dev\_get\_blocks

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knitr::opts\_chunk$set(  
 echo = TRUE,  
 warning = FALSE,  
 message = FALSE)  
knitr::opts\_knit$set(root.dir = '~/Documents/NCBA/species/')

# Purpose

This document details a functio to retrieve information about NCBA blocks in the form of a data frame or a spatial data frame (simple feature). The function also allows the user to pass a list of fields to return if they do not want all of the available fields. Restricting the fields returned can drastically speed up the query because some fields are nested with a large amount of data.

# Function

get\_blocks\_dev <- function(ncba\_config, spatial = FALSE, fields = NULL,  
 crs = 4326) {  
 # Returns a data frame of blocks with or without geometries  
 #   
 # Description:  
 # Retrieves the blocks data set in a data frame or spatial data frame   
 # (simple feature). A subset of all available fields can be specified  
 # to speed up the query.  
 #   
 # Parameters:  
 # ncba\_config -- config file with NCBA MongoDB username and password  
 # spatial -- TRUE or FALSE whether to return a spatially enabled data frame  
 # TRUE yields a data frame whereas FALSE returns a simple features data   
 # frame.  
 # fields -- either NULL or a list of column names to include while excluding  
 # all others. On August 28, 2023, column names available were:  
 # "AREA\_SQMI" "COUNTY" "GEOM"   
 # "ID\_BLOCK" "ID\_BLOCK\_CODE" "ID\_EBD\_NAME"   
 # "ID\_NCBA\_BLOCK" "ID\_OLD\_ID" "ID\_S123\_NOSPACES"   
 # "ID\_S123\_SPACES" "ID\_WEB\_BLOCKMAP" "NW\_X"   
 # "NW\_Y" "POSITION" "PRIORITY"   
 # "QUADID" "QUAD\_BLOCK" "QUAD\_NAME"   
 # "REGION" "SE\_X" "SE\_Y"   
 # "SUBNAT2" "TYPE" "ID\_S123\_NOSPACES\_TEMP"  
 # "ID\_S123\_SPACES\_TEMP" "GAP\_SPP" (nested) "EBD\_SPP" (nested)   
 # "ECOREGION"   
 #  
 # crs -- code of the CRS that you want spatial output in. Defaults to 4326.  
 library(sf)  
   
 # Connect to the blocks collection (table)  
 connection\_blocks <- connect\_ncba\_db(ncba\_config = ncba\_config,   
 database = "ebd\_mgmt",   
 collection = "blocks")  
   
 # Condition on whether fields were provided  
 if (is.null(fields) == TRUE) {  
 # Run query for data frame  
 blocks <- connection\_blocks$find()  
   
 } else {  
   
 # If spatial is true, add necessary fields to fields list  
 if (spatial == TRUE) {  
 fields <- c(fields, "SE\_X", "SE\_Y", "NW\_X", "NW\_Y")  
 }  
   
 # Convert the list of field names to a mongolite filter string  
 fields\_string <- paste0('{', paste0('"', fields, '" : true',   
 collapse = ', '), '}')  
   
 # Run query for data frame  
 blocks <- connection\_blocks$find(fields = fields\_string)  
 }  
   
 # Spatial - get a simple features data frame  
 if (spatial == TRUE) {  
 # Make a column with Well-known Text from SE\_X and SE\_Y etc.  
 blocks$wkt <- paste0("POLYGON((", blocks$SE\_X, " ", blocks$SE\_Y, ", ",   
 blocks$SE\_X, " ", blocks$NW\_Y, ", ", blocks$NW\_X, " ",   
 blocks$NW\_Y, ", ", blocks$NW\_X, " ", blocks$SE\_Y, ", ",   
 blocks$SE\_X, " ", blocks$SE\_Y, "))")  
  
 # Use the st\_as\_sf function to create a simple features data frame  
 blocks\_sf <- st\_as\_sf(blocks, wkt = "wkt", crs = 4326)  
   
 # Transform coordinate reference system  
 if (crs != 4326) {  
 blocks\_sf <- st\_transform(blocks\_sf, crs)  
 }  
   
 return(blocks\_sf)  
   
 } else {  
   
 return(blocks)  
 }  
}

# Usage

This demo requires the tidyverse packages.

library(tidyverse)

Load the NCBA functions because this function relies upon the output from some of them.

setwd("~/Code/NCBA/resources")  
source("ncba\_functions.R")  
  
ncba\_config <- "~/Documents/NCBA/Scripts/ncba\_config.R"

Retrieve a blocks data frame with all columns

blocks <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = FALSE)  
print(head(blocks))

## AREA\_SQMI COUNTY GEOM.type  
## 1 10.24026626 BLADEN Polygon  
## 2 10.26113436 BRUNSWICK Polygon  
## 3 10.2297224 BLADEN Polygon  
## 4 10.26647817 COLUMBUS Polygon  
## 5 10.01583399 WARREN Polygon  
## 6 10.27172009 BRUNSWICK Polygon  
## GEOM.coordinates  
## 1 -78.68751, -78.68751, -78.62501, -78.62501, -78.68751, 34.54169, 34.50002, 34.50002, 34.54169, 34.54169  
## 2 -78.18751, -78.18751, -78.12501, -78.12501, -78.18751, 34.37502, 34.33335, 34.33335, 34.37502, 34.37502  
## 3 -78.75001, -78.75001, -78.68751, -78.68751, -78.75001, 34.62502, 34.58335, 34.58335, 34.62502, 34.62502  
## 4 -78.25001, -78.25001, -78.18751, -78.18751, -78.25001, 34.33335, 34.29169, 34.29169, 34.33335, 34.33335  
## 5 -78.18751, -78.18751, -78.12501, -78.12501, -78.18751, 36.37502, 36.33335, 36.33335, 36.37502, 36.37502  
## 6 -78.25001, -78.25001, -78.18751, -78.18751, -78.25001, 34.29169, 34.25002, 34.25002, 34.29169, 34.29169  
## ID\_BLOCK ID\_BLOCK\_CODE ID\_EBD\_NAME ID\_NCBA\_BLOCK ID\_OLD\_ID  
## 1 ABBOTTSBURG-SE 34078E6SE Abbottsburg SE ABBOTTSBURG-SE Abbottsburg-SE  
## 2 ACME-NE 34078C2NE Acme NE ACME-NE Acme-NE  
## 3 ABBOTTSBURG-NW 34078E6NW Abbottsburg NW ABBOTTSBURG-NW Abbottsburg-NW  
## 4 ACME-CW 34078C2CW Acme CW ACME-CW Acme-CW  
## 5 AFTON-NE 36078C2NE Afton NE AFTON-NE Afton-NE  
## 6 ACME-SW 34078C2SW Acme SW ACME-SW Acme-SW  
## ID\_S123\_NOSPACES ID\_S123\_SPACES ID\_WEB\_BLOCKMAP NW\_X NW\_Y POSITION  
## 1 Abbottsburg\_SE Abbottsburg SE Abbottsburg SE -78.68751 34.54169 Inside  
## 2 Acme\_NE Acme NE Acme NE -78.18751 34.37502 Estuarine  
## 3 Abbottsburg\_NW Abbottsburg NW Abbottsburg NW -78.75001 34.62502 Inside  
## 4 Acme\_CW Acme CW Acme CW -78.25001 34.33335 Inside  
## 5 Afton\_NE Afton NE Afton NE -78.18751 36.37502 Inside  
## 6 Acme\_SW Acme SW Acme SW -78.25001 34.29169 Inside  
## PRIORITY QUADID QUAD\_BLOCK QUAD\_NAME REGION SE\_X SE\_Y SUBNAT2  
## 1 1 34078E6 SE ABBOTTSBURG 4 -78.62501 34.50002 US-NC-017  
## 2 0 34078c2 NE ACME 4 -78.12501 34.33335 US-NC-019  
## 3 0 34078E6 NW ABBOTTSBURG 4 -78.68751 34.58335 US-NC-017  
## 4 0 34078c2 CW ACME 4 -78.18751 34.29169 US-NC-047  
## 5 0 36078c2 NE AFTON 3 -78.12501 36.33335 US-NC-185  
## 6 0 34078c2 SW ACME 4 -78.18751 34.25002 US-NC-047  
## TYPE ID\_S123\_NOSPACES\_TEMP ID\_S123\_SPACES\_TEMP  
## 1 Priority Abbottsburg\_SE Abbottsburg SE  
## 2 Non-priority Acme\_NE Acme NE  
## 3 Non-priority Abbottsburg\_NW Abbottsburg NW  
## 4 Non-priority Acme\_CW Acme CW  
## 5 Non-priority Afton\_NE Afton NE  
## 6 Non-priority Acme\_SW Acme SW  
## GAP\_SPP  
## 1 ACFL, AMCR, AMGO, AMKE, AMRE, AMRO, AMWO, ANHI, BACS, BADO, BANO, BARS, BAWW, BCNH, BEKI, BGGN, BHCO, BHNU, BLGR, BLJA, BLVU, BRTH, BTNW, BWHA, CACH, CAEG, CANG, CARW, CEDW, CHSP, CHSW, COGR, COHA, CONI, COYE, CWWI, DICK, DOWO, EABL, EAKI, EAME, EASO, EATO, EAWP, EUCD, EUST, FICR, FISP, GBHE, GCFL, GHOW, GRCA, GRHE, GRSP, HAWO, HOFI, HOME, HOSP, HOWA, INBU, KEWA, KILL, LBHE, LEBI, LOSH, LOWA, MALL, MIKI, MODO, NOBO, NOCA, NOFL, NOMO, NOPA, NRWS, OROR, PBGR, PIWA, PIWO, PRAW, PROW, PUMA, RBWO, RCWO, REVI, RHWO, ROPI, RSHA, RTHA, RTHU, SCTA, SUTA, TUTI, TUVU, WBNU, WEVI, WEWA, WHIB, WITU, WODU, WOTH, YBCH, YBCU, YCNH, YTVI, YTWA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, Acadian Flycatcher, American Crow, American Goldfinch, American Kestrel, American Redstart, American Robin, American Woodcock, Anhinga, Bachman's Sparrow, Barred Owl, Barn Owl, Barn Swallow, Black-and-white Warbler, Black-crowned Night-Heron, Belted Kingfisher, Blue-gray Gnatcatcher, Brown-headed Cowbird, Brown-headed Nuthatch, Blue Grosbeak, Blue Jay, Black Vulture, Brown Thrasher, Black-throated Green Warbler, Broad-winged Hawk, Carolina Chickadee, Cattle Egret, Canada Goose, Carolina Wren, Cedar Waxwing, Chipping Sparrow, Chimney Swift, Common Grackle, Cooper's Hawk, Common Nighthawk, Common Yellowthroat, Chuck-will's-widow, Dickcissel, Downy Woodpecker, Eastern Bluebird, Eastern Kingbird, Eastern Meadowlark, Eastern Screech-Owl, Eastern Towhee, Eastern Wood-Pewee, Eurasian Collared-Dove, European Starling, Fish Crow, Field Sparrow, Great Blue Heron, Great Crested Flycatcher, Great Horned Owl, Gray Catbird, Green Heron, Grasshopper Sparrow, Hairy Woodpecker, House Finch, Hooded Merganser, House Sparrow, Hooded Warbler, Indigo Bunting, Kentucky Warbler, Killdeer, Little Blue Heron, Least Bittern, Loggerhead Shrike, Louisiana Waterthrush, Mallard, Mississippi Kite, Mourning Dove, Northern Bobwhite, Northern Cardinal, Northern Flicker, Northern Mockingbird, Northern Parula, Northern Rough-winged Swallow, Orchard Oriole, Pied-billed Grebe, Pine Warbler, Pileated Woodpecker, Prairie Warbler, Prothonotary Warbler, Purple Martin, Red-bellied Woodpecker, Red-cockaded Woodpecker, Red-eyed Vireo, Red-headed Woodpecker, Rock Pigeon, Red-shouldered Hawk, Red-tailed Hawk, Ruby-throated Hummingbird, Scarlet Tanager, Summer Tanager, Tufted Titmouse, Turkey Vulture, White-breasted Nuthatch, White-eyed Vireo, Worm-eating Warbler, White Ibis, Wild Turkey, Wood Duck, Wood Thrush, Yellow-breasted Chat, Yellow-billed Cuckoo, Yellow-crowned Night-Heron, Yellow-throated Vireo, Yellow-throated Warbler, 16177, 20638, 31382, 11407, 32773, 27462, 5920, 6940, 31681, 8693, 8110, 23153, 32682, 7227, 9697, 26030, 32557, 25893, 33276, 20373, 7334, 26950, 32906, 7993, 21127, 7170, 297, 26287, 28730, 31733, 3755, 32577, 7829, 3408, 32744, 3510, 33304, 10805, 27031, 16691, 32301, 8358, 32155, 16135, 1968, 26739, 20653, 31746, 7092, 16555, 8399, 26912, 7183, 31686, 10831, 31084, 651, 30329, 32772, 33285, 32729, 5742, 7156, 7073, 20158, 32672, 471, 7631, 2339, 912, 33194, 11284, 27022, 32777, 23036, 32405, 1756, 32853, 11150, 32879, 32683, 23051, 10620, 10830, 18416, 10567, 1798, 7984, 8011, 4652, 33116, 33112, 21225, 7338, 25873, 18324, 32671, 7265, 1706, 397, 27249, 32293, 3137, 7240, 18374, 32867  
## 2 ACFL, AMCR, AMGO, AMKE, AMRE, AMRO, AMWO, ANHI, BACS, BADO, BAEA, BANO, BARS, BAWW, BCNH, BEKI, BGGN, BHCO, BHNU, BLGR, BLJA, BLVU, BRTH, BTGR, BTNW, BWHA, CACH, CAEG, CANG, CARW, CEDW, CHSP, CHSW, COGR, COHA, CONI, COYE, CWWI, DOWO, EABL, EAKI, EAME, EASO, EATO, EAWP, EUCD, EUST, FICR, FISP, GBHE, GCFL, GHOW, GRCA, GRHE, HAWO, HESP, HOFI, HOME, HOSP, HOWA, HOWR, INBU, KEWA, KILL, KIRA, LBHE, LEBI, LOSH, LOWA, MALL, MIKI, MODO, NOBO, NOCA, NOFL, NOMO, NOPA, NRWS, OROR, OSPR, OVEN, PABU, PBGR, PIWA, PIWO, PRAW, PROW, PUMA, RBWO, RCWO, REVI, RHWO, ROPI, RSHA, RTHA, RTHU, SCTA, SNEG, SUTA, SWWA, TRHE, TUTI, TUVU, WBNU, WEVI, WEWA, WHIB, WITU, WODU, WOTH, YBCH, YBCU, YCNH, YTVI, YTWA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, Acadian Flycatcher, American Crow, American Goldfinch, American Kestrel, American Redstart, American Robin, American Woodcock, Anhinga, Bachman's Sparrow, Barred Owl, Bald Eagle, Barn Owl, Barn Swallow, Black-and-white Warbler, Black-crowned Night-Heron, Belted Kingfisher, Blue-gray Gnatcatcher, Brown-headed Cowbird, Brown-headed Nuthatch, Blue Grosbeak, Blue Jay, Black Vulture, Brown Thrasher, Boat-tailed Grackle, Black-throated Green Warbler, Broad-winged Hawk, Carolina Chickadee, Cattle Egret, Canada Goose, Carolina Wren, Cedar Waxwing, Chipping Sparrow, Chimney Swift, Common Grackle, Cooper's Hawk, Common Nighthawk, Common Yellowthroat, Chuck-will's-widow, Downy Woodpecker, Eastern Bluebird, Eastern Kingbird, Eastern Meadowlark, Eastern Screech-Owl, Eastern Towhee, Eastern Wood-Pewee, Eurasian Collared-Dove, European Starling, Fish Crow, Field Sparrow, Great Blue Heron, Great Crested Flycatcher, Great Horned Owl, Gray Catbird, Green Heron, Hairy Woodpecker, Henslow's Sparrow, House Finch, Hooded Merganser, House Sparrow, Hooded Warbler, House Wren, Indigo Bunting, Kentucky Warbler, Killdeer, King Rail, Little Blue Heron, Least Bittern, Loggerhead Shrike, Louisiana Waterthrush, Mallard, Mississippi Kite, Mourning Dove, Northern Bobwhite, Northern Cardinal, Northern Flicker, Northern Mockingbird, Northern Parula, Northern Rough-winged Swallow, Orchard Oriole, Osprey, Ovenbird, Painted Bunting, Pied-billed Grebe, Pine Warbler, Pileated Woodpecker, Prairie Warbler, Prothonotary Warbler, Purple Martin, Red-bellied Woodpecker, Red-cockaded Woodpecker, Red-eyed Vireo, Red-headed Woodpecker, Rock Pigeon, Red-shouldered Hawk, Red-tailed Hawk, Ruby-throated Hummingbird, Scarlet Tanager, Snowy Egret, Summer Tanager, Swainson's Warbler, Tricolored Heron, Tufted Titmouse, Turkey Vulture, White-breasted Nuthatch, White-eyed Vireo, Worm-eating Warbler, White Ibis, Wild Turkey, Wood Duck, Wood Thrush, Yellow-breasted Chat, Yellow-billed Cuckoo, Yellow-crowned Night-Heron, Yellow-throated Vireo, Yellow-throated Warbler, 16177, 20638, 31382, 11407, 32773, 27462, 5920, 6940, 31681, 8693, 7885, 8110, 23153, 32682, 7227, 9697, 26030, 32557, 25893, 33276, 20373, 7334, 26950, 32582, 32906, 7993, 21127, 7170, 297, 26287, 28730, 31733, 3755, 32577, 7829, 3408, 32744, 3510, 10805, 27031, 16691, 32301, 8358, 32155, 16135, 1968, 26739, 20653, 31746, 7092, 16555, 8399, 26912, 7183, 10831, 32012, 31084, 651, 30329, 32772, 26127, 33285, 32729, 5742, 5083, 7156, 7073, 20158, 32672, 471, 7631, 2339, 912, 33194, 11284, 27022, 32777, 23036, 32405, 7351, 32667, 33298, 1756, 32853, 11150, 32879, 32683, 23051, 10620, 10830, 18416, 10567, 1798, 7984, 8011, 4652, 33116, 7152, 33112, 32684, 7158, 21225, 7338, 25873, 18324, 32671, 7265, 1706, 397, 27249, 32293, 3137, 7240, 18374, 32867  
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## 4 ACFL, AMCR, AMGO, AMKE, AMRE, AMRO, AMWO, ANHI, BACS, BADO, BAEA, BANO, BARS, BAWW, BCNH, BEKI, BGGN, BHCO, BHNU, BLGR, BLJA, BLVU, BRTH, BTGR, BTNW, BWHA, CACH, CAEG, CANG, CARW, CEDW, CHSP, CHSW, COGR, COHA, CONI, COYE, CWWI, DOWO, EABL, EAKI, EAME, EASO, EATO, EAWP, EUCD, EUST, FICR, FISP, GBHE, GCFL, GHOW, GRCA, GRHE, HAWO, HESP, HOFI, HOME, HOSP, HOWA, HOWR, INBU, KEWA, KILL, LBHE, LEBI, LOSH, LOWA, MALL, MIKI, MODO, NOBO, NOCA, NOFL, NOMO, NOPA, NRWS, OROR, OSPR, PABU, PBGR, PIWA, PIWO, PRAW, PROW, PUMA, RBWO, RCWO, REVI, RHWO, ROPI, RSHA, RTHA, RTHU, SNEG, SUTA, TRHE, TUTI, TUVU, WBNU, WEVI, WEWA, WHIB, WITU, WODU, WOTH, YBCH, YBCU, YCNH, YTVI, YTWA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, Acadian Flycatcher, American Crow, American Goldfinch, American Kestrel, American Redstart, American Robin, American Woodcock, Anhinga, Bachman's Sparrow, Barred Owl, Bald Eagle, Barn Owl, Barn Swallow, Black-and-white Warbler, Black-crowned Night-Heron, Belted Kingfisher, Blue-gray Gnatcatcher, Brown-headed Cowbird, Brown-headed Nuthatch, Blue Grosbeak, Blue Jay, Black Vulture, Brown Thrasher, Boat-tailed Grackle, Black-throated Green Warbler, Broad-winged Hawk, Carolina Chickadee, Cattle Egret, Canada Goose, Carolina Wren, Cedar Waxwing, Chipping Sparrow, Chimney Swift, Common Grackle, Cooper's Hawk, Common Nighthawk, Common Yellowthroat, Chuck-will's-widow, Downy Woodpecker, Eastern Bluebird, Eastern Kingbird, Eastern Meadowlark, Eastern Screech-Owl, Eastern Towhee, Eastern Wood-Pewee, Eurasian Collared-Dove, European Starling, Fish Crow, Field Sparrow, Great Blue Heron, Great Crested Flycatcher, Great Horned Owl, Gray Catbird, Green Heron, Hairy Woodpecker, Henslow's Sparrow, House Finch, Hooded Merganser, House Sparrow, Hooded Warbler, House Wren, Indigo Bunting, Kentucky Warbler, Killdeer, Little Blue Heron, Least Bittern, Loggerhead Shrike, Louisiana Waterthrush, Mallard, Mississippi Kite, Mourning Dove, Northern Bobwhite, Northern Cardinal, Northern Flicker, Northern Mockingbird, Northern Parula, Northern Rough-winged Swallow, Orchard Oriole, Osprey, Painted Bunting, Pied-billed Grebe, Pine Warbler, Pileated Woodpecker, Prairie Warbler, Prothonotary Warbler, Purple Martin, Red-bellied Woodpecker, Red-cockaded Woodpecker, Red-eyed Vireo, Red-headed Woodpecker, Rock Pigeon, Red-shouldered Hawk, Red-tailed Hawk, Ruby-throated Hummingbird, Snowy Egret, Summer Tanager, Tricolored Heron, Tufted Titmouse, Turkey Vulture, White-breasted Nuthatch, White-eyed Vireo, Worm-eating Warbler, White Ibis, Wild Turkey, Wood Duck, Wood Thrush, Yellow-breasted Chat, Yellow-billed Cuckoo, Yellow-crowned Night-Heron, Yellow-throated Vireo, Yellow-throated Warbler, 16177, 20638, 31382, 11407, 32773, 27462, 5920, 6940, 31681, 8693, 7885, 8110, 23153, 32682, 7227, 9697, 26030, 32557, 25893, 33276, 20373, 7334, 26950, 32582, 32906, 7993, 21127, 7170, 297, 26287, 28730, 31733, 3755, 32577, 7829, 3408, 32744, 3510, 10805, 27031, 16691, 32301, 8358, 32155, 16135, 1968, 26739, 20653, 31746, 7092, 16555, 8399, 26912, 7183, 10831, 32012, 31084, 651, 30329, 32772, 26127, 33285, 32729, 5742, 7156, 7073, 20158, 32672, 471, 7631, 2339, 912, 33194, 11284, 27022, 32777, 23036, 32405, 7351, 33298, 1756, 32853, 11150, 32879, 32683, 23051, 10620, 10830, 18416, 10567, 1798, 7984, 8011, 4652, 7152, 33112, 7158, 21225, 7338, 25873, 18324, 32671, 7265, 1706, 397, 27249, 32293, 3137, 7240, 18374, 32867  
## 5 ACFL, AMCR, AMGO, AMKE, AMRE, AMRO, AMWO, BACS, BADO, BARS, BEKI, BGGN, BHCO, BHNU, BLGR, BLJA, BLVU, BRTH, BWHA, CACH, CAEG, CANG, CARW, CEDW, CHSP, CHSW, CLSW, COGR, COHA, CONI, COYE, CWWI, DICK, DOWO, EABL, EAKI, EAME, EASO, EATO, EAWP, EUCD, EUST, FICR, FISP, GBHE, GCFL, GHOW, GRCA, GRHE, GRSP, HAWO, HOFI, HOLA, HOME, HOSP, HOWA, HOWR, INBU, KEWA, KILL, LEBI, LOSH, MALL, MODO, NOBO, NOCA, NOFL, NOMO, NOPA, NRWS, OROR, OVEN, PIWA, PIWO, PRAW, PUMA, RBWO, REVI, RHWO, ROPI, RSHA, RTHA, RTHU, SCTA, SOSP, SSHA, SUTA, TRES, TUTI, TUVU, WBNU, WEVI, WEWA, WITU, WODU, WOTH, YBCH, YBCU, YTVI, YTWA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, Acadian Flycatcher, American Crow, American Goldfinch, American Kestrel, American Redstart, American Robin, American Woodcock, Bachman's Sparrow, Barred Owl, Barn Swallow, Belted Kingfisher, Blue-gray Gnatcatcher, Brown-headed Cowbird, Brown-headed Nuthatch, Blue Grosbeak, Blue Jay, Black Vulture, Brown Thrasher, Broad-winged Hawk, Carolina Chickadee, Cattle Egret, Canada Goose, Carolina Wren, Cedar Waxwing, Chipping Sparrow, Chimney Swift, Cliff Swallow, Common Grackle, Cooper's Hawk, Common Nighthawk, Common Yellowthroat, Chuck-will's-widow, Dickcissel, Downy Woodpecker, Eastern Bluebird, Eastern Kingbird, Eastern Meadowlark, Eastern Screech-Owl, Eastern Towhee, Eastern Wood-Pewee, Eurasian Collared-Dove, European Starling, Fish Crow, Field Sparrow, Great Blue Heron, Great Crested Flycatcher, Great Horned Owl, Gray Catbird, Green Heron, Grasshopper Sparrow, Hairy Woodpecker, House Finch, Horned Lark, Hooded Merganser, House Sparrow, Hooded Warbler, House Wren, Indigo Bunting, Kentucky Warbler, Killdeer, Least Bittern, Loggerhead Shrike, Mallard, Mourning Dove, Northern Bobwhite, Northern Cardinal, Northern Flicker, Northern Mockingbird, Northern Parula, Northern Rough-winged Swallow, Orchard Oriole, Ovenbird, Pine Warbler, Pileated Woodpecker, Prairie Warbler, Purple Martin, Red-bellied Woodpecker, Red-eyed Vireo, Red-headed Woodpecker, Rock Pigeon, Red-shouldered Hawk, Red-tailed Hawk, Ruby-throated Hummingbird, Scarlet Tanager, Song Sparrow, Sharp-shinned Hawk, Summer Tanager, Tree Swallow, Tufted Titmouse, Turkey Vulture, White-breasted Nuthatch, White-eyed Vireo, Worm-eating Warbler, Wild Turkey, Wood Duck, Wood Thrush, Yellow-breasted Chat, Yellow-billed Cuckoo, Yellow-throated Vireo, Yellow-throated Warbler, 16177, 20638, 31382, 11407, 32773, 27462, 5920, 31681, 8693, 23153, 9697, 26030, 32557, 25893, 33276, 20373, 7334, 26950, 7993, 21127, 7170, 297, 26287, 28730, 31733, 3755, 23244, 32577, 7829, 3408, 32744, 3510, 33304, 10805, 27031, 16691, 32301, 8358, 32155, 16135, 1968, 26739, 20653, 31746, 7092, 16555, 8399, 26912, 7183, 31686, 10831, 31084, 21625, 651, 30329, 32772, 26127, 33285, 32729, 5742, 7073, 20158, 471, 2339, 912, 33194, 11284, 27022, 32777, 23036, 32405, 32667, 32853, 11150, 32879, 23051, 10620, 18416, 10567, 1798, 7984, 8011, 4652, 33116, 32018, 7816, 33112, 23074, 21225, 7338, 25873, 18324, 32671, 1706, 397, 27249, 32293, 3137, 18374, 32867  
## 6 ACFL, AMCR, AMGO, AMKE, AMRE, AMRO, AMWO, ANHI, BACS, BADO, BANO, BARS, BAWW, BCNH, BEKI, BGGN, BHCO, BHNU, BLGR, BLJA, BLVU, BRTH, BTGR, BTNW, CACH, CAEG, CANG, CARW, CEDW, CHSP, CHSW, COGR, COHA, CONI, COYE, CWWI, DOWO, EABL, EAKI, EAME, EASO, EATO, EAWP, EUCD, EUST, FICR, FISP, GBHE, GCFL, GHOW, GRCA, GRHE, HAWO, HESP, HOFI, HOSP, HOWA, HOWR, INBU, KEWA, KILL, LBHE, LOSH, LOWA, MALL, MIKI, MODO, NOBO, NOCA, NOFL, NOMO, NOPA, NRWS, OROR, PABU, PIWA, PIWO, PRAW, PROW, PUMA, RBWO, RCWO, REVI, RHWO, ROPI, RSHA, RTHA, RTHU, SNEG, SUTA, TUTI, TUVU, WBNU, WEVI, WEWA, WHIB, WITU, WODU, WOTH, YBCH, YBCU, YCNH, YTVI, YTWA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, Acadian Flycatcher, American Crow, American Goldfinch, American Kestrel, American Redstart, American Robin, American Woodcock, Anhinga, Bachman's Sparrow, Barred Owl, Barn Owl, Barn Swallow, Black-and-white Warbler, Black-crowned Night-Heron, Belted Kingfisher, Blue-gray Gnatcatcher, Brown-headed Cowbird, Brown-headed Nuthatch, Blue Grosbeak, Blue Jay, Black Vulture, Brown Thrasher, Boat-tailed Grackle, Black-throated Green Warbler, Carolina Chickadee, Cattle Egret, Canada Goose, Carolina Wren, Cedar Waxwing, Chipping Sparrow, Chimney Swift, Common Grackle, Cooper's Hawk, Common Nighthawk, Common Yellowthroat, Chuck-will's-widow, Downy Woodpecker, Eastern Bluebird, Eastern Kingbird, Eastern Meadowlark, Eastern Screech-Owl, Eastern Towhee, Eastern Wood-Pewee, Eurasian Collared-Dove, European Starling, Fish Crow, Field Sparrow, Great Blue Heron, Great Crested Flycatcher, Great Horned Owl, Gray Catbird, Green Heron, Hairy Woodpecker, Henslow's Sparrow, House Finch, House Sparrow, Hooded Warbler, House Wren, Indigo Bunting, Kentucky Warbler, Killdeer, Little Blue Heron, Loggerhead Shrike, Louisiana Waterthrush, Mallard, Mississippi Kite, Mourning Dove, Northern Bobwhite, Northern Cardinal, Northern Flicker, Northern Mockingbird, Northern Parula, Northern Rough-winged Swallow, Orchard Oriole, Painted Bunting, Pine Warbler, Pileated Woodpecker, Prairie Warbler, Prothonotary Warbler, Purple Martin, Red-bellied Woodpecker, Red-cockaded Woodpecker, Red-eyed Vireo, Red-headed Woodpecker, Rock Pigeon, Red-shouldered Hawk, Red-tailed Hawk, Ruby-throated Hummingbird, Snowy Egret, Summer Tanager, Tufted Titmouse, Turkey Vulture, White-breasted Nuthatch, White-eyed Vireo, Worm-eating Warbler, White Ibis, Wild Turkey, Wood Duck, Wood Thrush, Yellow-breasted Chat, Yellow-billed Cuckoo, Yellow-crowned Night-Heron, Yellow-throated Vireo, Yellow-throated Warbler, 16177, 20638, 31382, 11407, 32773, 27462, 5920, 6940, 31681, 8693, 8110, 23153, 32682, 7227, 9697, 26030, 32557, 25893, 33276, 20373, 7334, 26950, 32582, 32906, 21127, 7170, 297, 26287, 28730, 31733, 3755, 32577, 7829, 3408, 32744, 3510, 10805, 27031, 16691, 32301, 8358, 32155, 16135, 1968, 26739, 20653, 31746, 7092, 16555, 8399, 26912, 7183, 10831, 32012, 31084, 30329, 32772, 26127, 33285, 32729, 5742, 7156, 20158, 32672, 471, 7631, 2339, 912, 33194, 11284, 27022, 32777, 23036, 32405, 33298, 32853, 11150, 32879, 32683, 23051, 10620, 10830, 18416, 10567, 1798, 7984, 8011, 4652, 7152, 33112, 21225, 7338, 25873, 18324, 32671, 7265, 1706, 397, 27249, 32293, 3137, 7240, 18374, 32867  
## EBD\_SPP  
## 1 ACFL, BLJA, CACH, CARW, HOWA, MODO, NOPA, RBWO, REVI, TUTI, YBCU, BLGR, CONI, EAME, HESP, NOBO, AMCR, AMGO, BAWW, BGGN, CHSP, COYE, EABL, EATO, FISP, HOFI, INBU, NOCA, NOFL, PIWO, PIWA, PRAW, RTHA, SCTA, WBNU, WEWA, WOTH, YBCH, AMRO, BARS, BRTH, CANG, CHSW, COGR, EAPH, GCFL, GRCA, NOMO, OVEN, RSHA, RTHU, TUVU, AMRE, BACS, BTBW, CLSW, DOWO, EAWP, EUST, GBHE, GREG, GRHE, KILL, LOWA, RCWO, RHWO, RWBL, WEVI, YTVI, BHNU, EAKI, SPSA, NRWS, TRES, ABDU, BEKI, BLVU, FICR, GRSP, HOSP, HOWR, SOSP, WITU, YTWA, BHCO, CEDW, DCCO, RCKI, YRWA, BAOR, BWHA, BTNW, BHVI, CAWA, CSWA, HAWO, KEWA, RBGR, AMKE, BCCH, DEJU, HETH, NOWA, RBNU, VEER, BBWA, SWWA, WAVI, OSPR, PROW, YEWA, BAEA, BOBO, BWWA, COHA, GWWA, MALL, PUMA, SAVS, SSHA, WIFL, EWPW, MIKI, CATE, FOTE, LAGU, LETE, LOSH, ANHI, BADO, CAEG, LBHE, OROR, BLSK, , BTGR, BRPE, CWWI, GBBG, HERG, PABU, RBGU, ROYT, SATE, SUTA, WIPL, EASO, WODU, AMOY, BCNH, COLO, COTE, EUCD, GBTE, MAGO, NOGA, RNEP, RUTU, SAND, SEPL, SESA, SNEG, TRHE, WHIB, WILL, WISP, AUSH, BSTP, BBPL, BCPE, BRTE, CORS, FEPE, GRSH, LESP, MASH, PAJA, POJA, PUGA, RBTR, SOSH, WTTR, WIWR, BLBW, BRCR, CORA, GCKI, RUGR, HOLA, AWPE, YCNH, GHOW, , YBSA, STKI, AMAV, BNST, CLRA, GLIB, GRYE, LESA, LEYE, LBDO, PESA, SESP, SBDO, WESA, WHIM, WOST, PIPL, CERW, SOTE, SPSK, TRPE, LEFL, ALFL, BBCU, PEFA, PISI, RECR, LEBI, MAWR, SOSA, UPSA, WISN, BLTE, NAWA, MAWA, BBSP, GRSK, RNPH, BBSA, PBGR, TEWA, NOHA, AMPI, BWTE, YBFL, PHVI, MERL, STSA, REKN, SWSP, KIRA, PAWA, SWTH, AMGP, CMWA, GOEA, WTSP, AMWO, GCTH, SPTS, BLPW, MUSW, LESC, WCSP, FOSP, RNDU, PUFI, RBME, BOGU, RUBL, HOME, HOGR, GADW, RUDU, BUFF, COGA, EAGR, NSHO, ATSP, CANV, AMBI, AMWI, BRAN, NOPI, OCWA, RAZO, SEWR, BLSC, ATPU, DUNL, TUSW, , GWTE, WEGR, SEOW, COGO, COME, ROGO, SNGO, REDH, RLHA, RTLO, SUSC, WWSC, LTDU, REPH, ANHU, BLKI, COMU, DOVE, LBBG, LIGU, CACG, SORA, YHBL, CORE, ICGU, GWFG, GRSC, LISP, SACR, NESP, AMCO, CASP, FTFL, ARTE, DICK, MAFR, VIRA, BANS, EUSP, GLGU, LTJA, NSWO, WIWA, BRBO, MABO, ROST, STFL, WRSA, REEG, WIPH, , CONW, SAGU, VESP, BRBL, RUHU, SALS, WHCR, GRCO, TBMU, ATFL, PALO, EUWI, BBAL, NOFU, BANO, MOWA, LASP, WWDO, OSFL, , MOPA, BASA, WEKI, , EVGR, COEI, LALO, CAHU, SAPH, PUSA, CCSP, NOLA, LAZB, BBWD, MODU, SNBU, SNOW, ALHU, CAGU, WETA, SWHA, RNGR, YNAL, CGDO, BEPE, ROSP, FRGU, LCSP, HADU, LIMP, RUFF, LBCU, MOPL, LIEG, WFSP, SNPL, 1, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 1, 1, 1, 1, 1, 1, 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Goldfinch, Black-and-white Warbler, Blue-gray Gnatcatcher, Chipping Sparrow, Common Yellowthroat, Eastern Bluebird, Eastern Towhee, Field Sparrow, House Finch, Indigo Bunting, Northern Cardinal, Northern Flicker, Pileated Woodpecker, Pine Warbler, Prairie Warbler, Red-tailed Hawk, Scarlet Tanager, White-breasted Nuthatch, Worm-eating Warbler, Wood Thrush, Yellow-breasted Chat, American Robin, Barn Swallow, Brown Thrasher, Canada Goose, Chimney Swift, Common Grackle, Eastern Phoebe, Great Crested Flycatcher, Gray Catbird, Northern Mockingbird, Ovenbird, Red-shouldered Hawk, Ruby-throated Hummingbird, Turkey Vulture, American Redstart, Bachmans Sparrow, Black-throated Blue Warbler, Cliff Swallow, Downy Woodpecker, Eastern Wood-Pewee, European Starling, Great Blue Heron, Great Egret, Green Heron, Killdeer, Louisiana Waterthrush, Red-cockaded Woodpecker, Red-headed Woodpecker, Red-winged Blackbird, White-eyed Vireo, Yellow-throated Vireo, Brown-headed Nuthatch, Eastern Kingbird, Spotted Sandpiper, Northern Rough-winged Swallow, Tree Swallow, American Black Duck, Belted Kingfisher, Black Vulture, Fish Crow, Grasshopper Sparrow, House Sparrow, House Wren, Song Sparrow, Wild Turkey, Yellow-throated Warbler, Brown-headed Cowbird, Cedar Waxwing, Double-crested Cormorant, Ruby-crowned Kinglet, Yellow-rumped Warbler, Baltimore Oriole, Broad-winged Hawk, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Chestnut-sided Warbler, Hairy Woodpecker, Kentucky Warbler, Rose-breasted Grosbeak, American Kestrel, Black-capped Chickadee, Dark-eyed Junco, Hermit Thrush, Northern Waterthrush, Red-breasted Nuthatch, Veery, Bay-breasted Warbler, Swainsons Warbler, Warbling Vireo, Osprey, Prothonotary Warbler, Yellow Warbler, Bald Eagle, Bobolink, Blue-winged Warbler, Coopers Hawk, Golden-winged Warbler, Mallard, Purple Martin, Savannah Sparrow, Sharp-shinned Hawk, Willow Flycatcher, Eastern Whip-poor-will, Mississippi Kite, Caspian Tern, Forsters Tern, Laughing Gull, Least Tern, Loggerhead Shrike, Anhinga, Barred Owl, Cattle Egret, Little Blue Heron, Orchard Oriole, Black Skimmer, Black Swan, Boat-tailed Grackle, Brown Pelican, Chuck-wills-widow, Great Black-backed Gull, Herring Gull, Painted Bunting, Ring-billed Gull, Royal Tern, Sandwich Tern, Summer Tanager, Wilsons Plover, Eastern Screech-Owl, Wood Duck, American Oystercatcher, Black-crowned Night-Heron, Common Loon, Common Tern, Eurasian Collared-Dove, Gull-billed Tern, Marbled Godwit, Northern Gannet, Ring-necked Pheasant, Ruddy Turnstone, Sanderling, Semipalmated Plover, Semipalmated Sandpiper, Snowy Egret, Tricolored Heron, White Ibis, Willet, Wilsons Storm-Petrel, Audubons Shearwater, Band-rumped Storm-Petrel, Black-bellied Plover, Black-capped Petrel, Bridled Tern, Corys Shearwater, Feas Petrel, Great Shearwater, Leachs Storm-Petrel, Manx Shearwater, Parasitic Jaeger, Pomarine Jaeger, Purple Gallinule, Red-billed Tropicbird, Sooty Shearwater, White-tailed Tropicbird, Winter Wren, Blackburnian Warbler, Brown Creeper, Common Raven, Golden-crowned Kinglet, Ruffed Grouse, Horned Lark, American White Pelican, Yellow-crowned Night-Heron, Great Horned Owl, Helmeted Guineafowl, Yellow-bellied Sapsucker, Swallow-tailed Kite, American Avocet, Black-necked Stilt, Clapper Rail, Glossy Ibis, Greater Yellowlegs, Least Sandpiper, Lesser Yellowlegs, Long-billed Dowitcher, Pectoral Sandpiper, Seaside Sparrow, Short-billed Dowitcher, Western Sandpiper, Whimbrel, Wood Stork, Piping Plover, Cerulean Warbler, Sooty Tern, South Polar Skua, Trindade Petrel, Least Flycatcher, Alder Flycatcher, Black-billed Cuckoo, Peregrine Falcon, Pine Siskin, Red Crossbill, Least Bittern, Marsh Wren, Solitary Sandpiper, Upland Sandpiper, Wilsons Snipe, Black Tern, Nashville Warbler, Magnolia Warbler, Black-bellied Storm-Petrel, Great Skua, Red-necked Phalarope, Buff-breasted Sandpiper, Pied-billed Grebe, Tennessee Warbler, Northern Harrier, American Pipit, Blue-winged Teal, Yellow-bellied Flycatcher, Philadelphia Vireo, Merlin, Stilt Sandpiper, Red Knot, Swamp Sparrow, King Rail, Palm Warbler, Swainsons Thrush, American Golden-Plover, Cape May Warbler, Golden Eagle, White-throated Sparrow, American Woodcock, Gray-cheeked Thrush, Sharp-tailed Sandpiper, Blackpoll Warbler, Mute Swan, Lesser Scaup, White-crowned Sparrow, Fox Sparrow, Ring-necked Duck, Purple Finch, Red-breasted Merganser, Bonapartes Gull, Rusty Blackbird, Hooded Merganser, Horned Grebe, Gadwall, Ruddy Duck, Bufflehead, Common Gallinule, Eared Grebe, Northern Shoveler, American Tree Sparrow, Canvasback, American Bittern, American Wigeon, Brant, Northern Pintail, Orange-crowned Warbler, Razorbill, Sedge Wren, Black Scoter, Atlantic Puffin, Dunlin, Tundra Swan, Indian Peafowl, Green-winged Teal, Western Grebe, Short-eared Owl, Common Goldeneye, Common Merganser, Rosss Goose, Snow Goose, Redhead, Rough-legged Hawk, Red-throated Loon, Surf Scoter, White-winged Scoter, Long-tailed Duck, Red Phalarope, Annas Hummingbird, Black-legged Kittiwake, Common Murre, Dovekie, Lesser Black-backed Gull, Little Gull, Cackling Goose, Sora, Yellow-headed Blackbird, Common Redpoll, Iceland Gull, Greater White-fronted Goose, Greater Scaup, Lincolns Sparrow, Sandhill Crane, Nelsons Sparrow, American Coot, Cassins Sparrow, Fork-tailed Flycatcher, Arctic Tern, Dickcissel, Magnificent Frigatebird, Virginia Rail, Bank Swallow, European Storm-Petrel, Glaucous Gull, Long-tailed Jaeger, Northern Saw-whet Owl, Wilsons Warbler, Brown Booby, Masked Booby, Roseate Tern, Scissor-tailed Flycatcher, White-rumped Sandpiper, Reddish Egret, Wilsons Phalarope, Budgerigar, Connecticut Warbler, Sabines Gull, Vesper Sparrow, Brewers Blackbird, Rufous Hummingbird, Saltmarsh Sparrow, Whooping Crane, Great Cormorant, Thick-billed Murre, Ash-throated Flycatcher, Pacific Loon, Eurasian Wigeon, Black-browed Albatross, Northern Fulmar, Barn Owl, Mourning Warbler, Lark Sparrow, White-winged Dove, Olive-sided Flycatcher, Mandarin Duck, Monk Parakeet, Bairds Sandpiper, Western Kingbird, Egyptian Goose, Evening Grosbeak, Common Eider, Lapland Longspur, Calliope Hummingbird, Says Phoebe, Purple Sandpiper, Clay-colored Sparrow, Northern Lapwing, Lazuli Bunting, Black-bellied Whistling-Duck, Mottled Duck, Snow Bunting, Snowy Owl, Allens Hummingbird, California Gull, Western Tanager, Swainsons Hawk, Red-necked Grebe, Yellow-nosed Albatross, Common Ground Dove, Bermuda Petrel, Roseate Spoonbill, Franklins Gull, LeContes Sparrow, Harlequin Duck, Limpkin, Ruff, Long-billed Curlew, Mountain Plover, Little Egret, White-faced Storm-Petrel, Snowy Plover, avibase-2778A3F4, avibase-1DA430B8, avibase-F941AAD3, avibase-CB5469E1, avibase-15EB3000, avibase-00124D98, avibase-41062654, avibase-078557F2, avibase-847717E2, avibase-B488AB70, avibase-0CF12F81, avibase-A7A75EA1, avibase-24E39ACD, avibase-8CD66855, avibase-CDA2F827, avibase-91CCBC71, avibase-69544B59, avibase-C9ABA616, avibase-4D207AF6, avibase-A15C5071, avibase-37E9CCDA, 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## 2 ACFL, BLJA, CACH, CARW, HOWA, MODO, NOPA, RBWO, REVI, TUTI, YBCU, BLGR, CONI, EAME, HESP, NOBO, AMCR, AMGO, BAWW, BGGN, CHSP, COYE, EABL, EATO, FISP, HOFI, INBU, NOCA, NOFL, PIWO, PIWA, PRAW, RTHA, SCTA, WBNU, WEWA, WOTH, YBCH, AMRO, BARS, BRTH, CANG, CHSW, COGR, EAPH, GCFL, GRCA, NOMO, OVEN, RSHA, RTHU, TUVU, AMRE, BACS, BTBW, CLSW, DOWO, EAWP, EUST, GBHE, GREG, GRHE, KILL, LOWA, RCWO, RHWO, RWBL, WEVI, YTVI, BHNU, EAKI, SPSA, NRWS, TRES, ABDU, BEKI, BLVU, FICR, GRSP, HOSP, HOWR, SOSP, WITU, YTWA, BHCO, CEDW, DCCO, RCKI, YRWA, BAOR, BWHA, BTNW, BHVI, CAWA, CSWA, HAWO, KEWA, RBGR, AMKE, BCCH, DEJU, HETH, NOWA, RBNU, VEER, BBWA, SWWA, WAVI, OSPR, PROW, YEWA, BAEA, BOBO, BWWA, COHA, GWWA, MALL, PUMA, SAVS, SSHA, WIFL, EWPW, MIKI, CATE, FOTE, LAGU, LETE, LOSH, ANHI, BADO, CAEG, LBHE, OROR, BLSK, , BTGR, BRPE, CWWI, GBBG, HERG, PABU, RBGU, ROYT, SATE, SUTA, WIPL, EASO, WODU, AMOY, BCNH, COLO, COTE, EUCD, GBTE, MAGO, NOGA, RNEP, RUTU, SAND, SEPL, SESA, SNEG, TRHE, WHIB, WILL, WISP, AUSH, BSTP, BBPL, BCPE, BRTE, CORS, FEPE, GRSH, LESP, MASH, PAJA, POJA, PUGA, RBTR, SOSH, WTTR, WIWR, BLBW, BRCR, CORA, GCKI, RUGR, HOLA, AWPE, YCNH, GHOW, , YBSA, STKI, AMAV, BNST, CLRA, GLIB, GRYE, LESA, LEYE, LBDO, PESA, SESP, SBDO, WESA, WHIM, WOST, PIPL, CERW, SOTE, SPSK, TRPE, LEFL, ALFL, BBCU, PEFA, PISI, RECR, LEBI, MAWR, SOSA, UPSA, WISN, BLTE, NAWA, MAWA, BBSP, GRSK, RNPH, BBSA, PBGR, TEWA, NOHA, AMPI, BWTE, YBFL, PHVI, MERL, STSA, REKN, SWSP, KIRA, PAWA, SWTH, AMGP, CMWA, GOEA, WTSP, AMWO, GCTH, SPTS, BLPW, MUSW, LESC, WCSP, FOSP, RNDU, PUFI, RBME, BOGU, RUBL, HOME, HOGR, GADW, RUDU, BUFF, COGA, EAGR, NSHO, ATSP, CANV, AMBI, AMWI, BRAN, NOPI, OCWA, RAZO, SEWR, BLSC, ATPU, DUNL, TUSW, , GWTE, WEGR, SEOW, COGO, COME, ROGO, SNGO, REDH, RLHA, RTLO, SUSC, WWSC, LTDU, REPH, ANHU, BLKI, COMU, DOVE, LBBG, LIGU, CACG, SORA, YHBL, CORE, ICGU, GWFG, GRSC, LISP, SACR, NESP, AMCO, CASP, FTFL, ARTE, DICK, MAFR, VIRA, BANS, EUSP, GLGU, LTJA, NSWO, WIWA, BRBO, MABO, ROST, STFL, WRSA, REEG, WIPH, , CONW, SAGU, VESP, BRBL, RUHU, SALS, WHCR, GRCO, TBMU, ATFL, PALO, EUWI, BBAL, NOFU, BANO, MOWA, LASP, WWDO, OSFL, , MOPA, BASA, WEKI, , EVGR, COEI, LALO, CAHU, SAPH, PUSA, CCSP, NOLA, LAZB, BBWD, MODU, SNBU, SNOW, ALHU, CAGU, WETA, SWHA, RNGR, YNAL, CGDO, BEPE, ROSP, FRGU, LCSP, HADU, LIMP, RUFF, LBCU, MOPL, LIEG, WFSP, SNPL, 0, 1, 1, 1, 0, 1, 0, 1, 0, 1, 1, 1, 0, 1, 1, 1, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 1, 1, 1, 1, 1, 1, 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Goldfinch, Black-and-white Warbler, Blue-gray Gnatcatcher, Chipping Sparrow, Common Yellowthroat, Eastern Bluebird, Eastern Towhee, Field Sparrow, House Finch, Indigo Bunting, Northern Cardinal, Northern Flicker, Pileated Woodpecker, Pine Warbler, Prairie Warbler, Red-tailed Hawk, Scarlet Tanager, White-breasted Nuthatch, Worm-eating Warbler, Wood Thrush, Yellow-breasted Chat, American Robin, Barn Swallow, Brown Thrasher, Canada Goose, Chimney Swift, Common Grackle, Eastern Phoebe, Great Crested Flycatcher, Gray Catbird, Northern Mockingbird, Ovenbird, Red-shouldered Hawk, Ruby-throated Hummingbird, Turkey Vulture, American Redstart, Bachmans Sparrow, Black-throated Blue Warbler, Cliff Swallow, Downy Woodpecker, Eastern Wood-Pewee, European Starling, Great Blue Heron, Great Egret, Green Heron, Killdeer, Louisiana Waterthrush, Red-cockaded Woodpecker, Red-headed Woodpecker, Red-winged Blackbird, White-eyed Vireo, Yellow-throated Vireo, Brown-headed Nuthatch, Eastern Kingbird, Spotted Sandpiper, Northern Rough-winged Swallow, Tree Swallow, American Black Duck, Belted Kingfisher, Black Vulture, Fish Crow, Grasshopper Sparrow, House Sparrow, House Wren, Song Sparrow, Wild Turkey, Yellow-throated Warbler, Brown-headed Cowbird, Cedar Waxwing, Double-crested Cormorant, Ruby-crowned Kinglet, Yellow-rumped Warbler, Baltimore Oriole, Broad-winged Hawk, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Chestnut-sided Warbler, Hairy Woodpecker, Kentucky Warbler, Rose-breasted Grosbeak, American Kestrel, Black-capped Chickadee, Dark-eyed Junco, Hermit Thrush, Northern Waterthrush, Red-breasted Nuthatch, Veery, Bay-breasted Warbler, Swainsons Warbler, Warbling Vireo, Osprey, Prothonotary Warbler, Yellow Warbler, Bald Eagle, Bobolink, Blue-winged Warbler, Coopers Hawk, Golden-winged Warbler, Mallard, Purple Martin, Savannah Sparrow, Sharp-shinned Hawk, Willow Flycatcher, Eastern Whip-poor-will, Mississippi Kite, Caspian Tern, Forsters Tern, Laughing Gull, Least Tern, Loggerhead Shrike, Anhinga, Barred Owl, Cattle Egret, Little Blue Heron, Orchard Oriole, Black Skimmer, Black Swan, Boat-tailed Grackle, Brown Pelican, Chuck-wills-widow, Great Black-backed Gull, Herring Gull, Painted Bunting, Ring-billed Gull, Royal Tern, Sandwich Tern, Summer Tanager, Wilsons Plover, Eastern Screech-Owl, Wood Duck, American Oystercatcher, Black-crowned Night-Heron, Common Loon, Common Tern, Eurasian Collared-Dove, Gull-billed Tern, Marbled Godwit, Northern Gannet, Ring-necked Pheasant, Ruddy Turnstone, Sanderling, Semipalmated Plover, Semipalmated Sandpiper, Snowy Egret, Tricolored Heron, White Ibis, Willet, Wilsons Storm-Petrel, Audubons Shearwater, Band-rumped Storm-Petrel, Black-bellied Plover, Black-capped Petrel, Bridled Tern, Corys Shearwater, Feas Petrel, Great Shearwater, Leachs Storm-Petrel, Manx Shearwater, Parasitic Jaeger, Pomarine Jaeger, Purple Gallinule, Red-billed Tropicbird, Sooty Shearwater, White-tailed Tropicbird, Winter Wren, Blackburnian Warbler, Brown Creeper, Common Raven, Golden-crowned Kinglet, Ruffed Grouse, Horned Lark, American White Pelican, Yellow-crowned Night-Heron, Great Horned Owl, Helmeted Guineafowl, Yellow-bellied Sapsucker, Swallow-tailed Kite, American Avocet, Black-necked Stilt, Clapper Rail, Glossy Ibis, Greater Yellowlegs, Least Sandpiper, Lesser Yellowlegs, Long-billed Dowitcher, Pectoral Sandpiper, Seaside Sparrow, Short-billed Dowitcher, Western Sandpiper, Whimbrel, Wood Stork, Piping Plover, Cerulean Warbler, Sooty Tern, South Polar Skua, Trindade Petrel, Least Flycatcher, Alder Flycatcher, Black-billed Cuckoo, Peregrine Falcon, Pine Siskin, Red Crossbill, Least Bittern, Marsh Wren, Solitary Sandpiper, Upland Sandpiper, Wilsons Snipe, Black Tern, Nashville Warbler, Magnolia Warbler, Black-bellied Storm-Petrel, Great Skua, Red-necked Phalarope, Buff-breasted Sandpiper, Pied-billed Grebe, Tennessee Warbler, Northern Harrier, American Pipit, Blue-winged Teal, Yellow-bellied Flycatcher, Philadelphia Vireo, Merlin, Stilt Sandpiper, Red Knot, Swamp Sparrow, King Rail, Palm Warbler, Swainsons Thrush, American Golden-Plover, Cape May Warbler, Golden Eagle, White-throated Sparrow, American Woodcock, Gray-cheeked Thrush, Sharp-tailed Sandpiper, Blackpoll Warbler, Mute Swan, Lesser Scaup, White-crowned Sparrow, Fox Sparrow, Ring-necked Duck, Purple Finch, Red-breasted Merganser, Bonapartes Gull, Rusty Blackbird, Hooded Merganser, Horned Grebe, Gadwall, Ruddy Duck, Bufflehead, Common Gallinule, Eared Grebe, Northern Shoveler, American Tree Sparrow, Canvasback, American Bittern, American Wigeon, Brant, Northern Pintail, Orange-crowned Warbler, Razorbill, Sedge Wren, Black Scoter, Atlantic Puffin, Dunlin, Tundra Swan, Indian Peafowl, Green-winged Teal, Western Grebe, Short-eared Owl, Common Goldeneye, Common Merganser, Rosss Goose, Snow Goose, Redhead, Rough-legged Hawk, Red-throated Loon, Surf Scoter, White-winged Scoter, Long-tailed Duck, Red Phalarope, Annas Hummingbird, Black-legged Kittiwake, Common Murre, Dovekie, Lesser Black-backed Gull, Little Gull, Cackling Goose, Sora, Yellow-headed Blackbird, Common Redpoll, Iceland Gull, Greater White-fronted Goose, Greater Scaup, Lincolns Sparrow, Sandhill Crane, Nelsons Sparrow, American Coot, Cassins Sparrow, Fork-tailed Flycatcher, Arctic Tern, Dickcissel, Magnificent Frigatebird, Virginia Rail, Bank Swallow, European Storm-Petrel, Glaucous Gull, Long-tailed Jaeger, Northern Saw-whet Owl, Wilsons Warbler, Brown Booby, Masked Booby, Roseate Tern, Scissor-tailed Flycatcher, White-rumped Sandpiper, Reddish Egret, Wilsons Phalarope, Budgerigar, Connecticut Warbler, Sabines Gull, Vesper Sparrow, Brewers Blackbird, Rufous Hummingbird, Saltmarsh Sparrow, Whooping Crane, Great Cormorant, Thick-billed Murre, Ash-throated Flycatcher, Pacific Loon, Eurasian Wigeon, Black-browed Albatross, Northern Fulmar, Barn Owl, Mourning Warbler, Lark Sparrow, White-winged Dove, Olive-sided Flycatcher, Mandarin Duck, Monk Parakeet, Bairds Sandpiper, Western Kingbird, Egyptian Goose, Evening Grosbeak, Common Eider, Lapland Longspur, Calliope Hummingbird, Says Phoebe, Purple Sandpiper, Clay-colored Sparrow, Northern Lapwing, Lazuli Bunting, Black-bellied Whistling-Duck, Mottled Duck, Snow Bunting, Snowy Owl, Allens Hummingbird, California Gull, Western Tanager, Swainsons Hawk, Red-necked Grebe, Yellow-nosed Albatross, Common Ground Dove, Bermuda Petrel, Roseate Spoonbill, Franklins Gull, LeContes Sparrow, Harlequin Duck, Limpkin, Ruff, Long-billed Curlew, Mountain Plover, Little Egret, White-faced Storm-Petrel, Snowy Plover, avibase-2778A3F4, avibase-1DA430B8, avibase-F941AAD3, avibase-CB5469E1, avibase-15EB3000, avibase-00124D98, avibase-41062654, avibase-078557F2, avibase-847717E2, avibase-B488AB70, avibase-0CF12F81, avibase-A7A75EA1, avibase-24E39ACD, avibase-8CD66855, avibase-CDA2F827, avibase-91CCBC71, avibase-69544B59, avibase-C9ABA616, avibase-4D207AF6, avibase-A15C5071, avibase-37E9CCDA, 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Goldfinch, Black-and-white Warbler, Blue-gray Gnatcatcher, Chipping Sparrow, Common Yellowthroat, Eastern Bluebird, Eastern Towhee, Field Sparrow, House Finch, Indigo Bunting, Northern Cardinal, Northern Flicker, Pileated Woodpecker, Pine Warbler, Prairie Warbler, Red-tailed Hawk, Scarlet Tanager, White-breasted Nuthatch, Worm-eating Warbler, Wood Thrush, Yellow-breasted Chat, American Robin, Barn Swallow, Brown Thrasher, Canada Goose, Chimney Swift, Common Grackle, Eastern Phoebe, Great Crested Flycatcher, Gray Catbird, Northern Mockingbird, Ovenbird, Red-shouldered Hawk, Ruby-throated Hummingbird, Turkey Vulture, American Redstart, Bachmans Sparrow, Black-throated Blue Warbler, Cliff Swallow, Downy Woodpecker, Eastern Wood-Pewee, European Starling, Great Blue Heron, Great Egret, Green Heron, Killdeer, Louisiana Waterthrush, Red-cockaded Woodpecker, Red-headed Woodpecker, Red-winged Blackbird, White-eyed Vireo, Yellow-throated Vireo, Brown-headed Nuthatch, Eastern Kingbird, Spotted Sandpiper, Northern Rough-winged Swallow, Tree Swallow, American Black Duck, Belted Kingfisher, Black Vulture, Fish Crow, Grasshopper Sparrow, House Sparrow, House Wren, Song Sparrow, Wild Turkey, Yellow-throated Warbler, Brown-headed Cowbird, Cedar Waxwing, Double-crested Cormorant, Ruby-crowned Kinglet, Yellow-rumped Warbler, Baltimore Oriole, Broad-winged Hawk, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Chestnut-sided Warbler, Hairy Woodpecker, Kentucky Warbler, Rose-breasted Grosbeak, American Kestrel, Black-capped Chickadee, Dark-eyed Junco, Hermit Thrush, Northern Waterthrush, Red-breasted Nuthatch, Veery, Bay-breasted Warbler, Swainsons Warbler, Warbling Vireo, Osprey, Prothonotary Warbler, Yellow Warbler, Bald Eagle, Bobolink, Blue-winged Warbler, Coopers Hawk, Golden-winged Warbler, Mallard, Purple Martin, Savannah Sparrow, Sharp-shinned Hawk, Willow Flycatcher, Eastern Whip-poor-will, Mississippi Kite, Caspian Tern, Forsters Tern, Laughing Gull, Least Tern, Loggerhead Shrike, Anhinga, Barred Owl, Cattle Egret, Little Blue Heron, Orchard Oriole, Black Skimmer, Black Swan, Boat-tailed Grackle, Brown Pelican, Chuck-wills-widow, Great Black-backed Gull, Herring Gull, Painted Bunting, Ring-billed Gull, Royal Tern, Sandwich Tern, Summer Tanager, Wilsons Plover, Eastern Screech-Owl, Wood Duck, American Oystercatcher, Black-crowned Night-Heron, Common Loon, Common Tern, Eurasian Collared-Dove, Gull-billed Tern, Marbled Godwit, Northern Gannet, Ring-necked Pheasant, Ruddy Turnstone, Sanderling, Semipalmated Plover, Semipalmated Sandpiper, Snowy Egret, Tricolored Heron, White Ibis, Willet, Wilsons Storm-Petrel, Audubons Shearwater, Band-rumped Storm-Petrel, Black-bellied Plover, Black-capped Petrel, Bridled Tern, Corys Shearwater, Feas Petrel, Great Shearwater, Leachs Storm-Petrel, Manx Shearwater, Parasitic Jaeger, Pomarine Jaeger, Purple Gallinule, Red-billed Tropicbird, Sooty Shearwater, White-tailed Tropicbird, Winter Wren, Blackburnian Warbler, Brown Creeper, Common Raven, Golden-crowned Kinglet, Ruffed Grouse, Horned Lark, American White Pelican, Yellow-crowned Night-Heron, Great Horned Owl, Helmeted Guineafowl, Yellow-bellied Sapsucker, Swallow-tailed Kite, American Avocet, Black-necked Stilt, Clapper Rail, Glossy Ibis, Greater Yellowlegs, Least Sandpiper, Lesser Yellowlegs, Long-billed Dowitcher, Pectoral Sandpiper, Seaside Sparrow, Short-billed Dowitcher, Western Sandpiper, Whimbrel, Wood Stork, Piping Plover, Cerulean Warbler, Sooty Tern, South Polar Skua, Trindade Petrel, Least Flycatcher, Alder Flycatcher, Black-billed Cuckoo, Peregrine Falcon, Pine Siskin, Red Crossbill, Least Bittern, Marsh Wren, Solitary Sandpiper, Upland Sandpiper, Wilsons Snipe, Black Tern, Nashville Warbler, Magnolia Warbler, Black-bellied Storm-Petrel, Great Skua, Red-necked Phalarope, Buff-breasted Sandpiper, Pied-billed Grebe, Tennessee Warbler, Northern Harrier, American Pipit, Blue-winged Teal, Yellow-bellied Flycatcher, Philadelphia Vireo, Merlin, Stilt Sandpiper, Red Knot, Swamp Sparrow, King Rail, Palm Warbler, Swainsons Thrush, American Golden-Plover, Cape May Warbler, Golden Eagle, White-throated Sparrow, American Woodcock, Gray-cheeked Thrush, Sharp-tailed Sandpiper, Blackpoll Warbler, Mute Swan, Lesser Scaup, White-crowned Sparrow, Fox Sparrow, Ring-necked Duck, Purple Finch, Red-breasted Merganser, Bonapartes Gull, Rusty Blackbird, Hooded Merganser, Horned Grebe, Gadwall, Ruddy Duck, Bufflehead, Common Gallinule, Eared Grebe, Northern Shoveler, American Tree Sparrow, Canvasback, American Bittern, American Wigeon, Brant, Northern Pintail, Orange-crowned Warbler, Razorbill, Sedge Wren, Black Scoter, Atlantic Puffin, Dunlin, Tundra Swan, Indian Peafowl, Green-winged Teal, Western Grebe, Short-eared Owl, Common Goldeneye, Common Merganser, Rosss Goose, Snow Goose, Redhead, Rough-legged Hawk, Red-throated Loon, Surf Scoter, White-winged Scoter, Long-tailed Duck, Red Phalarope, Annas Hummingbird, Black-legged Kittiwake, Common Murre, Dovekie, Lesser Black-backed Gull, Little Gull, Cackling Goose, Sora, Yellow-headed Blackbird, Common Redpoll, Iceland Gull, Greater White-fronted Goose, Greater Scaup, Lincolns Sparrow, Sandhill Crane, Nelsons Sparrow, American Coot, Cassins Sparrow, Fork-tailed Flycatcher, Arctic Tern, Dickcissel, Magnificent Frigatebird, Virginia Rail, Bank Swallow, European Storm-Petrel, Glaucous Gull, Long-tailed Jaeger, Northern Saw-whet Owl, Wilsons Warbler, Brown Booby, Masked Booby, Roseate Tern, Scissor-tailed Flycatcher, White-rumped Sandpiper, Reddish Egret, Wilsons Phalarope, Budgerigar, Connecticut Warbler, Sabines Gull, Vesper Sparrow, Brewers Blackbird, Rufous Hummingbird, Saltmarsh Sparrow, Whooping Crane, Great Cormorant, Thick-billed Murre, Ash-throated Flycatcher, Pacific Loon, Eurasian Wigeon, Black-browed Albatross, Northern Fulmar, Barn Owl, Mourning Warbler, Lark Sparrow, White-winged Dove, Olive-sided Flycatcher, Mandarin Duck, Monk Parakeet, Bairds Sandpiper, Western Kingbird, Egyptian Goose, Evening Grosbeak, Common Eider, Lapland Longspur, Calliope Hummingbird, Says Phoebe, Purple Sandpiper, Clay-colored Sparrow, Northern Lapwing, Lazuli Bunting, Black-bellied Whistling-Duck, Mottled Duck, Snow Bunting, Snowy Owl, Allens Hummingbird, California Gull, Western Tanager, Swainsons Hawk, Red-necked Grebe, Yellow-nosed Albatross, Common Ground Dove, Bermuda Petrel, Roseate Spoonbill, Franklins Gull, LeContes Sparrow, Harlequin Duck, Limpkin, Ruff, Long-billed Curlew, Mountain Plover, Little Egret, White-faced Storm-Petrel, Snowy Plover, avibase-2778A3F4, avibase-1DA430B8, avibase-F941AAD3, avibase-CB5469E1, avibase-15EB3000, avibase-00124D98, avibase-41062654, avibase-078557F2, avibase-847717E2, avibase-B488AB70, avibase-0CF12F81, avibase-A7A75EA1, avibase-24E39ACD, avibase-8CD66855, avibase-CDA2F827, avibase-91CCBC71, avibase-69544B59, avibase-C9ABA616, avibase-4D207AF6, avibase-A15C5071, avibase-37E9CCDA, 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## 5 AMGO, BARS, BOBO, EUST, HOLA, KILL, LESA, LBHE, MODO, NOHA, PESA, SESA, SPSA, TRES, NOMO, ACFL, AMCR, CACH, CARW, DOWO, EABL, NOCA, NOPA, PIWA, TUTI, BLJA, BRTH, CHSP, EAWP, TUVU, CORA, GBHE, AMOY, BBPL, BTGR, BRPE, DCCO, GBBG, GREG, GRYE, GRCA, HERG, LAGU, MERL, PEFA, REKN, RBGU, ROYT, SAND, SATE, AMRO, BLPW, BLVU, BHCO, CANG, COYE, EAME, EAPH, EATO, GCKI, HAWO, HOFI, NOFL, PAWA, PIWO, RBNU, RBWO, RSHA, RTHA, RWBL, RCKI, SAVS, SOSP, SWSP, WBNU, WEVI, WTSP, YRWA, AMKE, BAEA, BRCR, COHA, HOSP, MALL, PISI, RHWO, RUBL, YBSA, WITU, COGR, AMRE, BAWW, BADO, BWHA, BTBW, BTNW, CMWA, DEJU, WOTH, YBCU, AMPI, AMWO, BHNU, FISP, PUFI, WISN, WIWR, BOGU, LBBG, CORS, LOSH, HETH, OSPR, MUSW, RCWO, NOGA, SACR, WODU, BEKI, PBGR, HOME, SNGO, AMWI, GADW, RNDU, AMCO, BAOR, HOWR, SSHA, VESP, DUNL, GWTE, RUTU, SNEG, WILL, COLO, RAZO, NOBO, TUSW, EASO, FOSP, LISP, WCSP, BACS, FICR, CEDW, GHOW, BHVI, BGGN, LOWA, YTWA, WHIB, ANHI, PROW, NRWS, RTHU, BLGR, GCFL, HOWA, INBU, KEWA, OROR, OVEN, PRAW, PUMA, REVI, 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Bluebird, Northern Cardinal, Northern Parula, Pine Warbler, Tufted Titmouse, Blue Jay, Brown Thrasher, Chipping Sparrow, Eastern Wood-Pewee, Turkey Vulture, Common Raven, Great Blue Heron, American Oystercatcher, Black-bellied Plover, Boat-tailed Grackle, Brown Pelican, Double-crested Cormorant, Great Black-backed Gull, Great Egret, Greater Yellowlegs, Gray Catbird, Herring Gull, Laughing Gull, Merlin, Peregrine Falcon, Red Knot, Ring-billed Gull, Royal Tern, Sanderling, Sandwich Tern, American Robin, Blackpoll Warbler, Black Vulture, Brown-headed Cowbird, Canada Goose, Common Yellowthroat, Eastern Meadowlark, Eastern Phoebe, Eastern Towhee, Golden-crowned Kinglet, Hairy Woodpecker, House Finch, Northern Flicker, Palm Warbler, Pileated Woodpecker, Red-breasted Nuthatch, Red-bellied Woodpecker, Red-shouldered Hawk, Red-tailed Hawk, Red-winged Blackbird, Ruby-crowned Kinglet, Savannah Sparrow, Song Sparrow, Swamp Sparrow, White-breasted Nuthatch, White-eyed Vireo, White-throated Sparrow, Yellow-rumped Warbler, American Kestrel, Bald Eagle, Brown Creeper, Coopers Hawk, House Sparrow, Mallard, Pine Siskin, Red-headed Woodpecker, Rusty Blackbird, Yellow-bellied Sapsucker, Wild Turkey, Common Grackle, American Redstart, Black-and-white Warbler, Barred Owl, Broad-winged Hawk, Black-throated Blue Warbler, Black-throated Green Warbler, Cape May Warbler, Dark-eyed Junco, Wood Thrush, Yellow-billed Cuckoo, American Pipit, American Woodcock, Brown-headed Nuthatch, Field Sparrow, Purple Finch, Wilsons Snipe, Winter Wren, Bonapartes Gull, Lesser Black-backed Gull, Corys Shearwater, Loggerhead Shrike, Hermit Thrush, Osprey, Mute Swan, Red-cockaded Woodpecker, Northern Gannet, Sandhill Crane, Wood Duck, Belted Kingfisher, Pied-billed Grebe, Hooded Merganser, Snow Goose, American Wigeon, Gadwall, Ring-necked Duck, American Coot, Baltimore Oriole, House Wren, Sharp-shinned Hawk, Vesper Sparrow, Dunlin, Green-winged Teal, Ruddy Turnstone, Snowy Egret, Willet, Common Loon, Razorbill, Northern Bobwhite, Tundra Swan, Eastern Screech-Owl, Fox Sparrow, Lincolns Sparrow, White-crowned Sparrow, Bachmans Sparrow, Fish Crow, Cedar Waxwing, Great Horned Owl, Blue-headed Vireo, Blue-gray Gnatcatcher, Louisiana Waterthrush, Yellow-throated Warbler, White Ibis, Anhinga, Prothonotary Warbler, Northern Rough-winged Swallow, Ruby-throated Hummingbird, Blue Grosbeak, Great Crested Flycatcher, Hooded Warbler, Indigo Bunting, Kentucky Warbler, Orchard Oriole, Ovenbird, Prairie Warbler, Purple Martin, Red-eyed Vireo, Scarlet Tanager, Summer Tanager, Yellow-breasted Chat, Yellow-throated Vireo, Chuck-wills-widow, Eastern Whip-poor-will, Chimney Swift, Eastern Kingbird, Swainsons Warbler, Bank Swallow, Worm-eating Warbler, Rose-breasted Grosbeak, Cliff Swallow, Grasshopper Sparrow, Black Skimmer, Clapper Rail, Common Tern, Forsters Tern, Glossy Ibis, Green Heron, Least Bittern, Seaside Sparrow, Tricolored Heron, Virginia Rail, Wilsons Plover, Wilsons Storm-Petrel, Eurasian Collared-Dove, Wood Stork, Arctic Tern, Audubons Shearwater, Band-rumped Storm-Petrel, Black-capped Petrel, European Storm-Petrel, Bridled Tern, Brown Noddy, Feas Petrel, Great Shearwater, Leachs Storm-Petrel, Least Tern, Long-tailed Jaeger, Manx Shearwater, Masked Booby, Parasitic Jaeger, Pomarine Jaeger, Red-necked Phalarope, Roseate Tern, Sooty Shearwater, South Polar Skua, Blackburnian Warbler, Mississippi Kite, Swainsons Thrush, Chestnut-sided Warbler, Least Flycatcher, Black-crowned Night-Heron, Brown Booby, Black-bellied Whistling-Duck, Yellow Warbler, King Rail, Marsh Wren, Red-billed Tropicbird, Swinhoes Storm-Petrel, Trindade Petrel, Whimbrel, Canada Warbler, Veery, American Black Duck, Sooty Tern, Cattle Egret, Willow Flycatcher, Lesser Yellowlegs, Black Tern, Common Nighthawk, Sora, Magnolia Warbler, Wilsons Warbler, Tennessee Warbler, Bay-breasted Warbler, American Flamingo, Red-throated Loon, White-winged Scoter, Bufflehead, Black-legged Kittiwake, Ruffed Grouse, Atlantic Puffin, Great Skua, Northern Fulmar, Iceland Gull, Red-breasted Merganser, Horned Grebe, Western Tanager, Black Scoter, Common Murre, Dovekie, Little Gull, Red Phalarope, Thick-billed Murre, Blue-winged Teal, American White Pelican, Canvasback, Ruddy Duck, Solitary Sandpiper, American Bittern, Swallow-tailed Kite, Marbled Godwit, Gull-billed Tern, Tahiti Petrel, White-tailed Tropicbird, Golden-winged Warbler, Helmeted Guineafowl, Cerulean Warbler, Red Crossbill, Caspian Tern, Semipalmated Plover, Short-billed Dowitcher, Barn Owl, Dickcissel, Piping Plover, Western Sandpiper, White-faced Storm-Petrel, Stilt Sandpiper, Yellow-crowned Night-Heron, Warbling Vireo, White-rumped Sandpiper, Orange-crowned Warbler, Brewers Blackbird, Lark Sparrow, Northern Pintail, Northern Shoveler, Sedge Wren, Golden Eagle, Surf Scoter, Lesser Scaup, Pacific Loon, Common Goldeneye, Greater Scaup, Glaucous Gull, Long-tailed Duck, Trumpeter Swan, avibase-C9ABA616, avibase-58C502EA, avibase-F845062F, 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avibase-694C127A, avibase-0BFCAE79, avibase-534FB490, avibase-E196D6F9, avibase-27B2749A, avibase-3558066B, avibase-9A8E55D0, avibase-60E6081E, avibase-D3A260BC, avibase-D201EB72, avibase-C235A4D7, avibase-0783A7EA, avibase-4FB248BA, avibase-5110842F, avibase-A381417F, avibase-3B024163, avibase-3647E146, avibase-15369E8E, avibase-BC6C3CCE, avibase-DC3050A9, avibase-AA7901D8, avibase-E7A14E91, avibase-7E022378, avibase-64F4DD81, avibase-91CCBC71, avibase-0BCBA6B9, avibase-A69062C8, avibase-3A7B1F59, avibase-AF49F890, avibase-8601A467, avibase-DAD22BB6, avibase-43E56D2C, avibase-9437D635, avibase-FC366114, avibase-95DB0943, avibase-A15C5071, avibase-7AB0F3A4, avibase-136451CF, avibase-74EDE3CA, avibase-FBDAE86A, avibase-4D08EE7E, avibase-2C1981BB, avibase-DEC3D8D0, avibase-A7A75EA1, avibase-8D6D5F2B, avibase-15EB3000, avibase-043F337A, avibase-8C105C3C, avibase-000482C9, avibase-CEA5B6AA, avibase-E36325FA, avibase-ACB9D1C6, avibase-847717E2, avibase-42101632, avibase-891798D9, avibase-734C73A9, avibase-F8DDF6A6, avibase-8D3E8871, avibase-1A09655B, avibase-C3AD1AFF, avibase-082D833C, avibase-D3624203, avibase-94A1C447, avibase-295C4CD6, avibase-7C2FCB13, avibase-F5C181CA, avibase-5BFFE091, avibase-88AB027C, avibase-E893F98D, avibase-4D2FF6F1, avibase-D13B9122, avibase-D4540F88, avibase-86D45B8F, avibase-0B361ED8, avibase-0F81304F, avibase-031409C7, avibase-4880DC55, avibase-654D660C, avibase-D295D249, avibase-0C1EFC9B, avibase-19196211, avibase-BDC5CF80, avibase-06C36D41, avibase-D3FAE385, avibase-A01D9D21, avibase-E1638A37, avibase-E6518B9D, avibase-A070171E, avibase-26B5280F, avibase-8B879DFA, avibase-C5FB15C6, avibase-BE78E765, avibase-1D446440, avibase-5AEDC002, avibase-22D1B4A2, avibase-39086887, avibase-7CB8F5B7, avibase-E6F3BA54, avibase-74236837, avibase-1725B07D, avibase-7D1A9D5C, avibase-4168AF09, avibase-ACFC8EB6, avibase-E53FC25C, avibase-7AB1229B, avibase-F5837054, avibase-6BB94D7E, avibase-5EC21767, avibase-C01A22D6, avibase-A6C0C4A9, avibase-0BB84341, avibase-787E0536, avibase-7EE005BD, avibase-80DE8670, avibase-8116523B, avibase-F9305BAA, avibase-F2D675AF, avibase-0B8F4EE6, avibase-C732CB10, avibase-3E7F825D, avibase-6CCDAC53, avibase-5BC4E0EF, avibase-2C7A2673, avibase-115AF02D, avibase-24E39ACD, avibase-2CC21529, avibase-1E82CE1E, avibase-1F09CCCC, avibase-D204A930, avibase-10C601D3, avibase-E3FF6313, avibase-6C50988A, avibase-4800D6B6, avibase-FB738385, avibase-FB4D08F0, avibase-6D2B5CDA, avibase-2771624B, avibase-BB041C6E, avibase-049D9AEA, avibase-FB4FCB27, avibase-8DB64266, avibase-018B3169, avibase-0ADA5F17, avibase-B7B1A5DD, avibase-39F29B55, avibase-B0932D89, avibase-F89FD6E3, avibase-18A19380, avibase-B70B5840, avibase-90E2543E, avibase-866903B9, avibase-1929E1E1, avibase-675EEA7F, avibase-D4A73324, avibase-13E9F9B4, avibase-1BAC6645, avibase-249AE8DF, avibase-441918B5, avibase-FCFBB7D9, avibase-1D07B501, avibase-83F326C8, avibase-1044B438, avibase-D00EC2C9, avibase-135564AA, avibase-BC06BC0D, avibase-95E28A57, avibase-4A3B2CFF, avibase-FEE35F4C, avibase-592E58CE, avibase-671B69FE, avibase-01060BFD, avibase-E9DF118E, avibase-ECDE73F2, avibase-C6772490, avibase-66AA469C, avibase-153BA306, avibase-FFF61080, avibase-EA5E858A, avibase-78509A5D, avibase-56CCA717, avibase-ED4CE8E7, avibase-43D33E03, avibase-5F8E7CA8, avibase-624078BA, avibase-50566E50, avibase-B7D7EF23, avibase-68EA281A, avibase-25C94A8F, avibase-A59FA446, avibase-AF0C7BDE, avibase-B86C504C  
## 6 NULL  
## ECOREGION  
## 1 CP  
## 2 CP  
## 3 CP  
## 4 CP  
## 5 P  
## 6 CP

Retrieve a blocks data frame with a subset of columns

fields <- c("ID\_BLOCK", "ECOREGION", "COUNTY")  
blocks <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = FALSE,  
 fields = fields)  
print(head(blocks))

## \_id COUNTY ID\_BLOCK ECOREGION  
## 1 34078E6SE BLADEN ABBOTTSBURG-SE CP  
## 2 34078C2NE BRUNSWICK ACME-NE CP  
## 3 34078E6NW BLADEN ABBOTTSBURG-NW CP  
## 4 34078C2CW COLUMBUS ACME-CW CP  
## 5 36078C2NE WARREN AFTON-NE P  
## 6 34078C2SW BRUNSWICK ACME-SW CP

Retrieve a spatial data frame with a few columns

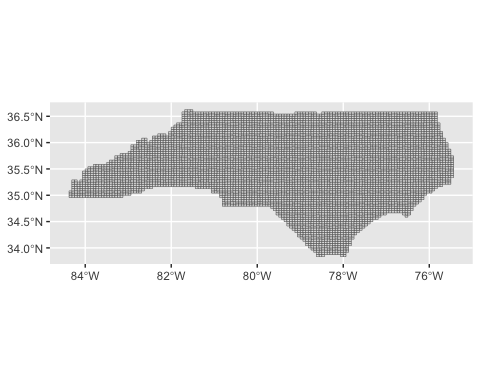
fields <- c("ID\_BLOCK", "ECOREGION")  
blocks\_sf <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = TRUE,  
 fields = fields)  
print(head(blocks\_sf, 5))

## Simple feature collection with 5 features and 7 fields  
## Geometry type: POLYGON  
## Dimension: XY  
## Bounding box: xmin: -78.75001 ymin: 34.29169 xmax: -78.12501 ymax: 36.37502  
## Geodetic CRS: WGS 84  
## \_id ID\_BLOCK NW\_X NW\_Y SE\_X SE\_Y ECOREGION  
## 1 34078E6SE ABBOTTSBURG-SE -78.68751 34.54169 -78.62501 34.50002 CP  
## 2 34078C2NE ACME-NE -78.18751 34.37502 -78.12501 34.33335 CP  
## 3 34078E6NW ABBOTTSBURG-NW -78.75001 34.62502 -78.68751 34.58335 CP  
## 4 34078C2CW ACME-CW -78.25001 34.33335 -78.18751 34.29169 CP  
## 5 36078C2NE AFTON-NE -78.18751 36.37502 -78.12501 36.33335 P  
## wkt  
## 1 POLYGON ((-78.62501 34.5000...  
## 2 POLYGON ((-78.12501 34.3333...  
## 3 POLYGON ((-78.68751 34.5833...  
## 4 POLYGON ((-78.18751 34.2916...  
## 5 POLYGON ((-78.12501 36.3333...

# Tests

Plot a blocks spatial data frame.

fields <- c("ID\_BLOCK")  
blocks\_sf <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = TRUE,  
 fields = fields)  
  
# Plot the spatial data frame  
ggplot(blocks\_sf) +  
 geom\_sf()



Get a data frame with a subset of fields

fields <- c("ID\_BLOCK", "ECOREGION")  
blocks <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = FALSE,  
 fields = fields)  
print(names(blocks))

## [1] "\_id" "ID\_BLOCK" "ECOREGION"

Confirm that the default CRS of output is 4326

fields <- c("ID\_BLOCK")  
blocks\_sf <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = TRUE,  
 fields = fields)  
st\_crs(blocks\_sf)

## Coordinate Reference System:  
## User input: EPSG:4326   
## wkt:  
## GEOGCRS["WGS 84",  
## ENSEMBLE["World Geodetic System 1984 ensemble",  
## MEMBER["World Geodetic System 1984 (Transit)"],  
## MEMBER["World Geodetic System 1984 (G730)"],  
## MEMBER["World Geodetic System 1984 (G873)"],  
## MEMBER["World Geodetic System 1984 (G1150)"],  
## MEMBER["World Geodetic System 1984 (G1674)"],  
## MEMBER["World Geodetic System 1984 (G1762)"],  
## MEMBER["World Geodetic System 1984 (G2139)"],  
## ELLIPSOID["WGS 84",6378137,298.257223563,  
## LENGTHUNIT["metre",1]],  
## ENSEMBLEACCURACY[2.0]],  
## PRIMEM["Greenwich",0,  
## ANGLEUNIT["degree",0.0174532925199433]],  
## CS[ellipsoidal,2],  
## AXIS["geodetic latitude (Lat)",north,  
## ORDER[1],  
## ANGLEUNIT["degree",0.0174532925199433]],  
## AXIS["geodetic longitude (Lon)",east,  
## ORDER[2],  
## ANGLEUNIT["degree",0.0174532925199433]],  
## USAGE[  
## SCOPE["Horizontal component of 3D system."],  
## AREA["World."],  
## BBOX[-90,-180,90,180]],  
## ID["EPSG",4326]]

Confirm that the CRS changes appropriately

fields <- c("ID\_BLOCK")  
blocks\_sf <- get\_blocks\_dev(ncba\_config = ncba\_config, spatial = TRUE,  
 fields = fields, crs = 5070)  
st\_crs(blocks\_sf)

## Coordinate Reference System:  
## User input: EPSG:5070   
## wkt:  
## PROJCRS["NAD83 / Conus Albers",  
## BASEGEOGCRS["NAD83",  
## DATUM["North American Datum 1983",  
## ELLIPSOID["GRS 1980",6378137,298.257222101,  
## LENGTHUNIT["metre",1]]],  
## PRIMEM["Greenwich",0,  
## ANGLEUNIT["degree",0.0174532925199433]],  
## ID["EPSG",4269]],  
## CONVERSION["Conus Albers",  
## METHOD["Albers Equal Area",  
## ID["EPSG",9822]],  
## PARAMETER["Latitude of false origin",23,  
## ANGLEUNIT["degree",0.0174532925199433],  
## ID["EPSG",8821]],  
## PARAMETER["Longitude of false origin",-96,  
## ANGLEUNIT["degree",0.0174532925199433],  
## ID["EPSG",8822]],  
## PARAMETER["Latitude of 1st standard parallel",29.5,  
## ANGLEUNIT["degree",0.0174532925199433],  
## ID["EPSG",8823]],  
## PARAMETER["Latitude of 2nd standard parallel",45.5,  
## ANGLEUNIT["degree",0.0174532925199433],  
## ID["EPSG",8824]],  
## PARAMETER["Easting at false origin",0,  
## LENGTHUNIT["metre",1],  
## ID["EPSG",8826]],  
## PARAMETER["Northing at false origin",0,  
## LENGTHUNIT["metre",1],  
## ID["EPSG",8827]]],  
## CS[Cartesian,2],  
## AXIS["easting (X)",east,  
## ORDER[1],  
## LENGTHUNIT["metre",1]],  
## AXIS["northing (Y)",north,  
## ORDER[2],  
## LENGTHUNIT["metre",1]],  
## USAGE[  
## SCOPE["Data analysis and small scale data presentation for contiguous lower 48 states."],  
## AREA["United States (USA) - CONUS onshore - Alabama; Arizona; Arkansas; California; Colorado; Connecticut; Delaware; Florida; Georgia; Idaho; Illinois; Indiana; Iowa; Kansas; Kentucky; Louisiana; Maine; Maryland; Massachusetts; Michigan; Minnesota; Mississippi; Missouri; Montana; Nebraska; Nevada; New Hampshire; New Jersey; New Mexico; New York; North Carolina; North Dakota; Ohio; Oklahoma; Oregon; Pennsylvania; Rhode Island; South Carolina; South Dakota; Tennessee; Texas; Utah; Vermont; Virginia; Washington; West Virginia; Wisconsin; Wyoming."],  
## BBOX[24.41,-124.79,49.38,-66.91]],  
## ID["EPSG",5070]]

# Speed

Describe runtimes for queries of a subset of fields

fields <- c("ID\_BLOCK", "ECOREGION", "COUNTY", "ID\_WEB\_BLOCKMAP")  
  
#Run the function 30 times and record the runtime  
time <- c()  
for (i in 1:30) {  
 time1 <- proc.time()  
 get\_blocks\_dev(ncba\_config = ncba\_config, fields = fields)  
 time[i] <- proc.time() - time1  
}  
  
# Print the descriptive statistics  
print(summary(time))

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 0.01100 0.01550 0.02400 0.03287 0.02775 0.35900

Describe runtimes for subset queries with geometries (spatial set to TRUE)

fields <- c("ID\_BLOCK", "ECOREGION", "COUNTY", "ID\_WEB\_BLOCKMAP")  
  
#Run the function 30 times and record the runtime  
time <- c()  
for (i in 1:30) {  
 time1 <- proc.time()  
 get\_blocks\_dev(ncba\_config = ncba\_config, fields = fields, spatial = TRUE)  
 time[i] <- proc.time() - time1  
}  
  
# Print the descriptive statistics  
print(summary(time))

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 0.05900 0.07700 0.07900 0.07777 0.08000 0.08100

Describe runtimes for query of all fields

# fields <- c("ID\_BLOCK", "ECOREGION", "COUNTY", "ID\_WEB\_BLOCKMAP")  
#   
# #Run the function 30 times and record the runtime  
# time <- c()  
# for (i in 1:30) {  
# time1 <- proc.time()  
# get\_blocks\_dev(ncba\_config = ncba\_config, fields = NULL)  
# time[i] <- proc.time() - time1  
# }  
#   
# # Print the descriptive statistics  
# print(summary(time))