

RISC Standard for Mapping Ecosystems at Risk in BC. Field survey protocols followed Describing Terrestrial Ecosystems in the Field (RISC 1998).

Structural Stage	Descripton [□]
0	No Structural Stage (usually rock or open water)
1	Sparse/bryoid
2	Herb
3	Shrub/Herb
4	Pole/Sapling
5	Young Forest
6	Mature Forest
7	Old Forest
Biogeoclimatc Units	Descripton 2
CDFmm	Coastal Douglas-fr Moist 2 Maritma Subzone2

Sensitive and Terrestrial Ecosystems Label

(as decile) → 2WD:co DC 4 ← Secondary Ecosystem

SE Subclass

The example label above indicates the SEM and TEM atributes 2

mapped for polygon 7838. The polygon occurs in the Coast

Western Hemlock Eastern Very Dry Maritre variant; 60% of the 2 polygon is WD:mx - Woodland: mixed conifer and broadleaf

(Primary Ecosystem), map code AM - Arbutus - Hairy manzanita,

structural stage 5. The remaining 40% of the polygon is WD:co-Woodland: conifer dominated, map code DC - Douglas-fr 2-Western hemlock – Cladina (Secondary and Tertary 2

Ecosystems). Of this 40%, 20% is structural stage 4 and 20% is

structural stage 5.

* Indicates a field sample

6WD:mx AM 5 ← Primary Ecosystem

2WD:co DC 5 ← Tertiary Ecosystem

4**72**000m.**E**

Mark van Bakel - Islands Trust

Terrestrial Ecosystem Map Codes and Site Unit Names									
ap Code	Site Unit Name	Map Code	Site Unit Name	Map Code	Site Unit Name	Map Code	Site Unit Name		
CDFmm - Forested		CDFmm - Non-Forested		CDFmm - Non-Forested		Anthropogenic			
AS	Aspen - Slough sedge	Ed01	Tufted hairgrass - Meadow barley estuarine meadow	Wf51	Sitka sedge - Peat moss fen	RE	Reservoir		
CS	Western redcedar - Slough sedge	Em02	Glasswort - Sea-milkwort estuarine marsh	Wf52	Sweet gale - Sitka sedge fen	RW	Rural residential		
CW	Black cottonwood - willow	Em03	Seashore saltgrass	Wf53	Slender sedge - White beak-rush fen	RZ	Road surface		
DA	Douglas-fir - Shore Pine - Arbutus	Em05	Lyngbye's sedge estuarine marsh	Wm05	Cattail marsh	UR	Urban		
DG	Douglas-fir - Grand Fir - Oregon Grape	FC	Fescue - Camas	Wm50	Sitka sedge - Hemlock-parsely marsh	Map Code	Site Unit Name		
DO	Douglas-fir - Oniongrass	HL	Hardhack - Labrador tea	Ws50	Pink spirea - Sitka sedge swamp	Sparsely	Vegetated		
DS	Douglas-fir - Salal	LM	Dunegrass - Beach pea	Ws51	Sitka willow - Pacific willow - Skunk cabbage swamp	BE	Beach		
GO	Garry oak - Oceanspray	ОМ	Garry oak - moss	Map Code	Site Unit Name	CL	Cliff		
LS	Shore pine - Sphagnum	OR	Oceanspray - rose	Anthropog	enic	LA	Lake		
RC	Western redcedar - Skunk cabbage	QB	Garry oak - Brome (or mixed grasses)	CF	Cultivated field	MU	Mudflat		
RF	Western redcedar - Grand fir - Foamflower	RA	Nootka rose - Pacific crab apple	СО	Cultivated orchard	OW	Open water (< 2m deep)		
RK	Western redcedar - Douglas-fir - Oregon beaked moss	sc	Cladina - Wallace's selaginella	ES	Exposed soil	PD	Pond (> 2m deep)		
RP	Western redcedar - Indian-plum	SL	Sedge - Western lilaeopsis	GC	Golf course	RI	River		
RS	Western redcedar - Snowberry	SS	Spirea - Sedge wetland	GP	Gravel pit	RO	Rock outcrop		

Wb50 Labrador tea - Bog laurel - Peat-moss bog

RV Western redcedar - Vanilla-leaf



4**78**000m.**E**





North Pender Associate Northern Islands Sensitive Ecosystem Mapping Airphoto - 2004

UTM Projection Zone 10 NAD83

Sensitive Ecosystems Sensitive ecosystems are fragile and/or rare, or are ecologically important because of the diversity of species they support.

<u>Definition:</u> Conifer-dominated dry to moist forest types, structural stage 7, generally >250yrs.

Importance: Due to the lack of disturbance, old forest ecosystems are often associated with rich communities of plants and animals that may be dependent upon the unique environmental conditions created by these forests. co (conifer-dominated) - greater than 75% coniferous species

mx (mixed conifer and deciduous) - forests dominated with a mixture of coniferous and broadleaf trees (<75% coniferous and >25% **bd** (broadleaf) - dominated by large old broadleaf trees

<u>Definition:</u> Dry open forests, generally between 10 and 30% tree cover, can be conifer-dominated or mixed conifer and arbutus stands; because of open canopy, will include non-forested openings, often with shallow soils and bedrock outcroppings. Importance: Woodlands are nationally, provincially and regionally rare and highly fragmented . A rich assemblage of plants, insects, reptiles and birds are drawn to these ecosystems due to the food sources, habitat and proximity to the ocean. Garry oak woodlands, for example support the highest plant species diversity of any terrestrial ecosystem in British Columbia and

bd (broadleaf) - dominant broadleaf with <15% coniferous species

are especially vulnerable to rural development.

mx (mixed conifer and deciduous) - mixed conifer and broadleaf with a minimum of 25% cover of either group is included in the total

Definition: Non-forested ecosystems (less than 10% tree cover), generally with shallow soils. They include bedrock outcroppings, large

Importance: Terrestrial Herbaceous ecosystems are characterized by thin soils which are easily disturbed. Herbaceous plants can be easily trampled or dislodged onto bare rock where they cannot re-establish. Thus they are highly vulnerable to a range of

openings within forested areas, spits, dunes and shorelines vegetetated with grasses and herbs

human disturbance factors including residential development and various recreational uses. **hb** (herbaceous) - non-forested, less than 10% tree cover, generally shallow soils, often with exposed bedrock, predominantly a mix of

cs (coastal herbaceous) - rocky shoreline or islet, influenced by the marine environment and characterized by less than 20% vegetation cover of grasses herbs, mosses and lichens. sp (spit) - finger-like extension of beach, comprised of sand or gravel deposited by longshore drifting; low to moderate cover of salt-tolerant

du (dunes) - ridge or hill, or beach area created by windblown sand; may be more or less vegetated depending on depositional activity, beach dunes will have low cover of salt-tolerant grasses and herbs sh (shrub) - >20% of total vegetation cover is shrub cover, with grasses and herbs **ro** (rock) - rock outcrops not dominated by shrubs

<u>Definition:</u> Areas adjacent to water bodies (rivers, lakes, ocean, wetlands) which are influenced by factors such as erosion, sedimentation, flooding and/or subterranean irrigation due to proximity to the water body. Structural stages 1 - 7

fl (low bench floodplain) - flooded at least every other year for moderate periods of growing season; plant species adapted to extended flooding and abrasion, low or tall shrubs most common

Importance: Riparian ecosystems support a disproportionately high number of vascular plant, moss, amphibian and small mammal

fm (medium bench floodplain) - flooded every 1-6 years for short periods (10-25 days); deciduous or mixed forest dominated by species tolerant of flooding and periodic sedimentation, trees occur on elevated microsites fh (high bench floodplain) - only periodically and briefly inundated by high waters, but lengthy subsurface flow in the rooting zone; typically

conifer-dominated floodplains of larger coastal rivers ff (fringe) - narrow linear communities along with open water bodies (rivers, lakes and ponds) where there is no floodplain, irregular flodding **gu** (gully riparian) - watercourse is within a steep sided V-shaped gully

ri (river) - watercourse is large enough to represent >10% of the polygon **sh** (shrub) - shrub-dominated floodplain or lakeshore

adapted to wet environments. This may result from flooding, fluctuating water tables, tidal influences or poor drainage conditions. Importance: Wetland ecosystems are sensitive and important because they exhibit rarity, high biodiversity, fragility, specialized habitat, specialized functions and connectivity.

<u>Definition:</u> Areas that are saturated or inundated with water for long enough periods of time to develop vegetation and biological activity

bg (bog) - nutrient poor wetland, on organic soils (sphagnum peat), water source predominantly from precipitation; may be treed or fn (fen) - nutrient medium wetland (sedge peat) where ground water inflow is the dominant water source, open water channels common;

dominated by sedges, grasses and mosses ms (marsh) - wetland with fluctuating water table, often with shallow surface water, usually organically enriched mineral soils; dominated

by rushes, reeds, grasses and sedges sp (swamp) - poor to very rich wetland on mineral soils or with an organic layer over mineral soil, with gently flowing or seasonally flooding

sw (shallow water) - standing or flowing water less than 2m deep, transition between deep water bodies and other wetland ecosystems (i.e. bogs, swamps, fens, etc.); often with vegetation rooted below the water surface

wm (wet meadow) - periodically saturated but not inundated with water, organically enriched mineral soils; grasses, sedges, rushes and

<u>Definition:</u> Very steep slope, often exposed bedrock, may include steep-sided sand bluffs. **Importance:** Open ledges and horizontal fissures on cliffs are known to provide nesting sites. Cliff crevices are used for roosting bats while

cc (coastal cliffs) - cliffs with a marine influence, generally near vertical bedrock with accumulation of soil limited to fissures and ledges. ic (inland cliffs) - inland cliffs: typically formed as a result of erosion, catastrophic failures or mass wastage. Generally characterized by

rapid drainage and the accumulation of soil that is limited to bedrock fissures and ledges

reshwater (FW): Primary Ecosystem **<u>Definition:</u>** Freshwater ecosystem includes bodies of water such as lakes and ponds that usually lack floating vegetation.

Importance: Freshwater ecosystems are home to numerous organisms such as, fish, amphibians, aquatic plants, and invertebrates. **Subclasses:** Lakes and ponds play a vital role in the lifecycle of many species.

la (lake) - a naturally occurring static body of water, greater than 2m deep in some portion. pd (pond) - a small body of water greater than 2m deep, but not large enough to be classified as a lake

deep crevices are used for shelter and overwintering of snakes and lizards.

Rare Ecosystems

Other important ecosystems have high biodiversity values. Mature Forest (MF): Primary Ecosystem <u>Definition:</u> Usually conifer-dominated, occasionally deciduous, dry to moist forest types, structural stage 6, generally >80yrs.

Importance: Future older forests Within 20 years, many Mature Forests that were logged early this century will become Older Forests. The biodiversity values of Mature Forests generally become higher with age. This means it will be able to sustain more and larger species of plants and animals. Landscape connectivity Mature Forest stands provide connections between other natural areas that promote the movement and dispersal of many forest-dwelling species across the landscape.

Buffers Mature Forest can minimize disturbance to sensitive ecosystems that occur within or adjacent to the forest patch. Where they border or surround wetlands, patches of older forest or other sensitive ecosystems, the Mature Forest area serves an important role in buffering the adjacent sensitive areas.

co (conifer dominated) - greater than 75% coniferous species mx (mixed conifer and deciduous) - a minimum of 25% cover of either group is included in the total tree cover

Other Mapped Ecosystems

Young Forest (YF):

<u>Definition:</u> Limited to areas of young forest dispersed amongst sensitive and important ecosystems. Forest is 40 - 80 yrs old depending on species and ecological conditions; canopy has begun to differentiate.

Seasonally Flooded Agricultural Fields (FS): **<u>Definition:</u>** Limited to areas of annually flooded cultivated fields or hay fields dispersed amongst sensitive and important ecosystems.

Non-Sensitive (NA):

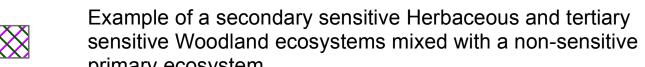
<u>Definition:</u> Limited to areas of disturbance or human impact dispersed amongst sensitive and important ecosystems.

Ecosystem Map Symbols

Ecosystem composition is complex and often contains a dominant ecosystem with secondary and tertiary ecosystems. In this map the dominant ecosystem has a solid shading and the secondary and tertiary ecosystems are identified by cross-hatched lines.

> Example of a primary sensitive Woodland ecosystem with a secondary sensitive Herbaceous ecosystem

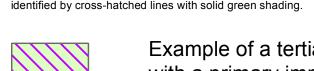
Occassionally sensitive ecosystems will mix with non-sensitive ecosystems. In this map a sensitive ecosystems mixed with non-sensitive is



identified by cross-hatched lines with solid white shading.

primary ecosystem

Sensitive ecosystems can also mix with important ecosystems. In this map a sensitive ecosystem mixed with an important ecosystem is



Example of a tertiary sensitive Herbaceous ecosystem mixed

