Part 02 Calculate LPI

Script para cálculo do LPI baseado nas instruções disponíveis [neste link](https://github.com/Zoological-Society-of-London/rlpi).

Função prepara dados do icmbio e chama funções do pacote rlpi

**Em fase de TESTE**

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### Carregar pacotes

library(here)

## here() starts at D:/git/monitoraFlorestalGlobal

library(tidyverse)

## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5 v purrr 0.3.4  
## v tibble 3.1.6 v dplyr 1.0.8  
## v tidyr 1.2.0 v stringr 1.4.0  
## v readr 2.1.2 v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(dplyr)

### Carregar funções

source(here("bin", "lpi\_icmbio.R"))

### Carregar dados

#Versão disponível:  
#dadosICMBio <- readRDS(here("data", "dadosICMBio\_2014a2018.rds"))  
#Versão não disponível  
dadosICMBio <- readRDS(here("data", "dadosICMBio\_2014a2019.rds"))  
mydata <- dadosICMBio

### Contagem de UCs

mydata %>%  
 group\_by(nome\_UC) %>%  
 count()

## # A tibble: 40 x 2  
## # Groups: nome\_UC [40]  
## nome\_UC n  
## <chr> <int>  
## 1 Esec Maracá 167  
## 2 Esec Niquiá 77  
## 3 Esec Serra Geral do Tocantins 12  
## 4 Esec Terra do Meio 1229  
## 5 Flona do Jamari 755  
## 6 Parna Campos Amazonicos 133  
## 7 Parna Chapada dos Veadeiros 11  
## 8 Parna da Amazônia 335  
## 9 Parna da Serra da Bocaina 50  
## 10 Parna da Serra da Bodoquena 126  
## # ... with 30 more rows

### Contagem de espécies

mydata %>%  
 group\_by(binomial) %>%  
 count() %>%  
 arrange(desc(n)) %>%  
 filter(! binomial %in% c(  
 NA,  
 "E",  
 "Tinamidae",  
 "Cracidae",  
 "Sciuridae",  
 "Callitrichidae",  
 "Pitheciidae",  
 "Atelidae",  
 "Cebidae",  
 "Primates",  
 "Felidae",  
 "Bradypodidae",  
 "Cervidae"  
 )  
 ) %>%  
 filter(! grepl('sp.', binomial)) %>%  
 print(n=Inf)

## # A tibble: 151 x 2  
## # Groups: binomial [151]  
## binomial n  
## <chr> <int>  
## 1 Dasyprocta croconota 1897  
## 2 Sapajus apella 1804  
## 3 Myoprocta acouchy 1024  
## 4 Dasyprocta leporina 753  
## 5 Dasyprocta fuliginosa 690  
## 6 Penelope jacquacu 505  
## 7 Mazama americana 404  
## 8 Tinamus major 384  
## 9 Pauxi tuberosa 374  
## 10 Pecari tajacu 371  
## 11 Guerlinguetus aestuans 351  
## 12 Ateles chamek 242  
## 13 Odontophorus gujanensis 236  
## 14 Sapajus macrocephalus 233  
## 15 Saguinus midas 232  
## 16 Lagothrix cana 224  
## 17 Mazama nemorivaga 212  
## 18 Myoprocta pratti 202  
## 19 Psophia crepitans 202  
## 20 Ateles paniscus 197  
## 21 Crax alector 192  
## 22 Nasua nasua 187  
## 23 Pithecia irrorata 174  
## 24 Psophia viridis 169  
## 25 Tayassu pecari 144  
## 26 Chiropotes albinasus 140  
## 27 Cebus unicolor 125  
## 28 Callicebus vieirai 122  
## 29 Saguinus weddelli 114  
## 30 Dasyprocta prymnolopha 111  
## 31 Aburria cujubi 109  
## 32 Psophia dextralis 107  
## 33 Saimiri boliviensis 107  
## 34 Alouatta nigerrima 106  
## 35 Tamandua tetradactyla 99  
## 36 Eira barbara 96  
## 37 Callicebus cupreus 91  
## 38 Mico humeralifer 90  
## 39 Crax fasciolata 88  
## 40 Alouatta macconnelli 87  
## 41 Saguinus imperator 87  
## 42 Ateles marginatus 86  
## 43 Alouatta puruensis 84  
## 44 Saimiri ustus 78  
## 45 Odontophorus stellatus 75  
## 46 Psophia leucoptera 75  
## 47 Callicebus brunneus 61  
## 48 Ortalis motmot 61  
## 49 Callicebus moloch 57  
## 50 Pithecia pithecia 56  
## 51 Chiropotes sagulatus 54  
## 52 Mico melanurus 54  
## 53 Saimiri collinsi 52  
## 54 Sciurillus pusillus 51  
## 55 Callicebus hoffmannsi 49  
## 56 Tapirus terrestris 49  
## 57 Aotus nigriceps 48  
## 58 Cebus olivaceus 48  
## 59 Guerlinguetus ignitus 48  
## 60 Penelope marail 46  
## 61 Urosciurus igniventris 46  
## 62 Sapajus cay 44  
## 63 Microsciurus flaviventer 39  
## 64 Sapajus nigritus 39  
## 65 Ortalis guttata 38  
## 66 Callicebus bernhardi 37  
## 67 Saguinus niger 34  
## 68 Guerlinguetus gilvigularis 32  
## 69 Aburria cumanensis 29  
## 70 Alouatta belzebul 28  
## 71 Mico argentatus 28  
## 72 Myrmecophaga tridactyla 28  
## 73 Panthera onca 28  
## 74 Cebus albifrons 26  
## 75 Saimiri sciureus 26  
## 76 Chiropotes chiropotes 24  
## 77 Mico rondoni 24  
## 78 Puma concolor 21  
## 79 Psophia interjecta 20  
## 80 Ateles belzebuth 18  
## 81 Bradypus variegatus 17  
## 82 Penelope obscura 17  
## 83 Dasypus novemcinctus 16  
## 84 Callimico goeldii 15  
## 85 Dasyprocta cf. fuliginosa 15  
## 86 Leopardus wiedii 15  
## 87 Chiropotes satanas 14  
## 88 Odontophorus capueira 14  
## 89 Cuniculus paca 13  
## 90 Choloepus didactylus 12  
## 91 Lagothrix poeppigii 11  
## 92 Leopardus pardalis 11  
## 93 Tinamus solitarius 11  
## 94 Galictis vittata 10  
## 95 Pithecia monachus 10  
## 96 Cabassous unicinctus 9  
## 97 Alouatta juara 8  
## 98 Callithrix penicillata 8  
## 99 Cerdocyon thous 8  
## 100 Chiropotes utahickae 8  
## 101 Guerlinguetus ingrami 8  
## 102 Psophia obscura 8  
## 103 Cacajao melanocephalus 7  
## 104 Callicebus cinerascens 7  
## 105 Didelphis marsupialis 7  
## 106 Leopardus tigrinus 7  
## 107 Mico emiliae 7  
## 108 Saimiri cassiquiarensis 7  
## 109 Brachyteles arachnoides 6  
## 110 bradypus variegatus 6  
## 111 Dasyprocta azarae 6  
## 112 Dasyprocta iacki 6  
## 113 Nothocrax urumutum 6  
## 114 Puma yagouaroundi 6  
## 115 Saimiri macrodon 6  
## 116 Callicebus baptista 5  
## 117 Coendou prehensilis 5  
## 118 Crax globulosa 5  
## 119 Dasypodidae 5  
## 120 Hydrochoerus hydrochaeris 5  
## 121 Lontra longicaudis 5  
## 122 Priodontes maximus 5  
## 123 Atelocynus microtis 4  
## 124 Pauxi tomentosa 4  
## 125 Alouatta discolor 3  
## 126 Alouatta seniculus 3  
## 127 Callicebus dubius 3  
## 128 Callithrix jacchus 3  
## 129 Canis familiaris 3  
## 130 Cebus kaapori 3  
## 131 Pteronura brasiliensis 3  
## 132 Rhynchotus rufescens 3  
## 133 Alouatta caraya 2  
## 134 Aotus infulatus 2  
## 135 Cyclopes didactylus 2  
## 136 Dasypus kappleri 2  
## 137 Mazama gouazoubira 2  
## 138 Sylvilagus brasiliensis 2  
## 139 Tapirus kabomani 2  
## 140 Tayassuidae 2  
## 141 Alouatta guariba 1  
## 142 Alouatta guariba clamitans 1  
## 143 Callicebus lugens 1  
## 144 Callithrix aurita 1  
## 145 Cebuella pygmaea 1  
## 146 Colinus cristatus 1  
## 147 Lontra longicaudata 1  
## 148 Ozotocerus bezoarticus 1  
## 149 Procyon cancrivorus 1  
## 150 Procyonidae 1  
## 151 Speothus venaticus 1

### Contagem de populações

mydata %>%  
 filter(! binomial %in% c(  
 NA,  
 "E",  
 "Tinamidae",  
 "Cracidae",  
 "Sciuridae",  
 "Callitrichidae",  
 "Pitheciidae",  
 "Atelidae",  
 "Cebidae",  
 "Primates",  
 "Felidae",  
 "Bradypodidae",  
 "Cervidae"  
 )  
 ) %>%  
 group\_by(populacao) %>%  
 count() %>%  
 arrange(desc(n)) %>%  
 filter(! grepl('sp.', populacao)) %>%  
 filter() %>%  
 print(n=Inf)

## # A tibble: 731 x 2  
## # Groups: populacao [731]  
## populacao n  
## <chr> <int>  
## 1 Dasyprocta\_croconota\_259 998  
## 2 Myoprocta\_acouchy\_213 880  
## 3 Dasyprocta\_croconota\_47 334  
## 4 Sapajus\_apella\_259 294  
## 5 Dasyprocta\_croconota\_151 290  
## 6 Dasyprocta\_leporina\_213 264  
## 7 Dasyprocta\_leporina\_1810 231  
## 8 Tinamus\_major\_213 230  
## 9 Dasyprocta\_croconota\_258 225  
## 10 Sapajus\_apella\_213 205  
## 11 Sapajus\_apella\_151 202  
## 12 Ateles\_paniscus\_213 152  
## 13 Dasyprocta\_fuliginosa\_208 148  
## 14 Sapajus\_apella\_47 142  
## 15 Crax\_alector\_213 136  
## 16 Penelope\_jacquacu\_232 128  
## 17 Sapajus\_apella\_169 126  
## 18 Saguinus\_midas\_187 116  
## 19 Tinamus\_major\_187 116  
## 20 Dasyprocta\_fuliginosa\_232 115  
## 21 Dasyprocta\_leporina\_211 114  
## 22 Lagothrix\_cana\_208 112  
## 23 Dasyprocta\_fuliginosa\_281 107  
## 24 Sapajus\_apella\_258 104  
## 25 Psophia\_crepitans\_213 102  
## 26 Sapajus\_apella\_256 101  
## 27 Sapajus\_apella\_281 98  
## 28 Sapajus\_macrocephalus\_232 98  
## 29 Sapajus\_apella\_118 96  
## 30 Ateles\_chamek\_281 94  
## 31 Dasyprocta\_fuliginosa\_118 94  
## 32 Callicebus\_vieirai\_47 92  
## 33 Guerlinguetus\_aestuans\_47 89  
## 34 Myoprocta\_acouchy\_187 89  
## 35 Psophia\_viridis\_259 89  
## 36 Sapajus\_apella\_173 88  
## 37 Penelope\_jacquacu\_274 87  
## 38 Mazama\_americana\_259 86  
## 39 Nasua\_nasua\_259 86  
## 40 Dasyprocta\_leporina\_187 85  
## 41 Alouatta\_nigerrima\_259 82  
## 42 Dasyprocta\_prymnolopha\_207 80  
## 43 Lagothrix\_cana\_281 78  
## 44 Pecari\_tajacu\_232 77  
## 45 Pauxi\_tuberosa\_281 72  
## 46 Mico\_humeralifer\_259 71  
## 47 Penelope\_jacquacu\_208 69  
## 48 Sapajus\_macrocephalus\_222 69  
## 49 Pauxi\_tuberosa\_47 68  
## 50 Myoprocta\_pratti\_173 66  
## 51 Sapajus\_apella\_136 66  
## 52 Odontophorus\_gujanensis\_47 64  
## 53 Saguinus\_midas\_169 61  
## 54 Sapajus\_apella\_188 57  
## 55 Penelope\_jacquacu\_1633 56  
## 56 Psophia\_crepitans\_187 56  
## 57 Saguinus\_midas\_213 55  
## 58 Callicebus\_cupreus\_232 54  
## 59 Chiropotes\_sagulatus\_213 54  
## 60 Penelope\_jacquacu\_222 54  
## 61 Guerlinguetus\_aestuans\_151 53  
## 62 Mico\_melanurus\_281 53  
## 63 Myoprocta\_acouchy\_169 53  
## 64 Myoprocta\_pratti\_232 52  
## 65 Sapajus\_apella\_1810 52  
## 66 Guerlinguetus\_aestuans\_213 51  
## 67 Saimiri\_boliviensis\_232 51  
## 68 Ateles\_chamek\_118 50  
## 69 Dasyprocta\_croconota\_136 50  
## 70 Sapajus\_apella\_187 50  
## 71 Dasyprocta\_fuliginosa\_188 49  
## 72 Penelope\_jacquacu\_173 49  
## 73 Sapajus\_macrocephalus\_1633 49  
## 74 Chiropotes\_albinasus\_259 48  
## 75 Dasyprocta\_leporina\_169 48  
## 76 Guerlinguetus\_ignitus\_232 48  
## 77 Odontophorus\_gujanensis\_258 48  
## 78 Pecari\_tajacu\_259 48  
## 79 Myoprocta\_pratti\_274 47  
## 80 Saguinus\_weddelli\_118 47  
## 81 Cebus\_unicolor\_259 46  
## 82 Pithecia\_irrorata\_259 46  
## 83 Saimiri\_boliviensis\_222 46  
## 84 Chiropotes\_albinasus\_208 45  
## 85 Mazama\_americana\_213 45  
## 86 Sapajus\_cay\_143 44  
## 87 Mazama\_nemorivaga\_259 43  
## 88 Saguinus\_imperator\_222 43  
## 89 Sapajus\_apella\_208 43  
## 90 Pauxi\_tuberosa\_208 42  
## 91 Alouatta\_puruensis\_232 41  
## 92 Cebus\_unicolor\_232 41  
## 93 Dasyprocta\_fuliginosa\_256 41  
## 94 Crax\_fasciolata\_47 40  
## 95 Dasyprocta\_fuliginosa\_222 40  
## 96 Alouatta\_macconnelli\_187 39  
## 97 Callicebus\_hoffmannsi\_259 39  
## 98 Pauxi\_tuberosa\_118 39  
## 99 Sapajus\_apella\_211 39  
## 100 Odontophorus\_gujanensis\_213 38  
## 101 Urosciurus\_igniventris\_173 38  
## 102 Callicebus\_bernhardi\_208 37  
## 103 Callicebus\_cupreus\_222 37  
## 104 Callicebus\_moloch\_258 37  
## 105 Mazama\_americana\_258 37  
## 106 Penelope\_jacquacu\_149 37  
## 107 Ateles\_marginatus\_151 36  
## 108 Mazama\_americana\_208 36  
## 109 Pauxi\_tuberosa\_258 36  
## 110 Psophia\_leucoptera\_232 36  
## 111 Aotus\_nigriceps\_232 35  
## 112 Ateles\_chamek\_208 35  
## 113 Callicebus\_brunneus\_188 35  
## 114 Odontophorus\_gujanensis\_151 35  
## 115 Psophia\_dextralis\_151 35  
## 116 Lagothrix\_cana\_1633 34  
## 117 Tinamus\_major\_169 34  
## 118 Alouatta\_macconnelli\_213 33  
## 119 Psophia\_dextralis\_258 33  
## 120 Alouatta\_puruensis\_222 32  
## 121 Crax\_alector\_187 32  
## 122 Guerlinguetus\_gilvigularis\_1810 32  
## 123 Pauxi\_tuberosa\_151 32  
## 124 Pauxi\_tuberosa\_259 32  
## 125 Sapajus\_nigritus\_172 32  
## 126 Chiropotes\_albinasus\_281 31  
## 127 Dasyprocta\_prymnolopha\_57 31  
## 128 Mazama\_nemorivaga\_208 31  
## 129 Pecari\_tajacu\_213 31  
## 130 Saguinus\_weddelli\_232 31  
## 131 Sciurillus\_pusillus\_169 31  
## 132 Callicebus\_vieirai\_151 30  
## 133 Pithecia\_pithecia\_173 30  
## 134 Psophia\_crepitans\_169 30  
## 135 Tayassu\_pecari\_151 30  
## 136 Ateles\_paniscus\_187 29  
## 137 Odontophorus\_stellatus\_232 29  
## 138 Odontophorus\_stellatus\_274 29  
## 139 Dasyprocta\_fuliginosa\_221 28  
## 140 Mico\_argentatus\_1810 28  
## 141 Pithecia\_irrorata\_274 28  
## 142 Psophia\_viridis\_208 28  
## 143 Saimiri\_collinsi\_47 28  
## 144 Sapajus\_apella\_221 28  
## 145 Ateles\_marginatus\_258 27  
## 146 Psophia\_dextralis\_47 27  
## 147 Saguinus\_imperator\_232 27  
## 148 Saguinus\_niger\_211 27  
## 149 Aburria\_cujubi\_151 26  
## 150 Ateles\_chamek\_188 25  
## 151 Crax\_fasciolata\_151 25  
## 152 Mazama\_americana\_232 25  
## 153 Psophia\_viridis\_281 25  
## 154 Chiropotes\_chiropotes\_189 24  
## 155 Mazama\_americana\_47 24  
## 156 Mico\_rondoni\_118 24  
## 157 Pecari\_tajacu\_151 24  
## 158 Guerlinguetus\_aestuans\_259 23  
## 159 Nasua\_nasua\_232 23  
## 160 Penelope\_marail\_169 23  
## 161 Penelope\_marail\_187 23  
## 162 Aburria\_cujubi\_259 22  
## 163 Mazama\_americana\_211 22  
## 164 Mazama\_nemorivaga\_187 22  
## 165 Odontophorus\_gujanensis\_259 22  
## 166 Pecari\_tajacu\_281 22  
## 167 Saimiri\_collinsi\_211 22  
## 168 Alouatta\_nigerrima\_1810 21  
## 169 Dasyprocta\_fuliginosa\_274 21  
## 170 Guerlinguetus\_aestuans\_207 21  
## 171 Myoprocta\_pratti\_259 21  
## 172 Saimiri\_ustus\_118 21  
## 173 Pithecia\_irrorata\_118 20  
## 174 Psophia\_interjecta\_211 20  
## 175 Mazama\_americana\_281 19  
## 176 Mico\_humeralifer\_136 19  
## 177 Pithecia\_irrorata\_1633 19  
## 178 Aburria\_cujubi\_281 18  
## 179 Dasyprocta\_fuliginosa\_149 18  
## 180 Guerlinguetus\_aestuans\_169 18  
## 181 Guerlinguetus\_aestuans\_173 18  
## 182 Mazama\_nemorivaga\_281 18  
## 183 Microsciurus\_flaviventer\_232 18  
## 184 Pauxi\_tuberosa\_211 18  
## 185 Saguinus\_weddelli\_222 18  
## 186 Ateles\_chamek\_256 17  
## 187 Cebus\_albifrons\_1633 17  
## 188 Dasyprocta\_fuliginosa\_173 17  
## 189 Pithecia\_irrorata\_281 17  
## 190 Saguinus\_imperator\_274 17  
## 191 Aburria\_cujubi\_258 16  
## 192 Ateles\_paniscus\_169 16  
## 193 Crax\_fasciolata\_211 16  
## 194 Guerlinguetus\_aestuans\_211 16  
## 195 Mazama\_nemorivaga\_213 16  
## 196 Pithecia\_irrorata\_208 16  
## 197 Psophia\_viridis\_118 16  
## 198 Saimiri\_ustus\_256 16  
## 199 Sapajus\_macrocephalus\_274 16  
## 200 Tayassu\_pecari\_57 16  
## 201 Alouatta\_belzebul\_207 15  
## 202 Ateles\_belzebuth\_57 15  
## 203 Dasyprocta\_cf. fuliginosa\_274 15  
## 204 Ortalis\_guttata\_222 15  
## 205 Penelope\_obscura\_142 15  
## 206 Alouatta\_macconnelli\_169 14  
## 207 Ateles\_chamek\_149 14  
## 208 Ateles\_marginatus\_47 14  
## 209 Callimico\_goeldii\_232 14  
## 210 Chiropotes\_satanas\_207 14  
## 211 Crax\_alector\_57 14  
## 212 Eira\_barbara\_213 14  
## 213 Eira\_barbara\_232 14  
## 214 Mazama\_americana\_169 14  
## 215 Mazama\_americana\_1810 14  
## 216 Pecari\_tajacu\_118 14  
## 217 Penelope\_jacquacu\_189 14  
## 218 Psophia\_leucoptera\_274 14  
## 219 Saimiri\_ustus\_281 14  
## 220 Tamandua\_tetradactyla\_151 14  
## 221 Tayassu\_pecari\_259 14  
## 222 Tayassu\_pecari\_281 14  
## 223 Callicebus\_brunneus\_118 13  
## 224 Cebus\_olivaceus\_189 13  
## 225 Guerlinguetus\_aestuans\_258 13  
## 226 Mazama\_americana\_151 13  
## 227 Mazama\_nemorivaga\_188 13  
## 228 Nasua\_nasua\_151 13  
## 229 Ortalis\_motmot\_151 13  
## 230 Pecari\_tajacu\_208 13  
## 231 Pecari\_tajacu\_256 13  
## 232 Pecari\_tajacu\_258 13  
## 233 Saguinus\_weddelli\_188 13  
## 234 Sapajus\_apella\_207 13  
## 235 Tayassu\_pecari\_118 13  
## 236 Alouatta\_belzebul\_211 12  
## 237 Cebus\_olivaceus\_60 12  
## 238 Cebus\_unicolor\_222 12  
## 239 Dasyprocta\_fuliginosa\_1633 12  
## 240 Eira\_barbara\_259 12  
## 241 Ortalis\_motmot\_60 12  
## 242 Pecari\_tajacu\_1633 12  
## 243 Pecari\_tajacu\_173 12  
## 244 Pecari\_tajacu\_187 12  
## 245 Pecari\_tajacu\_222 12  
## 246 Tamandua\_tetradactyla\_232 12  
## 247 Aburria\_cujubi\_47 11  
## 248 Aburria\_cumanensis\_149 11  
## 249 Aburria\_cumanensis\_213 11  
## 250 Dasyprocta\_leporina\_189 11  
## 251 Guerlinguetus\_aestuans\_188 11  
## 252 Mazama\_americana\_57 11  
## 253 Mazama\_nemorivaga\_169 11  
## 254 Microsciurus\_flaviventer\_173 11  
## 255 Ortalis\_guttata\_259 11  
## 256 Pauxi\_tuberosa\_1810 11  
## 257 Pecari\_tajacu\_47 11  
## 258 Penelope\_jacquacu\_60 11  
## 259 Pithecia\_irrorata\_188 11  
## 260 Tamandua\_tetradactyla\_208 11  
## 261 Alouatta\_puruensis\_281 10  
## 262 Callicebus\_hoffmannsi\_136 10  
## 263 Guerlinguetus\_aestuans\_187 10  
## 264 Guerlinguetus\_aestuans\_274 10  
## 265 Lagothrix\_poeppigii\_149 10  
## 266 Odontophorus\_stellatus\_222 10  
## 267 Pecari\_tajacu\_207 10  
## 268 Pithecia\_monachus\_149 10  
## 269 Psophia\_crepitans\_57 10  
## 270 Psophia\_leucoptera\_1633 10  
## 271 Saimiri\_sciureus\_213 10  
## 272 Tamandua\_tetradactyla\_213 10  
## 273 Aburria\_cujubi\_211 9  
## 274 Ateles\_marginatus\_1810 9  
## 275 Bradypus\_variegatus\_259 9  
## 276 Callicebus\_brunneus\_256 9  
## 277 Callicebus\_moloch\_1810 9  
## 278 Cebus\_olivaceus\_57 9  
## 279 Chiropotes\_albinasus\_136 9  
## 280 Crax\_alector\_169 9  
## 281 Mazama\_americana\_187 9  
## 282 Mazama\_nemorivaga\_118 9  
## 283 Myoprocta\_pratti\_149 9  
## 284 Odontophorus\_gujanensis\_173 9  
## 285 Ortalis\_motmot\_211 9  
## 286 Pithecia\_pithecia\_187 9  
## 287 Pithecia\_pithecia\_213 9  
## 288 Psophia\_dextralis\_1810 9  
## 289 Saimiri\_sciureus\_169 9  
## 290 Tayassu\_pecari\_211 9  
## 291 Callithrix\_penicillata\_148 8  
## 292 Chiropotes\_utahickae\_211 8  
## 293 Myrmecophaga\_tridactyla\_259 8  
## 294 Nasua\_nasua\_47 8  
## 295 Odontophorus\_capueira\_152 8  
## 296 Odontophorus\_gujanensis\_211 8  
## 297 Pecari\_tajacu\_169 8  
## 298 Pithecia\_pithecia\_169 8  
## 299 Psophia\_leucoptera\_149 8  
## 300 Psophia\_obscura\_207 8  
## 301 Tamandua\_tetradactyla\_259 8  
## 302 Tapirus\_terrestris\_281 8  
## 303 Urosciurus\_igniventris\_57 8  
## 304 Cacajao\_melanocephalus\_173 7  
## 305 Callicebus\_cinerascens\_281 7  
## 306 Chiropotes\_albinasus\_258 7  
## 307 Guerlinguetus\_aestuans\_281 7  
## 308 Mazama\_americana\_207 7  
## 309 Mazama\_americana\_222 7  
## 310 Mazama\_nemorivaga\_1810 7  
## 311 Nasua\_nasua\_118 7  
## 312 Pauxi\_tuberosa\_256 7  
## 313 Pecari\_tajacu\_221 7  
## 314 Pithecia\_irrorata\_221 7  
## 315 Psophia\_leucoptera\_222 7  
## 316 Saguinus\_niger\_207 7  
## 317 Saimiri\_sciureus\_187 7  
## 318 Saimiri\_ustus\_208 7  
## 319 Sciurillus\_pusillus\_187 7  
## 320 Tapirus\_terrestris\_213 7  
## 321 Tayassu\_pecari\_222 7  
## 322 Tayassu\_pecari\_47 7  
## 323 Brachyteles\_arachnoides\_152 6  
## 324 Callicebus\_moloch\_281 6  
## 325 Cebus\_olivaceus\_169 6  
## 326 Cebus\_unicolor\_149 6  
## 327 Cebus\_unicolor\_281 6  
## 328 Dasyprocta\_iacki\_196 6  
## 329 Galictis\_vittata\_259 6  
## 330 Mazama\_americana\_188 6  
## 331 Mazama\_nemorivaga\_173 6  
## 332 Mazama\_nemorivaga\_256 6  
## 333 Mazama\_nemorivaga\_47 6  
## 334 Mico\_emiliae\_151 6  
## 335 Microsciurus\_flaviventer\_274 6  
## 336 Myrmecophaga\_tridactyla\_232 6  
## 337 Nasua\_nasua\_211 6  
## 338 Odontophorus\_stellatus\_149 6  
## 339 Ortalis\_guttata\_136 6  
## 340 Ortalis\_motmot\_57 6  
## 341 Pauxi\_tuberosa\_136 6  
## 342 Pecari\_tajacu\_211 6  
## 343 Pithecia\_irrorata\_256 6  
## 344 Psophia\_viridis\_136 6  
## 345 Saimiri\_boliviensis\_258 6  
## 346 Saimiri\_cassiquiarensis\_173 6  
## 347 Saimiri\_macrodon\_149 6  
## 348 Saimiri\_ustus\_1810 6  
## 349 Saimiri\_ustus\_259 6  
## 350 Sapajus\_nigritus\_152 6  
## 351 Tapirus\_terrestris\_47 6  
## 352 Tapirus\_terrestris\_57 6  
## 353 Aburria\_cumanensis\_143 5  
## 354 Alouatta\_juara\_173 5  
## 355 Ateles\_chamek\_221 5  
## 356 Callicebus\_baptista\_136 5  
## 357 Callicebus\_moloch\_211 5  
## 358 Cebus\_albifrons\_173 5  
## 359 Cebus\_olivaceus\_187 5  
## 360 Cebus\_unicolor\_256 5  
## 361 Choloepus\_didactylus\_259 5  
## 362 Crax\_globulosa\_1633 5  
## 363 Dasypodidae\_259 5  
## 364 Dasyprocta\_azarae\_172 5  
## 365 Dasypus\_novemcinctus\_259 5  
## 366 Eira\_barbara\_118 5  
## 367 Eira\_barbara\_173 5  
## 368 Eira\_barbara\_281 5  
## 369 Eira\_barbara\_284 5  
## 370 Guerlinguetus\_ingrami\_142 5  
## 371 Mazama\_americana\_118 5  
## 372 Mazama\_americana\_149 5  
## 373 Myoprocta\_pratti\_222 5  
## 374 Nasua\_nasua\_169 5  
## 375 Nasua\_nasua\_187 5  
## 376 Nasua\_nasua\_208 5  
## 377 Nasua\_nasua\_213 5  
## 378 Nasua\_nasua\_281 5  
## 379 Odontophorus\_gujanensis\_207 5  
## 380 Odontophorus\_gujanensis\_57 5  
## 381 Ortalis\_motmot\_189 5  
## 382 Ortalis\_motmot\_213 5  
## 383 Panthera\_onca\_259 5  
## 384 Pauxi\_tuberosa\_189 5  
## 385 Saguinus\_weddelli\_256 5  
## 386 Sciurillus\_pusillus\_211 5  
## 387 Tamandua\_tetradactyla\_188 5  
## 388 Tamandua\_tetradactyla\_274 5  
## 389 Tayassu\_pecari\_256 5  
## 390 Tinamus\_solitarius\_172 5  
## 391 Aotus\_nigriceps\_281 4  
## 392 Bradypus\_variegatus\_196 4  
## 393 Cabassous\_unicinctus\_232 4  
## 394 Cebus\_unicolor\_173 4  
## 395 Choloepus\_didactylus\_169 4  
## 396 Didelphis\_marsupialis\_259 4  
## 397 Eira\_barbara\_208 4  
## 398 Guerlinguetus\_aestuans\_221 4  
## 399 Mazama\_americana\_173 4  
## 400 Mazama\_americana\_274 4  
## 401 Mazama\_nemorivaga\_151 4  
## 402 Mazama\_nemorivaga\_211 4  
## 403 Nothocrax\_urumutum\_232 4  
## 404 Ortalis\_motmot\_47 4  
## 405 Panthera\_onca\_187 4  
## 406 Panthera\_onca\_213 4  
## 407 Panthera\_onca\_281 4  
## 408 Pauxi\_tomentosa\_60 4  
## 409 Pecari\_tajacu\_188 4  
## 410 Psophia\_crepitans\_189 4  
## 411 Puma\_concolor\_259 4  
## 412 Saimiri\_ustus\_258 4  
## 413 Tamandua\_tetradactyla\_118 4  
## 414 Tamandua\_tetradactyla\_211 4  
## 415 Tamandua\_tetradactyla\_47 4  
## 416 Tapirus\_terrestris\_259 4  
## 417 Tayassu\_pecari\_169 4  
## 418 Tayassu\_pecari\_208 4  
## 419 Tinamus\_solitarius\_142 4  
## 420 Aburria\_cujubi\_136 3  
## 421 Alouatta\_juara\_274 3  
## 422 Alouatta\_nigerrima\_136 3  
## 423 Alouatta\_seniculus\_57 3  
## 424 Aotus\_nigriceps\_222 3  
## 425 Aotus\_nigriceps\_259 3  
## 426 Ateles\_belzebuth\_189 3  
## 427 bradypus\_variegatus\_259 3  
## 428 Callicebus\_brunneus\_208 3  
## 429 Callicebus\_dubius\_1633 3  
## 430 Cebus\_kaapori\_207 3  
## 431 Cebus\_olivaceus\_213 3  
## 432 Cebus\_unicolor\_274 3  
## 433 Coendou\_prehensilis\_259 3  
## 434 Crax\_fasciolata\_143 3  
## 435 Cuniculus\_paca\_187 3  
## 436 Cuniculus\_paca\_259 3  
## 437 Eira\_barbara\_187 3  
## 438 Eira\_barbara\_211 3  
## 439 Eira\_barbara\_258 3  
## 440 Eira\_barbara\_274 3  
## 441 Guerlinguetus\_ingrami\_152 3  
## 442 Leopardus\_pardalis\_259 3  
## 443 Leopardus\_tigrinus\_232 3  
## 444 Leopardus\_wiedii\_213 3  
## 445 Leopardus\_wiedii\_232 3  
## 446 Leopardus\_wiedii\_259 3  
## 447 Mazama\_americana\_136 3  
## 448 Mazama\_americana\_143 3  
## 449 Mazama\_nemorivaga\_1626 3  
## 450 Mazama\_nemorivaga\_210 3  
## 451 Microsciurus\_flaviventer\_222 3  
## 452 Myrmecophaga\_tridactyla\_213 3  
## 453 Nasua\_nasua\_222 3  
## 454 Nasua\_nasua\_256 3  
## 455 Nasua\_nasua\_274 3  
## 456 Odontophorus\_capueira\_142 3  
## 457 Odontophorus\_capueira\_172 3  
## 458 Ortalis\_guttata\_274 3  
## 459 Ortalis\_motmot\_169 3  
## 460 Panthera\_onca\_232 3  
## 461 Pauxi\_tuberosa\_207 3  
## 462 Pecari\_tajacu\_136 3  
## 463 Pecari\_tajacu\_149 3  
## 464 Pecari\_tajacu\_1626 3  
## 465 Pecari\_tajacu\_172 3  
## 466 Pithecia\_irrorata\_222 3  
## 467 Psophia\_dextralis\_281 3  
## 468 Psophia\_viridis\_188 3  
## 469 Pteronura\_brasiliensis\_173 3  
## 470 Puma\_concolor\_213 3  
## 471 Saimiri\_boliviensis\_1633 3  
## 472 Sciurillus\_pusillus\_259 3  
## 473 Tamandua\_tetradactyla\_187 3  
## 474 Tamandua\_tetradactyla\_222 3  
## 475 Tamandua\_tetradactyla\_256 3  
## 476 Tamandua\_tetradactyla\_281 3  
## 477 Tapirus\_terrestris\_143 3  
## 478 Tapirus\_terrestris\_208 3  
## 479 Tayassu\_pecari\_136 3  
## 480 Tayassu\_pecari\_187 3  
## 481 Tayassu\_pecari\_213 3  
## 482 Tinamus\_major\_189 3  
## 483 Aburria\_cujubi\_1810 2  
## 484 Aburria\_cujubi\_207 2  
## 485 Alouatta\_caraya\_143 2  
## 486 Alouatta\_discolor\_258 2  
## 487 Aotus\_nigriceps\_1633 2  
## 488 bradypus\_variegatus\_169 2  
## 489 Cabassous\_unicinctus\_259 2  
## 490 Callithrix\_jacchus\_196 2  
## 491 Cebus\_albifrons\_136 2  
## 492 Cebus\_albifrons\_274 2  
## 493 Cebus\_unicolor\_136 2  
## 494 Cerdocyon\_thous\_208 2  
## 495 Cerdocyon\_thous\_256 2  
## 496 Cerdocyon\_thous\_259 2  
## 497 Cerdocyon\_thous\_281 2  
## 498 Choloepus\_didactylus\_173 2  
## 499 Crax\_fasciolata\_256 2  
## 500 Crax\_fasciolata\_281 2  
## 501 Cuniculus\_paca\_136 2  
## 502 Cuniculus\_paca\_211 2  
## 503 Dasypus\_novemcinctus\_187 2  
## 504 Dasypus\_novemcinctus\_232 2  
## 505 Dasypus\_novemcinctus\_281 2  
## 506 Didelphis\_marsupialis\_281 2  
## 507 Eira\_barbara\_169 2  
## 508 Eira\_barbara\_1810 2  
## 509 Eira\_barbara\_188 2  
## 510 Eira\_barbara\_207 2  
## 511 Eira\_barbara\_222 2  
## 512 Eira\_barbara\_57 2  
## 513 Eira\_barbara\_60 2  
## 514 Galictis\_vittata\_281 2  
## 515 Guerlinguetus\_aestuans\_196 2  
## 516 Guerlinguetus\_aestuans\_222 2  
## 517 Hydrochoerus\_hydrochaeris\_281 2  
## 518 Leopardus\_pardalis\_281 2  
## 519 Leopardus\_wiedii\_1810 2  
## 520 Leopardus\_wiedii\_258 2  
## 521 Lontra\_longicaudis\_173 2  
## 522 Mazama\_americana\_1633 2  
## 523 Mazama\_americana\_256 2  
## 524 Mazama\_gouazoubira\_76 2  
## 525 Mazama\_nemorivaga\_221 2  
## 526 Mazama\_nemorivaga\_222 2  
## 527 Mazama\_nemorivaga\_258 2  
## 528 Myoprocta\_acouchy\_57 2  
## 529 Myoprocta\_pratti\_281 2  
## 530 Myrmecophaga\_tridactyla\_57 2  
## 531 Nasua\_nasua\_136 2  
## 532 Nasua\_nasua\_143 2  
## 533 Nasua\_nasua\_1810 2  
## 534 Odontophorus\_gujanensis\_187 2  
## 535 Ortalis\_guttata\_232 2  
## 536 Ortalis\_motmot\_1810 2  
## 537 Ortalis\_motmot\_258 2  
## 538 Panthera\_onca\_118 2  
## 539 Panthera\_onca\_208 2  
## 540 Panthera\_onca\_274 2  
## 541 Pauxi\_tuberosa\_232 2  
## 542 Pecari\_tajacu\_143 2  
## 543 Pecari\_tajacu\_1810 2  
## 544 Pecari\_tajacu\_210 2  
## 545 Pecari\_tajacu\_274 2  
## 546 Penelope\_obscura\_152 2  
## 547 Priodontes\_maximus\_281 2  
## 548 Psophia\_viridis\_256 2  
## 549 Puma\_concolor\_136 2  
## 550 Puma\_concolor\_173 2  
## 551 Puma\_concolor\_258 2  
## 552 Puma\_concolor\_47 2  
## 553 Rhynchotus\_rufescens\_76 2  
## 554 Saimiri\_collinsi\_207 2  
## 555 Saimiri\_ustus\_136 2  
## 556 Sciurillus\_pusillus\_136 2  
## 557 Sciurillus\_pusillus\_281 2  
## 558 Tamandua\_tetradactyla\_143 2  
## 559 Tamandua\_tetradactyla\_173 2  
## 560 Tamandua\_tetradactyla\_285 2  
## 561 Tapirus\_kabomani\_188 2  
## 562 Tapirus\_terrestris\_118 2  
## 563 Tapirus\_terrestris\_1633 2  
## 564 Tapirus\_terrestris\_188 2  
## 565 Tayassu\_pecari\_149 2  
## 566 Tayassu\_pecari\_1633 2  
## 567 Tayassu\_pecari\_173 2  
## 568 Tayassu\_pecari\_232 2  
## 569 Aburria\_cumanensis\_232 1  
## 570 Aburria\_cumanensis\_57 1  
## 571 Alouatta\_belzebul\_196 1  
## 572 Alouatta\_discolor\_47 1  
## 573 Alouatta\_guariba clamitans\_152 1  
## 574 Alouatta\_guariba\_142 1  
## 575 Alouatta\_macconnelli\_189 1  
## 576 Alouatta\_puruensis\_188 1  
## 577 Aotus\_infulatus\_151 1  
## 578 Aotus\_infulatus\_169 1  
## 579 Aotus\_nigriceps\_258 1  
## 580 Ateles\_chamek\_1633 1  
## 581 Ateles\_chamek\_259 1  
## 582 Atelocynus\_microtis\_136 1  
## 583 Atelocynus\_microtis\_1626 1  
## 584 Atelocynus\_microtis\_208 1  
## 585 Atelocynus\_microtis\_211 1  
## 586 Bradypus\_variegatus\_151 1  
## 587 bradypus\_variegatus\_211 1  
## 588 Bradypus\_variegatus\_211 1  
## 589 Bradypus\_variegatus\_213 1  
## 590 Bradypus\_variegatus\_274 1  
## 591 Cabassous\_unicinctus\_118 1  
## 592 Cabassous\_unicinctus\_221 1  
## 593 Cabassous\_unicinctus\_281 1  
## 594 Callicebus\_brunneus\_221 1  
## 595 Callicebus\_lugens\_189 1  
## 596 Callimico\_goeldii\_222 1  
## 597 Callithrix\_aurita\_142 1  
## 598 Callithrix\_jacchus\_142 1  
## 599 Canis\_familiaris\_148 1  
## 600 Canis\_familiaris\_152 1  
## 601 Canis\_familiaris\_274 1  
## 602 Cebuella\_pygmaea\_222 1  
## 603 Choloepus\_didactylus\_208 1  
## 604 Coendou\_prehensilis\_222 1  
## 605 Coendou\_prehensilis\_281 1  
## 606 Colinus\_cristatus\_169 1  
## 607 Crax\_alector\_60 1  
## 608 Cuniculus\_paca\_1810 1  
## 609 Cuniculus\_paca\_256 1  
## 610 Cuniculus\_paca\_284 1  
## 611 Cyclopes\_didactylus\_213 1  
## 612 Cyclopes\_didactylus\_259 1  
## 613 Dasyprocta\_azarae\_143 1  
## 614 Dasypus\_kappleri\_211 1  
## 615 Dasypus\_kappleri\_256 1  
## 616 Dasypus\_novemcinctus\_213 1  
## 617 Dasypus\_novemcinctus\_221 1  
## 618 Dasypus\_novemcinctus\_222 1  
## 619 Dasypus\_novemcinctus\_256 1  
## 620 Dasypus\_novemcinctus\_76 1  
## 621 Didelphis\_marsupialis\_47 1  
## 622 Eira\_barbara\_142 1  
## 623 Eira\_barbara\_151 1  
## 624 Eira\_barbara\_152 1  
## 625 Eira\_barbara\_1633 1  
## 626 Eira\_barbara\_210 1  
## 627 Eira\_barbara\_285 1  
## 628 Galictis\_vittata\_213 1  
## 629 Galictis\_vittata\_232 1  
## 630 Guerlinguetus\_aestuans\_118 1  
## 631 Guerlinguetus\_aestuans\_136 1  
## 632 Guerlinguetus\_aestuans\_189 1  
## 633 Hydrochoerus\_hydrochaeris\_118 1  
## 634 Hydrochoerus\_hydrochaeris\_210 1  
## 635 Hydrochoerus\_hydrochaeris\_211 1  
## 636 Lagothrix\_poeppigii\_274 1  
## 637 Leopardus\_pardalis\_1633 1  
## 638 Leopardus\_pardalis\_173 1  
## 639 Leopardus\_pardalis\_187 1  
## 640 Leopardus\_pardalis\_213 1  
## 641 Leopardus\_pardalis\_232 1  
## 642 Leopardus\_pardalis\_57 1  
## 643 Leopardus\_tigrinus\_169 1  
## 644 Leopardus\_tigrinus\_173 1  
## 645 Leopardus\_tigrinus\_259 1  
## 646 Leopardus\_tigrinus\_57 1  
## 647 Leopardus\_wiedii\_169 1  
## 648 Leopardus\_wiedii\_208 1  
## 649 Lontra\_longicaudata\_274 1  
## 650 Lontra\_longicaudis\_1633 1  
## 651 Lontra\_longicaudis\_259 1  
## 652 Lontra\_longicaudis\_274 1  
## 653 Mazama\_americana\_210 1  
## 654 Mazama\_nemorivaga\_136 1  
## 655 Mazama\_nemorivaga\_149 1  
## 656 Mazama\_nemorivaga\_1633 1  
## 657 Mazama\_nemorivaga\_284 1  
## 658 Mico\_emiliae\_47 1  
## 659 Mico\_melanurus\_208 1  
## 660 Microsciurus\_flaviventer\_57 1  
## 661 Myrmecophaga\_tridactyla\_118 1  
## 662 Myrmecophaga\_tridactyla\_188 1  
## 663 Myrmecophaga\_tridactyla\_208 1  
## 664 Myrmecophaga\_tridactyla\_211 1  
## 665 Myrmecophaga\_tridactyla\_222 1  
## 666 Myrmecophaga\_tridactyla\_256 1  
## 667 Myrmecophaga\_tridactyla\_258 1  
## 668 Myrmecophaga\_tridactyla\_281 1  
## 669 Myrmecophaga\_tridactyla\_47 1  
## 670 Nasua\_nasua\_172 1  
## 671 Nasua\_nasua\_207 1  
## 672 Nasua\_nasua\_241 1  
## 673 Nasua\_nasua\_258 1  
## 674 Nothocrax\_urumutum\_173 1  
## 675 Nothocrax\_urumutum\_208 1  
## 676 Odontophorus\_stellatus\_151 1  
## 677 Ortalis\_guttata\_256 1  
## 678 Ozotocerus\_bezoarticus\_1633 1  
## 679 Panthera\_onca\_151 1  
## 680 Panthera\_onca\_284 1  
## 681 Pauxi\_tuberosa\_188 1  
## 682 Pecari\_tajacu\_285 1  
## 683 Pecari\_tajacu\_60 1  
## 684 Pithecia\_irrorata\_136 1  
## 685 Priodontes\_maximus\_211 1  
## 686 Priodontes\_maximus\_213 1  
## 687 Priodontes\_maximus\_232 1  
## 688 Procyon\_cancrivorus\_1626 1  
## 689 Procyonidae\_281 1  
## 690 Puma\_concolor\_118 1  
## 691 Puma\_concolor\_151 1  
## 692 Puma\_concolor\_211 1  
## 693 Puma\_concolor\_232 1  
## 694 Puma\_concolor\_281 1  
## 695 Puma\_concolor\_60 1  
## 696 Puma\_yagouaroundi\_187 1  
## 697 Puma\_yagouaroundi\_208 1  
## 698 Puma\_yagouaroundi\_222 1  
## 699 Puma\_yagouaroundi\_232 1  
## 700 Puma\_yagouaroundi\_259 1  
## 701 Puma\_yagouaroundi\_281 1  
## 702 Rhynchotus\_rufescens\_148 1  
## 703 Saimiri\_boliviensis\_274 1  
## 704 Saimiri\_cassiquiarensis\_57 1  
## 705 Saimiri\_ustus\_151 1  
## 706 Saimiri\_ustus\_221 1  
## 707 Sapajus\_macrocephalus\_189 1  
## 708 Sapajus\_nigritus\_142 1  
## 709 Sciurillus\_pusillus\_188 1  
## 710 Speothus\_venaticus\_232 1  
## 711 Sylvilagus\_brasiliensis\_118 1  
## 712 Sylvilagus\_brasiliensis\_211 1  
## 713 Tamandua\_tetradactyla\_136 1  
## 714 Tamandua\_tetradactyla\_189 1  
## 715 Tamandua\_tetradactyla\_207 1  
## 716 Tamandua\_tetradactyla\_57 1  
## 717 Tapirus\_terrestris\_169 1  
## 718 Tapirus\_terrestris\_187 1  
## 719 Tapirus\_terrestris\_211 1  
## 720 Tapirus\_terrestris\_222 1  
## 721 Tapirus\_terrestris\_258 1  
## 722 Tapirus\_terrestris\_285 1  
## 723 Tayassu\_pecari\_1626 1  
## 724 Tayassu\_pecari\_1810 1  
## 725 Tayassu\_pecari\_207 1  
## 726 Tayassu\_pecari\_258 1  
## 727 Tayassuidae\_1633 1  
## 728 Tayassuidae\_259 1  
## 729 Tinamus\_major\_60 1  
## 730 Tinamus\_solitarius\_148 1  
## 731 Tinamus\_solitarius\_152 1

### Contagem de transectos

mydata %>%  
 distinct(nome\_UC, estacao\_amostral) %>%  
 count()

## # A tibble: 1 x 1  
## n  
## <int>  
## 1 105

### Esforço total

mydata %>%  
 summarize(sum(esforco, na.rm = TRUE)/1000)

## # A tibble: 1 x 1  
## `sum(esforco, na.rm = TRUE)/1000`  
## <dbl>  
## 1 14036.

### Cálculo de esforço anual por UC (Km)

esforco <- mydata %>%  
 group\_by(cnuc, ano) %>%  
 summarize(esforco = sum(esforco, na.rm = TRUE)/1000) %>%  
 filter(esforco > 149)

## `summarise()` has grouped output by 'cnuc'. You can override using the  
## `.groups` argument.

esforco

## # A tibble: 57 x 3  
## # Groups: cnuc [21]  
## cnuc ano esforco  
## <dbl> <dbl> <dbl>  
## 1 47 2016 151.  
## 2 118 2017 150   
## 3 118 2018 150   
## 4 118 2019 155   
## 5 151 2016 150   
## 6 151 2017 170   
## 7 169 2018 150   
## 8 169 2019 155   
## 9 173 2015 150   
## 10 173 2016 155   
## # ... with 47 more rows

##Seleção por critérios ### Selecionar UCs Seleção de UCs com mais de 1 ano de amostragem e mais de 149 km de esforço anual.

ucs\_selecionadas <- esforco %>%  
 group\_by(cnuc) %>%   
 count() %>%  
 filter(n > 1) %>%  
 pull(cnuc)  
ucs\_selecionadas

## [1] 118 151 169 173 187 188 208 211 213 222 232 256 259 274 281  
## [16] 1633 1810

### Filtrar

Filtrar dados mantendo somente UCs selecionadas

mydata <- mydata %>%  
 filter(cnuc %in% ucs\_selecionadas)  
mydata

## # A tibble: 16,665 x 17  
## cnuc nome\_UC estacao\_amostral nome\_ea esforco ano data hora\_inicio  
## <dbl> <chr> <dbl> <chr> <dbl> <dbl> <date> <time>   
## 1 118 Flona do~ 1 Fazenda 5000 2014 2014-04-25 06:18   
## 2 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 3 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 4 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 5 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 6 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 7 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 8 118 Flona do~ 1 Fazenda 5000 2014 2014-04-26 06:18   
## 9 118 Flona do~ 1 Fazenda NA 2014 2014-04-26 06:18   
## 10 118 Flona do~ 1 Fazenda NA 2014 2014-04-26 06:18   
## # ... with 16,655 more rows, and 9 more variables: hora\_fim <time>,  
## # classe <chr>, ordem <chr>, familia <chr>, genero <chr>, binomial <chr>,  
## # n\_animais <chr>, distancia <dbl>, populacao <chr>

Remover especies identificadas apenas ao nível de gênero

mydata <- mydata %>%  
 filter(! grepl('sp.', binomial))  
mydata

## # A tibble: 12,809 x 17  
## cnuc nome\_UC estacao\_amostral nome\_ea esforco ano data hora\_inicio  
## <dbl> <chr> <dbl> <chr> <dbl> <dbl> <date> <time>   
## 1 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 2 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 3 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 4 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 5 118 Flona do~ 1 Fazenda NA 2014 2014-04-25 06:18   
## 6 118 Flona do~ 1 Fazenda NA 2014 2014-04-26 06:18   
## 7 118 Flona do~ 1 Fazenda NA 2014 2014-04-26 06:18   
## 8 118 Flona do~ 1 Fazenda NA 2014 2014-04-27 06:20   
## 9 118 Flona do~ 1 Fazenda NA 2014 2014-04-27 06:20   
## 10 118 Flona do~ 1 Fazenda NA 2014 2014-04-27 06:20   
## # ... with 12,799 more rows, and 9 more variables: hora\_fim <time>,  
## # classe <chr>, ordem <chr>, familia <chr>, genero <chr>, binomial <chr>,  
## # n\_animais <chr>, distancia <dbl>, populacao <chr>

Esforço anual em km

esforco\_anual <- mydata %>%  
 group\_by(cnuc, ano) %>%  
 summarize(esforco = sum(esforco, na.rm = TRUE)) %>%  
 mutate(esforco = esforco/1000)

## `summarise()` has grouped output by 'cnuc'. You can override using the  
## `.groups` argument.

esforco\_anual

## # A tibble: 72 x 3  
## # Groups: cnuc [17]  
## cnuc ano esforco  
## <dbl> <dbl> <dbl>  
## 1 118 2014 25   
## 2 118 2015 30   
## 3 118 2016 70   
## 4 118 2017 85   
## 5 118 2018 120   
## 6 118 2019 120   
## 7 151 2016 105   
## 8 151 2017 125   
## 9 151 2018 80   
## 10 151 2019 118.  
## # ... with 62 more rows

Esforço anual em formato *wide* (QPEHE)

esforco\_anual\_wide <- esforco\_anual %>%  
 pivot\_wider(names\_from = ano, values\_from = esforco) %>%  
 select(cnuc,  
 `2014`,  
 `2015`,  
 `2016`,  
 `2017`,  
 `2018`,  
 `2019`  
 ) %>%  
 ungroup()  
esforco\_anual\_wide

## # A tibble: 17 x 7  
## cnuc `2014` `2015` `2016` `2017` `2018` `2019`  
## <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>  
## 1 118 25 30 70 85 120 120   
## 2 151 NA NA 105 125 80 118.  
## 3 169 NA NA 85 85 130 145   
## 4 173 NA 100 110 80 105 100   
## 5 187 10 80 90 125 120 125   
## 6 188 NA NA NA 30 100 75   
## 7 208 NA NA 120 125 155 130   
## 8 211 NA NA 30 75 80 110   
## 9 213 115 125 150 130 145 152.  
## 10 222 NA NA NA NA 140 125   
## 11 232 95 85 90 90 100 105   
## 12 256 NA NA NA 64.2 108. 104.  
## 13 259 50 225 285 405 320 340   
## 14 274 NA NA NA 50 95 65   
## 15 281 NA NA 145 110 90 100   
## 16 1633 NA NA NA 40 140 130   
## 17 1810 NA NA NA NA 120 NA