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/')

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"

# Purpose

This document details a function to retrieve information about NCBA blocks in the form of a dataframe or a spatial dataframe (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

## function (ncba\_config, spatial = FALSE, fields = NULL, crs = 4326)   
## {  
## library(sf)  
## connection\_blocks <- connect\_ncba\_db(ncba\_config = ncba\_config,   
## database = "ebd\_mgmt", collection = "blocks")  
## if (is.null(fields) == TRUE) {  
## blocks <- connection\_blocks$find()  
## }  
## else {  
## if (spatial == TRUE) {  
## fields <- c(fields, "SE\_X", "SE\_Y", "NW\_X", "NW\_Y")  
## }  
## fields\_string <- paste0("{", paste0("\"", fields, "\" : true",   
## collapse = ", "), "}")  
## blocks <- connection\_blocks$find(fields = fields\_string)  
## }  
## if (spatial == TRUE) {  
## 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, "))")  
## blocks\_sf <- st\_as\_sf(blocks, wkt = "wkt", crs = 4326)  
## if (crs != 4326) {  
## blocks\_sf <- st\_transform(blocks\_sf, crs)  
## }  
## return(blocks\_sf)  
## }  
## else {  
## return(blocks)  
## }  
## }

# Usage

Retrieve a blocks data frame with all columns

blocks <- get\_blocks(ncba\_config = ncba\_config, spatial = FALSE)  
print(head(blocks, 3))

## AREA\_SQMI COUNTY GEOM.type  
## 1 10.24026626 BLADEN Polygon  
## 2 10.2297224 BLADEN Polygon  
## 3 10.26647817 COLUMBUS 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 -78.75001, -78.75001, -78.68751, -78.68751, -78.75001, 34.62502, 34.58335, 34.58335, 34.62502, 34.62502  
## 3 -78.25001, -78.25001, -78.18751, -78.18751, -78.25001, 34.33335, 34.29169, 34.29169, 34.33335, 34.33335  
## 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 ABBOTTSBURG-NW 34078E6NW Abbottsburg NW ABBOTTSBURG-NW Abbottsburg-NW  
## 3 ACME-CW 34078C2CW Acme CW ACME-CW Acme-CW  
## 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 Abbottsburg\_NW Abbottsburg NW Abbottsburg NW -78.75001 34.62502 Inside  
## 3 Acme\_CW Acme CW Acme CW -78.25001 34.33335 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 34078E6 NW ABBOTTSBURG 4 -78.68751 34.58335 US-NC-017  
## 3 0 34078c2 CW ACME 4 -78.18751 34.29169 US-NC-047  
## TYPE ID\_S123\_NOSPACES\_TEMP ID\_S123\_SPACES\_TEMP  
## 1 Priority Abbottsburg\_SE Abbottsburg SE  
## 2 Non-priority Abbottsburg\_NW Abbottsburg NW  
## 3 Non-priority Acme\_CW Acme CW  
## 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  
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## 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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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, avibase-BA4C8A02, avibase-A8347C7D, avibase-6090278A, avibase-E23F6DE0, avibase-89431E9F, avibase-043F337A, avibase-4E74AE22, avibase-75600969, avibase-00635FF9, avibase-6283E61E, avibase-E36325FA, avibase-536A5157, avibase-42101632, avibase-19CCBBD2, avibase-295C4CD6, avibase-8E1D9327, avibase-734C73A9, avibase-D77E4B41, avibase-58C502EA, avibase-C8F9F2D0, avibase-B59E1863, avibase-C3AD1AFF, avibase-8BBB3255, avibase-62CA2AF8, avibase-8D6D5F2B, avibase-95B77F08, avibase-7EFF698D, avibase-CEA5B6AA, avibase-EA4D6C0B, avibase-DEC3D8D0, avibase-36B3872D, avibase-BED38F50, avibase-DAD22BB6, avibase-67B455A7, avibase-F5C181CA, avibase-1B2A6386, avibase-9891BF73, avibase-94A44032, avibase-93694BB5, avibase-49D9148A, avibase-86D45B8F, avibase-BCF9A19A, avibase-7AB0F3A4, avibase-0BFCAE79, avibase-448D91B7, avibase-C86D078E, avibase-D97F93CC, avibase-F8DDF6A6, avibase-AD7F307B, avibase-082D833C, avibase-0D88C072, avibase-2C1981BB, avibase-BBA2F9DF, avibase-C732CB10, avibase-3558066B, 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avibase-11512CF4, avibase-000482C9, avibase-88AB027C, avibase-46B54DB1, avibase-EF47E15D, avibase-F59AB6B3, avibase-8D3E8871, avibase-E826E9F3, avibase-8535345B, avibase-0BDB87DE, avibase-23863F65, avibase-719935EF, avibase-F7504353, avibase-891798D9, avibase-654D660C, avibase-A69062C8, avibase-27B2749A, avibase-981CE782, avibase-6BB94D7E, avibase-7E022378, avibase-4D2FF6F1, avibase-0C1EFC9B, avibase-441918B5, avibase-249AE8DF, avibase-534FB490, avibase-2FA39DCD, avibase-DC3050A9, avibase-06B9BD24, avibase-95E28A57, avibase-F35821AA, avibase-AA7901D8, avibase-031409C7, avibase-74EDE3CA, avibase-E7A14E91, avibase-D295D249, avibase-06C36D41, avibase-D3FAE385, avibase-27903EF7, avibase-A01D9D21, avibase-E6518B9D, avibase-FF3D837A, avibase-26B5280F, avibase-8B879DFA, avibase-C5FB15C6, avibase-5AEDC002, avibase-39086887, avibase-7CB8F5B7, avibase-72A4F8EB, avibase-7EE005BD, avibase-1725B07D, avibase-1D07B501, avibase-C757BD95, avibase-4168AF09, avibase-BAC33609, avibase-B9B272F4, avibase-154BCCAE, avibase-6D2B5CDA, avibase-FC0A1D95, avibase-866903B9, avibase-C6772490, avibase-FC366114, avibase-1044B438, avibase-9BE68BD3, avibase-1BAC6645, avibase-8EB0C1FA, avibase-D543132B, avibase-E893F98D, avibase-D4540F88, avibase-6EB81C98, avibase-A47B0BD4, avibase-2C7A2673, avibase-CB343E43, avibase-ACC99F35, avibase-0F81304F, avibase-4A3B2CFF, avibase-01060BFD, avibase-F9305BAA, avibase-19196211, avibase-671B69FE, avibase-D00EC2C9, avibase-3E7F825D, avibase-7D1A9D5C, avibase-8116523B, avibase-F5837054, avibase-33808812, avibase-41E9F54B, avibase-47E58408, avibase-B48335B1, avibase-135564AA, avibase-0B361ED8, avibase-787E0536, avibase-D4A73324, avibase-BF1DA86E, avibase-F5C8516D, avibase-115AF02D, avibase-183E5F90, avibase-1E82CE1E, avibase-ACE8EADE, avibase-BB041C6E, avibase-E6F3BA54, avibase-3A3C62BC, avibase-9A8E55D0, avibase-D204A930, avibase-A091D50A, avibase-8F268682, avibase-90E2543E, avibase-7B0669CB, avibase-447A1BA5, avibase-F3DA111C, avibase-ECDE73F2, avibase-B5CE8FAD, avibase-4E192262, avibase-0BB84341, avibase-4AAEF549, avibase-E53FC25C, avibase-2143A852, avibase-DB20CB6B, avibase-5F8E7CA8, avibase-39BD9FF2, avibase-F4829920, avibase-B904BB22, avibase-A0A67A81, avibase-544A5E6B, avibase-694C127A, avibase-50566E50, avibase-8601A467, avibase-3A7B1F59, avibase-0783A7EA, avibase-B4EE123D, avibase-8DB64266, avibase-0337440E, avibase-5F77FED5, avibase-60E6081E, avibase-018B3169, avibase-C235A4D7, avibase-675EEA7F, avibase-FB738385, avibase-3EF081A8, avibase-32DCEC14, avibase-ED4CE8E7, avibase-2A86F9C9, avibase-1929E1E1, avibase-13E9F9B4, avibase-D201EB72, avibase-3E04020B, avibase-56CCA717, avibase-FFF61080, avibase-64F4DD81, avibase-43D33E03, avibase-B7B1A5DD, avibase-2771624B, avibase-15369E8E, avibase-0BCBA6B9, avibase-A8C34DC9, avibase-BC6C3CCE, avibase-C6E1197B, avibase-8F123A11, avibase-68EA281A, avibase-407E2CA8, avibase-7A24F57F, avibase-D3A260BC, avibase-3072CC16, avibase-90B13ACF, avibase-6C50988A, avibase-624078BA, avibase-4800D6B6, avibase-AF0C7BDE, avibase-18A19380, avibase-42393721, avibase-FB4D08F0, avibase-39F29B55, avibase-B0932D89, avibase-2D52E3A5, avibase-F89FD6E3, avibase-60214D49, avibase-2CC21529, avibase-3E2D0C9B, avibase-A2BB98A9, avibase-FB4FCB27, avibase-466E9077, avibase-25C94A8F, avibase-AF49F890, avibase-E196D6F9, avibase-727D994F, avibase-4FB248BA, avibase-B58AFD6E, avibase-A2510EF4, avibase-BDC5CF80, avibase-592E58CE, avibase-8AA3B42E, avibase-4880DC55, avibase-94A1C447, avibase-E1638A37, avibase-A59FA446, avibase-1D446440, avibase-26BA25EF, avibase-1F09CCCC, avibase-5EC21767, avibase-22D1B4A2, avibase-74236837, avibase-6F65F82B, avibase-153BA306, avibase-D8A24A3E, avibase-667C6969, avibase-D17D101A, avibase-0B23929D, avibase-86182656, avibase-3647E146, avibase-EA5E858A, avibase-1E1B6D19, avibase-79C9C8C4, avibase-B87D744D, avibase-3DF5C587, avibase-B70B5840, avibase-E0A04985, avibase-B7D7EF23, avibase-15EE0D36, avibase-F9FCB9FF, avibase-049D9AEA, avibase-FEE35F4C, avibase-1A0096F2, avibase-78509A5D, avibase-BFBC73AF, avibase-951C150C, avibase-E1714A09, avibase-11783075, avibase-1F1AD154, avibase-2281F1C7, avibase-DA2F24E3, avibase-C6B5497C, avibase-B77377EE, avibase-3534E4CE, avibase-5816834E, avibase-28669A3D, avibase-0A0B8431, avibase-486265CF, avibase-F029489A, avibase-9F67F3AF, avibase-C01A22D6, avibase-697B933E, avibase-9BEBC025, avibase-5B23B360, avibase-C25794D5, avibase-7FCE8A43, avibase-0ADA5F17, avibase-DE473F42, avibase-1CBD2CED, avibase-7709CE5C, avibase-F9AED548, avibase-F6533C4B, avibase-70924157, avibase-57C93A74, avibase-B656B15D, avibase-BCBD2EAE, avibase-5D864313, avibase-2DABF98F, avibase-5284C27B, avibase-1FFFEF4E, avibase-F2858F9F, avibase-E9DF118E, avibase-F012ED4B  
## ECOREGION  
## 1 CP  
## 2 CP  
## 3 CP

Retrieve a blocks data frame with a subset of columns

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

## \_id COUNTY ID\_BLOCK ECOREGION  
## 1 34078E6SE BLADEN ABBOTTSBURG-SE CP  
## 2 34078E6NW BLADEN ABBOTTSBURG-NW CP  
## 3 34078C2CW COLUMBUS ACME-CW CP  
## 4 36078C2NE WARREN AFTON-NE P  
## 5 35080H4CE DAVIE ADVANCE-CE P  
## 6 35080H4SW DAVIE ADVANCE-SW P

Retrieve a spatial data frame with a few columns

fields <- c("ID\_BLOCK", "ECOREGION")  
blocks\_sf <- get\_blocks(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: -80.43751 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 34078E6NW ABBOTTSBURG-NW -78.75001 34.62502 -78.68751 34.58335 CP  
## 3 34078C2CW ACME-CW -78.25001 34.33335 -78.18751 34.29169 CP  
## 4 36078C2NE AFTON-NE -78.18751 36.37502 -78.12501 36.33335 P  
## 5 35080H4CE ADVANCE-CE -80.43751 35.95835 -80.37501 35.91669 P  
## wkt  
## 1 POLYGON ((-78.62501 34.5000...  
## 2 POLYGON ((-78.68751 34.5833...  
## 3 POLYGON ((-78.18751 34.2916...  
## 4 POLYGON ((-78.12501 36.3333...  
## 5 POLYGON ((-80.37501 35.9166...

# Tests

Plot a blocks spatial data frame.

fields <- c("ID\_BLOCK", "TYPE")  
blocks\_sf <- get\_blocks(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(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(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 when requested.

fields <- c("ID\_BLOCK")  
blocks\_sf <- get\_blocks(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(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.   
## 0.01500 0.02800 0.02900 0.03943 0.03100 0.36200

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(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.   
## 0.0740 0.0780 0.0805 0.0797 0.0820 0.0850

Describe runtimes for query of all fields

# Run the function 5 times and record the runtime  
time <- c()  
for (i in 1:5) {  
 time1 <- proc.time()  
 get\_blocks(ncba\_config = ncba\_config, fields = NULL)  
 t <- proc.time() - time1  
 time[i] <- t["elapsed"]  
}  
  
# Print the descriptive statistics  
print(summary(time))

## Min. 1st Qu. Median Mean 3rd Qu. Max.   
## 83.3 104.0 105.9 106.6 117.1 122.7