Source: http://www.audubonathome.org/HealthyYard_BirdHabitat.html
### Lower WV Natives & Assoc. Wildlife

#### SHRUBS
- **Blue Elderberry**
  - (30 birds, 4 mammals)
- **Red-osier Dogwood**
  - (20 birds, 10 mammals)
- **Serviceberry**
  - (21 birds, 5 mammals)
- **Salmonberry**
  - (33 birds, 3 mammals)

#### TREES
- **Vine Maple**
  - (17 birds, 3 mammals)
- **Pacific Dogwood**
  - (20 birds, 10 mammals)
- **Chokecherry**
  - (35 birds, 4 mammals)
- **Garry Oak**
  - (24 birds, 10 mammals)
- **Black Cottonwood**
  - (highest avian diversity)

#### HERBACEOUS
- **Miner’s lettuce**
  - (12 birds)
- **Wood strawberry**
  - (13 birds, 3 mammals)
- **Red columbine**
  - (7 birds, 1 mammal)
- **Wood sorrel**
  - (9 birds, 1 mammal)
- **Slough Sedge**
  - (21 birds, 5 mammals)

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90% of insects are coevolved specialists on native plants
96% of terrestrial birds rear young on insects
Habitats

- Mixed-conifer Forested
- Grassland
- Riparian

Basic Concepts

- Minimize disturbance to habitat patches
- Maintain connectivity/provide movement corridors
- Use natives & provide plant structure and species diversity
- Provide multiple layers of plant material for various levels of nesting, foraging & perching: ground, shrub, tree, snag
- Reduce use of pesticides, herbicides and fertilizers
Mixed-Conifer Forested habitat
Multilayered canopy, shady understory, dead wood, snags;
Doug fir, Western Hemlock, Western Red-cedar, Big leaf maple, vine maple, red alder

Band-tailed Pigeon
Pileated Woodpecker
Olive-sided Flycatcher
Hammond’s Flycatcher
Pacific-slope Flycatcher
Brown Creeper
Winter (Pacific) Wren
Swainson’s Thrush
Varied Thrush
Black-throated Gray Warbler
Hermit Warbler
Wilson’s Warbler
Red Crossbill

Forest Park: 104 species recorded, 1/3 of which are in decline
Basic Concepts:

- Retain large trees
- Retain downed logs
- Create or retain snags
- Create or retain native shrub patches
- Create brush piles
- Manage for diversity of trees, understory & groundcover
- Create multilayered canopy

- Rainforest Birds: A Land Manager’s Guide to Breeding Bird Habitat in Young Conifer Forests in the PNW (USDI, USGS, ABC)
- Managing Forest Habitats for Migrant Songbirds (WSU Extension Woodland Fish & Wildlife Bulletin Series)
Vaux’s Swift: nests & roosts in hollow, large-diameter trees. Loss of old growth & associated snags is concerning. Data needed on pop’n trends.

Pileated Woodpecker: large territories in unfragmented forest, depends on large-diameter live & dead trees under dense canopy for nesting, roosting & foraging.

Wilson’s Warbler: nest in well-developed understory of moist shrub sites on or near ground in all seral stages.
perch sites

food storage in bark fissures (e.g., for squirrels)

spaces behind loose bark provide roosting sites for bats

foraging sites in wood and bark

basal cavities for denning or cover

shed bark slabs for cover (e.g., for salamanders)

gradual tree decay, providing opportunities for cavity excavation and platform style nests for for fungi, enhancing "top-down" broken tops are an infection court
Grassland Habitats
dominated by grasses, forbs & wildflowers, with well-drained soils and low tree density. Once covered 1/3 of Willamette Valley. Now rare.

Northern Harrier
American Kestrel
Streaked Horned Lark
Vesper Sparrow
Western Meadowlark
Short-eared Owl
Chipping Sparrow
Basic Concepts:

- Plant native grasses of varying height and density
- Plant wildflowers to attract diverse pollinators
- Create singing perches
- Consider fire as a management tool to maintain grassland (if appropriate)
- Leave some bare ground

Landowner’s Guide to Creating Grassland Habitat for the Western Meadowlark and Oregon’s Other Grassland Birds (ODFW)
Chipping Sparrow:
1-10 acre, oak-wood-savanna, grassy area dotted with coniferous trees or open oak woodlands

Vesper Sparrow:
10-20 acre, upland prairie, christmas tree lots, grassland with bare ground, lightly grazed pasture

Western Meadowlark:
20-100 acres, prefers grasses & forbs 12-24” tall and requires large areas of contiguous grassland.
Streaked Horned Lark: prefers large contiguous habitat, sparsely vegetated prairies, ag fields, gravelly roadsides, airport runway margins; vegetation interspersed with bare ground

Short-eared Owl: 50-200 acres, prefers open country, wet meadows, grasslands

American Kestrel: prairies, grasslands, grassy forest openings, requiring nest cavities in old trees/posts. Some evidence of population declines.
Riparian Habitats

vary from willow thickets to cottonwood gallery forests adjacent to rivers & streams or in floodplains. Deciduous trees & shrubs, big leaf maple, red alder, black cottonwood, oregon ash, red-osier dogwood, willows.

Great Blue Heron
Green Heron
Wood Duck
Bald Eagle
Band-tailed Pigeon
Downy Woodpecker
Pileated Woodpecker
Willow Flycatcher
Western Wood-Pewee
Red-eyed Vireo
Brown Creeper
Swainson’s Thrush
Orange-crowned Warbler
Yellow Warbler
Black-throated Gray Warbler
Common Yellowthroat
Wilson’s Warbler
Bullock’s Oriole
Basic Concepts:

- Maintain 100’ vegetative buffer along streams
- Maintain dense shrub layer along streams
- Maintain riparian snags for nesting & perching
- Retain all cottonwoods
- Reduce riparian development & disturbance

Riparian Areas: Fish and Wildlife Havens (WSU Extension’s Woodland Fish & Wildlife Bulletin Series)
Yellow Warbler: riparian woodlands & thickets of willow & cottonwood, showing long term population declines of -1.7% annually.

Willow Flycatcher: shrub-dominated riparian thickets with canopy openings. Will use Himalayan blackberry. Showing statewide & local population declines.
Special Timing Considerations
primary nesting season (April 15-July 31)

- **Willow Flycatcher**: (late) nest through August 31 in wetland & riparian shrubs

- **Anna’s Hummingbird**: (early) nest as early as February in small trees & shrubs

- **Killdeer**: (early) lay eggs on ground in open gravelly & grassy areas as early as March

- **Great Horned Owl**: (early) nest as early as January

- **Bald Eagle**: (early/late) nest from January 1-Sept 1
Private land management can greatly contribute to benefitting wildlife.

Photos
Jim Cruce
Scott Carpenter