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Data Sheets

Wetland Functions & Values Form

Wetland I.D. Forest Project: Hatcher's Pass Assessed by: EMC
 Cowardin Class: PFO4B Ecology Category: Local Rating: Low Wetland size: Date: 9/15/08

Function/Value	Occurrence		Rationale	Principal Function(s)	Comments
	Y	N			
Flood Flow Alteration	X		Wetland is not a closed depressional system, but does have dense woody vegetation	X	Area is adjacent to flatter, wetter area and potentially can store more water in high precip years
Sediment Removal		X	No deepwater habitat present; no sediment deposits		
Nutrient & Toxicant Removal	X		Flooding is seasonal; at least 30% cover is herbaceous		
Erosion Control & Shoreline Stabilization		X	trees and shrubs present, but does not border watercourse directly		
Production of Organic Matter and its Export	X		high degree of plant community structure and species rich.	X	
General Habitat Suitability	X		wetland is fragmented by road; adjacent uplands have some development; high diversity	X	
Habitat for Aquatic Invertebrates		X	no evidence of seasonal inundation; no aquatic bed veg; stream nearby but no ponded areas		
Habitat for Amphibians		X	no evidence of standing water		
Habitat for Wetland-Associated Mammals		X	no evidence of permanent water or mammals; no banks for denning;		
Habitat for Wetland-Associated Birds	X		many chickadees in spruce trees, but no other bird habitat observed		
General Fish Habitat		X	No watercourse in wetland		
Native Plant Richness			N/A		
Educational or Scientific Value			N/A		
Uniqueness and Heritage			N/A		

Wetland Functions & Values Form

Wetland I.D. Herb Meadow Project: Hatcher's Pass Assessed by: EMC
 Cowardin Class: PEMIC Ecology Category: Local Rating: Moderate Wetland size: Date: 9/15/08

Function/Value	Occurrence		Rationale	Principal Function(s)	Comments
	Y	N			
Flood Flow Alteration	X		no adjacent water course; sheet flow occurs;		
Sediment Removal	X		slow moving water not present; no true ponding occurs; some sediment deposits observed		
Nutrient & Toxicant Removal	X		wetland may provide long duration of retention; mineral soil present	X	
Erosion Control & Shoreline Stabilization		X	no true adjacent watercourse		
Production of Organic Matter and its Export	X		dense herbaceous vegetation; species rich; inundation	X	
General Habitat Suitability	X		wetland is connected with other habitat types; evidence of animal activity	X	
Habitat for Aquatic Invertebrates		X	no floating aquatic veg or areas of standing water		
Habitat for Amphibians		X	no floating aquatic veg or areas of standing water		
Habitat for Wetland-Associated Mammals	X		evidence of animal activity	X	
Habitat for Wetland-Associated Birds	X		birds noted in areas adjacent with shrubs		
General Fish Habitat		X	no true adjacent watercourse		
Native Plant Richness			N/A		
Educational or Scientific Value			N/A		
Uniqueness and Heritage			N/A		

Wetland Functions & Values Form

Wetland I.D. Pond Project: Hatcher's Pass Assessed by: EMC
 Cowardin Class: POW Ecology Category: Local Rating: high Wetland size: Date: 9/15/08

Function/Value	Occurrence		Rationale	Principal Function(s)	Comments
	Y	N			
Flood Flow Alteration	X		ponds occur in upper alpine bowls. constricted outflow	X	watercourse runs through ponds
Sediment Removal	X		deepwater habitat present; ponding occurring		
Nutrient & Toxicant Removal	X		wetland provides long duration for water retention		
Erosion Control & Shoreline Stabilization	X		dense herbaceous vegetation line shore; no evidence of erosion	X	
Production of Organic Matter and its Export	X		willows and herbaceous veg present; wetland has outlet	X	
General Habitat Suitability	X		areas surrounding ponds are undeveloped; and high interspersions of cowardin types		
Habitat for Aquatic Invertebrates	X		permanent inundation present; various water depths; stream runs through ponds	X	
Habitat for Amphibians		X	standing water but no sedges or floating aquatic plants;		
Habitat for Wetland-Associated Mammals	X		permanent water present; beaver-created ponds	X	
Habitat for Wetland-Associated Birds		X	no aquatic bed classes or emergents; no sand bars or mud flats		
General Fish Habitat	X		wetland has perennial stream associated with it; open water may not freeze over-winter;	X	herbaceous vegetation present
Native Plant Richness			N/A		
Educational or Scientific Value			N/A		
Uniqueness and Heritage			N/A		

Wetland Functions & Values Form

Wetland I.D. Sphagnum Bog Project: Hatcher's Pass Assessed by: EMC
 Cowardin Class: PEMIC, PSSIC Ecology Category: Local Rating: high Wetland size: Date: 9/15/08

Function/Value	Occurrence		Rationale	Principal Function(s)	Comments
	Y	N			
Flood Flow Alteration	×		in flat area with dense woody vegetation;	×	one area has watercourse, the other has groundwater input
Sediment Removal	×		some ponding occurs in wetland; interspersions of water and veg is high	×	sediment deposits observed
Nutrient & Toxicant Removal	×		evidence of water retention; live dense vegetation present; fine-grained sediments	×	
Erosion Control & Shoreline Stabilization	×		dense herbaceous and woody vegetation; some shoreline		
Production of Organic Matter and its Export	×		high interspersions of vegetation and water; wetland is inundated for extended periods of year	×	
General Habitat Suitability		×	surrounding uplands generally not developed; not many signs of wildlife.		
Habitat for Aquatic Invertebrates	×		some aquatic bed evident; stream nearby in one location;		
Habitat for Amphibians	×		some standing water or floating aquatic vegetation		
Habitat for Wetland-Associated Mammals		×	no evidence of mammal use		
Habitat for Wetland-Associated Birds	×		forested and scrub-shrub areas adjacent.	×	
General Fish Habitat	×		watercourse present	×	
Native Plant Richness			N/A		
Educational or Scientific Value			N/A		
Uniqueness and Heritage			N/A		

Wetland Functions & Values Form

Wetland I.D. Willow Thicket Project: Hatcher's Pass Assessed by: EMC
 Cowardin Class: PSS/EM1C, PSS1B Ecology Category: Local Rating: Moderate Wetland size: Date: 9/15/08

Function/Value	Occurrence		Rationale	Principal Function(s)	Comments
	Y	N			
Flood Flow Alteration	×		wetland on slope; floodwaters come as sheet flow and dense woody vegetation is present	×	
Sediment Removal		×	deepwater habitat not present; no ponding or sediment deposits		
Nutrient & Toxicant Removal		×	wetland cannot provide water retention		
Erosion Control & Shoreline Stabilization		×	although adjacent to watercourse, any flooding would destabilize the sloped wetland		
Production of Organic Matter and its Export	×		woody plants and dense herbaceous plants present; high degree of plant structure/species richness		
General Habitat Suitability	×		Evidence of game observed (scat and game trails);	×	surrounding areas are undeveloped
Habitat for Aquatic Invertebrates	×		area is immediately adjacent a stream; and is inundated;		
Habitat for Amphibians	×		areas of inundation; thin-stemmed emergents	×	
Habitat for Wetland-Associated Mammals	×		inundated; observed/small mammals observed by voice (pika?)	×	
Habitat for Wetland-Associated Birds	×		no shallow, open water; but scrub shrub areas present;		
General Fish Habitat		×	no observation of fish or spawning areas		
Native Plant Richness			N/A		
Educational or Scientific Value			N/A		
Uniqueness and Heritage			N/A		

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Explanation and Functions and Values

Criteria Used to Evaluate Wetland Habitats

Flood Flow Alteration (Storage and Desynchronization)

1. Wetland occurs in the upper portion of its watershed.
2. Wetland is in a relatively flat area and is capable of retaining higher volumes of water during storm events, than under normal rainfall conditions.
3. Wetland is a closed (depressional) system.
4. If flow-through, wetland has constricted outlet with signs of fluctuating water levels, algal mats, and/or lodged debris.
5. Wetland has dense woody vegetation.
6. Wetland receives floodwater from an adjacent water course.
7. Floodwaters come as sheet flow rather than channel flow.

Sediment Removal

1. Sources of excess sediment (from tillage or construction) are present upgradient of the wetland.
2. Slow-moving water and/or a deepwater habitat are present in the wetland.
3. Dense herbaceous vegetation is present.
4. Interspersion of vegetation and water is high in wetland.
5. Ponding of water occurs in the wetland.
6. Sediment deposits are present in wetland.

Nutrient and Toxicant Removal

1. Sources of excess nutrients (fertilizers) and toxicants (pesticides and heavy metals) are present upgradient of the wetland.
2. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.
3. Wetland provides long duration for water detention.
4. Wetland has at least 30% areal cover of live dense herbaceous vegetation.
5. Fine-grained mineral or organic soils are present in the wetland.

Erosion Control and Shoreline Stabilization

If associated with water course or shoreline.

1. Wetland has dense, energy absorbing vegetation bordering the water course and no evidence of erosion.
2. An herbaceous layer is part of this dense vegetation.
3. Trees and shrubs able to withstand erosive flood events are also part of this dense vegetation.

Production of Organic Matter and its Export

1. Wetland has at least 30% areal cover of dense herbaceous vegetation.
2. Woody plants in wetland are mostly deciduous.
3. High degree of plant community structure, vegetation density, and species richness present.
4. Interspersion of vegetation and water is high in wetland.
5. Wetland is inundated or has indicators that flooding is a seasonal event during the growing season.
6. Wetland has outlet from which organic matter is flushed.

General Habitat Suitability

1. Wetland is not fragmented by development.
2. Upland surrounding wetland is undeveloped.
3. Wetland has connectivity with other habitat types.
4. Diversity of plant species is high.
5. Wetland has more than one Cowardin Class (i.e., PFO, PSS, PEM, PAB, POW, etc.)
6. Has high degree of Cowardin Class interspersion.
7. Evidence of wildlife use (e.g., tracks, scat, gnawed stumps, etc.) is present.

Habitat for Aquatic Invertebrates

Wetland must have permanent or evidence of seasonal inundation for this function to be provided.

1. Various water depths present in wetland
2. Aquatic bed vegetation present.
3. Emergent vegetation present within ponded area.
4. Cover (i.e., woody debris, rocks, and leaf litter) present within in the standing water area.
5. A stream or another wetland within 2 km (1.2 mi) of wetland.

Habitat for Amphibians

1. Wetland contains areas of seasonal and/or permanent standing water in most years. (*Must be present for this function to be provided*)
2. Thin-stemmed emergent and/or floating aquatic vegetation present within areas of seasonal and/or perennial standing water.
3. Wetland buffer < 40% developed (i.e., by pavement and/or buildings).
4. Woody debris present within wetland.
5. Lands within 1 km (0.6 mi) of wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural).
6. Other wetlands and/or an intermittent or perennial stream within 1 km (0.6 mi) of wetland.

Habitat for Wetland-Associated Mammals

1. Permanent water present within the wetland. *(Must be present for this function to be provided)*
2. Presence of emergent vegetation in areas of permanent water.
3. Areas containing dense shrubs and/or trees are present within wetland or its buffer.
4. Interspersion between different strata of vegetation.
5. Interspersion between permanent open water (without vegetation) and permanent water with vegetation.
6. Presence of banks suitable for denning.
7. Evidence of wildlife use (e.g., dens, tracks, scat, gnawed stumps, etc.) is present.

Habitat for Wetland-Associated Birds

1. Wetland has 30 to 50% shallow open water and/or aquatic bed classes present within the wetland.
2. Emergent vegetation class present within the wetland.
3. Forested and scrub-shrub classes present within the wetland or its buffer.
4. Snags present in wetland or its buffer.
5. Sand bars and/or mud flats present within the wetland.
6. Wetland contains invertebrates, amphibians, and/or fish.
7. Buffer contains relatively undisturbed grassland shrub and/or forest habitats.
8. Lands within 1 km (0.6 mi) of the wetland are greater than or equal to 40% undeveloped (e.g., green belts, forest, grassland, agricultural).

General Fish Habitat

(Must be associated with fish-bearing water)

1. Wetland has a perennial or intermittent surface-water connection to a fish-bearing water body
2. Wetland has sufficient size and depth of open water so as not to freeze completely during winter.
3. Observation of fish.
4. Herbaceous and/or woody vegetation is present in wetland and/or buffer to provide cover, shade, and/or detrital matter.
5. Spawning areas are present (aquatic vegetation and/or gravel beds).

The criteria for Native Plant Richness, Educational or Scientific Value and Uniqueness and Heritage is not applicable in Alaska as these criteria were developed in areas of the Lower 48 states where development, pollution and exotic species are direct threats to wetlands.

Summary of Habitats' Functions and Values

Function/Value Category	Forest	Herb Meadow	Pond	Sphagnum Bog	Willow Thicket
Flood-Flow Alteration	Moderate	Moderate	High	High	High
Sediment Removal	Low	Moderate	Moderate	High	Low
Nutrient and Toxicant Removal	Moderate	High	Moderate	High	Low
Erosion Control and Shoreline Stabilization	Low	Low	High	Moderate	Low
Production of Organic Matter and its Export	Moderate	High	High	High	Moderate
General Habitat Suitability	Moderate	High	Moderate	Low	High
Habitat for Aquatic Invertebrates	Low	Low	High	Moderate	Moderate
Habitat for Amphibians	Low	Low	Low	Low	High
Habitat for Wetland-Associated Mammals	Low	High	High	Low	Moderate
Habitat for Wetland-Associated Birds	Moderate	Moderate	Low	High	Moderate
General Fish Habitat	Low	Low	High	High	Low
Educational or Scientific Value	N/A	N/A	N/A	N/A	N/A
Uniqueness and Heritage	N/A	N/A	N/A	N/A	N/A
Overall Rating	Low	Moderate	High	High	Moderate
% of Wetlands	33.93	25.15	5.88	29.31	6.00

