Willamette Anchor Habitat Working Group Progress Update

spotlight on revegetation effectiveness

one river corridor and the stories of two birds

Bird recaptures bring the importance of habitat restoration into sharp relief. Recaptures are special - banded birds recovery rates are usually low: in many small species, less than 0.1% of banded individuals are recovered, while in larger species, recovery rates can approach 20%.

The Willamette River corridor is part of the Pacific Flyway and plays a role in connecting breeding and wintering grounds for some migratory bird species.

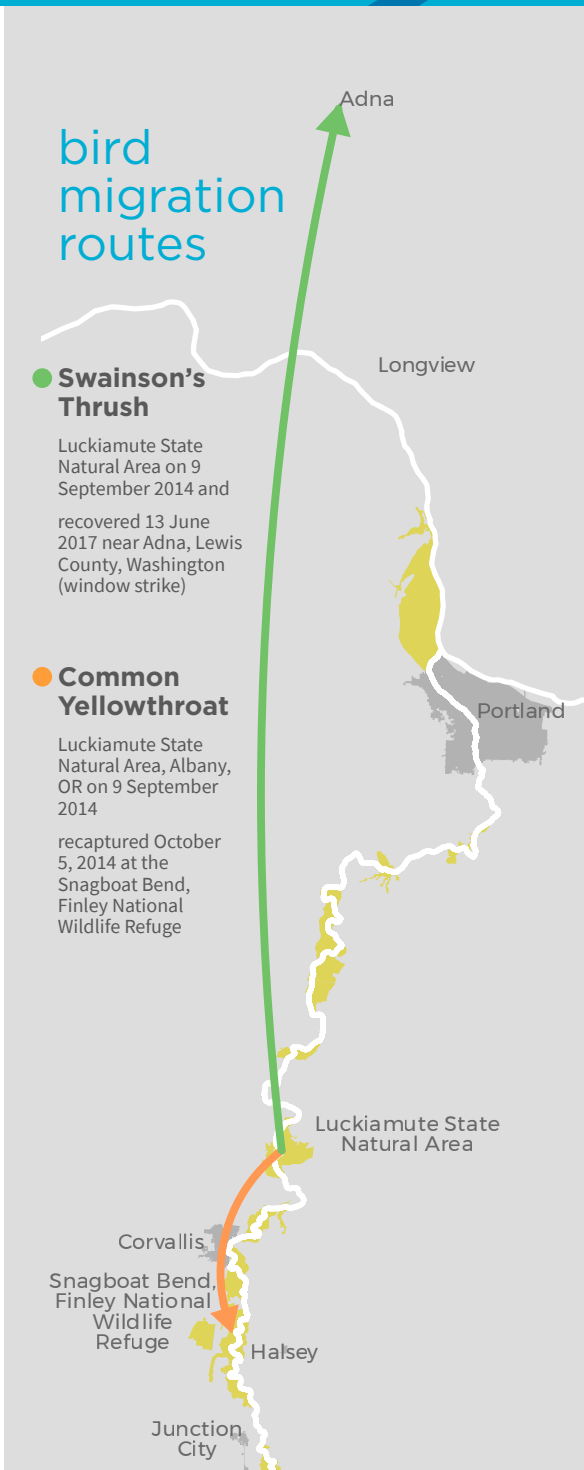
Common Yellowthroat warblers are found in open habitats such as marshes, wetland edges, and brushy fields. On September 9, 2014, a Common Yellowthroat was banded at Luckiamute State Natural Area and was recaptured 26 days later at the Snagboat Bend annex of Finley NWR, approximately 35 km to the south.

Swainson's thrush are found in closed canopy forests and dense streamside woods, and can also be seen in parks and woodlots during migration. One Swainson's thrush was banded as a juvenile while migrating through Luckiamute State Natural Area on 9 September 2014 and recovered 2.5 years later during the breeding season (13 June 2017), near Adna, Lewis County, Washington, after striking a window.

At the northerly latitude of the Willamette Valley, short-distance movements between patches of productive habitat, such as that of the Common yellowthroat, may be a precursor to larger migratory movements. Similarly, we assumed that the Swainson's thrush recovered during the breeding season, more than 140 km north of the original banding location, was migrating at the time of recovery.

Accounting for the interconnectedness among sites used by migratory species throughout their annual cycle is vital for successful conservation. Riparian forest remnants, especially in human dominated landscapes such as agricultural and urban systems, can provide a continuous corridor traversing otherwise inhospitable areas.

The recapture of banded birds provides a glimpse into the geography of avian annual cycles, and suggests that corridors of riparian forest in otherwise human altered environments may provide important conservation opportunities for migratory birds.



how birds play a role

Two of the eight priority actions identified in the Upper and Middle Willamette Strategic Action Plan involve floodplain revegetation. These actions are monitored in a few ways:

Implementation
as total acres planted

Effectiveness
through avian indicators

Status & Trends
by tracking canopy cover change

deeper dive into avian indicators

Birds can tell us a lot about vegetation condition and fish habitat. Nesting, feeding, and migration patterns draw specific bird species to specific plant communities and seral stages, which in turn have important implications for fish habitat.

Avian monitoring has been underway at three mainstem floodplain sites since 2014 thanks to the work of Dr. Joan Hagar and colleagues. By using birds as indicators of vegetation health, we leverage local expertise, generate information on relatively short timescales, and can connect with new audiences. Birds are excellent indicators because they are:

- **Diverse**
- **Found in Almost Every Habitat Type**
- **High on the Trophic System**
- **Sensitive to Environmental Change**
- **Relatively Cost-Effective to Monitor**

selected birds, their relationships to riparian vegetation types and implications for fish

Red-Eyed Vireo

High density of large canopy trees (e.g., cottonwood gallery forest)

LARGE TREES:

- contribute to water temperature control through shading;
- provide inputs of insect prey for fish through insects falling from foliage into water;
- input nutrients from litterfall to aquatic food webs that support fish
- stabilize banks and protect channel habitat for fish

Willow Flycatcher & Yellow-Breasted Chat

Dense shrubs (e.g., willow thickets)

RIPARIAN SHRUBS:

- help maintain water quality for fish by controlling erosion and filtering sediments;
- provide inputs of insect prey for fish through insects falling from foliage into water;
- provide input of nutrients from litterfall to aquatic food webs that support fish

Yellow-Billed Cuckoo & Red-Shouldered Hawk

Large patches of structurally diverse woodland

STRUCTURALLY DIVERSE RIPARIAN WOODLANDS:
are necessary to restore and maintain many of the floodplain processes that create habitat for native fish, including:

- flooding
- channel migration
- groundwater interaction
- formation of backwater areas

The AHWG is grateful to Dr. Joan Hagar, Research Wildlife Biologist at the USGS Forest & Rangeland Ecosystem Science Center in Corvallis. Her research program broadly addresses the effects of natural disturbance and management strategies on biodiversity, with the goal of providing a scientific basis for management of wildlife and habitat. Dr. Hagar provided content for this info brief.