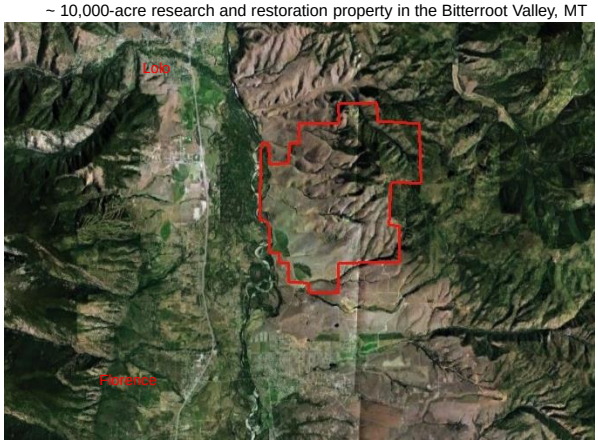
Using bird populations to evaluate activities, promote ecological awareness, and prompt action on private lands

Kate Stone, Philip Ramsey, Dan Mummey
MPG Ranch

- Background information on MPG Ranch
- Types of restoration treatments
- How and why we study birds
- What does it mean?

~ 10,000-acre research and restoration property in the Bitterroot Valley, MT

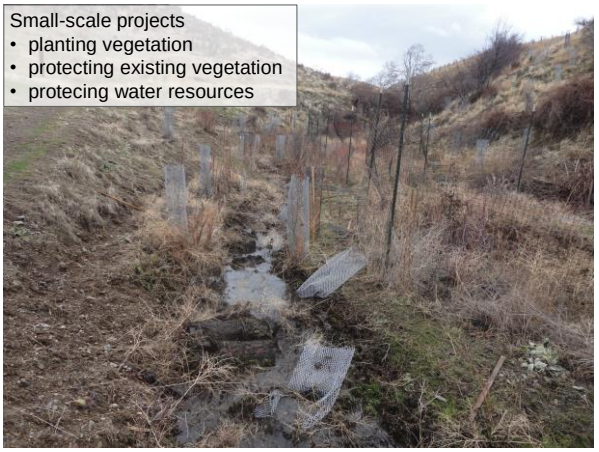


Broad management goals for the property

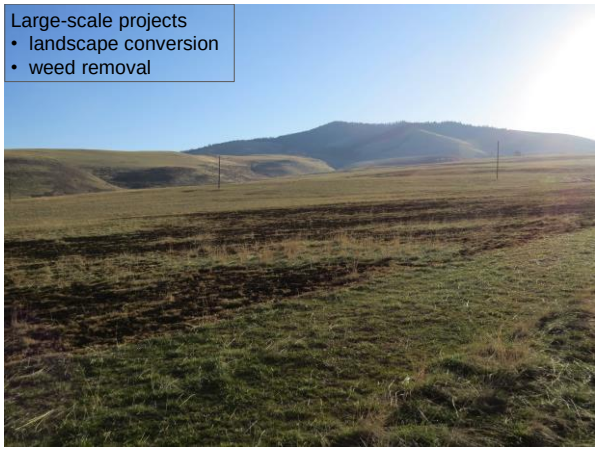
- Protect intact habitats by conducting activities that allow natural disturbance cycles to occur or mimicking disturbance with appropriate treatments
- Restore degraded habitats
- Understand how wildlife uses the property and document how it responds to restoration efforts

Variety of plant communities that vary in their “quality” as habitat

Small-scale projects
- planting vegetation
- protecting existing vegetation
- protecing water resources



Large-scale projects
- landscape conversion
- weed removal



Does this help?

How do we track changes and/or measure success?


07:05:19
11°F


BUCKEYE
CAM
12/18/2010
10:47:50
18°F

Why do birds make good response variables?

- Abundant = high sample sizes
- They can be monitored passively
- Many species
- Species have specific needs, especially related to vegetation
- Relatively small territories

Birds as response variables at multiple scales

Individual plants

Landscapes

Region and world

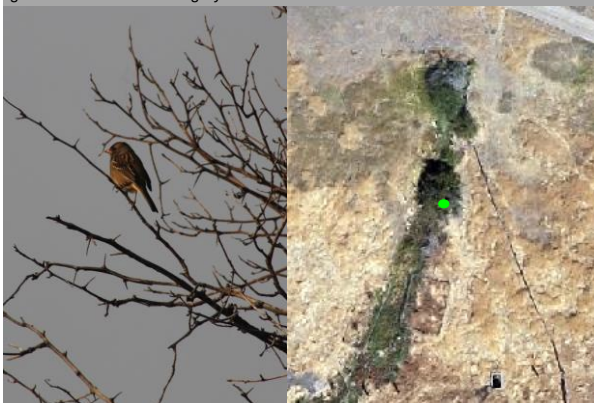
House Wren

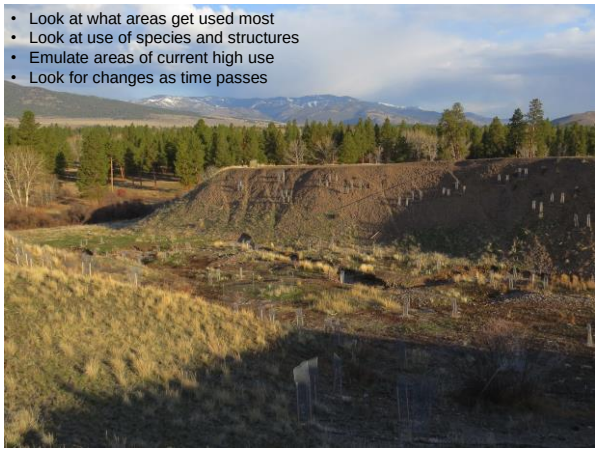
Fine-scale: Mapping bird use of shrubby draws during fall migration

Linear features that vary in width and amount of cover
Provide connectivity between floodplain and upland conifer forests

Putting lots of effort into restoring draws: Are we making a difference?

Developed an iPad app that allows us to map bird locations directly onto georeferenced aerial imagery.




• Look at what areas get used most
• Look at use of species and structures
• Emulate areas of current high use
• Look for changes as time passes


All detections from 8/23-10/22
1
2 - 5
6 - 15

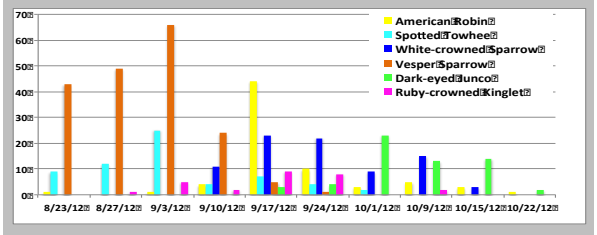

1
2 - 5
6 - 15

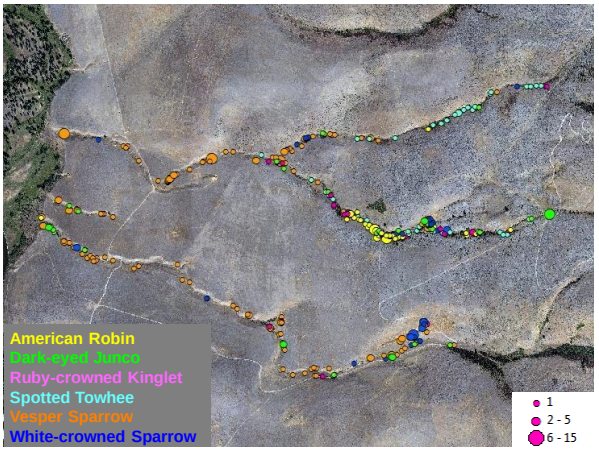

1
2 - 5
6 - 15

Always busy

Only used early in season

We observed temporal and spatial differences by species

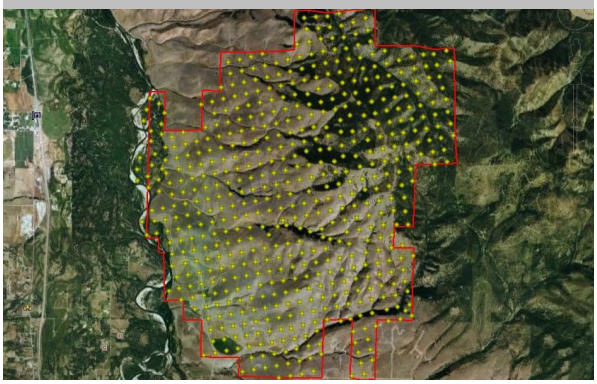




Substrate	Total
Live Shrub	**417**
Tree	188
Ground	137
Dead shrub	48
Man-made	62
Grass	85
Snag	19
Debris	11
Forb - Nonnative	11
Log	5

Shrub species	Total
Unknown	107
Black hawthorn	93
Mountain maple	64
Chokecherry	63
Serviceberry	25
Ninebark	20
Mock orange	16
Antelope bitterbrush	16
Elderberry	6
Big sagebrush	3
Rabbitbrush	2
Clematis	1
Willow	1

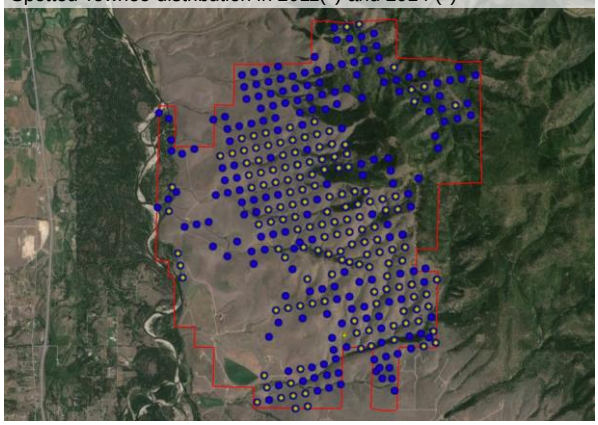
Point Counts:
- Monitoring birds and plants at established points on the property
- Look for changes over time



Good method for documenting long-term change
- Look at landscape as a whole
- Track changes at individual points
- Look at specific treatment areas
- Look at changes for species of interest

Spotted Towhee
- Loves shrubs!!
- Should be a good indicator that shrub habitats are improving

Spotted Towhee distribution in 2011(•) and 2014 (•)



Direct Observation of Species of Interest
- Species influenced by management actions
- Species of Concern
- Little known species


Lewis's Woodpeckers


Northern Pygmy-owl


Long-eared Owl


Regional and global scales
Long-billed Curlew

Use of tracking devices
- permits
- trapping and handling
- money

What habitats do Northern Saw-owls use during migration?

Put out 11 transmitters

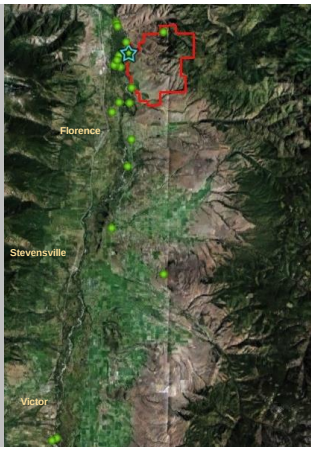
Got at least one relocation for 9 owls

5 owls with > 3 relocations

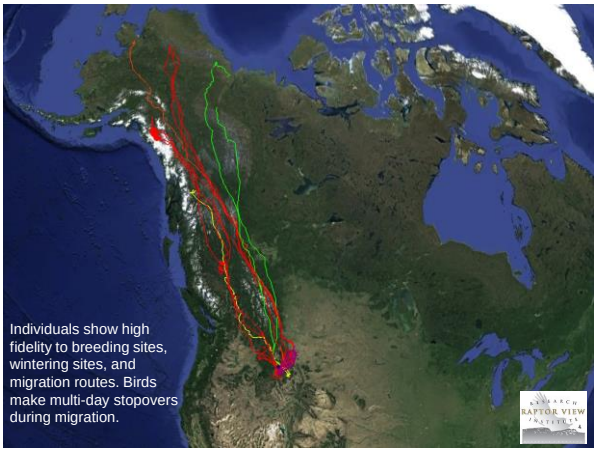
Highest number of relocations was 7

Greatest movement in a night was almost 17 miles

Greatest movement from banding station was 24 miles




Overwintering Golden Eagles
Breeding sites?
Migration routes?
Threats?


Individuals show high fidelity to breeding sites, wintering sites, and migration routes. Birds make multi-day stopovers during migration.


• Most birds caught in the Bitterroot Valley show elevated blood-lead levels
• Also evidence of death or injury from trapping
Our actions can influence Golden Eagle populations throughout the West


What does it all mean?
Western Tanager

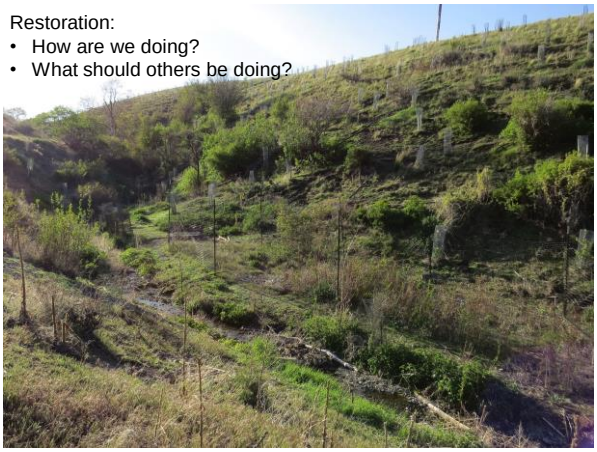
Private lands: where we have the most to save and the most to lose

- Potential to experience rapid change- little land use planning in Bitterroot
- Represent major gaps in distributional and ecological knowledge

Photo Phil Higuera

Restoration:

- How are we doing?
- What should others be doing?

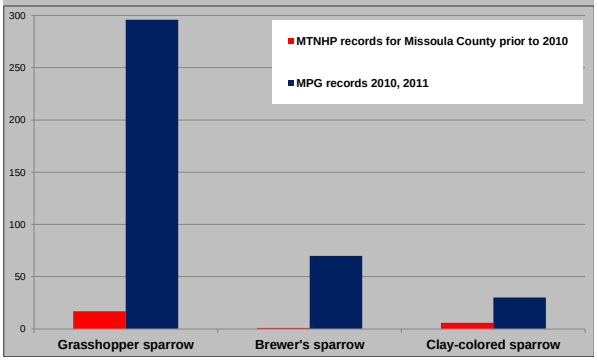


Increases our shared knowledge of some species

Brewer's Sparrow

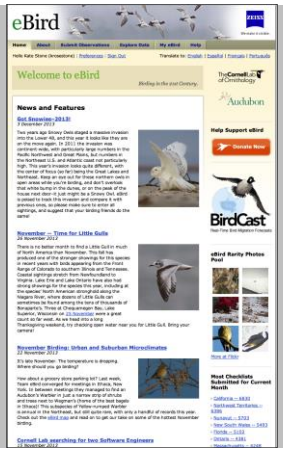
Major increase in distributional and ecological records

Point counts alone have contributed > 150,000 records to state database

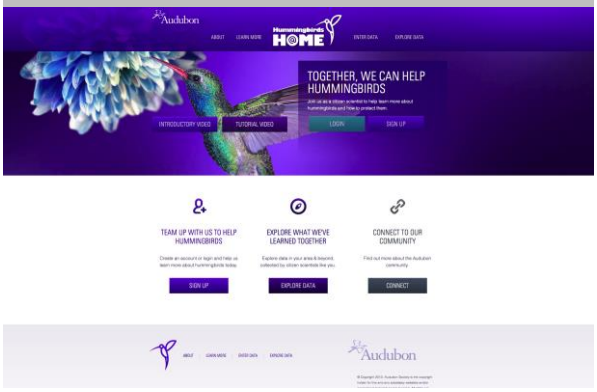


ebird.org

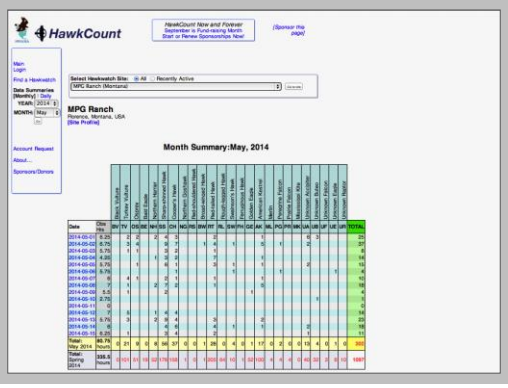
birdlog app



How will hummingbirds respond to climate change?
Hummingbirds at Home- Report hummingbird AND plant information



Spring and fall hawk migration data at HawkCount

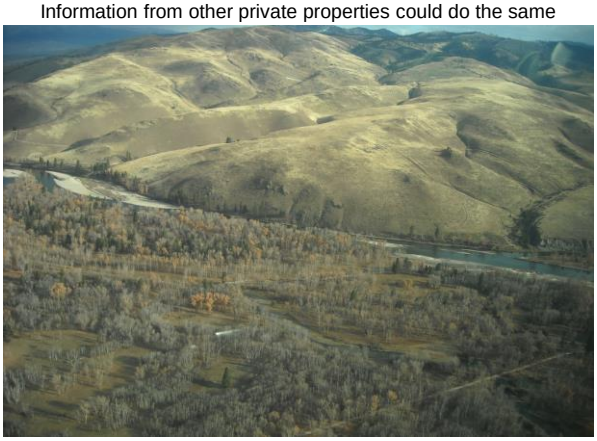


Gives us opportunities for public outreach

Birds captivate people

Our data can be applied to local conservation efforts
- in support of good projects
- in opposition to bad projects

Information from other private properties could do the same

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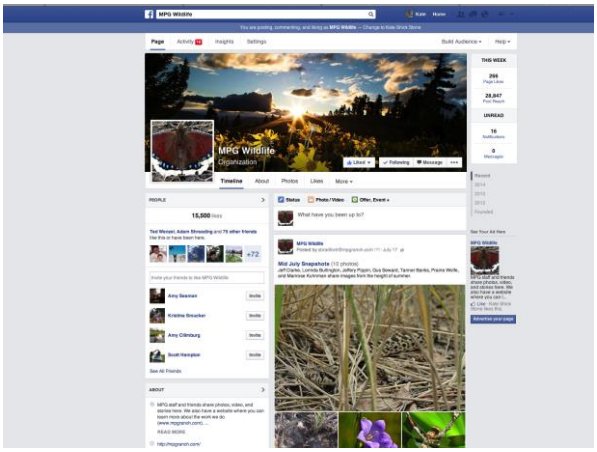
MPG Wildlife
Organization
Timeline
About
Photos
Likes
Mid July Snapshots


Thanks to:
• MPG Bird Technicians: Eric Rasmussen, Debbie Leick, William Blake, Amy Seaman
• Raptor View Research Institute
• Intermountain Bird Observatory
• Avian Science Center
• Bitterroot Audubon volunteers
American Robin


Questions?
Western Wood-pewee