



Alaska Landbird Monitoring Survey (ALMS)

Revision of Habitat Protocols

Topics addressed in new revision

- **Wetlands**
- **Disturbance**
- **Exotic plants**
- **Forest structure**
- **Topography**
- **Habitat mosaics**
- **Clarify objectives of habitat data collection**

Objectives

- Use habitat data to relate population trends to changes in habitat if they occur
- Develop habitat models so that we can predict/describe bird distributions based on habitats
- Collect habitat data useful for land managers in the field.

Wetlands

- Data previously collected were not sufficient to designate wetland habitats
- Added National Wetlands Inventory (NWI) classification to data collected
- Provided NWI Key and list of indicator species



National Wetlands Inventory Key

- Follows NWI classifications
- Most habitats described to NWI's System level
- Palustrine system subdivided into Classes consistent with NWI classifications
- Key based on habitat qualities observers can distinguish in the field without additional measurements



Alaska Landbird Monitoring Survey

National Wetlands Inventory Reference Sheet

NATIONAL WETLANDS INVENTORY (NWI) KEY

1. Water is dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. This area is at least periodically saturated with or covered by water. This includes shorelines where no vegetation occurs due to erosion or wave action. If soil is not covered or saturated at this time, presence of obligate wetland plant species indicates presence of a wetland. (See below for list of obligate and facultative wetland indicator plants.) This IS a wetland. Go to 2.
1. Above is not true. This is NOT a wetland. NWI=NA.
2. Saltwater or tidal influence is present. Go to 3.
2. Saltwater or tidal influence is not present. Go to 4.
3. Saltwater is not substantially diluted by freshwater at this location. SYSTEM=MARINE (NWI=M).
3. Saltwater is substantially diluted by freshwater runoff from the land, especially at the mouth of larger streams and rivers. SYSTEM=ESTUARINE (NWI=E).
4. Water flows and is contained within a channel. SYSTEM=RIVERINE (NWI=R).
4. Water is not contained in a channel, and appears to flow very slowly or not at all. This includes dammed rivers or streams. Go to 5.
5. Persistent emergent vegetation cover \geq 30%. SYSTEM=PALUSTRINE (See PALUSTRINE CLASSES for NWI code).
5. Persistent emergent vegetation cover $<$ 30%. Go to 6.
6. Area $>$ 8 ha or water depth $>$ 2 m or wave-formed or bedrock shoreline present. SYSTEM=LACUSTRINE (NWI=L).
6. Area $<$ 8 ha and water depth $<$ 2 m and no wave-formed or bedrock shoreline present. SYSTEM=PALUSTRINE (See PALUSTRINE CLASSES below).

National Wetland Inventory Codes*	
System	Code
MARINE	M
ESTUARINE	E
RIVERINE	R
LACUSTRINE	L
PALUSTRINE	See below

* Modified from NWI Codes (USFWS 2004)

PALUSTRINE CLASSES			
Vegetation	Name	Description	Code
Persistent emergent vegetation cover \geq 30%	Forested Wetland	Trees ($>$ 6 m tall) cover \geq 30% of area.	PFO
	Scrub-shrub Wetland	Trees ($>$ 6 m tall) alone cover $<$ 30% of area, but with shrubs cover \geq 30% of area.	PSS
	Emergent Wetland	Emergent vegetation dominated by graminoids or forbs.	PEM
	Moss-Lichen Wetland	Emergent vegetation dominated by mosses or lichens.	PML
	Aquatic Bed	Vegetation submerged or floating on surface of water.	PAB
Cover $<$ 30%	Unvegetated Shore/Bottom	Substrate of shore or bottom predominantly covered by rock, stones, organic material, or other unconsolidated matter.	PUB

Wetland Indicator Species Lists

- Derived from NWI list of regional wetland indicators (FWS 2004)
- Obligate wetland indicators estimated probability of occurring in a wetland >99%
- Facultative wetland indicators estimated probability of occurring in a wetland 67-99%

ALMS: National Wetlands Inventory reference sheet

XII-2

Obligate Wetland Indicators (WETLAND LIKELY PRESENT)			
Family	Scientific Name (synonym)	Common Name	
Brassicaceae—Mustard	<i>Cardamine pratensis</i>	Meadow bitter-cress	
Cyperaceae—Sedge	<i>Carex aquatilis</i>	Water sedge	
	<i>Carex pauciflora</i>	Few-flowered sedge	
	<i>Carex pluriflora</i>	Several-flowered sedge	
	<i>Carex rostrata</i>	Beaked sedge	
	<i>Carex sitchensis</i>	Sitka sedge	
	<i>Eriophorum angustifolium</i>	Narrow-leaf cottongrass	
	<i>Trichophorum caespitosum</i>	Tufted bulrush	
	<i>Scirpus microcarpus</i>	Small-fruit bulrush	
	Droseraceae—Sundew	<i>Drosera</i> spp.	Sundews
	Ericaceae—Heath	<i>Andromeda polifolia</i>	Bog rosemary
<i>Kalmia microphylla</i>		Alpine bog laurel	
<i>Vaccinium oxycoccos</i>		Small cranberry	
	<i>(Oxycoccos microcarpus)</i>	Bog cranberry	
Hippuridaceae—Mare's-tail	<i>Hippuris vulgaris</i>	Common mare's-tail	
Lentibulariaceae—Bladderwort	<i>Pinguicula villosa</i>	Hairy butterwort	
Menyanthaceae—Buckbean	<i>Menyanthes trifoliata</i>	Buckbean	
Myricaceae—Bayberry	<i>Myrica gale</i>	Sweetgale	
Ranunculaceae—Buttercup	<i>Caltha palustris</i>	Common marsh-marigold	
	<i>Ranunculus lapponicus</i>	Lapland buttercup	
	<i>Ranunculus pallasii</i>	Pallas' buttercup	
	<i>Comarum palustre</i>	Purple marshlocks	
Rosaceae—Rose	<i>(Potentilla palustris)</i>	Marsh cinquefoil	

Facultative Wetland Indicators (WETLAND MAY BE PRESENT, ESPECIALLY IF MORE THAN ONE SPECIES OCCURS)		
Family	Scientific Name (synonym)	Common Name
Asteraceae—Aster	<i>Petasites frigidus</i>	Arctic sweet coltsfoot
	<i>Senecio congestus</i>	Marsh groundsel
Cyperaceae—Sedge	<i>Eriophorum vaginatum</i>	Tussock cottongrass
Ericaceae—Heath	<i>Chamaedaphne calyculata</i>	Leatherleaf
	<i>Kalmia polifolia</i>	Pale laurel
	<i>Ledum decumbens</i>	Narrow-leaf Labrador tea
	<i>Ledum groenlandicum</i>	Greenland Labrador tea
Juncaceae—Rush	<i>Juncus</i> spp.	Rushes
Menyanthaceae—Buckbean	<i>Nephrrophyllidium crista-galli</i>	Deer-cabbage
	<i>(Fauria crista-galli)</i>	
Onagraceae—Evening primrose	<i>Circaea alpina</i>	Small enchanter's nightshade
Pinaceae—Pine	<i>Larix laricina</i>	American larch
	<i>Picea mariana</i>	Black spruce
	<i>Ranunculus occidentalis</i>	Western buttercup
Ranunculaceae—Buttercup	<i>Rubus chamaemorus</i>	Cloudberry
Rosaceae—Rose	<i>Sanguisorba canadensis</i>	Canada bumet



Disturbance

- Previously recorded three types of disturbance
 - Fire
 - Logging
 - Wind
- Previously recorded no information severity or timing of the disturbance

Disturbance

- Expanded types of disturbance recorded
 - Insect damage
 - Beaver ponds
 - Beaver cuttings
 - Other animal activity
 - Fire
 - Flooding
 - Wind
 - Landslide/Avalanche
 - Logging
 - Roads
 - Other human disturbances
 - Other
- Incorporated length of time since disturbance
- Incorporated severity of disturbance

Exotic plants

Marta Mueller



Bird Vetch

William S. Justice



White Sweetclover

Corlene Rose



Canada Thistle

- Added a section to list exotic plant species found on the study plot

Forest Structure

- Forest structure
 - Size class and % cover of largest trees
- Coniferous and deciduous snags
- Logs

Topography

- **Topographic Position**
 - **Summit**
 - **Ridge**
 - **Highslope**
 - **Lowslope**
 - **Midslope**
 - **Basin**
 - **Valley**
 - **Plain**



Topography

- **Local Features**
 - **Step in slope**
 - **Cutbank**
 - **Dunes**
 - **Floodplain**
 - **Cliff/Rock face**
 - **Alluvia/Moraine**
 - **Other**



Habitat mosaics

- When to lump and when to split?

Guidelines for mosaics

- Minimum patch size of 400 m²
- Wetland minimum 10 m wide
- Interdigitated mosaics of two vegetation types = one habitat

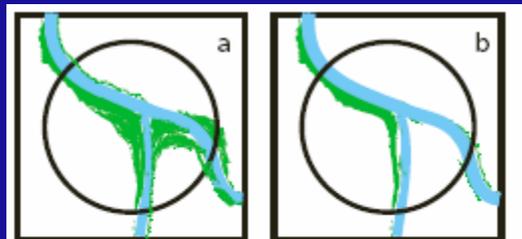
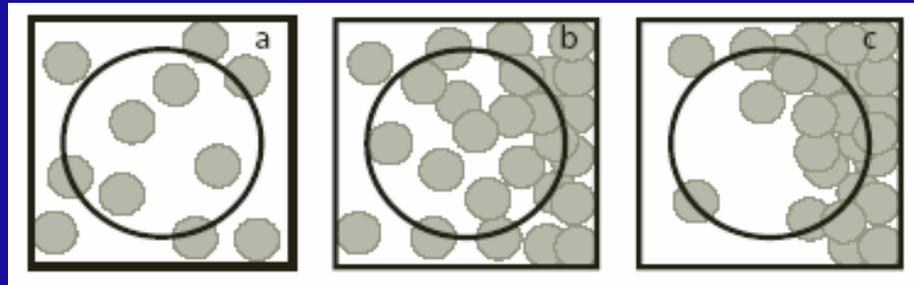


Fig. 5. Examples of streams with vegetated wetlands along banks crossing 50-m survey circle.

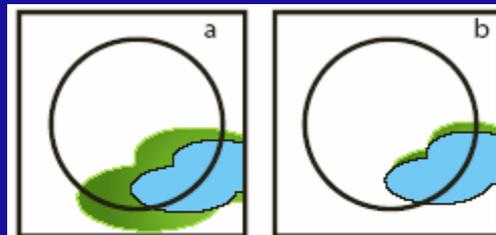


Fig. 4. Examples of water bodies with vegetated margins of varying widths in 50-m survey circle.

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