

Metadata for Oregon Birds Data Sets

Overview:

This document provides a brief description of the Oregon birds data set, including a separate description of each of the six relational data sets.

Source:

Kevin McGarigal

Details:

1. Bird.visit

This data set is derived from bird.raw using the script dataprep.R and contains a single record for each station (plot) and each visit (survey number), including several observation covariates pertaining to the survey (e.g., weather conditions) in addition to the number of bird detections within 50 m of plot center by species.

Variable	Description
basin	categorical indicator for basin [factor]
sub	categorical indicator for subbasin [factor]
sta	station (plot) number [integer, 1-38]
visit	visit (survey) number [integer, 1-4]
year	year of survey [integer, 1990-1992]
date	Julian date [integer, 119-193]
time	time of day, hours-minutes [integer, 507-1045]
obs	categorical indicator for observer [integer, 1-10]
cloud	percent cloud cover [integer, 0-100]
precip	precipitation level [integer, 0-2] 0=None; 1=Drizzle; 2=Light Rain
wind	wind level on the Beaufort scale [integer, 0-3] 0=None; 1=Light Breeze (leaves in motion); 2=Breezy (small branches in motion); 3=Windy (large branches/trees in motion)
bird species	Remaining columns represent the number of individuals by species detected within 50 m of plot center, including new and repeat detections; see Appendix A for a list of bird acronyms [numeric]

2. Bird.sta

This data set is derived from `bird.visit` using the script `dataprep.R` and contains a single record for each station (plot), including a relational header (`basin`, `sub` and `sta`) in addition to the maximum number of bird detections per visit to a station.

Variable	Description
<code>basin</code>	categorical indicator for basin [factor]
<code>sub</code>	categorical indicator for subbasin [factor]
<code>sta</code>	station (plot) number [integer, 1-38]
<code>bird species</code>	next block of columns represent the maximum number of individuals detected per visit to a station by species, including all new and repeat detections within 50 m of plot center; see Appendix A for a list of bird acronyms [numeric]
<code>b.total</code>	total number of birds detected per station based on the sum of the individual species counts above [numeric]
<code>b.rich</code>	total number of species (richness) detected per station pooled across visits [numeric]
<code>b.sidi</code>	Simpson's diversity index based on the individual species counts above [numeric]

3. Bird.sub

This data set is derived from `bird.raw` using the script `dataprep.R` and contains a single record for each subbasin (`sub`), including a relational header (`basin` and `sub`) in addition to the maximum number of bird detections per visit to a subbasin standardized by the number of stations.

Variable	Description
<code>basin</code>	categorical indicator for basin [factor]
<code>sub</code>	categorical indicator for subbasin [factor]
<code>tsta</code>	total number of stations (plots), used to standardize the bird count data [integer, 32-38]
<code>bird species</code>	Remaining columns represent the maximum number of individuals detected per visit to a subbasin standardized by the number of stations by species, including only "new" detections per visit to a subbasin at any distance from plot center (including fly-overs); in other words, the maximum number of new individuals per visit to a subbasin is calculated first and then it is divided by the number of stations; see Appendix A for a list of bird acronyms [numeric]

b.total	total number of birds detected per subbasin based on the sum of the individual species counts above [numeric]
b.rich	total number of species (richness) detected per subbasin pooled across visits [numeric]
b.sidi	Simpson's diversity index based on the individual species counts above [numeric]

4. Hab.sta

This data set contains a single record for each station (plot), including a relational header (basin, sub and sta) in addition to a large number of plot-level geographic and bio-physical variables.

Variable	Description
basin	categorical indicator for basin [factor]
sub	categorical indicator for subbasin [factor]
sta	station (plot) number [integer, 1-38]
lat	latitude in UTM (m) [numeric]
long	longitude in UTM (m) [numeric]
elev	elevation (m) [numeric, 85-872]
slope	percent slope (%) [numeric, 0-110]
aspect	aspect (degrees) [numeric, 0-360]
s.id	categorical indicator for stand id within each subbasin, where each stand is a disjunct patch based on seral stage [integer, 1-24]
s.edge	categorical indicator for stand edge; i.e., whether the plot center is within 50 m from the nearest seral stage edge [factor] I=interior (>50 m from stand edge); E=edge (<= 50 m from edge)
p.edge	categorical indicator for patch edge; i.e., whether the plot center is within 50 m from the nearest patch edge based on 27 patch types differentiated on the basis of floristic community, seral stage and canopy closure [factor] I=interior (>50 m from stand edge); E=edge (<= 50 m from edge)
p.edge	total length (m) of patch edge within 50 m radius circular plot based on 27 patch types differentiated on the basis of floristic community, seral stage and canopy closure [integer, 0-267]
p.cwedge	total length (m) of contrast-weighted patch edge within 50 m radius circular

	plot based on 27 patch types differentiated on the basis of floristic community, seral stage and canopy closure [integer, 0-196]
ba.con	basal area of conifers (m ² per ha) [integer, 0-129]
ba.hard	basal area of hardwoods (m ² per ha) [integer, 0-184]
ba.snag	basal area of snags (m ² per ha) [integer, 0-138]
ba.tot	basal area of trees, live and dead (m ² per ha) [integer, 0-207]
ba.ratio	basal area ratio of conifers to hardwoods (percent conifer) [integer, 0-100] 0=100% of basal area is hardwood; 100=100% of basal area is conifer
snag.sml	Total number of small, medium and large snags (>4 in dbh; >2 m tall) of any decay class (1-5) within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-393]
snag.ml	Total number of medium and large snags (>12 in dbh; >2 m tall) of any decay class (1-5) within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-141]
snag.l	Total number of large snags (>20 in dbh; >2 m tall) of any decay class (1-5) within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-85]
snag.dc1	Total number of small, medium and large snags (>4 in dbh; >2 m tall) of decay class 1 within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-216]
snag.dc2	Total number of small, medium and large snags (>4 in dbh; >2 m tall) of decay class 2 and 3 within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-212]
snag.dc4	Total number of small, medium and large snags (>4 in dbh; >2 m tall) of decay class 4 and 5 within 30 m of plot center, including both full (100% dead) and partial (<100% dead) snags meeting minimum size criteria [integer, 0-134]

5. Hab.patch

This data set contains a single record for each station (plot), including a relational header (basin, sub and stand id) in addition to a large number of stand-level geographic and bio-physical variables.

Variable	Description
basin	categorical indicator for basin [factor]
sub	categorical indicator for subbasin [factor]
s.id	categorical indicator for stand id within each subbasin, where each stand is a disjunct patch based on seral stage [integer,1-24]
s.lat	average stand latitude in UTM (m) [numeric]
s.long	average stand longitude in UTM (m) [numeric]
s.elev	average stand elevation (m) [numeric, 160-850]
s.type	categorical indicator for stand type [factor] B=barren; GF=grass/forb; SH=shrubland; SA=sapling; PO=pole; LS=large sawtimber
s.area	stand area (ha), where each stand is a disjunct patch based on seral stage [numeric, 4.03-281.3]
s.shape	stand shape index (unitless), where each stand is a disjunct patch based on seral stage [numeric, 1.11-2.85]
s.core	stand core area (ha) based on variable depth-of-edge effects, where each stand is a disjunct patch based on seral stage [numeric, 0-211.6]
s.cai	stand core area index (%) based on variable depth-of-edge effects, where each stand is a disjunct patch based on seral stage [numeric, 0-76.57]
s.teci	stand total edge contrast index (%) based on variable edge contrast weights, where each stand is a disjunct patch based on seral stage [numeric, 2.3-90.76]

6. Hab.sub and Hab.sub.missing

This data set contains a single record for each subbasin, including a relational header (basin and sub) in addition to a large number of subbasin-level geographic and bio-physical variables. The hab.sub.missing data set simply contains a couple of missing values, including for demonstration purposes.

Variable	Description
basin	categorical indicator for basin [factor]
sub	categorical indicator for subbasin [factor]
sub.lat	average subbasin latitude in UTM (m) [numeric]

sub.long	average subbasin longitude in UTM (m) [numeric]
sub.elev	average subbasin elevation (m) [integer, 160-850]
road.den	road density (km/km ²) [integer, 1-36]
stream.den	stream density (km/km ²) [integer, 23-51]
ta	total area of subbasin (ha) [numeric, 247.91-296.07]
p.mps	patch-based mean patch size (ha), where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.tcai	patch-based total core area index (%) based on variable depth-of-edge effects, where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.sidi	patch-based simpson's diversity index (proportion), where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.siei	patch-based simpson's evenness index (proportion), where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.contag	patch-based contagion index (%), where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.ed	patch-based edge density (m/ha), where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.cwed	patch-based contrast-weighted edge density (m/ha) based on variable edge contrast weights, where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
p.teci	patch-based total edge contrast index (%) based on variable edge contrast weights, where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.mps	stand-based mean patch size (ha), where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.tcai	stand-based total core area index (%) based on variable depth-of-edge effects, where each patch is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.sidi	stand-based simpson's diversity index (proportion), where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]

s.siei	stand-based simpson's evenness index (proportion), where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.contag	stand-based contagion index (%), where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.ed	stand-based edge density (m/ha), where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.cwed	stand-based contrast-weighted edge density (m/ha) based on variable edge contrast weights, where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
s.teci	stand-based total edge contrast index (%) based on variable edge contrast weights, where each stand is a disjunct patch based on floristic community, seral stage and canopy closure [numeric]
b through w	these columns represent the percent of the subbasin (%) in each land cover type. See Appendix B for a list of land cover types [numeric]

Appendix A. Bird Acronyms in alphabetical order

American Kestrel=AMKE	Hermit Thrush=HETH
American Robin=AMRO	Hooded Merganser=HOME
American Goldfinch=AMGO	House Finch=HOFI
Bald Eagle=BAEA	House Wren=HOWR
Band-tailed Pigeon=BTPI	Hutton's Vireo=HUVI
Bank Swallow=BKSW	Lesser Goldfinch=LEGO
Barn Swallow=BASW	MacGill. Warbler=MGWA
Belted Kingfisher=BEKI	Mallard=MALL
Bewick's Wren=BEWR	Marbled Murrelet=MAMU
Black-throated Gray=BGWA	Marsh Wren=MAWR
Black-cap Chickadee=BCCH	Mountain Quail=MOQU
Black-headed Grosbeak=BHGR	Mourning Dove=MODO
Blue Grouse=BUGR	Nashville Warbler=NAWA
Brewer's Blackbird=BRBL	Northern Flicker=NOFL
Brown Creeper=BRCR	O-crowned Warbler=OCWA
Brown-headed Cowbird=BHCO	Olive-sd Flycatcher=OSFL
Bushtit=BUSH	Osprey=OSPR
California Quail=CAQU	Pileated Woodpecker=PIWO
Cedar Waxwing=CEWA	Pine Siskin=PISI
Chestnut-bk Chickadee=CBCH	Purple Finch=PUFI
Chipping Sparrow=CHSP	Pygmy Owl=PYOW
Common Crow=COCR	Red Crossbill=RECR
Common Raven=CORA	Red-Tailed Hawk=RTHA
Common Snipe=COSN	Red-br Sapsucker=RBSA
Common Merganser=COME	Red-br Nuthatch=RBNU
Common Nighthawk=CONI	Red-winged Blackbird=RWBL
Common Yellowthroat=COYE	Rough-winged Swallow=RWSW
Cooper's Hawk=COHA	Ruby-cr Kinglet=RCKI
Dark-eyed Junco=DEJU	Ruffed Grouse=RUGR
Dipper=DIPP	Rufous Humingbird=RUHU
Downy Woodpecker=DOWO	Rufous-sided Towhee=RSTO
Evening Grosbeak=EVGR	Saw-whet Owl=SWOW
Fox Sparrow=FOSP	Screech Owl=SCOW
Golden-cr Kinglet=GCKI	Scrub Jay=SCJA
Golden-cr Sparrow=GCSP	Sharp-Shinned Hawk=SSHA
Goshawk=GOSH	Solitary Vireo=SOVI
Gray Jay=GRJA	Song Sparrow=SOSP
Great Blue Heron=GBHE	Spotted Owl=SPOW
Great Horned Owl=GHOW	Steller's Jay=STJA
Hairy Woodpecker=HAWO	Swainson's Thrush=SWTH
Hammond's Flycatcher=HAFL	Townsend's Warbler=TOWA
Hermit Warbler=HEWA	Townsend's Solitaire=TOSO

Tree Swallow=TRSW
Turkey Vulture=TUVU
Varied Thrush=VATH
Vaux's Swift=VASW
Violet-green Swallow=VGSW
Warbling Vireo=WAVI
Western Bluebird=WEBL
Western Meadowlark=WEME
Western Wood Pewee=WWPE
Western Flycatcher=WEFL
Western Tanager=WETA
White-br Nuthatch=WBNU
White-cr Sparrow=WCSP
Willow Flycatcher=WIFL
Wilson's Warbler=WIWA
Winter Wren=WIWR
Wood Duck=WODU
Wrentit=WREN
Y-rumped Warbler=YRWA
Yellow Warbler=YEWA

Appendix B. Land cover type classification system.

PLANT COMMUNITY: All patches have a designated plant community.

<u>Nonforested</u>	Areas that do not support forest vegetation because of natural or human-induced conditions.
Water	Open water (e.g. ponds, lakes).
Herbaceous wetlands	Bogs, marshes, and meadows dominated by herbaceous plants and having a site potential for minimal shrub cover (<60% woody cover); generally dominated by rushes, sedges, and grasses.
Hardwood/shrubby wetlands	Wetlands dominated by woody vegetation with woody crown cover >60%; commonly dominated by alder, bigleaf maple, willows, or Oregon ash.
Grass-forb dry hillsides	Grasslands with <40% woody cover; mainly caused by humans who control the tree or shrub vegetation to maintain the area in permanent pasture.
Brush fields	Brush-dominated areas that will remain in brush unless some sort of disturbance alters the site and makes tree growth possible.
<u>Forested</u>	Areas that support forest vegetation.
Hardwood dominated	>70% hardwood (red alder) composition.
Conifer dominated	>70% conifer composition.
Conifer-hardwood mixed	<70% hardwood or conifer composition.

SERAL CONDITION: All forested plant communities have a designated seral condition.

Grass-forb	Shrubs ^a : <40% crown cover; <1.5 m mean height Trees ^a : <20% crown cover; <3 m mean height; <2.5 cm mean dbh
Shrub	Shrubs: >40% crown cover any height Trees: <20% crown cover; <3 m mean height; <2.5 cm mean dbh

Sapling	Trees: >20% crown cover Conifers: >3 m mean height; 2.5-10.1 cm mean dbh Hardwoods: 3-15 m mean height; 2.5-10.1 cm mean dbh
Pole	Trees: >20% crown cover Conifers: >3 m mean height; 10.2-30.4 cm mean dbh Hardwoods: 3-15 m mean height; 10.2-30.4 cm mean dbh
Small sawtimber	Trees: >20% cover; 30.5-53.2 cm mean dbh
Large sawtimber	Trees: >20% cover; >53.2 cm mean dbh
CANOPY CLOSURE:	All forested plant communities with sapling and pole seral condition have a designated canopy closure condition.
Open canopy	20-70% tree crown cover
Closed canopy	70-100% tree crown cover

^aShrubs and trees were distinguished on the basis of the characteristic life form associated with each species and not on the basis of plant size.

Based on the above classification system, land cover was classified into the following patch types:

b	brush field	mcp	mixed closed pole forested
ccp	conifer closed pole forested	mcs	mixed closed sapling forested
ccs	conifer closed sapling forested	mf	mixed forested
cf	conifer forested	mgf	mixed grass-forb forested
cls	conifer large sawtimber forested	mls	mixed large sawtimber forested
cop	conifer open pole forested	mop	mixed open pole forested
cos	conifer open sapling forested	mos	mixed open sapling forested
csh	conifer shrub forested	msh	mixed shrub forested
g	grass/forb dry hillside	mss	mixed small sawtimber forested
gf	grass-forb forested	po	pole forested
hcp	hardwood closed pole forested	sa	sapling forested
hf	hardwood forested	sh	shrub forested
hls	hardwood large sawtimber forested	ss	small sawtimber forested
hop	hardwood open pole forested	w	water
hsh	hardwood shrub forested		
hss	hardwood small sawtimber forested		
hsw	hardwood shrubby wetland		
hw	herbaceous wetland		
ls	large sawtimber forested		