

Draft Version

Target Shorebird Species List

The target species list (species to be surveyed) should not change over the course of the study, therefore determining the target species list is an important project design task. Because waterbirds, including shorebirds, can occur in very high numbers in a census area, it is often not possible to count all species without compromising the quality of the survey data. For the basic shorebird census program (protocol 1), we recommend counting all shorebirds (sub-Order Charadrii), all raptors (hawks, falcons, owls, etc.), Common Ravens, and American Crows. This list of species is available on our field data forms, which can be downloaded from this site, and as a drop-down list on our online data entry form. If a very rare species occurs on a shorebird area survey, the species will need to be submitted with good documentation as a narrative note with the survey data. Project goals that could preclude counting all species include surveys designed to search for color-marked birds or post-breeding season counts of age-classed bird to obtain age ratios for a species.

When conducting a census, you should identify as many of the shorebirds as possible to species; sometimes, however, this is not possible. For example, dowitchers often cannot be separated under censuses conditions, and at a distance or under poor lighting, it may not be possible to distinguish some species such as small *Calidris* sandpipers. We have provided codes for species combinations that commonly are reported on censuses. Combined codes are still species-specific and you should use the code that provides as much information as possible about the potential species combination you designate. We have avoided ambiguous species combination such as “peeps” which are used loosely to designate various combinations of *Calidris* spp.

For example, on a wetland that supports Willets, Long-billed Curlews, and Marbled Godwits, you might see a tightly-packed roosting flock of 100 large shorebirds. By plumage color you can pick out the 37 Willets in the flock, but distinguishing characteristics are too hidden to identify the remaining birds. You should record 37 Willets (code WILL) and 63 Curlews/Godwits (code XCGO), rather than recording 100 large unidentified sandpipers (code XWCG or XWNG).

These are the species and species combinations and their codes for protocol 1 area surveys:

ospr Osprey ... *Pandion haliaetus*
wtki White-tailed Kite ... *Elanus caeruleus*
baea Bald Eagle ... *Haliaeetus leucocephalus*

noha Northern Harrier ... *Circus cyaneus*
ssha Sharp-shinned Hawk ... *Accipiter striatus*
coha Cooper's Hawk ... *Accipiter cooperi*
rsha Red-shouldered Hawk ... *Buteo lineatus*
bwba Broad-winged Hawk *Buteo platypterus*
swba Swainson's Hawk ... *Buteo swainsoni*
rtha Red-tailed Hawk ... *Buteo jamaicensis*
feha Ferruginous Hawk ... *Buteo regalis*
rlha Rough-legged Hawk ... *Buteo lagopus*
goea Golden Eagle ... *Aquila chrysaetos*
amke American Kestrel ... *Falco sparverius*
merl Merlin ... *Falco columbarius*
pefa Peregrine Falcon ... *Falco peregrinus*
prfa Prairie Falcon ... *Falco mexicanus*

bbpl Black-bellied Plover ... *Pluvialis squatarola*
amgp American Golden-Plover ... *Pluvialis dominica*
pagp Pacific Golden-Plover ... *Pluvialis fulva*
legp American or Pacific Golden-Plover ... *Pluvialis dominica*
snpl Snowy Plover ... *Charadrius alexandrinus*
wipl Wilson's Plover ... *Charadrius wilsonia*
sepl Semipalmated Plover ... *Charadrius semipalmatus*
crpl Common Ringed Plover ... *Charadrius leschenaultii*
pipl Piping Plover ... *Charadrius melodus*
kill Killdeer ... *Charadrius vociferus*
mopl Mountain Plover ... *Charadrius montanus*
eudo Eurasian Dotterel ... *Charadrius morinellus*
amoy American Oystercatcher ... *Haematopus palliatus*
bloy Black Oystercatcher ... *Haematopus bachmani*
bnst Black-necked Stilt ... *Himantopus mexicanus*
amav American Avocet ... *Recurvirostra americana*
grye Greater Yellowlegs ... *Tringa melanoleuca*
leye Lesser Yellowlegs ... *Tringa flavipes*
xyel unidentified yellowlegs ... *Tringa* spp.
wosa Wood Sandpiper ... *Tringa glareola*
sosa Solitary Sandpiper ... *Tringa solitaria*
will Willet ... *Catoptrophorus semipalmatus*
wata Wandering Tattler ... *Heteroscelus incanus*
spsa Spotted Sandpiper ... *Actitis macularia*
upsa Upland Sandpiper ... *Bartramia longicauda*
whim Whimbrel ... *Numenius phaeopus*
btcu Bristle-thighed Curlew ... *Numenius tahitiensis*
lbcu Long-billed Curlew ... *Numenius americanus*
xnum Whimbrel or Long-billed Curlew ... *Numenius* spp.
hugo Hudsonian Godwit ... *Limosa haemastica*
btgo Bar-tailed Godwit ... *Limosa lapponica*
mago Marbled Godwit ... *Limosa fedoa*
xcgo Curlew/Godwit ... *Numenius americanus/Limosa fedoa*
xwgc Curlew/Whimbrel/Godwit ... *Numenius* spp./*Limosa fedoa*
xwng Willet/Godwit/Curlew/Whimbrel ... unidentified large sandpiper
rutu Ruddy Turnstone ... *Arenaria interpres*
bltu Black Turnstone ... *Arenaria melanocephala*
surf Surf-bird ... *Aphriza virgata*
rekn Red Knot ... *Calidris canutus*
sand Sanderling ... *Calidris alba*
sesa Semipalmated Sandpiper ... *Calidris semipalmatus*
wesa Western Sandpiper ... *Calidris mauri*

rnst Red-necked Stint ... *Calidris ruficollis*
 lesa Least Sandpiper ... *Calidris minutilla*
 xsls Semipalmated or Least Sandpiper ... *Calidris* spp. 1
 xwls Western or Least Sandpiper ... *Calidris* spp. 2
 wrsa White-rumped Sandpiper ... *Calidris fuscicollis*
 basa Baird's Sandpiper ... *Calidris bairdii*
 pesa Pectoral Sandpiper ... *Calidris melanotos*
 spts Sharp-tailed Sandpiper ... *Calidris acuminata*
 pusa Purple Sandpiper ... *Calidris maritima*
 rosa Rock Sandpiper ... *Calidris ptilocnemis*
 dunl Dunlin ... *Calidris alpina*
 xwsd Western Sandpiper/Dunlin ... *Calidris* spp. 3
 xwld Western/Least/Dunlin ... *Calidris* spp. 4
 wcal Western/Least/Dunlin/Sanderling ... *Calidris* spp. 5
 xsms Calidrid/Charadriid Plover ... unidentified small shorebird
 cusa Curlew Sandpiper ... *Calidris ferrugenea*
 stsa Stilt Sandpiper ... *Calidris himantopus*
 bbsa Buff-breasted Sandpiper ... *Tryngites subruficollis*
 ruff Ruff (or Reeve) ... *Philomachus pugnax*
 sbdo Short-billed Dowitcher ... *Limnodromus griseus*
 lbdo Long-billed Dowitcher ... *Limnodromus scolopaceus*
 xdown unidentified dowitcher species ... *Limnodromus* spp.
 xmss Black-bellied Plover/dowitcher/knot ... unidentified medium-sized
 shorebird
 wisn Wilson's Snipe ... *Gallinago delicata*
 amwo American Woodcock ... *Scolopax minor*
 wiph Wilson's Phalarope ... *Phalaropus tricolor*
 rnph Red-necked Phalarope ... *Phalaropus lobatus*
 xwrp Wilson's/Red-necked Phalarope ... *Phalaropus* spp. 1
 reph Red Phalarope ... *Phalaropus fulicaria*
 xrrp Red-necked/Red Phalarope *Phalaropus* spp. 2
 xphl unid Phalarope spp. ... *Phalaropus* spp. 3

 cora Common Raven ... *Corvus corax*
 amcr American Crow ... *Corvus brachyrhynchos*

A species that you previously might not have been counting may enter or greatly increase in number in your study area and begin to have an unanticipated impact on your target species' ecosystem. You will want to add the species to the current study's target list, which you can do by either: 1) ending the earlier project protocol and start a new one with the augmented list of target species (the new protocol may be identical with the old in all but the target species list), or 2) starting a new, separate protocol for the additional species (with all other survey protocols the same as for the original study). The long-term value of the data you collect (past a time when you will be available to explain when species were added or dropped from the target list) will be greatly increased if there is no ambiguity between a lack of data and zero counts. In the narrative description for new protocols, if appropriate, you

can mention that the species' past status in the study area was mostly absent or occurring in very low numbers.