

Hidden Habitats: a shared landscape



Pacific Flyway



- 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

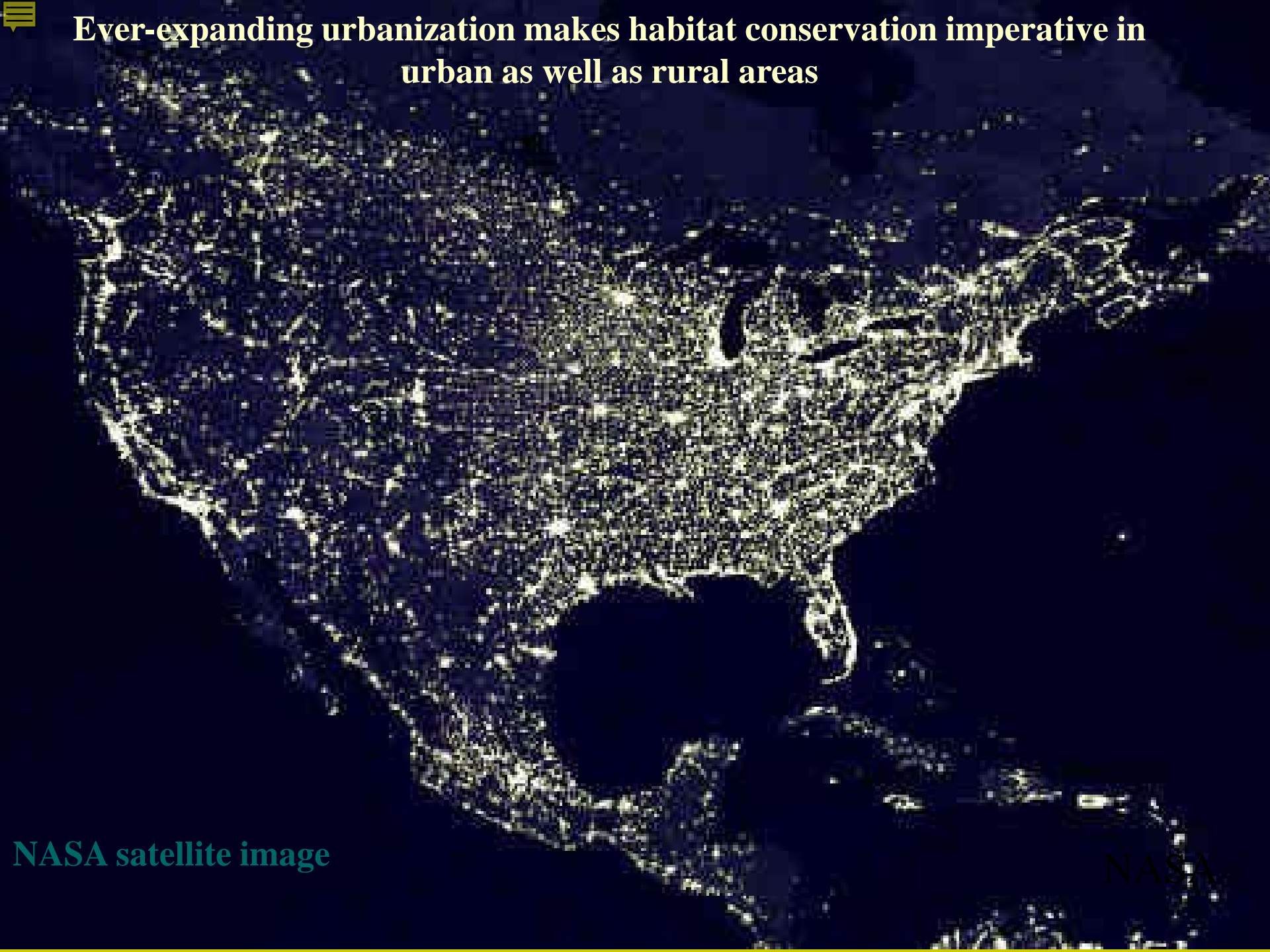
367 native species of fish and wildlife



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



Ever-expanding urbanization makes habitat conservation imperative in urban as well as rural areas



NASA satellite image

NASA



Why do we need conservation measures?

National Audubon Common Birds in Decline Report (2007)

Oregon Species with >50% Declines over 40 Years

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



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

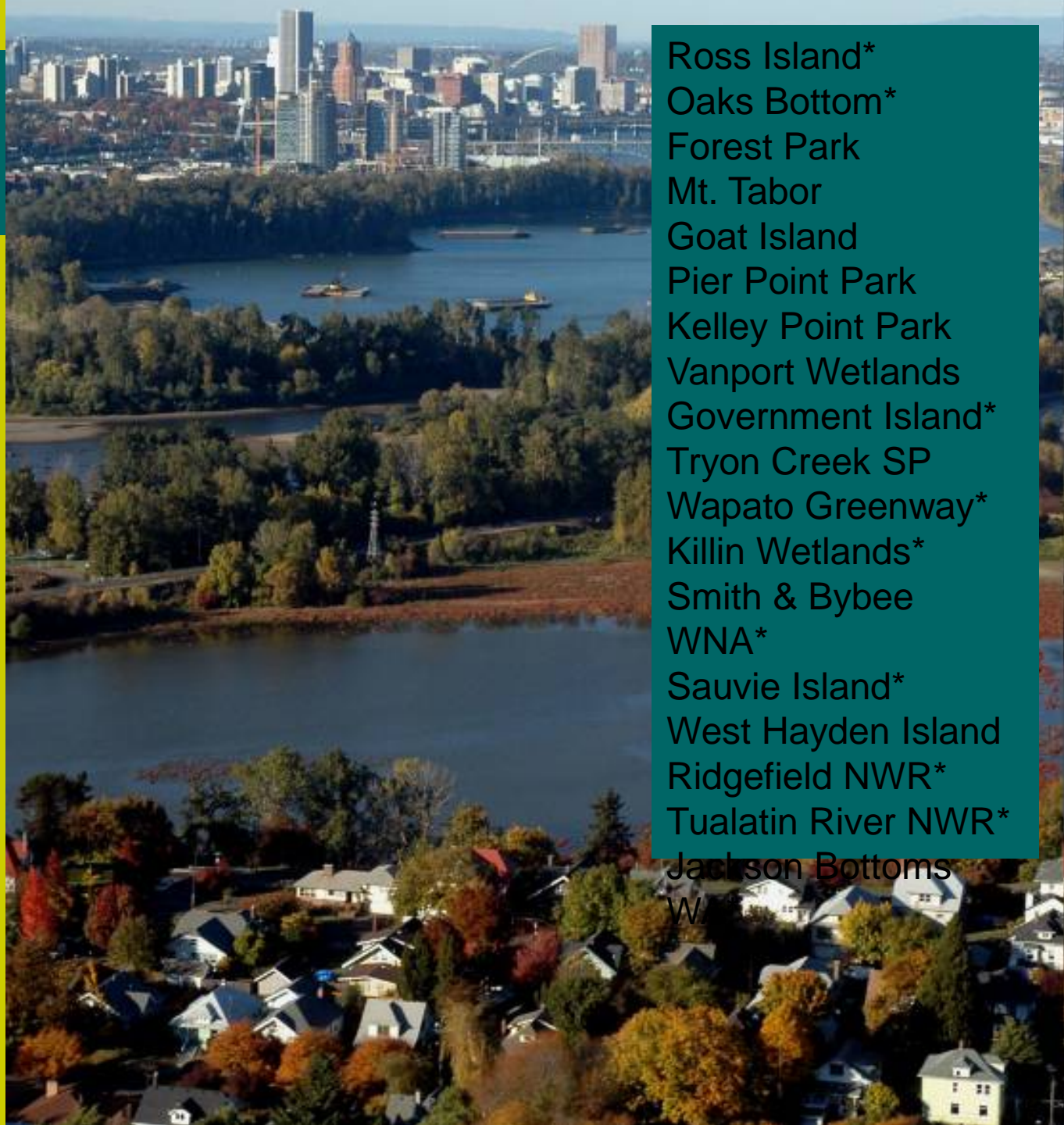
*USFWS
*ODFW
*PIF
*ABC
*Audubon





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
W

Private lands restoration

- Expands value of parks & natural areas
- Increases available habitat
- Improves connectivity
- Movement corridors
- Reduces fragmentation





The Plant Food Groups

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

Specialists, omnivores, 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)

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



- *Managing Small Woodlands for Cavity Nesting Birds*, Oct 1991 (World Forestry Center)
- *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.

Dead tree tops are an infection court
for fungi, enhancing "top-down"
gradual tree decay, providing
opportunities for cavity excavation
and platform style nests

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

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

basal cavities for
denning or cover



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)

Willow Flycatcher: shrub-dominated riparian thickets with canopy openings. Will use Himalayan blackberry. Showing statewide & local population declines.



Yellow Warbler: riparian woodlands & thickets of willow & cottonwood, showing long term population declines of -1.7% annually

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





Photos

Jim Cruce
Scott Carpenter

Private land management can greatly contribute to benefitting wildlife

