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### Data S1

### Waterbird survey and site conditions data.

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### File list

### Description

**DataS1.csv** - Number of surveys and survey days during each week of monitoring in the four enrollment periods.

|  |  |
| --- | --- |
| program | abbreviated name of BirdReturns enrollment period |
| survey week | number representing temporal order of survey week |
| first date of week | first day of survey week |
| # of survey days | number of days surveys were recorded during survey week |
| Control surveys | number of surveys recorded on control fields |
| Treatment surveys | number of surveys that recorded on treatment fields |
| total | total number of surveys |

**AppendixS1.csv** – Data file used for analyses of abundance, density, richness and diversity.

|  |  |
| --- | --- |
| tdat | code representing temporal order of birdreturns season |
| season | season |
| visitID | auto-generated number that relates information from the parent form to the subforms; this is unique within a season but not across seasons |
| surveyID | treatment or control point ID |
| date | survey date |
| dts | starting date time |
| dtf | ending date time |
| bidID | ID of the contract |
| trmt | specifies whether the survey point is treatment or control |
| area | area of monitoring zone (acres) |
| observer | name of observer |
| approach | observer's method of approaching the monitoring point |
| wind | wind speed, using Beaufort scale land descriptors ('calm' to 'large trees sway') |
| heat | level of heat distortion at 200m from survey point ('none'/'light'/'heavy') |
| precip | level of precipitation ('none'/ 'fog/mist' to 'heavy rain') |
| clouds | % cloud clover |
| dry | % cover of dry earth within monitoring zone (0/5/10%, then in 10% increments) |
| moist | % cover of moist to saturated earth within monitoring zone (0/5/10%, then in 10% increments) |
| flooded | % cover of standing water within monitoring zone (0/5/10%, then in 10% increments) |
| green | % cover of live vegetation within monitoring zone (0/5/10%, then in 10% increments) |
| dead | % cover of stubble, and other dead vegetation, within monitoring zone (0/5/10%, then in 10% increments) |
| straw | % cover of downed straw within monitoring zone (0/5/10%, then in 10% increments) |
| bare | % of bare earth within monitoring zone (0/5/10%, then in 10% increments) |
| residue | presence (Y/N) of downed straw beneath the water surface within the monitoring zone |
| stub50 | height of stubble (and other dead vegetation) at 50m from the survey point (none, 0-3" to 9-12", >12") |
| stub200 | height of stubble (and other dead vegetation) at 200m from the survey point (none, 0-3" to 9-12", >12") |
| veg50 | height of live vegetation at 50m from the survey point (none, 0-3" to 9-12", >12") |
| veg200 | height of live vegetation at 200m from the survey point (none, 0-3" to 9-12", >12") |
| water50 | depth of water at 50m form the survey point (1" increments, to a max. of >12") |
| water200 | depth of water at 200m form the survey point (1" increments, to a max. of >12") |
| program | TNC's name for the program |
| IDNUM | unique contract number |
| comments | comments made by field technician |
| clods | presence (Y/N) of soil clods above the water surface within the monitoring zone |
| levee | amount of vegetation on levees bordering the monitoring zone ('bare'/'sparsely vegetated'/thickly vegetated') |
| American.Avocet | number of observations of this species |
| Baird.s.Sandpiper | number of observations of this species |
| Bar.tailed.Godwit | number of observations of this species |
| Black.bellied.Plover | number of observations of this species |
| Black.necked.Stilt | number of observations of this species |
| Dunlin | number of observations of this species |
| Greater.Yellowlegs | number of observations of this species |
| Killdeer | number of observations of this species |
| Least.Sandpiper | number of observations of this species |
| Lesser.Yellowlegs | number of observations of this species |
| Long.billed.Curlew | number of observations of this species |
| Long.billed.Dowitcher | number of observations of this species |
| Marbled.Godwit | number of observations of this species |
| Pectoral.Sandpiper | number of observations of this species |
| Red.necked.Phalarope | number of observations of this species |
| Semipalmated.Plover | number of observations of this species |
| Solitary.sandpiper | number of observations of this species |
| Unidentified.Dowitcher | number of observations of this species |
| Unidentified.Peep | number of observations of this species |
| Unidentified.Phalarope | number of observations of this species |
| Unidentified.Plover | number of observations of this species |
| Unidentified.shorebird | number of observations of this species |
| Unidentified.Yellowlegs | number of observations of this species |
| Western.Sandpiper | number of observations of this species |
| Whimbrel | number of observations of this species |
| Wilson.s.Phalarope | number of observations of this species |
| Wilson.s.Snipe | number of observations of this species |
| American.Bittern | number of observations of this species |
| Caspian.Tern | number of observations of this species |
| Cattle.Egret | number of observations of this species |
| Forster.s.Tern | number of observations of this species |
| Great.Blue.Heron | number of observations of this species |
| Great.Egret | number of observations of this species |
| Green.Heron | number of observations of this species |
| Sandhill.Crane | number of observations of this species |
| Snowy.Egret | number of observations of this species |
| White.faced.Ibis | number of observations of this species |
| American.Wigeon | number of observations of this species |
| Blue.winged.Teal | number of observations of this species |
| Bufflehead | number of observations of this species |
| Cackling.Goose | number of observations of this species |
| Canada.Goose | number of observations of this species |
| Canvasback | number of observations of this species |
| Cinnamon.Teal | number of observations of this species |
| Common.Gallinule | number of observations of this species |
| Eared.Grebe | number of observations of this species |
| Eurasian.Wigeon | number of observations of this species |
| Gadwall | number of observations of this species |
| Goldeneye | number of observations of this species |
| Greater.White.fronted.Goose | number of observations of this species |
| Green.winged.Teal | number of observations of this species |
| Horned.Grebe | number of observations of this species |
| Lesser.Scaup | number of observations of this species |
| Mallard | number of observations of this species |
| Mute.Swan | number of observations of this species |
| Northern.Pintail | number of observations of this species |
| Northern.Shoveler | number of observations of this species |
| Pied.billed.Grebe | number of observations of this species |
| Redhead | number of observations of this species |
| Ross.s.Goose | number of observations of this species |
| Ruddy.Duck | number of observations of this species |
| Snow.Goose | number of observations of this species |
| Sora | number of observations of this species |
| Trumpeter.Swan | number of observations of this species |
| Tundra.Swan | number of observations of this species |
| Unidentified.dabbling.duck | number of observations of this species |
| Unidentified.dark.Goose | number of observations of this species |
| Unidentified.diving.duck | number of observations of this species |
| Unidentified.duck | number of observations of this species |
| Unidentified.Grebe | number of observations of this species |
| Unidentified.Swan | number of observations of this species |
| Unidentified.white.Goose | number of observations of this species |
| Wood.Duck | number of observations of this species |
| Virginia.Rail | number of observations of this species |
| American.Coot | number of observations of this species |
| Cooper.s.Hawk | number of observations of this species |
| Sharp.shinned.Hawk | number of observations of this species |
| Red.shouldered.Hawk | number of observations of this species |
| Red.tailed.Hawk | number of observations of this species |
| Swainson.s.Hawk | number of observations of this species |
| Unidentified.Buteo | number of observations of this species |
| Double.crested.Cormorant | number of observations of this species |
| American.Crow | number of observations of this species |
| Common.Raven | number of observations of this species |
| Bald.Eagle | number of observations of this species |
| Golden.Eagle | number of observations of this species |
| American.Kestrel | number of observations of this species |
| Merlin | number of observations of this species |
| Peregrine.Falcon | number of observations of this species |
| Prairie.Falcon | number of observations of this species |
| California.Gull | number of observations of this species |
| Franklin.s.Gull | number of observations of this species |
| Herring.Gull | number of observations of this species |
| Ring.billed.Gull | number of observations of this species |
| Unidentified.Gull | number of observations of this species |
| Unidentified.small.Gull | number of observations of this species |
| Northern.Harrier | number of observations of this species |
| Belted.Kingfisher | number of observations of this species |
| White.tailed.Kite | number of observations of this species |
| American.White.Pelican | number of observations of this species |
| Turkey.Vulture | number of observations of this species |
| stubx | Average stubble height between 50M and 200M |
| vegx | Average vegetation height between 50M and 200M |
| waterx | Average water depth between 50M and 200M |
| totbirds | Total abundance: sum of counts for all species for a particular survey. |
| shorebirds | abundance of shorebird species. |
| wadingbirds | abundance of wadingbird species. |
| waterfowl | abundance of waterfowl species. |
| density | "totbirds" divided by "area" |
| dens.shore | "shorebirds" divided by "area" |
| dens.wader | "wadingbirds" divided by "area" |
| dens.wfowl | "waterfowl" divided by "area" |
| logdens.shore | Logdensity of shorebirds |
| logdens.wader | Logdensity of waders |
| logdens.wfowl | Logdensity of waterfowl |
| richness | total number of species observed. |
| rich.shore | total number of shorebird species observed. |
| rich.wader | total number of wadingbird species observed. |
| rich.wfowl | total number of waterfowl species observed. |
| diversity | Shannon-Weiner diversity index including all species. |
| div.shore | Shannon-Weiner diversity index for shorebird species only. |
| div.wfowl | Shannon-Weiner diversity index for waterfowl species only. |
| div.wader | Shannon-Weiner diversity index for wading bird species only. |