

Waterbird Intertidal Habitat Use: Scan Sampling Protocol

1. FILL OUT TOP OF SCAN SAMPLING DATASHEET:

- **Date and Site Name.**
- **Names of Observer and Data Recorder**
- **Scan Start Time** in military time (e.g., 0930 or 1445)

2. **CONDUCT SCAN SAMPLING:** With your binoculars or spotting scope, **scan your habitat patch from one side to the other.** Please record only birds within the habitat patch, using any landmarks as visual references. Ignore birds in flight and outside the habitat patch boundary. If you aren't sure if the bird is within the habitat patch, please record it. Record the following information for every bird (or group of birds sharing a behavior):

- **Habitat type:** *Eelgrass or Unvegetated*
- **Sub-habitat type:** *Dry, Edge of water, Wet, or Pool*
- **Functional Group:** *Waterfowl* (geese, ducks), *Herons* (herons, egrets), *Vultures* (vultures, raptors), *Rails* (coots), *Shorebirds* (sandpipers, plovers, etc.), *Gulls* (gulls, terns), or *Corvids* (crows, ravens)
- **Number of individuals:** Record number of individuals in group sharing a behavior.
- **Species:** ID species to the best of your ability using species codes provided. Note unusual sightings or individuals not identified to species in Notes/Comments.

For **large flocks of more than 10 birds**, please record your “best” estimate in the # column and include “minimum” and “maximum” estimates in the Notes/Comments.

3. **RECORD SCAN STOP TIME.** Please use military time (e.g., 0945 or 1500). Scan sampling is a snapshot of bird habitat use and activity patterns, so scans may last only 5-10 minutes, depending on numbers of birds. However, the time spent on scan sampling will likely depend on site location, season, bird activity, and other factors. Let us know if you have concerns about scans being too long or too short.

4. **RECORD WEATHER AND OTHER SURVEY CONDITIONS DURING OBSERVATIONS:**

- **Scan Conditions:** circle the word that best describes weather conditions, windiness, precipitation, sea state, and tidal movement during your scan.
- **Visibility Conditions:** Briefly describe visibility conditions, particularly if reduced visibility is an impediment to identifying birds during your scan.
- **Human Activity:** Indicate level of human activity during your scan by recording the number in each category provided. If there was no activity, check ‘no activity.’
- **Raptor Activity:** record any raptors observed during your scan, including species and number, and how they may have affected any waterbirds.
- **Observation Equipment:** Circle equipment type/record magnifications used during scan.
- **Notes and Comments:** After the scan, please provide any further information which you feel is important or of interest, e.g. notes on unidentified species, details on rarity sightings, or notes on disturbances, etc.

Waterbird Intertidal Habitat Use: *Focal Sampling Protocol*

5. CONDUCT FOCAL ANIMAL SAMPLING: With your binoculars or spotting scope, observe a focal individual in at least one of the habitat types. Your observations will form activity budgets for individual birds as well as various species of birds using both types of intertidal habitats. Record only behaviors observed within that habitat patch. Observe a focal individual in the other habitat type if you wish.

6. FILL OUT TOP OF FOCAL SAMPLING DATASHEET

- **Date and Site.**
- **Names of Observer and Data Recorder**
- **Species observed and Habitat**

7. CONDUCT FOCAL ANIMAL SAMPLING

- **Select an individual in a habitat patch**
- **Observe its behavior over a 5 minute period (or until it leaves the patch).**
- **Record times at which it changes from one behavior category to another**
 - The start time of the next behavior serves as the start time of the next behavior.
 - Use hour:minute:second or stopwatch time (minutes:seconds from 00:00-5:00)
- **Select another individual (if you have the time and desire; record habitat type)**

Below are the categories of behaviors to be recorded. Become familiar with these categories and the data sheet.

Ethogram (Categories of Bird Use Behavior)

Behavior	Definition
Rest/roost (R):	Bird stationary; bird may visually scan surroundings rather than ground
Preen (P):	Bird uses its feet or bill to scratch its body or manipulate its skin or feathers
Move (M):	Bird walks, swims, or takes brief flight but remains in sampling area.
Feed/Forage (F):	Bird stationary or walking; bird may be obtaining food (probing, digging with bill, capturing prey) or actively searching ground with head at or below body level
Leave (L):	Bird leaves sampling area.
Other (O):	Any other behavior not previously described, such as interacting with another bird. Include behavior description in Notes/Comments.

SCAN CONDITIONS (Circle the appropriate conditions for each row)

WEATHER	CLEAR	PARTLY CLOUDLY		OVERCAST	FOGGY	
WINDINESS	CALM	LIGHT AIR	LIGHT BREEZE	GENTLE BREEZE	MODERATE BREEZE	FRESH BREEZE
PRECIPITATION	NONE	RAIN		SNOW		
SEA STATE	CALM	RIPPLED		CHOPPY	WAVY	ROUGH
TIDE MOVEMENT	RISING	FALLING		UNKNOWN		

WINDINESS Categories:

Calm (<1 mph): smoke rises vertically; mirror-like surface to water

Light air (1-3 mph): smoke drifts; scaly ripples on water, no foam crests

Light breeze (4-7 mph): felt on face, leaves rustle; wavelets, crests glassy, no white caps

Gentle breeze (8-12 mph): leaves in constant motion; large wavelets, scattered white caps

Moderate breeze (13-18 mph): leaves rise; branches move; small waves 1-4 ft., white caps

Fresh breeze (19-24 mph): small trees sway; 4-8 ft. waves, many whitecaps and some spray

Strong breeze (25-30 mph): large branches moving; large 8-13 ft. waves, white caps common and spray

(Do not conduct surveys when wind speed is consistently >24 mph).

VISIBILITY (*Describe visibility conditions*):

HUMAN ACTIVITY (Record NUMBER of shoreline users in the following categories):

No Activity
 Walkers
 Power Boats
 Unpowered Boats
 Dogs
 Other (describe): _____

RAPTOR ACTIVITY (Record NUMBER and SPECIES of raptors observed during scan):

#	<i>species</i>	<i>notes on how it affected the birds</i>
#	<i>species</i>	<i>notes on how it affected the birds</i>
#	<i>species</i>	<i>notes on how it affected the birds</i>

SURVEY EQUIPMENT (Circle equipment type and magnification (e.g. "8x" or "20-60x")):

BINOCULARS _____ SPOTTING SCOPE _____
magnification
magnification

Waterbird Intertidal Habitat Use Scan Sampling Datasheet

Date: _____ Observer: _____ Data Recorder: _____

Site Name: _____

Scan Start Time: _____ Scan Stop Time: _____

Habitat	Sub-habitat	Functional Group	#	Species	Behavior	NOTES/COMMENTS	
[E , U]	[D, E, W, P]	[W, H, V, R, S, G, C]			[R, P, M, F]		
<i>Examples</i>	<i>E</i>	<i>P</i>	<i>Herons or H</i>	<i>1</i>	<i>GBHE</i>	<i>R</i>	<i>Zzzzzzzz</i>
	<i>E</i>	<i>D</i>	<i>Corvids or C</i>	<i>2</i>	<i>AMCR</i>	<i>M</i>	<i>Hopping on eelgrass</i>
	<i>U</i>	<i>E</i>	<i>Shorebirds or S</i>	<i>6</i>	<i>?</i>	<i>F</i>	<i>Probing in mudflat</i>
	<i>U</i>	<i>D</i>	<i>Gulls or G</i>	<i>1</i>	<i>GWGU</i>	<i>F</i>	<i>Caught crab in mudflat</i>

Notes/Comments:

DATASHEET CODES

Habitat:

E = Eelgrass
U = Unvegetated

Sub-Habitat:

D = Dry
E = Edge of Water
W = Water
P = Pool

Functional group:

Waterfowl (geese, ducks)
Herons (herons, egrets)
Vultures (vultures, raptors)
Rails (coots)
Shorebirds (sandpipers, plovers)
Gulls (gulls, terns)
Corvids (crows, ravens)

Behavior:

R = Resting
M = Moving
F = Foraging

Species (4-letter AOU code):

Waterfowl

BRAN (Brant)
CACG (Cackling goose)
CANG (Canada goose)
SNGO (Snow goose)
GADW (Gadwall)
AMWI (American wigeon)
EUWI (Eurasian wigeon)
NSHO (Northern shoveler)
NOPI (Northern pintail)
MALL (Mallard)
CITE (Cinnamon teal)
AGWT (Am. Green-winged Teal)
HADU (Harlequin duck)

Herons/Egrets

GRBH (Great blue heron)
GREG (Great egret)

Vultures/Raptors

TUVU (Turkey vulture)
OSPR (Osprey)
BAEA (Bald eagle)

Rails

AMCO (American coot)

Shorebirds

BBPL (Black-bellied plover)
SEPL (Semipalmated plover)
KILL (Killdeer)
SPSA (Spotted sandpiper)
GRYE (Greater yellowlegs)
WHIM (Whimbrel)
LBCU (Long-billed curlew)
MAGO (Marbled godwit)
BLTU (Black turnstone)
REKN (Red knot)
SAND (Sanderling)
DUNL (Dunlin)
LESA (Least sandpiper)
WESA (Western sandpiper)
UNDO (Unidentified dowitcher)
RNPH (Red-necked phalarope)

Gulls/Terns

BOGU (Bonaparte's gull)
MEWG (Mew gull)
RBGU (Ring-billed gull)
WEGU (Western gull)
CAGU (California gull)
HEEG (Heermann's gull)
HERG (Herring gull)
THGU (Thayer's gull)
GWGU (Glaucous-winged gull)
UNLG (Unidentified *Larus* gull)
CATE (Caspian tern)

Corvids

AMCR (American crow)
CORA (Common raven)

