



## Coast Area Update

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### Background

- BEC mapping and site classification are fundamental to many forestry, planning, conservation, and environmental assessment initiatives.
- Due to improved knowledge and information, BEC has changed considerably over the past 15 years.
- The most current version of BEC mapping is version 8, released in February 2012; BEC8 is available on GeoBC (previously LRDW) and BECWeb - <http://www.for.gov.bc.ca/hre/becweb/>. Users should check this site for updates each year or use the GeoBC website for the “official” version.
  - NOTE: the only changes in BEC8 for the Coast Area are changes in provincial variant lines (remapped and also rescaled to approximately 1:50 000) on Haida Gwaii.
- Over the next 1-5 years, BEC users should expect changes to linework (geographic delineation of BEC units) and classification of units within the (1) Central and North Coasts and North/West Vancouver Island; (2) Southern Vancouver Island and South mainland Coasts (Dry South Coast Ecosystems); (3) and Haida Gwaii (classification only, no further linework changes in this time period).
- This update provides a summary of changes in process or expected within the Coast Area.

### BEC Revision Process and Progress

- The current Field Guides for Site Identification and Interpretation applicable to BEC within the Coast Area, and coastal units within the adjacent Skeena Region, include the guide for the Prince Rupert Forest Region (“The Orange Guide”, LMH 26, 1993) and the Guide for the Vancouver Forest Region (“The Red Guide”, LMH 28, 1994).
- From 2006 to present, the coastal research ecologists have been systematically evaluating and working towards revision of linework and ecosystem classification within the Coast Area (and coastal ecosystems of the former Coast Region; these are still to be included in revised mapping and guidebooks produced for the Area). Activities include:
  - Assessment and refinement of plots within the coastal BEC database for quality of data, consistency of recorded data with assigned site (BEC) unit, accuracy of location
  - Acquisition of TEM plots from existing and continuing projects to supplement the BEC database (some useable for classification, many only for linework assessment)
  - Collection of new field plots in priority areas (e.g., those identified by licensees or other stakeholders, areas near existing or proposed variant boundaries)
  - Collection of mensuration (standing structure) and downed woody material (DWM) data to complement traditional BEC plot data; structural data have been requested repeatedly by industry, ministry personnel, and other stakeholders for use in restoration, benchmarking, and evaluation of ecosystem recovery
  - Assessment and refinement of provincial linework (BigBEC) – helicopter transects and ground plots
  - Management of TEM/PEM projects to supplement BEC sampling and refine new, draft linework
- The new information and reassessment and refinement of existing plotwork will improve descriptions of existing units and support the delineation and description of new units (subzones, variants and site series);
  - The coastal BEC database currently has >11,000 plots (for comparison, the Red Guide utilized approximately 2200 plots in descriptions and classifications).
- Changes have been drafted or are being considered due to analysis of field data and/or insight from local terrestrial ecologists, foresters, and habitat specialists within provincial Ministries. Information has also been received from forest licensees, First Nations, and community stakeholders and ENGOs.
- BEC Workshops have been conducted for staff from DNI, DSI (held at DCR), DCR, DSQ, DCK, DSC (at DSQ and DCK) and DHG and associated BCTS Business Areas as well as contractors and other ministry (MoE, ILMB) personnel to:
  - improve communication regarding the classification and mapping process

- provide updates on BEC work
- solicit additional input into areas of concern re: classification and mapping of units

## Anticipated Release

- New linework for Haida Gwaii was released with BEC8 (Feb 2012) but no new units were incorporated
- Work on the classification for inclusion in a new Field Guide for Identification of Ecosystems of Haida Gwaii is near completion, with expected release end of fiscal year 2012/13
- Work has begun on revision to the classification and linework associated with Dry South Coast Ecosystems
  - Geographically these units include southeast and southcentral Vancouver Island (DSI, parts of DCR), and south coast mainland (DSC, DSQ, DCK)
  - Expected release 2015
- Work has begun on revision to the classification and linework associated with wetter BC Coastal Ecosystems
  - Geographically this includes west and northern Vancouver Island (some of DSI, DCK, and DNI), wetter areas of DCK and DSQ, and all of the mainland portion of DNI and DNC; note that although North Coast District (DNC) now is administratively part of Skeena Region, the area will still be incorporated into Coast Area guides along with coast units (e.g., portions of CWHvm) that fall within Kalum District
  - New draft linework for the Central and North Coasts exists
  - Expected release 2015
- New mapping is not released (if it contains newly described BEC units) until Field Guide materials are prepared and Chief Forester Reference Guide Stocking Standards have been revised.
- New materials will be released with crosswalk tables linking the new system to the 1993/4 units.
- Please contact Coast Area ecology if you would like to review new site series and mapping. Your input would be appreciated before new products are published.

## Haida Gwaii (DHG) Ecosystem Classification and Delineation

- All existing plot work in the database was assessed and information reconciled with assigned BEC units; locations were refined where possible (e.g., using airphotos and GIS data available through LRDW/GeoBC);
- New plot data were added in 2005, 2006, 2007
- Linework was reevaluated through field and heli work (2006)
- Draft site series have been developed for all BEC units, new and existing (latest draft April 2012);
- New linework (scaled to approximately 1:50 000) was released with BEC8 in Feb 2012 (no new units included)
- The new classifications are currently being reviewed and reconciled (correlated) with other coastal units;
- Release of the new classification and guide materials is expected fiscal year 2012/13
- The following changes to ecosystem delineation are noteworthy:
  - Eastward expansion of the CWHvh, primarily on northern Graham Island
- The following changes to the ecosystem classification (will be released with the Guide) are noteworthy:
  - Classification of a new CWHvh variant for Haida Gwaii; all CWHvh on Haida Gwaii will be classified CWHvh3 (CWH very wet hypermaritime, Haida Gwaii variant) and CWHvh2 (mainland variant) will occur on the adjacent mainland
  - All MH on Haida Gwaii is now classified MHwh2 (Haida Gwaii variant) with MHwh1 (mainland variant) on the adjacent mainland
    - Differentiation of Haida Gwaii specific variants is, in part, a reflection of biogeography (and some resultant differences in species composition of these units from mainland counterparts) but also reflects the need to recognize the overwhelming impact on the composition, structure, and ability to identify vegetative communities of the naturalized deer population on the Islands
  - Delineation of MHwhp (parkland associated with forested variant below in elevation as opposed to with alpine units).
  - Alpine classified as CMA (Coastal Mountain-heather Alpine)
  - Refinement of edatopes for all site series across variants;
    - Floodplain, wetland, and alpine ecosystems have received additional attention in this guide (contact Will MacKenzie, provincial ecologist)
    - Nonforested systems (e.g., beach and rocky headland) have received additional classification attention (contact will MacKenzie, provincial ecologist)

## Wet Coastal Ecosystems

- Draft linework (rescaling and refining of provincial BEC delineation) exists for the North and Central Coasts; this was done primarily through helicopter transects with some ground checking (and use of additional plot work) in 2006 (North Coast) and 2008 (Central and South Central Coast), also correlation with Southern Interior Region (Cariboo) and former Northern Interior (Skeena) for transitional ecosystem units
  - Peer review of the draft linework indicated a need for further assessment of CWHvh-vm differentiation; TEM projects within the Kingcome and MidCoast TSAs have been coordinated (2011, 12) to provide additional insight and internal field verification is planned for summer 2012.
  - Linework is expected to be appropriate for use at approximately 1:100 000 (refined from 1:200 000 – 1:600 000 depending on subregion, for the legacy linework currently in use)
- The following (expected) changes to ecosystem delineation are noteworthy:
  - Eastward shift of the CWHvh(2) (and concomitant reduction in extent of CWHvm) in the South central coast (southern mainland portion of DNI) and North Coast (DNC) portions of the Guide area
  - Transition to MH at lower elevations than in current BEC8 mapping – decreasing the elevation at which this unit starts by as much as 200m (e.g., MHwh found at 750m in parts of the Kingcome TSA whereas this is currently mapped at  $\geq 900$ m)
    - This is partly achieved by removal of the thin band of CWHvm2 (montane CWHvm) currently mapped above CWHvh2, particularly at the southern extent of the CWHvh2; CWHvh2 transitions directly to MHwh
      - In some Landscape Units, MHwh will now be mapped as low as 650m, e.g., parts of Johnston
  - Increased extent of CWHvh(1) eastward in larger river valleys of western Vancouver Island; exceptions to this include Tahsish-Kwois, where climatic influence appears to be extending from the central island towards the confluence and mouth of the river system (likely to be classified vm1)
  - Parkland units associated with forested ecosystem below (separated from alpine unit)
  - Increased complexity of alpine delineation (three alpine zones within Central Coast replacing AT include Coastal Mountain-heather Alpine, CMA; Interior Mountain-heather Alpine, IMA; and Boreal Altai Fescue Alpine, BAFA)
    - Some TEM will be available to the alpine class level in the Kingcome TSA by end of fiscal year 2012/13
  - Shifts in transitional (coast to interior) units:
    - Increasing extent of ESSFmw as a transitional unit from MH to ESSFvx in coastal transition valleys in the Tweedsmuir area
    - Increasing elevational extent of IDFww in coastal-interior transitional valleys (e.g., to 1200 m in some cases) with loss of bands of CWHds2 and CWHws2 currently mapped above the IDFww (IDFww would transition directly to ESSFmw)
- The following (expected) changes to the ecosystem classification are noteworthy:
  - Removal of the existing (currently-mapped) CWHvm3; this unit, although shown in the current provincial mapping has not been officially described and RCO field work and plot work acquired from additional (e.g., TEM) projects do not support retaining this unit as a distinct variant
  - Description of a new CWHvm variant (splitting of current vm1 into a “southern” variant similar to the current description and a “central” variant)
  - New alpine units (CMA, IMA, BAFA)

## Dry South Coast Ecosystems

- Concerns regarding existing delineation of BEC units have been identified through consultation with district offices (DCK, DSQ, DSC) and licensees, particularly in the Harrison Lk and Chilliwack R. areas
  - initial field reconnaissance and plot sampling were done in 2009 (DSQ, DCK), 2011 (DCK); resolution to these delineation issues has been difficult due to the limited amount of mature, accessible forest at low elevations near mapped transitions (particularly CWH maritime to sub-maritime in Chilliwack district)
  - additional sampling has been scheduled for May (DSC) and June (DCK) 2012

- Correlation issues with BEC variants also mapped in the southern interior have been identified;
  - Sampling in 2009 focussed on (currently mapped) IDFww in the Skagit Valley;
  - helicopter and sampling work was scheduled for 2011 to address correlation of IDF in Pemberton and Fraser Valley areas with southern interior units (and relative to Skagit) but this work was delayed due to late budgets or cancelled due to weather conditions (heli flying);
    - joint work with southern interior and BigBEC (refinement of provincial linework) is schedule for June 2012
- The following (expected) changes to ecosystem delineation are noteworthy:
  - Decreasing extent of CWHxm Strathcona area of Vancouver Island (and extension of CWHmm); many of the areas currently mapped as xm appear to be edaphic conditions supporting higher amounts of Fd within the mm
  - Refinement of CDF elevational boundary in DSC
  - Shifting of the subaritime-maritime boundary on either side of Harrison Lake - northward on the east side and southward on west side
  - Southward extension of the IDFww in the Fraser Valley
  - Reassessment of mapping of MH vs ESSF variants in the DSQ (new plot data indicate some areas of south facing slopes currently mapped as ESSF may be more appropriate mapped as MH at the scale of variant-level delineation)
  - Likely lowering of the MHmm lower elevational limit in the Squamish area – approximately 800m
- The following (expected) changes to the ecosystem classification are noteworthy:
  - Likely removal of the IDFww from Skagit Valley – plot work suggests this will likely be replaced with a new subzone (tentatively the CWHxs)
  - New IDFww variants are likely to be defined for and mapped in Pemberton and/or the Fraser Valley based on initial comparative analysis and correlation with southern interior IDFww units
  - Incorporation and correlation of Garry Oak ecosystem classification (Erickson and Meidinger) with revised CDFmm and CWHxm units