Environment and Climate Change Canada
Canada Nature Fund: Community-Nominated Priority Places for Species at Risk

Kootenay Connect: Columbia Wetlands
Summary Report – Mapping the vegetative communities in Columbia Wetlands

Prepared by Ryan Durand, MSc. RPBio

EcoLogic Consultants Ltd.

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1CW RIP MAP- Summary of vegetative community mapping of the Columbia Wetlands

Ecosystem mapping was completed for 14,144 hectares of the Columbia Valley Wetlands during the winter of 2019-2020. The mapping was completed at a scale of 1:1,250 using a variety of provincial and private data sources (Table 1). Light Detection and Ranging (LiDAR) data was obtained from Airborne Imaging (2015 acquisition) and the BC Government (2018 acquisition). LiDAR could not be obtained for the entire mapped area.

Table 1. Imagery Source, Date and Resolution

Source	Year	Resolution
Airborne Imaging	2015	20 cm
BC Government	2018	10 cm
BC Government	2009	50 cm
BC Government	2007	75 cm
BC Government	2005	50 cm

Mapping was performed using a combination of LiDAR and digital orthophotos. Initial line work was completed on bare earth LiDAR to delineate topographical and terrain features. Digital orthophotos were then used to map ecosystems using the standard Terrestrial Ecosystem Mapping (TEM) process of capturing up to three ecosystems per mapped polygon. Each polygon contains standard TEM attributes describing the decile (percent of the polygon in which the ecosystem occurs), a map code (ecosystem code or site association) and structural stage (description of the type and height of vegetation, such as shrub, herb or trees).

All mapping was generally completed using provincial methodologies, including:

- Standard for Terrestrial Ecosystem Mapping in BC (1998);
- Standard for TEM Digital Data Capture in BC, Version 3.0 (2000);
- Terrain Classification System for BC, Version 2.0 (1997);
- Biogeoclimatic Ecosystem Classification codes and names (BECdb version 8, Feb 2012);
- Biogeoclimatic Ecosystem Classification of Non-Forested Ecosystems in British Columbia (MacKenzie 2012);

Project specific, temporary map codes were used to classify portions of the mapping, as field validation is required to classify to the site series or association level. Table 2 presents a summary of the draft ecosystem mapping.

Table 2. Summary of Draft Ecosystem Mapping.

Map Code	Description	Area (ha)
CF	Cultivated Field	30.49
DD	Data Deficient. Image quality not sufficient to classify ecosystems.	1,277.01

ES	Exposed Soil	0.14
Fl	Low-bench Floodplain	573.42
Fl.1	Low-bench Floodplain - Reed Canarygrass	121.60
Fm	Mid-bench Floodplain	1,648.75
Fm.1	Mid-bench Floodplain - Reed Canarygrass	14.33
Fm.mo	Mid-bench Floodplain - Modified	15.60
GB	Gravel Bar	54.67
LA	Lake	702.28
MU	Mud Flat	24.83
OW	Shallow Open Water	1,326.86
PD	Pond	55.93
RI	River	1,463.12
RN	Railway	5.59
RR	Rural Residential	5.34
RZ	Road	15.91
Wb	Bog	44.25
Wf	Fen	111.86
Wf01	Fen - Beaked Sedge Fen	22.33
Wm	Marsh	5.11
Wm.1	Marsh - grass type, incl. Reed Canarygrass	1,894.99
Wm.mo	Marsh - Modified	44.70
Wm.s	Marsh - wet or sedge type	1,237.08
Wm05	Marsh - Cattail Marsh	819.65
Wm06	Marsh - Bulrush Sedge Marsh	742.22
Ws	Swamp	1,812.94
Ws.mo	Swamp - modified	12.24
YF	Upland Forest	57.91
Total		14,143.75

The next stage of this project will involve field surveys to confirm ecosystem classifications and to check spatial accuracy of mapped polygons. Field work will use a combination of visual and plot based sampling to verify the mapping using the Field Manual for Describing Terrestrial Ecosystems in British Columbia; 2nd Edition. Field data will then be used to revise the mapping as required to produce a final product. Field sampling procedures will be as per:

- Wetlands of British Columbia: a guide to identification (MacKenzie and Moran 2004);
- Field Manual for Describing Terrestrial Ecosystems; 2nd Edition (BC Ministry of Forests and Range and BC Ministry of Environment 2010); and
- A Field Guide to Site Identification and Interpretation for Southeast British Columbia (MacKillop and Ehman 2016).

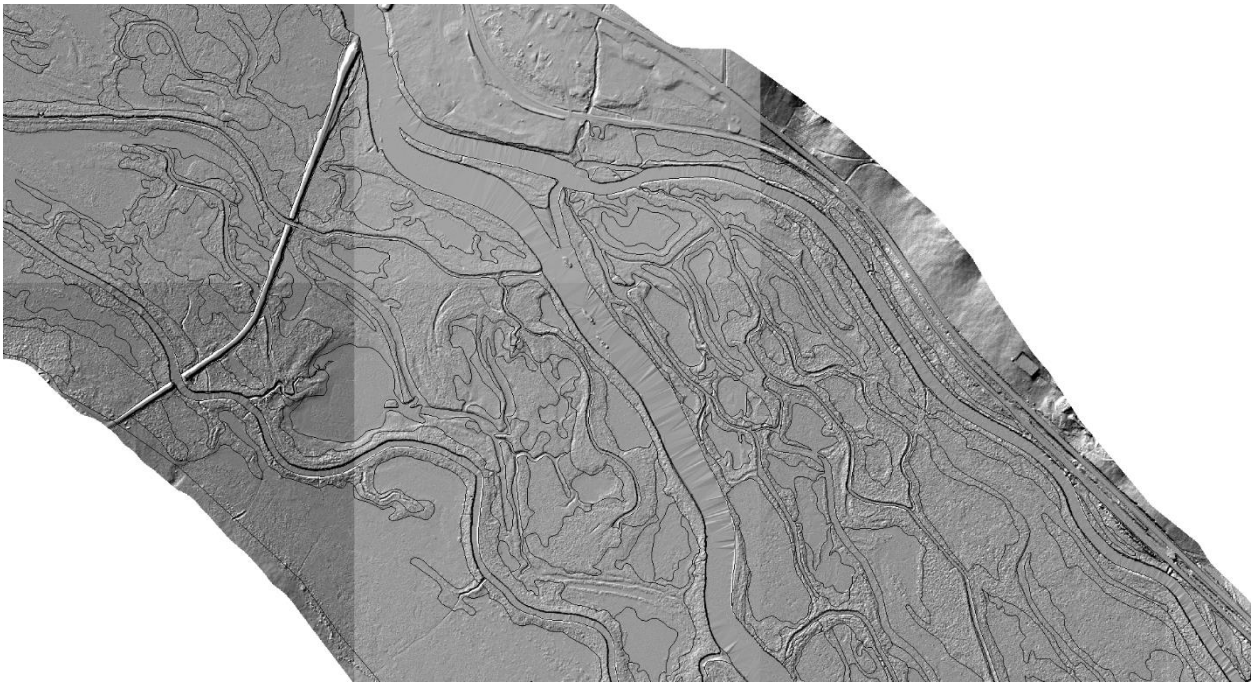

Figure 1. Ecosystem Mapping Overlain on LiDAR.

Figure 2. Ecosystem Mapping Overlain on Orthophotos.

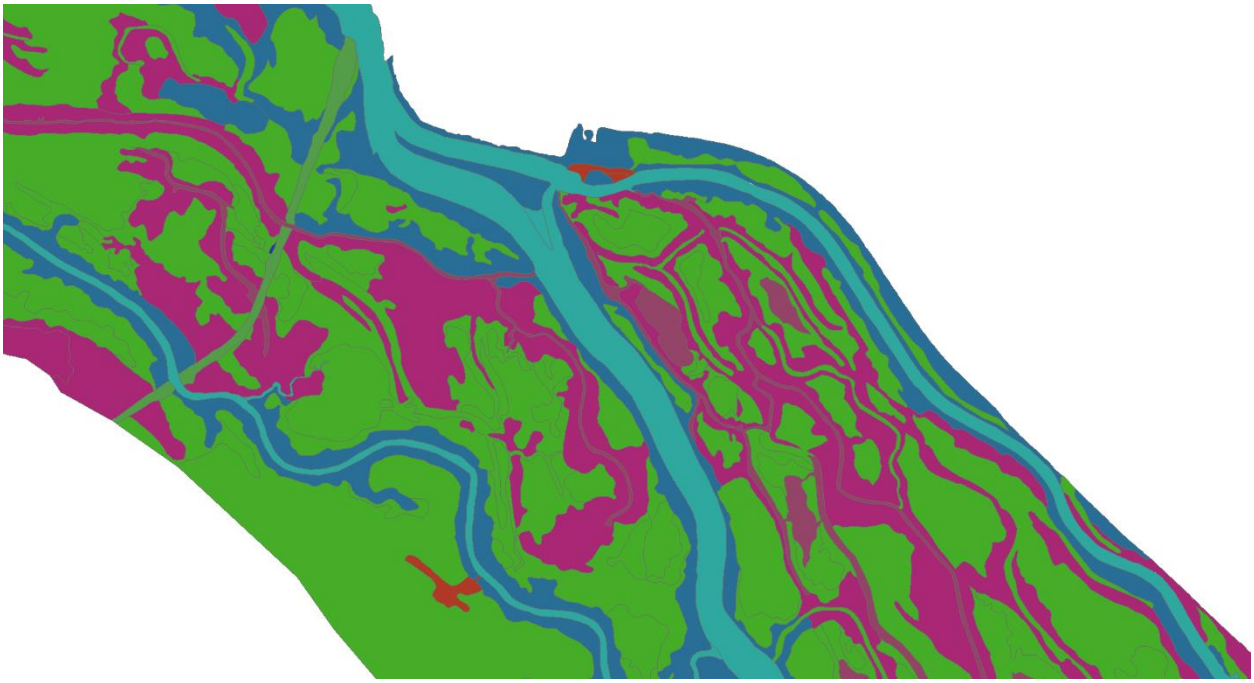

Figure 3. Ecosystem Mapping showing Generalized Dominant Ecosystem Types.

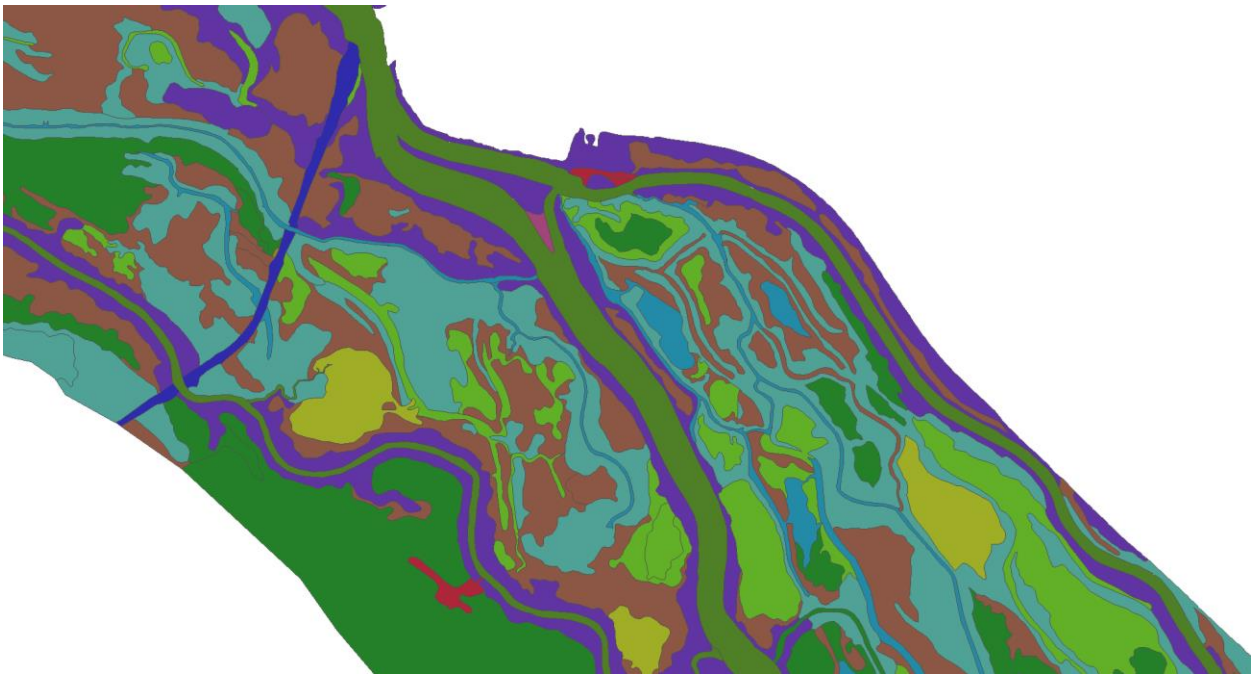

Figure 4. Ecosystem Mapping showing Primary Map Code