
AN ECOSYSTEM CARBON DATABASE FOR CANADIAN FORESTS

C.H. Shaw, J.S. Bhatti, and K.J. Sabourin

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ABSTRACT

The Forest Ecosystem Carbon Database presented in this report was compiled to meet the data needs of large-scale modelers and analysts working with the carbon budgets and dynamics of different forest ecosystems in Canada. The accompanying compact disk provides data for over 700 plots from across Canada, and includes data for over 60 variables. A summary of estimated carbon content for soil, tree biomass by component, and total ecosystem carbon for each plot is appended to this report. These estimates do not include detrital carbon (woody debris, etc.) or root biomass, which may significantly alter estimates for total ecosystem carbon in some forest types. The preliminary analyses in this report indicate that ecozones can be grouped on the basis of low and high average total biomass carbon and that these groups correspond to ecozones with low and high average total ecosystem carbon. Within each group of ecozones, mineral soil carbon contributes the highest proportion of carbon to the average total ecosystem carbon, and it is positively correlated with a gradient in ecozone climate from cold and dry to warm and wet. Differences between ecozones for the distribution of carbon within a mineral soil profile and variability in the carbon content of soil organic horizons may be explained by site-specific characteristics, such as differences in parent material and pedogenic processes.

RÉSUMÉ

La base de données sur les écosystèmes forestiers présentée dans ce rapport a été compilée afin de répondre aux besoins des spécialistes de la modélisation à grande échelle et des analystes s'intéressant aux bilans du carbone et à la dynamique des différents écosystèmes forestiers du Canada. Le disque compact s'y rattachant fournit des données sur plus de 700 placettes établies d'un bout à l'autre du Canada et présente des données sur plus de 60 variables. Un résumé des estimations des teneurs en carbone du sol et de la biomasse des arbres par composante ainsi que du carbone total de l'écosystème de chaque placette est annexé au rapport. Ces estimations ne comprennent pas le carbone présent dans les débris (débris ligneux, etc.) ou la biomasse des racines, des données qui pourraient modifier considérablement les estimations du carbone total de l'écosystème dans certains types forestiers. Selon les résultats des analyses préliminaires présentées dans ce rapport, les écozones peuvent être groupées à partir de la plus basse et la plus haute moyenne de carbone total de la biomasse, et ces groupes correspondent aux écozones ayant la plus basse et la plus haute moyenne de carbone total de l'écosystème. Au sein de chaque groupe d'écozones, le carbone du sol minéral est celui qui contribue le plus au carbone total moyen de l'écosystème, et cette contribution est positivement corrélée à un gradient du climat de l'écozone allant du froid et sec au chaud et humide. Les différences au niveau de la répartition du carbone dans un profil de sol minéral et la variabilité de la teneur en carbone des horizons du sol minéral d'une écozone à l'autre peuvent s'expliquer par les caractéristiques stationnelles, comme les différences de matériau d'origine et de processus pédogénétiques.

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PREFACE

This Forest Ecosystem Carbon Database (FECD) for Canada is the third of a series of three large-scale data collection and compilation projects completed by Canadian Forest Service staff at the Northern Forestry Centre in Edmonton. All three projects were developed to meet the data needs of large-scale ecosystem modelers and analysts, in particular those whose research is directed at understanding the response of forest carbon stocks and fluxes to changes in climate and site characteristics. The first two of these projects, the BOREal Ecosystem–Atmosphere Study (BOREAS) biometry and auxiliary sites (Halliwell and Apps 1997a, 1997b, 1997c) and a soil profile and organic carbon database for forest and tundra soils (Siltanen et al. 1997), were conceived by and supported through research funding to Dr. Mike Apps, who also strongly influenced and supported the development of the current database. The first project was published as three reports (Halliwell and Apps 1997a, 1997b, 1997c) providing basic forest characterization data for more than 90 plots on a transect spanning the boreal forest from northern Manitoba to southern Saskatchewan. Siltanen et al. (1997) provided a comprehensive database of soil carbon compiled from soil survey reports, inventories, and research projects from across Canada. The FECD is a compilation of comprehensive plot-level data for site, stand, and soil characteristics. It includes estimates of tree biomass carbon, soil carbon, and total ecosystem carbon for each plot. Collectively, the three projects provide a unique and valuable set of data for the forest research community.

INTRODUCTION

In 1995 the International Panel on Climate Change (IPCC) identified northern forested ecosystems as the most vulnerable to changing climate (1995 IPCC assessment; <http://www.ipcc-wg2.org/index.html>). Recent IPCC reports support that finding and have further noted that impacts from global change (climate change, land use, and pollution) are already discernible (2001 IPCC assessment; <http://www.ipcc-wg2.org/index.html>). Verifiable forest ecosystem models that can be applied across a wide range of spatial and temporal scales are essential to understanding and quantifying the vulnerability of Canada's forests. Most successful forest ecosystem models, regardless of their purpose or scale of application, require an explicit understanding of the relationships between stand productivity, and detrital and soil carbon dynamics.

National-scale carbon budget models are essential to the development of an effective policy for Canadian carbon stocks under a changing global climate (Kurz and Apps 1999). In 1999 the ENFOR (Energy From the Forest) priority setting and soil carbon workshops identified one of the major limitations of these models as the lack of data on detrital and soil carbon pools in major forest ecosystems and the lack of tools to project changes in these pools as a result of stand dynamics. Detrital pools from trees and understory vegetation include dead and downed wood, (often referred to as woody debris), foliar litter, and dead roots. The type, quantity, and timing of detrital inputs to the soil system are largely controlled by stand dynamics and disturbance patterns (Kurz and Apps 1999). Verifiable soil carbon pools are typically divided into an organic soil layer (i.e., the forest floor) and a mineral soil layer. Ideally, to support model verification and further development, a database is required where data for all these ecosystem components are collected simultaneously at the same location.

Although separate compilations already exist for carbon in soil profiles (Siltanen et al. 1997) and for tree biomass (Bonner 1985) and volume (Lowe et al. 1991), a national database of plots in the forest regions of Canada where both types of data have been collected simultaneously has not previously existed. Canadian Forest Service (CFS) scientists understood that data on vegetation and soil collected for other purposes could be useful for model development and testing but were uncertain about the quantity and availability of such historical data. Consequently, the Forest Ecosystem Carbon Database (FECD) compilation project was undertaken with the primary objective of searching out and compiling existing plot-level data where sufficient primary data had been collected to estimate aboveground and belowground carbon pools.

This database, the FECD, provides support for the development and improvement of existing national-scale carbon budget models used for regional and national assessments. It provides the basis for validation (comparison) of simulation model results for the same stands and, in combination with other stand-level carbon budgets, for testable scaling of these results to the regional level. The data compiled will also contribute to research directed at enhancing the understanding of links between forest site characteristics, soil characteristics, and productivity.

The new National Forest Inventory initiative (Natural Resources Canada 1999), in which new plots are being established to meet multiple objectives, will contribute substantially to meeting data requirements, but it will take months to years before these data are available in a format that will be useful to large-scale modelers. The FECD can satisfy the immediate need of modelers for plot-level data and allows for meta-analysis of the relationships between stand-level estimates of tree biomass and soil carbon stocks.

PLOT SELECTION

Carbon stocks in forest ecosystems can be divided into the components of tree biomass carbon and carbon in the understory vegetation, detrital pools (such as coarse woody debris, and snags), the forest floor, and the mineral soil. The type of literature targeted by the FECD (historical inventories and research projects) did not typically report data for all these components at a single site. Historically, the most common type of data collected was tree mensuration (height, diameter at breast height), followed by soil profile descriptions, and then soil chemistry. Data for detrital pools and understory vegetation biomass were rarely collected. To meet the primary objective of the FECD, linking stand-level estimates for biomass carbon to soil carbon, the focus was on securing information for plots with the more commonly collected tree mensuration and soil profile data.

The following minimum requirements for accepting a plot into the database were established so that total forest ecosystem carbon for a plot (defined as the sum of tree biomass carbon, forest floor carbon, and mineral soil carbon) could be calculated. Latitude and longitude were required so that the plot-level data could be linked to other georeferenced data sets. Names of dominant tree species and soil classification were considered fundamental for describing the tree-soil system within the plot. In addition to meeting the criteria outlined below, the data had to be in the public domain or the contributor had to be willing to provide permission for the data to appear in the FECD, which is a public domain database.

Location:

- Latitude
- Longitude

Aboveground biomass:

- Plot-level estimate of live tree biomass, or volume, or diameter at breast height and (if available) height for individual trees; individual tree data could be used to estimate individual tree biomass and then plot-level biomass by using published equations
- Names of dominant tree species

Soil:

- Percent carbon or percent organic matter by horizon
- Horizon thickness
- Soil profile classification

After these criteria were established, provincial and federal government agencies, consultants, forest companies, and universities were contacted, and research publications were evaluated. Extensive data searches and evaluation of archival documents and tapes were performed. Once a plot was accepted for entry into the database, the data quality were checked, taxonomy was updated, and the data were put into the standard format of the FECD. Some plots were rejected because data did not meet the minimum criteria.

For plots that met the minimum requirements, available accessory plot-level information was recorded (site characteristics, vegetation types, and soil characteristics) on the assumption that it might aid in explaining trends or differences in carbon stocks between different types of ecosystems or ecosystem components.

As a result of these efforts the FECD holds data for 706 plots originating from eight sources (Table 1) and represents the largest, publicly available database of its type in Canada. The largest contributions came from Alberta Sustainable Resources Development, Resource Data Branch (Resource Data Branch 2002) and from CFS-led or CFS-partnered projects such as the Acid Rain Early Warning System (ARNEWS) (D'Eon et al. 1994), BOREAS (Halliwell and Apps 1997a, 1997b, 1997c) and a lodgepole pine and white spruce productivity study (La Roi and Pluth 1986).

The majority (494) of the plots were located in Alberta (Fig. 1, Table 2), with the rest relatively evenly distributed among the remaining provinces and territories, except for the Yukon Territory, Nunavut, and Newfoundland and Labrador, where there were no plots. The Boreal Shield and Boreal Plains ecozones are the ecozones best represented in the database, followed by the Taiga Plains and the Atlantic Maritime ecozones. The database represents an estimated 30–40% of the total amount of plot-level data in Canada that are known to the authors. The remaining 60–70% of the data resides in provincial government or private databases available only through data-sharing agreements, in unarchived storage, or in publications and unpublished research that could not be collated.

Table 1. Data sources for the Forest Ecosystem Carbon Database

Original source ^a	References	No. of plots
Halliwell and Apps 1997	Halliwell, D.H.; Apps, M.J. 1997a. BOREal Ecosystem–Atmosphere Study (BOREAS) biometry and auxiliary sites: locations and descriptions. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB. Halliwell, D.H.; Apps, M.J. 1997b. BOREal Ecosystem–Atmosphere Study (BOREAS) biometry and auxiliary sites: overstory and understory data. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB. Halliwell, D.H.; Apps, M.J. 1997c. BOREal Ecosystem–Atmosphere Study (BOREAS) biometry and auxiliary sites: soils and detritus data. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB.	90
Fyles 1986	Fyles, J.W. 1986. Interrelationships between vegetation, soil development and nitrogen and phosphorus cycling in upland coniferous forests near Hondo, Alberta. PhD thesis. Univ. Alberta. Edmonton, AB. Unpublished individual tree data, provided by D. MacIsaac from SEADYN (seasonal dynamics) boreal forest ecosystem study, G.H. La Roi, Dep. Biol., Univ. Alberta, Edmonton, AB.	4
Kingston et al. 1995	Kingston, D.G.O.; McMullin, C.; Webb, K.; Bauditz, C.; Mahendrappa, M.K. 1995. Lysimeter studies to evaluate the impacts of intensive harvesting and site preparation methods on site quality: an establishment report. Nat. Resour. Can., Can. For. Serv., Atl. For. Cent., Fredericton, NB. Inf. Rep. M-X-197E.	4
La Roi and Pluth 1986	La Roi, G.H.; Pluth, D.J. 1986. Lodgepole pine and white spruce site index curves and productivity–site relationships in western Alberta. Prepared for the Program of Research by Universities in Forestry, Can. For. Serv., North. For. Cent., Edmonton, AB. Individual tree data for plot names in Original_Source_ID field beginning with “PSP” provided by D. Gilday from permanent sample plot data of Resource Analysis Section, Forest Management Branch, Alberta Sustainable Resource Development, Edmonton, AB.	115
Knapik et al. 1988	Knapik, L.J.; Russell, W.B.; Riddell, K.M.; Stevens, N. 1988. Forest ecosystem classification and land system mapping pilot project. Duck Mountain, Manitoba. Prepared for Canadian Forest Service and Manitoba Forestry Branch by PEDOCAN Land Evaluation Ltd., Edmonton, AB.	15
Knapik et al. 1989	Knapik, L.J.; Ellis, R.A.; Phillips, B. 1989. Forest ecosystem classification and land system mapping pilot project. Sandilakes, Manitoba. Prepared for Canadian Forest Service and Manitoba Forestry Branch by PEDOCAN Land Evaluation Ltd., Edmonton, AB.	11
ESIS ^b	Resource Data Branch. 2002. Alberta ecological site data and ecological site description manual. Alberta Sustainable Resource Development, Edmonton, AB.	374
ARNEWS ^c	D’Eon, S.P.; Magasi, L.P.; Lachance, D.; DesRochers, P. 1994. ARNEWS. Canada’s national forest health monitoring plot network. Manual on plot establishment and monitoring (revised). Nat. Resour. Can., Can. For. Serv., Petawawa Natl. For. Inst., Chalk River, ON. Inf. Rep. PI-X-117. Data from National Forest Health and Biodiversity Database provided by S. Martin, Nat. Resour. Can., Can. For. Serv., Atl. For. Cent., Fredericton, NB.	93
Total		706

^aOriginal source is the name of the field used in the database.

^bESIS = Alberta Ecological Site Data.

^cARNEWS = Acid Rain Early Warning System.

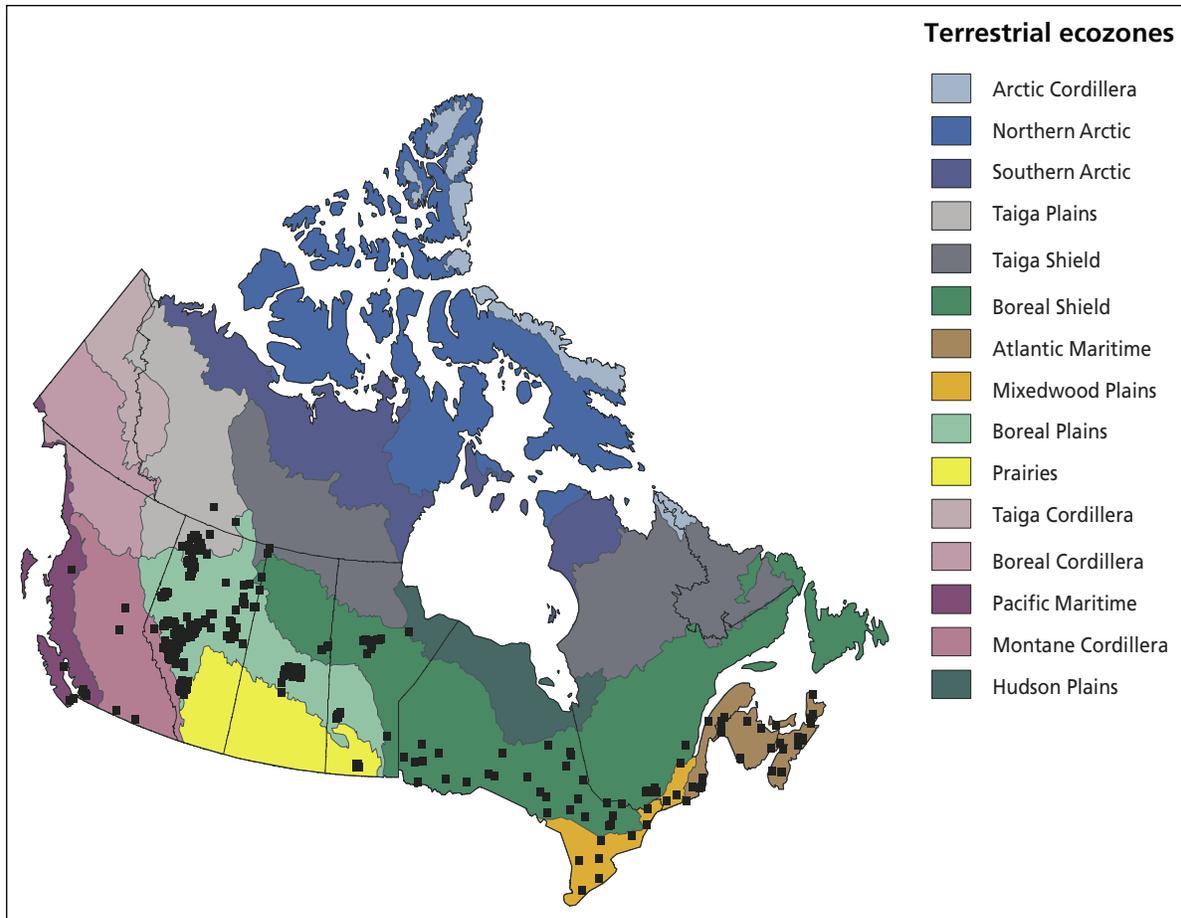


Figure 1. Terrestrial eozones of Canada (Ecological Stratification Working Group 1996) and distribution of 706 plots in the Forest Ecosystem Carbon Database.

Table 2. Number of plots in the Forest Ecosystem Carbon Database, grouped by jurisdiction and terrestrial eozone

Province or territory	No. of plots	Terrestrial eozone ^a	No. of plots
Alberta	494	Taiga Plains	36
British Columbia	13	Western Taiga Shield	7
Manitoba	64	Eastern Taiga Shield	0
New Brunswick	6	Boreal Shield	102
Newfoundland and Labrador	0	Atlantic Maritime	30
Northwest Territories	2	Mixedwood Plains	10
Nova Scotia	14	Boreal Plains	494
Nunavut	0	Prairies	0
Ontario	37	Taiga Cordillera	0
Prince Edward Island	1	Boreal Cordillera	0
Québec	21	Pacific Maritime	9
Saskatchewan	54	Montane Cordillera	16
Yukon Territory	0	Hudson Plains	2
Total	706	Total	706

^aEcological Stratification Working Group (1996).

Note: Table 2 includes eozones with forested land. The eozones present in Figure 1 and not included in Table 2 are not forested.

ORGANIZATION OF THE DATA

The database was developed in Microsoft Access (Microsoft 2000a) and comprises eight primary tables (Table 3) containing the plot data and 10 accessory tables (Table 4) that hold taxonomic or categorical data used in drop-down boxes during data entry and retrieval. All of the tables are linked through the common FECD_ID field, with the exception of the HORIZON table. The HORIZON table is linked to the other tables by the PROFILE table, which contains the PROFILE_ID field (common to the HORIZON table) and

the FECD_ID field (common to the other tables) (Fig. 2). Instructions for installation of the FECD onto the user's hard drive are provided in the READ-ME-FIRST document on the accompanying disk (see inside back cover). Copies of all the Access tables were saved onto the accompanying disk as Microsoft Excel files (Microsoft 2000b) for users who do not have Microsoft Access available to them. See the READ-ME-FIRST document for instructions on how to use the Excel files.

Table 3. Primary tables in the Forest Ecosystem Carbon Database

Table name	Description
Biomass_Carbon	Stand-level estimates for trees and other vegetation, including tree basal area, stems, density, volume, biomass, carbon
Detrital_Biomass	Information on biomass of measured detrital pools such as litter and woody debris
Detrital_Carbon_Content	Estimates of carbon from the Detrital_Biomass table
Site_Information	Site description information such as plot source, identification, slope, aspect, species of vegetation
Site_Disturbance	Information about natural disturbance history such as fires and insect damage
Site_Management	Information about site management history such as date and type of harvesting or silvicultural practice
Profile	Date for soil profile description; acts as a link between the Horizon and Site_Information tables
Horizon	Soil horizon information such as horizon name and soil chemical and physical data

Table 4. Accessory tables in the Forest Ecosystem Carbon Database

Table name	Description
Tree_Species_Codes	List of tree species codes and corresponding names (Appendix 1)
Shrub_Species_Codes	List of shrub species codes and corresponding names (Appendix 1)
Herb_Species_Codes	List of herb species codes and corresponding names (Appendix 1)
Moss_Species_Codes	List of moss species codes and corresponding names (Appendix 1)
Lichen_Species_Codes	List of lichen species codes and corresponding names (Appendix 1)
Soil_Taxonomy	List of soil orders and soil great groups and sub groups (Soil Classification Working Group 1998)
Terrestrial_Ecozone	List of terrestrial ecozones (by name) (Ecological Stratification Working Group 1996)
Terrestrial_Ecoregion	List of terrestrial ecoregions (by name) within ecozones (Ecological Stratification Working Group 1996)
Terrestrial_Ecodistricts	List of terrestrial ecodistricts (by number) within ecoregions (Ecological Stratification Working Group 1996)
Coarse_Fragments	List of coarse fragment classes (Shields et al. 1991)

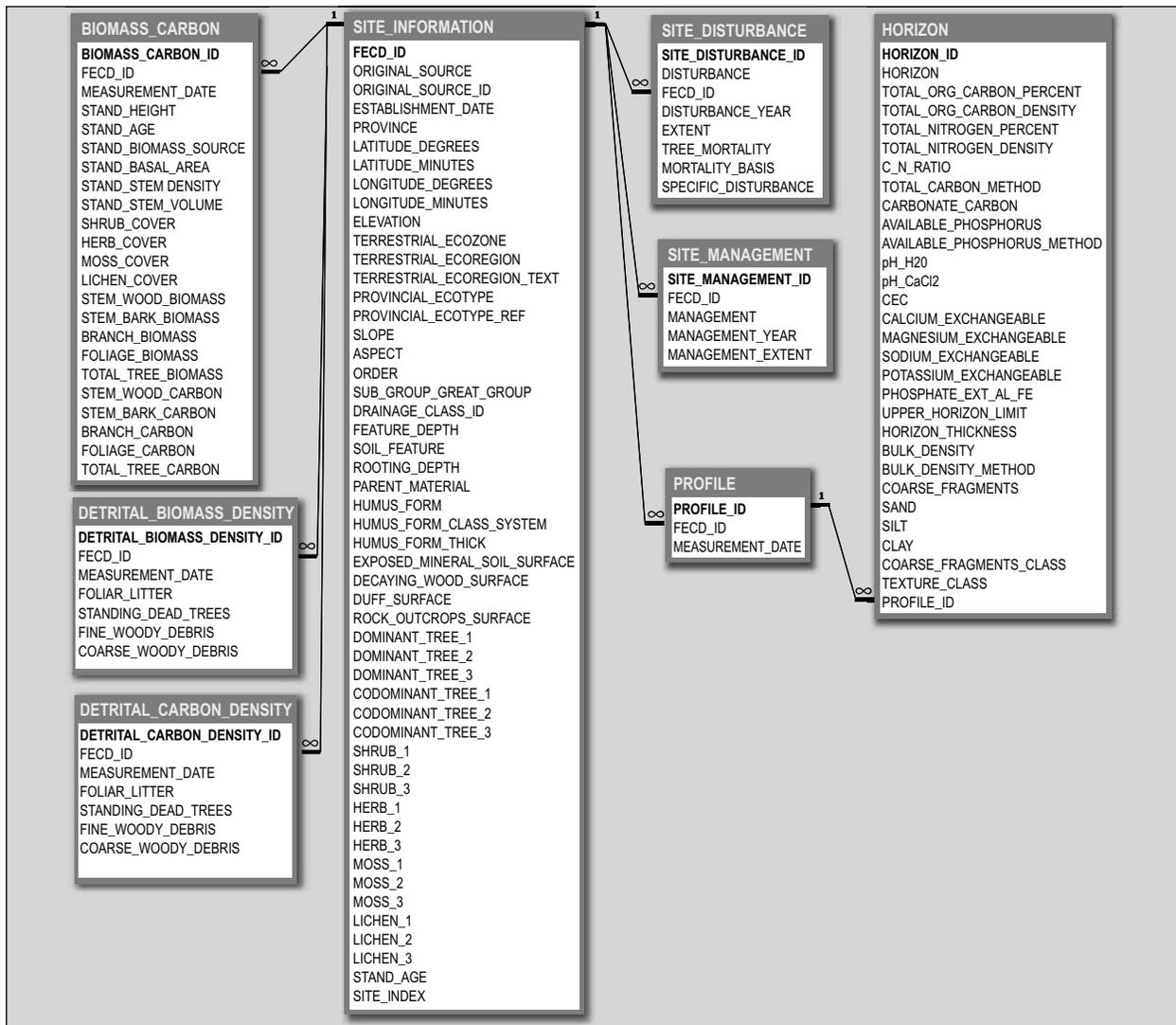


Figure 2. The eight primary tables in the Forest Ecosystem Carbon Database and their relationships. Note: The number one and ∞ symbol outside framed boxes of text signify the relationships between fields (i.e., many fields to one field, one field to one field, and many fields to many fields).

In addition to the data tables, the FECD contains a user-friendly interface in Access that facilitated data entry and allows for searching and browsing through the database on a plot-by-plot basis (Fig. 3). Tabs running across the top of the interface roughly correspond to the tables. Buttons in the lower left-hand corner allow for rapid access to plots identified by FECD number or the original plot name. Once a plot is located on the "Site Description" tab, the correct data for that plot automatically appear in the form associated with each of the other tabs. The FECD database is not editable, to ensure that the data remain unaltered from their original state. However, a template of the database and the user-friendly interface are provided for those who wish to use the database structure for their own data collection or compilation purposes. Details on how to use the interface are found in the section entitled "The FECD Template."

Range-checking, data re-entry, and extensive spot-checking against the original data were used to reduce transcription and calculation

errors. Range-checking of derived values was used to check the original data. For example, unusual values for the carbon-nitrogen ratio could be used to identify a potential error in the Total_Carbon_Percent or Total_Nitrogen_Percent data. Additional features were built into the database to help avoid data entry problems. For example, the sum of the percent sand, silt, and clay had to equal 100 before the soil texture class could be determined. Most of the data entry for descriptive information used drop-down boxes, restricting the choices for that field and avoiding typographic entry errors. For example, once the Terrestrial_Ecozone was selected, the choices for Terrestrial_Ecoregion were restricted to those within the chosen ecozone. A similar approach was taken with the Order and Sub_Group_Great_Group fields for soil classification. Within vegetation types, species names could be selected only once from the list provided, to avoid repeat entry errors. As with most large and complex databases some errors are expected to remain undetected. If a user detects or suspects that an error exists in the data, he or she should refer back to the original source.

The screenshot displays a complex data entry interface with multiple tabs at the top: "Site Description", "Disturbance and Management History", "Plant Biomass and Carbon", "Detrital Biomass and Carbon", "Soil Chemical Properties", and "Soil Physical Properties". The "Site Description" tab is active, showing a form with several sections:

- Plot Identification:** Fields for FECD ID, Source ID (MAN TE-OA(1)), Data Source (Halliwell & Apps, 1997), and Established (1994).
- Location Data:** Province (MB), Latitude (55° 53'), Longitude (98° 41'), and Elevation (m).
- Landscape Information:** Slope and Aspect.
- Forest Floor Surface Cover:** Percentages for Exposed Mineral Soil, Decaying Wood, Duff, and Rock Outcrops.
- Humus Form Information:** Fields for Humus Form, H.F. Class System, and Humus Form Thickness.
- Soil Information Order:** Drop-down menus for Brunisolic, Subgroup/Great Group (Gleyed Melanic), and Drainage Class (Imperfect).
- Soil Feature:** Carbonates.
- Feature Depth:** 33 cm.
- Rooting Depth:** 53 cm.
- Parent Material:** Drop-down menu.
- Stand Information:** Stand Age (63) and Site Index.
- Vegetation Information:** Multiple sections for Dominant Trees, Codominant Trees, Shrubs, Herbs, Mosses, and Lichens, each with three species selection fields (e.g., Species 1: POPU TRE, Species 2: , Species 3:).
- Ecological Classification:** Terrestrial Ecozone (Boreal Shield), Terrestrial Ecoregion (Churchill River Upland), and Provincial Ecotype.
- Record Lookup:** Radio buttons for Original Source ID and FECD ID, with a Search button.

At the bottom, a status bar shows "Record: 1 of 706".

Figure 3. User-friendly interface with convenient tabs across the top for various data entry forms, drop-down boxes for entry of vegetation, soil and ecological classification information and search and browse buttons to manoeuvre between records.

DESCRIPTION OF THE DATA

The FECD is a user-friendly product that does not use numeric coding for field attributes. In most cases, the field attribute is fully displayed in words. For example, the terrestrial ecosystem name and soil taxonomic classes are fully displayed in words rather than being identified by codes that might be difficult to decipher. The only abbreviations used are those that are easy to understand, such as the familiar two-letter codes for the provinces and territories (e.g., AB for Alberta) and site aspects (e.g., NW for northwest). Codes were also used for scientific names of vegetation (4 letters for genus name and 3 letters for species epithet), but the interface provides a query button (?) that rapidly allows the user to associate the genus and species abbreviation with the appropriate full text. Appendix 1 lists the plant genus and species codes and corresponding full names.

The following text describes all of the fields and their attributes for the eight primary tables holding plot-level data.

Site_Information Table

The Site_Information table contains data for ecosystem characteristics. Table 5 summarizes the fields in the Site_Information table. References are provided for original definitions of the attributes where required (Table 5).

All data in the Site_Information table appear as provided by the contributor, with the following exceptions.

Terrestrial_Ecozone and Terrestrial_Ecoregion

Names of terrestrial ecozones and ecoregions were determined by overlaying the latitude and longitude coordinates for each plot on the terrestrial ecozone map provided on the Environment Canada terrestrial ecozone website (www.ccea.org/ecozones/terr.html).

Order and Sub_Group_Great_Group (soil classification)

All soil profile descriptions and taxonomy were checked to ensure that horizon designations and classifications were consistent with the current Canadian System of Soil Classification (Soil Classification Working Group 1998); this resulted in a few minor changes. The appropriate taxonomy was determined for soil profiles that had not been classified by the original contributor.

Stand_Age

For the majority of plots (La Roi and Pluth 1986; Halliwell and Apps 1997b; Resource Data Branch 2000), stand age was calculated as the mean value of breast height age for the dominant and codominant trees for which breast height age was measured. In most cases this represented a small subset of trees on the plot. No data on breast height age were collected for the ARNEWS plots, but incremental growth ring data were provided for some of the plots (D'Eon et al. 1994). The total number of rings for individual trees was used to estimate the age of individual dominant and codominant trees, and the mean of the available ages was used to estimate stand age for these plots. Data on age class structure were available for the Fyles (1986) plots. In this case, stand age was estimated as the age class holding the largest number of dominant and codominant trees. The estimates for stand age provided by Knapik et al. (1988, 1989) were entered directly into the FECD. Insufficient data were available to estimate age for the four Kingston et al. (1995) plots, one Halliwell and Apps (1997b) plot, three ESIS plots (Resource Data Branch 2000), and 11 ARNEWS plots (D'Eon et al. 1994).

Biomass_Carbon Table

The Biomass_Carbon table contains stand-level estimates (for live trees only) of height, basal area, and stem density, as well as stand-level estimates for biomass and carbon in live tree components (stem wood, branches, stem bark, foliage) and their totals (Table 6). Estimates of percent cover for shrubs, herbs, mosses, and lichens are also provided (Table 6).

For most of the plots, values for fields in this table were calculated from individual tree data and percent cover data for individual species of shrubs, herbs, mosses, and lichens, as provided by the contributor. The approaches to estimating the values for each field are described below.

- **Stand_Height (m):** Stand height was estimated using the median value for the height of dominant and codominant trees for which height measurements were available. The median was chosen rather than the mean because it is less sensitive to influence from extreme outliers (Sokal and Rolf 1997).
- **Stand_Age (years):** As previously described for the Site_Information table.

- **Stand_Basal_Area** (m² ha⁻¹): Estimates of live stand basal area were provided by Halliwell and Apps (1997b) and Kingston et al. (1995). These values were entered directly into the FECD. For the remaining plots for which individual tree data were provided (Fyles 1986; La Roi and Pluth 1986; D'Eon et al. 1994; Resource Data Branch 2000) **Stand_Basal_Area** was calculated using equation 1:

$$BA = \frac{\sum_{i=1}^n \pi \left(\frac{DBH_i}{2} \right)^2}{A} \quad [1]$$

where BA is the stand basal area, DBH_{*i*} is the diameter at breast height of an individual tree, *n* is the total number of trees in the plot, and *A* is the area of the sample plot. When DBH is in centimeters and plot area is in square meters, the unit for basal area is centimeters per square meter, which is equivalent to square meters per hectare. There are no estimates for basal area for the Knapik et al. (1988, 1989) plots, since data for this variable were not provided in the report, and the individual tree data required for the calculation were not available.

- **Stand_Stem_Density** (number ha⁻¹): Estimates of live stem density provided by Halliwell and Apps (1997b) were entered directly into the FECD. For the remaining plots for which individual tree data were provided (La Roi and Pluth 1986; Fyles 1986; D'Eon et al. 1994; Resource Data Branch 2000), **Stand_Stem_Density** was calculated using equation 2:

$$\text{Stem density} = \frac{n}{A} \quad [2]$$

where *n* is the number of individual trees in the plot area (*A*).

- **Stand_Stem_Volume** (m³ ha⁻¹): Stand stem volume was entered into the FECD only if it was provided by the contributor. Data were available for plots described by Halliwell and Apps (1997b), Kingston et al. (1995), Knapik et al. (1988, 1989), and La Roi and Pluth (1986). The approach to estimating volume can vary significantly between sources and may not be directly comparable, as outlined below.

Halliwell and Apps (1997b) estimated the volume of wood in the tree stems in terms of inside bark values. The estimate excluded branches and foliage but included the entire stem. It was

expected that this volume would be high compared with merchantable volume, which is commonly used in commercial surveys.

Kingston et al. (1995) estimated both total and merchantable volume using the tables published by Honer et al. (1983). The volume estimates that appear in the FECD represent total volume, and they are slightly higher than the reported estimates for merchantable volume. Merchantable volumes reported by Kingston et al. (1995) for the West Brook Road, Dickey Lake Road, West River Station, and McIntryes Mountain sites were 356, 158, 174, and 202 m³ ha⁻¹, respectively.

Knapik et al. (1988, 1989) did not provide details or a reference for the volume calculations, except to say that the values reported represented "gross merchantable volume" using a "Manitoba volume equation."

La Roi and Pluth (1986) reported volume calculated using a FORTRAN program developed by Pluth and Cameron (1971), but the equations used in the calculations were not specified.

- **Shrub, Herb, Moss, and Lichen_Cover**: Data from ocular estimates of percent cover by species for the shrub, herb, moss, and lichen vegetation layers were provided by Resource Data Branch (2000), D'Eon et al. 1994; Halliwell and Apps (1997b), and La Roi and Pluth (1986). For the FECD a total percent cover for each vegetation layer was estimated by summing the percent cover for individual species within a layer to a maximum of 100%. These estimates were completed for plots from La Roi and Pluth (1986), Halliwell and Apps (1997b) and ESIS (Resource Data Branch 2000), but because of time constraints the data from ARNEWS (D'Eon et al. 1994) were not summarized or entered into the FECD.
- **Stem_Wood, Stem_Bark, Branch, and Foliage_Biomass** (t ha⁻¹): Individual tree data were provided for most of the plots (Fyles 1986; La Roi and Pluth 1986; D'Eon et al. 1994; Halliwell and Apps 1997b; Resource Data Branch 2000), and estimates of live tree biomass by component (stem wood, stem bark, branches, and foliage) for each tree in the plot were calculated. These values were summed over all trees in the plot to yield stand-level estimates for each component and then summed over the components to provide an estimate of total live tree biomass.

Table 5. Summary of fields in the Site_Information table (maximum of 706 records [plots])

Field name	Description	Reference	No. (and %) of records
FECID_ID	Unique identifier, automatically assigned by database	NA ^a	706 (100)
Original_Source	Name of contributor (data source)	Table 1	706 (100)
Original_Source_ID	Original plot name given by contributor	NA	706 (100)
Establishment_Date	Year the plot was established in the field	NA	706 (100)
Province	Abbreviation for province or territory	NA	706 (100)
Latitude_degrees	Latitude degrees	NA	706 (100)
Latitude_minutes	Latitude minutes	NA	702 (99)
Longitude_degrees	Longitude degrees	NA	706 (100)
Longitude_minutes	Longitude minutes	NA	702 (99)
Elevation	Elevation above sea level (m)	NA	583 (83)
Terrestrial_Ecozone	Terrestrial ecozone name	Ecological Stratification Working Group (1996)	706 (100)
Terrestrial_Ecoregion	Terrestrial ecoregion name	Ecological Stratification Working Group (1996)	706 (100)
Provincial_Ecotype	Provincial ecotype name, provided by contributor	NA	128 (18)
Provincial_Ecotype_Ref	Reference for provincial ecotype classification	NA	128 (18)
Slope	Percent slope	NA	475 (67)
Aspect	Aspect (N, NW, W, etc.)	NA	492 (70)
Order	Soil order name	Soil Classification Working Group (1998)	706 (100)
Sub_Group_Great_Group	Combined soil subgroup/great group name	Soil Classification Working Group (1998)	706 (100)
Drainage_Class_ID	Drainage class name	Soil Classification Working Group (1998)	615 (87)
Feature_Depth	Depth (cm) to soil feature	NA	125 (18)
Soil_Feature	Soil feature name (e.g., carbonates)	Soil Classification Working Group (1998)	127 (18)
Rooting_Depth	Depth (cm) at which rooting abundance drops to few	Luttmerding et al. 1990	420 (59)
Parent_Material	Mode of deposition of soil parent material	Soil Classification Working Group (1998)	588 (83)
Humus_Form	Name of humus form classification	NA	92 (13)
Humus_Form_Class_System	Reference for humus form classification	NA	92 (13)
Humus_Form_Thick	Thickness (cm) of humus form	NA	26 (4)
Exposed_Mineral_Soil_Surface	Percent of ground surface area that is exposed mineral soil	Luttmerding et al. 1990	233 (33)
Decaying_Wood_Surface	Percent of ground surface area that is decaying wood	Luttmerding et al. 1990	370 (52)
Duff_Surface	Percent of ground surface area that is decomposing organic matter other than wood	Luttmerding et al. 1990	372 (53)
Rock_Outcrops_Surface	Percent of ground surface area that is rock	Luttmerding et al. 1990	232 (33)
Dominant_Tree_1 (2) (3)	Names of first, second, and third most dominant tree species	Appendix 1	678 (96) 385 (54), 164 (23)
Codominant_Tree_1 (2) (3)	Names of first, second, and third most dominant among codominant tree species	Appendix 1	563 (80), 358 (51), 163 (23)
Shrub_1 (2) (3)	Names of first, second, and third most abundant shrub species	Appendix 1	603 (85), 601 (85), 590 (84)
Herb_1 (2) (3)	Names of first, second, and third most abundant herb species	Appendix 1	597 (85), 590 (84), 580 (82)
Moss_1 (2) (3)	Names of first, second, and third most abundant moss species	Appendix 1	587 (83), 561 (79), 525 (74)
Lichen_1 (2) (3)	Names of first, second, and third most abundant lichen species	Appendix 1	465 (66), 366 (52), 279 (40)
Stand_Age	Average stand age (years)	NA	687 (97)
Site_Index	Height (m) at 50 years of age	NA	132 (19)

^aNA = not applicable.

Table 6. Summary of fields in the Biomass_Carbon table (maximum of 706 records [plots])

Field name	Description	No. (and%) of records
Biomass_Carbon_ID	Unique identifier, automatically assigned by database	706 (100)
FECD_ID	Same as in Site_Information table (see Table 5)	706 (100)
Measurement_Date	Year when trees were measured	706 (100)
Stand_Height	Median stand height (m)	702 (99)
Stand_Age	Average stand age (years) (same as in Table 5)	687 (97)
Stand_Biomass_Source	Provides reference for biomass equations used in data source	4 (.01)
Stand_Basal_Area	Basal area (m ² ha ⁻¹)	680 (96)
Stand_Stem_Density	Number of live tree stems per hectare	676 (96)
Stand_Stem_Volume	Stand stem volume, as provided by contributor (m ³ ha ⁻¹)	196 (28)
Shrub_Cover	Percent ground area covered by shrubs	602 (85)
Herb_Cover	Percent ground area covered by herbs	602 (85)
Moss_Cover	Percent ground area covered by moss	601 (85)
Lichen_Cover	Percent ground area covered by lichens	586 (83)
Stem_Wood_Biomass	Biomass of live tree stems (t ha ⁻¹)	706 (100)
Stem_Bark_Biomass	Biomass of live tree bark (t ha ⁻¹)	706 (100)
Branch_Biomass	Biomass of live tree branches (t ha ⁻¹)	706 (100)
Foliage_Biomass	Biomass of live tree foliage (t ha ⁻¹)	706 (100)
Total_Tree_Biomass	Sum of Stem_Wood_Biomass, Stem_Bark_Biomass, Branch_Biomass, and Foliage_Biomass (t ha ⁻¹)	706 (100)
Stem_Wood_Carbon	Carbon in live tree stem wood (t ha ⁻¹)	706 (100)
Stem_Bark_Carbon	Carbon in live tree stem bark (t ha ⁻¹)	706 (100)
Branch_Carbon	Carbon in live tree branches (t ha ⁻¹)	706 (100)
Foliage_Carbon	Carbon in live tree foliage (t ha ⁻¹)	706 (100)
Total_Tree_Carbon	Sum of Stem_Wood_Carbon, Stem_Bark_Carbon, Branch_Carbon, and Foliage_Carbon (t ha ⁻¹)	706 (100)

Biomass of the components was calculated using published allometric equations (referenced in Appendix 2), which require species, diameter at breast height, and height data for each tree in the plot. Selection of the appropriate equation was based on the tree's species and plot location (combination of province or territory and terrestrial ecozone).

Height was not always measured for all the trees in the plots. Where required, tree height was estimated from the equations of Halliwell and Apps (1997b) before biomass was estimated.

For a small percentage of the plots (Knapik et al. 1988, 1989; Kingston et al. 1995) individual tree data were not published, but stand-level estimates for volume or biomass were available. CFS scientists are developing equations to predict stand-level biomass for components (and totals) based on merchantable stand volume for each province or territory and ecozone, using different combinations of dominant tree species or stand types defined by the proportion of coniferous trees present

in the stands. These preliminary equations were used to estimate the biomass of tree components and their total for the Knapik et al. (1988, 1989) and Kingston et al. (1995) plots. These estimates should be viewed as very preliminary because the conversion equations used are still under development and are currently being tested and improved.

- Stem_Wood, Stem_Bark, Branch, and Foliage_Carbon (t ha⁻¹). These data were calculated by multiplying the corresponding biomass estimates by 0.5.

Horizon Table

The Horizon table contains chemical and physical information for each soil horizon (Table 7). Most of the data were provided by the contributor, but some values for percent carbon and bulk density had to be estimated.

No data were rejected because of differences between analytical approaches. In general, standard soil analysis techniques have changed little over the years, and similar

approaches are reported in many soil analysis manuals (McKeague 1978; Kalra and Maynard 1991). Some cautionary remarks are included in the description of each field. For details of the original analytical techniques, readers should refer to the original sources.

Data for percent carbon, bulk density, and horizon thickness are required to calculate the carbon content of a soil horizon. Horizon thickness was available for all soil horizons, but percent carbon was missing for about 15% of the horizons, and bulk density was missing for about 78% of the horizons. Because a major objective of this database is to provide plot-level estimates of carbon stocks, it was necessary to establish a procedure for estimating substitution values for the missing data. The companion fields, `Total_Carbon_Method` and `Bulk_Density_Method` associated with `Total_Org_Carbon_Percent` estimates and `Bulk_Density` estimates respectively, indicate whether the value was estimated by the authors or measured by the contributor.

Typically, analyses for percent carbon were not done by the contributors when the horizons were thin or expected to have relatively low values for percent carbon (e.g., the Ae horizon). Although these horizons would not have a huge influence on the estimates of total soil carbon stocks, values were estimated and included in the FECD for the sake of completeness. Percent carbon in these cases was estimated using a mean value for similar horizons in the same soil taxonomic class. Means were estimated using data for measured percent carbon values in a combined database from the FECD and Siltanen et al. (1997). For example, if there was no analysis for percent carbon in the Ae horizon of an Eluviated Eutric Brunisol, the mean value for all Ae horizons of Eluviated Eutric Brunisols in the combined database was calculated and used as an estimate for the missing value.

Bulk density is a critical type of data required to calculate soil carbon content, but it was not routinely measured in previous soil inventories or research studies. Although predictive equations have been published to estimate bulk density, they are generally not intended for use outside the study or region in which they were developed (Grigal et al. 1989; Kaur et al. 2002). Therefore, a forest soil bulk density database of measured bulk densities, horizon name, and soil taxonomic classification (Soil Classification Working Group 1998) was compiled. Analysis of variance and

planned contrasts (Petersen 1985) were used to determine statistically different groupings of soil horizons within soil orders in terms of bulk density. These results were used to produce a look-up table for bulk density substitution values for horizons where bulk density was not measured (Table 8). Data from Zoltai et al. (2000) were used to estimate look-up values for O horizons in organic soils (Table 8).

- `Horizon (name)`: All horizon designations were checked for consistency with current definitions (Soil Classification Working Group 1998). Labels were updated or modified as required.
- `Total_Org_Carbon_Percent`: Most of the data in this field were provided as percent organic carbon values. If data were provided as percent organic matter or percent loss on ignition, `Total_Org_Carbon_Percent` was estimated by dividing the value by 1.725 for mineral soil horizons and by 2 for organic horizons (Nelson and Sommers 1982). Caution should be exercised in using `Total_Org_Carbon_Percent` values for soil horizons with pH above 6.5, where some unknown portion of the carbon analyzed might have been inorganic carbon. Where this might have been the case, all inorganic and organic carbon data were extracted and examined. Inorganic carbon data were available for a small subset (36) of B and C horizons, and the values ranged from 0% to 2.8%. An examination of horizons with pH above 6.5 where only organic carbon analyses were reported showed that, in general, values for percent organic carbon were low and in the range expected if little or no inorganic carbon had been included in the determination. In a very small percentage of the horizons, the values were high, indicating the possibility that the presence of inorganic carbon may have contributed to the high value. In these cases, the values for `Total_Org_Carbon_Percent` should be interpreted with caution.
- `Total_Org_Carbon_Density (kg m-2)`: Total carbon density was calculated for each horizon in the database using equation 3:

$$CD = \frac{TOC\%}{100} \times D_b \times TH \times 10 \quad [3]$$

where CD is the total organic carbon density, TOC% is the total organic carbon (%), D_b is the bulk density ($g\ cm^{-3}$), TH is the horizon

Table 7. Summary of fields in the Horizon table (maximum of 3547 records [horizons])

Field name	Description	No. (and %) of records
Horizon_ID	Unique identifier, automatically assigned by database	3547 (100)
Horizon	Horizon name (Soil Classification Working Group 1998)	3547 (100)
Total_Org_Carbon_Percent	Total percent carbon as provided by contributor or as estimated by procedure described in this publication	3531 + 16R ^a (100)
Total_Org_Carbon_Density	Total carbon (kg m ⁻²)	3531 + 16R (100)
Total_Nitrogen_Percent	Total percent nitrogen, as provided by contributor	2854 (80)
Total_Nitrogen_Density	Total nitrogen (kg m ⁻²)	2854 (80)
C_N_Ratio	Total_Carbon_Percent/ Total_Nitrogen_Percent	2854 (80)
Total_Carbon_Method	“Estimated” if estimated by procedure described in this publication	537 (15)
	“Measured” if provided by contributor	2995 (84)
Carbonate_Carbon	Percent carbonate carbon	36 (1)
Available_Phosphorus	Extractable phosphorus (ppm)	2262 (64)
Available_Phosphorus_Method	Method for extractable phosphorus, as described by contributor	2262 (64)
PH_H2O	pH in water	700 (20)
PH_CaCl2	pH in CaCl ₂	2808 (79)
CEC	Cation exchange capacity (cmol(+) kg ⁻¹)	2167 (61)
Calcium_Exchangeable	Exchangeable calcium (cmol(+) kg ⁻¹)	2167 (61)
Magnesium_Exchangeable	Exchangeable magnesium (cmol(+) kg ⁻¹)	2138 (60)
Sodium_Exchangeable	Exchangeable sodium (cmol(+) kg ⁻¹)	2085 (59)
Potassium_Exchangeable	Exchangeable potassium (cmol(+) kg ⁻¹)	2116 (60)
Phosphate_Ext_Al_Fe	Percent phosphate-extractable aluminum + iron	98 (3)
Upper_Horizon_Limit	Depth to top of horizon (cm)	3547 (100)
Horizon_Thickness	Thickness of horizon (cm)	3547 (100)
Bulk_Density	Bulk density (g cm ⁻³)	3531 + 16R (100)
Bulk_Density_Method	“Estimated” if estimated using Table 8	2710 (76)
	“Measured” if provided by contributor	821 (23)
Coarse_Fragments	Box checked if coarse fragments accounted for in measured Bulk_Density	NA ^b
Sand	Percent sand	2046 (58)
Silt	Percent silt	2046 (58)
Clay	Percent clay	2070 (58)
Coarse_Fragments_Class	Coarse fragments class based on percent coarse fragments from visual estimates	758 (21)
Texture_Class	Texture class, based on percent sand, silt, and clay (Soil Classification Working Group 1998)	2046 (58)
Profile_ID	Unique identifier automatically assigned by database	3547 (100)

^aR = rock or bedrock.

^bNA = not applicable.

Table 8. Continued

Horizons	Order	Great group	Sub group	Horizon	Db (g cm ⁻³)	SE	n ^a	
A	Luvisolic	Gray Brown	Gleyed Brunisolic	All	1.34	0.06	20	
			Orthic	All	1.21	0.19	16	
	Podzolic	Fera Humic, Humic Humo Ferric	Podzolic	All	1.30	0.25	3	
			All	All	0.93	0.13	19	
			All	Ah, Ae, Aeg AB, Aex	1.31	0.15	8	
	Regosolic Solonetzic	All	All	All	1.18	0.05	111	
			All	All	0.97	0.10	48	
	B	Brunisolic	Dystric	All	BC, Bm, Bt, Bg Bf horizons	1.45	0.07	96
				All	All	1.03	0.13	21
		Cryosolic	Melanic Sombric All	Eluviated, Gleyed, Gleyed Eluviated	All	1.44	0.04	50
Orthic				All	1.20	0.05	48	
All				All	1.43	0.05	21	
All				All	1.62	0.11	10	
Gleysolic		Gleysol Humic	All	Bmy	1.86	0.44	5	
			All	All other B horizons	1.40	0.10	34	
Luvisolic		Luvic Gray	All	All	1.56	0.07	43	
			Fera, Orthic	All	1.42	0.06	44	
	Rego		All	1.44	0.05	66		
	All		All	1.70	0.05	59		
	Brunisolic		Bf, Bm	1.26	0.12	37		
	Dark, Gleyed Dark		BC, Bt	1.53	0.09	29		
	Gleyed		All	1.49	0.07	37		
	Gleyed Brunisolic		All	1.42	0.07	59		
	Orthic		All	1.51	0.14	38		
	Podzolic, Gleyed Podzolic, Fragic		All	1.44	0.03	148		
Podzolic	Gray Brown	Solonetzic, Gleyed Solonetzic	BC, Bt, Btg, Bx Bf, Bfg, Bfh	1.65	0.05	61		
		Brunisolic	All	1.02	0.07	41		
		Gleyed	Bm	1.39	0.05	32		
		Gleyed Brunisolic	Bt	1.40	0.05	17		
		Orthic	All	1.47	0.06	14		
		Podzolic	All	1.51	0.10	11		
		Orthic	All	1.48	0.05	34		
		Podzolic	Bm, Bt	1.36	0.09	19		
		All	BC	1.85	0.63	2		
		All	All	1.61	0.14	8		
Podzolic	Ferro Humic, Humic Humo Ferric	Podzolic	Bf	1.17	0.11	24		
		All	Bfh, Bhf	0.86	0.09	34		
		Fragic, Sombric, Orstein, Duric	BC, BCc, Bx	1.71	0.10	17		
		Orthic	Bm, Bx	1.70	0.15	11		
		Orthic	BC, Bf	1.38	0.12	12		
		Orthic	Bm, Bt, BC, BCc, BCg, Bx Bfc, Bfg, Bf	1.19	0.04	79		
		Orthic	Orthic	1.46	0.05	99		
		Orthic	Orthic	1.46	0.05	99		
		Orthic	Orthic	1.46	0.05	99		
		Orthic	Orthic	1.46	0.05	99		

Table 8. Concluded

Horizons	Order	Great group	Sub group	Horizon	Db (g cm ⁻³)	SE	n ^a
B	Podzolic	Humo Ferric	Orthic Gleyed All	Bhf, Bfh BC, Bcg Gleyed B horizons Nongleyed B horizons	0.87 1.57 1.27 1.10	0.07 0.16 0.06 0.07	41 13 88 59
C	Solonetzic	Use values for Solonetzic subgroups of Luvisolic order					
	Brunisolic	Dystric	Eluviated, Gleyed, Orthic Gleyed Eluviated	All All	1.38 1.76	0.10 0.08	48 26
		Eutric	Eluviated, Gleyed, Gleyed Eluviated Orthic	All All	1.52 1.29	0.04 0.07	34 29
		Melanic Sombric All	All All All	All All C and Cg	1.50 1.84 1.54	0.16 0.18 0.12	10 7 13
	Cryosolic	All	All	Cy and Cz	1.92	0.22	9
	Gleysolic	Gleysol	Fera, Orthic	Cg All other C horizons ^d	1.71 1.26	0.07 0.29	38 5
			Rego	Cg All other C horizons	1.42 1.26	0.07 0.29	42 5
		Humic	Fera, Orthic	All	1.66	0.10	25
		Luvic All	Rego All	All All	1.44 1.78	0.05 0.09	66 33
	Luvisolic		Brunisolic Gleyed Brunisolic	All All	1.58 1.66	0.08 0.06	39 37
			Podzolic, Gleyed Podzolic, Fragic All other subgroups	All All	1.75 1.51	0.07 0.03	38 159
	Podzolic	Ferro Humic, Humic Humo Ferric	All All	All Gleyed subgroups and Cg horizons	1.74 1.78	0.10 0.04	22 57
				Cx	1.91	0.14	7
	Regosolic ^c	All	All	All other C horizons Gleyed C horizons Nongleyed C horizons	1.63 1.27 1.10	0.04 0.06 0.07	93 88 59
	Solonetzic	Use values for Solonetzic subgroups of Luvisolic order					

^an = number of samples used to estimate mean and SE.

^bOrganic horizons comprise LFH, Of, Om, Oh.

^cBulk density of B and C horizons of Regosolic soils were not statistically significantly different; therefore, substitution values for Gleyed B and C horizons and for Nongleyed B and C horizons are the same for these two types of horizon.

^dBulk densities of all C horizons other than Cg in Fera, Orthic, and Rego subgroups were not significantly different; these subgroups were therefore combined.

thickness (cm), and the factor of 10 converts units from grams per square centimeter to kilograms per square meter.

- **Total_Nitrogen_Percent:** The percent total nitrogen was entered only if provided by the contributor.
- **Total_Nitrogen_Density (kg m⁻²):** Total nitrogen density was calculated using equation 4:

$$ND = \frac{TN\%}{100} \times D_b \times TH \times 10 \quad [4]$$

where ND is the total nitrogen density, TN% is the total nitrogen (%), D_b is the bulk density (g cm⁻³), TH is the horizon thickness (cm), and the factor of 10 converts units from grams per square centimeter to kilograms per square meter.

- **C_N_Ratio:** Calculated as Total_Org_Carbon_Percent divided by Total_Nitrogen_Percent.
- **Total_Carbon_Method (measured or estimated):** This field indicates whether the value for percent carbon was estimated as described for Total_Org_Carbon_Percent or measured by the contributor.
- **Carbonate_Carbon (% carbonate carbon):** Data for percent calcium carbonate (CaCO₃) were provided by Halliwell and Apps (1997c) and Knapik et al. (1988, 1989). These values were converted to inorganic carbon using a conversion factor of 0.12 (the proportion of carbon in CaCO₃).
- **Available_Phosphorus (ppm):** This field reports the value for phosphorus extracted by the method described in Available_Phosphorus_Method (see below) and considered to be available for plant growth. A wide variety of analytical techniques are used for determining available phosphorus, and users should clearly understand the methodologic differences when comparing values between different studies.
- **Available_Phosphorus_Method:** This field provides the name of the analytical method reported by the contributor as having been used to determine extractable phosphorus or the most likely procedure used (if not reported).
- **pH_H2O:** This field reports the pH value of a soil suspension in water, as provided by the contributor.
- **pH_CaCl2:** This field reports the pH value of a soil suspension in a calcium chloride solution, as provided by the contributor.

- **CEC (cmol [+]⁻¹ kg⁻¹):** This field reports the value for cation exchange capacity, as provided by the contributor.
- **Calcium, Magnesium, Sodium, and Potassium_Exchangeable (cmol [+]⁻¹ kg⁻¹):** These fields report the values for exchangeable calcium, magnesium, sodium, and potassium, as provided by the contributor.
- **Phosphate_Ext_Al_Fe(%):** This field reports the sum of the percent pyrophosphate-extractable aluminum and iron (McKeague 1978). This characteristic is commonly used to distinguish Podzolic soils from some other soil orders and to distinguish among Podzolic great groups (Soil Classification Working Group 1998).
- **Upper_Horizon_Limit (cm):** This field reports the value for the depth to the upper boundary of the horizon. For all soils except those in the Organic order and the Organic great group of the Cryosolic order, the boundary between the mineral and organic soil horizons was 0 cm. Upper horizon limits are negative for organic horizons and positive for mineral soil horizons. For soils in the Organic order and the Organic great group of the Cryosolic order, the surface is 0 cm, and all values are positive.
- **Horizon_Thickness (cm):** This field reports the thickness of the horizon. The depths of the soil profiles were standardized to 100 cm of mineral soil (plus the variable thickness of the overlying organic horizons) or a total of 100-cm depth for organic soils (Organic order, and Organic great group of the Cryosolic order). In cases where the pit was not dug to a depth of 100 cm, it was assumed that the lowermost horizon extended to 100-cm depth. In one case, it was necessary to extrapolate the depth of a Cumulic Regosol. In this instance the average values for percent carbon and bulk density for the multiple pairs of A and C horizons were used to describe a virtual A/C cumulic horizon that was extrapolated to 100-cm depth.
- **Bulk_Density (g cm⁻³):** This field reports the value for bulk density in grams dry weight per cubic centimeter. Measured values were provided by the contributor. If the contributor corrected the bulk density by subtracting the weight of coarse fragments, the check box in the Coarse_Fragments field (see below) is checked. Otherwise, it must be assumed that the bulk density values were not corrected for coarse fragment content. For about 78% of the horizons, bulk density was not measured. In

those cases, it was estimated using information in Table 8.

- **Bulk_Density_Method** (measured or estimated): This field indicates whether the value in the Bulk_Density field was measured by the contributor or estimated using the information in Table 8.
- **Coarse_Fragments** (check box): A check indicates that the contributor corrected the bulk density value for the presence of coarse fragments (>2 mm diameter).
- **Sand (%)**: This field reports the value for percent by weight of sand-sized particles (0.05–2 mm diameter)
- **Silt (%)**: This field reports the value for percent by weight of silt-sized particles (0.002–0.05 mm diameter).
- **Clay (%)**: This field reports the value for percent by weight of clay-sized particles (≤ 0.002 mm diameter).
- **Coarse_Fragments_Class** (one of four classes: <10%, 10–30%, 31–65%, >65%): The coarse fragments class is based on visual estimates in the field of the fraction of soil >2 mm in diameter (pebbles, stones, etc.).
- **Texture_Class** (some combination of S, Si, or C): The textural class was determined when data were available for percent sand (S), percent silt (Si), and percent clay (C) according to the criteria set out in the Canadian System of Soil Classification (Soil Classification Working Group 1998).

Profile Table

The Profile table contains only three fields. The sole purpose of the table is to link the profile of a plot (identified by the FECD_ID) to many horizons in the Horizon table. The two fields

FECD_ID and PROFILE_ID facilitate this linkage. The third field provides the date (year) when the soil pit was described and sampled.

Detrital_Biomass_Density and Detrital_Carbon_Density Tables

The Detrital_Biomass_Density table (Table 9) contains biomass estimates for foliar litter, standing dead trees, and coarse and fine woody debris, if these data were available.

Only four plots had data for foliar litter biomass (Fyles 1986). Data for coarse and fine woody debris were available for the Halliwell and Apps (1997c) plots, and data for fine woody debris were available for the four Fyles (1986) plots. Estimates for biomass of standing dead trees were possible for some of the plots where dead trees were identified and their diameter was measured. Their height (if not measured) and biomass were estimated using the same equations and procedures as for live trees (see description for Total_Tree_Biomass field in Biomass_Carbon table [Table 6]).

The Detrital_Carbon_Density table contains fields that directly correspond to those in the Detrital_Biomass_Density table. The carbon estimate was calculated by multiplying the detrital biomass by 0.5.

Site_Management and Site_Disturbance Tables

The Site_Management (Table 10) and Site_Disturbance (Table 11) tables were created to hold data for the history of plot management and disturbance. No data of this type were available for the plots accepted into the database, but the tables were retained in the database structure to accommodate future data collection.

Table 9. Summary of fields in the Detrital_Biomass_Density table and the Detrital_Carbon_Density table (maximum of 706 records [plots])

Field name	Description	No. (and %) of records
Detrital_Biomass_Density_ID (or Detrital_Carbon_Density_ID)	Unique identifier automatically assigned by database	307 (43)
Measurement_Date	Year when data were collected	307 (43)
Foliar_Litter	Foliar litter biomass or carbon (kg m ⁻²)	4 (1)
Standing_Dead_Trees	Biomass or carbon of standing dead trees (kg m ⁻²)	267 (38)
Fine_Woody_Debris	Biomass or carbon of woody debris <7 cm diameter (kg m ⁻²)	94 (13)
Coarse_Woody_Debris	Biomass or carbon of woody debris >7 cm diameter (kg m ⁻²)	90 (13)

Table 10. Summary of fields in the Site_Management table (maximum of 706 records [plots])

Field name	Description
Site_Management_ID	Unique identifier automatically assigned by database
FECD_ID	Same as in Site_Information table
Management	Type of management practice such as fertilization, thinning (drop-down menu provides choices)
Management_Year	Estimated year of management practice
Management_Extent	Extent, expressed as percent of total area

Table 11. Summary of fields in the Site_Disturbance table (maximum of 706 records [plots])

Field name	Description
Site_Disturbance_ID	Unique identifier automatically assigned by database
Disturbance	Natural disturbance agents such as fire, wind, snow (drop-down menu provides choices)
FECD_ID	Same as in Site_Information table
Disturbance_Year	Estimated year of disturbance
Extent	Extent, expressed as percent of total area
Tree_Mortality	Extent of tree mortality, expressed as percent (based on Mortality_Basis)
Mortality_Basis	Basis for Tree_Mortality estimate (drop-down menu provides the following options: VL = volume, BA = basal area, CA = crown area, ST = stem number, AR = area)
Specific_Disturbance_Agent	Comment field for details about disturbance agent

THE FECD TEMPLATE

A copy of the FECD template is included on the compact disk for individuals who want to use the database structure to create their own compilation or to record and organize their own research data. The database structure and interface facilitate entry of measurements repeated over time. To use the FECD template Microsoft Access (Microsoft 2000a) must be installed on the user's computer.

Creating a New Database and Initiating Plot Records

1. Look at the READ-ME-FIRST document on the accompanying disk for instructions on installing the template on your hard drive.
2. Double-click on the template icon to bring up the "Site Description" form of the data entry interface (Fig. 4). Do not click on any of the six tabs displayed across the top of the form until after the database has been initiated (by initiating a record for your first plot using the "Site Description" form, following the procedure outlined below).
3. When a new plot is added to the database, the "Plot Identification" box located in the upper left-hand corner of the "Site Description" form must be completed first (Fig. 4). The "Source ID" and "Data Source" fields must be filled in by the user to complete the plot record initialization. The "Data Source" might be the name of an individual researcher or research project, whereas the "Source ID" field should be used for the plot name and must be unique. Enter the year the plot was established in the "Established" field. The entire field must be highlighted to enter the four digits for the year.
4. To initiate a record for subsequent plots, click on the right arrow next to the "Record" box in the lower left-hand corner of the screen (Fig. 4). A new "Site Description" form should appear so that a record can be initiated for the next plot.
5. Once records have been initiated for more than one plot, there are several ways to use the interface to move between plots. The "Record Lookup" box can be used to search plots by their Source ID by typing in the search term, and clicking on the "Search" button. Alternatively, the browse buttons

next to the "Record" box in the lower left-hand corner of the screen can be used to move between plots (Fig. 4). The "Record Lookup" box and the "Record" browse buttons appear on every form associated with each of the six tabs.

"Site Description" Form

Once the plot record is initialized, the remaining fields on the "Site Description" form can be filled in. For several fields, convenient drop-down boxes are provided to facilitate rapid and consistent data entry.

1. The "Ecological Classification" box, located on the left-hand side of the "Site Description" form provides drop-down boxes to enter the names of the terrestrial ecozone and ecoregion (Fig. 4). The terrestrial ecozone name must be selected first; the appropriate subset of ecoregion names then becomes available in the "Terrestrial Ecoregion" drop-down box.
2. The "Order" and "Subgroup/Great Group" drop-down boxes in the "Soil Information" box operate in the same way. The order must be selected first; the appropriate subset of combined subgroup and great group names then becomes available.
3. The "Vegetation Information" box on the right-hand side of the form provides drop-down boxes that allow selection of three combined genus and species codes for each vegetation layer. The choices must be entered in sequence from Species 1 to Species 3. The question-mark button located to the right of the boxes for each vegetation type provides access to a complete list of the genus and species names available in the database and their codes. If the required species name is not on the list, a new name and code can be added to the bottom of the appropriate vegetation type table (see Table 4, the list of accessory tables). The new name should appear in the appropriate drop-down box of the data entry form.
4. Other types of data can be entered by tabbing through the remaining five forms (described below). Data entered into the "Plot Identification" and "Location Data" boxes on the "Site Description" form will automatically appear on the other forms.

Site Description	Disturbance and Management History	Plant Biomass and Carbon	Detrital Biomass and Carbon	Soil Chemical Properties	Soil Physical Properties
Plot Identification Source ID: FILL FIRST Data Source: FILL SECOND Established:	Location Data Province: [dropdown] Latitude: [degrees] [minutes] [seconds] Longitude: [degrees] [minutes] [seconds] Elevation: [] m Landscape information Slope: [] Aspect: [dropdown] Forest Floor Surface Cover Exposed Mineral Soil: [] % Decaying Wood: [] % Duff: [] % Rock Outcrops: [] % Humus Form Information Humus Form: [] H.F. Class System: [] Humus Form Thickness: []	Soil Information Order: [dropdown] Subgroup / Great Group: [dropdown] Drainage Class: [dropdown] Soil Feature: [dropdown] Feature Depth: [] Rooting Depth: [] cm Parent Material: [dropdown]	Vegetation Information Dominant Trees Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown] Codominant Trees Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown] Shrubs Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown] Herbs Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown] Mosses Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown] Lichens Species 1: [dropdown] [?] Species 2: [dropdown] Species 3: [dropdown]		
Ecological Classification Terrestrial Ecozone: [dropdown] Terrestrial Ecoregion: [dropdown] Provincial Ecotype: [] Provincial Ecotype Reference: [] Record Lookup [] [Search]					


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Record: [] 1 of 1

Figure 4. Data entry form for “Site Description.” Note: data entered through the “Site Description” tab appears on the “Site Information” table.

“Disturbance and Management History” Form

There are two buttons on the “Disturbance and Management History” form, one for each type of history. Clicking on the “Management History” button brings up the “Site Management History” window (Fig. 5). Each row within the “Site Management History” window can be used to enter data for a different “Management Event” to describe the history for that plot (Fig. 5). Browse buttons are provided within the “Site Management History” window to facilitate browsing between records within the window. These are different from the browse buttons in the lower left-hand corner of the screen, which facilitate browsing between plots. Clicking on the “Disturbance History” button brings up a window similar to that for “Site Management History” but for natural disturbances.

“Plant Biomass and Carbon” Form

The “Plant Biomass and Carbon” data entry form offers four buttons (“Stand Values,” “Understory Cover,” “Biomass,” and “Carbon”),

which bring up forms for entry of different types of stand-level data for aboveground vegetation. Like the “Disturbance and Management History” form, each row within each of the four forms can be used to enter measurements made on different dates for the same plot. For example, if stand basal area was measured in 1960, again in 1965, and so on, the measurement obtained in each year would be entered in a different row. No drop-down boxes are provided, and all data must be entered directly by the user.

“Detrital Biomass and Carbon” Form

The “Detrital Biomass and Carbon” data entry form is similar in structure to the “Plant Biomass and Carbon” form, but it has only two buttons: one for biomass and one for carbon. The fields in each form are for the measurement date, foliar litter, standing dead biomass, fine woody debris, and coarse woody debris. Data from repeated measurements can be entered as separate records in different rows. No drop-down boxes are provided, and all data must be entered directly by the user.

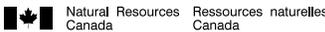
Site Description	Disturbance and Management History	Plant Biomass and Carbon	Detrital Biomass and Carbon	Soil Chemical Properties	Soil Physical Properties																											
Plot Identification Source ID: EXAMPLE ID Data Source: EXAMPLE SOURCE Established: <input type="text"/>		Location Data Province: MB Latitude: 55° 53' Longitude: 98° 41' Elevation: <input type="text"/> m		<input type="button" value="Management History"/> <input type="button" value="Disturbance History"/>																												
Site Management History <table border="1"> <thead> <tr> <th>Year</th> <th>Management Event</th> <th>Extent</th> </tr> </thead> <tbody> <tr> <td></td> <td>Clearcut</td> <td>0</td> </tr> <tr> <td></td> <td>Partial cut</td> <td></td> </tr> <tr> <td></td> <td>Deforestation</td> <td></td> </tr> <tr> <td></td> <td>Cleaning</td> <td></td> </tr> <tr> <td></td> <td>Juvenile spacing</td> <td></td> </tr> <tr> <td></td> <td>Pruning</td> <td>1</td> </tr> <tr> <td></td> <td>Pre-commercial thinning</td> <td></td> </tr> <tr> <td></td> <td>Commercial thinning</td> <td></td> </tr> </tbody> </table>						Year	Management Event	Extent		Clearcut	0		Partial cut			Deforestation			Cleaning			Juvenile spacing			Pruning	1		Pre-commercial thinning			Commercial thinning	
Year	Management Event	Extent																														
	Clearcut	0																														
	Partial cut																															
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	Juvenile spacing																															
	Pruning	1																														
	Pre-commercial thinning																															
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Record Lookup <input type="text"/> <input type="button" value="Search"/>																																
																																
Record: 1 of 1																																

Figure 5. Data entry form for “Disturbance and Management History,” with the “Management History” window open.

“Soil Chemical Properties” Form

The “Soil Chemical Properties” data entry form has two buttons leading to separate windows: one for soil carbon and nitrogen data (Fig. 6) and the other for “Accessory Properties” such as pH and exchangeable cations. The “Soil Carbon and Nitrogen by Horizon” window provides fields to enter the soil profile horizon names, total organic carbon (%), and total nitrogen (%). These are the only fields where numeric data can be entered. The “C Method” field provides a drop-down box with two choices: “Measured” and “Estimated.” The database contains macros that automatically calculate total organic carbon density (kg m^{-2}) and total nitrogen density (kg m^{-2}) for the horizon, provided that the “Total Organic (%)” and “Total N (%)” fields are completed on this form and the fields for horizon thickness (cm) and bulk density (g cm^{-3}) are completed in the “Soil Physical Properties” data entry form. The carbon to nitrogen ratio is automatically calculated if the “Total Organic (%)” and “Total N (%)” fields are completed.

The horizon names entered on this form will automatically appear on the “Accessory Properties” form and the forms associated with the “Soil Physical Properties” tab. If the name of a horizon is changed on any of the soil profile

horizon forms, it will automatically be changed on all the other forms.

The structure of the forms for soil data entry associated with the “Soil Chemical Properties” and “Soil Physical Properties” tabs is slightly different from the structure of forms associated with the “Disturbance and Management History,” “Plant Biomass and Carbon,” and “Detrital Biomass and Carbon” tabs. A record exists for each horizon on each measurement date. The browse arrows that appear immediately below the horizon names allow you to move between horizons (Fig. 6). In the example provided, the browser indicates that record 1 (LFH) of 4 (the four soil horizons) is selected (Fig. 6). The “Measurement Date” box located above the “Horizon” field name is used to enter the year when data were obtained. In the example, the data were collected in 1994 (Fig. 6). Another set of measurements obtained in a different year could be entered by clicking once on the right arrow for browsing between measurement dates (Fig. 6). A new entry form appears, so that the new measurement date (year) and the new data for that year can be entered.

The “Accessory Properties” button leads to a data input form for soil chemical properties such as pH and exchangeable cations. All data must be entered by the user, and fields are self-explanatory.

The screenshot shows a web-based data entry form with several tabs at the top: Site Description, Disturbance and Management History, Plant Biomass and Carbon, Detrital Biomass and Carbon, Soil Chemical Properties (selected), and Soil Physical Properties. The 'Soil Carbon and Nitrogen by Horizon' window is open, displaying a table with the following data:

Horizon	Total Organic C (%)	C Method	Total Organic C Density
LFH	37	Measured	2.1312
Ah	5	Measured	1.335
Bmkgj	1.1	Measured	5.313
Ck	1.6		

Callout boxes in the image provide instructions on navigation: 'Browse arrows used to move between soil horizons' points to the arrows in the table's record navigation; 'Browse arrows used to move between measurement dates' points to the arrows in the 'Record: 1 of 1' navigation; and 'Browse arrows used to move between records (plots)' points to the arrows in the bottom record navigation.

Figure 6. Data entry form for “Soil Chemical Properties,” with the “Carbon and Nitrogen” window open.

“Soil Physical Properties” Form

The “Soil Physical Properties” form has two buttons leading to data entry forms for “Soil Horizon Properties” (Fig. 7) and “Particle Size Analyses.”

The “Soil Horizon Properties” form contains fields for horizon upper and lower depth limits, horizon thickness, and bulk density. A drop-down box offers two choices for bulk density method: “Estimated” and “Measured.” A check box is used to indicate whether the bulk density estimate was corrected for the presence of coarse fragments (Fig. 7).

The “Particle Size Analyses” data entry form contains fields for percent sand, silt, and clay.

The texture class is automatically determined by the database (Soil Classification Working Group 1998), provided that the percent sand, silt, and clay fields are completed and sum to 100% (Fig. 8). Four “Coarse Fragment Classes” are provided by a drop-down box (Fig. 8).

Importing Data

Other types of data files (e.g., Microsoft Excel or text files) can be directly imported into the tables. For details on importing and exporting files, please refer to the Microsoft Access (Microsoft 2000a) help files or a user’s manual. However, it is best to become familiar with the database structure by entering individual plot data before importing large quantities of data.

Site Description	Disturbance and Management History	Plant Biomass and Carbon	Detrital Biomass and Carbon	Soil Chemical Properties	Soil Physical Properties
------------------	------------------------------------	--------------------------	-----------------------------	--------------------------	--------------------------

Plot Identification
 Source ID: EXAMPLE ID
 Data Source: EXAMPLE SOURCE
 Established: _____

Location Data
 Province:
 Latitude: °
 Longitude: °
 Elevation: m

Soil Horizon Properties:

Measurement Date: 0

Horizon Thickness	Bulk Density	Bulk Density Method	Corrected for Coarse Fragment
		Measured	<input type="checkbox"/>
		Estimated	<input type="checkbox"/>

Record: 1 of 1

Record: 1 of 1

Record Lookup

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Record: 1 of 1

Figure 7. Data entry form for "Soil Physical Properties," showing the "Horizon Properties" window.

Site Description	Disturbance and Management History	Plant Biomass and Carbon	Detrital Biomass and Carbon	Soil Chemical Properties	Soil Physical Properties
------------------	------------------------------------	--------------------------	-----------------------------	--------------------------	--------------------------

Plot Identification
 Source ID: EXAMPLE ID
 Data Source: EXAMPLE SOURCE
 Established: _____

Location Data
 Province: MB
 Latitude: 55 ° 53'
 Longitude: 98 ° 41'
 Elevation: m

Particle Size Analyses by Horizon:

Measurement Date: 1994

Clay	Texture Class	Coarse Fragments Class
	76 Heavy Clay	<10%
	72 Heavy Clay	10-30%
	68 Heavy Clay	31-65%
*		>65%

Record: 1 of 4

Record: 1 of 1

Record Lookup

Natural Resources Canada / Ressources naturelles Canada

Record: 1 of 1

Figure 8. Data entry form for "Soil Physical Properties," showing the "Particle Size Analysis" window.

EVALUATION OF TOTAL ECOSYSTEM CARBON

The following summary and discussion of large-scale comparisons and trends is provided as an example of the type of analysis that can be achieved with the database. The reader must be aware that the summary provided here is not the result of a comprehensive analysis of data in the FECD at the scale of individual plots. Rather, descriptive statistics at the scale of terrestrial ecozones or ecoclimatic provinces are provided for stand age and for carbon stocks in soil organic horizons, soil mineral horizons (to 100-cm depth), and live tree biomass. Total ecosystem carbon is reported as the sum of live tree biomass carbon plus carbon in the mineral and organic soil horizons. Estimates of carbon stocks for individual plots summarized in this evaluation are found in Appendix 3. Pearson correlation coefficients were determined for some of the variables to illustrate relationships at a large scale.

In the evaluation, no estimates are provided for detrital carbon (e.g., coarse woody debris, standing dead trees), which can be an important component in the carbon budget of forested ecosystems and would be expected to influence the magnitude and variability of total ecosystem carbon estimates. Halliwell and Apps (1997c) estimated carbon ($t\ ha^{-1}$) for coarse and fine woody debris in plots located in the Boreal Plains and Boreal Shield ecozones. They concluded that, in general, the amount of carbon in the woody debris is less than that in the organic or mineral soil horizons. Conversely, similar estimates for plots on Vancouver Island in the Pacific Maritime ecozone, showed

that detrital carbon constituted a significant proportion of total ecosystem carbon and that the proportion varied with stand age and site type (Trofymow and Blackwell 1998). Although the FECD contains some data for detrital carbon, it is not enough to justify estimation of means for comparison between terrestrial ecozones. The comprehensive National Forest Inventory (Natural Resources Canada 1999) currently under way will ensure that plot-level data are collected for the detrital component, as well as the aboveground vegetation and soils.

Means are reported only for ecozones where the appropriate data were available. For some of these ecozones, data were available for very few plots. The means reported should not be taken as representative of the ecozone as a whole, but rather as the means for plots for which data were provided. They should not be directly compared with site-specific results.

The Boreal Shield and Taiga Shield ecozones were divided into eastern and western parts because the west is typically colder and drier than the east; these subzones have been modeled separately (Kurz et al. 1992; Table 12). Before calculation of the summary statistics, the plots were divided into two groups: a relatively small group of plots with organic or wetland soils (Organic order and Organic Cryosol great group of the Cryosolic order) and a larger group of plots with mineral or upland soils.

Table 12. Mean temperature range and precipitation for various ecozones

Terrestrial ecozone	Mean temperature range (°C)			Mean annual precipitation (mm)
	Annual	Winter	Summer	
Taiga Plains (TP)	-10 to -1	-26 to -15	6.5 to 14	200 to 500
Western Taiga Shield (WTS)	-8 to 0	-11 to -24.5	6 to 11	200 to 500
Western Boreal Shield (WBS)	-4	>-20.5	11 to 15	>400
Atlantic Maritime (AM)	3.5 to 6.5	-8 to -2	13 to 15.5	900 to 1500
Mixedwood Plains (MP)	5 to 8	-2.5 to -7	16 to 18	720 to 1000
Boreal Plains (BP)	-2 to 2	-17.5 to -11	13 to 15.5	300 to 625
Pacific Maritime (PM)	4.5 to 9	-0.5 to 3.5	10 to 15	1500 to 3000
Montane Cordillera (MC)	0.5 to 7.5	-11 to -1	11 to 16.5	500 to 1500
Hudson Plains (HP)	-4 to -2	-19 to -16	10.5 to 11.5	400 to 800
Eastern Boreal Shield (EBS)	5.5	-1	11 to 15	>1000

Source: summarized from <http://www.ccea.org/ecozones/terr.html>.

Wetland Plots

Very few plots in the database are from wetland sites (soils in the Organic order and the Organic Cryosol great group of the Cryosolic order). Carbon estimates in this database are standardized to 100 cm depth and would underestimate carbon stocks for peatlands, which are typically 2–3 m in depth and may be up to 5 or 6 m in depth (Tarnocai and Lacelle 2001). The summary in this report is provided to illustrate a comparison between upland, transitional, and wetland sites. In-depth analysis of carbon stocks in the wetlands of Canada is provided elsewhere (Vitt et al. 2000; Tarnocai and Lacelle 2001).

Some comparisons can be made between upland and wetland sites in the Taiga Plains and Boreal Plains ecozones. Wetland plots in each of these ecozones were divided into two groups to distinguish sites that are transitional between uplands and wetlands. Transitional sites were defined as those with mineral soil horizons within the top 1 m and wetlands as soils that were organic throughout the 1-m depth. The ecosystem carbon of these groups was compared with that of the upland sites in the same ecozones (Figs. 9 and 10).

Average total ecosystem carbon and its distribution between components were similar for upland sites in both ecozones and for wetland sites in both ecozones (Fig. 9). As expected, wetland sites had the highest proportion of carbon in the organic horizons. In both ecozones tree biomass carbon was lower in the wetland plots, than in the upland plots, which may be due to a younger average stand age in the wetland plots in the Boreal Plains (Fig. 10) or (more likely) the low tree productivity in wetland sites that is commonly observed (Simpson et al. 1993). The main difference between the two ecozones was in the mineral soil carbon of the transitional plots, where the average value was higher for the Boreal Plains than the Taiga Plains (Fig. 9) because of the presence of A and B horizons with a relatively high percentage of carbon in some of the Boreal Plains plots. Mineral soils of the Taiga Plains plots had no A or B horizons but only C horizons with a relatively low percentage of carbon. This finding is consistent with the prevailing view that peatlands are older and soils younger in the northern range of peatlands (Taiga Plains), whereas peatlands are younger and soils older in the southern range of peatlands (Boreal Plains). Where soils are older, sufficient time has passed for pedological processes to result in

the horizon development (presence of A and B horizons) that is evident in the Boreal Plains mineral soil under peat.

Upland Plots

Estimates from the FECD

Estimates for mean total ecosystem carbon for different terrestrial ecozones ranged from 113 t ha⁻¹ in the Western Taiga Shield (WTS) to 487 t ha⁻¹ in the Pacific Maritime ecozone (PM) (Fig. 11). Estimated means for mineral soil horizons ranged from 48 t ha⁻¹ (WTS) to 387 t ha⁻¹ (PM). Means for soil organic horizons ranged from 11 t ha⁻¹ in the Mixedwood Plains (MP) to 63 t ha⁻¹ in the Taiga Plains (TP), whereas those for live tree biomass ranged from 35 t ha⁻¹ in the Western Boreal Shield (WBS) to 102 t ha⁻¹ in the Boreal Plains (BP) (Fig. 11). In general, the highest relative contribution to total ecosystem carbon was from mineral soil (40–80%), followed by tree biomass (15–40%) and organic soil horizons (2–25%) (Fig. 12).

The terrestrial ecozones could be divided into two productivity groups on the basis of average tree biomass carbon (Fig. 13c). The low biomass carbon group, with less than 50 t ha⁻¹, included the WTS, WBS, and Hudson Plains (HP) ecozones. The high biomass carbon group, with average biomass carbon above 50 t ha⁻¹, included the BP, TP, Montane Cordillera (MC), Eastern Boreal Shield (EBS), MP, Atlantic Maritime (AM), and PM ecozones. Ecozones with low tree biomass carbon (Fig. 13c) also had low total ecosystem carbon (Fig. 11).

The average stand age for the different ecozones ranged from 31 years (PM) to 111 years (WTS, MC) (Fig. 13d). Research has shown that stand-level biomass is strongly correlated with stand age and disturbance history (Kurz and Apps 1999). Summary statistics from the FECD show that average stand age correlates with biomass carbon within the ecozone groups with low ($R^2 = 0.99$) and high ($R^2 = 0.54$) tree biomass carbon, but not across all ecozones. For example, the average stand age of 111 years (WTS, MC ecozones) corresponded with a biomass carbon value of 42 t ha⁻¹ in the low biomass carbon group (WTS) and 95 t ha⁻¹ in the high biomass group (MC); the average stand age of 62 years (WBS, MP ecozones) corresponded with a biomass carbon value of 35 t ha⁻¹ in the low biomass carbon group (WBS) and 98 t ha⁻¹ in the high biomass group (MP) (Figs. 13c, 13d).

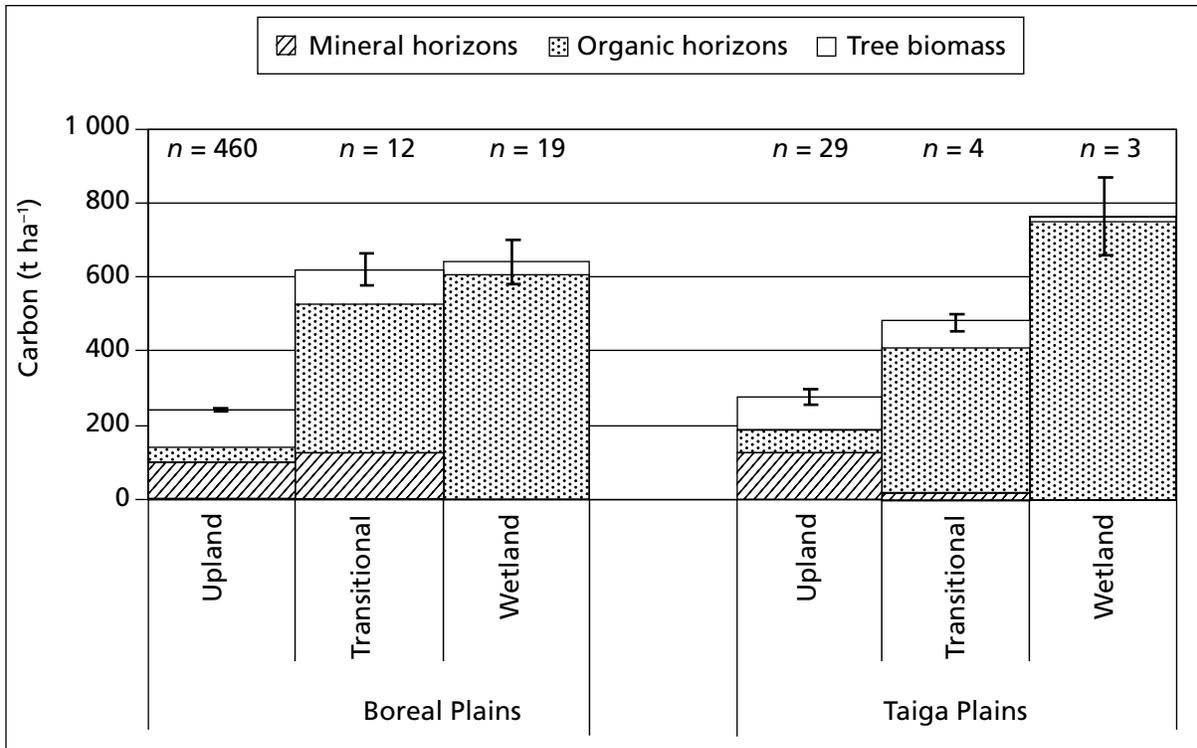


Figure 9. Distribution of total ecosystem carbon between soil mineral horizons, soil organic horizons, and tree biomass in upland, transitional, and wetland sites of the Boreal Plains and Taiga Plains ecozones. *n* = number of plots used to estimate the mean and standard error; standard error bar applies only to the total for each group.

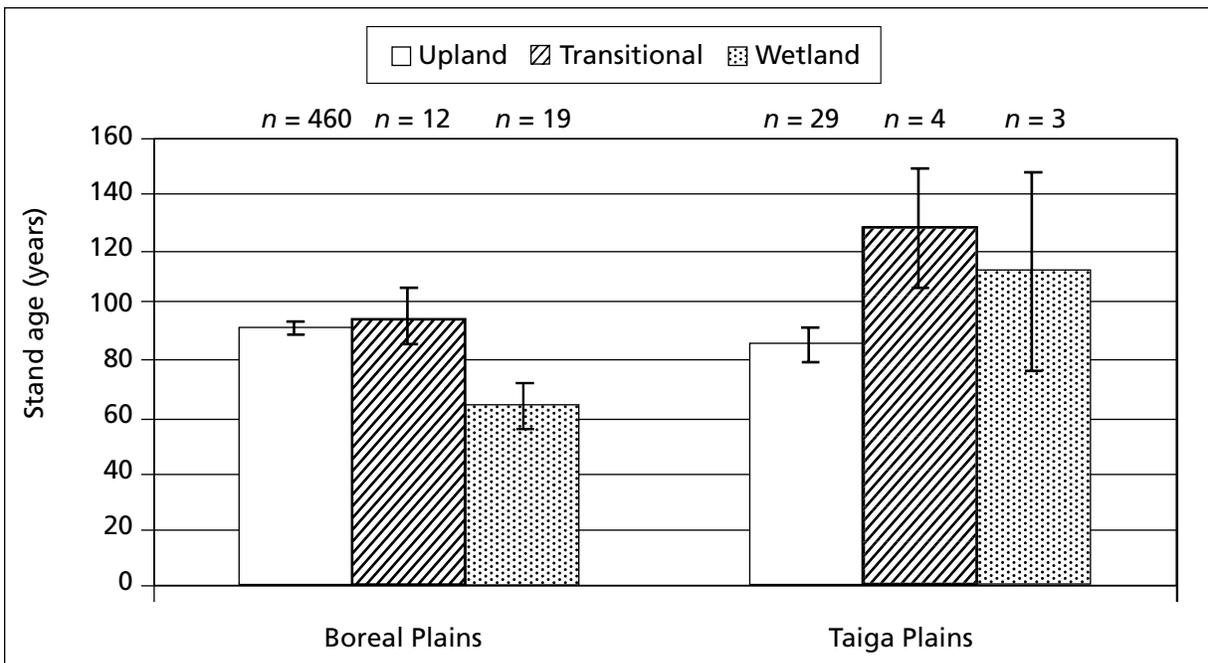


Figure 10. Average stand age in upland, transitional, and wetland sites of the Boreal Plains and Taiga Plains. *n* = number of plots used to estimate the mean and standard error.

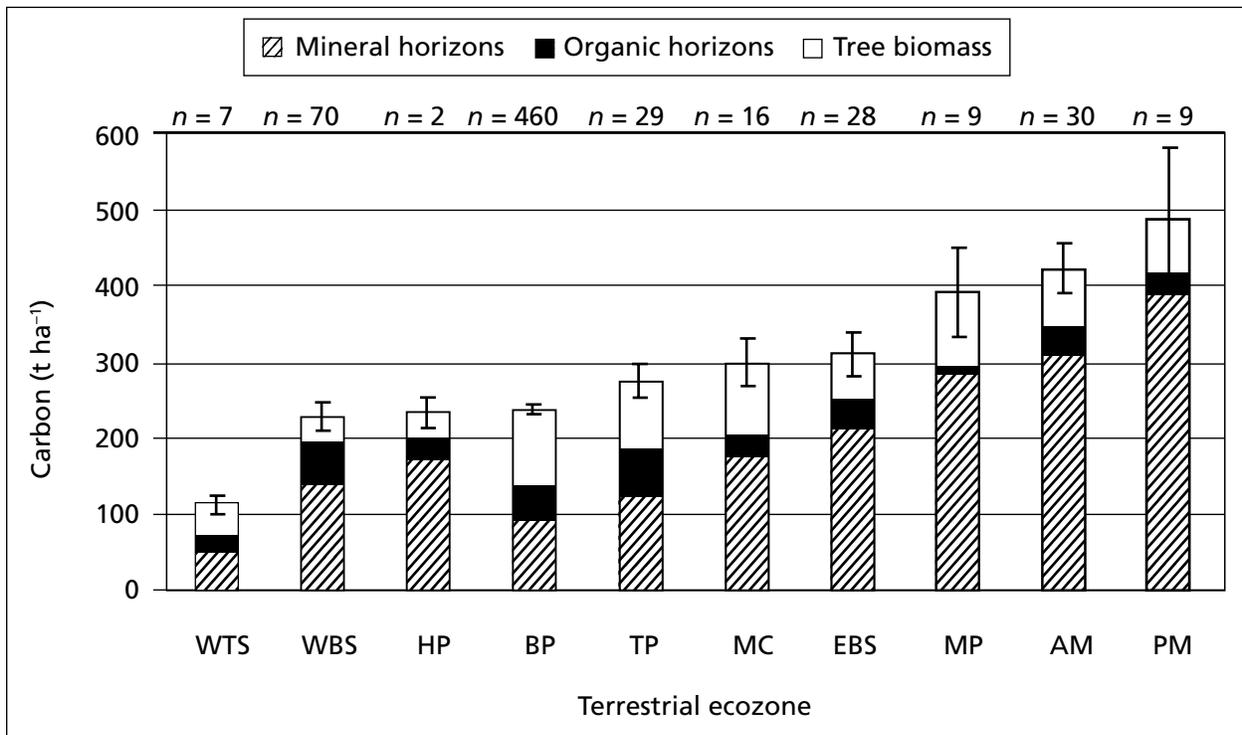


Figure 11. Distribution of total ecosystem carbon between soil mineral horizons, soil organic horizons, and tree biomass in the various terrestrial ecozones. *n* = number of plots used to estimate the mean and standard error; standard error bar applies only to total ecosystem carbon for each ecozone. WTS = Western Taiga Shield, WBS = Western Boreal Shield, HP = Hudson Plains, BP = Boreal Plains, TP = Taiga Plains, MC = Montane Cordillera, EBS = Eastern Boreal Shield, MP = Mixedwood Plains, AM = Atlantic Maritime, and PM = Pacific Maritime.

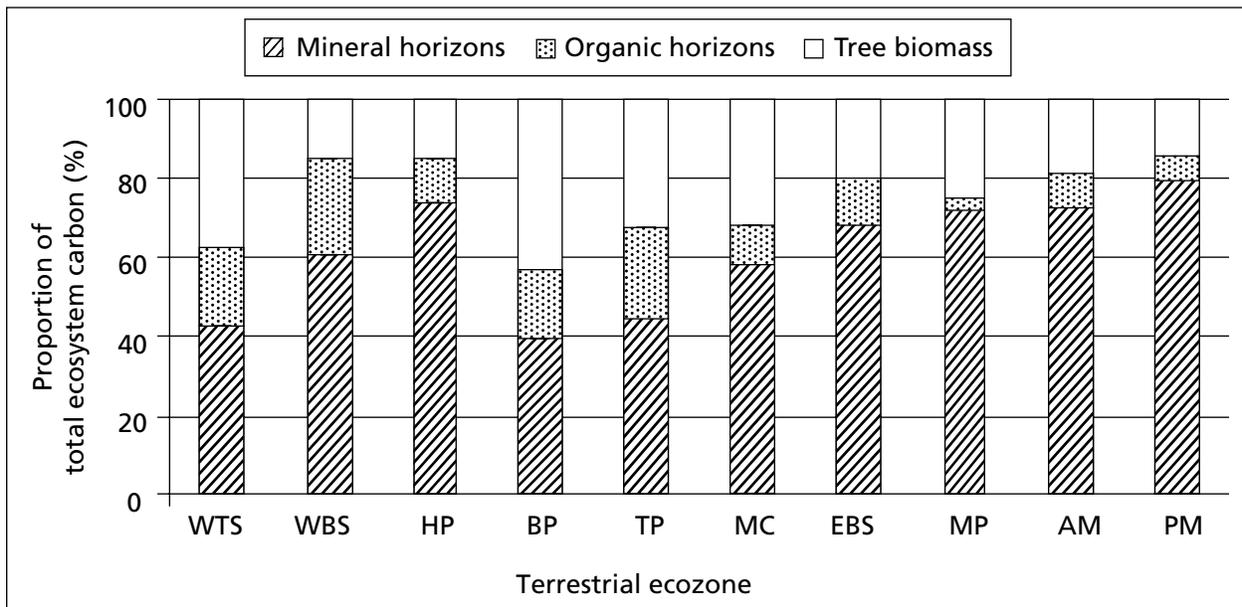


Figure 12. Relative contribution of mineral horizon soil carbon, organic horizon soil carbon, and tree biomass carbon to total ecosystem carbon. WTS = Western Taiga Shield, WBS = Western Boreal Shield, HP = Hudson Plains, BP = Boreal Plains, TP = Taiga Plains, MC = Montane Cordillera, EBS = Eastern Boreal Shield, MP = Mixedwood Plains, AM = Atlantic Maritime, and PM = Pacific Maritime.

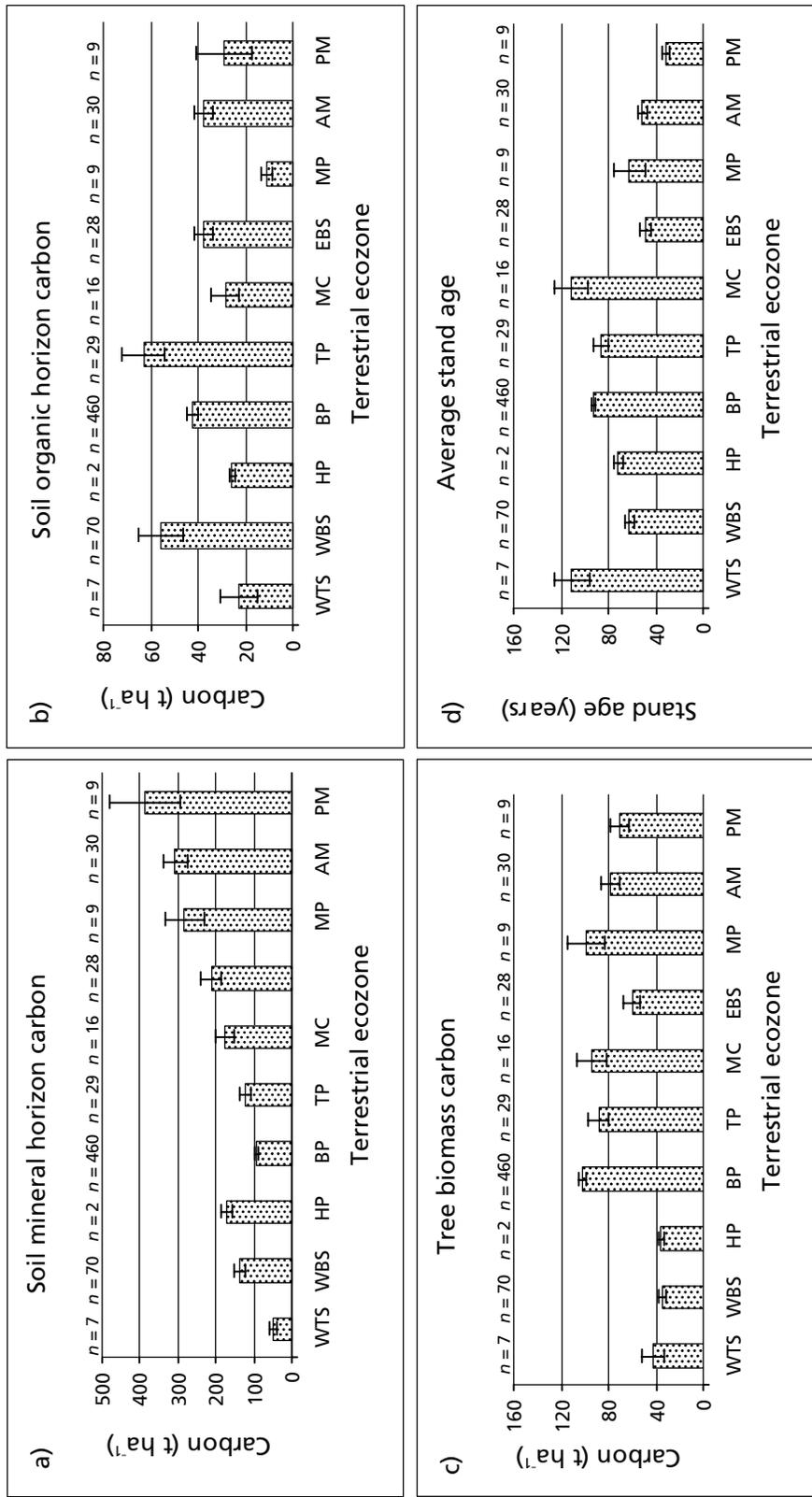


Figure 13. Average stand age and distribution of carbon in soil mineral horizons, soil organic horizons, tree biomass, and average stand age for the various terrestrial ecoregions. WTS = Western Taiga Shield, WBS = Western Boreal Shield, HP = Hudson Plains, BP = Boreal Plains, TP = Taiga Plains, MC = Montane Cordillera, EBS = Eastern Boreal Shield, MP = Mixedwood Plains, AM = Atlantic Maritime, and PM = Pacific Maritime.

On average, mineral soil carbon contributes the largest quantity and proportion of carbon to total ecosystem carbon estimates (Figs. 11, 12, 13a). Although, as mentioned above, detrital carbon may be an important component contributing to total ecosystem carbon in some instances, there were insufficient data in the FECD to assess this contribution.

Within the low and high biomass carbon groups, the trend for increasing mineral soil carbon content roughly corresponded to climatic gradients from cold and wet to warm and dry (Fig. 13a, Table 12). Mineral soil carbon was correlated with mean annual precipitation within the high ($R^2 = 0.77$) and low ($R^2 = 0.87$) tree biomass groups. In the high tree biomass group, mineral soil carbon was correlated with mean winter temperature (MWT) ($R^2 = 0.63$), but not mean summer temperature (MST) ($R^2 = 0.05$), whereas the converse was true for the low tree biomass group ($R^2 = 0.11$ and 0.55 for MWT and MST, respectively). Mineral soil carbon was not correlated with mean annual temperature (MAT) in either tree biomass group.

Ecozones with the highest mineral soil carbon content had plots dominated by soils from the Podzolic order (EBS, AM, and PM ecozones), with high carbon content in the B horizons, or by Sombric and Melanic Brunisols and Gray Brown Luvisols (MP ecozone), with high carbon content in the A horizons. Ecozones within the high tree biomass carbon group but with lower mineral soil carbon content (BP, TP, and MC ecozones) were dominated by Eluviated Brunisols and Gray Luvisols. Within the low biomass carbon group, mineral soil carbon in the WTS ecozone was much lower than for the WBS and HP ecozones. The WTS plots were dominated by Eluviated Dystric Brunisols, whereas the WBS and HP ecozones contained a significant number of plots with Regosols, Gleysols, and Gleyed Luvisols, in addition to the Eluviated Brunisols. These poorly drained soils are typically associated with higher carbon content because of low decomposition rates.

Average ecozone carbon content of the organic soil horizons was highly variable across ecozones (Fig. 13b) and did not correlate with mean stand age. In the high tree biomass group, organic horizon carbon was negatively correlated with MWT ($R^2 = -0.51$), MST ($R^2 = -0.73$), and MAT ($R^2 = -0.74$). In the low biomass group,

organic horizon carbon was negatively correlated with MWT ($R^2 = -1.00$), positively correlated with MST ($R^2 = 0.97$), and not correlated with MAT ($R^2 = -0.18$).

Within the low tree biomass group, the estimated mean carbon content of the organic horizons for the WBS ecozone was higher than that for the HP or WTS ecozones. This may reflect the combined effects of poor drainage (indicated by the presence of Regosols, Gleysols, and Gleyed Luvisols), cold temperatures, and acidic parent materials of the Canadian Shield, all of which reduce decomposition rates. Within the high tree biomass group, the highest average carbon content of the organic horizons occurred in the TP ecozone (Fig. 13b) where the MAT and precipitation were the lowest (Table 12); these climatic features might have led to low decomposition rates and an accumulation of organic matter at the soil surface. Intermediate values for organic horizon carbon content in the BP ecozone may have been due to poor drainage conditions (indicated by the presence of Gleysols and Regosols); in the EBS, AM, and PM ecozones, intermediate values may have been due to the balance between the effect of acidic parent materials (which may reduce decomposition rates) and high mean annual precipitation and MAT (which may enhance decomposition rates). The lowest carbon content in the organic horizons occurred in the MP ecozone, which is consistent with pedogenic processes of the dominant soil types (Gray Brown Luvisols and Sombric and Melanic Brunisols) leading to a forest mull Ah humus form (Klinka et al. 1981). In these cases the activity of soil organisms results in the intermixing of organic and mineral horizons and a net reduction of organic matter at the mineral soil surface.

Comparison with Other Carbon Estimates

Previously published large-scale estimates for forest soil carbon (Tarnocai and Lacelle 1996; Siltanen et al. 1997) and forest ecosystem carbon (Kurz and Apps 1999) in Canada were stratified by ecoclimatic province (Ecoregions Working Group 1989), rather than by terrestrial ecozone (Ecological Stratification Working Group 1996) as in this report. To facilitate comparison between the FECD estimates and those previously published, maps for each classification system were examined to determine the approximate correspondence between ecoclimatic provinces and terrestrial ecozones (Table 13).

Table 13. Approximate correspondence between ecoclimatic provinces and terrestrial ecozones

Ecoclimatic province	Terrestrial ecozone(s)
Pacific Cordilleran (PC)	Pacific Maritime
Cool Temperate (CT)	Atlantic Maritime and Mixedwood Plains
Boreal East (BE)	Eastern Boreal Shield
Boreal West (BW)	Boreal Plains, Taiga Plains, Western Boreal Shield
Cordilleran (C)	Montane Cordillera
Interior Cordilleran (IC)	Montane Cordillera

The means presented in the figures are identified by ecoclimatic province, although this categorization is not strictly true for the FECD, for which means were drawn from the corresponding terrestrial ecozone means (Table 13). The FECD mean for the Cool Temperate ecoclimatic province was calculated as the straight mean of the Atlantic Maritime and Mixedwood Plains ecozones, as they are of approximately the same size. A weighted mean was calculated for the Boreal West ecoclimatic province to account for the large differences in the size of the three ecozones used in the calculation (Table 13).

The FECD estimates for total tree biomass carbon and total ecosystem carbon (based on plots) were compared with those predicted by the Carbon Budget Model of the Canadian Forest Sector 2 (CBM-CFS2) (Kurz et al. 1992; Kurz and Apps 1999), an inventory-based model of forest carbon stocks. The carbon stocks reported for a region are based on the averages of thousands of stands of all site productivity classes and ages, including recently disturbed stands that may not contain any biomass. Biomass carbon estimates were simulated based on model parameters derived from Canada's national biomass inventory (Bonnor 1985). Estimates of other ecosystem carbon pools, such as dead organic matter in detritus, coarse woody debris, and soil, were derived through simulation modeling. In contrast, FECD data represented an often small number of sample plots within the same geographic region. Because these were not sampled to be representative of populations stratified by ecozones or ecoclimatic provinces, the comparisons here are primarily for illustrative purposes.

The FECD estimates for soil carbon were compared with several other independent estimates. Two of the other estimates were based on plot-level data, one was based on pedological mapping, and the fourth was based on the CBM-

CFS2, which was used for comparison of tree biomass and total ecosystem carbon estimates.

Plot-based estimates are shown for the Oak Ridge National Laboratory (ORNL, as reported in Siltanen et al. 1997) and from the Forest Soil Profile Carbon Database (FSPCD, Siltanen et al. 1997). Estimates from FECD, ORNL, and the Canadian Soil Organic Carbon Database (CSOCD) are all based on a standard depth of 100 cm for the mineral soil. The depths of mineral soil in the FSPCD (Siltanen et al. 1997) are highly variable, ranging from 3 to 101 cm, with approximately 30–40% of the profiles less than 50 cm deep. To standardize the depth for comparison with the other soil carbon estimates, a subset of sites with soil profiles 90 to 100 cm deep were extracted from the FSPCD, and means for the ecoclimatic provinces were recalculated.

Estimates derived from the CSOCD (Tarnocai and Lacelle 1996) were based on pedological maps. The CSOCD provided one estimate for a Boreal ecoclimatic province, whereas other databases provided two estimates, one each for eastern and western parts of the Boreal ecoclimatic province. The CSOCD estimate for the Boreal is high (550 t ha⁻¹) relative to the other estimates, as it includes many nonforested wetland areas. Bhatti et al. (2002) recently used the same approach as that used for the CSOCD to generate estimates for the forested areas in the Boreal ecoclimatic province in Alberta, Saskatchewan, and Manitoba (102.0, 82.0, and 107.0 t ha⁻¹, respectively). An average of these three values was used to represent the Boreal West for the CSOCD comparisons in this report. Thus, a total of six estimates for soil carbon are compared:

- ORNL (plot-based): as reported in Siltanen et al. (1997),
- FSPCD (plot-based): data from Siltanen et al. (1997); means based on a subset of data with mineral soil profiles 90–100 cm deep,

- CSOCD (map-based): data from Tarnocai and Lacelle (1996), with Boreal West estimate from Bhatti et al. (2002),
- FECD (plot-based): estimates from this database,
- GM: a grand mean estimated from ORNL, FSPCD, CSOCD, and FECD,
- CBM-CFS2 (model-based): modeled results from the Carbon Budget Model of the Canadian Forest Sector 2 (Kurz and Apps 1999).

In general, the observed similarities and differences between model-based and plot-based estimates for ecosystem carbon were as expected. Modeled estimates for total ecosystem carbon were within the 95% confidence interval estimated using data from the FECD for the six ecoclimatic provinces that were compared (Fig. 14).

Estimates of total soil carbon stock were largely determined by mineral soil carbon, which accumulates over a longer time frame than that for stand development (from 60 to 300 or 400 years). The inherently low variability of mineral soil carbon on a large scale is reflected in the relatively good agreement between the estimates for mean total soil carbon regardless of the approach and between the grand mean and modeled results (Fig. 15).

Conversely, tree biomass, as well as the detrital pools (such as coarse woody debris) and soil organic horizons, which are largely derived from tree biomass, is highly variable over the course of stand development (represented by stand age) and is responsive to site quality and disturbance type (e.g., fire, insects, harvesting) and frequency. Thus, it might be expected that plot-level estimates, especially those based on a low sample size (as for the Pacific Cordilleran ecoclimatic province), which are likely biased in some way, would exhibit high variability in biomass carbon estimates (Fig. 16). Inventory or research plots of the type included in the FECD are typically installed to represent a specific ecotype or to measure trees in commercially productive forest. In the latter situation, tree biomass estimates may be biased toward mature, productive forests, tending to underrepresent young or unproductive forests; when young and unproductive forests are included, the estimate of mean biomass carbon should be lower. Models such as CBM-CFS2 attempt to simulate the influences of large-scale disturbances by fire, insects, and harvesting, which tend to reduce stand age and therefore lower biomass carbon estimates. As a consequence, there is relatively poor agreement between means for tree biomass carbon estimated from plots and modeled results (Fig. 16).

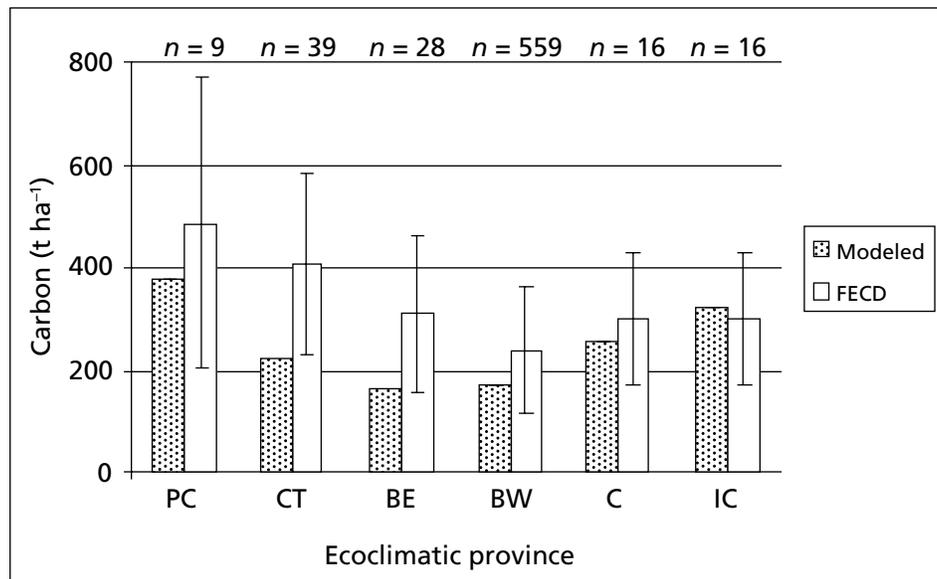


Figure 14. Comparison of estimates of average total ecosystem carbon from the Forest Ecosystem Carbon Database (FECD) and the Carbon Budget Model of the Canadian Forest Sector 2 model (Kurz and Apps 1999). *n* = number of plots used to estimate the mean and standard deviation. PC = Pacific Cordilleran, CT = Cool Temperate, BE = Boreal East, BW = Boreal West, C = Cordilleran, and IC = Interior Cordilleran.

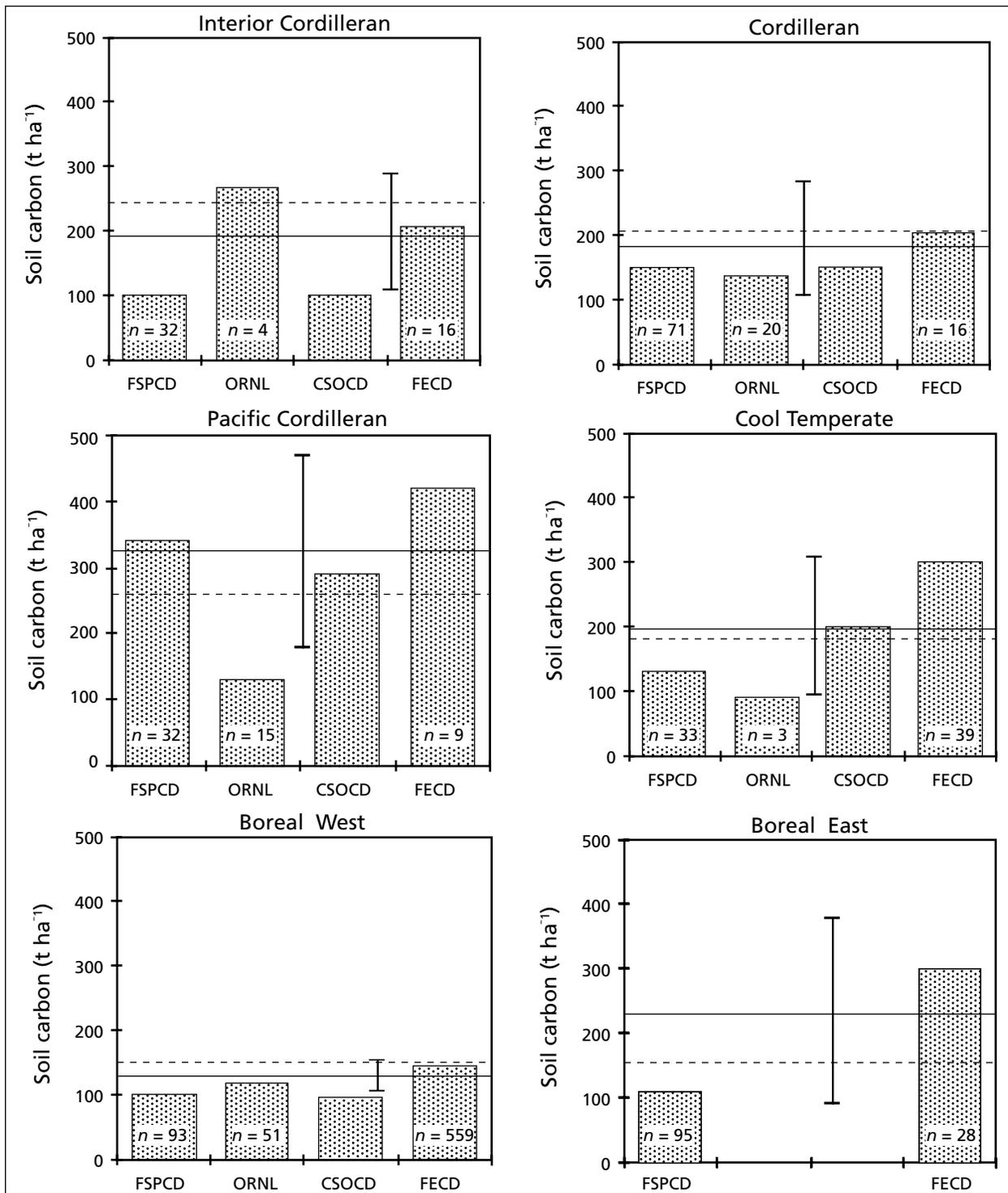


Figure 15. Comparison of four estimates for total soil carbon content (bars), their grand mean (solid line), and its standard deviation (error bar), with modeled results (dashed line) (Kurz and Apps 1999) for the various ecoclimatic provinces. *n* = number of plots used to estimate the mean represented by each bar; FSPCD = Forest Soil Profile Carbon Database (Siltanen et al. 1997), ORNL = Oak Ridge National Laboratory (as reported in Siltanen et al. 1997), CSOCD = Canadian Soil Organic Carbon Database (Tarnocai and Lacelle 1996), FECD = Forest Ecosystem Carbon Database. Note: no *n* values are given for CSOCD data because the estimate reported was based on map units and not individual plots.

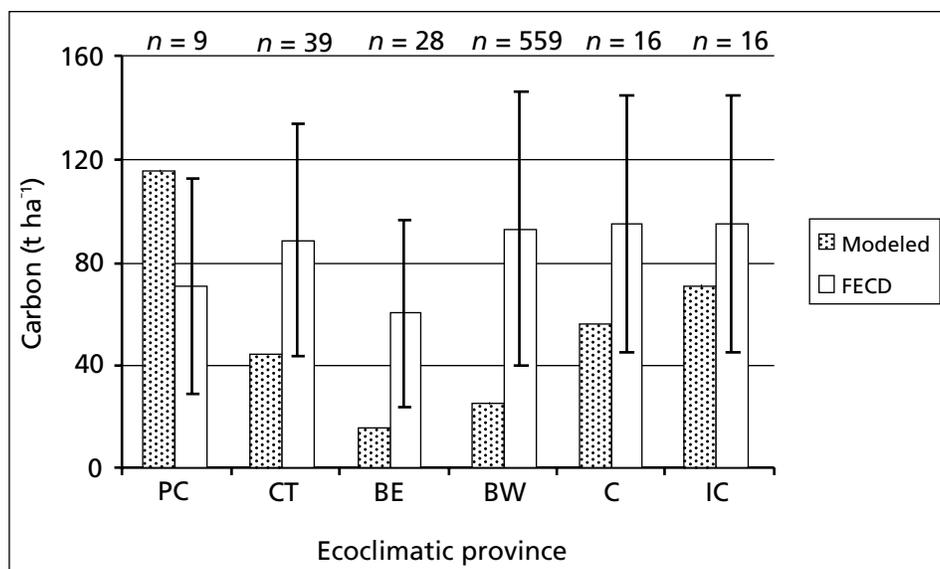


Figure 16. Comparison of estimates of average total live tree biomass carbon from the Forest Ecosystem Carbon Database (FECD) and the Carbon Budget Model of the Canadian Forest Sector 2 model (Kurz and Apps 1999). *n* = number of plots used to estimate the mean and standard deviation. PC = Pacific Cordilleran, CT = Cool Temperate, BE = Boreal East, BW = Boreal West, C = Cordilleran, and IC = Interior Cordilleran.

CONCLUDING REMARKS

This FECD is a compilation of data from over 700 plots from across Canada. Although it is, to the authors' knowledge, the largest database of its type in Canada, it represents only 30–40% of the total number of known similar plots in the country. The database is relatively complete for site description information, soil chemistry, stand-level estimates of live tree biomass (and carbon) components (foliage, stem wood, stem bark, branches) and their totals, as well as soil carbon content by horizon. Totals for organic and mineral soil horizons, total soil carbon, tree biomass carbon and total ecosystem carbon for each plot are provided in Appendix 3.

This compilation targeted data collected at single points in space (the plots) where aboveground (tree biomass) and belowground (forest floor, mineral soil) carbon were measured simultaneously. The data are best for site-specific analyses of the relationships between stand characteristics and edaphic factors that may influence the distribution of carbon between trees, the forest floor, and the mineral soil. Caution

should be exercised when scaling up results from plots to larger ecosystem units (ecoregion or ecozone) because the plots are not sampled to be representative of the larger units. However, the FECD most likely represents the best publicly available compilation of this type of data currently available.

Estimates for detrital biomass (litter, fine and coarse woody debris, standing dead biomass, etc.) and carbon were available for some plots, but in general detrital components were not measured. No data were available for the natural disturbance or management histories of the stands where the plots were located. This represents a significant information gap, since disturbance and management history significantly influence stand age and therefore live tree biomass and transfers to detrital pools.

Many of the information gaps and the inability of the plots to accurately reflect large-scale ecosystem units should eventually be satisfied by data collected for the new National Forest

Inventory, but those data will not be available for model testing and analysis for some time. Thus, the FECD provides a quality-controlled database to satisfy the immediate needs of large-scale ecosystem modelers and ecosystem analysts for model testing and meta-analyses.

Recognizing that the database and its template are of value to other forest research scientists, the Microsoft Access database and its template, as well as copies of Microsoft Excel spreadsheets for all of the Access tables, are provided on the accompanying compact disk.

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APPENDIX 1

VEGETATION SPECIES CODES AND CORRESPONDING SCIENTIFIC NAMES IN THE FOREST ECOSYSTEM CARBON DATABASE (FECDB)

Appendix 1A. Trees^a

FECD code	Scientific name	FECD code	Scientific name
ABIE AMA	<i>Abies amabilis</i> (Dougl. ex Loud.) Dougl. ex Forbes	FAGU GRA	<i>Fagus grandifolia</i> Ehrh.
ABIE BAL	<i>Abies balsamea</i> (L.) Mill.	FRAX AME	<i>Fraxinus americana</i> L.
ABIE CON	<i>Abies concolor</i> (Gord. & Glend.) Lindl.	FRAX LAT	<i>Fraxinus latifolia</i> Benth.
ABIE GRA	<i>Abies grandis</i> (Dougl. ex D. Don) Lindl.	FRAX NIG	<i>Fraxinus nigra</i> Marsh.
ABIE LAS	<i>Abies lasiocarpa</i> (Hook.) Nutt.	FRAX PEN	<i>Fraxinus pennsylvanica</i> Marsh.
ABIE MAG SHA	<i>Abies magnifica</i> A. Murr var. <i>shastensis</i> Lemmon	FRAX PEN SUB	<i>Fraxinus pennsylvanica</i> Marsh. var. <i>subintegerrima</i> (Vahl) Fern.
ABIE PRO	<i>Abies procera</i> Rehd.	FRAX SPP	<i>Fraxinus</i> spp.
ABIE SPP	<i>Abies</i> spp.	GENC	Unknown softwood
ACER CIR	<i>Acer circinatum</i> Pursh	GENH	Unknown hardwood
ACER MAC	<i>Acer macrophyllum</i> Pursh	GLED TRI	<i>Gleditsia triacanthos</i> L.
ACER NEG	<i>Acer negundo</i> L.	ILEX VER	<i>Ilex verticillata</i> (L.) A. Gray
ACER PEN	<i>Acer pensylvanicum</i> L.	JUGL CIN	<i>Juglans cinerea</i> L.
ACER PLA	<i>Acer platanoides</i> L.	JUGL NIG	<i>Juglans nigra</i> L.
ACER PSE	<i>Acer pseudoplatanus</i> L.	JUNI SCO	<i>Juniperus scopulorum</i> Sarg.
ACER RUB	<i>Acer rubrum</i> L.	JUNI VIR	<i>Juniperus virginiana</i> L.
ACER SAC	<i>Acer saccharinum</i> L.	LARI DEC	<i>Larix decidua</i> Mill.
ACER SAH	<i>Acer saccharum</i> Marsh.	LARI KAE	<i>Larix kaempferi</i> (Lamb.) Carrière
ACER SPI	<i>Acer spicatum</i> Lamb.	LARI LAR	<i>Larix laricina</i> (Du Roi) K. Koch
ACER SPP	<i>Acer</i> spp.	LARI LYA	<i>Larix lyallii</i> Parl.
ALNU CRI	<i>Alnus crispa</i> (Ait.) Pursh	LARI OCC	<i>Larix occidentalis</i> Nutt.
ALNU TEN	<i>Alnus tenuifolia</i> Nutt.	LIRI TUL	<i>Liriodendron tulipifera</i> L.
ALNU INC RUG	<i>Alnus incana</i> (L.) Moench. ssp. <i>rugosa</i> (Du Roi) Clausen	MALU FUS	<i>Malus fusca</i> (Raf.) C.K. Schneid.
ALNU INC TEN	<i>Alnus incana</i> (L.) Moench. ssp. <i>tenuifolia</i> (Nutt.) Breit	MALU SPP	<i>Malus</i> spp.
ALNU RUB	<i>Alnus rubra</i> Bong.	NEMO MUC	<i>Nemopanthus mucronatus</i> (L.) Trel.
ALNU SIN	<i>Alnus sinuata</i> (Regel) Rydb.	NYSS SYL	<i>Nyssa sylvatica</i> Marsh.
ALNU SPP	<i>Alnus</i> spp.	OSTR VIR	<i>Ostrya virginiana</i> (Mill.) K. Koch
AMEL SPP	<i>Amelanchier</i> spp.	PICE ABI	<i>Picea abies</i> (L.) Karst.
ARBU MEN	<i>Arbutus menziesii</i> Pursh	PICE ENG	<i>Picea engelmannii</i> Parry ex Engelm.
ASIM TRI	<i>Asimina triloba</i> (L.) Dunal	PICE ENG GLA	<i>Picea engelmann</i> x <i>glauca</i>
BETU ALL	<i>Betula alleghaniensis</i> Britt.	PICE GLA	<i>Picea glauca</i> (Moench) Voss
BETU COR	<i>Betula cordifolia</i> Regel	PICE LUT X	<i>Picea</i> x <i>lutzii</i> Little
BETU GLA	<i>Betula glandulosa</i> Michx.	PICE MAR	<i>Picea mariana</i> (Mill.) BSP
BETU NEO	<i>Betula neoalaskana</i> Sarg.	PICE RUB	<i>Picea rubens</i> Sarg.
BETU OCC	<i>Betula occidentalis</i> Hook.	PICE SIT	<i>Picea sitchensis</i> (Bong.) Carrière
BETU PAP	<i>Betula papyrifera</i> Marsh.	PICE SIT X	<i>Picea sitchensis</i> x ?
BETU PEN	<i>Betula pendula</i> Roth	PICE SPP	<i>Picea</i> spp.
BETU POP	<i>Betula populifolia</i> Marsh.	PINU ALB	<i>Pinus albicaulis</i> Engelm.
BETU PUB	<i>Betula pubescens</i> Ehrh.	PINU BAN	<i>Pinus banksiana</i> Lamb.
BETU PUM	<i>Betula pumila</i> L.	PINU CON	<i>Pinus contorta</i> Dougl. ex Loud.
BETU SPP	<i>Betula</i> spp.	PINU CON	<i>Pinus contorta</i> Dougl. ex Loud. var. <i>contorta</i>
BETU WIN	<i>Betula</i> x <i>winteri</i> Dugle	PINU CON LAT	<i>Pinus contorta</i> Dougl. ex Loud. var. <i>latifolia</i> Engelm.
CALO DEC	<i>Calocedrus decurrens</i> (Torr.) Florin	PINU FLE	<i>Pinus flexilis</i> James
CARP CAR	<i>Carpinus caroliniana</i> Walt.	PINU LAM	<i>Pinus lambertiana</i> Dougl.
CARY COR	<i>Carya cordiformis</i> (Wangenh.) K. Koch	PINU MON	<i>Pinus monticola</i> Dougl. ex D. Don
CARY OVA	<i>Carya ovata</i> (Mill.) K. Koch	PINU MUR	<i>Pinus</i> x <i>murray banksiana</i>
CAST DEN	<i>Castanea dentata</i> (Marsh.) Borkh.	PINU NIG	<i>Pinus nigra</i> Arnold
CELT OCC	<i>Celtis occidentalis</i> L.	PINU PON	<i>Pinus ponderosa</i> P. Laws. ex C. Laws.
CHAM LAW	<i>Chamaecyparis lawsoniana</i> (A. Murr) Parl.	PINU RAD	<i>Pinus radiata</i> D. Don
CHAM NOO	<i>Chamaecyparis nootkatensis</i> (D. Don) Spach	PINU RES	<i>Pinus resinosa</i> Ait.
CORN ALT	<i>Cornus alternifolia</i> L. f.	PINU RIG	<i>Pinus rigida</i> Mill.
CORN NUT	<i>Cornus nuttallii</i> Audub.	PINU SPP	<i>Pinus</i> spp.
CORN STO	<i>Cornus stolonifera</i> Michx.	PINU STR	<i>Pinus strobus</i> L.
CORY COR	<i>Corylus cornuta</i> Marsh.	PINU SYL	<i>Pinus sylvestris</i> L.
CRAT SPP	<i>Crataegus</i> spp.	PLAT OCC	<i>Platanus occidentalis</i> L.
		POPU ANG	<i>Populus angustifolia</i> James
		POPU BAL	<i>Populus balsamifera</i> L.
		POPU DEL	<i>Populus deltoides</i> Bartr. ex Marsh.

Appendix 1A. Concluded

FECD code	Scientific name	FECD code	Scientific name
POPU DEL MON	<i>Populus deltooides</i> Bartr. ex Marsh ssp. <i>monilifera</i> (Ait.) Eckenw.	SALI LUC LAS	<i>Salix lucida</i> ssp. <i>lasiandra</i> (Benth.) E. Murr
POPU GRA	<i>Populus grandidentata</i> Michx.	SALI LUC LUC	<i>Salix lucida</i> Muhl. ssp. <i>lucida</i>
POPU SPP	<i>Populus</i> spp.	SALI NIG	<i>Salix nigra</i> Marsh.
POPU TRE	<i>Populus tremuloides</i> Michx.	SALI PYR	<i>Salix pyrifolia</i> Andersson
POPU TRI	<i>Populus trichocarpa</i> Torr. & A. Gray	SALI SCO	<i>Salix scouleriana</i> Barnett
PRUN AVI	<i>Prunus avium</i> (L.) L.	SALI SIT	<i>Salix sitchensis</i> Sanson
PRUN COM	<i>Prunus communis</i> Huds.	SALI SPP	<i>Salix</i> spp.
PRUN EMA	<i>Prunus emarginata</i> Dougl.	SASS ALB	<i>Sassafras albidum</i> (Nutt.) Nees
PRUN PEN	<i>Prunus pensylvanica</i> L. F.	SEQU GIG	<i>Sequoiadendron giganteum</i> (Lindl.) Buchh.
PRUN SER	<i>Prunus serotina</i> Ehrh.	SEQU SEM	<i>Sequoia sempervirens</i> (D. Don) Endl.
PRUN VIR	<i>Prunus virginiana</i> L.	SORB AME	<i>Sorbus americana</i> Marsh.
PSEU MEN	<i>Pseudotsuga menziesii</i> (Mirb.) Franco	SORB AUC	<i>Sorbus aucuparia</i> L.
PSEU MEN GLA	<i>Pseudotsuga menziesii</i> (Mirb.) Franco var. <i>glauca</i> (Beissn.) Franco	SORB DEC	<i>Sorbus decora</i> (Sarg.) C.K. Schneid.
PSEU MEN MEN	<i>Pseudotsuga menziesii</i> (Mirb.) Franco var. <i>menziesii</i>	SORB SCO	<i>Sorbus scopulina</i> Greene
QUER ALB	<i>Quercus alba</i> L.	SORB SPP	<i>Sorbus</i> spp.
QUER BIC	<i>Quercus bicolor</i> Willd.	TAXU BRE	<i>Taxus brevifolia</i> Nutt.
QUER GAR	<i>Quercus garryana</i> Dougl.	THUJ OCC	<i>Thuja occidentalis</i> L.
QUER MAC	<i>Quercus macrocarpa</i> Michx.	THUJ PLI	<i>Thuja plicata</i> Donn ex D. Don
QUER ROB	<i>Quercus robur</i> L.	TILI AME	<i>Tilia americana</i> L.
QUER RUB	<i>Quercus rubra</i> L.	TSUG CAN	<i>Tsuga canadensis</i> (L.) Carrière
QUER SPP	<i>Quercus</i> spp.	TSUG HET	<i>Tsuga heterophylla</i> (Raf.) Sarg.
QUER VEL	<i>Quercus velutina</i> Lam.	TSUG MER	<i>Tsuga mertensiana</i> (Bong.) Carrière
RHAM PUR	<i>Rhamnus purshiana</i> DC.	TSUG MER HET	<i>Tsuga mertensiana</i> x <i>heterophylla</i>
RHUS TYP	<i>Rhus typhina</i> L.	ULMU AME	<i>Ulmus americana</i> L.
ROBI PSE	<i>Robinia pseudoacacia</i> L.	ULMU PUM	<i>Ulmus pumila</i> L.
SALI AMY	<i>Salix amygdaloides</i> Andersson	ULMU RUB	<i>Ulmus rubra</i> Muhl.
SALI BEB	<i>Salix bebbiana</i> Sarg.	ULMU THO	<i>Ulmus thomasi</i> Sarg.
SALI DIS	<i>Salix discolor</i> Muhl.	VIBU SPP	<i>Viburnum</i> spp.

^aProvided by Tamara Brierley, National Forest Inventory, Canadian Forest Service, Victoria, BC.

Appendix 1B. Shrubs^a

FECD code	Scientific name	FECD code	Scientific name
ABIE BAL	<i>Abies balsamea</i> (L.) Mill.	LEDU GLA	<i>Ledum glandulosum</i> Nutt.
ABIE BAS	<i>Abies balsamea</i> x <i>lasiocarpa</i>	LEDU GRO	<i>Ledum groenlandicum</i> Oeder
ABIE LAS	<i>Abies lasiocarpa</i> (Hook.) Nutt.	LEDU PAL	<i>Ledum palustre</i> L.
ACER GLA	<i>Acer glabrum</i> Torr.	LEDU SPP	<i>Ledum</i> spp.
ACER SPI	<i>Acer spicatum</i> Lamb.	LINN BOR	<i>Linnaea borealis</i> L.
ALNU CRI	<i>Alnus crispa</i> (Ait.) Pursh	LOIS PRO	<i>Loiseleuria procumbens</i> (L.) Desv.
ALNU RUG	<i>Alnus rugosa</i> (Du Roi) Spreng.	LONI CAE	<i>Lonicera caerulea</i> L.
ALNU TEN	<i>Alnus tenuifolia</i> Nutt.	LONI DIO	<i>Lonicera dioica</i> L.
AMAR ALB	<i>Amaranthus albus</i> L.	LONI INV	<i>Lonicera involucrata</i> (Richards.) Banks
AMEL ALN	<i>Amelanchier alnifolia</i> (Nutt.) Nutt.	LONI SPP	<i>Lonicera</i> spp.
ANDR POL	<i>Andromeda polifolia</i> L.	LONI UTA	<i>Lonicera utahensis</i> S. Wats.
ARCT RUB	<i>Arctostaphylos rubra</i> (Rehd. & Wilson) Fern.	LUET PEC	<i>Luetkea pectinata</i> (Pursh) Kuntze
ARCT SPP	<i>Arctostaphylos</i> spp.	MENZ FER	<i>Menziesia ferruginea</i> Sm.
ARCT UVA	<i>Arctostaphylos uva-ursi</i> (L.) Spreng.	MYRI GAL	<i>Myrica gale</i> L.
ARTE CAN	<i>Artemisia cana</i> Pursh	OPLO HOR	<i>Oplopanax horridus</i> Miq.
ARTE TRI	<i>Artemisia tridentata</i> Nutt.	OXYC MIC	<i>Oxycoccus microcarpus</i> Turcz.
ATRI NUT	<i>Atriplex nuttallii</i> S. Wats.	OXYC QUA	<i>Oxycoccus quadripetalus</i> Gilib.
BERB REP	<i>Berberis repens</i> Lindl.	OXYC SPP	<i>Oxycoccus</i> spp.
BETU GLA	<i>Betula glandulosa</i> Michx.	PACH MYR	<i>Pachistima myrsinites</i> (Pursh) Raf.
BETU NEO	<i>Betula neoalaskana</i> Sarg.	PENS FRU	<i>Penstemon fruticosus</i> (Pursh) Greene
BETU OCC	<i>Betula occidentalis</i> Hook.	PHYL EMP	<i>Phyllodoce empetriformis</i> (Sm.) D. Don
BETU PAP	<i>Betula papyrifera</i> Marsh.	PHYL GLA	<i>Phyllodoce glanduliflora</i> (Hook.) Coville
BETU PUM	<i>Betula pumila</i> L.	PHYL INT	<i>Phyllodoce</i> x <i>intermedia</i> (Hook.) Rydb.
BETU SPP	<i>Betula</i> spp.	PHYL SPP	<i>Phyllodoce</i> spp.
CASS MER	<i>Cassiope mertensiana</i> (Bong.) D. Don	PICE ENG GLA	<i>Picea engelmannii</i> x <i>glauca</i>
CASS TET	<i>Cassiope tetragona</i> (L.) D. Don	PICE ENG	<i>Picea engelmannii</i> Parry ex Engelm.
CEAN VEL	<i>Ceanothus velutinus</i> Dougl. ex Hook.	PICE GLA	<i>Picea glauca</i> (Moench) Voss
CHAM CAL	<i>Chamaedaphne calyculata</i> (L.) Moench	PICE MAR	<i>Picea mariana</i> (Mill.) BSP
CHIM UMB	<i>Chimaphila umbellata</i> (L.) W. Bart.	PINU ALB	<i>Pinus albicaulis</i> Engelm.
CLEM LIG	<i>Clematis ligusticifolia</i> Nutt.	PINU BAN	<i>Pinus banksiana</i> Lamb.
CLEM OCC	<i>Clematis occidentalis</i> (Hornem.) DC.	PINU COB	<i>Pinus contorta</i> x <i>banksiana</i>
CORN CAN	<i>Cornus canadensis</i> L.	PINU CON	<i>Pinus contorta</i> Dougl. ex Loud.
CORN SPP	<i>Cornus</i> spp.	PINU FLE	<i>Pinus flexilis</i> James
CORN STO	<i>Cornus stolonifera</i> Michx.	POPU BAL	<i>Populus balsamifera</i> L.
CORY COR	<i>Corylus cornuta</i> Marsh.	POPU TRE	<i>Populus tremuloides</i> Michx.
CRAT DOU	<i>Crataegus douglasii</i> Lindl.	POTE FRU	<i>Potentilla fruticosa</i> L.
CRAT ROT	<i>Crataegus rotundifolia</i> Moench p. p. non Lamb.	PRUN PEN	<i>Prunus pennsylvanica</i> L. f.
DIER LON	<i>Dierovilla lonicera</i> P. Mill.	PRUN VIR	<i>Prunus virginiana</i> L.
DRYA DRU	<i>Dryas drummondii</i> Richards. ex Hook.	PSEU MEN	<i>Pseudotsuga menziesii</i> (Mirb.) Franco
DRYA INT	<i>Dryas integrifolia</i> Vahl	RHAM ALN	<i>Rhamnus alnifolia</i> L'Hér.
DRYA OCT	<i>Dryas octopetala</i> L.	RHOD ALB	<i>Rhododendron albiflorum</i> Hook.
DRYA SPP	<i>Dryas</i> spp.	RHOD LAP	<i>Rhododendron lapponicum</i> (L.) Wahl.
ELAE COM	<i>Elaeagnus commutata</i> Bernh.	RHUS RAD	<i>Rhus radicans</i> L.
EMPE NIG	<i>Empetrum nigrum</i> L.	RIBE AME	<i>Ribes americanum</i> P. Mill.
ERIO UMB	<i>Eriogonum umbellatum</i> Torr.	RIBE GLA	<i>Ribes glandulosum</i> Grauer
GAUL HIS	<i>Gaultheria hispidula</i> (L.) Muhl. ex Bigelow	RIBE HIR	<i>Ribes hirtellum</i> Michx.
GAUL HUM	<i>Gaultheria humifusa</i> (Graham) Rydb.	RIBE HUD	<i>Ribes hudsonianum</i> Richards.
HUDS TOM	<i>Hudsonia tomentosa</i> Nutt.	RIBE INE	<i>Ribes inerme</i> Rydb.
JUNC CON	<i>Juncus confusus</i> Coville	RIBE LAC	<i>Ribes lacustre</i> (Pers.) Poir.
JUNI COM	<i>Juniperus communis</i> L.	RIBE LAX	<i>Ribes laxiflorum</i> Pursh
JUNI HOR	<i>Juniperus horizontalis</i> Moench	RIBE OXY	<i>Ribes oxyacanthoides</i> L.
JUNI SCO	<i>Juniperus scopulorum</i> Sarg.	RIBE SPP	<i>Ribes</i> spp.
JUNI SPP	<i>Juniperus</i> spp.	RIBE TRI	<i>Ribes triste</i> Pall.
KALM MIC	<i>Kalmia microphylla</i> (Hook.) Heller	RIBE VIS	<i>Ribes viscosissimum</i> Pursh
KALM POL	<i>Kalmia polifolia</i> Wangenh.	ROSA ACI	<i>Rosa acicularis</i> Lindl.
LARI LAR	<i>Larix laricina</i> (Du Roi) K. Koch.	ROSA ARK	<i>Rosa arkansana</i> Porter
LARI LYA	<i>Larix lyallii</i> Parl.	ROSA SPP	<i>Rosa</i> spp.
		ROSA WOO	<i>Rosa woodsii</i> Lindl.
		RUBU ARC	<i>Rubus arcticus</i> L.
		RUBU CHA	<i>Rubus chamaemorus</i> L.
		RUBU IDA	<i>Rubus idaeus</i> L.

Appendix 1B. Concluded

FECD code	Scientific name	FECD code	Scientific name
RUBU PAA	<i>Rubus x paracaulis</i> Bailey	SALI SER	<i>Salix serissima</i> (Bailey) Fern.
RUBU PAR	<i>Rubus parviflorus</i> Nutt.	SALI SIT	<i>Salix sitchensis</i> Sanson
RUBU PUB	<i>Rubus pubescens</i> Raf.	SALI SPP	<i>Salix</i> spp.
RUBU SPP	<i>Rubus</i> spp.	SALI STO	<i>Salix stolonifera</i> Coville
SALI ALA	<i>Salix alaxensis</i> (Andersson) Coville	SALI VES	<i>Salix vestita</i> Pursh
SALI AMY	<i>Salix amygdaloides</i> Andersson	SAMB RAC	<i>Sambucus racemosa</i> L.
SALI ARB	<i>Salix arbusculoides</i> Andersson	SAMB SPP	<i>Sambucus</i> spp.
SALI ARC	<i>Salix arctica</i> Pallas	SARC VER	<i>Sarcobatus vermiculatus</i> (Hook.) Torr.
SALI ATH	<i>Salix athabascensis</i> Raup	SHEP ARG	<i>Shepherdia argentea</i> Nutt.
SALI BAA	<i>Salix barrattiana</i> Hook.	SHEP CAN	<i>Shepherdia canadensis</i> (L.) Nutt.
SALI BAR	<i>Salix barclayi</i> Andersson	SIBB PRO	<i>Sibbaldia procumbens</i> L.
SALI BEB	<i>Salix bebbiana</i> Sarg.	SORB SCO	<i>Sorbus scopulina</i> Greene
SALI BOO	<i>Salix boothii</i> Dorn	SORB SIT	<i>Sorbus sitchensis</i> M.J. Roem.
SALI BRA	<i>Salix brachycarpa</i> Nutt.	SORB SPP	<i>Sorbus</i> spp.
SALI CAN	<i>Salix candida</i> Flueggé ex Willd.	SPHA COC	<i>Sphaeralcea coccinea</i> (Nutt.) Rydb.
SALI COM	<i>Salix commutata</i> Bebb	SPIR ALB	<i>Spiraea alba</i> Du Roi
SALI DIS	<i>Salix discolor</i> Muhl.	SPIR BET	<i>Spiraea betulifolia</i> Pallas
SALI DRU	<i>Salix drummondiana</i> Barratt ex Hook.	SPIR DEN	<i>Spiraea densiflora</i> Nutt. ex T. & G.
SALI EXI	<i>Salix exigua</i> Nutt.	SYMP ALB	<i>Symphoricarpos albus</i> (L.) Blake
SALI FAR	<i>Salix farriae</i> Ball	SYMP OCC	<i>Symphoricarpos occidentalis</i> Hook.
SALI GLA	<i>Salix glauca</i> L.	THUJ OCC	<i>Thuja occidentalis</i> L.
SALI LAN	<i>Salix lanata</i> L.	VACC ANG	<i>Vaccinium angustifolium</i> Ait.
SALI LUC	<i>Salix lucida</i> Muhl.	VACC CAE	<i>Vaccinium caespitosum</i> Michx.
SALI LUT	<i>Salix lutea</i> Nutt.	VACC MEM	<i>Vaccinium membranaceum</i> Dougl. ex Hook.
SALI MAC	<i>Salix maccalliana</i> Rowlee	VACC MYR	<i>Vaccinium myrtilloides</i> Michx.
SALI MEL	<i>Salix melanopsis</i> Nutt.	VACC MYT	<i>Vaccinium myrtillus</i> L.
SALI MYR	<i>Salix myrtillifolia</i> Andersson	VACC OVA	<i>Vaccinium ovalifolium</i> J.E. Smith
SALI PED	<i>Salix pedicellaris</i> Pursh	VACC SCO	<i>Vaccinium scoparium</i> Leib. ex Coville
SALI PET	<i>Salix petiolaris</i> Sm.	VACC SPP	<i>Vaccinium</i> spp.
SALI PLA	<i>Salix planifolia</i> Pursh	VACC ULI	<i>Vaccinium uliginosum</i> L.
SALI PRO	<i>Salix prolixa</i> Andersson	VACC VIT	<i>Vaccinium vitis-idaea</i> L.
SALI PSE	<i>Salix pseudomonticola</i> Ball	VIBU EDU	<i>Viburnum edule</i> (Michx.) Raf.
SALI PYR	<i>Salix pyrifolia</i> Andersson	VIBU OPU	<i>Viburnum opulus</i> L.
SALI RET	<i>Salix reticulata</i> L.		
SALI SCO	<i>Salix scouleriana</i> Barratt		

^aBased on the Alberta plants and fungi — Master species list and species group checklists provided by the Resource Data Branch, Alberta Sustainable Resource Development, Government of Alberta.

Appendix 1C. Herb species^a

FECD code	Scientific name	FECD code	Scientific name
ABRO MIC	<i>Abronia micrantha</i> Torr.	AMAR POW	<i>Amaranthus powellii</i> S. Wats.
ABUT THE	<i>Abutilon theophrasti</i> Medik.	AMAR RET	<i>Amaranthus retroflexus</i> L.
ACHI MIL	<i>Achillea millefolium</i> L.	AMBR ART	<i>Ambrosia artemisiifolia</i> L.
ACHI PTA	<i>Achillea ptarmica</i> L.	AMBR PSI	<i>Ambrosia psilostachya</i> DC.
ACHI SIB	<i>Achillea sibirica</i> Ledeb.	AMBR TRI	<i>Ambrosia trifida</i> L.
ACHI SPP	<i>Achillea</i> spp.	AMSI MEN	<i>Amsinckia menziesii</i> (Lehm.) A. Nels. & J.F. Macbr.
ACON DEL	<i>Aconitum delphiinifolium</i> DC.	ANAP MAR	<i>Anaphalis margaritacea</i> (L.) Benth. & Hook. f. ex C.B. Clarke
ACOR AME	<i>Acorus americanus</i> (Raf.) Raf.	ANDR CHA	<i>Androsace chamaejasme</i> Wulfen
ACTA RUB	<i>Actaea rubra</i> (Ait.) Willd.	ANDR OCC	<i>Androsace occidentalis</i> Pursh
ADEN BIC	<i>Adenocaulon bicolor</i> Hook.	ANDR SEP	<i>Androsace septentrionalis</i> L.
ADIA PED	<i>Adiantum pedatum</i> L.	ANDR SPP	<i>Androsace</i> spp.
ADOX MOS	<i>Adoxa moschatellina</i> L.	ANEM CAN	<i>Anemone canadensis</i> L.
AGAS FOE	<i>Agastache foeniculum</i> (Pursh) Kuntze	ANEM CYL	<i>Anemone cylindrica</i> Gray
AGOS AUR	<i>Agoseris aurantiaca</i> (Hook.) Greene	ANEM LIT	<i>Anemone lithophila</i> Rydb.
AGOS GLA	<i>Agoseris glauca</i> (Pursh) Raf.	ANEM MUL	<i>Anemone multifida</i> Poir.
AGOS SPP	<i>Agoseris</i> spp.	ANEM OCC	<i>Anemone occidentalis</i> (S. Wats.) Freyn
AGRI STR	<i>Agrimonia striata</i> Scribn. & Smith	ANEM PAR	<i>Anemone parviflora</i> Michx.
AGRO ALB	<i>Agropyron albicans</i> (Scribn. & J.G. Sm.) A. Löve	ANEM PAT	<i>Anemone patens</i> L.
AGRO BOW	<i>Agroelymus bowdenii</i>	ANEM QUI	<i>Anemone quinquefolia</i> L.
AGRO DAS	<i>Agropyron dasystachyum</i> (Hook.) Scribn. & J.G. Sm.	ANEM RIC	<i>Anemone richardsonii</i> Hook.
AGRO EXA	<i>Agrostis exarata</i> Trin.	ANEM RIP	<i>Anemone riparia</i> Fern.
AGRO HIR	<i>Agroelymus hirtiflorus</i> (A.S. Hitchc.) Barkworth	ANEM SPP	<i>Anemone</i> spp.
AGRO HUM	<i>Agrostis humilis</i> Vasey	ANET GRA	<i>Anethum graveolens</i> L.
AGRO MAC	<i>Agrohordeum macounii</i> Vasey	ANGE ARG	<i>Angelica arguta</i> Nutt.
AGRO MER	<i>Agrostis mertensii</i> Trin.	ANGE DAW	<i>Angelica dawsonii</i> S. Wats.
AGRO MOS	<i>Agroelymus mossii</i> Lepage	ANGE GEN	<i>Angelica genuflexa</i> Nutt.
AGRO PEC	<i>Agropyron pectiniforme</i> Roemer & J.A. Schultes	ANGE SPP	<i>Angelica</i> spp.
AGRO REP	<i>Agropyron repens</i> (L.) Beaverd	ANTE ALP	<i>Antennaria alpina</i> (L.) Gaertn.
AGRO SCA	<i>Agrostis scabra</i> Willd.	ANTE ANA	<i>Antennaria anaphaloides</i> Rydb.
AGRO SCR	<i>Agropyron scribneri</i> Vasey	ANTE APR	<i>Antennaria aprica</i> Greene
AGRO SIB	<i>Agropyron sibiricum</i> (Willd.) Beaverd	ANTE COR	<i>Antennaria corymbosa</i> E. Nels.
AGRO SMI	<i>Agropyron smithii</i> Rydb.	ANTE DIM	<i>Antennaria dimorpha</i> (Nutt.) Torr. & Gray
AGRO SPI	<i>Agropyron spicatum</i> (Pursh) Scribn. & Smith	ANTE LAN	<i>Antennaria lanata</i> (Hook.) Greene
AGRO SPP	<i>Agropyron</i> spp.	ANTE LUZ	<i>Antennaria luzuloides</i> Torr. & Gray
AGRO STO	<i>Agrostis stolonifera</i> L.	ANTE MON	<i>Antennaria monocephala</i> D.C. Eaton
AGRO THU	<i>Agrostis thurberiana</i> A.S. Hitchc.	ANTE NEG	<i>Antennaria neglecta</i> Greene
AGRO TRA	<i>Agropyron trachycaulum</i> (Link) Malte ex H.F. Lewis	ANTE PAR	<i>Antennaria parvifolia</i> Nutt.
AGRO TUR	<i>Agroelymus turneri</i>	ANTE PUL	<i>Antennaria pulcherrima</i> (Hook.) Greene
AGRO VAR	<i>Agrostis variabilis</i> Rydb.	ANTE RAC	<i>Antennaria racemosa</i> Hook.
AGRO VIO	<i>Agropyron violaceum</i> (Hornem.) Lange	ANTE ROS	<i>Antennaria rosea</i> Greene
ALIS GRA	<i>Alisma gramineum</i> Lej.	ANTE SPP	<i>Antennaria</i> spp.
ALIS PLA	<i>Alisma plantago-aquatica</i> L.	ANTE UMB	<i>Antennaria umbrinella</i> Rydb.
ALLI CER	<i>Allium cernuum</i> Roth	ANTH COT	<i>Anthemis cotula</i> L.
ALLI GEY	<i>Allium geyeri</i> S. Wats.	ANTH TIN	<i>Anthemis tinctoria</i> L.
ALLI SCH	<i>Allium schoenoprasum</i> L.	APOC AND	<i>Apocynum androsaemifolium</i> L.
ALLI TEX	<i>Allium textile</i> Nels. & Macbr.	APOC CAN	<i>Apocynum cannabinum</i> L.
ALOP AEQ	<i>Alopecurus aequalis</i> Sobol.	APOC MED	<i>Apocynum x medium</i> Greene
ALOP OCC	<i>Alopecurus occidentalis</i> Scribn. & Tweedy	AQUI BRE	<i>Aquilegia brevistyla</i> Hook.
ALOP PRA	<i>Alopecurus pratensis</i> L.	AQUI FLA	<i>Aquilegia flavescens</i> S. Wats.
ALYS ALY	<i>Alyssum alyssoides</i> (L.) L.	AQUI FOR	<i>Aquilegia formosa</i> Fisch. ex DC.
ALYS DES	<i>Alyssum desertorum</i> Stapf	AQUI JON	<i>Aquilegia jonesii</i> Parry
ALYS MUR	<i>Alyssum murale</i> Waldst. & Kit.	AQUI SPP	<i>Aquilegia</i> spp.
AMAR CAL	<i>Amaranthus californicus</i> (Moq.) S. Wats.	ARAB DIV	<i>Arabis divaricarpa</i> A. Nels.
AMAR GRA	<i>Amaranthus graecizans</i> auct. non L.	ARAB DRU	<i>Arabis drummondii</i> Gray
		ARAB GLA	<i>Arabis glabra</i> (L.) Bernh.
		ARAB HIR	<i>Arabis hirsuta</i> (L.) Scop.
		ARAB HOL	<i>Arabis holboellii</i> Hornem.
		ARAB LEM	<i>Arabis lemmonii</i> S. Wats.

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
ARAB LYA	<i>Arabis lyallii</i> S. Wats.	ASTE BRA	<i>Aster brachyactis</i> Blake
ARAB LYR	<i>Arabis lyrata</i> L.	ASTE CAM	<i>Aster campestris</i> Nutt.
ARAB NUT	<i>Arabis nuttallii</i> B.L. Robins.	ASTE CIL	<i>Aster ciliolatus</i> Lindl.
ARAB SPP	<i>Arabis</i> spp.	ASTE CON	<i>Aster conspicuus</i> Lindl.
ARAL NUD	<i>Aralia nudicaulis</i> L.	ASTE EAT	<i>Aster eatonii</i> (Gray) T.J. Howell
ARCE AME	<i>Arceuthobium americanum</i> Nutt. ex Engelm.	ASTE ENG	<i>Aster engelmannii</i> (D.C. Eaton) Gray
ARCT ARU	<i>Arctagrostis arundinacea</i> (Trin.) Beal	ASTE ERI	<i>Aster ericoides</i> L.
ARCT LAP	<i>Arctium lappa</i> L.	ASTE FAL	<i>Aster falcatus</i> Lindl.
ARCT MIN	<i>Arctium minus</i> Bernh.	ASTE HES	<i>Aster hesperius</i> Gray
ARCT TOM	<i>Arctium tomentosum</i> P. Mill.	ASTE LAE	<i>Aster laevis</i> L.
ARCT UVA	<i>Arctostaphylos uva-ursi</i> (L.) Spreng	ASTE MAC	<i>Aster maccallae</i> Rydb.
AREN CAP	<i>Arenaria capillaris</i> Poir.	ASTE MOD	<i>Aster modestus</i> Lindl.
AREN CON	<i>Arenaria congesta</i> Nutt.	ASTE PAU	<i>Aster pauciflorus</i> Nutt.
AREN LON	<i>Arenaria longipedunculata</i> Hultén	ASTE PUN	<i>Aster puniceus</i> L.
AREN SER	<i>Arenaria serpyllifolia</i> L.	ASTE SIB	<i>Aster sibiricus</i> L.
AREN SPP	<i>Arenaria</i> spp.	ASTE SPP	<i>Aster</i> spp.
ARIS LON	<i>Aristida longiseta</i> Steud.	ASTE SUB	<i>Aster subspicatus</i> Nees
ARMO RUS	<i>Armoracia rusticana</i> P.G. Gaertn., B. Mey. & Scherb.	ASTE UMB	<i>Aster umbellatus</i> P. Mill.
ARNI AMP	<i>Arnica amplexicaulis</i> Nutt.	ASTR ABO	<i>Astragalus aboriginum</i> Richards
ARNI ANG	<i>Arnica angustifolia</i> Vahl	ASTR ALP	<i>Astragalus alpinus</i> L.
ARNI CHA	<i>Arnica chamissonis</i> Less.	ASTR AME	<i>Astragalus americanus</i> (Hook.) M.E. Jones
ARNI COR	<i>Arnica cordifolia</i> Hook.	ASTR BIS	<i>Astragalus bisulcatus</i> (Hook.) Gray
ARNI DIV	<i>Arnica diversifolia</i> Greene	ASTR BOD	<i>Astragalus bodinii</i> Sheldon
ARNI FUL	<i>Arnica fulgens</i> Pursh	ASTR BOU	<i>Astragalus bourgovii</i> Gray
ARNI GRA	<i>Arnica gracilis</i> Rydb.	ASTR CAN	<i>Astragalus canadensis</i> L.
ARNI LAT	<i>Arnica latifolia</i> Bong.	ASTR CIC	<i>Astragalus cicer</i> L.
ARNI LOC	<i>Arnica lonchophylla</i> Greene	ASTR CRA	<i>Astragalus crassicaarpus</i> Nutt.
ARNI LON	<i>Arnica longifolia</i> D.C. Eaton	ASTR DAS	<i>Astragalus dasyglottis</i> Fisch. ex DC.
ARNI LOU	<i>Arnica louiseana</i> Farr.	ASTR DRU	<i>Astragalus drummondii</i> Dougl. ex Hook.
ARNI MOL	<i>Arnica mollis</i> Hook.	ASTR EUC	<i>Astragalus eucosmus</i> B.L. Robins.
ARNI PAR	<i>Arnica parryi</i> Gray	ASTR FLE	<i>Astragalus flexuosus</i> (Hook.) Dougl. ex G. Don
ARNI RYD	<i>Arnica rydbergii</i> Greene	ASTR GIL	<i>Astragalus gilvoiflorus</i> Sheldon
ARNI SOR	<i>Arnica sororia</i> Greene	ASTR KEN	<i>Astragalus kentrophyta</i> Gray
ARNI SPP	<i>Arnica</i> spp.	ASTR LOT	<i>Astragalus lotiflorus</i> Hook.
ARTE ABR	<i>Artemisia abrotanum</i> L.	ASTR MIO	<i>Astragalus missouriensis</i> Nutt.
ARTE ABS	<i>Artemisia absinthium</i> L.	ASTR MIS	<i>Astragalus miser</i> Dougl.
ARTE BIE	<i>Artemisia biennis</i> Willd.	ASTR PEC	<i>Astragalus pectinatus</i> (Hook.) Dougl. ex G. Don
ARTE BOR	<i>Artemisia borealis</i>	ASTR PUR	<i>Astragalus purshii</i> Dougl. ex Hook.
ARTE CAM	<i>Artemisia campestris</i> L.	ASTR ROB	<i>Astragalus robbinsii</i> (Oakes) Gray
ARTE DRA	<i>Artemisia dracunculus</i> L.	ASTR SPA	<i>Astragalus spatulatus</i> Sheldon
ARTE FRI	<i>Artemisia frigida</i> Willd.	ASTR SPP	<i>Astragalus</i> spp.
ARTE FUR	<i>Artemisia furcata</i> Bieb.	ASTR STR	<i>Astragalus striatus</i> Nutt.
ARTE LON	<i>Artemisia longifolia</i> Nutt.	ASTR TEN	<i>Astragalus tenellus</i> Pursh
ARTE LUD	<i>Artemisia ludoviciana</i> Nutt.	ASTR VEX	<i>Astragalus vexilliflexus</i> Sheldon
ARTE MIC	<i>Artemisia michauxiana</i> Bess.	ATHY DIS	<i>Athyrium distentifolium</i> Tausch ex Opiz.
ARTE NOR	<i>Artemisia norvegica</i> Fries	ATHY FIL	<i>Athyrium filix-femina</i> (L.) Roth
ARTE SPP	<i>Artemisia</i> spp.	ATRI ARG	<i>Atriplex argentea</i> Nutt.
ARTE TIL	<i>Artemisia tilesii</i> Ledeb.	ATRI HET	<i>Atriplex heterosperma</i> Burge
ARUN SYL	<i>Arnica sylvestris</i> Kostel.	ATRI HOR	<i>Atriplex hortensis</i> L.
ASCL OVA	<i>Asclepias ovalifolia</i> Dcne.	ATRI OBL	<i>Atriplex oblongifolia</i> Waldst. & Kit.
ASCL SPE	<i>Asclepias speciosa</i> Torr.	ATRI POW	<i>Atriplex powellii</i> S. Wats.
ASCL VIR	<i>Asclepias viridiflora</i> Raf.	ATRI PRO	<i>Atriplex prostrata</i> Bouchér ex DC.
ASPA OFF	<i>Asparagus officinalis</i> L.	ATRI ROS	<i>Atriplex rosea</i> L.
ASPE ARV	<i>Asperula arvensis</i> L.	ATRI SUB	<i>Atriplex subspicata</i> (Nutt.) Rydb.
ASPE PRO	<i>Asperugo procumbens</i> L.	ATRI SUC	<i>Atriplex suckleyi</i> (Torr.) Rydb.
ASPL VIR	<i>Asplenium viride</i> Huds.		
ASTE ALP	<i>Aster alpinus</i> L.		
ASTE ASC	<i>Aster ascendens</i> Lindl.		
ASTE BOR	<i>Aster borealis</i> (Torr. & Gray) Prov.		

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
ATRI TRU	<i>Atriplex truncata</i> (Torr. ex S. Wats.) Gray	CALA INE	<i>Calamagrostis inexpansa</i> Gray
AVEN FAT	<i>Avena fatua</i> L.	CALA LAP	<i>Calamagrostis lapponica</i> (Wahlenb.) Hartman
AVEN SAT	<i>Avena sativa</i> L.	CALA LON	<i>Calamovilfa longifolia</i> (Hook.) Scribn.
AXYR AMA	<i>Axyris amaranthoides</i> L.	CALA MON	<i>Calamagrostis montanensis</i> Scribn. ex Vasey
BAHI OPP	<i>Bahia oppositifolia</i> (Nutt.) Rydb. ex Britt.	CALA PUR	<i>Calamagrostis purpurascens</i> R. Br.
BALS SAG	<i>Balsamorhiza sagittata</i> (Pursh) Nutt.	CALA RUB	<i>Calamagrostis rubescens</i> Buckl.
BARB ORT	<i>Barbarea orthoceras</i> Ledeb.	CALA SPP	<i>Calamagrostis</i> spp.
BARB VUL	<i>Barbarea vulgaris</i> Ait. f.	CALA STR	<i>Calamagrostis stricta</i> (Timm) Koel.
BASS HYS	<i>Bassia hyssopifolia</i> (Pallas) Kuntz	CALL HER	<i>Callitriche hermaphroditica</i> L.
BECK SYZ	<i>Beckmannia syzigachne</i> (Steud.) Fern.	CALL PAL	<i>Calla palustris</i> L.
BERT INC	<i>Berteroa incana</i> (L.) DC.	CALL VER	<i>Callitriche verna</i> L.
BESS WYO	<i>Besseyia wyomingensis</i> (A. Nels.) Rydb.	CALO API	<i>Calochortus apiculatus</i> Baker
BIDE CER	<i>Bidens cernua</i> L.	CALT LEP	<i>Caltha leptosepala</i> DC.
BIDE FRO	<i>Bidens frondosa</i> L.	CALT NAT	<i>Caltha natans</i> Pallas ex Georgi
BIDE TRI	<i>Bidens tripartita</i> L.	CALT PAL	<i>Caltha palustris</i> L.
BOIS GLA	<i>Boisduvalia glabella</i> (Nutt.) Walp.	CALT SPP	<i>Caltha</i> spp.
BORA OFF	<i>Borago officinalis</i> L.	CALY BUL	<i>Calypso bulbosa</i> (L.) Oakes
BOSC ROS	<i>Boschniakia rossica</i> (Cham. & Schlecht.) Fedtsch.	CAMA QUA	<i>Camassia quamash</i> (Pursh) Greene
BOTR ASC	<i>Botrychium ascendens</i> W.H. Wagner	CAME MIC	<i>Camelina microcarpa</i> DC.
BOTR BOR	<i>Botrychium boreale</i> (Fries) Milde	CAME PAR	<i>Camelina parodii</i> Ibarra & La Porte
BOTR DUS	<i>Botrychium dusenii</i> auct. non (Christ) Alston	CAME SAT	<i>Camelina sativa</i> (L.) Crantz
BOTR LAN	<i>Botrychium lanceolatum</i> (Gmel.) Angstr.	CAMP LAS	<i>Campanula lasiocarpa</i> Cham.
BOTR LUN	<i>Botrychium lunaria</i> (L.) Sw.	CAMP RAP	<i>Campanula rapunculoides</i> L.
BOTR MUL	<i>Botrychium multifidum</i> (Gmel.) Trev.	CAMP ROT	<i>Campanula rotundifolia</i> L.
BOTR PAR	<i>Botrychium paradoxum</i> W.H. Wagner	CAMP UNI	<i>Campanula uniflora</i> L.
BOTR SIM	<i>Botrychium simplex</i> E. Hitchc.	CANN SAT	<i>Cannabis sativa</i> L.
BOTR SPP	<i>Botrychium</i> spp.	CAPS BUR	<i>Capsella bursa-pastoris</i> (L.) Medik.
BOTR VIR	<i>Botrychium virginianum</i> (L.) Sw.	CARD BEL	<i>Cardamine bellidifolia</i> L.
BOUT GRA	<i>Bouteloua gracilis</i> (Willd. ex Kunth) Lag. ex Griffiths	CARD CHA	<i>Cardaria chalepensis</i> L.
BRAS KAB	<i>Brassica kaber</i> (DC.) L.C. Wheeler	CARD DRA	<i>Cardaria draba</i> (L.) Desv.
BRAS CAM	<i>Brassica campestris</i> L.	CARD NUT	<i>Carduus nutans</i> L.
BRAS HIR	<i>Brassica hirta</i> Moench	CARD PAR	<i>Cardamine parviflora</i> L.
BRAS JUN	<i>Brassica juncea</i> (L.) Czern.	CARD PEN	<i>Cardamine pensylvanica</i> Muhl. ex Willd.
BRAS NAP	<i>Brassica napus</i> L.	CARD PRA	<i>Cardamine pratensis</i> L.
BRAY HUM	<i>Braya humilis</i> (C.A. Mey.) B.L. Robins.	CARD PUB	<i>Cardaria pubescens</i> (C.A. Mey.) Jarmolenko
BRAY PUR	<i>Braya purpurascens</i> (R. Br.) Burge	CARD SPP	<i>Cardamine</i> spp.
BRAY SPP	<i>Braya</i> spp.	CARD UMB	<i>Cardamine umbellata</i> Greene
BRIC GRA	<i>Brickellia grandiflora</i> (Hook.) Nutt.	CARE ADU	<i>Carex adusta</i> Boott
BROM ALT	<i>Bromus altissimus</i> Pursh	CARE AEN	<i>Carex aenea</i> Fern.
BROM ANO	<i>Bromus anomalus</i> Rupr. ex Fourn.	CARE ALB	<i>Carex albo-nigra</i> Mack.
BROM CAR	<i>Bromus carinatus</i> Hook. & Arn.	CARE APE	<i>Carex aperta</i> Boott
BROM CIL	<i>Bromus ciliatus</i> L.	CARE AQU	<i>Carex aquatilis</i> Wahlenb.
BROM COM	<i>Bromus commutatus</i> Schrad.	CARE ARC	<i>Carex arcta</i> Boott
BROM INE	<i>Bromus inermis</i> Leyss.	CARE ATH	<i>Carex atherodes</i> Spreng.
BROM JAP	<i>Bromus japonicus</i> Thunb. ex Mr.	CARE ATR	<i>Carex athrostachya</i> Olney
BROM MOL	<i>Bromus mollis</i> L.	CARE ATS	<i>Carex atosquama</i> Mackenzie
BROM PUM	<i>Bromus inermis</i> Leyss. ssp. <i>Pumpellianus</i> (Scribn.)	CARE AUR	<i>Carex aurea</i> Nutt.
BROM SEC	<i>Bromus secalinus</i> L.	CARE BAC	<i>Carex backii</i> Boott
BROM SPP	<i>Bromus</i> spp.	CARE BEB	<i>Carex bebbii</i> Olney ex Fern.
BROM SQU	<i>Bromus squarrosus</i> L.	CARE BIP	<i>Carex bipartita</i> All.
BROM TEC	<i>Bromus tectorum</i> L.	CARE BRE	<i>Carex brevior</i> (Dewey) Mackenzie
BROM VUL	<i>Bromus vulgaris</i> (Hook.) Shear	CARE BRU	<i>Carex brunnescens</i> (Pers.) Poir.
BUPL AME	<i>Bupleurum americanum</i> Coult. & Rose	CARE BUX	<i>Carex buxbaumii</i> Wahlenb.
CALA CAN	<i>Calamagrostis canadensis</i> (Michx.) Beauverd	CARE CAI	<i>Carex capitata</i> L.
		CARE CAP	<i>Carex capillaris</i> L.
		CARE CHO	<i>Carex chordorrhiza</i> Ehrh. ex L. f.
		CARE COC	<i>Carex concinnoides</i> Mackenzie
		CARE CON	<i>Carex concinna</i> R. Br.

Appendix 1C. Continued

FECDC code	Scientific name	FECDC code	Scientific name
CARE CRA	<i>Carex crawei</i> Dewey	CARE PRT	<i>Carex praticola</i> Rydb.
CARE CRW	<i>Carex crawfordii</i> Fern.	CARE PSE	<i>Carex pseudocyperus</i> L.
CARE CUR	<i>Carex curta</i> Goodenough	CARE PYR	<i>Carex pyrenaica</i> Wahlenb.
CARE DEF	<i>Carex deflexa</i> Hornem.	CARE RAN	<i>Carex raynoldsii</i> Dewey
CARE DEW	<i>Carex deweyana</i> Schwein.	CARE RAY	<i>Carex raymondii</i> Calder
CARE DIA	<i>Carex diandra</i> Schrank	CARE RET	<i>Carex retrorsa</i> Schwein.
CARE DIS	<i>Carex disperma</i> Dewey	CARE RIC	<i>Carex richardsonii</i> R. Br.
CARE DOU	<i>Carex douglasii</i> Boott	CARE ROI	<i>Carex rossii</i> Boott
CARE EBU	<i>Carex eburnea</i> Boott	CARE ROS	<i>Carex rostrata</i> Stokes
CARE ENA	<i>Carex enanderi</i> Holm	CARE RUP	<i>Carex rupestris</i> All.
CARE EPA	<i>Carex epapillosa</i> Mackenzie	CARE SAR	<i>Carex sartwellii</i> Dewey
CARE FIL	<i>Carex filifolia</i> Nutt.	CARE SAX	<i>Carex saxatilis</i> L.
CARE FLA	<i>Carex flava</i> L.	CARE SCI	<i>Carex scirpoidea</i> Michx.
CARE FRA	<i>Carex franklinii</i> Boott	CARE SCO	<i>Carex scoparia</i> Schkuhr ex Willd.
CARE GEY	<i>Carex geyeri</i> Boott	CARE SCP	<i>Carex scopulorum</i> Holm
CARE GLA	<i>Carex glacialis</i> Mackenzie	CARE SIC	<i>Carex siccata</i> Dewey
CARE GYN	<i>Carex gynocrates</i> Wormsk. ex Drej	CARE SIM	<i>Carex simulata</i> Mackenzie
CARE HAY	<i>Carex haydeniana</i> Olney	CARE SPE	<i>Carex spectabilis</i> Dewey
CARE HEL	<i>Carex heleonastes</i> L. f.	CARE SPP	<i>Carex</i> spp.
CARE HOD	<i>Carex hoodii</i> Boott	CARE SPR	<i>Carex sprengelii</i> Dewey ex Spreng.
CARE HOO	<i>Carex hookerana</i> Dewey	CARE STE	<i>Carex stenophylla</i> Wahlenb.
CARE HOU	<i>Carex houghtoniana</i> Torr. ex Dewey	CARE STI	<i>Carex stipata</i> Muhl. ex Willd.
CARE HYS	<i>Carex hystericina</i> Muhl. ex Willd.	CARE SYC	<i>Carex sychnocephala</i> Carey
CARE ILL	<i>Carex illota</i> Bailey	CARE TEN	<i>Carex tenera</i> Dewey
CARE INT	<i>Carex interior</i> Bailey	CARE TEU	<i>Carex tenuiflora</i> Wahlenb.
CARE KEL	<i>Carex kelloggii</i> W. Boott	CARE TIN	<i>Carex tincta</i> (Fern.) Fern.
CARE LAC	<i>Carex lacustris</i> Willd.	CARE TOR	<i>Carex torreyi</i> Tuckerman
CARE LAN	<i>Carex lanuginosa</i> Michx.	CARE TRI	<i>Carex trisperma</i> Dewey
CARE LAS	<i>Carex lasiocarpa</i> Ehrh.	CARE UMB	<i>Carex umbellata</i> Schkuhr ex Willd.
CARE LEN	<i>Carex lenticularis</i> Michx.	CARE UTR	<i>Carex utriculata</i> Boott
CARE LEP	<i>Carex leptalea</i> Wahlenb.	CARE VAG	<i>Carex vaginata</i> Tausch
CARE LIM	<i>Carex limosa</i> L.	CARE VES	<i>Carex vesicaria</i> L.
CARE LIV	<i>Carex livida</i> (Wahlenb.) Willd.	CARE VIR	<i>Carex viridula</i> Michx.
CARE LOL	<i>Carex loliacea</i> L.	CARE VUL	<i>Carex vulpinoidea</i> Michx.
CARE MAC	<i>Carex macloviana</i> d'Urv.	CARE XER	<i>Carex xerantica</i> Bailey
CARE MAR	<i>Carex maritima</i> Gunn.	CART TIN	<i>Carthamus tinctorius</i> L.
CARE MER	<i>Carex mertensii</i> Prescott ex Bong.	CARU CAR	<i>Carum carvi</i> L.
CARE MIC	<i>Carex microglochin</i> Wahlenb.	CAST CUS	<i>Castilleja cusickii</i> Greenm.
CARE MIR	<i>Carex microptera</i> Mackenzie	CAST HIS	<i>Castilleja hispida</i> Benth.
CARE MIS	<i>Carex misandra</i> R. Br.	CAST LUT	<i>Castilleja lutescens</i> (Greenm.) Rydb.
CARE NAR	<i>Carex nardina</i> Fries	CAST MIN	<i>Castilleja miniata</i> Dougl. ex Hook.
CARE NEB	<i>Carex nebraskensis</i> Dewey	CAST OCC	<i>Castilleja occidentalis</i> Torr.
CARE NIG	<i>Carex nigricans</i> C.A. Mey.	CAST RAU	<i>Castilleja raupii</i> Pennell
CARE NOR	<i>Carex norvegica</i> Retz.	CAST RHE	<i>Castilleja rhexifolia</i> Rydb.
CARE OBT	<i>Carex obtusata</i> Lilj.	CAST SES	<i>Castilleja sessiliflora</i> Pursh
CARE OLI	<i>Carex oligosperma</i> Michx.	CAST SPP	<i>Castilleja</i> spp.
CARE PAC	<i>Carex pachystachya</i> Cham. ex Steud.	CATA AQU	<i>Catabrosa aquatica</i> (L.) Beauverd
CARE PAP	<i>Carex paupercula</i> Michx.	CENT CYA	<i>Centaurea cyanus</i> L.
CARE PAR	<i>Carex parryana</i> Dewey	CENT DIF	<i>Centaurea diffusa</i> Lam.
CARE PAU	<i>Carex pauciflora</i> Lightf.	CENT MAC	<i>Centaurea maculosa</i> auct. non Lam.
CARE PAY	<i>Carex paysonis</i> Clokey	CENT MIN	<i>Centunculus minimus</i> L.
CARE PEC	<i>Carex peckii</i> Howe	CENT REP	<i>Centaurea repens</i> (L.) DC.
CARE PEN	<i>Carex pensylvanica</i> Lam.	CENT SOL	<i>Centaurea solstitialis</i> L.
CARE PER	<i>Carex petricosa</i> Dewey	CERA ARV	<i>Cerastium arvense</i> L.
CARE PET	<i>Carex petasata</i> Dewey	CERA BEE	<i>Cerastium beeringianum</i> Cham. & Schlecht.
CARE PHA	<i>Carex phaeocephala</i> Piper	CERA DEM	<i>Ceratophyllum demersum</i> L.
CARE PLA	<i>Carex platylepis</i> Mackenzie	CERA NUT	<i>Cerastium nutans</i> Raf.
CARE POD	<i>Carex podocarpa</i> R. Br.	CERA SPP	<i>Cerastium</i> spp.
CARE PRA	<i>Carex prairea</i> Dewey ex Wood	CERA VUL	<i>Cerastium vulgatum</i> L.
CARE PRE	<i>Carex presli</i> Steud.		
CARE PRG	<i>Carex praegracilis</i> W. Boott		

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
CHAE DOU	<i>Chaenactis douglasii</i> (Hook.) Hook. & Arn.	CONR ORI	<i>Conringia orientalis</i> (L.) Dumort.
CHAE MIN	<i>Chaenorrhinum minus</i> (L.) Lange	CONV ARV	<i>Convolvulus arvensis</i> L.
CHAM ERE	<i>Chamaerhodos erecta</i> (L.) Bunge	CONV SEP	<i>Convolvulus sepium</i> (L.) R. Br.
CHAM GRA	<i>Chamaesaracha grandiflora</i> (Hook.) Fern.	COPT TRI	<i>Coptis trifolia</i> (L.) Salisb.
CHEI FEE	<i>Cheilanthes feei</i> T. Moore	CORA MAC	<i>Corallorrhiza maculata</i> (Raf.) Raf.
CHEI GRA	<i>Cheilanthes gracillima</i> D.C. Eaton	CORA SPP	<i>Corallorrhiza</i> spp.
CHEN ALB	<i>Chenopodium album</i> L.	CORA STR	<i>Corallorrhiza striata</i> Lindl.
CHEN ATR	<i>Chenopodium atrovirens</i> Rydb.	CORA TRI	<i>Corallorrhiza trifida</i> Chatelain
CHEN BER	<i>Chenopodium berlandieri</i> Moq.	CORE TIN	<i>Coreopsis tinctoria</i> Nutt.
CHEN BON	<i>Chenopodium bonus-henricus</i> L.	CORI HYS	<i>Corispermum hyssopifolium</i> L. p. p.
CHEN CAP	<i>Chenopodium capitatum</i> (L.) Ambrosi	CORI NIT	<i>Corispermum nitidum</i> Kit. ex J.A. Schultes
CHEN DES	<i>Chenopodium desiccatum</i> A. Nels.	CORN CAN	<i>Cornus canadensis</i> L.
CHEN FRE	<i>Chenopodium fremontii</i> S. Wats.	CORO VAR	<i>Coronilla varia</i> L.
CHEN GIG	<i>Chenopodium gigantospermum</i> Aellen	CORY AUR	<i>Corydalis aurea</i> Willd.
CHEN INC	<i>Chenopodium incanum</i> (S. Wats.) Heller	CORY SEM	<i>Corydalis sempervirens</i> (L.) Pers.
CHEN LEP	<i>Chenopodium leptophyllum</i> (Moq.) Nutt. ex S. Wats.	CORY VIV	<i>Coryphantha vivipara</i> (Nutt.) Britt. & Rose
CHEN PRA	<i>Chenopodium pratericola</i> Rydb.	CREP ATR	<i>Crepis atrabarba</i> Heller
CHEN RUB	<i>Chenopodium rubrum</i> L.	CREP CAP	<i>Crepis capillaris</i> (L.) Wallr.
CHEN SAL	<i>Chenopodium salinum</i> Standl.	CREP ELE	<i>Crepis elegans</i> Hook.
CHEN SPP	<i>Chenopodium</i> spp.	CREP INT	<i>Crepis intermedia</i> Gray
CHEN SUB	<i>Chenopodium subglabrum</i> (S. Wats.) A. Nels.	CREP NAN	<i>Crepis nana</i> Richards.
CHEN WAT	<i>Chenopodium watsonii</i> A. Nels.	CREP OCC	<i>Crepis occidentalis</i> Nutt.
CHRY IOW	<i>Chrysosplenium iowense</i> Rydb.	CREP RUN	<i>Crepis runcinata</i> (James) Torr. & Gray
CHRY LEU	<i>Chrysanthemum leucanthemum</i> L.	CREP TEC	<i>Crepis tectorum</i> L.
CHRY TET	<i>Chrysosplenium tetrandrum</i> (Lund ex Malmgr.) Th. Fries	CRYP ACR	<i>Cryptogramma acrostichoides</i> R. Br.
CICH END	<i>Cichorium endivia</i> L.	CRYP FEN	<i>Cryptantha fendleri</i> (Gray) Greene
CICH INT	<i>Cichorium intybus</i> L.	CRYP MAC	<i>Cryptantha macounii</i> (Eastw.) Payson
CICU BUL	<i>Cicuta bulbifera</i> L.	CRYP MIN	<i>Cryptantha minima</i> Rydb.
CICU MAC	<i>Cicuta maculata</i> L.	CRYP NUB	<i>Cryptantha nubigena</i> (Greene) Payson
CICU VIR	<i>Cicuta virosa</i> L.	CRYP STE	<i>Cryptogramma stelleri</i> (Gmel.) Prantl
CINN LAT	<i>Cinna latifolia</i> (Trev. ex Goepp.) Griseb.	CUSC GRO	<i>Cuscuta gronovii</i> (Willd. ex J.A. Schultes
CIRC ALP	<i>Circaea alpina</i> L.	CYMO ACA	<i>Cymopterus acaulis</i> (Pursh) Raf.
CIRC SPP	<i>Circaea</i> spp.	CYNO BOR	<i>Cynoglossum boreale</i> Fern.
CIRS ARV	<i>Cirsium arvense</i> (L.) Scop.	CYNO OFF	<i>Cynoglossum officinale</i> L.
CIRS DRU	<i>Cirsium drummondii</i> Torr. & Gray	CYPE SCH	<i>Cyperus schweinitzii</i> Torr.
CIRS FLO	<i>Cirsium flodmanii</i> (Rydb.) Arthur	CYPE SQU	<i>Cyperus squarrosus</i> L.
CIRS FOL	<i>Cirsium foliosum</i> (Hook.) DC.	CYPR ACA	<i>Cypripedium acaule</i> Ait.
CIRS HOO	<i>Cirsium hookerianum</i> Nutt.	CYPR CAL	<i>Cypripedium calceolus</i> L.
CIRS SCA	<i>Cirsium scariosum</i> Nutt.	CYPR MON	<i>Cypripedium montanum</i> Dougl. ex Lindl.
CIRS SPP	<i>Cirsium</i> spp.	CYPR PAS	<i>Cypripedium passerinum</i> Richards.
CIRS UND	<i>Cirsium undulatum</i> (Nutt.) Spreng.	CYPR SPP	<i>Cypripedium</i> spp.
CIRS VUL	<i>Cirsium vulgare</i> (Savi) Ten.	CYST FRA	<i>Cystopteris fragilis</i> (L.) Bernh.
CLAY LAN	<i>Claytonia lanceolata</i> Pall. ex Pursh	CYST MON	<i>Cystopteris montana</i> (Lam.) Bernh. ex Desv.
CLAY MEG	<i>Claytonia megarhiza</i> (Gray) Parry ex S. Wats.	DACT GLO	<i>Dactylis glomerata</i> L.
CLAY SPP	<i>Claytonia</i> spp.	DANT CAL	<i>Danthonia californica</i> Boland.
CLEM SPP	<i>Clematis</i> spp.	DANT PAR	<i>Danthonia parryi</i> Scribn.
CLEO SER	<i>Cleome serrulata</i> Pursh	DANT SPI	<i>Danthonia spicata</i> (L.) Beaverd ex Roemer & J.A. Schultes
CLIN UNI	<i>Clintonia uniflora</i> (Menzies ex J.A. & J.H. Schultes) Kunth	DANT SPP	<i>Danthonia</i> spp.
COLL LIN	<i>Collomia linearis</i> Nutt.	DANT UNI	<i>Danthonia unispicata</i> (Thurb.) Munro ex Macoun
COLL PAR	<i>Collinsia parviflora</i> Lindl.	DEL P BIC	<i>Delphinium bicolor</i> Nutt.
COMA UMB	<i>Comandra umbellata</i> (L.) Nutt.	DEL P GLA	<i>Delphinium glaucum</i> S. Wats.
CONI MAC	<i>Conium maculatum</i> L.	DEL P NUT	<i>Delphinium nuttallianum</i> Pritz ex Walp.
CONI WIL	<i>Conimitella williamsii</i> (D.C. Eaton) Rydb.	DEL P SPP	<i>Delphinium</i> spp.
		DESC CES	<i>Deschampsia cespitosa</i> (L.) Beauverd

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
DESC ELO	<i>Deschampsia elongata</i> (Hook.) Munro	DRYO FIL	<i>Dryopteris filix-mas</i> (L.) Schott
DESC PIN	<i>Descurainia pinnata</i> (Walt.) Britt.	DRYO FRA	<i>Dryopteris fragrans</i> (L.) Schott
DESC RIC	<i>Descurainia richardsonii</i> O.E. Schulz	DRYO SPP	<i>Dryopteris</i> spp.
DESC SOP	<i>Descurainia sophia</i> (L.) Webb ex Prantl	ECHI CRU	<i>Echinochloa crus-galli</i> (L.) Beauverd
DESC SPP	<i>Deschampsia</i> spp.	ECHI LOB	<i>Echinocystis lobata</i> (Michx.) Torr. & Gray
DIAN BAR	<i>Dianthus barbatus</i> L.	ECHI VUL	<i>Echium vulgare</i> L.
DIAN DEL	<i>Dianthus deltooides</i> L.	ELAT TRI	<i>Elatine triandra</i> Schkuhr
DIAN PLU	<i>Dianthus plumarius</i> L.	ELEO ACI	<i>Eleocharis acicularis</i> (L.) Roemer & J.A. Schultes
DIAN SEG	<i>Dianthus seguieri</i> Vill.	ELEO COM	<i>Eleocharis compressa</i> Sullivant
DICA ACU	<i>Dichantherium acuminatum</i> (Sw.) Gould & C.A. Clarke	ELEO OVA	<i>Eleocharis ovata</i> (Roth) Roemer & J.A. Schultes
DICA LEI	<i>Dichantherium leibergii</i> (Vasey) Freckman	ELEO PAL	<i>Eleocharis palustris</i> (L.) Roemer & J.A. Schultes
DICA OLI	<i>Dichantherium oligosanthes</i> (J.A. Schultes) Gould	ELEO QUI	<i>Eleocharis quinqueflora</i> (F.X. Hartmann) Schwartz
DIGI ISC	<i>Digitaria ischaemum</i> (Schreb.) Schreb. ex Muhl.	ELEO SPP	<i>Eleocharis</i> spp.
DIGI SAN	<i>Digitaria sanguinalis</i> (L.) Scop.	ELLI NYC	<i>Ellisia nyctelea</i> (L.) L.
DIPL MUR	<i>Diploaxis muralis</i> (L.) DC.	ELOD LON	<i>Elodea longivaginita</i> St. John
DISP HOO	<i>Disporum hookeri</i> (Torr.) Nichols.)	ELYM CAN	<i>Elymus canadensis</i> L.
DISP SPP	<i>Disporum</i> spp.	ELYM GLA	<i>Elymus glaucus</i> Buckl.
DISP TRA	<i>Disporum trachycarpum</i> (S. Wats.) Benth. & Hook. f.	ELYM INN	<i>Elymus innovatus</i> Beal
DIST STR	<i>Distichlis stricta</i> (L.) Greene	ELYM JUN	<i>Elymus junceus</i> Fisch.
DODE CON	<i>Dodecatheon conjugens</i> Greene	ELYM MOL	<i>Elymus mollis</i> Trin.
DODE PUL	<i>Dodecatheon pulchellum</i> (Raf.) Merr.	ELYM PIP	<i>Elymus piperi</i> Bowden
DODE SPP	<i>Dodecatheon</i> spp.	ELYM SPP	<i>Elymus</i> spp.
DOUG MON	<i>Douglasia montana</i> Gray	ELYM VIR	<i>Elymus virginicus</i> L.
DOWN LAE	<i>Downingia laeta</i> (Greene) Greene	EMPE NIG	<i>Empetrum nigrum</i> L.
DRAB ALB	<i>Draba albertina</i> Greene	EPIL ANA	<i>Epilobium anagallidifolium</i> Lam.
DRAB AUR	<i>Draba aurea</i> Vahl ex Hornem.	EPIL ANG	<i>Epilobium angustifolium</i> L.
DRAB BOR	<i>Draba borealis</i> DC.	EPIL CIL	<i>Epilobium ciliatum</i> Raf.
DRAB CAN	<i>Draba cana</i> Rydb.	EPIL CLA	<i>Epilobium clavatum</i> Trel.
DRAB CRA	<i>Draba crassifolia</i> Graham	EPIL GLA	<i>Epilobium glaberrimum</i> Barbey
DRAB DEN	<i>Draba densifolia</i> Nutt.	EPIL HAL	<i>Epilobium halleanum</i> Hausskn.
DRAB FLA	<i>Draba fladnizensis</i> Wulfen	EPIL HOR	<i>Epilobium hornemannii</i> Reichenb.
DRAB GLA	<i>Draba glabella</i> Pursh	EPIL LAC	<i>Epilobium lactiflorum</i> Hausskn.
DRAB INC	<i>Draba incerta</i> Payson	EPIL LAT	<i>Epilobium latifolium</i> L.
DRAB KAN	<i>Draba kananaskis</i> Mulligan	EPIL LEP	<i>Epilobium leptocarpum</i> Hausskn.
DRAB LOG	<i>Draba longipes</i> Raup	EPIL LET	<i>Epilobium leptophyllum</i> Raf.
DRAB LON	<i>Draba lonchocarpa</i> Rydb.	EPIL LUT	<i>Epilobium luteum</i> Pursh
DRAB MAC	<i>Draba macounii</i> O.E. Schulz	EPIL MIR	<i>Epilobium mirabile</i> Trel. ex Piper
DRAB NEM	<i>Draba nemorosa</i> L.	EPIL PAL	<i>Epilobium palustre</i> L.
DRAB NIV	<i>Draba nivalis</i> Lilj.	EPIL PAN	<i>Epilobium paniculatum</i> Nutt. ex Torr. & Gray
DRAB OLI	<i>Draba oligosperma</i> Hook.	EPIL SAX	<i>Epilobium saximontanum</i> Hausskn
DRAB PAY	<i>Draba paysonii</i> J.F. Macbr.	EPIL SPP	<i>Epilobium</i> spp.
DRAB POR	<i>Draba porsildii</i> Mulligan	EQUI ARV	<i>Equisetum arvense</i> L.
DRAB PRA	<i>Draba praealta</i> Greene	EQUI FLU	<i>Equisetum fluviatile</i> L.
DRAB REP	<i>Draba reptans</i> Lam.) Fern.	EQUI HYE	<i>Equisetum hyemale</i> L.
DRAB SPP	<i>Draba</i> spp.	EQUI LAE	<i>Equisetum laevigatum</i> A. Braun
DRAB STE	<i>Draba stenoloba</i> Ledeb.	EQUI PAL	<i>Equisetum palustre</i> L.
DRAB VEN	<i>Draba ventosa</i> Gray	EQUI PRA	<i>Equisetum pratense</i> Ehrh.
DRAB VER	<i>Draba verna</i> L.	EQUI SCI	<i>Equisetum scirpoides</i> Michx.
DRAC PAR	<i>Dracocephalum parviflorum</i> Nutt.	EQUI SPP	<i>Equisetum</i> spp.
DRAC THY	<i>Dracocephalum thymiflorum</i> L.	EQUI SYL	<i>Equisetum sylvaticum</i> L.
DROS ANG	<i>Drosera anglica</i> Huds.	EQUI VAR	<i>Equisetum variegatum</i> Schleich ex F. Weber & D.M.H. Mohr
DROS LIN	<i>Drosera linearis</i> Goldie	ERAG MEG	<i>Eragrostis megastachya</i> (Koel.) Link
DROS ROT	<i>Drosera rotundifolia</i> L.	EREM TRI	<i>Eremopyrum triticeum</i> (Gaertn.) Nevski
DRYO ASS	<i>Dryopteris assimilis</i> S. Walker	ERIG ACR	<i>Erigeron acris</i> L.
DRYO CAR	<i>Dryopteris carthusiana</i> (Vill.) H.P. Fuchs		
DRYO CRI	<i>Dryopteris cristata</i> (L.) Gray		

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
ERIG ANN	<i>Erigeron annuus</i> (L.) Pers.	FAGO ESC	<i>Fagopyrum esculentum</i> Moench
ERIG ART	<i>Erigeron x arthurii</i> Boivin	FAGO TAR	<i>Fagopyrum tartaricum</i> (L.) Gaertn.
ERIG AUR	<i>Erigeron aureus</i> Greene	FEST BAF	<i>Festuca baffinensis</i> Polunin
ERIG CAE	<i>Erigeron caespitosus</i> Nutt.	FEST BRA	<i>Festuca brachyphylla</i> J.A. Schultes ex J.A. & J.H. Schultes
ERIG CAN	<i>Erigeron canadensis</i> (L.) Cronq.	FEST IDA	<i>Festuca idahoensis</i> Elmer
ERIG COM	<i>Erigeron compositus</i> Pursh	FEST OCC	<i>Festuca occidentalis</i> Hook.
ERIG DIV	<i>Erigeron divergens</i> Torr. & Gray	FEST OVI	<i>Festuca ovina</i> L.
ERIG ELA	<i>Erigeron elatus</i> (Hook.) Greene	FEST PRA	<i>Festuca pratensis</i> Huds.
ERIG FLA	<i>Erigeron flagellaris</i> Gray	FEST RUB	<i>Festuca rubra</i> L.
ERIG GLA	<i>Erigeron glabellus</i> Nutt.	FEST SAX	<i>Festuca saximontana</i> Rydb.
ERIG GRA	<i>Erigeron grandiflorus</i> Hook.	FEST SCA	<i>Festuca scabrella</i> Torr. ex Hook.
ERIG HUM	<i>Erigeron humilis</i> Graham	FEST SPP	<i>Festuca</i> spp.
ERIG HYS	<i>Erigeron hyssopifolius</i> Michx.	FEST SUB	<i>Festuca subulata</i> Trin.
ERIG LAN	<i>Erigeron lanatus</i> Hook.	FRAG VES	<i>Fragaria vesca</i> L.
ERIG LON	<i>Erigeron lonchophyllus</i> Hook.	FRAG VIR	<i>Fragaria virginiana</i> Duchesne
ERIG OCH	<i>Erigeron ochroleucus</i> Nutt.	FRAN ACA	<i>Franseria acanthicarpa</i> Hook.) Coville
ERIG PER	<i>Erigeron peregrinus</i> (Banks ex Pursh) Greene	FRIT PUD	<i>Fritillaria pudica</i> (Pursh) Spreng.
ERIG PHI	<i>Erigeron philadelphicus</i> L.	GAIL ARI	<i>Gaillardia aristata</i> Pursh
ERIG PUM	<i>Erigeron pumilus</i> Nutt.	GALE SPE	<i>Galeopsis speciosa</i> Mill.
ERIG PUR	<i>Erigeron purpuratus</i> Greene	GALE TET	<i>Galeopsis tetrahit</i> L.
ERIG RAD	<i>Erigeron radicans</i> Hook.	GALI APA	<i>Galium aparine</i> L.
ERIG SPE	<i>Erigeron speciosus</i> (Lindl.) DC.	GALI BOR	<i>Galium boreale</i> L.
ERIG SPP	<i>Eriogonum</i> spp.	GALI CIL	<i>Galinsoga ciliata</i> (Raf.) Blake
ERIG TRI	<i>Erigeron trifidus</i> Hook.	GALI LAB	<i>Galium labradoricum</i> (Wieg.) Wieg.
ERIO AND	<i>Eriogonum androsaceum</i> Benth.	GALI SPP	<i>Galium</i> spp.
ERIO BRA	<i>Eriophorum brachyantherum</i> Trautv. & C.A. Mey.	GALI SPU	<i>Galium spurium</i> L.
ERIO CAL	<i>Eriophorum callitrix</i> Cham. ex C.A. Mey	GALI TRF	<i>Galium trifidum</i> L.
ERIO CER	<i>Eriogonum cernuum</i> Nutt.	GALI TRI	<i>Galium triflorum</i> Michx.
ERIO CHA	<i>Eriophorum chamissonis</i> C.A. Mey.	GALI VER	<i>Galium verum</i> L.
ERIO FLA	<i>Eriogonum flavum</i> Nutt.	GAUL HIS	<i>Gaultheria hispidula</i> (L.) Muhl. ex Bigelow
ERIO GRA	<i>Eriophorum gracile</i> Benth.	GAUR COC	<i>Gaura coccinea</i> Nutt. ex Pursh
ERIO OVA	<i>Eriogonum ovalifolium</i> Nutt.	GAYO RAC	<i>Gayophytum racemosum</i> Torr. & Gray
ERIO POL	<i>Eriophorum polystachion</i> L. p. p.	GENT AFF	<i>Gentiana affinis</i> Griseb.
ERIO SCH	<i>Eriophorum scheuchzeri</i> Hoppe	GENT AMA	<i>Gentianella amarella</i> (L.) Boerner
ERIO SPP	<i>Eriophorum</i> spp.	GENT AQU	<i>Gentiana aquatica</i> auct. non L.
ERIO VAG	<i>Eriophorum vaginatum</i> L.	GENT CAL	<i>Gentiana calycosa</i> Griseb.
ERIO VIR	<i>Eriophorum viridicarinatum</i> (Engelm.) Fern.	GENT CRI	<i>Gentianella crinita</i> (Froel.) G. Don
EROD CIC	<i>Erodium cicutarium</i> (L.) L'Hér. ex Ait.	GENT DET	<i>Gentianella detonsa</i> (Rotlb.) G. Don
ERUC GAL	<i>Erucastrum gallicum</i> (Willd.) O.E. Schulz	GENT GLA	<i>Gentiana glauca</i> Pallas
ERUC SAT	<i>Eruca sativa</i> P. Mill.	GENT PRO	<i>Gentiana prostrata</i> Haenke
ERYN PLA	<i>Eryngium planum</i> L.	GENT PRP	<i>Gentianella propinqua</i> (Richards.) J. Gillett
ERYS ASP	<i>Erysimum asperum</i> (Nutt.) DC.	GENT SPP	<i>Gentiana</i> spp.
ERYS CHE	<i>Erysimum cheiranthoides</i> L.	GEOC LIV	<i>Geocaldon lividum</i> (Richards.) Fern.
ERYS INC	<i>Erysimum inconspicuum</i> (S. Wats.) MacM	GERA BIC	<i>Geranium bicknellii</i> Britt.
ERYS PAL	<i>Erysimum pallasii</i> (Pursh) Fern.	GERA CAR	<i>Geranium carolinianum</i> L.
ERYS SPP	<i>Erysimum</i> spp.	GERA ERI	<i>Geranium erianthum</i> DC.
ERYT GRA	<i>Erythronium grandiflorum</i> Pursh	GERA RIC	<i>Geranium richardsonii</i> Fisch. & Trautv.
EUPA MAC	<i>Eupatorium maculatum</i> L.	GERA SPP	<i>Geranium</i> spp.
EUPH ARC	<i>Euphrasia arctica</i> Lange ex Rostr.	GERA VIS	<i>Geranium viscosissimum</i> Fisch. & C.A. Mey ex C.A. Mey
EUPH ESU	<i>Euphorbia esula</i> L.	GEUM ALE	<i>Geum aleppicum</i> Jacq.
EUPH GLY	<i>Euphorbia glyptosperma</i> Engelm.	GEUM MAC	<i>Geum macrophyllum</i> Willd.
EUPH HEL	<i>Euphorbia helioscopia</i> L.	GEUM RIV	<i>Geum rivale</i> L.
EUPH PEP	<i>Euphorbia peplus</i> L.	GEUM SPP	<i>Geum</i> spp.
EUPH SER	<i>Euphorbia serpyllifolia</i> Pers.	GEUM TRI	<i>Geum triflorum</i> Pursh
EURO LAN	<i>Eurotia lanata</i> (Pursh) Moq.	GLAU MAR	<i>Glaux maritima</i> L.
		GLEC HED	<i>Glecoma hederacea</i> L.
		GLYC BOR	<i>Glyceria borealis</i> (Nash) Batchelder

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
GLYC ELA	<i>Glyceria elata</i> (Nash ex Rydb.) M.E. Jones	HESP MAT	<i>Hesperis matronalis</i> L.
GLYC GRA	<i>Glyceria grandis</i> S. Wats.	HETE SPP	<i>Heterotheca</i> spp.
GLYC LEP	<i>Glycyrrhiza lepidota</i> Pursh	HETE VIL	<i>Heterotheca villosa</i> (Pursh) Shinnars
GLYC PUL	<i>Glyceria pulchella</i> (Nash) K. Schum.	HEUC CYL	<i>Heuchera cylindrica</i> Dougl. ex Hook.
GLYC STR	<i>Glyceria striata</i> (Lam.) A.S. Hitchc.	HEUC GLA	<i>Heuchera glabra</i> Willd. ex Roemer & J.A. Schultes
GNAP MIC	<i>Gnaphalium microcephalum</i> Nutt.	HEUC PAR	<i>Heuchera parvifolia</i> Bartl.
GNAP PAL	<i>Gnaphalium palustre</i> Nutt.	HEUC RIC	<i>Heuchera richardsonii</i> R. Br.
GNAP ULI	<i>Gnaphalium uliginosum</i> L.	HIER ALB	<i>Hieracium albiflorum</i> Hook.
GNAP VIS	<i>Gnaphalium viscosum</i> Kunth	HIER ALP	<i>Hierochloa alpina</i> (Sw. ex Willd.) Roemer & J.A. Schultes
GOOD OBL	<i>Goodyera oblongifolia</i> Raf.	HIER AUR	<i>Hieracium aurantiacum</i> L.
GOOD REP	<i>Goodyera repens</i> (L.) R. Br. ex Ait. f.	HIER CYN	<i>Hieracium cynoglossoides</i> Arv.-Touv.
GOOD SPP	<i>Goodyera</i> spp.	HIER ODO	<i>Hierochloa odorata</i> (L.) Beauverd
GRAT NEG	<i>Gratiola neglecta</i> Torr.	HIER SPP	<i>Hierachloa</i> spp.
GRIN SQU	<i>Grindelia squarrosa</i> (Pursh) Dunal	HIER TRI	<i>Hieracium triste</i> Willd. ex Spreng.
GUTI SAR	<i>Gutierrezia sarothrae</i> (Pursh) Britt. & Rusby	HIER UMB	<i>Hieracium umbellatum</i> L.
GYMN DRY	<i>Gymnocarpium dryopteris</i> (L.) Newman	HIPP MON	<i>Hippuris montana</i> Ledeb.
GYMN JES	<i>Gymnocarpium jessoense</i> (Koidzumi) Koidzumi	HIPP VUL	<i>Hippuris vulgaris</i> L.
GYPS ELE	<i>Gypsophila elegans</i> Bieb.	HORD GLA	<i>Hordeum glaucum</i> Steud.
GYPS PAN	<i>Gypsophila paniculata</i> L.	HORD JUB	<i>Hordeum jubatum</i> L.
GYPS SCO	<i>Gypsophila scorzonifolia</i> Ser.	HORD PUS	<i>Hordeum pusillum</i> Nutt.
HABE DIL	<i>Habenaria dilatata</i> (Pursh) Lindl. ex Beck	HORD VUL	<i>Hordeum vulgare</i> L.
HABE HYP	<i>Habenaria hyperborea</i> (L.) Lindl.	HOUS LON	<i>Houstonia longifolia</i> Gaertn.
HABE OBT	<i>Habenaria obtusata</i> (Banks ex Pursh) Lindl.	HUDS TOM	<i>Hudsonia tomentosa</i> Nutt.
HABE ORB	<i>Habenaria orbiculata</i> (Pursh) Lindl.	HUMU LUP	<i>Humulus lupulus</i> L.
HABE SAC	<i>Habenaria saccata</i> Greene	HYDR CAP	<i>Hydrophyllum capitatum</i> Dougl. ex Benth.
HABE SPP	<i>Habenaria</i> spp.	HYME ACA	<i>Hymenoxys acaulis</i> (Pursh) Parker
HABE UNA	<i>Habenaria unalascensis</i> (Spreng) S. Wats.	HYME FIL	<i>Hymenopappus filifolius</i> Hook.
HABE VIR	<i>Habenaria viridis</i> (L.) R. Br. ex Ait. f.	HYME RIC	<i>Hymenoxys richardsonii</i> (Hook.) Cockerll
HACK AME	<i>Hackelia americana</i> (Gray) Fern.	HYOS NIG	<i>Hyoscyamus niger</i> L.
HACK FLO	<i>Hackelia floribunda</i> (Lehm.) I.M. Johnston	HYPE FOR	<i>Hypericum formosum</i> Kunth
HACK JES	<i>Hackelia jessicae</i> (McGregor) Brand	HYPE MAJ	<i>Hypericum majus</i> (Gray) Britt.
HACK SPP	<i>Hackelia</i> spp.	ILIA RIV	<i>Iliamna rivularis</i> (Dougl. ex Hook.) Greene
HALE DEF	<i>Halenia deflexa</i> (Sm.) Griseb.	IMPA CAP	<i>Impatiens capensis</i> Meerb.
HALI VIR	<i>Halimolobos virgata</i> (Nutt.) O.E. Schulz	IMPA NOL	<i>Impatiens noli-tangere</i> L.
HAPL LAN	<i>Haplopappus lanceolatus</i> (Hook.) Torr. & Gray	IRIS MIS	<i>Iris missouriensis</i> Nutt.
HAPL LYA	<i>Haplopappus lyallii</i> Gray	ISOE BOL	<i>Isoetes bolanderi</i> Engelm.
HAPL SPI	<i>Haplopappus spinulosus</i> (Push) DC.	ISOE ECH	<i>Isoetes echinospora</i> Durieu
HAPL UNI	<i>Haplopappus uniflorus</i> (Hook.) Torr. & Gray	IVA ANT	<i>Iva xanthifolia</i> Nutt.
HEDE HIS	<i>Hedeoma hispida</i> Pursh	IVA XIL	<i>Iva axillaris</i> Pursh
HEDY ALP	<i>Hedysarum alpinum</i> L.	JUNC ALB	<i>Juncus albescens</i> (Lange) Fern.
HEDY BOR	<i>Hedysarum boreale</i> Nutt.	JUNC ALP	<i>Juncus alpinoarticulatus</i> Chaix
HEDY SPP	<i>Hedysarum</i> spp.	JUNC BAL	<i>Juncus balticus</i> Willd.
HEDY SUL	<i>Hedysarum sulphurescens</i> Rydb.	JUNC BIG	<i>Juncus biglumis</i> L.
HELE AUT	<i>Helenium autumnale</i> L.	JUNC BRE	<i>Juncus brevicaudatus</i> (Engelm.) Fern.
HELI ANN	<i>Helianthus annuus</i> L.	JUNC BUF	<i>Juncus bufonius</i> L.
HELI COU	<i>Helianthus couplandii</i> Bouvin	JUNC CAS	<i>Juncus castaneus</i> Sm.
HELI CUR	<i>Heliotropium curassavicum</i> L.	JUNC CON	<i>Juncus confusus</i> Coville
HELI HOO	<i>Helictotrichon hookeri</i> (Scribn.) Henr.	JUNC DRU	<i>Juncus drummondii</i> E. Mey.
HELI MAX	<i>Helianthus maximiliani</i> Schrad.	JUNC ENS	<i>Juncus ensifolius</i> Wikstr.
HELI NUT	<i>Helianthus nuttallii</i> Torr. & Gray	JUNC FIL	<i>Juncus filiformis</i> L.
HELI SUB	<i>Helianthus subrhomboides</i> Rydb.	JUNC LON	<i>Juncus longistylis</i> Torr.
HERA LAN	<i>Heracleum lanatum</i> Michx.	JUNC MER	<i>Juncus mertensianus</i> Bong.
HERA SPP	<i>Heracleum</i> spp.	JUNC NEV	<i>Juncus nevadensis</i> S. Wats.
		JUNC NOD	<i>Juncus nodosus</i> L.
		JUNC PAR	<i>Juncus parryi</i> Engelm.
		JUNC REG	<i>Juncus regelii</i> Buch.
		JUNC SPP	<i>Juncus</i> spp.

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
JUNC STY	<i>Juncus stygius</i> L.	LITH RUD	<i>Lithospermum ruderale</i> Dougl. ex Lehm.
JUNC TEN	<i>Juncus tenuis</i> Willd.	LOBE DOR	<i>Lobelia dortmanna</i> L.
JUNC TOR	<i>Juncus torreyi</i> Coville	LOBE KAL	<i>Lobelia kalmii</i> L.
JUNC TRA	<i>Juncus tracyi</i> Rydb.	LOBE SPI	<i>Lobelia spicata</i> Lam.
JUNC VAS	<i>Juncus vaseyi</i> Engelm.	LOLI MUL	<i>Lolium multiflorum</i> Lam.
KNAU ARV	<i>Knautia arvensis</i> (L.) Coult.	LOLI PER	<i>Lolium perenne</i> L.
KOBR MYO	<i>Kobresia myosuroides</i> (Vill.) Fiori	LOLI PES	<i>Lolium persicum</i> Boiss. & Hohen. ex Boiss.
KOBR SIM	<i>Kobresia simpliciuscula</i> (Wahlenb.) Mackenzie	LOLI TEM	<i>Lolium temulentum</i> L.
KOBR SPP	<i>Kobresia</i> spp.	LOMA COU	<i>Lomatium cous</i> (S. Wats.) Coult. & Rose
KOCH SCO	<i>Kochia scoparia</i> (L.) Schrad.	LOMA DIS	<i>Lomatium dissectum</i> (Nutt.) Mathias & Constance
KOEL MAC	<i>Koeleria macrantha</i> (Ledeb.) J.A. Schultes	LOMA FOE	<i>Lomatium foeniculaceum</i> (Nutt.) Coult. & Rose
KOEN ISL	<i>Koenigia islandica</i> L.	LOMA MAC	<i>Lomatium macrocarpum</i> (Nutt. ex Torr. & Gray) Coult. & Rose
LACT BIE	<i>Lactuca biennis</i> (Moench) Fern.	LOMA ROT	<i>Lomatogonium rotatum</i> (L.) Fries ex Fern.
LACT PUL	<i>Lactuca pulchella</i> (Pursh) DC.	LOMA SAN	<i>Lomatium sandbergii</i> (Coult. & Rose) Coult. & Rose
LACT SER	<i>Lactuca serriola</i> L.	LOMA SPP	<i>Lomatium</i> spp.
LAMI AMP	<i>Lamium amplexicaule</i> L.	LOMA TRI	<i>Lomatium triternatum</i> (Pursh) Coult. & Rose
LAPP OCC	<i>Lappula occidentalis</i> (S. Wats.) Greene	LOTU COR	<i>Lotus corniculatus</i> L.
LAPP SQU	<i>Lappula squarrosa</i> (Retz.) Dumort.	LUPI ARG	<i>Lupinus argenteus</i> Pursh
LAPS COM	<i>Lapsana communis</i> L.	LUPI LEP	<i>Lupinus lepidus</i> Dougl. ex Lindl.
LATH OCH	<i>Lathyrus ochroleucus</i> Hook.	LUPI MIN	<i>Lupinus minimus</i> Dougl. ex Hook.
LATH VEN	<i>Lathyrus venosus</i> Muhl. ex Willd.	LUPI NOO	<i>Lupinus nootkatensis</i> Donn ex Sims.
LEMN MIN	<i>Lemna minor</i> L.	LUPI POL	<i>Lupinus polyphyllus</i> Lindl.
LEMN TRI	<i>Lemna trisulca</i> L.	LUPI PUS	<i>Lupinus pusillus</i> Pursh
LEON CAR	<i>Leonurus cardiaca</i> L.	LUPI SER	<i>Lupinus sericeus</i> Pursh
LEPI BOU	<i>Lepidium bourgeauanum</i> Thellung	LUPI SPP	<i>Lupinus</i> spp.
LEPI CAM	<i>Lepidium campestre</i> (L.) Ait. f.	LUZU ACU	<i>Luzula acuminata</i> Raf.
LEPI DEN	<i>Lepidium densiflorum</i> Schrad.	LUZU ARC	<i>Luzula arcuata</i> (Wahlenb.) Sw.
LEPI LAT	<i>Lepidium latifolium</i> L.	LUZU GRO	<i>Luzula groenlandica</i> Böcher
LEPI PER	<i>Lepidium perfoliatum</i> L.	LUZU HIT	<i>Luzula hitchcockii</i> Hämet-Ahti
LEPI RAM	<i>Lepidium ramosissimum</i> A. Nels.	LUZU MUL	<i>Luzula multiflora</i> (Ehrh.) Lej.
LEPI SAT	<i>Lepidium sativum</i> L.	LUZU PAR	<i>Luzula parviflora</i> (Ehrh.) Desv.
LEPT PYR	<i>Leptarrhena pyrolifolia</i> (D. Don) R. Br. ex Ser.	LUZU PIP	<i>Luzula piperi</i> (Coville) M.E. Jones
LESQ ALP	<i>Lesquerella alpina</i> (Nutt.) S. Wats.	LUZU RUF	<i>Luzula rufescens</i> (Fisch. ex E. Mey.)
LESQ ARC	<i>Lesquerella arctica</i> (Wormsk. ex Hornem) S. Wats.	LUZU SPI	<i>Luzula spicata</i> (L.) DC.
LESQ ARE	<i>Lesquerella arenosa</i> (Richards.) Rydb.	LUZU SPP	<i>Luzula</i> spp.
LEWI PYG	<i>Lewisia pygmaea</i> (Gray) B.L. Robins.	LYCO ALP	<i>Lycopodium alpinum</i> L.
LIAT LIG	<i>Liatris ligulistylis</i> (A. Nels.) K. Schum.	LYCO AME	<i>Lycopus americanus</i> Muhl ex W. Bart.
LIAT PUN	<i>Liatris punctata</i> Hook.	LYCO ANN	<i>Lycopodium annotinum</i> L.
LILA SCI	<i>Lilaea scilloides</i> (Poir.) Hauman	LYCO ARV	<i>Lycopsis arvensis</i> L.
LILI PHI	<i>Lilium philadelphicum</i> L.	LYCO ASP	<i>Lycopus asper</i> Greene
LIMO AQU	<i>Limnospira aquatica</i> L.	LYCO CLA	<i>Lycopodium clavatum</i> L.
LINA DAL	<i>Linaria dalmatica</i> (L.) P. Mill.	LYCO COM	<i>Lycopodium complanatum</i> L.
LINA SEP	<i>Linanthus septentrionalis</i> Mason	LYCO INU	<i>Lycopodium inundatum</i> L.
LINA VUL	<i>Linaria vulgaris</i> P. Mill.	LYCO OBS	<i>Lycopodium obscurum</i> L.
LINN BOR	<i>Linnaea borealis</i> L.	LYCO SEL	<i>Lycopodium selago</i> L.
LINU LEW	<i>Linum lewisii</i> Pursh	LYCO SIT	<i>Lycopodium sitchense</i> Rupr.
LINU RIG	<i>Linum rigidum</i> Pursh	LYCO SPP	<i>Lycopsis</i> spp.
LINU SPP	<i>Linum</i> spp.	LYCO UNI	<i>Lycopus uniflorus</i> Michx.
LINU USI	<i>Linum usitatissimum</i> L.	LYGO JUN	<i>Lygodesmia juncea</i> (Pursh) D. Don ex Hook.
LIST BOR	<i>Listera borealis</i> Morong	LYGO ROS	<i>Lygodesmia rostrata</i> (Gray) Gray
LIST CAU	<i>Listera caurina</i> Piper	LYSI CIL	<i>Lysimachia ciliata</i> L.
LIST CON	<i>Listera convallarioides</i> (Sw.) Nutt. ex Ell.	LYSI LAN	<i>Lysimachia lanceolata</i> Walt.
LIST COR	<i>Listera cordata</i> (L.) R. Br. ex Ait. f.		
LIST SPP	<i>Listera</i> spp.		
LITH INC	<i>Lithospermum incisum</i> Lehm.		
LITH PAR	<i>Lithophragma parviflorum</i> (Hook.) Nutt. ex Torr. & Gray		

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
LYSI THY	<i>Lysimachia thyrsoiflora</i> L.	MITE PEN	<i>Mitella pentandra</i> Hook.
LYTH SAL	<i>Lythrum salicaria</i> L.	MITE SPP	<i>Mitella</i> spp.
LYTH SPP	<i>Lythrum</i> spp.	MITE TRI	<i>Mitella trifida</i> Graham
MACH CAN	<i>Machaeranthera canescens</i> (Pursh) Gray	MOEH LAT	<i>Moehringia lateriflora</i> (L.) Fenzl
MACH GRI	<i>Machaeranthera grindelioides</i> (Nutt.) Shinners	MONA FIS	<i>Monarda fistulosa</i> L.
MACH TAN	<i>Machaeranthera tanacetifolia</i> (Kunth) Nees	MONE SPP	<i>Moneses</i> spp.
MADI GLO	<i>Madia glomerata</i> Hook.	MONE UNI	<i>Moneses uniflora</i> (L.) Gray
MAIA CAN	<i>Maianthemum canadense</i> Desf.	MONO HYP	<i>Monotropa hypopithys</i> L.
MAIA SPP	<i>Maianthemum</i> spp.	MONO NUT	<i>Monolepis nuttalliana</i> (J.A. Schultes) Greene
MALA MON	<i>Malaxis monophyllos</i> (L.) Sw.	MONO UNI	<i>Monotropa uniflora</i> L.
MALA PAL	<i>Malaxis paludosa</i> (L.) Sw.	MONT LIN	<i>Montia linearis</i> (Dougl. ex Hook.) Greene
MALV PAR	<i>Malva parviflora</i> L.	MONT PAR	<i>Montia parvifolia</i> (Moc. ex DC.) Greene
MALV ROT	<i>Malva rotundifolia</i> L.	MUHL ASP	<i>Muhlenbergia asperifolia</i> (Nees & Meyen ex Trin.) Parodi
MALV SYL	<i>Malva sylvestris</i> L.	MUHL CUS	<i>Muhlenbergia cuspidata</i> (Torr. ex Hook.) Rydb.
MALV VER	<i>Malva verticillata</i> L.	MUHL GLO	<i>Muhlenbergia glomerata</i> (Willd.) Trin.
MARS VES	<i>Marsilea vestita</i> Hook. & Grev.	MUHL RAC	<i>Muhlenbergia racemosa</i> (Michx.) B.S.P.
MATR MAT	<i>Matricaria matricarioides</i> auct. non (Less.) Porter	MUHL RIC	<i>Muhlenbergia richardsonis</i> (Trin.) Rydb.
MATR PER	<i>Matricaria perforata</i> Mérat	MONR SQU	<i>Monroa squarrosa</i> (Nutt.) Torr.
MATR REC	<i>Matricaria recutita</i> L.	MUSI DIV	<i>Musineon divaricatum</i> (Pursh) Raf.
MATT STR	<i>Matteuccia struthiopteris</i> (L.) Todaro	MYOS ALP	<i>Myosotis alpestris</i> F.W. Schmidt
MEDI FAL	<i>Medicago falcata</i> L.	MYOS ARI	<i>Myosurus aristatus</i> Benth.
MEDI LUP	<i>Medicago lupulina</i> L.	MYOS ARV	<i>Myosotis arvensis</i> (L.) Hill
MEDI SAT	<i>Medicago sativa</i> L.	MYOS LAX	<i>Myosotis laxa</i> Lehm.
MELA LIN	<i>Melampyrum lineare</i> Desr.	MYOS MIC	<i>Myosotis micrantha</i> auct. non Pallas ex Lehm.
MELI ALB	<i>Melilotus alba</i> Medikus	MYOS MIN	<i>Myosurus minimus</i> L.
MELI OFF	<i>Melilotus officinalis</i> (L.) Lam.	MYRI EXA	<i>Myriophyllum exalbescens</i> Fern.
MELI SMI	<i>Melica smithii</i> (Porter ex Gray) Vasey	MYRI VER	<i>Myriophyllum verticillatum</i> L.
MELI SPE	<i>Melica spectabilis</i> Scribn.	NAJA FLE	<i>Najas flexilis</i> (Willd) Rostk. & Schmidt
MELI SPP	<i>Melica</i> spp.	NAST OFF	<i>Nasturtium officinale</i> Ait. f.
MELI SUB	<i>Melica subulata</i> (Griseb.) Scribn.	NAVA MIN	<i>Navarretia minima</i> Nutt.
MENT ARV	<i>Mentha arvensis</i> L.	NEMO BRE	<i>Nemophila breviflora</i> Gray
MENT DEC	<i>Mentzelia decapetala</i> (Pursh ex Sims) Urban & Gilg ex Gilg	NEPE CAT	<i>Nepeta cataria</i> L.
MENT SPI	<i>Mentha spicata</i> L.	NESL PAN	<i>Neslia paniculata</i> (L.) Desv.
MENY TRI	<i>Menyanthes trifoliata</i> L.	NONE VES	<i>Nonea vesicaria</i> (L.) Reichenb.
MERT LAN	<i>Mertensia lanceolata</i> (Pursh) DC.	NOTH CUS	<i>Nothocalais cuspidata</i> (Pursh) Greene
MERT LON	<i>Mertensia longiflora</i> Greene	NUPH VAR	<i>Nuphar variegatum</i> Engelm.
MERT PAN	<i>Mertensia paniculata</i> (Ait.) G. Don	NYMP TET	<i>Nymphaea tetragona</i> Georgi
MERT SPP	<i>Mertensia</i> spp.	ODON SER	<i>Odontites serotina</i> (Lam.)
MICR GRA	<i>Microsteris gracilis</i> (Hook.) Greene	OENO AND	<i>Oenothera andina</i> (Nutt.) Raven
MICR NUT	<i>Microseris nutans</i> (Hook.) Schultz-Bip.	OENO BIE	<i>Oenothera biennis</i> L.
MIMU FLO	<i>Mimulus floribundus</i> Lindl.	OENO BRE	<i>Oenothera breviflora</i> Torr. & Gray
MIMU GUT	<i>Mimulus guttatus</i> DC.	OENO CAE	<i>Oenothera caespitosa</i> Nutt.
MIMU LEW	<i>Mimulus lewisii</i> Pursh	OENO FLA	<i>Oenothera flava</i> (A. Nels.) Garrett
MINU AUS	<i>Minuartia austromontana</i> S.J. Wolf & Packer	OENO NUT	<i>Oenothera nuttallii</i> Sweet
MINU BIF	<i>Minuartia biflora</i> (L.) Schinz & Thellung	OENO SER	<i>Oenothera serrulata</i> Nutt.
MINU DAW	<i>Minuartia dawsonensis</i> (Britt.) House	ONOB VIC	<i>Onobrychis viciifolia</i> Scop.
MINU ELE	<i>Minuartia elegans</i> (Cham. & Schlecht.) Schischkin	ONON ARV	<i>Ononis arvensis</i> L.
MINU NUT	<i>Minuartia nuttallii</i> (Pax) Briq.	ONOS MOL	<i>Onosmodium molle</i> Michx.
MINU OBT	<i>Minuartia obtusiloba</i> (Rydb.) House	OPUN FRA	<i>Opuntia fragilis</i> (Nutt.) Haw.
MINU RUB	<i>Minuartia rubella</i> (Wahlenb.) Hiern	OPUN POL	<i>Opuntia polyacantha</i> Haw.
MIRA HIR	<i>Mirabilis hirsuta</i> (Pursh) MacM.	ORCH ROT	<i>Orchis rotundifolia</i> Banks ex Pursh
MIRA NYC	<i>Mirabilis nyctaginea</i> (Michx.) MacM.	ORCH SPP	<i>Orchis</i> spp.
MITE BRE	<i>Mitella breweri</i> Gray	OROB FAS	<i>Orobanche fasciculata</i> Nutt.
MITE NUD	<i>Mitella nuda</i> L.	OROB LUD	<i>Orobanche ludoviciana</i> Nutt.
		OROB UNI	<i>Orobanche uniflora</i> L.
		ORTH LUT	<i>Orthocarpus luteus</i> Nutt.

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
ORTH SEC	<i>Orthilia secunda</i> (L.) House	PENS ALI	<i>Penstemon albidus</i> Nutt.
ORYZ ASP	<i>Oryzopsis asperifolia</i> Michx.	PENS CON	<i>Penstemon confertus</i> Dougl. ex Lindl.
ORYZ CAN	<i>Oryzopsis canadensis</i> (Poir.) Torr.	PENS ELL	<i>Penstemon ellipticus</i> Coult. & Fischer
ORYZ EXI	<i>Oryzopsis exigua</i> Thurb.	PENS ERI	<i>Penstemon eriantherus</i> Pursh
ORYZ HYM	<i>Oryzopsis hymenoides</i> (Roemer & J.A. Schultes) Richer ex Piper	PENS GRA	<i>Penstemon gracilis</i> Nutt.
ORYZ MIC	<i>Oryzopsis micrantha</i> (Trin. & Rupr.) Thurb.	PENS LYA	<i>Penstemon lyallii</i> (Gray) Gray
ORYZ PUN	<i>Oryzopsis pungens</i> (Torr. ex Spreng.) A.S. Hitchc.	PENS NIT	<i>Penstemon nitidus</i> Dougl. ex Benth.
ORYZ SPP	<i>Oryzopsis</i> spp.	PENS PRO	<i>Penstemon procerus</i> Dougl. ex Graham
OSMO CHI	<i>Osmorhiza chilensis</i> Hook. & Arn.	PENS SPP	<i>Penstemon</i> spp.
OSMO DEP	<i>Osmorhiza depauperata</i> Phil.	PERI GAI	<i>Perideridia gairdneri</i> (Hook. & Arn.) Mathias
OSMO LON	<i>Osmorhiza longistylis</i> (Torr.) DC.	PETA CAN	<i>Petalostemon candidus</i> Michx.
OSMO OCC	<i>Osmorhiza occidentalis</i> (Nutt. ex Torr. & Gray) Torr.	PETA NIV	<i>Petasites nivalis</i> Greene
OSMO PUR	<i>Osmorhiza purpurea</i> (Coult. & Rose) Suksdorf	PETA PAL	<i>Petasites palmatus</i> (Ait.) Gray
OSMO SPP	<i>Osmorhiza</i> spp.	PETA PUR	<i>Petalostemon purpureum</i> (Vent.) Rydb.
OXYC QUA	<i>Oxycoccus quadripetalus</i> Gilib.	PETA SAG	<i>Petasites sagittatus</i> (Banks ex Pursh) Gray
OXYR DIG	<i>Oxyria digyna</i> (L.) Hill	PETA SPP	<i>Petalostemon</i> spp.
OXYT CUS	<i>Oxytropis cusickii</i> Greenm.	PETA VIT	<i>Petasites vitifolius</i> Greene
OXYT DEF	<i>Oxytropis deflexa</i> (Pallas) DC.	PHAC FRA	<i>Phacelia franklinii</i> (R.Br.) Greene
OXYT JOR	<i>Oxytropis jordalii</i> Porsild	PHAC HAS	<i>Phacelia hastata</i> Dougl. ex Lehm.
OXYT LAG	<i>Oxytropis lagopus</i> Nutt.	PHAC LIN	<i>Phacelia linearis</i> (Pursh) Holz
OXYT MON	<i>Oxytropis monticola</i> Gray	PHAC LYA	<i>Phacelia lyallii</i> (Gray) Rydb.
OXYT POD	<i>Oxytropis podocarpa</i> Gray	PHAC SER	<i>Phacelia sericea</i> (Graham) Gray
OXYT SER	<i>Oxytropis sericea</i> Nutt.	PHAC SPP	<i>Phacelia</i> spp.
OXYT SPL	<i>Oxytropis splendens</i> Dougl. ex Hook.	PHAL ARU	<i>Phalaris arundinacea</i> L.
OXYT SPP	<i>Oxytropis</i> spp.	PHAL CAN	<i>Phalaris canariensis</i> L.
OXYT VIS	<i>Oxytropis viscida</i> Nutt.	PHEG CON	<i>Phegopteris connectilis</i> (Michx.) Watt.
PANI CAP	<i>Panicum capillare</i> L.	PHLE COM	<i>Phleum commutatum</i> Gaudin
PANI MIL	<i>Panicum miliaceum</i> L.	PHLE PRA	<i>Phleum pratense</i> L.
PAPA FRE	<i>Papaver freedmanianum</i> D. Löve	PHLO ALY	<i>Phlox alyssifolia</i> Greene
PAPA KLU	<i>Papaver kluanense</i> D. Löve	PHLO HOO	<i>Phlox hoodii</i> Richards.
PAPA NUD	<i>Papaver nudicaule</i> L.	PHRA AUS	<i>Phragmites australis</i> (Cav.) Trin. ex Steud.
PAPA PYG	<i>Papaver pygmaeum</i> Rydb.	PHYS DID	<i>Physaria didymocarpa</i> (Hook.) Gray
PAPA SOM	<i>Papaver somniferum</i> L.	PHYS IXO	<i>Physalis ixocarpa</i> auct. non Brot. ex Hornem.
PARI PEN	<i>Parietaria pennsylvanica</i> Muhl. ex Willd.	PHYS PAR	<i>Physostegia parviflora</i> Nutt. ex Gray
PARN FIM	<i>Parnassia fimbriata</i> Koenig	PICR ECH	<i>Picris echioides</i> L.
PARN KOT	<i>Parnassia kotzebuei</i> Cham. ex Spreng.	PING VIL	<i>Pinguicula villosa</i> L.
PARN PAL	<i>Parnassia palustris</i> L.	PING VUL	<i>Pinguicula vulgaris</i> L.
PARN PAR	<i>Parnassia parviflora</i> DC.	PLAG SCO	<i>Plagiobothrys scouleri</i> (Hook. & Arn.) I.M. Johnston
PARN SPP	<i>Parnassia</i> spp.	PLAN CAN	<i>Plantago canescens</i> M.F. Adams
PARO SES	<i>Paronychia sessiliflora</i> Nutt.	PLAN ELO	<i>Plantago elongata</i> Pursh
PAST SAT	<i>Pastinaca sativa</i> L.	PLAN ERI	<i>Plantago eriopoda</i> Torr.
PEDI ARC	<i>Pedicularis arctica</i> R. Br.	PLAN MAJ	<i>Plantago major</i> L.
PEDI BRA	<i>Pedicularis bracteosa</i> Benth.	PLAN MAR	<i>Plantago maritima</i> L.
PEDI CAP	<i>Pedicularis capitata</i> M.F. Adams	PLAN PAT	<i>Plantago patagonica</i> Jacq.
PEDI CON	<i>Pedicularis contorta</i> Benth.	POA ALP	<i>Poa alpina</i> L.
PEDI FLA	<i>Pedicularis flammaea</i> L.	POA ARC	<i>Poa arctica</i> R. Br.
PEDI GRO	<i>Pedicularis groenlandica</i> Retz.	POA ARI	<i>Poa arida</i> Vasey
PEDI LAB	<i>Pedicularis labradorica</i> Wirsing	POA CAN	<i>Poa canbyi</i> (Scribn.) T.J. Howell
PEDI LAN	<i>Pedicularis lanata</i> Cham. & Schlecht.	POA COM	<i>Poa compressa</i> L.
PEDI PAR	<i>Pedicularis parviflora</i> Sm. ex Rees	POA CUS	<i>Poa cusickii</i> Vasey
PEDI RAC	<i>Pedicularis racemosa</i> Dougl. ex Benth.	POA EPI	<i>Poa epilis</i> Scribn.
PEDI SPP	<i>Pedicularis</i> spp.	POA GLA	<i>Poa glauca</i> Vahl
PEDI SUD	<i>Pedicularis sudetica</i> Willd.	POA GRA	<i>Poa gracillima</i> Vasey
PELL ATR	<i>Pellaea atropurpurea</i> (L.) Link	POA INT	<i>Poa interior</i> Rydb.
PELL GLA	<i>Pellaea glabella</i> Mett. ex Kuhn.	POA JUN	<i>Poa juncifolia</i> Scribn.
PENS ALB	<i>Penstemon albertinus</i> Greene	POA LEP	<i>Poa leptocoma</i> Trin.

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
POA NER	<i>Poa nervosa</i> (Hook.) Vasey	POTE GLA	<i>Potentilla glandulosa</i> Lindl.
POA NEV	<i>Poa nevadensis</i> Scribn.	POTE GRA	<i>Potentilla gracilis</i> Dougl. ex Hook.
POA PAL	<i>Poa palustris</i> L.	POTE HIP	<i>Potentilla hippiana</i> Lehm.
POA PAT	<i>Poa pattersonii</i> Vasey	POTE HOO	<i>Potentilla hookeriana</i> Lehm.
POA PRA	<i>Poa pratensis</i> L.	POTE HYP	<i>Potentilla hyparctica</i> Malte
POA SAN	<i>Poa sandbergii</i> Vasey	POTE MUL	<i>Potentilla multifida</i> auct. non L.
POA SPP	<i>Poa</i> spp.	POTE MUT	<i>Potentilla multisecta</i> (S. Wats.) Rydb.
POLA DOD	<i>Polanisia dodecandra</i> (L.) DC.	POTE NIV	<i>Potentilla nivea</i> L.
POLE ACU	<i>Polemonium acutiflorum</i> Willd. ex Roemer & J.A. Schultes	POTE NOR	<i>Potentilla norvegica</i> L.
POLE PUL	<i>Polemonium pulcherrimum</i> Hook.	POTE OVI	<i>Potentilla ovina</i> Macoun ex J.M. Macoun
POLE SPP	<i>Polemonium</i> spp.	POTE PAL	<i>Potentilla palustris</i> (L.) Scop.
POLE VIS	<i>Polemonium viscosum</i> Nutt.	POTE PAR	<i>Potentilla paradoxa</i> Nutt.
POLY AMP	<i>Polygonum amphibium</i> L.	POTE PEN	<i>Potentilla pensylvanica</i> L.
POLY ARE	<i>Polygonum arenastrum</i> Jord. ex Boreau	POTE PLA	<i>Potentilla plattensis</i> Nutt.
POLY AUS	<i>Polygonum austiniiae</i> Greene	POTE REC	<i>Potentilla recta</i> L.
POLY BIS	<i>Polygonum bistortoides</i> Pursh	POTE RIV	<i>Potentilla rivalis</i> Nutt.
POLY COC	<i>Polygonum coccineum</i> Muhl. ex Willd.	POTE SPP	<i>Potentilla</i> spp.
POLY CON	<i>Polygonum convolvulus</i> L.	POTE TRI	<i>Potentilla tridentata</i> Ait.
POLY DOU	<i>Polygonum douglasii</i> Greene	POTE UNI	<i>Potentilla uniflora</i> Ledeb.
POLY ENG	<i>Polygonum engelmannii</i> Greene	POTE VIL	<i>Potentilla villosa</i> Pallas ex Pursh
POLY ERE	<i>Polygonum erectum</i> L.	PREN ALA	<i>Prenanthes alata</i> (Hook.) D. Dietr.
POLY HES	<i>Polypodium hesperium</i> Maxon	PREN ARC	<i>Prenanthes racemosa</i> Michx.
POLY LAP	<i>Polygonum lapathifolium</i> L.	PREN SAG	<i>Prenanthes sagittata</i> (Gray) A. Nels.
POLY LON	<i>Polystichum lonchitis</i> (L.) Roth	PRIM EGA	<i>Primula egaliksensis</i> Womsk. ex Hornem.
POLY MIN	<i>Polygonum minimum</i> S. Wats.	PRIM INC	<i>Primula incana</i> M.E. Jones
POLY MON	<i>Polyogon monspeliensis</i> (L.) Desf.	PRIM MIS	<i>Primula mistassinica</i> Michx.
POLY MOS	<i>Polygonum monspeliense</i> Pers.	PRIM SPP	<i>Primula</i> spp.
POLY PAU	<i>Polygala paucifolia</i> Willd.	PRIM STR	<i>Primula stricta</i> Hornem.
POLY PER	<i>Polygonum persicaria</i> L.	PRUN VUL	<i>Prunella vulgaris</i> L.
POLY RAM	<i>Polygonum ramosissimum</i> Michx.	PSIL ELA	<i>Psilocarphus elatior</i> (Gray) Gray
POLY SCA	<i>Polygonum scandens</i> L.	PSOR ARG	<i>Psoralea argophylla</i> Pursh
POLY SEG	<i>Polygala senega</i> L.	PSOR ESC	<i>Psoralea esculenta</i> Pursh
POLY SPP	<i>Polygonum</i> spp.	PSOR LAN	<i>Psoralea lanceolata</i> Pursh
POLY VIR	<i>Polypodium virginianum</i> L.	PTER AND	<i>Pterospora andromedea</i> Nutt.
POLY VIV	<i>Polygonum viviparum</i> L.	PTER AQU	<i>Pteridium aquilinum</i> (L.) Kuhn.
POLY WAT	<i>Polygonum watsonii</i> Small	PUCC CUS	<i>Puccinellia cusickii</i> Weatherby
PORT OLE	<i>Portulaca oleracea</i> L.	PUCC DIS	<i>Puccinellia distans</i> (Jacq.) Parl.
POTA ALP	<i>Potamogeton alpinus</i> Balbis	PUCC HAU	<i>Puccinellia hauptiana</i> (Trin. ex Krecz.) Kitagawa
POTA CRI	<i>Potamogeton crispus</i> L.	PUCC NUT	<i>Puccinellia nuttalliana</i> (J.A. Schultes) A.S. Hitchc.
POTA FIL	<i>Potamogeton filiformis</i> Pers.	PUCC PAU	<i>Puccinellia pauciflora</i> (J. Presl) Munz
POTA FOL	<i>Potamogeton foliosus</i> Raf.	PYRO ASA	<i>Pyrola asarifolia</i> Michx.
POTA FRI	<i>Potamogeton friesii</i> Rupr.	PYRO BRA	<i>Pyrola bracteata</i> Hook.
POTA GRA	<i>Potamogeton gramineus</i> L.	PYRO CHL	<i>Pyrola chlorantha</i> Sw.
POTA NAT	<i>Potamogeton natans</i> L.	PYRO ELL	<i>Pyrola elliptica</i> Nutt.
POTA OBT	<i>Potamogeton obtusifolius</i> Mert. & Koch.	PYRO GRA	<i>Pyrola grandiflora</i> Radius
POTA PEC	<i>Potamogeton pectinatus</i> L.	PYRO MIN	<i>Pyrola minor</i> L.
POTA PRA	<i>Potamogeton praelongus</i> Wulfen	PYRO PIC	<i>Pyrola picta</i> Sm.
POTA PUS	<i>Potamogeton pusillus</i> L.	PYRO SPP	<i>Pyrola</i> spp.
POTA RIC	<i>Potamogeton richardsonii</i> (Benn.) Rydb.	RANU ABO	<i>Ranunculus abortivus</i> L.
POTA ROB	<i>Potamogeton robbinsii</i> Oakes	RANU ACR	<i>Ranunculus acris</i> L.
POTA STR	<i>Potamogeton strictifolius</i> Benn.	RANU AQU	<i>Ranunculus aquatilis</i> L.
POTA VAG	<i>Potamogeton vaginatus</i> Turcz.	RANU CAR	<i>Ranunculus cardiophyllus</i> Hook.
POTA ZOS	<i>Potamogeton zosteriformis</i> Fern.	RANU CIR	<i>Ranunculus circinatus</i> auct. non Sibthorp.
POTE ANS	<i>Potentilla anserina</i> L.	RANU CYM	<i>Ranunculus cymbalaria</i> Pursh
POTE ARG	<i>Potentilla argentea</i> L.	RANU ESC	<i>Ranunculus eschscholtzii</i> Schlecht.
POTE ARU	<i>Potentilla arguta</i> Pursh	RANU GLA	<i>Ranunculus glaberrimus</i> Hook.
POTE BIP	<i>Potentilla bipinnatifida</i> Dougl. ex Hook.	RANU GME	<i>Ranunculus gmelinii</i> DC.
POTE CON	<i>Potentilla concinna</i> Richards.		
POTE DIV	<i>Potentilla diversifolia</i> Lehm.		
POTE DRU	<i>Potentilla drummondii</i> Lehm.		
POTE FIN	<i>Potentilla finitima</i> Kohli & Packer		

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
RANU GRA	<i>Ranunculus grayi</i> Britt.	SANI MAR	<i>Sanicula marilandica</i> L.
RANU HYP	<i>Ranunculus hyperboreus</i> Rottb.	SAPO OFF	<i>Saponaria officinalis</i> L.
RANU INA	<i>Ranunculus inamoenus</i> Greene	SARR PUR	<i>Sarracenia purpurea</i> L.
RANU LAP	<i>Ranunculus lapponicus</i> L.	SAUS AME	<i>Saussurea americana</i> D.C. Eaton
RANU MAC	<i>Ranunculus macounii</i> Britt.	SAUS GLO	<i>Saussurea glomerata</i> DC.
RANU NIV	<i>Ranunculus nivalis</i> L.	SAUS NUD	<i>Saussurea nuda</i> Ledeb.
RANU OCC	<i>Ranunculus occidentalis</i> Nutt.	SAXI ADS	<i>Saxifraga adscendens</i> L.
RANU PED	<i>Ranunculus pedatifidus</i> Sm.	SAXI AIZ	<i>Saxifraga aizoides</i> L.
RANU PEN	<i>Ranunculus pensylvanicus</i> L. f.	SAXI BRO	<i>Saxifraga bronchialis</i> L.
RANU PYG	<i>Ranunculus pygmaeus</i> Wahlenb.	SAXI CAE	<i>Saxifraga caespitosa</i> L.
RANU REP	<i>Ranunculus repens</i> L.	SAXI CER	<i>Saxifraga cernua</i> L.
RANU RET	<i>Ranunculus reptans</i> L.	SAXI FER	<i>Saxifraga ferruginea</i> Graham
RANU RHO	<i>Ranunculus rhomboideus</i> Goldie	SAXI FLA	<i>Saxifraga flagellaris</i> Willd. ex Sternb.
RANU SCE	<i>Ranunculus sceleratus</i> L.	SAXI HYP	<i>Saxifraga hyperborea</i> R. Br.
RANU SPP	<i>Ranunculus</i> spp.	SAXI LYA	<i>Saxifraga lyallii</i> Engl.
RANU UNC	<i>Ranunculus uncinatus</i> D. Don ex G. Don	SAXI MER	<i>Saxifraga mertensiana</i> Bong.
RANU VER	<i>Ranunculus verecundus</i> B.L. Robins. ex Piper	SAXI NEL	<i>Saxifraga nelsoniana</i> D. Don
RAPH RAP	<i>Raphanus raphanistrum</i> L.	SAXI NIV	<i>Saxifraga nivalis</i> L.
RATI COL	<i>Ratibida columnifera</i> (Nutt.) Woot. & Standl.	SAXI OCC	<i>Saxifraga occidentalis</i> S. Wats.
RHIN MIN	<i>Rhinanthus minor</i> L.	SAXI ODO	<i>Saxifraga odontoloma</i> Piper
RHYN CAP	<i>Rhynchospora capillacea</i> Torr.	SAXI OPP	<i>Saxifraga oppositifolia</i> L.
ROMA SIT	<i>Romanzoffia sitchensis</i> Bong.	SAXI ORE	<i>Saxifraga oregana</i> T.J. Howell
RORI AUS	<i>Rorippa austriaca</i> (Crantz) Bess	SAXI SPP	<i>Saxifraga</i> spp.
RORI CUR	<i>Rorippa curvipes</i> Greene	SAXI TRI	<i>Saxifraga tricuspidata</i> Rottb.
RORI PAL	<i>Rorippa palustris</i> (L.) Bess.	SCHE PAL	<i>Scheuchzeria palustris</i> L.
RORI SIN	<i>Rorippa sinuata</i> (Nutt.) A.S. Hitchc.	SCHE PAN	<i>Schedonnardus paniculatus</i> (Nutt.) Trel.
RORI SYL	<i>Rorippa sylvestris</i> (L.) Bess.	SCHI PUR	<i>Schizachne purpurascens</i> (Torr.) Swallen
RORI TEN	<i>Rorippa tenerrima</i> Greene	SCHI SCO	<i>Schizachyrium scoparium</i> (Michx.) Nash
RORI TRU	<i>Rorippa truncata</i> (Jepson) R. Stuckey	SCHO LIN	<i>Schoenocrambe linifolia</i> (Nutt.) Greene
RUBU ARC	<i>Rubus arcticus</i> L.	SCIR ACU	<i>Scirpus acutus</i> Muhl. ex Bigelow
RUBU CHA	<i>Rubus chamaemorus</i> L.	SCIR CAE	<i>Scirpus caespitosus</i> L.
RUBU PED	<i>Rubus pedatus</i> Sm.	SCIR CLI	<i>Scirpus clintonii</i> Gray
RUBU PUB	<i>Rubus pubescens</i> Raf.	SCIR CYP	<i>Scirpus cyperinus</i> (L.) Kunth
RUDB HIR	<i>Rudbeckia hirta</i> L.	SCIR FLU	<i>Scirpus fluviatilis</i> (Torr.) Gray
RUME ACE	<i>Rumex acetosa</i> L.	SCIR HUD	<i>Scirpus hudsonianus</i> (Michx.) Fern.
RUME ACT	<i>Rumex acetosella</i> L.	SCIR MIC	<i>Scirpus microcarpus</i> J. & K. Presl.
RUME BRI	<i>Rumex britannica</i> Amer. auct. non L.	SCIR NEV	<i>Scirpus nevadensis</i> S. Wats.
RUME CON	<i>Rumex confertus</i> Willd.	SCIR PAL	<i>Scirpus pallidus</i> (Britt.) Fern.
RUME CRI	<i>Rumex crispus</i> L.	SCIR PAU	<i>Scirpus paludosus</i> A. Nels.
RUME DEN	<i>Rumex dentatus</i> L.	SCIR PUM	<i>Scirpus pumilus</i> Vahl
RUME LON	<i>Rumex longifolius</i> DC.	SCIR PUN	<i>Scirpus pungens</i> Vahl
RUME MAR	<i>Rumex maritimus</i> L.	SCIR SPP	<i>Scirpus</i> spp.
RUME OCC	<i>Rumex occidentalis</i> S. Wats.	SCIR VAL	<i>Scirpus validus</i> Vahl
RUME PAU	<i>Rumex paucifolius</i> Nutt.	SCLE ANN	<i>Scleranthus annuus</i> L.
RUME PSE	<i>Rumex pseudonatronatus</i> Borbás	SCOL FES	<i>Scolochloa festucacea</i> (Willd.) Link
RUME SPP	<i>Rumex</i> spp.	SCRO LAN	<i>Scrophularia lanceolata</i> Pursh
RUME STE	<i>Rumex stenophyllus</i> Ledeb.	SCUT GAL	<i>Scutellaria galericulata</i> L.
RUME TRI	<i>Rumex triangulivalvis</i> (Danser) Rech. f.	SECA CER	<i>Secale cereale</i> L.
RUME VEN	<i>Rumex venosus</i> Pursh	SECA SPP	<i>Secale</i> spp.
RUPP MAR	<i>Ruppia maritima</i> L.	SEDU DIV	<i>Sedum divergens</i> S. Wats.
SAGI CUN	<i>Sagittaria cuneata</i> Sheldon	SEDU LAN	<i>Sedum lanceolatum</i> Torr.
SAGI DEC	<i>Sagina decumbens</i> (Ell.) Torr. & Gray	SEDU SPP	<i>Sedum</i> spp.
SAGI LAT	<i>Sagittaria latifolia</i> Willd.	SEDU STE	<i>Sedum stenopetalum</i> Pursh
SAGI NIV	<i>Sagina nivalis</i> (Lindbl.) Fries	SELA DEN	<i>Selaginella densa</i> Rydb.
SAGI NOD	<i>Sagina nodosa</i> (L.) Fenzl	SELA RUP	<i>Selaginella rupestris</i> (L.) Spring
SAGI SAG	<i>Sagina saginoides</i> (L.) Karst.	SELA SEL	<i>Selaginella selaginoides</i> (L.) Beauverd ex Mart. & Schrank
SALI EUR	<i>Salicornia europaea</i> L.	SELA SPP	<i>Selaginella</i> spp.
SALS KAL	<i>Salsola kali</i> L.	SELA WAL	<i>Selaginella wallacei</i> Hieron.
SALV NEM	<i>Salvia nemorosa</i> L.	SENE CAN	<i>Senecio canus</i> Hook.
		SENE COG	<i>Senecio congestus</i> (R. Br.) DC.
		SENE CON	<i>Senecio conterminus</i> Greenm.

Appendix 1C. Continued

FECD code	Scientific name	FECD code	Scientific name
SENE CYM	<i>Senecio cymbalarioides</i> Buek	SONC ASP	<i>Sonchus asper</i> (L.) Hill
SENE ERE	<i>Senecio eremophilus</i> Richards.	SONC OLE	<i>Sonchus oleraceus</i> L.
SENE FOE	<i>Senecio foetidus</i> J.T. Howell	SONC SPP	<i>Sonchus</i> spp.
SENE FRE	<i>Senecio fremontii</i> Torr. & Gray	SONC ULI	<i>Sonchus uliginosus</i> Bieb.
SENE IND	<i>Senecio indecorus</i> Greene	SPAR ANG	<i>Sparganium angustifolium</i> Michx.
SENE INT	<i>Senecio integerrimus</i> Nutt.	SPAR EUR	<i>Sparganium eurycarpum</i> Engelm. ex Gray
SENE LUG	<i>Senecio lugens</i> Richards.	SPAR FLU	<i>Sparganium fluctuans</i> (Morong) B.L. Robins.
SENE MAG	<i>Senecio megacephalus</i> Nutt.	SPAR GLO	<i>Sparganium glomeratum</i> (Laestad.) L. Neum.
SENE PAP	<i>Senecio pauperculus</i> Michx.	SPAR GRA	<i>Spartina gracilis</i> Trin.
SENE PAU	<i>Senecio pauciflorus</i> Pursh	SPAR HYP	<i>Sparganium hyperboreum</i> Laestad.
SENE PSE	<i>Senecio pseud aureus</i> Rydb.	SPAR MIN	<i>Sparganium minimum</i> (Hartman) Wallr.
SENE SPP	<i>Senecio</i> spp.	SPAR PEC	<i>Spartina pectinata</i> Bosc ex Link
SENE STR	<i>Senecio streptanthifolius</i> Greene	SPER ARV	<i>Spergula arvensis</i> L.
SENE TRI	<i>Senecio triangularis</i> Hook.	SPER DIA	<i>Spergularia diandra</i> (Guss.) Held. & Sart.
SENE VIS	<i>Senecio viscosus</i> L.	SPER MAR	<i>Spergularia marina</i> (L.) Griseb.
SENE VUL	<i>Senecio vulgaris</i> L.	SPHE INT	<i>Sphenopholis intermedia</i> Rydb.) Rydb.
SETA GLA	<i>Setaria glauca</i> (L.) Beauverd	SPHE OBT	<i>Sphenopholis obtusata</i> (Michx.) Scribn.
SETA VIR	<i>Setaria viridis</i> (L.) Beauverd	SPIR POL	<i>Spirodela polyrrhiza</i> (L.) Schleiden
SILE ACA	<i>Silene acaulis</i> (L.) Jacq.	SPIR ROM	<i>Spiranthes romanzoffiana</i> Cham.
SILE ANT	<i>Silene antirrhina</i> L.	SPOR CRY	<i>Sporobolus cryptandrus</i> (Torr.) Gray
SILE CON	<i>Silene conoidea</i> L.	SPOR NEG	<i>Sporobolus neglectus</i> Nash
SILE CSE	<i>Silene csereii</i> Baumg.	STAC PAL	<i>Stachys palustris</i> L.
SILE CUC	<i>Silene cucubalus</i> Wibel	STEL AME	<i>Stellaria americana</i> (Porter ex B.L. Robins.) Standl.
SILE DRU	<i>Silene drummondii</i> Hook.	STEL ARE	<i>Stellaria arenicola</i> Raup
SILE FUR	<i>Silene furcata</i> Raf.	STEL CAL	<i>Stellaria calycantha</i> (Ledeb.) Bong.
SILE MEN	<i>Silene menziesii</i> Hook.	STEL CRA	<i>Stellaria crassifolia</i> Ehrh.
SILE NOC	<i>Silene noctiflora</i> L.	STEL CRI	<i>Stellaria crispa</i> Cham. & Schlecht
SILE PAR	<i>Silene parryi</i> (S. Wats.) C.L. Hitchc. & Maguire	STEL LOG	<i>Stellaria longipes</i> Goldie
SILE PRA	<i>Silene pratensis</i> (Raf.) Godr. & Gren.	STEL LON	<i>Stellaria longifolia</i> Muhl. ex Willd.
SILE SPP	<i>Silene</i> spp.	STEL MED	<i>Stellaria media</i> (L.) Vill.
SILE URA	<i>Silene uralensis</i> (Rupr.) Bocquet	STEL OBT	<i>Stellaria obtusa</i> Engelm.
SILY MAR	<i>Silybum marianum</i> (L.) Gaertn.	STEL SPP	<i>Stellaria</i> spp.
SISY ALT	<i>Sisymbrium altissimum</i> L.	STEL UMB	<i>Stellaria umbellata</i> Turcz. ex Kar. & Kir.
SISY LOE	<i>Sisymbrium loeselii</i> L.	STEN OCC	<i>Stenanthium occidentale</i> Gray
SISY MON	<i>Sisyrinchium montanum</i> Greene	STEP RUN	<i>Stephanomeria runcinata</i> Nutt.
SISY OFF	<i>Sisymbrium officinale</i> (L.) Scop.	STIP COL	<i>Stipa columbiana</i> Macoun
SISY SEP	<i>Sisyrinchium septentrionale</i> Bickn.	STIP COM	<i>Stipa comata</i> Trin. & Rupr.
SITA HYS	<i>Sitanion hystrix</i> (Nutt.) J.G. Sm.	STIP CUR	<i>Stipa curtisetata</i> (A.S. Hitchc.) Barkworth
SIUM SUA	<i>Sium suave</i> Walt.	STIP RIC	<i>Stipa richardsonii</i> Link
SMEL CAL	<i>Smelowskia calycina</i> (Steph. ex Willd.) C.A. Mey.	STIP SPA	<i>Stipa spartea</i> Trin.
SMIL RAC	<i>Smilacina racemosa</i> (L.) Desf.	STIP VIR	<i>Stipa viridula</i> Trin.
SMIL SPP	<i>Smilacina</i> spp.	STRE AMP	<i>Streptopus amplexifolius</i> (L.) DC.
SMIL STE	<i>Smilacina stellata</i> (L.) Desf.	STRE ROS	<i>Streptopus roseus</i> Michx.
SMIL TRI	<i>Smilacina trifolia</i> (L.) Desf.	STRE SPP	<i>Streptopus</i> spp.
SOLA NIG	<i>Solanum nigrum</i> L.	STRE STR	<i>Streptopus streptopoides</i> (Ledeb.) Frye & Rigg
SOLA ROS	<i>Solanum rostratum</i> Dunal	SUAE CAL	<i>Suaeda calceoliformis</i> (Hook.) Moq.
SOLA SAR	<i>Solanum sarrachoides</i> auct. non Sendtner	SUCK SUC	<i>Suckleya suckleyana</i> (Torr.) Rydb.
SOLA TRI	<i>Solanum triflorum</i> Nutt.	SUKS RAN	<i>Suksdorfia ranunculifolia</i> (Hook.) Engl.
SOLI CAN	<i>Solidago canadensis</i> L.	SUKS VIO	<i>Suksdorfia violacea</i> Gray
SOLI GIG	<i>Solidago gigantea</i> Ait.	SYMP OFF	<i>Symphytum officinale</i> L.
SOLI GRA	<i>Solidago graminifolia</i> (L.) Salisb.	TANA HUR	<i>Tanacetum huronense</i> Nutt.
SOLI MIS	<i>Solidago missouriensis</i> Nutt.	TANA VUL	<i>Tanacetum vulgare</i> L.
SOLI MOL	<i>Solidago mollis</i> Bartl.	TARA CER	<i>Taraxacum ceratophorum</i> (Ledeb.) DC.
SOLI MUL	<i>Solidago multiradiata</i> Ait.	TARA LAE	<i>Taraxacum laevigatum</i> (Willd.) DC.
SOLI NEM	<i>Solidago nemoralis</i> Ait.	TARA OFF	<i>Taraxacum officinale</i> G.H. Weber ex Wiggers
SOLI RIG	<i>Solidago rigida</i> L.		
SOLI SPA	<i>Solidago spathulata</i> DC.		
SOLI SPP	<i>Solidago</i> spp.		
SONC ARV	<i>Sonchus arvensis</i> L.		

Appendix 1C. Concluded

FECD code	Scientific name	FECD code	Scientific name
TARA SPP	<i>Taraxacum</i> spp.	UTRI VUL	<i>Utricularia vulgaris</i> L.
TELE HEU	<i>Telesonix heucheriformis</i> Rydb.	VACC CAE	<i>Vaccinium caespitosum</i> Michx.
TELL GRA	<i>Tellima grandiflora</i> (Pursh) Dougl. ex Lindl.	VACC PYR	<i>Vaccaria pyramidata</i> Medik.
THAL DAS	<i>Thalictrum dasycarpum</i> Fisch. & Avé Lall.	VACC VIT	<i>Vaccinium vitis-idaea</i> L.
THAL OCC	<i>Thalictrum occidentale</i> Gray	VAHL ATR	<i>Vahlodea atropurpurea</i> (Wahlenb.) Fries ex Hartman
THAL SPA	<i>Thalictrum sparsiflorum</i> Turcz. ex Fisch. & C.A. Mey.	VALE DIO	<i>Valeriana dioica</i> L.
THAL SPP	<i>Thalictrum</i> spp.	VALE SIT	<i>Valeriana sitchensis</i> Bong.
THAL VEN	<i>Thalictrum venulosum</i> Trel.	VALE SPP	<i>Valeriana</i> spp.
THEL MAR	<i>Thelesperma marginatum</i> Rydb.	VERA ESC	<i>Veratrum eschscholtzii</i> (J.A. & J.H. Schultes) Rydb. ex Heller
THEL SAL	<i>Thellungiella salsuginea</i> (Pallas) O.E. Schulz	VERB BRA	<i>Verbena bracteata</i> Lag. & Rodr.
THER RHO	<i>Thermopsis rhombifolia</i> (Nutt. ex Pursh) Nutt. ex Richards.	VERB NIG	<i>Verbascum nigrum</i> L.
THLA ARV	<i>Thlaspi arvense</i> L.	VERB PHL	<i>Verbascum phlomoides</i> L.
TIAR TRI	<i>Tiarella trifoliata</i> L.	VERB THA	<i>Verbascum thapsus</i> L.
TIAR UNI	<i>Tiarella unifoliata</i> L.	VERO AGR	<i>Veronica agrestis</i> L.
TOFI COC	<i>Tofieldia coccinea</i> Richards.	VERO ALP	<i>Veronica alpina</i> L.
TOFI GLU	<i>Tofieldia glutinosa</i> (Michx.) Pers.	VERO AME	<i>Veronica americana</i> Schwein. ex Benth.
TOFI PUS	<i>Tofieldia pusilla</i> (Michx.) Pers.	VERO CAT	<i>Veronica catenata</i> Pennell
TOFI SPP	<i>Tofieldia</i> spp.	VERO CHA	<i>Veronica chamaedrys</i> L.
TOLM INT	<i>Tolmachevia integrifolia</i> Raf.	VERO LON	<i>Veronica longifolia</i> L.
TOWN CON	<i>Townsendia condensata</i> Parry ex Gray	VERO PER	<i>Veronica peregrina</i> L.
TOWN EXS	<i>Townsendia exscapa</i> (Richards.) Porter	VERO PES	<i>Veronica persica</i> Poir.
TOWN HOO	<i>Townsendia hookeri</i> Beaman	VERO SCU	<i>Veronica scutellata</i> L.
TOWN PAR	<i>Townsendia parryi</i> D.C. Eaton	VERO SER	<i>Veronica serpyllifolia</i> L.
TRAD OCC	<i>Tradescantia occidentalis</i> (Britt.) Smith	VERO SPP	<i>Veronica</i> spp.
TRAG DUB	<i>Tragopogon dubius</i> Scop.	VICI AME	<i>Vicia americana</i> Muhl. ex Willd.
TRAG POR	<i>Tragopogon porrifolius</i> L.	VICI CRA	<i>Vicia cracca</i> L.
TRAG PRA	<i>Tragopogon pratensis</i> L.	VICI SPP	<i>Vicia</i> spp.
TRIE BOR	<i>Trientalis borealis</i> Raf.	VIOL ADU	<i>Viola adunca</i> Sm.
TRIE EUR	<i>Trientalis europaea</i> L.	VIOL ARV	<i>Viola arvensis</i> Murr.
TRIF AUR	<i>Trifolium aureum</i> Pollich	VIOL CAN	<i>Viola canadensis</i> L.
TRIF HYB	<i>Trifolium hybridum</i> L.	VIOL GLA	<i>Viola glabella</i> Nutt.
TRIF PRA	<i>Trifolium pratense</i> L.	VIOL MAC	<i>Viola macloskeyi</i> Lloyd
TRIF REP	<i>Trifolium repens</i> L.	VIOL NEP	<i>Viola nephrophylla</i> Greene
TRIF SPP	<i>Trifolium</i> spp.	VIOL NUT	<i>Viola nuttallii</i> Pursh
TRIG CAE	<i>Trigonella caerulea</i> (L.) Ser.	VIOL ORB	<i>Viola orbiculata</i> Geyer ex Holz
TRIG MAR	<i>Triglochin maritimum</i> L.	VIOL PAL	<i>Viola palustris</i> L.
TRIG PAL	<i>Triglochin palustre</i> L.	VIOL PED	<i>Viola pedatifida</i> G. Don
TRIG SPP	<i>Triglochin</i> spp.	VIOL REN	<i>Viola renifolia</i> Gray
TRIL OVA	<i>Trillium ovatum</i> Pursh	VIOL SEL	<i>Viola selkirkii</i> Pursh ex Goldie
TRIS CAN	<i>Trisetum canescens</i> Buckl.	VIOL SPP	<i>Viola</i> spp.
TRIS CER	<i>Trisetum cernuum</i> Trin.	VIOL TRI	<i>Viola tricolor</i> L.
TRIS FLA	<i>Trisetum flavescens</i> (L.) Beauverd	VULP OCT	<i>Vulpia octoflora</i> (Walt.) Rydb.
TRIS MON	<i>Trisetum montanum</i> Vasey	WOLF BOR	<i>Wolffia borealis</i> (Engelm. ex Hegelm.) Landolt ex Landolt & Willd.
TRIS SPI	<i>Trisetum spicatum</i> (L.) Richter	WOLF COL	<i>Wolffia columbiana</i> Karst.
TRIS SPP	<i>Trisetum</i> spp.	WOOD GLA	<i>Woodsia glabella</i> R. Br. ex Richards.
TRIS WOL	<i>Trisetum wolfii</i> Vasey	WOOD ILV	<i>Woodsia ilvensis</i> (L.) R. Br.
TRIT AES	<i>Triticum aestivum</i> L.	WOOD ORE	<i>Woodsia oregana</i> D.C. Eaton
TROL ALB	<i>Trollius albiflorus</i> (Gray) Rydb.	WOOD SCO	<i>Woodsia scopulina</i> D.C. Eaton
TYPH LAT	<i>Typha latifolia</i> L.	XANT STR	<i>Xanthium strumarium</i> L.
URTI DIO	<i>Urtica dioica</i> L.	XERO TEN	<i>Xerophyllum tenax</i> (Pursh) Nutt.
URTI SPP	<i>Utricularia</i> spp.	YUCC GLA	<i>Yucca glauca</i> Nutt.
URTI URE	<i>Urtica urens</i> L.	ZANN PAL	<i>Zannichellia palustris</i> L.
UTRI COR	<i>Utricularia cornuta</i> Michx.	ZIGA ELE	<i>Zigadenus elegans</i> Pursh
UTRI INT	<i>Utricularia intermedia</i> Hayne	ZIGA SPP	<i>Zigadenus</i> spp.
UTRI MIN	<i>Utricularia minor</i> L.	ZIGA VEN	<i>Zigadenus venenosus</i> S. Wats.
		ZIZA AQU	<i>Zizania aquatica</i> L.
		ZIZI APT	<i>Zizia aptera</i> (Gray) Fern.

^aBased on the Alberta plants and fungi — Master species list and species group checklists provided by the Resource Data Branch, Alberta Sustainable Resource Development, Government of Alberta.

Appendix 1D. Mosses^a

FECD code	Scientific name	FECD code	Scientific name
ABIE ABI	<i>Abietinella abietina</i> (Hedw.) Fleisch.	BARB HAT	<i>Barbilophozia hatcheri</i> (A. Evans) Loeske
ALOI BRE	<i>Aloina brevirostris</i> (Hook. & Grev.) Kindb.	BARB ICM	<i>Barbula icmadophila</i> Schimp. ex C. Mill.
ALOI RIG	<i>Aloina rigida</i> (Hedw.) Limpr.	BARB KUN	<i>Barbilophozia kunzeana</i> (Huebener) Gams
AMBL DEA	<i>Amblyodon dealbatus</i> (Hedw.) Bruch & Schimp. in B.S.G.	BARB LYC	<i>Barbilophozia lycopodioides</i> (Wallr.) Loeske
AMBL HUM	<i>Amblystegium humile</i> (P. Beauv.) Crundw.	BARB QUA	<i>Barbilophozia quadriloba</i> (Lindb.) Loeske
AMBL NOT	<i>Amblystegium noterophilum</i> Sull. & Lesq. in Sull.) Holz.	BARB REF	<i>Barbula reflexa</i> (Brid.) Brid.
AMBL RIP	<i>Amblystegium riparium</i> (Hedw.) Schimp. in B.S.G.	BARB SPP	<i>Barbula</i> spp.
AMBL SER	<i>Amblystegium serpens</i> (Hedw.) Schimp. in B.S.G.	BARB UNG	<i>Barbula unguiculata</i> Hedw.
AMBL SPP	<i>Amblystegium</i> spp.	BART HAL	<i>Bartramia halleriana</i> Hedw.
AMBL TEN	<i>Amblystegium tenax</i> (Hedw.) C. Jens.	BART ITH	<i>Bartramia ithyphylla</i> Brid.
AMBL VAR	<i>Amblystegium varium</i> (Hedw.) Lindb.	BART POM	<i>Bartramia pomiformis</i> Hedw.
AMPH LAP	<i>Amphidium lapponicum</i> (Hedw.) Schimp.	BART SPP	<i>Bartramia</i> spp.
AMPH MOU	<i>Amphidium mougeotii</i> (Bruch & Schimp. in B.S.G.) Schimp.	BAZZ TRI	<i>Bazzania tricenata</i> (Wahlenb.) Lindb.
ANAS HEL	<i>Anastrophyllum helleranum</i> (Nees) R.M. Schust.	BLAS PUS	<i>Blasia pusilla</i> L.
ANAS MIC	<i>Anastrophyllum michauxii</i> (F. Weber) H. Buch ex A. Evans	BLEP SPP	<i>Blepharostoma</i> spp.
ANAS MIN	<i>Anastrophyllum minutum</i> (Schreb.) R.M. Schust.	BLEP TRI	<i>Blepharostoma trichophyllum</i> (L.) Dumort.
ANDR NIV	<i>Andreaea nivalis</i> Hook.	BLIN ACU	<i>Blindia acuta</i> (Hedw.) Bruch & Schimp. in B.S.G.
ANDR RUP	<i>Andreaea rupestris</i> Hedw.	BRAC ACU	<i>Brachythecium acutum</i> (Mitt.) Sull.
ANEU PIN	<i>Aneura pinguis</i> (L.) Dumort.	BRAC ALB	<i>Brachythecium albicans</i> (Hedw.) Schimp. in B.S.G.
ANOE SEN	<i>Anoetangium sendtnerianum</i> Bruch & Schimp. in B.S.G.	BRAC CAM	<i>Brachythecium campestre</i> (C. Müll.) Schimp. in B.S.G.
ANOM MIN	<i>Anomodon minor</i> (Hedw.) Fűrnr.	BRAC COL	<i>Brachythecium collinum</i> (Schleich. ex C. Müll.) Schimp. in B.S.G.
ANTH JUL	<i>Anthelia julacea</i> (L.) Dumort.	BRAC CUR	<i>Brachythecium curtum</i> (Lindb.) Limpr.
ANTH JUR	<i>Anthelia juratzkana</i> (Limpr.) Trevis.	BRAC FRI	<i>Brachythecium frigidum</i> (C. Müll.) Besch.
ANTH PUN	<i>Anthoceros punctatus</i> L.	BRAC GRO	<i>Brachythecium groenlandicum</i> (C. Jens.) Schljak.
AONG LON	<i>Aongstroemia longipes</i> (Somm.) Bruch & Schimp. in B.S.G.	BRAC HYA	<i>Brachythecium hyalotapetum</i> B. Hig. & N. Hig.
ARNE FEN	<i>Arnellia fennica</i> (Gottsche) Lindb.	BRAC LEI	<i>Brachythecium leibergii</i> Grout
ASTE LIN	<i>Asterella lindenbergiana</i> (Corda) Lindb.	BRAC MIL	<i>Brachythecium mildeanum</i> (Schimp.) Schimp. ex Milde
ASTE SAC	<i>Asterella saccata</i> (Wahl.) A. Evans	BRAC NEL	<i>Brachythecium nelsonii</i> Grout
ATHA HYA	<i>Athalamia hyalina</i> (Sommerf.) S. Hatt.	BRAC OED	<i>Brachythecium oedipodium</i> (Mitt.) Jaeg.
ATRI SEL	<i>Atrichum selwynii</i> Aust.	BRAC PLU	<i>Brachythecium plumosum</i> (Hedw.) Schimp. in B.S.G.
ATRI UND	<i>Atrichum undulatum</i> (Hedw.) P. Beauv.	BRAC POP	<i>Brachythecium populeum</i> (Hedw.) Schimp. in B.S.G.
AULA ACU	<i>Aulacomnium acuminatum</i> Lindb. & Arnell) Kindb.	BRAC REF	<i>Brachythecium reflexum</i> (Starke in Web. & Mohr) Schimp. in B.S.G.
AULA AND	<i>Aulacomnium androgynum</i> (Hedw.) Schwaegr.	BRAC RIV	<i>Brachythecium rivulare</i> Schimp. in B.S.G.
AULA PAL	<i>Aulacomnium palustre</i> (Hedw.) Schwaegr.	BRAC RUT	<i>Brachythecium rutabulum</i> (Hedw.) Schimp. in B.S.G.
AULA SPP	<i>Aulacomnium</i> spp.	BRAC SAL	<i>Brachythecium salebrosum</i> (Web. & Mohr) Schimp. in B.S.G.
AULA TUR	<i>Aulacomnium turgidum</i> (Wahleng.) Schwaegr.	BRAC SPP	<i>Brachythecium</i> spp.
BARB ACU	<i>Barbula acuta</i> (Brid.) Brid.	BRAC STA	<i>Brachythecium starkei</i> (Brid.) Schimp. in B.S.G.
BARB ATT	<i>Barbilophozia attenuata</i> (Mart.) Loeske	BRAC TUR	<i>Brachythecium turgidum</i> (Hartm.) Kindb.
BARB BAR	<i>Barbilophozia barbata</i> (Schmid. ex Schreb.) Loeske	BRAC VEL	<i>Brachythecium velutinum</i> (Hedw.) Schimp. in B.S.G.
BARB BIN	<i>Barbilophozia binsteadii</i> (Kaal.) Loeske		
BARB CON	<i>Barbula convoluta</i> Hedw.		
BARB FLO	<i>Barbilophozia floerke</i> (F. Weber & D. Mohr) Loeske		

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
BRYO FER	<i>Bryoerythrophyllum ferruginascens</i> (Stirt.) Giac.	CALY SUE	<i>Calypogeia suecica</i> (Arnell & J. Perss.) Müll. Frib.
BRYO LON	<i>Bryobrittonia longipes</i> (Williams) Horton	CALY TRI	<i>Calypogeia trichomanis</i> (L.) Corda
BRYO REC	<i>Bryoerythrophyllum recurvirostre</i> (Hedw.) Chen	CAMP CHR	<i>Campylium chrysophyllum</i> (Brid.) J. Lange
BRYU ALG	<i>Bryum algovicum</i> Sendtn. ex C. Müll.	CAMP HAL	<i>Campylium halleri</i> (Hedw.) Lindb.
BRYU ARC	<i>Bryum arcticum</i> (R. Br.) Bruch & Schimp. in B.S.G.	CAMP HIS	<i>Campylium hispidulum</i> (Brid.) Mitt.
BRYU ARG	<i>Bryum argenteum</i> Hedw.	CAMP POL	<i>Campylium polygamum</i> (Schimp. in B.S.G.) C. Jens.
BRYU BIC	<i>Bryum bicolor</i> Dicks.	CAMP RAD	<i>Campylium radicale</i> (P. Beauv.) Grout
BRYU CAB	<i>Bryum calobryoides</i> Spence	CAMP SPP	<i>Campylium</i> spp.
BRYU CAE	<i>Bryum caespiticium</i> Hedw.	CAMP STE	<i>Campylium stellatum</i> (Hedw.) C. Jens
BRYU CAL	<i>Bryum calophyllum</i> R. Br.	CATO NIG	<i>Catosciopium nigratum</i> (Hedw.) Brid.
BRYU CAP	<i>Bryum capillare</i> Hedw.	CEPH BIC	<i>Cephalozia bicuspidata</i> (L.) Dumort.
BRYU CYC	<i>Bryum cyclophyllum</i> (Schwaegr.) Bruch & Schimp. in B.S.G.	CEPH CAT	<i>Cephalozia catenulata</i> Huebener) Lindb.
BRYU INT	<i>Bryum intermedium</i> auct. Eur. & Amer.	CEPH CON	<i>Cephalozia connivens</i> (Dicks.) Lindb.
BRYU LIS	<i>Bryum lisae</i> De Not. var. <i>cuspidatum</i> (Bruch & Schimp. in B.S.G.) Marg.	CEPH DIV	<i>Cephaloziella divaricata</i> (Sm.) Schiffn.
BRYU LON	<i>Bryum lonchocaulon</i> C. Müll.	CEPH ELA	<i>Cephaloziella elachista</i> (J.B. Jack) Schiffn.
BRYU MAR	<i>Bryum marratii</i> Hook. f. & Wils. ex Wils.	CEPH HAM	<i>Cephaloziella hampeana</i> (Nees) Schiffn.
BRYU MEE	<i>Bryum meesioides</i> Kindb. in Mac.	CEPH LUN	<i>Cephalozia lunulifolia</i> (Dumort.) Dumort.
BRYU MUE	<i>Bryum muehlenbeckii</i> Bruch & Schimp. in B.S.G.	CEPH MAC	<i>Cephalozia macounii</i> (Austin) Austin
BRYU PAL	<i>Bryum pallens</i> (Brid.) Sw. in Röhl.	CEPH PLE	<i>Cephalozia pleniceps</i> (Austin) Lindb.
BRYU PAS	<i>Bryum pallescens</i> Schleich. ex Schwaegr.	CEPH RUB	<i>Cephaloziella rubella</i> (Nees) Warnst.
BRYU PSE	<i>Bryum pseudotriquetrum</i> Besch	CERA PUR	<i>Ceratodon purpureus</i> (Hedw.) Brid.
BRYU PUR	<i>Bryum purpurascens</i> (R. Br.) Bruch & Schimp. in B.S.G.	CHAN SET	<i>Chandonanthus setiformis</i> (Ehrh.) Lindb. ^b
BRYU SCH	<i>Bryum schleicheri</i> Schwaegr.	CHIL PAL	<i>Chiloscyphus pallescens</i> (Ehrh. ex Hoffm.) Dumort.
BRYU SPP	<i>Bryum</i> spp.	CHIL POL	<i>Chiloscyphus polyanthos</i> (L.) Corda
BRYU STE	<i>Bryum stenotrichum</i> C. Müll.	CINC STY	<i>Cinclidium stygium</i> Sw. in Schrad.
BRYU STI	<i>Bryum stirtonii</i> Schimp.	CIRR CIR	<i>Cirriphyllum cirrosum</i> (Schwaegr. in Schultes) Grout
BRYU TUR	<i>Bryum turbinatum</i> (Hedw.) Turn.	CLAD FLU	<i>Cladopodiella fluitans</i> (Nees) H. Buch
BRYU ULI	<i>Bryum uliginosum</i> (Brid.) Bruch & Schimp. in B.S.G.	CLAO BOL	<i>Claopodium bolanderi</i> Best
BRYU WEI	<i>Bryum weigelii</i> Spreng. in Biehler	CLIM DEN	<i>Climacium dendroides</i> (Hedw.) Web. & Mohr
BUCE ROM	<i>Bucegia romanica</i> Radian	CNES ALP	<i>Cnestrum alpestre</i> (Wahlenb.) Milde
BUXB APH	<i>Buxbaumia aphylla</i> Hedw.	CNES GLA	<i>Cnestrum glaucescens</i> (Lindb. & Arnell) Par.
BUXB VIR	<i>Buxbaumia viridis</i> (DC.) Moug. & Nestl.	CNES SCH	<i>Cnestrum schisti</i> (Web. & Mohr) Lindb.
CALL COR	<i>Calliargon cordifolium</i> (Hedw.) Kindb.	CONA COM	<i>Conardia compacta</i> (C. Müll.) Robins.
CALL CUS	<i>Calliargonella cuspidata</i> (Hedw.) Loeske	CONO CON	<i>Conocephalum conicum</i> (L.) Dumort.
CALL GIG	<i>Calliargon giganteum</i> (Schimp.) Kindb.	CONO TET	<i>Conostomum tetragonum</i> (Hedw.) Lindb.
CALL RIC	<i>Calliargon richardsonii</i> (Mitt.) Kindb. in Warnst.	COSC CAL	<i>Coscinodon calyptratus</i> (Hook. in Drumm.) C. Jens. ex Kindb.
CALL SAR	<i>Calliargon sarmentosum</i> Wahlenb.) Kindb.	CRAT COM	<i>Cratoneuron commutatum</i> (Brid.) G. Roth
CALL SPP	<i>Calliargon</i> spp.	CRAT FIL	<i>Cratoneuron filicinum</i> (Hedw.) Spruce
CALL STR	<i>Calliargon stramineum</i> (Brid.) Kindb.	CRAT WIL	<i>Cratoneuron williamsii</i> Grout
CALL TRI	<i>Calliargon trifarium</i> (Web. & Mohr) Kindb.	CYNO SPP	<i>Cynodontium</i> spp.
CALY INT	<i>Calypogeia integristipula</i> Steph.	CYNO STR	<i>Cynodontium strumiferum</i> (Hedw.) Lindb.
CALY MUE	<i>Calypogeia muelleriana</i> (Schiffn.) Müll. Frib.	CYNO TEN	<i>Cynodontium tenellum</i> (Bruch & Schimp. in B.S.G.) Limpr.
CALY NEE	<i>Calypogeia neesiana</i> (C. Massal. & Carestia) Müll. Frib.	CYRT HYM	<i>Cyrtomnium hymenophylloides</i> (Hüb.) Nyh. ex T. Kop.
CALY SPH	<i>Calypogeia sphagnicola</i> (Arnell & J. Perss.) Warnst. & Loeske	DESM CER	<i>Desmatodon cernuus</i> (Hüb.) Bruch & Schimp. in B.S.G.

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
DESM GUE	<i>Desmatodon guepinii</i> Bruch & Schimp. in B.S.G.	DIDY SUB	<i>Didymodon subandreaeoides</i> (Kindb.) Zand.
DESM HEI	<i>Desmatodon heimii</i> (Hedw.) Mitt.	DIDY TOP	<i>Didymodon tophaceus</i> (Brid.) Lisa
DESM LAT	<i>Desmatodon latifolius</i> (Hedw.) Brid.	DIPL ALB	<i>Diplophyllum albicans</i> (L.) Dumort.
DESM LAU	<i>Desmatodon laureri</i> (Schultz) Bruch & Schimp. in B.S.G.	DIPL TAX	<i>Diplophyllum taxifolium</i> (Wahlenb.) Dumort.
DESM LEU	<i>Desmatodon leucostoma</i> (R. Br.) Berggr.	DISC NUD	<i>Discelium nudum</i> (Dicks.) Brid.
DESM OBT	<i>Desmatodon obtusifolius</i> (Schwaegr.) Schimp.	DIST CAP	<i>Distichium capillaceum</i> (Hedw.) Bruch & Schimp. in B.S.G.
DESM RAN	<i>Desmatodon randii</i> (Kenn.) Laz.	DIST INC	<i>Distichium inclinatum</i> (Hedw.) Bruch & Schimp. in B.S.G.
DESM SPP	<i>Desmatodon</i> spp.	DIST SPP	<i>Distichium</i> spp.
DESM SYS	<i>Desmatodon systylius</i> Schimp.	DITR CRI	<i>Ditrichum crispatisimum</i> (C. Müll.) Par.
DICH FAL	<i>Dichelyma falcatum</i> (Hedw.) Myr.	DITR FLE	<i>Ditrichum flexicaule</i> (Schwaegr.) Hampe
DICH OLY	<i>Dichodontium olympicum</i> Ren. & Card.	DITR LIN	<i>Ditrichum lineare</i> (Sw.) Lindb.
DICH PEL	<i>Dichodontium pellucidum</i> (Hedw.) Schimp.	DITR MON	<i>Ditrichum montanum</i> Leib.
DICR ACU	<i>Dicranum acutifolium</i> (Lindb. & Arnell) C. Jens. ex Weinm.	DITR SPP	<i>Ditrichum</i> spp.
DICR ANG	<i>Dicranum angustum</i> Lindb.	DREP ADU	<i>Drepanocladus aduncus</i> (Hedw.) Warnst.
DICR BON	<i>Dicranum bonjeanii</i> De Not. in Lisa	DREP CAP	<i>Drepanocladus capillifolius</i> (Warnst.) Warnst.
DICR BRE	<i>Dicranum brevifolium</i> (Lindb.) Lindb.	DREP CRA	<i>Drepanocladus crassicosatus</i> Janssens
DICR CER	<i>Dicranella cerviculata</i> (Hedw.) Schimp.	DREP EXA	<i>Drepanocladus exannulatus</i> (Schimp. in B.S.G.) Warnst.
DICR CRI	<i>Dicranella crispa</i> (Hedw.) Schimp.	DREP FLU	<i>Drepanocladus fluitans</i> (Hedw.) Warnst.
DICR CRS	<i>Dicranoweisia crispula</i> (Hedw.) Lindb. ex Milde	DREP LAP	<i>Drepanocladus lapponicus</i> (Norrl.) Smirn.
DICR ELO	<i>Dicranum elongatum</i> Schleich. ex Schwaegr.	DREP LYC	<i>Drepanocladus lycopodioides</i> (Brid.) Warnst.
DICR FLA	<i>Dicranum flagellare</i> Hedw.	DREP PSE	<i>Drepanocladus pseudostramineus</i> (C. Müll.) G. Roth
DICR FRA	<i>Dicranum fragilifolium</i> Lindb.	DREP REV	<i>Drepanocladus revolvens</i> (Sw.) Warnst.
DICR FUS	<i>Dicranum fuscescens</i> Turn.	DREP SEN	<i>Drepanocladus sendtneri</i> (Schimp.) Warnst.
DICR GRE	<i>Dicranella grevilleana</i> (Brid.) Schimp.	DREP SPP	<i>Drepanocladus</i> spp.
DICR GRO	<i>Dicranum groenlandicum</i> Brid.	DREP TUN	<i>Drepanocladus tundrae</i> (Arnell) Loeske
DICR HET	<i>Dicranella heteromalla</i> (Hedw.) Schimp.	DREP UNC	<i>Drepanocladus uncinatus</i> (Hedw.) Warnst.
DICR HOW	<i>Dicranum howellii</i> Ren. & Card.	DREP VER	<i>Drepanocladus vernicosus</i> (Mitt.) Warnst.
DICR MAJ	<i>Dicranum majus</i> Sm.	DRYP PAT	<i>Dryptodon patens</i> (Hedw.) Brid.
DICR MON	<i>Dicranum montanum</i> Hedw.	ENCA AFF	<i>Encalypta affinis</i> Hedw. f. in Web. & Mohr
DICR MUE	<i>Dicranum muehlenbeckii</i> Bruch & Schimp. in B.S.G.	ENCA ALP	<i>Encalypta alpina</i> Sm.
DICR ONT	<i>Dicranum ontariense</i> Peters.	ENCA BRC	<i>Encalypta brevicolla</i> (Bruch & Schimp. in B.S.G.) Bruch ex Ångstr.
DICR PAL	<i>Dicranum pallidisetum</i> (Bail.) in Holz.) Irel.	ENCA BRE	<i>Encalypta brevipes</i> Schljak.
DICR PAU	<i>Dicranella palustris</i> (Dicks.) Crundw. ex Warb.	ENCA CIL	<i>Encalypta ciliata</i> Hedw.
DICR POL	<i>Dicranum polysetum</i> Sw.	ENCA INT	<i>Encalypta intermedia</i> Jur. in Jur. & Milde
DICR RUF	<i>Dicranella rufescens</i> (With.) Schimp.	ENCA LON	<i>Encalypta longicolla</i> Bruch
DICR SCH	<i>Dicranella schreberiana</i> (Hedw.) Hilf. ex Crum & Anderson	ENCA MUT	<i>Encalypta mutica</i> Hag.
DICR SCO	<i>Dicranum scoparium</i> Hedw.	ENCA PRO	<i>Encalypta procera</i> Bruch
DICR SPA	<i>Dicranum spadiceum</i> Zett.	ENCA RHA	<i>Encalypta rhaptoarpa</i> Schwaegr.
DICR SPP	<i>Dicranum</i> spp.	ENCA SPA	<i>Encalypta spathulata</i> C. Müll.
DICR SUB	<i>Dicranella subulata</i> (Hedw.) Schimp.	ENCA SPP	<i>Encalypta</i> spp.
DICR TAU	<i>Dicranum tauricum</i> Sapeh.	ENCA VUL	<i>Encalypta vulgaris</i> Hedw.
DICR UND	<i>Dicranum undulatum</i> Brid.	ENTO BRE	<i>Entodon brevisetus</i> (Hook. & Wils. in Wils.) Lindb.
DICR VAR	<i>Dicranella varia</i> (Hedw.) Schimp.		
DIDY ACU	<i>Didymodon acutus</i> (Brid.) Saito		
DIDY ASP	<i>Didymodon asperifolius</i> (Mitt.) Crum et al.		
DIDY FAL	<i>Didymodon fallax</i> (Hedw.) Zand.		
DIDY JOH	<i>Didymodon johansenii</i> (Williams) Crum		
DIDY NIG	<i>Didymodon nigrescens</i> (Mitt.) Saito		
DIDY RIG	<i>Didymodon rigidulus</i> Hedw.		

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
ENTO CLA	<i>Entodon cladorrhizans</i> (Hedw.) C. Müll.	HETE DIM	<i>Heterocladium dimorphum</i> (Brid.) Schimp. in B.S.G.
ENTO CON	<i>Entodon concinnus</i> (De Not.) Par.	HOMA AEN	<i>Homalothecium aeneum</i> (Mitt.) Lawt.
ENTO SCH	<i>Entodon schleicheri</i> (Schimp.) Demeter	HOMA NEV	<i>Homalothecium nevadense</i> (Lesq.) Ren. & Card.
EURH PUL	<i>Eurhynchium pulchellum</i> (Hedw.) Jenn.	HOMA PIN	<i>Homalothecium pinnatifidum</i> (Sull. & Lesq.) Lawt.
FISS ADI	<i>Fissidens adianthoides</i> Hedw.	HOMO ADN	<i>Homomallium adnatum</i> (Hedw.) Broth.
FISS BRY	<i>Fissidens bryoides</i> Hedw.	HYGR ALP	<i>Hygrohypnum alpestre</i> (Hedw.) Loeske
FISS GRA	<i>Fissidens grandifrons</i> Brid.	HYGR BES	<i>Hygrohypnum bestii</i> (Ren. & Bryhn in Ren.) Broth.
FISS LIM	<i>Fissidens limbatus</i> Sull.	HYGR DUR	<i>Hygrohypnum duriusculum</i> (De Not.) Jamieson
FISS OSM	<i>Fissidens osmundioides</i> Hedw.	HYGR LAX	<i>Hygrobriella laxifolia</i> (Hook.) Spruce
FONT ANT	<i>Fontinalis antipyretica</i> Hedw.	HYGR LUR	<i>Hygrohypnum luridum</i> (Hedw.) Jenn.
FONT DAL	<i>Fontinalis dalecarlica</i> Schimp. in B.S.G.	HYGR MOL	<i>Hygrohypnum molle</i> (Hedw.) Loeske
FONT HOW	<i>Fontinalis howellii</i> Ren. & Card.	HYGR OCH	<i>Hygrohypnum ochraceum</i> (Turn. ex Wils.) Loeske
FONT HYP	<i>Fontinalis hypnoides</i> Hartm.	HYGR SMI	<i>Hygrohypnum smithii</i> (Sw. in Lilj.) Broth.
FONT NEO	<i>Fontinalis neomexicana</i> Sull. & Lesq.	HYGR STY	<i>Hygrohypnum styriacum</i> (Limpr.) Broth.
FONT NOV	<i>Fontinalis novae-angliae</i> Sull.	HYLO PYR	<i>Hylocomium pyrenaicum</i> (Spruce) Lindb.
FOSS MAC	<i>Fossombronina macounii</i> Austin	HYLO SPL	<i>Hylocomium splendens</i> (Hedw.) Schimp. in B.S.G.
FRUL INF	<i>Frullania inflata</i> Gottsche	HYLO SPP	<i>Hylocomium</i> spp.
FUNA AME	<i>Funaria americana</i> Lindb. in Sull.	HYPN BAM	<i>Hypnum bambergeri</i> Schimp.
FUNA HYG	<i>Funaria hygrometrica</i> Hedw.	HYPN CAL	<i>Hypnum callichroum</i> Funck ex Brid.
FUNA MUH	<i>Funaria muhlenbergii</i> Turn.	HYPN CUP	<i>Hypnum cupressiforme</i> Hedw.
GEOC GRA	<i>Geocalyx graveolens</i> (Schrad.) Nees	HYPN LIN	<i>Hypnum lindbergii</i> Mitt.
GRIM AFF	<i>Grimmia affinis</i> Hoppe & Hornsch. ex Hornsch.	HYPN PAL	<i>Hypnum pallescens</i> (Hedw.) P. Beauv.
GRIM ANO	<i>Grimmia anodon</i> Bruch & Schimp. in B.S.G.	HYPN PRA	<i>Hypnum pratense</i> (Rabenh.) W. Koch ex Spruce
GRIM APO	<i>Grimmia apocarpa</i> Hedw.	HYPN PRO	<i>Hypnum procerrimum</i> Mol.
GRIM ATR	<i>Grimmia atrichia</i> C. Müll. & Kindb.	HYPN REC	<i>Hypnum recurvatum</i> (Lindl. & Arnell) Kindb.
GRIM CAL	<i>Grimmia calyptrata</i> Hook. in Drumm.	HYPN REV	<i>Hypnum revolutum</i> (Mitt.) Lindb.
GRIM CRI	<i>Grimmia cribosa</i> Hedw.	HYPN SPP	<i>Hypnum</i> spp.
GRIM DON	<i>Grimmia donniana</i> Sm.	HYPN VAU	<i>Hypnum vaucheri</i> Lesq.
GRIM ELA	<i>Grimmia elatior</i> Bruch ex Bals. & De Not.	ISOP PUL	<i>Isopterygium pulchellum</i> (Hedw.) Jaeg.
GRIM ELO	<i>Grimmia elongata</i> Kaulf. in Sturm	JAFF RAU	<i>Jaffueliobryum raui</i> (Aust.) Thér.
GRIM HET	<i>Grimmia heterophylla</i> Kindb. in Mac. and Kindb.	JAFF WRI	<i>Jaffueliobryum wrightii</i> (Sull. in Gray) Thér.
GRIM INC	<i>Grimmia incurva</i> Schwaegr.	JAME AUT	<i>Jamesoniella autumnalis</i> (DC.) Steph.
GRIM MON	<i>Grimmia montana</i> Bruch & Schimp. in B.S.G.	JUNG ATR	<i>Jungermannia atrovirens</i> Dumort.
GRIM PIL	<i>Grimmia pilifera</i> P. Beauv.	JUNG EXS	<i>Jungermannia exsertifolia</i> Steph.
GRIM PLA	<i>Grimmia plagiopodia</i> Hedw.	JUNG HYA	<i>Jungermannia hyalina</i> Lyell
GRIM PUL	<i>Grimmia pulvinata</i> (Hedw.) Sm.	JUNG LEI	<i>Jungermannia leiantha</i> Grolle
GRIM SPP	<i>Grimmia</i> spp.	JUNG OBO	<i>Jungermannia obovata</i> Nees
GRIM TER	<i>Grimmia tenerrima</i> Ren. & Card.	JUNG POL	<i>Jungermannia polaris</i> Lindb.
GRIM TOR	<i>Grimmia torquata</i> Hornsch. in Grev.	JUNG PUM	<i>Jungermannia pumila</i> With.
GRIM TRI	<i>Grimmia trichophylla</i> Grev.	JUNG RUB	<i>Jungermannia rubra</i> Gottsche ex Underw.
GYMN AER	<i>Gymnostomum aeruginosum</i> Sm.	JUNG SPH	<i>Jungermannia sphaerocarpa</i> Hook.
GYMN CON	<i>Gymnomitrium concinnatum</i> (Lightf.) Corda	KIAE BLY	<i>Kiaeria blyttii</i> (Schimp.) Broth.
GYMN COR	<i>Gymnomitrium corallioides</i> Nees	KIAE FAL	<i>Kiaeria falcata</i> (Hedw.) Hag.
GYMN INF	<i>Gymnocolea inflata</i> (Huds.) Dumort.	KIAE STA	<i>Kiaeria starkei</i> (Web. & Mohr) Hag.
GYMN REC	<i>Gymnostomum recurvirostre</i> Hedw.	LEPI REP	<i>Lepidozia reptans</i> (L.) Dumort.
HAPL MIC	<i>Haplocladium microphyllum</i> (Hedw.) Broth.	LEPT PYF	<i>Leptobryum pyriforme</i> (Hedw.) Wils.
HAPL VIR	<i>Haplocladium virginianum</i> (Brid.) Broth	LESC INC	<i>Lescuraea incurvata</i> (Hedw.) Lawt.
HARP FLO	<i>Harpanthus flotovianus</i> (Nees) Nees		
HEDW CIL	<i>Hedwigia ciliata</i> (Hedw.) P. Beauv.		
HELO BLA	<i>Helodium blandowii</i> (Web. & Mohr) Warnst.		
HERZ SEL	<i>Herzogiella seligeri</i> (Brid.) Iwats.		
HERZ STR	<i>Herzogiella striatella</i> (Brid.) Iwats.		
HERZ TUR	<i>Herzogiella turfacea</i> (Lindb.) Iwats.		

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
LESC PAT	<i>Lescuraea patens</i> (Lindb.) Kindb.	MNIU BLY	<i>Mnium blyttii</i> Bruch & Schimp. in B.S.G.
LESC RAD	<i>Lescuraea radicata</i> (Mitt.) M ^{nk}	MNIU LYC	<i>Mnium lycopodioides</i> Schwaegr.
LESC SAX	<i>Lescuraea saxicola</i> (Schimp. in B.S.G.) Milde	MNIU MAR	<i>Mnium marginatum</i> (With.) Brid. ex P. Beauv.
LESC SPP	<i>Lescuraea</i> spp.	MNIU SPI	<i>Mnium spinulosum</i> Bruch & Schimp. in B.S.G.
LESC STE	<i>Lescuraea stenophylla</i> (Ren. & Card.) in Röhl	MNIU SPP	<i>Mnium</i> spp.
LESK NER	<i>Leskeella nervosa</i> (Brid.) Loeske	MNIU THO	<i>Mnium thomsonii</i> Schimp.
LESK OBS	<i>Leskea obscura</i> Hedw.	MOER BLY	<i>Moerckia blyttii</i> (Moerch) Brockm.
LOES BAD	<i>Loeskyppnum badium</i> (Hartm.) Paul	MOER HIB	<i>Moerckia hibernica</i> (Hook.) Gottsche
LOPH ALP	<i>Lophozia alpestris</i> (Schleich. ex Weber) A. Evans	MYLI ANO	<i>Mylia anomala</i> (Hook.) Gray
LOPH ASC	<i>Lophozia ascendens</i> (Warnst.) R.M. Schust.	MYUR JUL	<i>Myurella julacea</i> (Schwaegr.) Schimp. in B.S.G.
LOPH BAD	<i>Lophozia badensis</i> (Gottsche ex Rabenh.) Schiffn.	MYUR SIB	<i>Myurella sibirica</i> (C. Müll.) Reim.
LOPH BAN	<i>Lophozia bantriensis</i> (Hook.) Steph.	MYUR TEN	<i>Myurella tenerrima</i> (Brid.) Lindb.
LOPH BID	<i>Lophocolea bidentata</i> (L.) Dumort.	NARD BRE	<i>Nardia breideri</i> (Limpr.) Lindb.
LOPH COL	<i>Lophozia collaris</i> (Nees) Dumort.	NARD GEO	<i>Nardia geoscyphus</i> (De Not.) Lindb.
LOPH EXC	<i>Lophozia excisa</i> (Dicks.) Dumort.	NECK PEN	<i>Neckera pennata</i> Hedw.
LOPH GIL	<i>Lophozia gillmanii</i> (Austin) R.M. Schust.	ODON DEN	<i>Odontoschisma denudatum</i> (Mart.) Dumort.
LOPH GRA	<i>Lophozia grandiretis</i> (Lindb. ex Kaal.) Schiffn.	OLIG ALI	<i>Oligotrichum aligerum</i> Mitt.
LOPH GUT	<i>Lophozia guttulata</i> (Lindb. & Arnell) A. Evans	OLIG HER	<i>Oligotrichum hercynicum</i> (Hedw.) Lam. & DC.
LOPH HET	<i>Lophozia heterocolpos</i> (Thed. ex Hartm.) M. Howe	OLIG PAR	<i>Oligotrichum parallelum</i> (Mitt.) Kindb.
LOPH HEY	<i>Lophocolea heterophylla</i> (Schrad.) Dumort.	ONCO VIR	<i>Oncophorus virens</i> (Hedw.) Brid.
LOPH INC	<i>Lophozia incisa</i> (Schrad.) Dumort.	ONCO WAH	<i>Oncophorus wahlenbergii</i> Brid.
LOPH LAX	<i>Lophozia laxa</i> (Lindb.) Grolle	OREA MAR	<i>Oreas martiana</i> (Hoppe & Hornsch. in Hornsch.) Brid.
LOPH LON	<i>Lophozia longidens</i> (Lindb.) Macoun	ORTH AFF	<i>Orthotrichum affine</i> Brid.
LOPH MIN	<i>Lophocolea minor</i> Nees	ORTH ALP	<i>Orthotrichum alpestre</i> Hornsch. in B.S.G.
LOPH OBT	<i>Lophozia obtusa</i> (Lindb.) A. Evans	ORTH ANO	<i>Orthotrichum anomalum</i> Hedw.
LOPH RUT	<i>Lophozia rutheana</i> (Limpr.) M. Howe	ORTH CHR	<i>Orthothecium chryseum</i> (Schwaegr. in Schultes) Schimp. in B.S.G.
LOPH SPP	<i>Lophozia</i> spp.	ORTH INT	<i>Orthothecium intricatum</i> (Hartm.) Schimp. in B.S.G.
LOPH VEN	<i>Lophozia ventricosa</i> (Dicks.) Dumort.	ORTH JAM	<i>Orthotrichum jamesianum</i> Sull. in James in Watson
LOPH WEN	<i>Lophozia wenzelii</i> (Nees) Steph.	ORTH LAE	<i>Orthotrichum laevigatum</i> Zett.
MANN FRA	<i>Mannia fragrans</i> (Balb.) Frye & L. Clark	ORTH OBT	<i>Orthotrichum obtusifolium</i> Brid.
MANN PIL	<i>Mannia pilosa</i> (Hornem.) Frye & L. Clark	ORTH PAL	<i>Orthotrichum pallens</i> Bruch ex Brid.
MANN TRI	<i>Mannia triandra</i> (Scop.) Grolle	ORTH PEL	<i>Orthotrichum pellucidum</i> Lindb.
MARC POL	<i>Marchantia polymorpha</i> L.	ORTH PUL	<i>Orthotrichum pulchellum</i> Brunt. in Winch. & Gateh.
MARC SPP	<i>Marchantia</i> spp.	ORTH PUM	<i>Orthotrichum pumilum</i> Sw.
MARS BRE	<i>Marsupella brevissima</i> (Dumort.) Grolle	ORTH PYL	<i>Orthotrichum pylaisii</i> Brid.
MARS EMA	<i>Marsupella emarginata</i> (Ehrh.) Dumort.	ORTH RUP	<i>Orthotrichum rupestre</i> Schleich. ex Schwaegr.
MARS REV	<i>Marsupella revoluta</i> (Nees) Dumort.	ORTH SPE	<i>Orthotrichum speciosum</i> Nees in Sturm
MARS SPA	<i>Marsupella sparsifolia</i> (Lindb.) Dumort.	ORTH SPP	<i>Orthotrichum</i> spp.
MARS SPH	<i>Marsupella sphacelata</i> (Gieseke) Dumort.	ORTH STR	<i>Orthothecium strictum</i> Lor.
MEES LON	<i>Meesia longiseta</i> Hedw.	OXYS TEN	<i>Oxystegus tenuirostris</i> (Hook. & Tayl.) A.J.E. Sm.
MEES TRI	<i>Meesia triquetra</i> (Richt.) Ångstr.	PALU SQU	<i>Paludella squarrosa</i> (Hedw.) Brid.
MEES ULI	<i>Meesia uliginosa</i> Hedw.	PARA ENE	<i>Paraleucobryum enerve</i> (Thed. in Hartm.) Loeske
META MEN	<i>Metaneckera menziesii</i> (Hook. in Drumm.) Steere	PARA LON	<i>Paraleucobryum longifolium</i> (Hedw.) Loeske
MIEL MAC	<i>Mielichhoferia macrocarpa</i> (Hook. in Drumm.) Bruch & Schimp. ex Jaeg.	PELL END	<i>Pellia endiviifolia</i> (Dicks.) Dumort.
MNIU AMB	<i>Mnium ambiguum</i> H. Müll.	PELL EPI	<i>Pellia epiphylla</i> (L.) Corda
MNIU ARI	<i>Mnium arizonicum</i> Amann		

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
PELL NEE	<i>Pellia neesiana</i> (Gottsche) Limpr.	POHL PRO	<i>Pohlia proligera</i> (Kindb. ex Breidl.) Lindb. ex Arnell
PHAS CUS	<i>Phascum cuspidatum</i> Hedw.	POHL ROT	<i>Pohlia rothii</i> (Corr. ex Limpr.) Broth.
PHIL FON	<i>Philonotis fontana</i> (Hedw.) Brid.	POHL SPH	<i>Pohlia sphagnicola</i> (Bruch & Schimp.) Lindb. & Arnell
PHIL MAR	<i>Philonotis marchica</i> (Hedw.) Brid.	POHL SPP	<i>Pohlia</i> spp.
PHYS HOO	<i>Physcomitrium hookeri</i> Hampe	POHL VEX	<i>Pohlia vexans</i> (Limpr.) H. Lindb.
PHYS PYR	<i>Physcomitrium pyriforme</i> (Hedw.) Hampe	POHL WAH	<i>Pohlia wahlenbergii</i> (Web. & Mohr) Andrews
PLAG ASP	<i>Plagiochila asplenioides</i> (L.) Dumort.	POLY ALP ALP	<i>Polytrichastrum alpinum</i> sm. var. <i>alpinum</i> (Hedw.) G.L.
PLAG CIL	<i>Plagiomnium ciliare</i> (C. Müll.) T. Kop.	POLY ALP	<i>Polytrichum alpinum</i> Hedw.
PLAG CUS	<i>Plagiomnium cuspidatum</i> (Hedw.) T. Kop.	POLY COM	<i>Polytrichum commune</i> Hedw.
PLAG DEM	<i>Plagiobryum demissum</i> (Hook.) Lindb.	POLY JUN	<i>Polytrichum juniperinum</i> Hedw.
PLAG DEN	<i>Plagiothecium denticulatum</i> (Hedw.) Schimp. in B.S.G.	POLY LOG	<i>Polytrichum longisetum</i> Brid.
PLAG DRU	<i>Plagiomnium drummondii</i> (Bruch & Schimp.) T. Kop.	POLY LYA	<i>Polytrichum lyallii</i> (Mitt.) Kindb.
PLAG ELL	<i>Plagiomnium ellipticum</i> (Brid.) T. Kop.	POLY PIL	<i>Polytrichum piliferum</i> Hedw.
PLAG LAE	<i>Plagiothecium laetum</i> Schimp. in B.S.G.	POLY SEN	<i>Polyblastia sendtneri</i> Krempelsh.
PLAG MED	<i>Plagiomnium medium</i> (Bruch & Schimp. in B.S.G.) T. Kop.	POLY SEX	<i>Polytrichum sexangulare</i> Brid.
PLAG OED	<i>Plagiopus oederiana</i> (Sw.) Crum & Anderson	POLY SPP	<i>Polytrichum</i> spp.
PLAG POR	<i>Plagiochila porelloides</i> (Torr. ex Nees) Lindenb.	POLY STR	<i>Polytrichum strictum</i> Brid.
PLAG RUG	<i>Plagiomnium rugicum</i> (Laur.) T. Kop.	PORE COR	<i>Porella cordaeana</i> (Huebener) Moore
PLAG SPP	<i>Plagiomnium</i> spp.	PORE NAV	<i>Porella navicularis</i> (Lehm. & Lindenb.) Lindb.
PLAG UND	<i>Plagiothecium undulatum</i> (Hedw.) Schimp. in B.S.G.	PORE PLA	<i>Porella platyphylla</i> (L.) Pfeiff.
PLAG ZIE	<i>Plagiobryum zieri</i> (Hedw.) Lindb.	POTT NEV	<i>Pottia nevadensis</i> Card. & Thér.
PLAT JUN	<i>Platydictya jungermannioides</i> (Brid.) Crum	POTT TRU	<i>Pottia truncata</i> (Hedw.) Fűrnr. ex B.S.G.
PLAT MIN	<i>Platydictya minutissima</i> (Sull. & Lesq. in Sull.) Crum	PREI QUA	<i>Preissia quadrata</i> (Scop.) Nees
PLAT REP	<i>Platygyrium repens</i> (Brid.) Schimp. in B.S.G.	PSEU CAT	<i>Pseudoleskeella catenulata</i> (Brid. ex Schrad.) Kindb.
PLAT SPP	<i>Platydictya</i> spp.	PSEU CIN	<i>Pseudobryum cinclidioides</i> (Hüb.) T. Kop.
PLEU ALB	<i>Pleurocladula albescens</i> (Hook.) Grolle	PSEU TEC	<i>Pseudoleskeella tectorum</i> (Funck ex Brid.) Kindb. in Broth.
PLEU SCH	<i>Pleurozium schreberi</i> (Brid.) Mitt.	PTER FIL	<i>Pterigynandrum filiforme</i> Hedw.
PLEU SPP	<i>Pleurozium</i> spp.	PTER OVA	<i>Pterygoneurum ovatum</i> (Hedw.) Dix.
POGO DEN	<i>Pogonatum dentatum</i> (Brid.) Brid.	PTER SUB	<i>Pterygoneurum subsessile</i> (Brid.) Jur.
POGO URN	<i>Pogonatum urnigerum</i> (Hedw.) P. Beauv.	PTIL CIL	<i>Ptilidium ciliare</i> (L.) Hampe
POHL AND	<i>Pohlia andalusica</i> (Höhn.) Broth.	PTIL CRI	<i>Ptilidium crista-castrensis</i> (Hedw.) De Not.
POHL ANN	<i>Pohlia annotina</i> (Hedw.) Lindb.	PTIL PUL	<i>Ptilidium pulcherrimum</i> (Weber) Vainio
POHL ATR	<i>Pohlia atropurpurea</i> (Wahlenb. in Fűrnr.) H. Lindb.	PTIL SPP	<i>Ptilidium</i> spp.
POHL BRE	<i>Pohlia brevinervis</i> Lindb. & Arnell	PYLA POL	<i>Pylaisiella polyantha</i> (Hedw.) Grout
POHL BUL	<i>Pohlia bulbifera</i> (Warnst.) Warnst.	RADU COM	<i>Radula complanata</i> (L.) Dumort.
POHL CAM	<i>Pohlia campotrachela</i> (Ren. & Card.) Broth.	REBO HEM	<i>Reboulia hemisphaerica</i> (L.) Raddi
POHL COL	<i>Pohlia columbica</i> (Kindb. in Mac. & Kindb.) Andrews	RHAC ACI	<i>Rhacomitrium aciculare</i> (Hedw.) Brid.
POHL CRU	<i>Pohlia cruda</i> (Hedw.) Lindb.	RHAC CAN	<i>Rhacomitrium canescens</i> (Hedw.) Brid.
POHL DRU	<i>Pohlia drummondii</i> (C. Müll.) Andrews	RHAC ELO	<i>Rhacomitrium elongatum</i> Ehrh. ex Frisv.
POHL ELO	<i>Pohlia elongata</i> Hedw.	RHAC FAS	<i>Rhacomitrium fasciculare</i> (Hedw.) Brid.
POHL FIL	<i>Pohlia filiformis</i> (Dicks.) Andrews in Grout	RHAC HET	<i>Rhacomitrium heterostichum</i> (Hedw.) Brid.
POHL FIU	<i>Pohlia filum</i> (Schimp.) Mört.	RHAC LAN	<i>Rhacomitrium lanuginosum</i> (Hedw.) Brid.
POHL LON	<i>Pohlia longicolla</i> (Hedw.) Lindb.	RHAC SPP	<i>Rhacomitrium</i> spp.
POHL NUT	<i>Pohlia nutans</i> (Hedw.) Lindb.	RHAC SUD	<i>Rhacomitrium sudeticum</i> (Funck) Bruch & Schimp. in B.S.G.
POHL OBT	<i>Pohlia obtusifolia</i> (Brid.) L. Koch.	RHAC VAR	<i>Rhacomitrium varium</i> (Mitt.) Jaeg.
		RHIZ AND	<i>Rhizomnium andrewsianum</i> (Steere) T. Kop.
		RHIZ GRA	<i>Rhizomnium gracile</i> T. Kop.

Appendix 1D. Continued

FECD code	Scientific name	FECD code	Scientific name
RHIZ MAG	<i>Rhizomnium magnifolium</i> (Horik.) T. Kop.	SCLE CES	<i>Scleropodium cespitans</i> (C. Müll.) L. Koch
RHIZ NUD	<i>Rhizomnium nudum</i> (Britt. & Williams) T. Kop.	SCLE OBT	<i>Scleropodium obtusifolium</i> (Jaeg.) Kindb. in Mac. & Kindb.
RHIZ PSE	<i>Rhizomnium pseudopunctatum</i> (Bruch & Schimp.) T. Kop.	SCOR SCO	<i>Scorpidium scorpioides</i> (Hedw.) Limpr.
RHIZ PUN	<i>Rhizomnium punctatum</i> (Hedw.) T. Kop.	SCOR TUR	<i>Scorpidium turgescens</i> (T. Jens.) Loeske
RHOD ONT	<i>Rhodobryum ontariense</i> (Kindb.) Par. in Kindb.	SCOU AQU	<i>Scouleria aquatica</i> Hook. in Drumm.
RHOD ROS	<i>Rhodobryum roseum</i> (Hedw.) Limpr.	SELI CAL	<i>Seligeria calcarea</i> (Hedw.) Bruch & Schimp. in B.S.G.
RHYT LOR	<i>Rhytidiadelphus loreus</i> (Hedw.) Warnst.	SELI CAM	<i>Seligeria campylopoda</i> Kindb. in Mac. & Kindb.
RHYT ROB	<i>Rhytidiopsis robusta</i> (Hook.) Broth.	SELI DON	<i>Seligeria donniana</i> (Sm.) C. Müll.
RHYT RUG	<i>Rhytidium rugosum</i> (Hedw.) Kindb.	SELI SUB	<i>Seligeria subimmersa</i> Lindb.
RHYT SPP	<i>Rhytidiopsis</i> spp.	SELI TRI	<i>Seligeria tristichoides</i> Kindb.
RHYT SQU	<i>Rhytidiadelphus squarrosus</i> (Hedw.) Warnst.	SPHA ANG	<i>Sphagnum angustifolium</i> (C. Jens. ex Russ.) C. Jens. in Tolf
RHYT SUB	<i>Rhytidiadelphus subpinnatus</i> (Lindb.) T. Kop.	SPHA BAL	<i>Sphagnum balticum</i> (Russ.) C. Jens.
RHYT TRI	<i>Rhytidiadelphus triquetrus</i> (Hedw.) Warnst.	SPHA CAP	<i>Sphagnum capillifolium</i> (Ehrh.) Hedw.
RICC BEY	<i>Riccia beyrichiana</i> Hampe ex Lehm. & Lindenb.	SPHA CEN	<i>Sphagnum centrale</i> C. Jens. in Arnell & C. Jens.
RICC CAV	<i>Riccia cavernosa</i> Hoffm.	SPHA COM	<i>Sphagnum compactum</i> DC. in Lam. & DC.
RICC CHA	<i>Riccardia chamedryfolia</i> (With.) Grolle	SPHA CON	<i>Sphagnum contortum</i> Schultz
RICC LAT	<i>Riccardia latifrons</i> (Lindb.) Lindb.	SPHA FAL	<i>Sphagnum fallax</i> (Klinggr.) Klinggr.
RICC MUL	<i>Riccardia multifida</i> (L.) Gray	SPHA FIM	<i>Sphagnum fimbriatum</i> Wils. in Wils. & Hook. f. in Hook. f.
RICC NAT	<i>Ricciocarpos natans</i> (L.) Corda	SPHA FUS	<i>Sphagnum fuscum</i> (Schimp.) Klinggr.
RICC SPP	<i>Riccardia</i> spp.	SPHA GIR	<i>Sphagnum girgensohnii</i> Russ.
ROEL ROE	<i>Roellia roellii</i> (Broth. in Röhl) Andrews ex Crum	SPHA JEN	<i>Sphagnum jensenii</i> H. Lindb.
SAEL GLA	<i>Saelania glaucescens</i> (Hedw.) Broth. in Bomanss. & Broth.	SPHA LIN	<i>Sphagnum lindbergii</i> Schimp. in Lindb.
SAUT ALP	<i>Sauteria alpina</i> (Nees) Nees	SPHA MAG	<i>Sphagnum magellanicum</i> Brid.
SCAP API	<i>Scapania apiculata</i> Spruce	SPHA MAJ	<i>Sphagnum majus</i> (Russ.) C. Jens.
SCAP BRE	<i>Scapania brevicaulis</i> Taylor	SPHA NEM	<i>Sphagnum nemoreum</i> Scop. auct. plur.
SCAP CAR	<i>Scapania carinthiaca</i> J.B. Jack ex Lindb.	SPHA OBT	<i>Sphagnum obtusum</i> Warnst.
SCAP CUR	<i>Scapania curta</i> (Mart.) Dumort.	SPHA REC	<i>Sphagnum recurvum</i> P. Beauv.
SCAP CUS	<i>Scapania cuspiduligera</i> (Nees) Müll. Frib.	SPHA RIP	<i>Sphagnum riparium</i> Ångstr.
SCAP DEG	<i>Scapania degenii</i> Schiffn. ex Müll. Frib.	SPHA RUS	<i>Sphagnum russowii</i> Warnst.
SCAP GLA	<i>Scapania glaucocephala</i> (Taylor) Austin	SPHA SPP	<i>Sphagnum</i> spp.
SCAP IRR	<i>Scapania irrigua</i> (Nees) Gottsche & Lindenb. & Nees	SPHA SQU	<i>Sphagnum squarrosus</i> Crome
SCAP MUC	<i>Scapania mucronata</i> H. Buch	SPHA SUB	<i>Sphagnum subsecundum</i> Nees in Sturm
SCAP NEM	<i>Scapania nemorosa</i> (Linn.) Grolle ^b	SPHA TER	<i>Sphagnum teres</i> (Schimp.) Ångstr. in Hartm.
SCAP PAL	<i>Scapania paludicola</i> Loeske & Müll. Frib.	SPHA WAR	<i>Sphagnum warnstorffii</i> Russ.
SCAP PAU	<i>Scapania paludosa</i> (Müll. Frib.) Müll. Frib.	SPHA WUL	<i>Sphagnum wulfianum</i> Girg.
SCAP SPP	<i>Scapania</i> spp.	SPLA AMP	<i>Splachnum ampullaceum</i> Hedw.
SCAP SUB	<i>Scapania subalpina</i> (Nees) Dumort.	SPLA LUT	<i>Splachnum luteum</i> Hedw.
SCAP UND	<i>Scapania undulata</i> (L.) Dumort.	SPLA RUB	<i>Splachnum rubrum</i> Hedw.
SCHI AGA	<i>Schistidium agassizii</i> Sull. & Lesq. in Sull.	SPLA SPH	<i>Splachnum sphaericum</i> Hedw.
SCHI APO	<i>Schistidium apocarpum</i> (Hedw.) Bruch & Schimp. in B.S.G.	SPLA SPP	<i>Splachnum</i> spp.
SCHI PEN	<i>Schistostega pennata</i> (Hedw.) Web. & Morh.	SPLA VAS	<i>Splachnum vasculosum</i> Hedw.
SCHI RIV	<i>Schistidium rivulare</i> (Brid.) Podp.	STEG LAT	<i>Stegonia latifolia</i> (Schwaegr. in Schultes) Vent. ex Broth.
SCHI TEN	<i>Schistidium tenerum</i> (Zett.) Nyh.	STEG SPP	<i>Stegonia</i> spp.
		TAYL ACU	<i>Tayloria acuminata</i> Hornsch.
		TAYL FRO	<i>Tayloria froelichiana</i> (Hedw.) Mitt. ex Broth.
		TAYL HOR	<i>Tayloria hornschurchii</i> (Grev. & Arnott) Broth.
		TAYL LIN	<i>Tayloria lingulata</i> (Dicks.) Lindb.
		TAYL SER	<i>Tayloria serrata</i> (Hedw.) Bruch & Schimp. in B.S.G.

Appendix 1D. Concluded

FECD code	Scientific name	FECD code	Scientific name
TAYL SPL	<i>Tayloria splachnoides</i> (Schleich. ex Schwaegr.) Hook.	TOME NIT	<i>Tomentypnum nitens</i> (Hedw.) Loeske
TAYL SPP	<i>Tayloria</i> spp.	TOME SPP	<i>Tomentypnum</i> spp.
TETR ANG	<i>Tetraplodon angustatus</i> (Hedw.) Bruch & Schimp. in B.S.G.	TORT CAN	<i>Tortula caninervis</i> (Mitt.) Broth.
TETR MNI	<i>Tetraplodon mnioides</i> (Hedw.) Bruch & Schimp. in B.S.G.	TORT FRA	<i>Tortella fragilis</i> (Hook. & Wils. in Drumm.) Limpr.
TETR PEL	<i>Tetraphis pellucida</i> Hedw.	TORT HUM	<i>Tortella humilis</i> (Hedw.) Jenn.
TETR SPP	<i>Tetraphis</i> spp.	TORT INC	<i>Tortella inclinata</i> (Hedw. f.) Limpr.
TETR URC	<i>Tetraplodon urceolatus</i> (Hedw.) Bruch & Schimp. in Schimp.	TORT MUC	<i>Tortula mucronifolia</i> Schwaegr.
THAM NEC	<i>Thamnobryum neckeroides</i> (Hook.) Lawt.	TORT NOR	<i>Tortula norvegica</i> (Web.) Wahlenb. ex Lindb.
THUI ABI	<i>Thuidium abietinum</i> (Hedw.) Schimp. in B.S.G.	TORT PRI	<i>Tortula princeps</i> De Not.
THUI DEL	<i>Thuidium delicatulum</i> (Hedw.) Schimp. in B.S.G.	TORT RUR	<i>Tortula ruralis</i> (Hedw.) Gaertn. et al.
THUI PYG	<i>Thuidium pygmaeum</i> Schimp. in B.S.G.	TORT SPP	<i>Tortella</i> spp.
THUI REC	<i>Thuidium recognitum</i> (Hedw.) Lindb.	TORT TOR	<i>Tortella tortuosa</i> (Hedw.) Limpr.
THUI SPP	<i>Thuidium</i> spp.	TRIC CYL	<i>Trichodon cylindricus</i> (Hedw.) Schimp.
TIMM AUS	<i>Timmia austriaca</i> Hedw.	TRIT EXA	<i>Tritomaria exsecta</i> (Schrad.) Loeske
TIMM BAV	<i>Timmia bavarica</i> Hessel.	TRIT EXS	<i>Tritomaria exsectiformis</i> (Breidl.) Loeske
TIMM MEG	<i>Timmia megalopolitana</i> Hedw.	TRIT HET	<i>Tritomaria heterophylla</i> (R.M. Schust.)
TIMM NOR	<i>Timmia norvegica</i> Zett.	TRIT POL	<i>Tritomaria polita</i> (Nees) Jörg.
TIMM SIB	<i>Timmia sibirica</i> Lindb. & Arnell	TRIT QUI	<i>Tritomaria quinquedentata</i> (Huds.) H. Buch
TIMM SPP	<i>Timmia</i> spp.	TRIT SCI	<i>Tritomaria scitula</i> (Taylor) Jörg.
TOME FAL	<i>Tomentypnum falcifolium</i> (Ren. ex Nichols) Tuom. in Ahti & Fagers.	TRIT SPP	<i>Tritomaria</i> spp.
		ULOT CUR	<i>Ullota curvifolia</i> (Wahlenb.) Lilj.
		VOIT NIV	<i>Voitia nivalis</i> Hornsch.
		WEIS CON	<i>Weissia controversa</i> Hedw.

^aBased on the Alberta plants and fungi — Master species list and species group checklists provided by the Resource Data Branch, Alberta Sustainable Resource Development, Government of Alberta.

^b*Chandonanthus setiformis* (Ehrh.) Lindb. and *Scapania nemorosa* (Linn.) Grolle are liverworts, not mosses.

Appendix 1E. Lichens^a

FECD code	Scientific name	FECD code	Scientific name
ACAR ARE	<i>Acarospora arenacea</i> H. Magn.	BIAT SPH	<i>Biatora sphaeroides</i> (Dickson) Korber
ACAR CER	<i>Acarospora cervina</i> A. Massal.	BIAT SPP	<i>Biatora</i> spp.
ACAR CHL	<i>Acarospora chlorophana</i> (Wahlenb.) A. Massal.	BIAT VER	<i>Biatora vernalis</i> (L.) Fr.
ACAR FUS	<i>Acarospora fuscata</i> (Schradler) Arnold	BRYO ABB	<i>Bryoria abbreviata</i> (Mull. Arg.) Brodo & D. Hawksw.
ACAR GLA	<i>Acarospora glaucocarpa</i> (Ach.) Korber	BRYO CAS	<i>Bryonora castanea</i> (Hepp) Poelt
ACAR HEP	<i>Acarospora heppii</i> (Nageli ex Hepp) Nageli ex Korber	BRYO CHA	<i>Bryoria chalybeiformis</i> (L.) Brodo & D. Hawksw.
ACAR OLI	<i>Acarospora oligospora</i> (Nyl.) Arnold	BRYO DIV	<i>Bryocaulon divergens</i> (Ach.) Karnefelt
ACAR SCH	<i>Acarospora schleicheri</i> (Ach.) A. Massal.	BRYO FUS	<i>Bryoria fuscescens</i> (Gyelnik) Brodo & D. Hawksw.
ACAR SMA	<i>Acarospora smaragdula</i> (Wahlenb.) A. Massal.	BRYO GLA	<i>Bryoria glabra</i> (Mot.) Brodo & D. Hawksw.
ACAR SPP	<i>Acarospora</i> spp.	BRYO LAN	<i>Bryoria lanestris</i> (Ach.) Brodo & D. Hawksw.
ACAR STR	<i>Acarospora strigata</i> (Nyl.) Jatta	BRYO NAD	<i>Bryoria nadvornikiana</i> (Gyelnik) Brodo & D. Hawksw.
ACAR VER	<i>Acarospora veronensis</i> A. Massal.	BRYO ORE	<i>Bryoria oregana</i> (Tuck. ex Willey) Brodo & D. Hawksw.
AHTI SPH	<i>Ahtiana sphaerosporella</i> Mull. Arg.) Goward	BRYO PSE	<i>Bryoria pseudofuscescens</i> (Gyelnik) Brodo & D. Hawksw.
ALEC NIG	<i>Alectoria nigricans</i> (Ach.) Nyl.	BRYO SPP	<i>Bryoria</i> spp.
ALEC OCH	<i>Alectoria ochroleuca</i> (Hoffm.) A. Massal.	BRYO SUB	<i>Bryoria subdivergens</i> (E. Dahl) Brodo & D. Hawksw.
ALEC SAR	<i>Alectoria sarmentosa</i> (Ach.) Ach.	BRYO TRI	<i>Bryoria trichodes</i> (Michaux) Brodo & D. Hawksw.
ALEC SPP	<i>Alectoria</i> spp.	BUEL DIS	<i>Buellia disciformis</i> (Fr.) Mudd
ALLA ALP	<i>Allantoparmelia alpicola</i> (Th. Fr.) Essl.	BUEL ELE	<i>Buellia elegans</i> Poelt
ANAP SET	<i>Anaptychia setifera</i> Rasanen	BUEL EPI	<i>Buellia epigaea</i> (Pers.) Tuck.
ARCT CEN	<i>Arctoparmelia centrifuga</i> (L.) Hale	BUEL ERU	<i>Buellia erubescens</i> Arnold
ARCT INC	<i>Arctoparmelia incurva</i> (Pers.) Hale	BUEL LAC	<i>Buellia lacteoides</i> de Lesd.
ARCT SUB	<i>Arctoparmelia subcentrifuga</i> (Oksner) Hale	BUEL PAP	<i>Buellia papillata</i> (Sommerf.) Tuck.
ARTH ALP	<i>Arthrorhaphis alpina</i> (Schaerer) R. Sant.	BUEL PUN	<i>Buellia punctata</i> (Hoffm.) A. Massal.
ARTH CIT	<i>Arthrorhaphis citrinella</i> (Ach.) Poelt	BUEL SPU	<i>Buellia spuria</i> (Schaerer) Anzi
ARTH INT	<i>Arthonia intexta</i> Almq.	BUEL TRI	<i>Buellia triphragmioides</i> Anzi
ARTH PAT	<i>Arthonia patellulata</i> Nyl.	BUEL VIL	<i>Buellia vilis</i> Th. Fr.
ARTH PUN	<i>Arthopyrenia punctiformis</i> (Pers.) Massal.	CALI ABI	<i>Calicium abietinum</i> Pers.
ASPI ALP	<i>Aspicilia alphoplaca</i> (Wahlenb.) Poelt & Lauckert	CALI SAL	<i>Calicium salicinum</i> Pers.
ASPI CAE	<i>Aspicilia caesiocinerea</i> (Nyl. ex Malbr.) Arnold	CALI VIR	<i>Calicium viride</i> Pers.
ASPI CAL	<i>Aspicilia calcarea</i> (L.) Mudd	CALO ATR	<i>Caloplaca atroabla</i> (Tuck.) Zahlbr.
ASPI CAN	<i>Aspicilia candida</i> (Anzi) Hue	CALO AUR	<i>Caloplaca aurantia</i> (Pers.) Hellbom
ASPI CIN	<i>Aspicilia cinerea</i> (L.) Korber	CALO CER	<i>Caloplaca cerina</i> (Ehrh. ex Hedwig) Th. Fr.
ASPI ELE	<i>Aspicilia elevata</i> (Lyne) J.W. Thomson	CALO CIT	<i>Caloplaca citrina</i> (Hoffm.) Th. Fr.
ASPI NIK	<i>Aspicilia nikrapensis</i> Darbish.	CALO CLA	<i>Caloplaca cladodes</i> (Tuck.) Zahlbr.
ASPI PER	<i>Aspicilia pergibbosa</i> (H. Magn.) Rasanen	CALO EPI	<i>Caloplaca epithallina</i> Lynge
ASPI ROL	<i>Aspicilia rolleana</i> Hue	CALO FER	<i>Caloplaca ferruginea</i> (Hudson) Th. Fr.
ASPI SPP	<i>Aspicilia</i> spp.	CALO FLA	<i>Caloplaca flavovirescens</i> (Wulfen) Dall Torre & Sarnth.
ASPI SUP	<i>Aspicilia supertegens</i> Arnold	CALO FLR	<i>Caloplaca flavorubescens</i> (Hudson) J.R. Laundon
BACI ACC	<i>Bacidia accedens</i> (Arnold) Lettau	CALO FRA	<i>Caloplaca fraudans</i> (Th. Fr.) H. Olivier
BACI AKA	<i>Bacidia akompsa</i> (Tuck.) Fink	CALO HOL	<i>Caloplaca holocarpa</i> (Hoffm. ex Ach.) M. Wade
BACI BAG	<i>Bacidia bagliettoana</i> (A. Massal. & De Not.) Jatta	CALO JUN	<i>Caloplaca jungermanniae</i> (Vahl) Th. Fr.
BACI DEC	<i>Bacidia declinis</i> (Tuck.) Zahlbr.	CALO LAC	<i>Caloplaca lactea</i> (A. Massal.) Zahlbr.
BACI HEG	<i>Bacidia hegetschweileri</i> (Hepp) Vainio	CALO MIC	<i>Caloplaca microphyllina</i> (Tuck.) Hasse
BACI POP	<i>Bacidia populorum</i> (A. Massal.) Trevisan	CALO MUR	<i>Caloplaca microphyllina</i> (Tuck.) Hasse
BACI SPH	<i>Bacidia sphaeroides</i> (Dickson) Zahlbr.	CALO NIV	<i>Caloplaca nivialis</i> (Korber) Th. Fr.
BAEO RUF	<i>Baeomyces rufus</i> (Hudson) Rebent.	CALO SAX	<i>Caloplaca saxicola</i> (Hoffm.) Nordin
BELL ALP	<i>Bellemerea alpina</i> (Sommerf.) Clauzade & Roux	CALO SIN	<i>Caloplaca sinapisperma</i> (Lam. & DC.) Maheu & A. Gillet
BELL CIN	<i>Bellemerea cinereorufescens</i> (Ach.) Clauzade & Roux		

Appendix 1E. Continued

FECD code	Scientific name	FECD code	Scientific name
CALO SPP	<i>Caloplaca</i> spp.	CLAD CHL	<i>Cladonia chlorophaea</i> (Florke ex Sommerf.) Sprengel
CALO STI	<i>Caloplaca stipitata</i> Wetmore	CLAD COC	<i>Cladonia coccifera</i> (L.) Willd.
CALO TET	<i>Caloplaca tetraspora</i> (Nyl.) H. Olivier	CLAD CON	<i>Cladonia coniocraea</i> auct.
CALO TRA	<i>Caloplaca trachyphylla</i> (Tuck.) Zahlbr.	CLAD COR	<i>Cladonia cornuta</i> (L.) Hoffm.
CALO ULM	<i>Caloplaca ulmorum</i> (Fink) Fink	CLAD CRI	<i>Cladonia crispata</i> (Ach.) Flotow
CALO VIT	<i>Caloplaca vitellinula</i> (Nyl.) H. Olivier	CLAD CRS	<i>Cladonia cristatella</i> Tuck.
CAND AUR	<i>Candelariella aurella</i> (Hoffm.) Zahlbr.	CLAD CRY	<i>Cladonia cryptochlorophaea</i> Asah.
CAND CAN	<i>Candelariella canadensis</i> H. Magn.	CLAD CYA	<i>Cladonia cyanipes</i> (Sommerf.) Nyl.
CAND CON	<i>Candelaria concolor</i> (Dickson) Stein	CLAD CYL	<i>Cladonia cylindrica</i> (A. Evans) A. Evans
CAND SPP	<i>Candelariella</i> spp.	CLAD DEC	<i>Cladonia decorticata</i> (Florke) Sprengel
CAND TER	<i>Candelariella terrigena</i> Rasanen	CLAD DEF	<i>Cladonia deformis</i> (L.) Hoffm.
CAND VIT	<i>Candelariella vitellina</i> (Hoffm) Mull. Arg.	CLAD DID	<i>Cladonia didyma</i> (Fee) Vainio
CAND XAN	<i>Candelariella xanthostigma</i> (Ach.) Lettau	CLAD DIG	<i>Cladonia digitata</i> (L.) Hoffm.
CARB VOR	<i>Carbonea vorticosa</i> (Florke) Hertel	CLAD ECM	<i>Cladonia ecmocyna</i> Leighton
CATA CIN	<i>Catapyrenium cinereum</i> (pers.) Korber	CLAD FAR	<i>Cladonia farinacea</i> (Vainio) A. Evans
CATA LAC	<i>Catapyrenium lachneum</i> (Ach.) R. Sant.	CLAD FIM	<i>Cladonia fimbriata</i> (L.) Fr.
CATI CHA	<i>Catillaria chalybeia</i> (Borrer) A. Massal.	CLAD FUR	<i>Cladonia furcata</i> (Hudson) Schrader
CATI GLA	<i>Catillaria glauconigrans</i> (Tuck.) Hasse	CLAD GLA	<i>Cladonia glauca</i> Florke
CATI GLO	<i>Catillaria globulosa</i> (Florke) Th. Fr.	CLAD GON	<i>Cladonia gonecha</i> (Ach.) Asah.
CATI GRI	<i>Catillaria griffithii</i> (Sm.) Coppins	CLAD GRA	<i>Cladonia gracilis</i> (L.) Willd.
CATI LAU	<i>Catinaria laureri</i> (Hepp ex Th. Fr.) Degel.	CLAD GRY	<i>Cladonia grayi</i> (G. Merr. ex Sandst.
CETR ARE	<i>Cetraria arenaria</i> Karnefelt	CLAD HUM	<i>Cladonia humilis</i> (With.) J.R. Laundon
CETR CAN	<i>Cetraria canadensis</i> (Rasanen) Rasanen	CLAD LEP	<i>Cladonia leporina</i> Fr.
CETR CHL	<i>Cetraria chlorophylla</i> (Willd.) Vainio	CLAD MAC	<i>Cladonia macilentata</i> Hoffm.
CETR COM	<i>Cetraria commixta</i> (Nyl.) Th. Fr.	CLAD MAR	<i>Cladonia macrophylla</i> (Schaerer) Stenh.
CETR CUC	<i>Cetraria cucullata</i> (Bellardi) Ach.	CLAD MAT	<i>Cladonia mateocyatha</i> Robbins
CETR ERI	<i>Cetraria ericetorum</i> Opiz	CLAD MAY	<i>Cladonia macrophyllodes</i> Nyl.
CETR HAL	<i>Cetraria halei</i> Culb. & C. Culb.	CLAD MER	<i>Cladonia merochlorophaea</i> Asah.
CETR HEP	<i>Cetraria hepatizon</i> (Ach.) Vainio	CLAD MET	<i>Cladonia metacorallifera</i> Asah.
CETR ISL	<i>Cetraria islandica</i> (L.) Ach.	CLAD MIT	<i>Cladonia mitis</i> (Sandst.) Hustich
CETR LAE	<i>Cetraria laevigata</i> Rass.	CLAD MUL	<i>Cladonia multiformis</i> G. Merr.
CETR MER	<i>Cetraria merrillii</i> Du Rietz	CLAD NEM	<i>Cladonia nemoxyna</i> (Ach.) Arnold
CETR NIV	<i>Cetraria nivalis</i> (L.) Ach.	CLAD PEZ	<i>Cladonia peziziformis</i> (With.) J.R. Laundon
CETR PIN	<i>Cetraria pinastri</i> (Scop.) Gray	CLAD PHY	<i>Cladonia phyllophora</i> Ehrh. ex Hoffm.
CETR PLA	<i>Cetraria platyphylla</i> Tuck.	CLAD PLE	<i>Cladonia pleurota</i> (Florke) Schaerer
CETR SPP	<i>Cetraria</i> spp.	CLAD POC	<i>Cladonia pocillum</i> (Ach.) Grognot
CETR SUB	<i>Cetraria subalpina</i> Imshaug	CLAD POL	<i>Cladonia polydactyla</i> (Florke) Sprengel
CETR TIL	<i>Cetraria tilesii</i> Ach.	CLAD POY	<i>Cladonia polycarpoides</i> Nyl.
CHAE CHR	<i>Chaenotheca chrysocephala</i> (Turner ex Ach.) Th. Fr.	CLAD PYX	<i>Cladonia pyxidata</i> (L.) Hoffm.
CHAE FUR	<i>Chaenotheca furfuracea</i> (L.) Tibell	CLAD RAM	<i>Cladonia ramulosa</i> (With.) J.R. Laundon
CHRY CHL	<i>Chrysothrix chlorina</i> (Ach.) J.R. Laundon	CLAD RAN	<i>Cladonia rangiferina</i> (L.) Nyl.
CLAD ACU	<i>Cladonia acuminata</i> (Ach.) Norrlin	CLAD REI	<i>Cladonia rei</i> Schaerer
CLAD ALP	<i>Cladonia alpestris</i> (L.) Nyl.	CLAD ROB	<i>Cladonia robbinsii</i> A. Evans
CLAD AMA	<i>Cladonia amaurocraea</i> (Florke) Schaerer	CLAD SCA	<i>Cladonia scabriuscula</i> (Delise) Nyl.
CLAD APO	<i>Cladonia gonecha</i> (Ach.) Asah.	CLAD SIM	<i>Cladonia simulata</i> Robbins
CLAD ARB	<i>Cladonia arbuscula</i> (Wallr.) Hale & Culb.	CLAD SOB	<i>Cladonia sobolescens</i> Nyl. ex Vainio
CLAD BAC	<i>Cladonia bacillaris</i> Nyl.	CLAD SPE	<i>Cladonia</i> spp.
CLAD BAI	<i>Cladonia bacilliformis</i> (Nyl.) Gluck	CLAD SPP	<i>Cladonia</i> spp.
CLAD BEL	<i>Cladonia bellidiflora</i> (Ach.) Schaerer	CLAD SQU	<i>Cladonia squamosa</i> Hoffm.
CLAD BOR	<i>Cladonia borealis</i> S. Stenroos	CLAD STE	<i>Cladonia stellaris</i> (Opiz) Brodo
CLAD BOT	<i>Cladonia botrytes</i> (K. Hagen) Willd.	CLAD STR	<i>Cladonia stricta</i> (Nyl.) Nyl.
CLAD BRE	<i>Cladonia brevis</i> (Sandst.) Sandst.	CLAD SUB	<i>Cladonia subulata</i> (L.) Weber ex F.H. Wigg.
CLAD CAN	<i>Cladonia carneola</i> (Fr.) Fr.	CLAD SUE	<i>Cladonia subcervicornis</i> (Vainio) Kernst.
CLAD CAR	<i>Cladonia cariosa</i> (Ach.) Sprengel	CLAD SUF	<i>Cladonia subfurcata</i> (Nyl.) Arnold
CLAD CEN	<i>Cladonia cenotea</i> (Ach.) Schaerer	CLAD SUL	<i>Cladonia sulphurina</i> (Michaux) Fr.
CLAD CER	<i>Cladonia cervicornis</i> (Ach.) Flotow	CLAD SYM	<i>Cladonia symphycarpa</i> (Florke) Fr.
		CLAD TUR	<i>Cladonia turgida</i> Hoffm.
		CLAD UNC	<i>Cladonia uncialis</i> (L.) F.H. Wigg.

Appendix 1E. Continued

FECD code	Scientific name	FECD code	Scientific name
CLAD VER	<i>Cladonia verruculosa</i> (Vainio) Ahti	FULG FUL	<i>Fulgensia fulgens</i> (Sw.) Elenkin
CLIO GRI	<i>Cliostomum griffithii</i> (Sm.) Coppins	FULG SPP	<i>Fulgensia</i> spp.
COEL ACU	<i>Coelocaulon aculeatum</i> (Schreber) Link	GLYP SCA	<i>Glypholecia scabra</i> (Pers.) Mull. Arg.
COEL DIV	<i>Coelocaulon divergens</i> (Ach.) R. Howe	HAEM LAP	<i>Haematomma lapponicum</i> Rasanen
COLL BAC	<i>Collema bachmanianum</i> (Fink) Degel.	HETE SPE	<i>Heterodermia speciosa</i> (Wulfen) Trevisan
COLL CER	<i>Collema ceranicum</i> Nyl.		
COLL CRI	<i>Collema cristatum</i> (L.) F.H. Wigg.	HYP0 AUS	<i>Hypogymnia austerodes</i> (Nyl.) Rasanen
COLL CRS	<i>Collema crispum</i> (Hudson) Weber ex F.H. Wigg.	HYP0 BIT	<i>Hypogymnia bitteri</i> (Lynge) Ahti
		HYP0 DUP	<i>Hypogymnia duplicata</i> (Ach.) Rass.
COLL FLA	<i>Collema flaccidum</i> (Ach.) Ach.	HYP0 ENT	<i>Hypogymnia enteromorpha</i> (Ach.) Nyl.
COLL FUR	<i>Collema furfuraceum</i> (Arnold) Dr Rietz	HYP0 FRI	<i>Hypocenomyce friesii</i> (Ach.) P. James & Gotth. Schneider
COLL FUS	<i>Collema fuscovirens</i> (With.) J.R. Laundon		
		HYP0 IMS	<i>Hypogymnia imshaugii</i> Krog
COLL LIM	<i>Collema limosum</i> (Ach.) Ach.	HYP0 ORO	<i>Hypogymnia oroarctica</i> Krog
COLL MUL	<i>Collema multipartitum</i> Sm.	HYP0 PHY	<i>Hypogymnia physodes</i> (L.) Nyl.
COLL NIG	<i>Collema nigrescens</i> (Hudson) DC.	HYP0 SCA	<i>Hypocenomyce scalaris</i> (Ach.) Choisy
COLL POL	<i>Collema polycarpon</i> Hoffm.	HYP0 SUB	<i>Hypogymnia subobscura</i> (Vainio) Poelt
COLL SPP	<i>Collema</i> spp.	HYP0 TUB	<i>Hypogymnia tubulosa</i> (Schaerer) Hav.
COLL SUB	<i>Collema subflaccidum</i> Degel.	ICMA ERI	<i>Icmadophila ericetorum</i> (L.) Zahlbr.
COLL TEN	<i>Collema tenax</i> (Sw.) Ach.	IMSH ALE	<i>Imshaugia aleurites</i> (Ach.) S.F. Meyer
COLL TUN	<i>Collema tuniforme</i> (Ach.) Ach.	IMSH PLA	<i>Imshaugia placocardia</i> (Ach.) S.F. Meyer
COLL UND	<i>Collema undulatum</i> Laurer ex Flotow	IONA MEL	<i>Ionaspis melanocarpa</i> (Kermpelh.) Arnold
CYPH INQ	<i>Cyphelium inquinans</i> (Sm.) Trevisan		
CYPH NOT	<i>Cyphelium notarisii</i> (Tul.) Blomb. & Forss.	IONA OCH	<i>Ionaspis ochracella</i> (Nyl.) H. Magn.
		LASA PEN	<i>Lasallia pensylvanica</i> (Hoffm.) Llano
CYPH PIN	<i>Cyphelium pinicola</i> Tibell	LECA ALL	<i>Lecanora allophana</i> Nyl.
CYPH SPP	<i>Cyphelium</i> spp.	LECA ARG	<i>Lecanora argopholis</i> (Ach.) Ach.
CYPH TIG	<i>Cyphelium tigillare</i> (Ach.) Ach.	LECA BEH	<i>Lecanora behringii</i> Nyl.
DACT ARC	<i>Dactylina arctica</i> (Richardson) Nyl.	LECA CAD	<i>Lecanora cadubriae</i> (A. Massal.) Hedl.
DACT BER	<i>Dactylina beringica</i> C.D. Bird & J.W. Thomson	LECA CEN	<i>Lecanora cenisia</i> Ach.
		LECA CIR	<i>Lecanora circumborealis</i> Brodo & Vitik.
DACT MAD	<i>Dactylina madreporiformis</i> (Ach.) Tuck.	LECA COI	<i>Lecanora coilocarpa</i> (Ach.) Nyl.
DACT RAM	<i>Dactylina ramulosa</i> (Hook.) Tuck.	LECA CRE	<i>Lecanora crenulata</i> Hook.
DERM CIN	<i>Dermatocarpon cinereum</i> (Pers.) Th. Fr.	LECA DIS	<i>Lecanora dispersa</i> (Pers.) Sommerf.
DERM HEP	<i>Dermatocarpon hepaticum</i> (Ach.) Th.Fr.	LECA DUB	<i>Lecania dubitans</i> (Nyl.) A.L. Sm.
DERM INT	<i>Dermatocarpon intestiniforme</i> (Korber) Hasse	LECA EPI	<i>Lecanora epibryon</i> (Ach.) Ach.
		LECA FSS	<i>Lecanora fuscescens</i> (Sommerf.) Nyl.
DERM LAC	<i>Dermatocarpon lachneum</i> (Ach.) A.L. Sm.	LECA FUS	<i>Lecania fuscella</i> (Schaerer) Korber
		LECA HAG	<i>Lecanora hagenii</i> (Ach.) Ach.
DERM LUR	<i>Dermatocarpon luridum</i> (With.) J.R. Laundon	LECA HYP	<i>Lecanora hypoptoides</i> (Nyl.) Nyl.
		LECA IMP	<i>Lecanora impudens</i> Degel.
DERM MIN	<i>Dermatocarpon miniatum</i> (L.) W. Mann	LECA INT	<i>Lecanora intricata</i> (Ach.) Ach.
DERM MOU	<i>Dermatocarpon moulinsii</i> (Mont.) Zahlbr.	LECA MAR	<i>Lecanora marginata</i> (Schaerer) Hertel & Rambold
DERM RET	<i>Dermatocarpon reticulatum</i> H. Magn.	LECA MUR	<i>Lecanora muralis</i> (Schreber) Rabenh.
DERM SPP	<i>Dermatocarpon</i> spp.	LECA PIN	<i>Lecanora piniperda</i> Korber
DERM VAG	<i>Dermatocarpon vagans</i> Imshaug	LECA POL	<i>Lecanora polytropa</i> (Hoffm.) Rabenh.
DIME ORE	<i>Dimelaena oreina</i> (Ach.) Norman	LECA PRI	<i>Lecanora pringlei</i> (Tuck.) Lamb
DIPL SCR	<i>Diploschistes scruposus</i> (Schreber) Norman	LECA PUL	<i>Lecanora pulcaris</i> (Pers.) Ach.
		LECA ROL	<i>Lecanora rolleana</i> (Hue) Zahlbr.
ENDO TOR	<i>Endocarpon tortuosum</i> Herre	LECA RUP	<i>Lecanora rupicola</i> (L.) Zahlbr.
EPHE LAN	<i>Ephebe lanata</i> (L.) Vainio	LECA SCO	<i>Lecanora scotopholis</i> (Tuck.) Timdal
EUOP GRA	<i>Euopsis granatina</i> (Sommerf.) Nyl.	LECA SPP	<i>Lecanora</i> spp.
EVER DIV	<i>Evernia divaricata</i> (L.) Ach.	LECA SYM	<i>Lecanora symmicta</i> (Ach.) Ach.
EVER MES	<i>Evernia mesomorpha</i> Nyl.	LECA VAR	<i>Lecanora varia</i> (Hoffm.) Ach.
EVER PRU	<i>Evernia prunastri</i> (L.) Ach.	LECI ALB	<i>Lecidea albofuscescens</i> Nyl.
FARN JUR	<i>Farnoldia jurana</i> (Schaerer) Hertel	LECI ANO	<i>Lecidella anomaloides</i> (A. Massal.) Hertel & R. Kilius
FLAV CAP	<i>Flavoparmelia caperata</i> (L.) Hale		
FLAV FLA	<i>Flavopunctelia flaventior</i> (Stirton) Hale	LECI ARM	<i>Lecidea armeniaca</i> (DC.) Fr.
FLAV SOR	<i>Flavopunctelia soledica</i> (Nyl.) Hale	LECI ATM	<i>Lecidea atromarginata</i> H. Magn.
FULG BRA	<i>Fulgensia bracteata</i> (Hoffm.) Rasanen		

Appendix 1E. Continued

FECD code	Scientific name	FECD code	Scientific name
LECI ATR	<i>Lecidea atrobrunnea</i> (Raymond ex Lam. & DC.) Schaerer	LEPT TEN	<i>Leptogium tenuissimum</i> (Dickson) Korber
LECI AUR	<i>Lecidea auriculata</i> Th. Fr.	LEPT TER	<i>Leptogium teretiusculum</i> (Wallr.) Arnold
LECI BER	<i>Lecidea berengeriana</i> (A. Massal.) Nyl.	LICH SCO	<i>Lichenothelia scopularia</i> (Nyl.) D. Hawksw.
LECI CAE	<i>Lecidea caesiota</i> Schaerer	LICH SPP	Lichen species
LECI CAR	<i>Lecidella carpathica</i> Korber	LOBA LIN	<i>Lobaria linita</i> (Ach.) Rabenh.
LECI CIN	<i>Lecidea cinnabarina</i> Sommerf.	LOBA ORE	<i>Lobaria oregana</i> (Tuck.) Mull. Arg.
LECI CON	<i>Lecidea confluens</i> (Weber) Ach.	LOBA PUL	<i>Lobaria pulmonaria</i> (L.) Hoffm.
LECI DEM	<i>Lecidoma demissum</i> (Rustr.) Gotth. Schneider & Hertel	LOPA PEZ	<i>Lopadium pezizoideum</i> (Ach.) Korber
LECI EUP	<i>Lecidella euphorea</i> (Florke) Hertel	MEGA VER	<i>Megaspora verrucosa</i> (Ach.) Hafellner & V. Wirth
LECI FUS	<i>Lecidea fuscatoatra</i> Nyl.	MELA ALB	<i>Melanelia albertana</i> (Ahti) Essl.
LECI GLM	<i>Lecidea glomerulosa</i> (DC.) Steudel	MELA DIS	<i>Melanelia granulosa</i> (Lyngae) Essl.
LECI GLO	<i>Lecidea globifera</i> Ach.	MELA EXA	<i>Melanelia exasperata</i> (De Not.) Essl.
LECI GRA	<i>Lecidella granulata</i> (H. Magn.) R.C. Harris	MELA EXS	<i>Melanelia exasperatula</i> (Nyl.) Essl.
LECI HYN	<i>Lecidea hypnorum</i> Lib.	MELA INC	<i>Melanelia incolorata</i> (Parr.) Essl.
LECI HYP	<i>Lecidea hypocrita</i> A. Massal.	MELA INF	<i>Melanelia infumata</i> (Nyl.) Essl.
LECI INT	<i>Lecidea intrudens</i> H. Magn.	MELA MUL	<i>Melanelia multispora</i> (A. Schneider) Essl.
LECI LAC	<i>Lecidea lactea</i> Florke ex Schaerer	MELA OLI	<i>Melanelia olivacea</i> (L.) Eassl.
LECI LAP	<i>Lecidea lapicida</i> (Ach.) Ach.	MELA PAN	<i>Melanelia panniformis</i> (Nyl.) Essl.
LECI LEU	<i>Lecidea leucothallina</i> Arnold	MELA SEP	<i>Melanelia septentrionalis</i> (Lyngae) Essl.
LECI LIT	<i>Lecidea lithophila</i> (Ach.) Ach.	MELA SOR	<i>Melanelia sorediata</i> (Ach.) Goward & Ahti
LECI MAR	<i>Lecidea marginata</i> Schaerer	MELA STY	<i>Melanelia stygia</i> (L.) Essl.
LECI MEL	<i>Lecidea melaphanoides</i> Nyl.	MELA SUA	<i>Melanelia subargentifera</i> (Nyl.) Essl.
LECI PAN	<i>Lecidea panaeola</i> (Ach.) Ach.	MELA SUB	<i>Melanelia subaurifera</i> (Nyl.) Essl.
LECI PAU	<i>Lecidea paupercula</i> Th. Fr.	MELA SUE	<i>Melanelia subelegantula</i> (Essl.) Essl.
LECI PLA	<i>Lecidea plana</i> (J. Lahm) Nyl.	MELA SUO	<i>Melanelia subolivacea</i> (Nyl.) Essl.
LECI SCA	<i>Lecidella scabra</i> (Taylor) Hertel & Leuckert	MELA SUS	<i>Melanelia substygia</i> (Rasanen) Essl.
LECI SPI	<i>Lecidella spitsbergensis</i> (Lyngae) Hertel & Leuckert	MELA TRA	<i>Melanelia trabeculata</i> (Ahti) Essl.
LECI SPP	<i>Lecidea</i> spp.	MICA ASS	<i>Micarea assimilata</i> (Nyl.) Coppins
LECI STI	<i>Lecidella stigmata</i> (Ach.) Hertel & Leuckert	MYCO AFF	<i>Mycoblastus affinis</i> (Schaerer) Schauer
LECI SYM	<i>Lecidea symmicta</i> (Ach.) Ach.	MYCO BER	<i>Mycobilimbia berengeriana</i> (A. Massal.) Hafellner & V. Wirth
LECI TES	<i>Lecidea tessellata</i> Florke	MYCO LOB	<i>Mycobilimbia lobulata</i> (Sommerf.) Hafellner
LECI TOR	<i>Lecidea tornoensis</i> Nyl.	MYCO OBS	<i>Mycobilimbia fusca</i> (A. Massal.) Hafellner & V. Wirth
LECI TUR	<i>Lecidea turgidula</i> Fr.	MYCO SAB	<i>Mycobilimbia sabuletorum</i> (Schreber) Hafellner
LECI ULI	<i>Lecidea uliginosa</i> (Schrader) Ach.	MYCO SAN	<i>Mycoblastus sanguinarius</i> (L.) Norman
LECI UMB	<i>Lecidea umbonata</i> (Hepp) Mudd	MYCO SUB	<i>Mycocalicium subtile</i> (Pers.) Szat.
LECI VAR	<i>Lecidea varians</i> Ach.	NEPH ARC	<i>Nephroma arcticum</i> (L.) Torss.
LECI VER	<i>Lecidea vernalis</i> (L.) Ach.	NEPH BEL	<i>Nephroma bellum</i> (Sprengel) Tuck.
LECI WUL	<i>Lecidella wulfenii</i> (Hepp) Korber	NEPH EXP	<i>Nephroma expallidum</i> (Nyl.) Nyl.
LEMP RAD	<i>Lempholemma radiatum</i> (Sommerf.) Henssen	NEPH HEL	<i>Nephroma helveticum</i> Ach.
LEPR INC	<i>Lepraria incana</i> (L.) Ach.	NEPH PAR	<i>Nephroma parile</i> (Ach.) Ach.
LEPR MEM	<i>Lepraria membranacea</i> (Dickson) Vainio	NEPH RES	<i>Nephroma resupinatum</i> (L.) Ach.
LEPR NEG	<i>Lepraria neglecta</i> (Nyl.) Erichsen	NEPH SPP	<i>Nephroma</i> spp.
LEPR SPP	<i>Lepraria</i> spp.	OCHR AND	<i>Ochrolechia androgyna</i> (Hoffm.) Arnold
LEPR SUB	<i>Leprocaulon subalbicans</i> (Lamb) Lamb & Ward	OCHR ARB	<i>Ochrolechia arborea</i> (Kreyer) Almb.
LEPT BUR	<i>Leptogium burnetiae</i> (C.W. Dodge)	OCHR FRI	<i>Ochrolechia frigida</i> (Sw.) Lyngae
LEPT FUR	<i>Leptogium furfuraceum</i> (Harm.) Sierk	OCHR GEM	<i>Ochrolechia geminipara</i> (Th. Fr.) Vainio
LEPT GEL	<i>Leptogium gelatinosum</i> (With.) J.R. Laundon	OCHR INA	<i>Ochrolechia inaequatula</i> (Nyl.) Zahlbr.
LEPT HIR	<i>Leptogium hirsutum</i> Sierk	OCHR PAL	<i>Ochrolechia pallescens</i> (L.) A. Massal.
LEPT LIC	<i>Leptogium lichenoides</i> (L.) Zahlbr.	OCHR SOR	<i>Ochrolechia sorediata</i> Howard
LEPT SAT	<i>Leptogium saturninum</i> (Dickson) Nyl.	OCHR SPP	<i>Ochrolechia</i> spp.
LEPT SPP	<i>Leptogium</i> spp.		

Appendix 1E. Continued

FECD code	Scientific name	FECD code	Scientific name
OCHR UPS	<i>Ochrolechia upsaliensis</i> (L.) A. Massal.	PHAE HIS	<i>Phaeophyscia hispidula</i> (Ach.) Essl.
OPEG VAR	<i>Opographa varia</i> Pers.	PHAE NIM	<i>Phaeorrhiza nimbose</i> (Fr.) H. Mayrh. & Poelt
OPHI LAP	<i>Ophioparma lapponica</i> (Rasanen) Hafellner & R.W. Rogers	PHAE ORB	<i>Phaeophyscia orbicularis</i> (Necker) Moberg
ORPH MOR	<i>Orphniospora moriopsis</i> (A. Massal.) D. Hawksw.	PHAE POP	<i>Phaeocalicium populneum</i> (Brond. ex Duby) A.F.W. Schmidt
PANN CON	<i>Pannaria conoplea</i> (Ach.) Bory	PHAE SCI	<i>Phaeophyscia sciastra</i> (Ach.) Moberg
PANN LEU	<i>Pannaria leucophaea</i> (Vahl) P.M. Jorg.	PHYL DEM	<i>Phylliscium demangeonii</i> (Moug. & Mont.) Nyl.
PANN MIC	<i>Pannaria microphylla</i> (Sw.) A. Massal.	PHYS ADS	<i>Physcia adscendens</i> (Fr.) H. Olivier
PANN PEZ	<i>Pannaria pezizoides</i> (Weber) Trevisan	PHYS AIP	<i>Physcia aipolia</i> (Ehrh. ex Humb.) Furnr.
PANN RUB	<i>Pannaria rubiginosa</i> (Ach.) Bory	PHYS BIZ	<i>Physcia biziana</i> (A. Massal.) Zahlbr.
PARM AMB	<i>Parmeliopsis ambigua</i> (Wulfen) Nyl.	PHYS CAE	<i>Physcia caesia</i> (Hoffm.) Furnr.
PARM CEN	<i>Parmelia centrifuga</i> (L.) Ach.	PHYS CIL	<i>Physcia ciliata</i> (Hoffm.) Du Rietz
PARM CHL	<i>Parmelia chlorochroa</i> Tuck.	PHYS DET	<i>Physconia detersa</i> (Nyl.) Poelt
PARM DIS	<i>Parmelia dissecta</i> Nyl.	PHYS DIS	<i>Physconia distorta</i> (With.) Laundon
PARM ELE	<i>Parmelia elegantula</i> (Zahlbr.) Szat.	PHYS DUB	<i>Physcia dubia</i> (Hoffm.) Lettau
PARM EXA	<i>Parmelia exasperata</i> De Not.	PHYS END	<i>Physcia endochrysea</i> (Hampe) Nyl.
PARM HYP	<i>Parmeliopsis hyperopta</i> (Ach.) Arnold	PHYS GRI	<i>Physconia grisea</i> (Lam.) Poelt
PARM INF	<i>Parmelia infrapallida</i> Essl.	PHYS MIL	<i>Physcia millegrana</i> Degel.
PARM LIN	<i>Parmelia lineola</i> E.C. Berry	PHYS MUS	<i>Physconia muscigena</i> (Ach.) Poelt
PARM PER	<i>Parmelia perforata</i> (Jacq.) Ach.	PHYS NIG	<i>Physcia nigricans</i> (Florke) Stizenb.
PARM SAX	<i>Parmelia saxatilis</i> (L.) Ach.	PHYS ORB	<i>Physcia orbicularis</i> (Necker) Poetsch
PARM SPH	<i>Parmelia sphaerospora</i> Nyl.	PHYS PER	<i>Physconia perisidiosa</i> (Erichsen) Moberg
PARM SPP	<i>Parmelia</i> spp.	PHYS PHA	<i>Physcia phaea</i> (Tuck.) J.W. Thomson
PARM SUL	<i>Parmelia sulphurata</i> Nees & Flotow	PHYS SCI	<i>Physcia sciastra</i> (Ach.) Du Rietz
PARM TAR	<i>Parmelia taractica</i> Krempelh.	PHYS SEM	<i>Physcia semipinnata</i> (J.F. Gmelin) Moberg
PARM WYO	<i>Parmelia wyomingica</i> (Gyelnik) Hale	PHYS SET	<i>Physcia setosa</i> (Ach.) Nyl.
PELT APH	<i>Peltigera aphthosa</i> (L.) Willd.	PHYS SPP	<i>Physcia</i> spp.
PELT CAN	<i>Peltigera canina</i> (L.) Willd.	PHYS STE	<i>Physcia stellaris</i> (L.) Nyl.
PELT COL	<i>Peltigera collina</i> (Ach.) Schrader	PHYS SUB	<i>Physcia subobscura</i> Nyl.
PELT DID	<i>Peltigera didactyla</i> (With.) J.R. Laundon	PHYS TEN	<i>Physcia tenella</i> (Scop.) DC.
PELT ELI	<i>Peltigera elisabethae</i> Gyelnik	PLAC ASP	<i>Placynthium asperellum</i> (Ach.) Trevisan
PELT HOR	<i>Peltigera horizontalis</i> (Hudson) Baumg.	PLAC NIG	<i>Placynthium nigrum</i> (Hudson) Gray
PELT LEP	<i>Peltigera lepidophora</i> (Vainio) Bitter	PLAC OLI	<i>Placynthiella oligotropha</i> (J.R. Laundon) Coppins & P. James
PELT LEU	<i>Peltigera leucophlebia</i> (Nyl.) Gyelnik	PLAC STE	<i>Placynthium stenophyllum</i> (Tuck.) Fink
PELT MAL	<i>Peltigera malacea</i> (Ach.) Funck	PLAC SUB	<i>Placynthium subradiatum</i> (Nyl.) Arnold
PELT MEM	<i>Peltigera membranacea</i> (Ach.) Nyl.	PLAC ULI	<i>Placynthiella uliginosa</i> (Schrader) Coppins & P. James
PELT NEO	<i>Peltigera neopolydactyla</i> (Gyelnik) Gyelnik	PLAT GLA	<i>Platismatia glauca</i> (L.) Culb. & C. Culb.
PELT POL	<i>Peltigera polydactyla</i> (Necker) Hoffm.	POLY HYP	<i>Polyblastia hyperborea</i> Th. Fr.
PELT PRA	<i>Peltigera praetextata</i> (Florke ex Sommerf.) Zopf	POLY OBS	<i>Polyblastia obsoleta</i> Arnold
PELT RUF	<i>Peltigera rufescens</i> (Weiss) Humb.	POLY SIM	<i>Polysporina simplex</i> (Davies) Vezda
PELT SCA	<i>Peltigera scabrosa</i> Th. Fr.	POLY THE	<i>Polyblastia theleodes</i> (Sommerf.) Th. Fr.
PELT SPP	<i>Peltigera</i> spp.	PORP CRU	<i>Porpidia crustulata</i> (Ach.) Hertel & Knoph
PELT SPU	<i>Peltigera spuria</i> (Ach.) DC.	PORP FLA	<i>Porpidia flavocaerulescens</i> (Hornem.) Hertel & A.J. Schwab
PELT VEN	<i>Peltigera venosa</i> (L.) Hoffm.	PORP GLA	<i>Porpidia glaucophaea</i> (Korber) Hertel & Knoph
PERT BRY	<i>Pertusaria bryontha</i> (Ach.) Nyl.	PORP MAC	<i>Porpidia macrocarpa</i> (DC.) Hertel & A.J. Schwab
PERT DAC	<i>Pertusaria dactylina</i> (Ach.) Nyl.	PORP THO	<i>Porpidia thomsonii</i> Gowan
PERT GEM	<i>Pertusaria geminipara</i> (Th. Fr.) C. Knight ex Brodo	PROT BAD	<i>Protoparmelia badia</i> (Hoffm.) Hafellner
PERT PAN	<i>Pertusaria panyrga</i> (Ach.) A. Massal.	PROT RUP	<i>Protoblastenia rupestris</i> (Scop.) J. Steiner
PERT SOM	<i>Pertusaria sommerfeltii</i> (Florke ex Sommerf.) Fr.		
PERT SPP	<i>Pertusaria</i> spp.		
PERT TRO	<i>Pertusaria trochisea</i> Norman		
PHAE CON	<i>Phaeophyscia constipata</i> (Norrlin & Nyl.) Moberg		
PHAE END	<i>Phaeophyscia endococcina</i> (Korber) Moberg		

Appendix 1E. Continued

FECD code	Scientific name	FECD code	Scientific name
PSEU MIN	<i>Pseudephebe minuscula</i> (Nyl. ex Arnold) Brodo & D. Hawksw.	SOLO AST	<i>Solorinella asteriscus</i> Anzi
PSEU PUB	<i>Pseudephebe pubescens</i> (L.) Choisy	SOLO BIS	<i>Solorina bispora</i> Nyl.
PSOR DEC	<i>Psora decipiens</i> (Hedwig) Hoffm.	SOLO CRO	<i>Solorina crocea</i> (L.) Ach.
PSOR GLO	<i>Psora globifera</i> (Ach.) A. Massal.	SOLO OCT	<i>Solorina octospora</i> (Arnold) Arnold
PSOR HYP	<i>Psoroma hypnorum</i> (Vahl) Gray	SOLO SAC	<i>Solorina saccata</i> (L.) Ach.
PSOR RUB	<i>Psora rubiformis</i> (Ach.) Hook.	SOLO SPO	<i>Solorina spongiosa</i> (Ach.) Anzi
PSOR RUF	<i>Psorula rufonigra</i> (Tuck.) Gotth.	SOLO SPP	<i>Solorina</i> spp.
PUNC SUR	<i>Punctelia subrudecta</i> (Nyl.) Krog	SPHA GLO	<i>Sphaerophorus globosus</i> (Hudson) Vainio
PYRE LEU	<i>Pyrenula leucoplaca</i> (Wallr.) Korber	SPIL REV	<i>Spilonema revertens</i> Nyl.
RAMA FAS	<i>Ramalina fastigiata</i> (Pers.) Ach.	SPOR POL	<i>Sporastatia polyspora</i> (Nyl.) Grumann
RAMA POL	<i>Ramalina pollinaria</i> (Westr.) Ach.	SPOR TES	<i>Sporastatia testudinea</i> (Ach.) A. Massal.
RAMA ROE	<i>Ramalina roesleri</i> (Hochst. ex Schaerer) Hue	SQUA LEN	<i>Squamarina lentigera</i> (Weber) Poelt
RAMA SIN	<i>Ramalina sinensis</i> Jatta	STAU CAT	<i>Staurothele catalepta</i> (Ach.) Blomb. & Forss.
RAMA SPP	<i>Ramalina</i> spp.	STAU CLO	<i>Staurothele clopima</i> (Wahlenb.) Th. Fr.
RHIZ ALP	<i>Rhizocarpon alpicola</i> (Anzi) Rabenh.	STAU FUS	<i>Staurothele fuscocuprea</i> (Nyl.) Zschacke
RHIZ BAD	<i>Rhizocarpon badioatrum</i> (Florke ex Sprengel) Th. Fr.	STAU PER	<i>Staurothele perradiata</i> Lynge
RHIZ BOL	<i>Rhizocarpon bolanderi</i> (Tuck.) Herre	STAU SPP	<i>Staurothele</i> spp.
RHIZ CHI	<i>Rhizocarpon chioneum</i> (Norman) Th. Fr.	STER ALB	<i>Stereocaulon albicans</i> Th. Fr.
RHIZ CHR	<i>Rhizoplaca chrysoleuca</i> (Sm.) Zopf	STER ALP	<i>Stereocaulon alpinum</i> Laurer ex Funck
RHIZ DIS	<i>Rhizocarpon disporum</i> (Naeg. ex Hepp) Mull. Arg.	STER BOT	<i>Stereocaulon botryosum</i> Ach.
RHIZ EUM	<i>Rhizocarpon eupetraeum</i> (Nyl.) Arnold	STER CON	<i>Stereocaulon condensatum</i> Hoffm.
RHIZ EUP	<i>Rhizocarpon eupetraeoides</i> (Nyl.) Blomb. & Forss.	STER DAC	<i>Stereocaulon dactylophyllum</i> Florke
RHIZ GEO	<i>Rhizocarpon geographicum</i> (L.) DC.	STER PAS	<i>Stereocaulon paschale</i> (L.) Hoffm.
RHIZ GER	<i>Rhizocarpon geminatum</i> Korber	STER PIL	<i>Stereocaulon pileatum</i> Ach.
RHIZ GRN	<i>Rhizocarpon grande</i> (Florke ex Flotow) Arnold	STER RIV	<i>Stereocaulon rivulorum</i> H. Magn.
RHIZ INT	<i>Rhizocarpon intermediellum</i> Rasanen	STER SAX	<i>Stereocaulon saxatile</i> H. Magn.
RHIZ MAC	<i>Rhizocarpon macrosporum</i> Rasanen	STER SPP	<i>Stereocaulon</i> spp.
RHIZ MEL	<i>Rhizoplaca melanophthalma</i> (DC.) Leuckert & Poelt	STER TOM	<i>Stereocaulon tomentosum</i> Fr.
RHIZ POL	<i>Rhizocarpon polycarpum</i> (Hepp) Th. Fr.	SYNA SYM	<i>Synalissa symphorea</i> (Ach.) Nyl.
RHIZ RIP	<i>Rhizocarpon riparium</i> Rasanen	TEPH ATR	<i>Tephromela atra</i> (Hudson) Hafellner
RHIZ SUP	<i>Rhizocarpon superficiale</i> (Schaerer) Vainio	THAM SPP	<i>Thamnia</i> spp.
RINO ANN	<i>Rinodina annulata</i> H. Magn.	THAM SUB	<i>Thamnia subuliformis</i> (Ehrh.) Culb.
RINO ARC	<i>Rinodina archaea</i> (Ach.) Arnold	THAM VER	<i>Thamnia vermicularis</i> (Sw.) Ach. ex Schaerer
RINO BIS	<i>Rinodina bischoffii</i> (Hepp) A. Massal.	THEL DEC	<i>Thelidium decipiens</i> (Nyl.) Krempelh.
RINO CAL	<i>Rinodina calcigena</i> (Th. Fr.) Lynge	THEL PYR	<i>Thelidium pyrenophorum</i> (Ach.) Mudd
RINO MIL	<i>Rinodina milliaria</i> Tuck.	TONI CAE	<i>Toninia caeruleonigricans</i> auct.
RINO MNI	<i>Rinodina mniaraea</i> (Ach.) Korber	TONI CAN	<i>Toninia candida</i> (Weber) Th. Fr.
RINO NIM	<i>Rinodina nimbosea</i> (Fr.) Th. Fr.	TONI TRI	<i>Toninia tristis</i> (Th. Fr.) Th. Fr.
RINO OCC	<i>Rinodina occidentalis</i> Lynge	TRAP GRA	<i>Trapeliopsis granulosa</i> (Hoffm.)
RINO POL	<i>Rinodina polyspora</i> Th. Fr.	TREM ATR	<i>Tremolecia atrata</i> (Ach.) Hertel
RINO PYR	<i>Rinodina pyrina</i> (Ach.) Arnold	TREM JUR	<i>Tremolecia jurana</i> (Schaerer) Hertel
RINO ROS	<i>Rinodina roscida</i> (Sommerf.) Arnold	TUCK AME	<i>Tuckermannopsis americana</i> (Sprengel) Hale
RINO SPP	<i>Rinodina</i> spp.	TUCK CAN	<i>Tuckermannopsis canadensis</i> (Rasanen) Hale
RINO TUR	<i>Rinodina turfacea</i> (Wahlenb.) Korber	TUCK CHL	<i>Tuckermannopsis chlorophylla</i> (Willd.) Hale
SARC NOV	<i>Sarcogyne novomexicana</i> H. Magn.	TUCK CIL	<i>Tuckermannopsis ciliaris</i> (Ach.) Gyelnik
SARC PRI	<i>Sarcogyne privigna</i> (Ach.) A. Massal.	TUCK MER	<i>Tuckermannopsis merrillii</i> (Du Rietz) Hale
SARC SIM	<i>Sarcogyne similis</i> H. Magn.	TUCK PIN	<i>Tuckermannopsis pinastri</i> (Scop.) Hale
SARC SPP	<i>Sarcogyne</i> spp.	TUCK PLA	<i>Tuckermannopsis platyphylla</i> (Tuck.)
SCHA CIN	<i>Schaereria cinereorufa</i> (Schaerer) Th. Fr.	TUCK SEP	<i>Tuckermannopsis sepincola</i> (Ehrh.) Hale
SCHA TEN	<i>Schaereria tenebrosa</i> (Flotow) Hertel & Poelt	TYLO BIF	<i>Tylothallia biformigera</i> (Leighton) P. James & R. Kiliias
SCOL CHL	<i>Scoliciosporum chlorococcum</i> (Stenh.) Vezda	UMBI ANG	<i>Umbilicaria angulata</i> Tuck.
		UMBI ARC	<i>Umbilicaria arctica</i> (Ach.) Nyl.

Appendix 1E. Concluded

FECD code	Scientific name	FECD code	Scientific name
UMBI CYL	<i>Umbilicaria cylindrica</i> (L.) Delise ex Duby	VERR CAL	<i>Verrucaria calkinsiana</i> Servit
UMBI DEC	<i>Umbilicaria decussata</i> (Vill.) Zahlbr.	VERR FUS	<i>Verrucaria fuscella</i> (Turner) Winch
UMBI DEU	<i>Umbilicaria deusta</i> (L.) Baumg.	VERR MUR	<i>Verrucaria muralis</i> Ach.
UMBI HYP	<i>Umbilicaria hyperborea</i> (Ach.) Hoffm.	VERR NIG	<i>Verrucaria nigrescens</i> Pers.
UMBI KRA	<i>Umbilicaria krascheninnikovii</i> (Savicz) Zahlbr.	VERR RUD	<i>Verrucaria ruderella</i> Nyl.
UMBI LAM	<i>Umbilicaria lambii</i> Imshaug	VERR SPP	<i>Verrucaria</i> spp.
UMBI MAM	<i>Umbilicaria mammulata</i> (Ach.) Tuck.	VERR VIR	<i>Verrucaria virens</i> Nyl.
UMBI MUE	<i>Umbilicaria muehlenbergii</i> (Ach.) Tuck.	XANT CAN	<i>Xanthoria candelaria</i> (L.) Th. Fr.
UMBI PHA	<i>Umbilicaria phaea</i> Tuck.	XANT CHL	<i>Xanthoparmelia chlorochroa</i> (Tuck.) Hale
UMBI POL	<i>Umbilicaria polyphylla</i> (L.) Baumg.	XANT CON	<i>Xanthoparmelia conspersa</i> (Ehrh. ex Ach.) Hale
UMBI PRO	<i>Umbilicaria proboscidea</i> (L.) Schrader	XANT ELE	<i>Xanthoria elegans</i> (Link) Th. Fr.
UMBI RIG	<i>Umbilicaria rigida</i> (Du Rietz) Frey	XANT FAL	<i>Xanthoria fallax</i> (Hepp) Arnold
UMBI SPP	<i>Umbilicaria</i> spp.	XANT LIN	<i>Xanthoparmelia lineola</i> (E.C. Berry) Hale
UMBI TOR	<i>Umbilicaria torrefacta</i> (Lightf.) Schrader	XANT POL	<i>Xanthoria polycarpa</i> (Hoffm.) Rieber
UMBI VEL	<i>Umbilicaria vellea</i> (L.) Ach.	XANT SOR	<i>Xanthoria sorediata</i> (Vainio) Poelt
UMBI VIR	<i>Umbilicaria virginis</i> Schaerer	XANT SPP	<i>Xanthoria</i> spp.
USNE ALP	<i>Usnea alpina</i> Mot.	XANT TAR	<i>Xanthoparmelia coloradoensis</i> (Gyelnik) Hale
USNE COM	<i>Usnea compacta</i> (Rasanen) Mot.	XANT WYO	<i>Xanthoparmelia wyomingica</i> (Gyelnik) Hale
USNE GLA	<i>Usnea glabrata</i> (Ach.) Vainio	XYLO ABI	<i>Xylographa abietina</i> (Pers.) Zahlbr.
USNE HIR	<i>Usnea hirta</i> (L.) F.H. Wigg.	XYLO VIT	<i>Xylographa vitiligo</i> (Ach.) J.R. Laundon
USNE SOR	<i>Usnea sorediifera</i> (Arnold) Lyngé	Z AHL CAL	<i>Zahlbrucknerella calcarea</i> (Herre) Herre
USNE SPP	<i>Usnea</i> spp.		
VARI KEM	<i>Varicellaria kemensis</i> Rasanen		
VARI RHO	<i>Varicellaria rhodocarpa</i> (Korber) Th. Fr.		

^aBased on the Alberta plants and fungi — Master species list and species group checklists provided by the Resource Data Branch, Alberta Sustainable Resource Development, Government of Alberta.

APPENDIX 2

REFERENCES FOR BIOMASS EQUATIONS

Provided by Mark Gillis and Alex Song, Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, Victoria, BC.

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APPENDIX 3

SUMMARY OF SELECTED SITE CHARACTERISTICS AND CARBON STOCKS FOR ALL PLOTS

Appendix 3A. Summary of selected site characteristics by plot, sorted alphabetically by province or territory and terrestrial ecozone

Original source ^a	Province or territory		Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
	Original source ID	territory							
ARNEWS	PLOT 820	AB	53° 32'	117° 49'	Boreal Plains	58	N.D. ^b	N.T. ^c	PICE GLA
ESIS	34CB2457	AB	52° 57'	116° 45'	Boreal Plains	133	Well	PICE ENG	ABIE LAS
ESIS	34CB2462	AB	52° 51'	116° 37'	Boreal Plains	62	Rapidly	N.T.	PICE ENG
ESIS	34CB2466	AB	53° 07'	116° 56'	Boreal Plains	70	Well	PINU CON	PINU CON
ESIS	34CB2467	AB	53° 18'	117° 13'	Boreal Plains	70	Well	PINU CON	N.T.
ESIS	34CB4475	AB	53° 28'	116° 30'	Boreal Plains	59	Well	POPU TRE	POPU TRE
ESIS	34CB4476	AB	53° 28'	116° 30'	Boreal Plains	94	Very poorly	PICE MAR	PICE MAR
ESIS	34CB4477	AB	53° 28'	116° 22'	Boreal Plains	72	Well	POPU TRE	PICE GLA
ESIS	34CB4478	AB	53° 28'	116° 30'	Boreal Plains	32	Very poorly	LARI LAR	PICE MAR
ESIS	34CB4479	AB	53° 23'	116° 39'	Boreal Plains	33	Very poorly	PICE MAR	PICE MAR
ESIS	34CB4480	AB	53° 28'	116° 48'	Boreal Plains	51	Well	PICE GLA	PINU CON
ESIS	34CB4481	AB	53° 33'	117° 06'	Boreal Plains	26	Very poorly	LARI LAR	LARI LAR
ESIS	34CB4482	AB	53° 33'	116° 39'	Boreal Plains	62	Well	POPU TRE	POPU TRE
ESIS	34CB4483	AB	53° 18'	117° 39'	Boreal Plains	34	Rapidly	PICE GLA	N.T.
ESIS	34CB4484	AB	53° 18'	116° 47'	Boreal Plains	60	Poorly	PICE MAR	PICE MAR
ESIS	34CB4485	AB	53° 18'	116° 38'	Boreal Plains	68	Moderately well	POPU TRE	POPU TRE
ESIS	34CB4487	AB	53° 12'	116° 29'	Boreal Plains	40	Very poorly	PICE MAR	N.T.
ESIS	34CB4488	AB	53° 18'	117° 39'	Boreal Plains	38	Well	PICE GLA	PICE GLA
ESIS	34CB4489	AB	53° 12'	116° 29'	Boreal Plains	118	Very poorly	PICE MAR	PICE MAR
ESIS	34CB4490	AB	53° 12'	116° 38'	Boreal Plains	90	Moderately well	PINU CON	PICE MAR
ESIS	34CB4637	AB	53° 18'	116° 38'	Boreal Plains	98	Moderately well	POPU TRE	PINU CON
ESIS	34CB4652	AB	53° 23'	116° 39'	Boreal Plains	34	Very poorly	LARI LAR	N.T.
ESIS	34CB4653	AB	53° 18'	116° 38'	Boreal Plains	75	Rapidly	PINU CON	N.T.
ESIS	34CB4655	AB	53° 07'	116° 56'	Boreal Plains	64	Moderately well	PINU CON	PINU CON
ESIS	34CB8558	AB	53° 02'	116° 29'	Boreal Plains	69	Moderately well	PINU CON	PINU CON
ESIS	34CB8559	AB	53° 02'	116° 29'	Boreal Plains	91	Poorly	PICE GLA	PICE GLA
ESIS	34CB8563	AB	53° 07'	117° 04'	Boreal Plains	75	Well	PINU CON	PINU CON
ESIS	34CB8564	AB	53° 07'	117° 04'	Boreal Plains	72	N.D.	PINU CON	PINU CON
ESIS	34CB8566	AB	53° 18'	116° 56'	Boreal Plains	74	Well	N.T.	POPU TRE
ESIS	34CB8571	AB	53° 12'	117° 13'	Boreal Plains	75	N.D.	PICE GLA	PICE GLA
ESIS	34CB8574	AB	53° 23'	116° 57'	Boreal Plains	88	Moderately well	PINU CON	PINU CON
ESIS	34CB8575	AB	53° 23'	116° 48'	Boreal Plains	81	Well	POPU TRE	N.T.
ESIS	34CB8577	AB	53° 18'	117° 04'	Boreal Plains	79	Well	POPU TRE	POPU TRE
ESIS	34CB8578	AB	53° 12'	116° 56'	Boreal Plains	52	Well	POPU TRE	N.T.
ESIS	34CB8579	AB	53° 18'	116° 47'	Boreal Plains	72	Rapidly	POPU TRE	N.T.
ESIS	34CB8580	AB	53° 07'	116° 56'	Boreal Plains	68	Well	PINU CON	PINU CON
ESIS	34CB8583	AB	53° 12'	116° 56'	Boreal Plains	46	Well	PINU CON	N.T.

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ESIS	34CB8584	AB	52° 57'	116° 37'	Boreal Plains	134	Very poorly	PICE MAR	N.T.
ESIS	34CB8591	AB	52° 51'	116° 37'	Boreal Plains	34	Rapidly	PINU CON	N.T.
ESIS	34CB8592	AB	52° 51'	116° 28'	Boreal Plains	90	Moderately well	PINU CON	PICE ENG
ESIS	34CB8593	AB	53° 18'	117° 31'	Boreal Plains	58	Well	PICE ENG	PICE ENG
ESIS	34CB8602	AB	53° 12'	117° 22'	Boreal Plains	94	Well	PINU CON	PINU CON
ESIS	34CB8607	AB	52° 51'	116° 37'	Boreal Plains	103	Poorly	POPU BAL	PICE MAR
ESIS	34CB8617	AB	52° 51'	116° 28'	Boreal Plains	38	Moderately well	N.T.	PINU CON
ESIS	34CB8618	AB	53° 02'	116° 29'	Boreal Plains	76	Well	N.T.	POPU TRE
ESIS	34CB8619	AB	52° 51'	116° 28'	Boreal Plains	78	Rapidly	PINU CON	N.T.
ESIS	34CB8620	AB	53° 18'	117° 22'	Boreal Plains	60	Rapidly	PINU CON	PICE ENG
ESIS	34CB8624	AB	53° 18'	117° 13'	Boreal Plains	69	Moderately well	PINU CON	PICE GLA
ESIS	34CB8652	AB	53° 12'	116° 56'	Boreal Plains	70	Well	PINU CON	PINU CON
ESIS	34CB8654	AB	53° 12'	116° 29'	Boreal Plains	103	Well	PINU CON	PINU CON
ESIS	34ET4350	AB	51° 28'	114° 58'	Boreal Plains	62	Moderately well	PINU CON	N.T.
ESIS	34ET4351	AB	51° 35'	114° 59'	Boreal Plains	82	Well	PICE GLA	N.T.
ESIS	34ET4352	AB	51° 38'	115° 07'	Boreal Plains	104	Moderately well	PICE GLA	N.T.
ESIS	34ET4353	AB	51° 38'	115° 07'	Boreal Plains	69	Imperfectly	PINU CON	N.T.
ESIS	34ET4354	AB	51° 28'	114° 56'	Boreal Plains	67	Moderately well	PICE MAR	N.T.
ESIS	34ET4355	AB	51° 28'	114° 54'	Boreal Plains	154	Moderately well	PICE GLA	N.T.
ESIS	34ET4356	AB	51° 38'	115° 02'	Boreal Plains	78	Moderately well	PICE GLA	N.T.
ESIS	34ET4357	AB	51° 57'	114° 53'	Boreal Plains	86	Imperfectly	PICE MAR	N.T.
ESIS	34ET4358	AB	51° 37'	115° 10'	Boreal Plains	139	Moderately well	PINU CON	N.T.
ESIS	34ET4359	AB	51° 37'	115° 10'	Boreal Plains	76	Well	POPU TRE	N.T.
ESIS	34ET4360	AB	51° 40'	115° 10'	Boreal Plains	166	Imperfectly	ABIE LAS	N.T.
ESIS	34ET4361	AB	51° 35'	114° 52'	Boreal Plains	86	Well	PICE GLA	N.T.
ESIS	34ET4363	AB	51° 31'	115° 05'	Boreal Plains	77	Moderately well	PICE ENG GLA	N.T.
ESIS	34ET4364	AB	51° 43'	114° 51'	Boreal Plains	70	Moderately well	POPU TRE	N.T.
ESIS	34ET4365	AB	51° 53'	115° 00'	Boreal Plains	91	Moderately well	PICE GLA	N.T.
ESIS	34ET4366	AB	51° 33'	115° 05'	Boreal Plains	88	Rapidly	PINU CON	N.T.
ESIS	34ET4367	AB	51° 33'	115° 03'	Boreal Plains	88	Imperfectly	PICE GLA	N.T.
ESIS	34ET4368	AB	52° 00'	114° 37'	Boreal Plains	93	Well	PICE GLA	N.T.
ESIS	34ET4369	AB	51° 39'	115° 14'	Boreal Plains	124	Moderately well	PICE GLA	N.T.
ESIS	34ET4370	AB	51° 32'	115° 06'	Boreal Plains	150	Moderately well	PINU CON	N.T.
ESIS	34ET4371	AB	51° 29'	115° 08'	Boreal Plains	178	Well	PINU CON	N.T.
ESIS	34ET4372	AB	51° 33'	115° 10'	Boreal Plains	191	Poorly	ABIE LAS	N.T.
ESIS	34ET4373	AB	51° 34'	114° 39'	Boreal Plains	71	Well	PINU CON	N.T.
ESIS	34ET4374	AB	51° 25'	115° 03'	Boreal Plains	61	Well	PINU CON	N.T.
ESIS	34ET4375	AB	51° 26'	115° 06'	Boreal Plains	52	Rapidly	PICE ENG	N.T.
ESIS	34ET4376	AB	51° 33'	115° 12'	Boreal Plains	177	Imperfectly	ABIE LAS	N.T.

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ESIS	34ET4377	AB	51° 28'	115° 09'	Boreal Plains	193	Moderately well	PINU CON	N.T.
ESIS	34ET4400	AB	51° 47'	115° 12'	Boreal Plains	106	Moderately well	PICE GLA	N.T.
ESIS	34ET4402	AB	51° 54'	115° 01'	Boreal Plains	101	Imperfectly	PICE GLA	N.T.
ESIS	34ET4403	AB	51° 49'	115° 11'	Boreal Plains	98	Moderately well	PICE GLA	N.T.
ESIS	34ET4404	AB	51° 47'	115° 12'	Boreal Plains	193	Moderately well	PINU CON	N.T.
ESIS	34ET4405	AB	51° 50'	115° 10'	Boreal Plains	96	Well	ABIE LAS	N.T.
ESIS	34ET4406	AB	51° 54'	115° 04'	Boreal Plains	77	Moderately well	PICE GLA	N.T.
ESIS	34ET4407	AB	51° 40'	115° 14'	Boreal Plains	78	Rapidly	PICE GLA	N.T.
ESIS	34ET4408	AB	51° 43'	115° 15'	Boreal Plains	180	Moderately well	ABIE LAS	N.T.
ESIS	34ET4409	AB	51° 54'	115° 04'	Boreal Plains	80	Moderately well	PICE GLA	N.T.
ESIS	34ET4410	AB	51° 36'	114° 47'	Boreal Plains	106	Moderately well	POPU BAL	N.T.
ESIS	34ET4411	AB	51° 39'	114° 41'	Boreal Plains	66	Moderately well	POPU TRE	N.T.
ESIS	34ET4412	AB	51° 39'	115° 05'	Boreal Plains	79	Well	POPU TRE	N.T.
ESIS	34ET4413	AB	51° 49'	115° 01'	Boreal Plains	95	Moderately well	ABIE LAS	N.T.
ESIS	34ET4414	AB	51° 40'	115° 07'	Boreal Plains	78	Well	POPU TRE	N.T.
ESIS	34ET4415	AB	51° 49'	114° 58'	Boreal Plains	104	Moderately well	PICE GLA	N.T.
ESIS	34ET4416	AB	51° 51'	115° 05'	Boreal Plains	88	Moderately well	PICE GLA	N.T.
ESIS	34ET4417	AB	51° 58'	115° 11'	Boreal Plains	56	Moderately well	PINU CON	N.T.
ESIS	34ET4418	AB	51° 59'	115° 14'	Boreal Plains	64	Well	PINU CON	N.T.
ESIS	34ET4419	AB	51° 38'	115° 14'	Boreal Plains	121	Well	PICE GLA	N.T.
ESIS	34ET4420	AB	51° 37'	115° 13'	Boreal Plains	102	Moderately well	POPU TRE	N.T.
ESIS	34ET4421	AB	51° 38'	115° 12'	Boreal Plains	100	Well	PINU CON	N.T.
ESIS	34ET4422	AB	51° 38'	115° 12'	Boreal Plains	71	Well	PINU CON	N.T.
ESIS	34ET4423	AB	51° 29'	115° 10'	Boreal Plains	81	Moderately well	ABIE LAS	N.T.
ESIS	34ET4424	AB	51° 30'	115° 16'	Boreal Plains	194	Well	ABIE LAS	N.T.
ESIS	34ET4427	AB	51° 46'	115° 01'	Boreal Plains	75	Moderately well	PINU CON	N.T.
ESIS	34ET4428	AB	51° 46'	115° 01'	Boreal Plains	125	Imperfectly	PINU CON	N.T.
ESIS	34ET4430	AB	51° 48'	115° 12'	Boreal Plains	89	Moderately well	PICE GLA	N.T.
ESIS	34ET4431	AB	51° 50'	115° 10'	Boreal Plains	130	Poorly	LARI LAR	N.T.
ESIS	34ET4433	AB	51° 30'	114° 45'	Boreal Plains	98	Moderately well	POPU TRE	N.T.
ESIS	34ET4435	AB	51° 29'	114° 47'	Boreal Plains	96	Well	PINU CON	N.T.
ESIS	34ET4436	AB	51° 40'	115° 14'	Boreal Plains	109	Rapidly	PICE GLA	N.T.
ESIS	34ET4437	AB	51° 40'	115° 00'	Boreal Plains	10	Very poorly	PICE MAR	N.T.
ESIS	34ET4438	AB	51° 40'	115° 01'	Boreal Plains	59	Well	PINU CON	N.T.
ESIS	34ET4439	AB	51° 36'	114° 45'	Boreal Plains	115	Rapidly	PINU CON	N.T.
ESIS	34ET4440	AB	51° 36'	114° 45'	Boreal Plains	98	Moderately well	PINU CON	N.T.
ESIS	34ET4441	AB	51° 36'	114° 47'	Boreal Plains	114	Very poorly	PICE MAR	N.T.
ESIS	34ET4442	AB	51° 35'	114° 54'	Boreal Plains	120	Imperfectly	PICE GLA	N.T.
ESIS	34ET4443	AB	51° 38'	114° 38'	Boreal Plains	63	Poorly	LARI LAR	N.T.

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ESIS	34ET4444	AB	51° 28'	114° 56'	Boreal Plains	68	Well	PINU CON	N.T.
ESIS	34ET4445	AB	51° 37'	115° 09'	Boreal Plains	82	Well	ABIE LAS	N.T.
ESIS	34ET4447	AB	51° 23'	114° 45'	Boreal Plains	89	Moderately well	POPU BAL	N.T.
ESIS	34ET4650	AB	51° 56'	114° 50'	Boreal Plains	86	Imperfectly	PICE GLA	N.T.
ESIS	34ET4659	AB	51° 40'	115° 14'	Boreal Plains	105	Moderately well	PICE ENG GLA	N.T.
ESIS	34ET4661	AB	51° 53'	114° 53'	Boreal Plains	59	Moderately well	POPU TRE	N.T.
ESIS	34ET4662	AB	51° 31'	114° 45'	Boreal Plains	132	Moderately well	PICE GLA	N.T.
ESIS	34ET4671	AB	51° 40'	115° 12'	Boreal Plains	157	Rapidly	PICE GLA	N.T.
ESIS	37BF2157	AB	53° 49'	116° 18'	Boreal Plains	92	Well	POPU TRE	PICE GLA
ESIS	37BF2172	AB	54° 06'	116° 35'	Boreal Plains	66	Well	PINU CON	PINU CON
ESIS	37CB3102	AB	53° 24'	116° 30'	Boreal Plains	119	Poorly	PICE MAR	PICE MAR
ESIS	37CB3103	AB	53° 30'	116° 30'	Boreal Plains	68	Moderately well	POPU TRE	PICE GLA
ESIS	37CB3105	AB	53° 30'	116° 33'	Boreal Plains	82	Well	POPU TRE	N.T.
ESIS	37CB3106	AB	53° 29'	116° 33'	Boreal Plains	82	Moderately well	PICE MAR	PICE MAR
ESIS	37CB3107	AB	53° 30'	116° 26'	Boreal Plains	82	Moderately well	PINU CON	PICE MAR
ESIS	37CB3108	AB	53° 35'	116° 44'	Boreal Plains	99	Moderately well	POPU TRE	PICE GLA
ESIS	37CB3109	AB	53° 27'	116° 41'	Boreal Plains	162	Poorly	PICE MAR	PICE MAR
ESIS	37CB3110	AB	53° 27'	116° 41'	Boreal Plains	76	Moderately well	PINU CON	PICE MAR
ESIS	37CB3111	AB	53° 27'	116° 45'	Boreal Plains	79	Very poorly	PICE MAR	PICE MAR
ESIS	37CB3112	AB	53° 32'	116° 48'	Boreal Plains	37	Well	POPU TRE	POPU TRE
ESIS	37KR1001	AB	57° 39'	117° 25'	Boreal Plains	70	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1008	AB	57° 44'	117° 27'	Boreal Plains	60	Poorly	POPU TRE	POPU TRE
ESIS	37KR1009	AB	57° 45'	117° 33'	Boreal Plains	76	Imperfectly	POPU TRE	N.T.
ESIS	37KR1010	AB	57° 12'	117° 33'	Boreal Plains	59	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1011	AB	57° 21'	117° 31'	Boreal Plains	46	Well	PINU CON	PICE GLA
ESIS	37KR1012	AB	57° 24'	117° 31'	Boreal Plains	41	Moderately well	POPU TRE	PICE MAR
ESIS	37KR1013	AB	57° 27'	117° 30'	Boreal Plains	39	Well	POPU TRE	N.T.
ESIS	37KR1015	AB	57° 45'	118° 07'	Boreal Plains	53	Imperfectly	POPU TRE	POPU BAL
ESIS	37KR1017	AB	57° 32'	117° 28'	Boreal Plains	36	Well	POPU TRE	PICE GLA
ESIS	37KR1019	AB	57° 24'	117° 30'	Boreal Plains	47	Moderately well	POPU TRE	N.T.
ESIS	37KR1020	AB	57° 44'	117° 47'	Boreal Plains	51	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1021	AB	57° 49'	117° 37'	Boreal Plains	42	Moderately well	POPU TRE	SALI BEB
ESIS	37KR1022	AB	57° 52'	117° 40'	Boreal Plains	52	Well	POPU TRE	POPU TRE
ESIS	37KR1023	AB	57° 48'	117° 40'	Boreal Plains	44	Moderately well	POPU TRE	PICE GLA
ESIS	37KR1025	AB	57° 47'	117° 53'	Boreal Plains	61	Well	PICE GLA	PICE GLA
ESIS	37KR1026	AB	57° 46'	117° 55'	Boreal Plains	72	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1027	AB	57° 46'	117° 48'	Boreal Plains	102	Imperfectly	PICE GLA	PICE GLA
ESIS	37KR1028	AB	57° 47'	117° 55'	Boreal Plains	71	Imperfectly	POPU TRE	PICE GLA
ESIS	37KR1030	AB	57° 48'	117° 58'	Boreal Plains	50	Moderately well	POPU TRE	POPU TRE

Appendix 3A. Continued

Original source ^a	Province or territory		Longitude	Latitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
	Original source ID	territory							
ESIS	37KR1032	AB	118° 08'	57° 46'	Boreal Plains	63	Poorly	POPU TRE	POPU TRE
ESIS	37KR1033	AB	118° 05'	57° 47'	Boreal Plains	68	Moderately well	POPU TRE	N.T.
ESIS	37KR1040	AB	118° 00'	57° 47'	Boreal Plains	40	Well	POPU BAL	ALNU TEN
ESIS	37KR1042	AB	118° 00'	57° 46'	Boreal Plains	40	Moderately well	POPU TRE	N.T.
ESIS	37KR1047	AB	118° 15'	57° 45'	Boreal Plains	35	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1051	AB	117° 50'	57° 46'	Boreal Plains	68	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1052	AB	117° 50'	57° 48'	Boreal Plains	81	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1054	AB	117° 37'	57° 08'	Boreal Plains	34	Imperfectly	POPU TRE	POPU BAL
ESIS	37KR1055	AB	117° 39'	57° 11'	Boreal Plains	110	Well	POPU TRE	POPU TRE
ESIS	37KR1056	AB	117° 41'	57° 10'	Boreal Plains	116	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1057	AB	117° 31'	57° 11'	Boreal Plains	29	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1058	AB	117° 33'	57° 11'	Boreal Plains	75	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1059	AB	117° 31'	57° 13'	Boreal Plains	28	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1060	AB	117° 23'	57° 18'	Boreal Plains	32	Imperfectly	POPU TRE	N.T.
ESIS	37KR1061	AB	117° 28'	57° 11'	Boreal Plains	84	Poorly	PICE GLA	BETU PAP
ESIS	37KR1062	AB	117° 28'	57° 11'	Boreal Plains	24	Moderately well	POPU TRE	SALI BEB
ESIS	37KR1063	AB	117° 25'	57° 16'	Boreal Plains	24	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1064	AB	117° 27'	57° 15'	Boreal Plains	34	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1065	AB	117° 31'	57° 15'	Boreal Plains	36	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1066	AB	117° 33'	57° 16'	Boreal Plains	31	Imperfectly	POPU TRE	POPU BAL
ESIS	37KR1068	AB	117° 31'	57° 18'	Boreal Plains	35	Imperfectly	POPU BAL	POPU BAL
ESIS	37KR1069	AB	117° 23'	57° 19'	Boreal Plains	139	Imperfectly	PICE GLA	PICE GLA
ESIS	37KR1070	AB	117° 25'	57° 18'	Boreal Plains	34	Imperfectly	PINU CON	POPU TRE
ESIS	37KR1071	AB	117° 31'	57° 08'	Boreal Plains	32	Well	POPU TRE	POPU BAL
ESIS	37KR1072	AB	117° 31'	57° 08'	Boreal Plains	28	Well	POPU TRE	POPU TRE
ESIS	37KR1073	AB	117° 34'	57° 10'	Boreal Plains	32	Well	POPU TRE	POPU TRE
ESIS	37KR1074	AB	117° 39'	57° 11'	Boreal Plains	54	Moderately well	POPU TRE	PICE GLA
ESIS	37KR1076	AB	117° 33'	57° 09'	Boreal Plains	34	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1078	AB	117° 37'	57° 11'	Boreal Plains	118	Imperfectly	PICE GLA	PICE GLA
ESIS	37KR1084	AB	117° 30'	57° 35'	Boreal Plains	78	Moderately well	PICE GLA	PICE GLA
ESIS	37KR1089	AB	117° 33'	57° 28'	Boreal Plains	47	Rapidly	PINU CON	PINU CON
ESIS	37KR1095	AB	117° 29'	57° 35'	Boreal Plains	124	Moderately well	PICE MAR	PICE MAR
ESIS	37KR1108	AB	117° 45'	57° 52'	Boreal Plains	34	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1109	AB	117° 43'	57° 51'	Boreal Plains	44	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1116	AB	117° 37'	57° 54'	Boreal Plains	N.D.	Moderately well	POPU TRE	N.T.
ESIS	37KR1127	AB	117° 35'	57° 35'	Boreal Plains	66	Well	ABIE BAL	ABIE BAL
ESIS	37KR1130	AB	117° 20'	57° 39'	Boreal Plains	N.D.	Imperfectly	POPU BAL	N.T.
ESIS	37KR1135	AB	117° 50'	57° 41'	Boreal Plains	132	Well	PICE GLA	PICE GLA
ESIS	67BI2841	AB	111° 49'	57° 39'	Boreal Plains	116	Imperfectly	PICE GLA	PICE GLA

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		AB	ES							
ESIS	67BM1720	AB	55° 55'	119° 15'	Boreal Plains	100	Moderately well	PINU CON	PICE GLA	
ESIS	67BM1721	AB	55° 50'	119° 25'	Boreal Plains	121	Moderately well	POPU TRE	PICE GLA	
ESIS	67BM1722	AB	55° 50'	119° 06'	Boreal Plains	84	Moderately well	PICE GLA	PICE GLA	
ESIS	67BM1723	AB	55° 50'	119° 06'	Boreal Plains	100	Imperfectly	PICE GLA	PICE GLA	
ESIS	67BM1724	AB	55° 55'	119° 06'	Boreal Plains	106	Moderately well	PICE GLA	PICE GLA	
ESIS	67CR1838	AB	56° 42'	110° 19'	Boreal Plains	119	Moderately well	PICE GLA	PICE GLA	
ESIS	67CR1839	AB	56° 42'	110° 10'	Boreal Plains	33	Rapidly	PINU BAN	POPU TRE	
ESIS	67CR1840	AB	56° 42'	110° 10'	Boreal Plains	155	Imperfectly	PICE GLA	PICE GLA	
ESIS	67CR1841	AB	56° 42'	110° 10'	Boreal Plains	74	Moderately well	PICE GLA	PICE GLA	
ESIS	67FB1830	AB	57° 45'	111° 19'	Boreal Plains	77	Well	PINU BAN	BETU PAP	
ESIS	67FB1831	AB	57° 45'	111° 19'	Boreal Plains	61	Well	PICE GLA	PICE GLA	
ESIS	67FB1832	AB	57° 45'	111° 19'	Boreal Plains	42	Moderately well	POPU TRE	POPU BAL	
ESIS	67FB1833	AB	57° 45'	111° 19'	Boreal Plains	74	Well	PINU BAN	N.T.	
ESIS	67FC1953	AB	54° 10'	116° 33'	Boreal Plains	145	Well	PINU CON	PICE GLA	
ESIS	67FC1954	AB	54° 10'	116° 42'	Boreal Plains	91	Imperfectly	PICE GLA	PICE GLA	
ESIS	67FC1955	AB	54° 10'	116° 33'	Boreal Plains	103	Imperfectly	PINU CON	PICE MAR	
ESIS	67FC1956	AB	54° 10'	116° 33'	Boreal Plains	97	Well	PINU CON	PICE MAR	
ESIS	67FC1958	AB	54° 20'	116° 51'	Boreal Plains	77	Poorly	PICE MAR	N.T.	
ESIS	67FC1959	AB	54° 15'	116° 51'	Boreal Plains	131	Imperfectly	BETU PAP	N.T.	
ESIS	67FC1960	AB	54° 10'	116° 42'	Boreal Plains	97	Imperfectly	PINU CON	PICE GLA	
ESIS	67FC1962	AB	54° 20'	116° 51'	Boreal Plains	146	Poorly	PICE MAR	N.T.	
ESIS	67FC1963	AB	54° 10'	116° 33'	Boreal Plains	121	Imperfectly	PICE GLA	PICE GLA	
ESIS	67FC1964	AB	54° 20'	116° 42'	Boreal Plains	100	Poorly	PICE GLA	PICE GLA	
ESIS	67FC1965	AB	54° 10'	116° 42'	Boreal Plains	98	Imperfectly	PINU CON	PICE MAR	
ESIS	67FC1966	AB	54° 15'	116° 42'	Boreal Plains	92	Poorly	PICE MAR	PICE MAR	
ESIS	67FL1729	AB	58° 37'	117° 23'	Boreal Plains	106	Moderately well	BETU PAP	PICE MAR	
ESIS	67FL2742	AB	58° 32'	117° 41'	Boreal Plains	82	Imperfectly	PICE GLA	PICE GLA	
ESIS	67FL2756	AB	58° 37'	117° 23'	Boreal Plains	115	Moderately well	PICE MAR	PICE MAR	
ESIS	67FL2759	AB	58° 32'	116° 31'	Boreal Plains	117	Moderately well	PICE GLA	PICE GLA	
ESIS	67FL3704	AB	58° 32'	117° 51'	Boreal Plains	86	Poorly	PICE MAR	PICE MAR	
ESIS	67FL3705	AB	58° 32'	117° 51'	Boreal Plains	88	Well	PICE GLA	PICE GLA	
ESIS	67FM1821	AB	57° 03'	111° 37'	Boreal Plains	28	Well	PINU BAN	N.T.	
ESIS	67FM1836	AB	56° 42'	111° 17'	Boreal Plains	110	Moderately well	PICE GLA	PICE GLA	
ESIS	67FM1837	AB	56° 47'	111° 36'	Boreal Plains	136	Well	PICE GLA	PICE GLA	
ESIS	67FM2828	AB	56° 47'	111° 36'	Boreal Plains	130	Well	PICE GLA	PICE GLA	
ESIS	67GP1703	AB	54° 26'	118° 00'	Boreal Plains	38	Very poorly	LARI LAR	LARI LAR	
ESIS	67GP1704	AB	54° 26'	118° 00'	Boreal Plains	110	Poorly	PICE MAR	PICE MAR	
ESIS	67GP2703	AB	54° 26'	118° 00'	Boreal Plains	48	Well	POPU TRE	POPU TRE	
ESIS	67GP2708	AB	54° 15'	118° 18'	Boreal Plains	165	Imperfectly	PINU CON	PINU CON	

Appendix 3A. Continued

Original source ^a	Province or territory	Original source ID	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ESIS	AB	67GT2844	56° 16'	112° 04'	Boreal Plains	82	Very poorly	PICE MAR	PICE MAR
ESIS	AB	67GT2845	56° 16'	112° 04'	Boreal Plains	82	Moderately well	ABIE BAL	ABIE BAL
ESIS	AB	67GT2846	56° 16'	112° 04'	Boreal Plains	109	Moderately well	POPU TRE	PICE GLA
ESIS	AB	67L2836	57° 29'	113° 45'	Boreal Plains	139	Well	POPU TRE	PICE GLA
ESIS	AB	67L2837	57° 29'	113° 45'	Boreal Plains	156	Well	PICE MAR	PICE MAR
ESIS	AB	67JT2829	57° 34'	110° 10'	Boreal Plains	22	Rapidly	N.T.	PINU BAN
ESIS	AB	67JT2830	57° 34'	110° 10'	Boreal Plains	106	N.D.	BETU PAP	BETU PAP
ESIS	AB	67LB1801	54° 45'	111° 55'	Boreal Plains	89	Imperfectly	POPU TRE	N.T.
ESIS	AB	67LB1802	54° 45'	111° 55'	Boreal Plains	N.D.	Well	POPU TRE	N.T.
ESIS	AB	67LB1803	55° 23'	111° 33'	Boreal Plains	122	Poorly	PICE MAR	N.T.
ESIS	AB	67LB1805	55° 18'	111° 42'	Boreal Plains	67	Imperfectly	PINU BAN	PICE MAR
ESIS	AB	67LB1806	55° 18'	111° 42'	Boreal Plains	74	Well	PINU BAN	N.T.
ESIS	AB	67LB1807	55° 18'	111° 51'	Boreal Plains	72	Well	PINU BAN	N.T.
ESIS	AB	67LB1809	54° 47'	111° 50'	Boreal Plains	120	Poorly	PICE MAR	N.T.
ESIS	AB	67LB1810	54° 47'	111° 50'	Boreal Plains	98	Moderately well	BETU PAP	ABIE BAL
ESIS	AB	67LB1811	54° 52'	112° 18'	Boreal Plains	26	Imperfectly	N.T.	PICE MAR
ESIS	AB	67LB1813	54° 47'	111° 50'	Boreal Plains	80	Moderately well	PICE GLA	PICE GLA
ESIS	AB	67LB2801	54° 47'	111° 50'	Boreal Plains	78	Imperfectly	PICE GLA	N.T.
ESIS	AB	67LB2802	54° 41'	110° 37'	Boreal Plains	98	Well	PINU BAN	N.T.
ESIS	AB	67LB2803	54° 41'	110° 37'	Boreal Plains	95	Rapidly	POPU TRE	PICE GLA
ESIS	AB	67LB2804	54° 57'	111° 32'	Boreal Plains	98	Moderately well	PICE GLA	PICE GLA
ESIS	AB	67LB2805	54° 57'	111° 32'	Boreal Plains	102	Well	PICE GLA	PICE GLA
ESIS	AB	67LB2806	54° 57'	111° 32'	Boreal Plains	43	Well	POPU TRE	POPU TRE
ESIS	AB	67LB2807	54° 57'	111° 41'	Boreal Plains	49	Well	ABIE BAL	ABIE BAL
ESIS	AB	67LB2808	54° 57'	111° 50'	Boreal Plains	115	Well	POPU TRE	PICE GLA
ESIS	AB	67LB2809	54° 57'	111° 41'	Boreal Plains	103	N.D.	PICE GLA	PICE GLA
ESIS	AB	67LB2810	54° 47'	111° 50'	Boreal Plains	88	Well	PICE GLA	PICE GLA
ESIS	AB	67LB2811	54° 47'	111° 50'	Boreal Plains	45	Well	BETU PAP	BETU PAP
ESIS	AB	67LB2812	54° 47'	111° 50'	Boreal Plains	87	Well	PICE GLA	PICE GLA
ESIS	AB	67ND1914	52° 41'	116° 11'	Boreal Plains	121	Well	PICE GLA	PICE GLA
ESIS	AB	67RB1009	53° 18'	116° 56'	Boreal Plains	78	Moderately well	PINU CON	PINU CON
ESIS	AB	67RB1010	53° 18'	116° 47'	Boreal Plains	61	Imperfectly	PINU CON	PICE MAR
ESIS	AB	67RB1011	53° 12'	117° 04'	Boreal Plains	175	Imperfectly	PICE ENG GLA	PICE ENG
ESIS	AB	67SH1716	55° 34'	119° 33'	Boreal Plains	51	Moderately well	POPU TRE	POPU TRE
ESIS	AB	67SH1717	55° 34'	119° 24'	Boreal Plains	130	Imperfectly	PICE GLA	PICE GLA
ESIS	AB	67SH1718	55° 34'	119° 33'	Boreal Plains	120	Moderately well	PICE GLA	PICE GLA
ESIS	AB	67SH1719	55° 39'	119° 24'	Boreal Plains	139	Imperfectly	PICE GLA	PICE GLA
ESIS	AB	67SH2730	55° 34'	119° 33'	Boreal Plains	64	Moderately well	POPU TRE	POPU TRE
ESIS	AB	67SH2731	55° 34'	119° 33'	Boreal Plains	101	Moderately well	PINU CON	PINU CON

Appendix 3A. Continued

Original source ^a	Province or territory		Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1	
	Original source ID	territory							
ESIS	67SH2732	AB	55° 34'	119° 33'	Boreal Plains	90	Moderately well	PINU CON	PINU CON
ESIS	67SH2733	AB	55° 34'	119° 33'	Boreal Plains	40	Moderately well	POPU TRE	PICE GLA
ESIS	67SH2734	AB	55° 39'	119° 14'	Boreal Plains	131	Imperfectly	PICE GLA	PICE MAR
ESIS	67SH2735	AB	55° 39'	119° 14'	Boreal Plains	100	Well	PINU CON	PINU CON
ESIS	67SH2736	AB	55° 55'	119° 15'	Boreal Plains	96	Moderately well	PICE GLA	PICE GLA
ESIS	67SH2737	AB	55° 55'	119° 15'	Boreal Plains	71	Well	PINU CON	PICE GLA
ESIS	67SH2738	AB	55° 39'	119° 33'	Boreal Plains	76	Well	PINU CON	PINU CON
ESIS	67SL2816	AB	55° 18'	114° 46'	Boreal Plains	91	Imperfectly	PICE GLA	PICE GLA
ESIS	67SL2817	AB	55° 08'	114° 46'	Boreal Plains	69	Moderately well	PICE GLA	PICE GLA
ESIS	67SL2818	AB	55° 44'	114° 09'	Boreal Plains	114	Well	POPU TRE	PICE GLA
ESIS	67SL2819	AB	55° 39'	114° 28'	Boreal Plains	95	Moderately well	PICE GLA	PICE GLA
ESIS	67SL2820	AB	55° 08'	114° 46'	Boreal Plains	160	Well	PICE MAR	PICE MAR
ESIS	67SL2822	AB	55° 13'	114° 37'	Boreal Plains	79	Rapidly	PICE GLA	PICE GLA
ESIS	67SL2823	AB	55° 13'	114° 46'	Boreal Plains	95	Moderately well	PICE GLA	PICE GLA
ESIS	67SL2825	AB	55° 08'	116° 28'	Boreal Plains	51	Moderately well	POPU TRE	POPU TRE
ESIS	67SR1001	AB	52° 51'	115° 27'	Boreal Plains	81	Imperfectly	PICE GLA	PICE GLA
ESIS	67SR1003	AB	52° 44'	115° 27'	Boreal Plains	84	Moderately well	BETU PAP	PICE ENG
ESIS	67SR1004	AB	52° 39'	115° 24'	Boreal Plains	96	Imperfectly	PICE GLA	PICE GLA
ESIS	67SW1820	AB	54° 52'	115° 13'	Boreal Plains	120	Imperfectly	PINU CON	PICE MAR
ESIS	67SW1842	AB	54° 31'	115° 22'	Boreal Plains	101	Imperfectly	PICE GLA	ABIE BAL
ESIS	67SW1843	AB	54° 31'	115° 22'	Boreal Plains	117	Imperfectly	PICE GLA	PICE GLA
ESIS	67SW1844	AB	54° 31'	115° 22'	Boreal Plains	152	Imperfectly	PICE MAR	PICE MAR
ESIS	67SW1845	AB	54° 31'	115° 22'	Boreal Plains	83	Moderately well	PICE GLA	PICE GLA
ESIS	67SW1846	AB	54° 41'	115° 22'	Boreal Plains	118	Moderately well	PINU CON	PICE MAR
ESIS	67SW1847	AB	54° 36'	115° 31'	Boreal Plains	93	Moderately well	PICE GLA	PICE GLA
ESIS	67SW1848	AB	54° 41'	115° 31'	Boreal Plains	126	Moderately well	ABIE BAL	ABIE BAL
ESIS	67SW1849	AB	54° 41'	115° 40'	Boreal Plains	131	Moderately well	ABIE BAL	ABIE BAL
ESIS	67SW1850	AB	54° 31'	115° 22'	Boreal Plains	107	Moderately well	PICE GLA	PICE GLA
ESIS	67SW1938	AB	54° 47'	115° 59'	Boreal Plains	91	Moderately well	PINU CON	ABIE LAS
ESIS	67SW1939	AB	54° 47'	115° 59'	Boreal Plains	90	Moderately well	ABIE LAS	ABIE LAS
ESIS	67SW1944	AB	54° 26'	115° 31'	Boreal Plains	130	Moderately well	PINU CON	BETU PAP
ESIS	67SW1945	AB	54° 26'	115° 31'	Boreal Plains	125	Moderately well	PINU CON	PINU CON
ESIS	67SW2826	AB	55° 02'	115° 22'	Boreal Plains	114	Well	PICE GLA	PICE GLA
ESIS	67SW2827	AB	55° 02'	115° 22'	Boreal Plains	119	Moderately well	PICE MAR	PICE MAR
ESIS	67SW2847	AB	54° 41'	115° 22'	Boreal Plains	120	Well	PINU CON	N.T.
ESIS	67SW2848	AB	54° 41'	115° 22'	Boreal Plains	112	Imperfectly	PICE MAR	PICE MAR
ESIS	67SW2849	AB	54° 41'	115° 31'	Boreal Plains	113	Well	PINU CON	PICE MAR
ESIS	67SW2850	AB	54° 41'	115° 31'	Boreal Plains	130	Well	ABIE BAL	ABIE BAL
ESIS	67SW2851	AB	54° 41'	115° 40'	Boreal Plains	114	Well	PINU CON	PINU CON

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		Latitude	Longitude					species 1	species 1
ESIS	67WC1948	AB	54° 20'	115° 39'	Boreal Plains	138	Moderately well	PICE MAR	PICE MAR
ESIS	67WC1949	AB	54° 15'	115° 39'	Boreal Plains	76	Poorly	PICE MAR	PICE MAR
ESIS	67WC1950	AB	54° 15'	115° 39'	Boreal Plains	94	Moderately well	PICE GLA	ABIE LAS
ESIS	67WR1814	AB	55° 39'	112° 20'	Boreal Plains	70	Moderately well	PICE MAR	PICE GLA
ESIS	67WR1815	AB	55° 39'	112° 11'	Boreal Plains	77	Moderately well	PINU BAN	PICE GLA
ESIS	67WR1816	AB	55° 34'	112° 20'	Boreal Plains	146	Imperfectly	ABIE BAL	ABIE BAL
ESIS	67WR1817	AB	55° 34'	112° 20'	Boreal Plains	106	Poorly	PICE MAR	PICE MAR
ESIS	67WR2815	AB	55° 34'	112° 20'	Boreal Plains	130	Imperfectly	PICE GLA	PICE GLA
Fyles 1986	Site 1	AB	55°	114°	Boreal Plains	45	N.D.	PINU BAN	N.T.
Fyles 1986	Site 2	AB	55°	114°	Boreal Plains	65	N.D.	PINU BAN	N.T.
Fyles 1986	Site 3	AB	55°	114°	Boreal Plains	85	N.D.	PINU BAN	ALNU CRI
Fyles 1986	Site 4	AB	55°	114°	Boreal Plains	140	N.D.	PICE GLA	PINU BAN
La Roi and Pluth 1986	BE1	AB	54° 01'	116° 52'	Boreal Plains	95	Well	PINU CON	PICE GLA
La Roi and Pluth 1986	BE2	AB	54° 02'	116° 57'	Boreal Plains	122	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	BE3	AB	54° 01'	116° 59'	Boreal Plains	111	Well	PINU CON	PINU CON
La Roi and Pluth 1986	CF11	AB	54° 34'	117° 25'	Boreal Plains	181	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	CF13	AB	54° 30'	117° 40'	Boreal Plains	76	Well	PICE GLA	POPU TRE
La Roi and Pluth 1986	CF15	AB	54° 19'	118° 22'	Boreal Plains	82	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	CF16	AB	54° 14'	118° 26'	Boreal Plains	80	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	CF3	AB	54° 13'	118° 25'	Boreal Plains	104	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	CF9	AB	54° 13'	118° 22'	Boreal Plains	123	Well	PINU CON	PICE GLA
La Roi and Pluth 1986	FC1	AB	54° 24'	116° 49'	Boreal Plains	112	Imperfectly	PICE GLA	ABIE BAL
La Roi and Pluth 1986	FC2	AB	54° 24'	116° 49'	Boreal Plains	110	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	FC3	AB	54° 23'	117° 00'	Boreal Plains	104	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	FC4	AB	54° 18'	117° 08'	Boreal Plains	119	Imperfectly	POPU BAL	ABIE BAL
La Roi and Pluth 1986	FC5	AB	54° 19'	117° 06'	Boreal Plains	90	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	FC6	AB	54° 24'	116° 50'	Boreal Plains	111	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	HC1	AB	54° 06'	116° 26'	Boreal Plains	134	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	KN1	AB	54° 19'	116° 37'	Boreal Plains	88	Poorly	PINU CON	PINU CON
La Roi and Pluth 1986	KN10	AB	54° 08'	116° 17'	Boreal Plains	122	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	KN11	AB	54° 14'	116° 36'	Boreal Plains	120	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	KN12	AB	54° 12'	116° 36'	Boreal Plains	87	Very poorly	PINU CON	PINU CON
La Roi and Pluth 1986	KN13	AB	54° 11'	116° 35'	Boreal Plains	89	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	KN2	AB	54° 03'	116° 39'	Boreal Plains	86	Poorly	ABIE BAL	PICE MAR
La Roi and Pluth 1986	KN3	AB	54° 03'	116° 38'	Boreal Plains	140	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	KN4	AB	54° 10'	116° 38'	Boreal Plains	108	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	KN5	AB	54° 18'	116° 49'	Boreal Plains	116	Well	PINU CON	PINU CON
La Roi and Pluth 1986	KN6	AB	54° 02'	116° 21'	Boreal Plains	90	Well	PINU CON	PINU CON
La Roi and Pluth 1986	KN7	AB	54° 01'	116° 19'	Boreal Plains	90	Moderately well	PINU CON	PINU CON

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
La Roi and Pluth 1986	KN8	AB	54° 00'	116° 20'	Boreal Plains	158	Well	PINU CON	PINU CON
La Roi and Pluth 1986	PS11	AB	54° 18'	116° 26'	Boreal Plains	106	Imperfectly	PINU CON	PICE GLA
La Roi and Pluth 1986	PS12	AB	54° 18'	116° 18'	Boreal Plains	106	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	PS13	AB	54° 18'	116° 18'	Boreal Plains	105	Moderately well	PINU CON	BETU PAP
La Roi and Pluth 1986	PS14	AB	54° 19'	116° 15'	Boreal Plains	37	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	PS20	AB	54° 20'	116° 04'	Boreal Plains	140	Well	PINU CON	PINU CON
La Roi and Pluth 1986	PS233	AB	54° 20'	116° 04'	Boreal Plains	124	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	PS241	AB	54° 20'	116° 04'	Boreal Plains	104	Well	PINU CON	PICE GLA
La Roi and Pluth 1986	PS243	AB	54° 17'	116° 08'	Boreal Plains	87	Imperfectly	PINU CON	ALNU CRI
La Roi and Pluth 1986	PS245	AB	54° 44'	115° 41'	Boreal Plains	87	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	PS246	AB	54° 49'	115° 25'	Boreal Plains	86	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	PS247	AB	54° 07'	116° 45'	Boreal Plains	87	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	PS248	AB	54° 07'	116° 51'	Boreal Plains	84	Well	PINU CON	ALNU CRI
La Roi and Pluth 1986	PS249	AB	54° 04'	117° 02'	Boreal Plains	94	Moderately well	PINU CON	ALNU CRI
La Roi and Pluth 1986	PS257	AB	54° 04'	117° 03'	Boreal Plains	102	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	PS267	AB	54° 04'	117° 04'	Boreal Plains	105	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	PS6	AB	54° 04'	117° 08'	Boreal Plains	105	Well	PINU CON	PICE GLA
La Roi and Pluth 1986	PS7	AB	54° 04'	117° 11'	Boreal Plains	108	Moderately well	PINU CON	BETU PAP
La Roi and Pluth 1986	PS8	AB	54° 22'	117° 04'	Boreal Plains	107	Moderately well	PINU CON	ALNU CRI
La Roi and Pluth 1986	PS9	AB	54° 37'	117° 34'	Boreal Plains	107	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	SA10	AB	54° 33'	117° 25'	Boreal Plains	58	Imperfectly	PINU CON	PICE MAR
La Roi and Pluth 1986	SA11	AB	54° 33'	117° 25'	Boreal Plains	58	Imperfectly	PINU CON	SALI PYR
La Roi and Pluth 1986	SA12	AB	54° 33'	117° 26'	Boreal Plains	92	Moderately well	PINU CON	PICE MAR
La Roi and Pluth 1986	SA13	AB	54° 31'	117° 30'	Boreal Plains	86	Poorly	PICE GLA	PICE MAR
La Roi and Pluth 1986	SA14	AB	54° 31'	117° 29'	Boreal Plains	110	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA15	AB	54° 34'	118° 09'	Boreal Plains	92	Rapidly	PINU CON	PINU CON
La Roi and Pluth 1986	SA16	AB	54° 33'	118° 09'	Boreal Plains	92	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA17	AB	54° 29'	118° 06'	Boreal Plains	175	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA19	AB	54° 27'	118° 04'	Boreal Plains	86	Well	PICE MAR	PICE MAR
La Roi and Pluth 1986	SA20	AB	54° 34'	118° 09'	Boreal Plains	87	Well	PICE MAR	PICE MAR
La Roi and Pluth 1986	SA21	AB	54° 31'	118° 11'	Boreal Plains	91	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA22	AB	54° 33'	117° 23'	Boreal Plains	90	Well	PINU CON	PICE GLA
La Roi and Pluth 1986	SA26	AB	54° 34'	118° 10'	Boreal Plains	183	Imperfectly	PINU CON	PICE MAR
La Roi and Pluth 1986	SA27	AB	54° 34'	118° 10'	Boreal Plains	200	Well	PINU CON	PICE MAR
La Roi and Pluth 1986	SA3	AB	54° 33'	117° 53'	Boreal Plains	208	Well	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA4	AB	54° 32'	118° 13'	Boreal Plains	100	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA5	AB	54° 32'	118° 13'	Boreal Plains	107	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	SA50	AB	54° 31'	118° 12'	Boreal Plains	106	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA51	AB	54° 32'	118° 12'	Boreal Plains	106	Imperfectly	PICE GLA	PICE GLA

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		Latitude	Longitude						
La Roi and Pluth 1986	SA52	AB	54° 33'	117° 51'	Boreal Plains	142	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA53	AB	54° 34'	118° 13'	Boreal Plains	139	Moderately well	PICE MAR	PICE MAR
La Roi and Pluth 1986	SA54	AB	54° 38'	115° 31'	Boreal Plains	138	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	SA55	AB	54° 38'	115° 33'	Boreal Plains	136	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA56	AB	54° 42'	115° 31'	Boreal Plains	138	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA57	AB	54° 42'	115° 31'	Boreal Plains	140	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA58	AB	54° 45'	115° 26'	Boreal Plains	143	Well	PINU CON	ABIE BAL
La Roi and Pluth 1986	SA59	AB	54° 46'	115° 33'	Boreal Plains	142	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA6	AB	54° 45'	115° 31'	Boreal Plains	106	Well	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA60	AB	54° 46'	115° 33'	Boreal Plains	134	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA61	AB	54° 44'	115° 41'	Boreal Plains	144	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA62	AB	54° 44'	115° 23'	Boreal Plains	138	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA63	AB	54° 44'	115° 23'	Boreal Plains	143	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA64	AB	54° 44'	115° 31'	Boreal Plains	140	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA65	AB	54° 44'	115° 31'	Boreal Plains	208	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA67	AB	54° 45'	115° 30'	Boreal Plains	142	Moderately well	PINU CON	PICE MAR
La Roi and Pluth 1986	SA68	AB	54° 44'	115° 31'	Boreal Plains	140	Moderately well	PINU CON	PICE GLA
La Roi and Pluth 1986	SA69	AB	54° 50'	115° 25'	Boreal Plains	182	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA7	AB	54° 44'	115° 25'	Boreal Plains	109	Imperfectly	PICE GLA	PICE MAR
La Roi and Pluth 1986	SA70	AB	54° 47'	115° 31'	Boreal Plains	130	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA71	AB	54° 47'	115° 30'	Boreal Plains	130	Moderately well	POPU TRE	PICE ABI
La Roi and Pluth 1986	SA72	AB	54° 48'	115° 20'	Boreal Plains	131	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA73	AB	54° 49'	115° 26'	Boreal Plains	111	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA74	AB	54° 40'	115° 30'	Boreal Plains	108	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA75	AB	54° 40'	115° 28'	Boreal Plains	106	Imperfectly	ABIE BAL	ABIE BAL
La Roi and Pluth 1986	SA76	AB	54° 40'	115° 28'	Boreal Plains	112	Imperfectly	PINU CON	PICE MAR
La Roi and Pluth 1986	SA77	AB	54° 40'	115° 28'	Boreal Plains	136	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA78	AB	54° 39'	115° 25'	Boreal Plains	104	Moderately well	PINU CON	PINU CON
La Roi and Pluth 1986	SA79	AB	54° 44'	115° 22'	Boreal Plains	128	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	SA8	AB	54° 37'	115° 34'	Boreal Plains	91	Poorly	PINU CON	SALI SCO
La Roi and Pluth 1986	SA80	AB	54° 29'	115° 28'	Boreal Plains	131	Moderately well	PINU CON	PICE MAR
La Roi and Pluth 1986	SA81	AB	54° 36'	115° 34'	Boreal Plains	127	Imperfectly	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA82	AB	54° 35'	115° 34'	Boreal Plains	130	Imperfectly	PICE GLA	ABIE BAL
La Roi and Pluth 1986	SA83	AB	54° 30'	115° 25'	Boreal Plains	136	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	SA84	AB	54° 30'	115° 25'	Boreal Plains	116	Well	PICE GLA	PICE GLA
La Roi and Pluth 1986	SA85	AB	54° 34'	115° 29'	Boreal Plains	142	Well	PINU CON	PINU CON
La Roi and Pluth 1986	SA86	AB	54° 34'	115° 26'	Boreal Plains	140	Imperfectly	PINU CON	PINU CON
La Roi and Pluth 1986	SA9	AB	54° 34'	115° 25'	Boreal Plains	91	Rapidly	PINU CON	PINU CON
La Roi and Pluth 1986	WF1	AB	54° 12'	116° 08'	Boreal Plains	110	Well	PINU CON	PINU CON

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		AB	WF							
La Roi and Pluth 1986	WF10	AB	WF10	54° 08'	116° 06'	Boreal Plains	92	Well	PINU CON	PINU CON
La Roi and Pluth 1986	WF11	AB	WF11	54° 08'	116° 06'	Boreal Plains	93	Moderately well	POPU TRE	PINU CON
La Roi and Pluth 1986	WF2	AB	WF2	54° 06'	116° 04'	Boreal Plains	105	Imperfectly	POPU TRE	PICE GLA
La Roi and Pluth 1986	WF3	AB	WF3	54° 08'	116° 13'	Boreal Plains	128	Moderately well	PICE GLA	PICE GLA
La Roi and Pluth 1986	WF4	AB	WF4	54° 08'	116° 17'	Boreal Plains	138	Imperfectly	PINU CON	PICE GLA
La Roi and Pluth 1986	WF5	AB	WF5	54° 08'	116° 08'	Boreal Plains	114	Well	ABIE BAL	ABIE BAL
La Roi and Pluth 1986	WF6	AB	WF6	54° 05'	116° 15'	Boreal Plains	56	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	WF7	AB	WF7	54° 05'	116° 17'	Boreal Plains	126	Poorly	PICE GLA	PICE GLA
La Roi and Pluth 1986	WF8	AB	WF8	54° 05'	116° 17'	Boreal Plains	89	Well	PINU CON	PINU CON
La Roi and Pluth 1986	WF9	AB	WF9	54° 03'	116° 16'	Boreal Plains	161	Poorly	PICE GLA	ABIE BAL
ESIS	67KT2832	AB	WF9	58° 16'	110° 10'	Boreal Shield	65	Rapidly	N.T.	PINU BAN
ESIS	67KT2833	AB	WF9	58° 16'	110° 10'	Boreal Shield	56	Rapidly	PICE MAR	PINU BAN
ESIS	67KT2834	AB	WF9	58° 16'	110° 10'	Boreal Shield	64	Rapidly	N.T.	PINU BAN
ESIS	67KT2835	AB	WF9	58° 16'	110° 10'	Boreal Shield	122	Rapidly	PINU BAN	BETU PAP
ESIS	34CB2460	AB	WF9	52° 51'	117° 03'	Montane Cordillera	161	Rapidly	N.T.	PICE ENG
ESIS	34CB2465	AB	WF9	53° 07'	117° 13'	Montane Cordillera	102	Moderately well	PICE ENG	PICE ENG
ESIS	34CB4645	AB	WF9	53° 02'	116° 56'	Montane Cordillera	70	Moderately well	PINU CON	PINU CON
ESIS	34CB8565	AB	WF9	53° 07'	117° 13'	Montane Cordillera	77	Moderately well	PINU CON	N.T.
ESIS	34CB8598	AB	WF9	52° 46'	116° 54'	Montane Cordillera	184	Well	PICE ENG	PICE ENG
ESIS	34CB8614	AB	WF9	53° 12'	117° 39'	Montane Cordillera	197	Poorly	PICE ENG	PICE ENG
ESIS	34CB8616	AB	WF9	53° 12'	117° 39'	Montane Cordillera	134	Rapidly	ABIE LAS	ABIE LAS
ESIS	34CB8621	AB	WF9	52° 46'	116° 54'	Montane Cordillera	188	Imperfectly	PICE GLA	PICE GLA
ESIS	34CB8622	AB	WF9	52° 46'	116° 45'	Montane Cordillera	184	Poorly	PICE MAR	PICE MAR
ESIS	34ET4448	AB	WF9	51° 20'	114° 44'	Montane Cordillera	76	Moderately well	POPU BAL	N.T.
ESIS	67GC3922	AB	WF9	53° 54'	119° 11'	Montane Cordillera	117	Well	PICE GLA	PICE GLA
ESIS	67HT4929	AB	WF9	53° 12'	117° 48'	Montane Cordillera	188	Well	PICE GLA	PICE GLA
ESIS	37KR1029	AB	WF9	57° 49'	117° 56'	Taiga Plains	52	Moderately well	POPU TRE	PICE GLA
ESIS	37KR1035	AB	WF9	57° 49'	118° 12'	Taiga Plains	28	Poorly	POPU TRE	PICE GLA
ESIS	37KR1036	AB	WF9	57° 49'	118° 10'	Taiga Plains	75	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1037	AB	WF9	57° 50'	118° 07'	Taiga Plains	36	Poorly	POPU BAL	POPU BAL
ESIS	37KR1038	AB	WF9	57° 49'	118° 07'	Taiga Plains	60	Moderately well	POPU TRE	ALNU TEN
ESIS	37KR1039	AB	WF9	57° 50'	117° 58'	Taiga Plains	42	Poorly	POPU TRE	POPU TRE
ESIS	37KR1045	AB	WF9	57° 51'	117° 55'	Taiga Plains	63	Moderately well	POPU TRE	POPU TRE
ESIS	37KR1046	AB	WF9	57° 51'	117° 53'	Taiga Plains	49	Imperfectly	POPU TRE	POPU TRE
ESIS	37KR1048	AB	WF9	57° 49'	118° 05'	Taiga Plains	78	Imperfectly	POPU TRE	N.T.
ESIS	37KR1136	AB	WF9	57° 56'	118° 10'	Taiga Plains	49	Poorly	PICE GLA	PICE GLA
ESIS	67FL1725	AB	WF9	58° 47'	117° 23'	Taiga Plains	153	Poorly	LARI LAR	N.T.
ESIS	67FL1726	AB	WF9	59° 03'	118° 21'	Taiga Plains	94	Very poorly	BETU PAP	BETU PAP
ESIS	67FL1727	AB	WF9	59° 03'	118° 21'	Taiga Plains	40	Poorly	BETU PAP	PICE MAR

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		AB	BC							
ESIS	67FL1731	AB		58° 58'	117° 35'	Taiga Plains	95	Well	PINU BAN	POPU TRE
ESIS	67FL1732	AB		59° 03'	118° 00'	Taiga Plains	144	Very poorly	LARI LAR	LARI LAR
ESIS	67FL1733	AB		59° 35'	116° 56'	Taiga Plains	85	Well	PINU BAN	PINU BAN
ESIS	67FL1737	AB		59° 35'	116° 56'	Taiga Plains	104	Poorly	PICE MAR	N.T.
ESIS	67FL1738	AB		58° 58'	118° 41'	Taiga Plains	180	Poorly	LARI LAR	PICE MAR
ESIS	67FL2739	AB		59° 08'	118° 00'	Taiga Plains	134	Imperfectly	PICE GLA	PICE GLA
ESIS	67FL2740	AB		58° 11'	118° 00'	Taiga Plains	130	Well	PINU BAN	PINU BAN
ESIS	67FL2741	AB		58° 11'	118° 00'	Taiga Plains	101	Well	PINU BAN	PINU BAN
ESIS	67FL2743	AB		58° 32'	118° 10'	Taiga Plains	101	Well	POPU TRE	PICE GLA
ESIS	67FL2744	AB		58° 32'	118° 10'	Taiga Plains	95	Poorly	LARI LAR	LARI LAR
ESIS	67FL2745	AB		58° 32'	118° 10'	Taiga Plains	132	Well	PINU BAN	PINU BAN
ESIS	67FL2746	AB		58° 32'	118° 10'	Taiga Plains	77	Well	POPU TRE	PICE GLA
ESIS	67FL2747	AB		59° 14'	118° 21'	Taiga Plains	111	Imperfectly	PICE GLA	PICE GLA
ESIS	67FL2749	AB		58° 21'	118° 30'	Taiga Plains	110	Imperfectly	PICE GLA	PICE GLA
ESIS	67FL2753	AB		58° 26'	119° 20'	Taiga Plains	51	Well	PINU CON	PICE MAR
ESIS	67FL2755	AB		58° 42'	117° 13'	Taiga Plains	74	Well	PINU BAN	PICE GLA
ESIS	67FL2757	AB		59° 08'	118° 10'	Taiga Plains	95	Moderately well	PICE GLA	PICE GLA
ESIS	67FL2758	AB		59° 08'	118° 10'	Taiga Plains	143	Very poorly	PICE GLA	PICE GLA
ESIS	67FL3702	AB		59° 14'	118° 31'	Taiga Plains	117	Imperfectly	PICE GLA	PICE GLA
ESIS	67FL3703	AB		59° 14'	118° 31'	Taiga Plains	110	Moderately well	PICE MAR	PICE MAR
ESIS	67FL3706	AB		58° 37'	118° 41'	Taiga Plains	179	Well	PICE GLA	PICE GLA
ESIS	67CS1823	AB		59° 50'	110° 00'	Taiga Shield	122	Well	PINU BAN	N.T.
ESIS	67CS1824	AB		59° 50'	110° 00'	Taiga Shield	189	Well	PICE GLA	PICE MAR
ESIS	67CS1825	AB		59° 50'	110° 00'	Taiga Shield	108	Well	PINU BAN	BETU PAP
ESIS	67CS1826	AB		59° 50'	110° 00'	Taiga Shield	111	Well	PINU BAN	BETU PAP
ESIS	67CS1828	AB		59° 35'	110° 11'	Taiga Shield	58	Well	BETU PAP	BETU PAP
ESIS	67CS1829	AB		59° 35'	110° 11'	Taiga Shield	82	Well	PINU BAN	BETU PAP
ESIS	67CS1822	AB		59° 35'	110° 11'	Western Taiga Shield	110	Well	PICE MAR	PICE MAR
ARNEWS	PLOT 905	BC		49° 15'	118° 03'	Montane Cordillera	22	N.D.	PICE ENG	PICE ENG
ARNEWS	PLOT 906	BC		49° 16'	119° 45'	Montane Cordillera	69	N.D.	PSEU MEN GLA	PSEU MEN GLA
ARNEWS	PLOT 907	BC		54° 14'	122° 23'	Montane Cordillera	35	Well	ABIE LAS	ABIE LAS
ARNEWS	PLOT 915	BC		53° 03'	122° 09'	Montane Cordillera	97	Well	PICE GLA	PICE GLA
ARNEWS	PLOT 901	BC		48° 38'	123° 44'	Pacific Maritime	27	Well	N.T.	PSEU MEN
ARNEWS	PLOT 902	BC		49° 17'	122° 35'	Pacific Maritime	35	Moderately well	THUJ PLI	THUJ PLI
ARNEWS	PLOT 903	BC		48° 50'	123° 31'	Pacific Maritime	38	Moderately well	N.T.	PSEU MEN
ARNEWS	PLOT 904	BC		50° 03'	125° 21'	Pacific Maritime	34	Well	N.T.	PSEU MEN
ARNEWS	PLOT 908	BC		54° 35'	128° 34'	Pacific Maritime	44	Well	PINU CON LAT	TSUG HET
ARNEWS	PLOT 911	BC		49° 23'	123° 00'	Pacific Maritime	29	N.D.	PSEU MEN	PSEU MEN
ARNEWS	PLOT 912	BC		49° 30'	122° 58'	Pacific Maritime	14	Well	ABIE AMA	ABIE AMA

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ARNEWS	PLOT 913	BC	49° 22'	122° 45'	Pacific Maritime	34	N.D.	TSUG HET	TSUG HET
ARNEWS	PLOT 914	BC	49° 21'	122° 48'	Pacific Maritime	26	Moderately well	TSUG HET	TSUG HET
Knapik et al. 1988	Plot 12	MB	51° 58'	100° 44'	Boreal Plains	12	Rapidly	N.T.	PINU BAN
Knapik et al. 1988	Plot 13	MB	51° 53'	100° 54'	Boreal Plains	18	Poorly	N.T.	PINU BAN
Knapik et al. 1988	Plot 22	MB	51° 59'	100° 41'	Boreal Plains	81	Well	BETU PAP	N.T.
Knapik et al. 1988	Plot 23	MB	52° 05'	100° 36'	Boreal Plains	65	Well	BETU PAP	PICE GLA
Knapik et al. 1988	Plot 25	MB	52° 05'	100° 33'	Boreal Plains	85	Moderately well	POPU TRE	PINU BAN
Knapik et al. 1988	Plot 36	MB	52° 02'	100° 43'	Boreal Plains	83	Well	PICE GLA	N.T.
Knapik et al. 1988	Plot 37	MB	52° 06'	100° 35'	Boreal Plains	87	Well	POPU BAL	PICE GLA
Knapik et al. 1988	Plot 51	MB	51° 51'	100° 54'	Boreal Plains	17	Poorly	N.T.	PINU BAN
Knapik et al. 1988	Plot 52	MB	51° 52'	100° 51'	Boreal Plains	20	Imperfectly	PINU BAN	N.T.
Knapik et al. 1988	Plot 60	MB	51° 54'	100° 50'	Boreal Plains	65	Poorly	POPU BAL	N.T.
Knapik et al. 1988	Plot 66	MB	51° 54'	100° 50'	Boreal Plains	37	Moderately well	BETU PAP	N.T.
Knapik et al. 1988	Plot 7	MB	51° 54'	100° 48'	Boreal Plains	88	Well	BETU PAP	N.T.
Knapik et al. 1988	Plot 71	MB	51° 58'	100° 48'	Boreal Plains	62	Imperfectly	PICE GLA	N.T.
Knapik et al. 1988	Plot 90	MB	51° 54'	100° 46'	Boreal Plains	107	Well	POPU BAL	N.T.
Knapik et al. 1988	Plot 95	MB	52° 07'	100° 36'	Boreal Plains	76	Imperfectly	POPU TRE	N.T.
ARNEWS	PLOT 818	MB	51° 05'	96° 17'	Boreal Shield	34	N.D.	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN AIH-14 (1)	MB	55° 53'	98° 53'	Boreal Shield	44	Well	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN AIH-30 (1)	MB	55° 53'	98° 41'	Boreal Shield	33	Moderately well	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN AIM-1 (1)	MB	55° 53'	98° 29'	Boreal Shield	32	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN AIM-20 (1)	MB	55° 56'	98° 38'	Boreal Shield	27	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN BDH-3a (1)	MB	55° 58'	97° 29'	Boreal Shield	58	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BDH-3b (2)	MB	55° 51'	98° 02'	Boreal Shield	78	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIH-1a (1)	MB	56° 00'	97° 20'	Boreal Shield	61	Moderately well	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIH-1b (2)	MB	55° 55'	98° 27'	Boreal Shield	84	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIH-1c (3)	MB	55° 55'	98° 27'	Boreal Shield	107	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIH-9 (1)	MB	55° 50'	97° 59'	Boreal Shield	42	Well	PINU BAN	PICE MAR
Halliwell and Apps 1997	MAN BIL-2 (1)	MB	55° 50'	97° 59'	Boreal Shield	57	Very poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIM-12a (1)	MB	55° 50'	97° 59'	Boreal Shield	132	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIM-1a	MB	55° 55'	98° 31'	Boreal Shield	67	Well	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BIM-1b (2)	MB	55° 53'	98° 11'	Boreal Shield	64	Moderately well	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BMH-6 (1)	MB	55° 50'	97° 60'	Boreal Shield	42	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BMH-7 (1)	MB	55° 50'	97° 60'	Boreal Shield	118	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BML-21 (1)	MB	55° 50'	97° 59'	Boreal Shield	51	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BMM-8a (1)	MB	55° 55'	98° 38'	Boreal Shield	117	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN BMM-8b (2)	MB	55° 53'	98° 48'	Boreal Shield	83	Poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN JDH-3 (1)	MB	55° 54'	98° 14'	Boreal Shield	25	Rapidly	PINU BAN	PINU BAN
Halliwell and Apps 1997	MAN JDM-1 (1)	MB	55° 53'	98° 49'	Boreal Shield	35	Rapidly	PINU BAN	PINU BAN

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
Halliwell and Apps 1997	MAN JIH-2 (1)	MB	55° 53'	98° 49'	Boreal Shield	43	Moderately well	PINU BAN	PINU BAN
Halliwell and Apps 1997	MAN JIL-1 (1)	MB	55° 54'	98° 17'	Boreal Shield	89	Rapidly	PINU BAN	PINU BAN
Halliwell and Apps 1997	MAN JIM-4 (1)	MB	55° 54'	98° 16'	Boreal Shield	23	Rapidly	PINU BAN	PINU BAN
Halliwell and Apps 1997	MAN MW-1a (1)	MB	55° 56'	98° 36'	Boreal Shield	91	Well	PICE MAR	POPU TRE
Halliwell and Apps 1997	MAN MW-2a (1)	MB	55° 56'	98° 37'	Boreal Shield	97	N.D.	PINU BAN	POPU TRE
Halliwell and Apps 1997	MAN P-AM-1 (1)	MB	55° 54'	98° 18'	Boreal Shield	57	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN P-JM-1 (1)	MB	55° 53'	98° 52'	Boreal Shield	84	Imperfectly	PINU BAN	POPU TRE
Halliwell and Apps 1997	MAN S-AD-1 (1)	MB	55° 33'	98° 03'	Boreal Shield	N.D.	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN SO-M-1 (1)	MB	55° 30'	98° 05'	Boreal Shield	37	Imperfectly	PINU BAN	PINU BAN
Halliwell and Apps 1997	MAN T-AM-1 (1)	MB	55° 33'	98° 02'	Boreal Shield	83	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN T-BI-1 (1)	MB	55° 55'	98° 22'	Boreal Shield	75	Imperfectly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN TE-OA (1)	MB	55° 14'	98° 24'	Boreal Shield	63	Imperfectly	POPU TRE	POPU TRE
Halliwell and Apps 1997	MAN TE-OBS (1)	MB	55° 41'	97° 54'	Boreal Shield	105	Very poorly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN TE-OJP (1)	MB	56° 03'	97° 04'	Boreal Shield	61	Rapidly	PINU BAN	PINU BAN
Knapik et al. 1989	Plot 8802	MB	49° 36'	98° 43'	Boreal Shield	65	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8808	MB	49° 36'	98° 50'	Boreal Shield	85	Imperfectly	POPU TRE	FRAX PEN
Knapik et al. 1989	Plot 8810	MB	49° 36'	98° 48'	Boreal Shield	92	Poorly	THUJ OCC	POPU BAL
Knapik et al. 1989	Plot 8815	MB	49° 33'	98° 46'	Boreal Shield	46	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8824	MB	49° 32'	98° 46'	Boreal Shield	109	Very poorly	PICE MAR	N.T.
Knapik et al. 1989	Plot 8829	MB	49° 26'	98° 35'	Boreal Shield	29	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8832	MB	49° 33'	98° 45'	Boreal Shield	28	Imperfectly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8835	MB	49° 26'	98° 49'	Boreal Shield	53	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8836	MB	49° 26'	98° 48'	Boreal Shield	15	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8837	MB	49° 25'	98° 50'	Boreal Shield	54	Rapidly	PINU BAN	N.T.
Knapik et al. 1989	Plot 8838	MB	49° 29'	98° 49'	Boreal Shield	73	Poorly	THUJ OCC	POPU BAL
Halliwell and Apps 1997	MAN G-BI-1 (1)	MB	56° 25'	94° 16'	Hudson Plains	76	Imperfectly	PICE MAR	PICE MAR
Halliwell and Apps 1997	MAN G-BI-2 (1)	MB	56° 25'	94° 16'	Hudson Plains	68	Imperfectly	PICE MAR	PICE MAR
ARNEWS	PLOT 204	NB	46° 44'	65° 08'	Atlantic Maritime	34	Imperfectly	N.T.	PINU BAN
ARNEWS	PLOT 216	NB	47° 29'	68° 10'	Atlantic Maritime	52	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 217	NB	47° 50'	67° 56'	Atlantic Maritime	40	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 218	NB	47° 24'	65° 57'	Atlantic Maritime	21	N.D.	POPU TRE	POPU BAL
ARNEWS	PLOT 219	NB	45° 54'	67° 37'	Atlantic Maritime	43	N.D.	ACER SAH	ABIE BAL
ARNEWS	PLOT 224	NB	45° 38'	65° 09'	Atlantic Maritime	47	N.D.	PICE RUB	PICE RUB
ARNEWS	PLOT 209	NS	45° 35'	64° 20'	Atlantic Maritime	58	N.D.	PICE RUB	PICE RUB
ARNEWS	PLOT 210	NS	44° 17'	65° 08'	Atlantic Maritime	81	N.D.	PINU STR	PICE RUB
ARNEWS	PLOT 211	NS	44° 17'	65° 10'	Atlantic Maritime	30	N.D.	N.T.	PINU STR
ARNEWS	PLOT 212	NS	45° 58'	61° 07'	Atlantic Maritime	28	N.D.	BETU PAP	ABIE BAL
ARNEWS	PLOT 213	NS	45° 38'	61° 34'	Atlantic Maritime	48	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 214	NS	45° 03'	63° 11'	Atlantic Maritime	45	Imperfectly	PICE GLA	ABIE BAL

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
ARNEWS	PLOT 215	NS	45° 16'	64° 21'	Atlantic Maritime	33	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 221	NS	45° 09'	62° 42'	Atlantic Maritime	32	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 222	NS	46° 50'	60° 23'	Atlantic Maritime	44	N.D.	ACER RUB	ABIE BAL
ARNEWS	PLOT 223	NS	44° 32'	65° 45'	Atlantic Maritime	60	N.D.	ACER RUB	ACER RUB
Kingston et al. 1995	Dickey Lake Road	NS	45° 12'	62° 38'	Atlantic Maritime	N.D.	Moderately well	ACER SAH	BETU ALL
Kingston et al. 1995	McIntyres Mountain	NS	45° 19'	62° 51'	Atlantic Maritime	N.D.	Imperfectly	ACER SAH	ABIE BAL
Kingston et al. 1995	West Brook Road	NS	45° 23'	62° 55'	Atlantic Maritime	N.D.	Moderately well	PICE RUB	BETU ALL
Kingston et al. 1995	West River Station	NS	45° 53'	61° 25'	Atlantic Maritime	N.D.	Well	ACER RUB	ACER SAH
ARNEWS	PLOT 816	NT	60° 39'	114° 03'	Taiga Plains	73	N.D.	PICE GLA	PICE GLA
ARNEWS	PLOT 817	NT	60° 57'	117° 02'	Taiga Plains	78	N.D.	PICE GLA	PICE GLA
ARNEWS	PLOT 502	ON	48° 38'	89° 35'	Boreal Shield	52	N.D.	ABIE BAL	ABIE BAL
ARNEWS	PLOT 503	ON	46° 24'	81° 34'	Boreal Shield	39	N.D.	ACER RUB	ACER SAC
ARNEWS	PLOT 504	ON	45° 08'	78° 43'	Boreal Shield	90	N.D.	PINU STR	PINU STR
ARNEWS	PLOT 505	ON	45° 08'	78° 50'	Boreal Shield	103	N.D.	ACER SAH	ACER SAH
ARNEWS	PLOT 509	ON	47° 17'	83° 12'	Boreal Shield	31	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 510	ON	49° 48'	82° 17'	Boreal Shield	43	N.D.	PICE MAR	PICE MAR
ARNEWS	PLOT 511	ON	48° 55'	87° 43'	Boreal Shield	56	N.D.	PICE MAR	PICE MAR
ARNEWS	PLOT 512	ON	48° 46'	93° 40'	Boreal Shield	34	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 513	ON	50° 10'	91° 49'	Boreal Shield	49	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 514	ON	46° 00'	77° 27'	Boreal Shield	16	N.D.	PICE GLA	PICE GLA
ARNEWS	PLOT 515	ON	46° 00'	77° 27'	Boreal Shield	17	N.D.	PICE ABI	PICE ABI
ARNEWS	PLOT 516	ON	45° 52'	80° 29'	Boreal Shield	41	N.D.	POPU TRE	POPU TRE
ARNEWS	PLOT 520	ON	46° 17'	78° 35'	Boreal Shield	36	N.D.	BETU PAP	BETU PAP
ARNEWS	PLOT 521	ON	48° 26'	84° 31'	Boreal Shield	17	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 522	ON	49° 50'	93° 08'	Boreal Shield	24	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 523	ON	49° 49'	86° 20'	Boreal Shield	29	N.D.	ABIE BAL	PICE MAR
ARNEWS	PLOT 524	ON	47° 40'	80° 00'	Boreal Shield	25	N.D.	PINU BAN	N.T.
ARNEWS	PLOT 527	ON	45° 33'	78° 24'	Boreal Shield	52	N.D.	QUER RUB	QUER RUB
ARNEWS	PLOT 528	ON	46° 28'	83° 23'	Boreal Shield	N.D.	N.D.	N.T.	QUER RUB
ARNEWS	PLOT 529	ON	46° 50'	80° 47'	Boreal Shield	N.D.	N.D.	BETU PAP	BETU PAP
ARNEWS	PLOT 530	ON	49° 04'	80° 32'	Boreal Shield	N.D.	N.D.	PICE MAR	PICE MAR
ARNEWS	PLOT 531	ON	49° 11'	80° 38'	Boreal Shield	N.D.	N.D.	N.T.	BETU PAP
ARNEWS	PLOT 532	ON	48° 35'	81° 08'	Boreal Shield	N.D.	N.D.	POPU TRE	POPU TRE
ARNEWS	PLOT 533	ON	47° 34'	83° 37'	Boreal Shield	N.D.	N.D.	PICE GLA	BETU PAP
ARNEWS	PLOT 534	ON	48° 51'	91° 16'	Boreal Shield	N.D.	N.D.	POPU TRE	POPU TRE
ARNEWS	PLOT 535	ON	48° 46'	87° 11'	Boreal Shield	N.D.	N.D.	POPU TRE	ABIE BAL
ARNEWS	PLOT 536	ON	49° 47'	93° 49'	Boreal Shield	N.D.	N.D.	PINU BAN	PINU BAN
ARNEWS	PLOT 537	ON	50° 39'	93° 17'	Boreal Shield	N.D.	N.D.	N.T.	BETU PAP
ARNEWS	PLOT 538	ON	50° 00'	94° 49'	Boreal Shield	N.D.	N.D.	POPU TRE	POPU TRE

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory			Stand			Drainage class	Dominant species 1	Codominant species 1
		Latitude	Longitude	Terrestrial ecozone	age					
ARNEWS	PLOT 506	ON	44° 32'	79° 41'	Mixedwood Plains	61	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 507	ON	43° 51'	81° 36'	Mixedwood Plains	59	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 508	ON	44° 37'	76° 00'	Mixedwood Plains	83	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 517	ON	43° 42'	80° 06'	Mixedwood Plains	23	N.D.	PINU STR	PINU STR	
ARNEWS	PLOT 518	ON	44° 19'	77° 23'	Mixedwood Plains	15	N.D.	PINU STR	PINU STR	
ARNEWS	PLOT 519	ON	45° 20'	75° 38'	Mixedwood Plains	17	N.D.	PICE GLA	PICE GLA	
ARNEWS	PLOT 525	ON	42° 22'	81° 51'	Mixedwood Plains	67	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 526	ON	42° 42'	80° 26'	Mixedwood Plains	79	N.D.	QUER VEL	QUER ALB	
ARNEWS	PLOT 220	PE	46° 29'	64° 01'	Atlantic Maritime	41	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 313	QC	45° 02'	72° 35'	Atlantic Maritime	37	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 315	QC	45° 34'	71° 49'	Atlantic Maritime	65	N.D.	ACER SAH	ACER RUB	
ARNEWS	PLOT 319	QC	45° 24'	71° 18'	Atlantic Maritime	66	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 320	QC	45° 24'	71° 18'	Atlantic Maritime	75	N.D.	PICE RUB	PICE RUB	
ARNEWS	PLOT 321	QC	45° 24'	71° 10'	Atlantic Maritime	85	N.D.	ABIE BAL	N.T.	
ARNEWS	PLOT 322	QC	45° 46'	70° 56'	Atlantic Maritime	67	N.D.	ACER SAH	ACER SAH	
ARNEWS	PLOT 324	QC	48° 18'	68° 52'	Atlantic Maritime	101	N.D.	PINU RES	PINU RES	
ARNEWS	PLOT 325	QC	48° 01'	67° 52'	Atlantic Maritime	51	N.D.	ABIE BAL	ABIE BAL	
ARNEWS	PLOT 326	QC	48° 07'	67° 31'	Atlantic Maritime	48	N.D.	PICE MAR	PICE MAR	
ARNEWS	PLOT 301	QC	46° 09'	75° 23'	Boreal Shield	42	N.D.	ACER SAH	ABIE BAL	
ARNEWS	PLOT 302	QC	46° 14'	75° 16'	Boreal Shield	40	N.D.	ACER SAH	N.T.	
ARNEWS	PLOT 303	QC	46° 14'	75° 16'	Boreal Shield	40	N.D.	ABIE BAL	ABIE BAL	
ARNEWS	PLOT 304	QC	46° 09'	75° 08'	Boreal Shield	65	N.D.	PINU STR	PINU STR	
ARNEWS	PLOT 305	QC	46° 14'	74° 37'	Boreal Shield	63	N.D.	PICE RUB	PICE RUB	
ARNEWS	PLOT 306	QC	46° 14'	74° 37'	Boreal Shield	56	N.D.	BETU ALL	ABIE BAL	
ARNEWS	PLOT 307	QC	45° 58'	74° 37'	Boreal Shield	64	N.D.	PICE RUB	ABIE AMA	
ARNEWS	PLOT 314	QC	46° 55'	72° 07'	Boreal Shield	58	N.D.	ACER SAH	PICE RUB	
ARNEWS	PLOT 316	QC	47° 39'	71° 16'	Boreal Shield	73	N.D.	ABIE BAL	ABIE BAL	
ARNEWS	PLOT 317	QC	47° 39'	71° 16'	Boreal Shield	73	N.D.	PICE GLA	ABIE BAL	
ARNEWS	PLOT 308	QC	45° 25'	74° 06'	Mixedwood Plains	79	N.D.	QUER RUB	QUER RUB	
ARNEWS	PLOT 312	QC	45° 30'	73° 12'	Mixedwood Plains	145	N.D.	QUER RUB	ACER SAC	
ARNEWS	PLOT 819	SK	53° 52'	106° 08'	Boreal Plains	63	N.D.	PICE GLA	PICE GLA	
Halliwell and Apps 1997	SASK ADH-2 (1)	SK	53° 52'	106° 08'	Boreal Plains	21	Well	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK ADM-3(1)	SK	53° 44'	105° 12'	Boreal Plains	22	Well	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK AIH-3 (1)	SK	53° 38'	106° 11'	Boreal Plains	34	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK AIM-13 (1)	SK	53° 59'	105° 07'	Boreal Plains	63	Well	N.T.	POPU TRE	
Halliwell and Apps 1997	SASK AMH-16 (1)	SK	53° 55'	104° 41'	Boreal Plains	36	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK AMM-12 (1)	SK	53° 39'	105° 19'	Boreal Plains	65	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK B?L (1)	SK	53° 52'	104° 38'	Boreal Plains	69	Very poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK B-AM-1 (1)	SK	53° 54'	106° 07'	Boreal Plains	43	Rapidly	POPU TRE	POPU TRE	

Appendix 3A. Continued

Original source ^a	Original source ID	Province or territory		Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
		SK	SK						Dominant species 1	Codominant species 1
Halliwell and Apps 1997	SASK BDH-4 (2)	SK	53° 53'	106° 07'	Boreal Plains	15	Very poorly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK BDL-20 (1)	SK	53° 40'	104° 38'	Boreal Plains	120	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK BIH (1)	SK	54° 04'	104° 39'	Boreal Plains	52	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK BMH (2)	SK	53° 43'	105° 12'	Boreal Plains	137	Well	PINU BAN	PICE MAR	
Halliwell and Apps 1997	SASK BMH-9 (1)	SK	53° 36'	106° 12'	Boreal Plains	54	Very poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK BMM-1b (2)	SK	53° 44'	105° 28'	Boreal Plains	90	Poorly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK Jail House(1)	SK	53° 51'	106° 05'	Boreal Plains	88	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK JDM-8 (1)	SK	53° 54'	104° 38'	Boreal Plains	16	Rapidly	N.T.	PINU BAN	
Halliwell and Apps 1997	SASK JIH-7 (1)	SK	54° 02'	104° 39'	Boreal Plains	62	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK JMH-10 (1)	SK	54° 00'	105° 07'	Boreal Plains	66	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK JMH-5 (1)	SK	53° 56'	105° 08'	Boreal Plains	98	Imperfectly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK JMH-A1 (1)	SK	53° 56'	105° 08'	Boreal Plains	82	Moderately well	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK JMH-A2 (2)	SK	53° 57'	104° 46'	Boreal Plains	144	Well	PICE MAR	PINU BAN	
Halliwell and Apps 1997	SASK JMM-5 (1)	SK	53° 39'	105° 18'	Boreal Plains	112	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK JMM-6 (1)	SK	53° 48'	104° 32'	Boreal Plains	68	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK JMM-8a (1)	SK	53° 58'	104° 38'	Boreal Plains	64	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK JMM-8b (2)	SK	54° 07'	105° 03'	Boreal Plains	67	Rapidly	N.T.	PINU BAN	
Halliwell and Apps 1997	SASK M-BD-1 (1)	SK	53° 53'	105° 04'	Boreal Plains	48	Very poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK MW-1a (1)	SK	53° 59'	104° 44'	Boreal Plains	102	Well	PICE GLA	POPU TRE	
Halliwell and Apps 1997	SASK MW-1b (2)	SK	53° 53'	105° 02'	Boreal Plains	106	Imperfectly	PICE GLA	PICE GLA	
Halliwell and Apps 1997	SASK NI-J-1 (1)	SK	53° 53'	105° 02'	Boreal Plains	38	Rapidly	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK PA-BM-1(1)	SK	53° 55'	104° 46'	Boreal Plains	84	Imperfectly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK PA-M-1 (1)	SK	53° 55'	104° 45'	Boreal Plains	76	Imperfectly	PICE GLA	PICE GLA	
Halliwell and Apps 1997	SASK PA-M-2 (1)	SK	53° 57'	104° 46'	Boreal Plains	56	Well	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK POM-MW (1)	SK	53° 58'	104° 46'	Boreal Plains	52	Moderately well	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK POM-OBS (1)	SK	53° 57'	105° 09'	Boreal Plains	68	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK POM-OJP(1)	SK	53° 57'	105° 09'	Boreal Plains	64	Well	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK TE MW (1)	SK	52° 44'	106° 08'	Boreal Plains	42	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK TE-OA (1)	SK	54° 03'	105° 44'	Boreal Plains	52	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK TE-OBS (1)	SK	53° 12'	106° 14'	Boreal Plains	91	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK TE-OJP (1)	SK	54° 04'	105° 56'	Boreal Plains	62	Moderately well	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK TF-YA (1)	SK	54° 04'	105° 56'	Boreal Plains	11	Imperfectly	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK TF-YJP (1)	SK	54° 04'	105° 56'	Boreal Plains	19	Moderately well	PINU BAN	PINU BAN	
Halliwell and Apps 1997	SASK F-AM-1 (1)	SK	55° 26'	102° 20'	Boreal Shield	56	Well	POPU TRE	POPU TRE	
Halliwell and Apps 1997	SASK F-BD-1 (1)	SK	55° 13'	102° 49'	Boreal Shield	37	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK F-BI-1 (1)	SK	55° 26'	102° 26'	Boreal Shield	52	Well	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK F-BM-1 (1)	SK	55° 13'	102° 53'	Boreal Shield	65	Poorly	PICE MAR	PICE MAR	
Halliwell and Apps 1997	SASK F-BM-2 (1)	SK	55° 13'	102° 51'	Boreal Shield	46	Rapidly	PINU BAN	PICE MAR	
Halliwell and Apps 1997	SASK F-BM-3 (1)	SK	55° 25'	102° 23'	Boreal Shield	61	Imperfectly	PICE MAR	PICE MAR	

Appendix 3A. Concluded

Original source ^a	Original source ID	Province or territory	Latitude	Longitude	Terrestrial ecozone	Stand age	Drainage class	Dominant species 1	Codominant species 1
Halliwell and Apps 1997	SASK F-JD-1 (1)	SK	55° 13'	102° 54'	Boreal Shield	13	Moderately well	PINU BAN	PINU BAN
Halliwell and Apps 1997	SASK F-JM-1 (1)	SK	55° 13'	102° 53'	Boreal Shield	110	Imperfectly	PICE MAR	PINU BAN
Halliwell and Apps 1997	SASK F-JM-2 (1)	SK	55° 13'	102° 53'	Boreal Shield	121	Rapidly	PINU BAN	PINU BAN
Halliwell and Apps 1997	SASK F-JM-4 (1)	SK	55° 27'	102° 19'	Boreal Shield	51	Rapidly	PICE MAR	PINU BAN
Halliwell and Apps 1997	SASK F-JM-5 (1)	SK	55° 26'	102° 20'	Boreal Shield	55	Well	PICE MAR	PICE MAR
Halliwell and Apps 1997	SASK F-M-1 (1)	SK	55° 27'	102° 19'	Boreal Shield	91	Imperfectly	PINU BAN	PINU BAN

^aARNEWS = Acid Rain Early Warning System (D'Eon 1994), ESIS = Alberta Ecological Sita Data (Resource Data Branch 2002).

^bN.D. = no data.

^cN.T. = no trees in this layer.

Appendix 3B. Summary of soil, aboveground live tree and total ecosystem carbon stocks (t ha⁻¹), sorted alphabetically by province or territory and terrestrial ecozone (same order as Appendix 3A)

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ARNEWS	PLOT 820	95	40	135	35	7	5	3	50	185
ESIS	34CB2457	75	44	119	77	11	13	12	113	232
ESIS	34CB2462	161	15	176	34	5	9	7	56	232
ESIS	34CB2466	54	20	75	59	6	7	7	79	154
ESIS	34CB2467	101	47	148	79	8	9	8	104	252
ESIS	34CB4475	55	14	69	174	38	30	6	249	318
ESIS	34CB4476	0	893	893	45	5	4	8	61	954
ESIS	34CB4477	38	35	72	168	31	24	16	239	311
ESIS	34CB4478	0	582	582	28	4	6	5	42	624
ESIS	34CB4479	50	304	354	11	1	1	2	16	370
ESIS	34CB4480	44	34	78	61	8	7	9	85	163
ESIS	34CB4481	0	873	873	23	3	5	3	34	907
ESIS	34CB4482	51	39	90	83	17	15	3	118	208
ESIS	34CB4483	51	5	56	10	2	1	2	14	70
ESIS	34CB4484	133	305	438	37	4	3	7	51	489
ESIS	34CB4485	53	29	82	60	10	9	4	82	164
ESIS	34CB4487	0	568	568	1	0	0	0	2	570
ESIS	34CB4488	202	0	202	14	3	2	2	21	223
ESIS	34CB4489	0	773	773	19	2	2	3	26	799
ESIS	34CB4490	72	80	152	76	8	7	12	102	254
ESIS	34CB4637	83	52	135	80	14	12	5	110	245
ESIS	34CB4652	0	756	756	1	0	0	0	2	758
ESIS	34CB4653	19	16	35	18	2	2	2	23	58
ESIS	34CB4655	73	34	107	101	10	11	10	131	238
ESIS	34CB8558	140	59	200	106	11	12	11	139	339
ESIS	34CB8559	300	35	334	79	11	11	10	111	445
ESIS	34CB8563	115	60	175	58	6	7	6	77	252
ESIS	34CB8564	107	87	194	86	9	10	9	113	307
ESIS	34CB8566	99	103	202	103	18	15	6	142	344
ESIS	34CB8571	151	36	187	89	14	9	18	130	317
ESIS	34CB8574	46	29	76	77	8	9	8	102	178
ESIS	34CB8575	73	22	96	133	29	23	5	189	285
ESIS	34CB8577	66	27	94	93	20	16	3	132	226
ESIS	34CB8578	48	11	58	71	12	10	4	98	156
ESIS	34CB8579	56	51	106	92	14	13	7	125	231
ESIS	34CB8580	58	18	75	73	7	8	7	96	171
ESIS	34CB8583	63	32	96	63	6	7	6	82	178

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	34CB8584	370	40	409	14	1	1	3	18	427
ESIS	34CB8591	59	21	80	20	2	3	3	28	108
ESIS	34CB8592	46	46	91	54	5	6	5	71	162
ESIS	34CB8593	86	44	130	70	4	12	8	97	227
ESIS	34CB8602	72	36	108	53	6	6	6	71	179
ESIS	34CB8607	574	156	730	103	14	9	19	145	875
ESIS	34CB8617	64	14	78	36	4	4	5	48	126
ESIS	34CB8618	125	66	191	86	15	13	5	119	310
ESIS	34CB8619	134	20	154	72	7	8	7	94	248
ESIS	34CB8620	95	51	147	43	5	5	5	57	204
ESIS	34CB8624	77	42	120	68	7	8	7	89	209
ESIS	34CB8652	57	0	57	40	4	5	5	54	111
ESIS	34CB8654	81	10	92	63	6	7	7	83	175
ESIS	34ET4350	107	16	124	68	7	8	7	90	214
ESIS	34ET4351	86	15	100	51	5	6	5	67	167
ESIS	34ET4352	203	43	246	86	9	10	8	112	358
ESIS	34ET4353	57	30	87	62	7	6	10	86	173
ESIS	34ET4354	125	30	154	55	6	6	7	73	227
ESIS	34ET4355	102	81	183	38	6	4	8	56	239
ESIS	34ET4356	141	22	163	69	13	12	3	97	260
ESIS	34ET4357	79	50	129	96	10	10	11	126	255
ESIS	34ET4358	112	29	142	118	18	12	22	170	312
ESIS	34ET4359	173	27	200	32	7	6	1	45	245
ESIS	34ET4360	146	41	187	118	15	12	17	162	349
ESIS	34ET4361	82	24	105	74	8	8	7	97	202
ESIS	34ET4363	105	45	151	37	4	4	4	49	200
ESIS	34ET4364	108	18	126	44	8	5	7	64	190
ESIS	34ET4365	58	25	83	80	8	9	9	105	188
ESIS	34ET4366	46	42	88	24	3	3	3	32	120
ESIS	34ET4367	61	23	84	71	7	8	8	94	178
ESIS	34ET4368	108	24	131	61	13	11	2	87	218
ESIS	34ET4369	125	9	134	100	10	11	11	131	265
ESIS	34ET4370	95	20	114	43	7	8	9	66	180
ESIS	34ET4371	109	41	149	35	5	5	7	51	200
ESIS	34ET4372	376	53	429	43	7	5	9	64	493
ESIS	34ET4373	60	25	86	39	8	6	3	57	143
ESIS	34ET4374	108	15	124	41	4	5	6	56	180
ESIS	34ET4375	160	17	176	47	5	6	6	63	239
ESIS	34ET4376	170	52	222	37	6	4	8	56	278

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	34ET4377	82	72	154	45	7	5	9	66	220
ESIS	34ET4400	209	13	222	78	12	8	15	113	335
ESIS	34ET4402	92	9	101	70	15	11	5	101	202
ESIS	34ET4403	72	24	96	33	3	4	4	44	140
ESIS	34ET4404	124	22	146	65	7	6	11	89	235
ESIS	34ET4405	80	15	95	72	7	8	8	94	189
ESIS	34ET4406	109	38	147	109	17	12	16	154	301
ESIS	34ET4407	136	23	159	74	8	8	10	100	259
ESIS	34ET4408	95	29	124	74	12	7	15	108	232
ESIS	34ET4409	84	29	113	96	21	17	3	137	250
ESIS	34ET4410	77	10	87	47	7	6	4	64	151
ESIS	34ET4411	106	27	133	45	10	8	2	65	198
ESIS	34ET4412	303	37	340	80	10	9	12	111	451
ESIS	34ET4413	70	12	82	101	10	11	11	134	216
ESIS	34ET4414	175	22	197	60	13	10	2	86	283
ESIS	34ET4415	71	55	126	129	20	13	24	186	312
ESIS	34ET4416	124	14	138	156	18	19	16	208	346
ESIS	34ET4417	70	21	91	99	10	11	11	131	222
ESIS	34ET4418	237	24	261	31	7	5	1	45	306
ESIS	34ET4419	157	41	198	63	7	7	8	84	282
ESIS	34ET4420	192	23	215	55	12	10	2	79	294
ESIS	34ET4421	113	9	122	17	2	2	2	22	144
ESIS	34ET4422	59	6	65	43	4	5	5	57	122
ESIS	34ET4423	96	21	117	50	5	6	5	66	183
ESIS	34ET4424	111	43	154	30	5	4	7	45	199
ESIS	34ET4427	84	11	96	61	6	7	6	80	176
ESIS	34ET4428	96	21	117	71	7	6	12	96	213
ESIS	34ET4430	120	22	142	87	13	9	16	124	266
ESIS	34ET4431	99	270	369	12	1	1	2	16	385
ESIS	34ET4433	79	42	122	47	8	6	5	67	189
ESIS	34ET4435	89	24	113	31	5	3	7	46	159
ESIS	34ET4436	66	4	70	28	3	3	4	38	108
ESIS	34ET4437	0	992	992	8	1	1	2	11	1003
ESIS	34ET4438	107	2	109	19	2	2	2	25	134
ESIS	34ET4439	88	3	91	24	3	3	3	33	124
ESIS	34ET4440	81	22	102	188	33	25	19	266	368
ESIS	34ET4441	0	219	219	10	1	1	2	14	233
ESIS	34ET4442	110	28	138	102	10	11	12	134	272
ESIS	34ET4443	0	519	519	7	1	1	1	10	529

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	34ET4444	70	10	80	45	5	5	5	60	140
ESIS	34ET4445	125	66	191	31	4	4	5	43	234
ESIS	34ET4447	110	21	131	52	10	10	2	74	205
ESIS	34ET4650	80	13	93	33	7	6	2	47	140
ESIS	34ET4659	83	9	92	42	4	5	4	55	147
ESIS	34ET4661	63	22	85	52	12	9	2	75	160
ESIS	34ET4662	59	22	82	81	8	10	8	107	189
ESIS	34ET4671	92	4	96	22	3	2	5	32	128
ESIS	37BF2157	88	24	112	68	13	11	4	96	208
ESIS	37BF2172	40	14	54	76	8	8	7	99	153
ESIS	37CB3102	148	37	185	59	7	7	8	81	266
ESIS	37CB3103	110	42	152	69	15	12	3	98	250
ESIS	37CB3105	219	37	256	115	25	20	4	164	420
ESIS	37CB3106	77	33	110	93	9	9	11	123	233
ESIS	37CB3107	108	20	129	74	7	8	9	97	226
ESIS	37CB3108	131	20	151	117	25	20	5	167	318
ESIS	37CB3109	113	48	161	55	6	4	10	75	236
ESIS	37CB3110	104	18	122	79	8	9	8	104	226
ESIS	37CB3111	79	65	143	46	5	4	8	63	206
ESIS	37CB3112	87	40	127	15	3	3	1	22	149
ESIS	37KR1001	37	47	84	64	8	7	9	88	172
ESIS	37KR1008	67	19	86	51	11	9	2	73	159
ESIS	37KR1009	45	12	57	47	10	8	2	66	123
ESIS	37KR1010	73	39	112	109	17	11	22	159	271
ESIS	37KR1011	44	17	61	38	4	4	5	51	112
ESIS	37KR1012	40	13	53	16	3	3	1	22	75
ESIS	37KR1013	43	26	69	43	10	7	2	62	131
ESIS	37KR1015	162	51	213	46	9	9	1	65	278
ESIS	37KR1017	87	22	109	16	4	3	1	23	132
ESIS	37KR1019	37	44	80	81	14	17	2	115	195
ESIS	37KR1020	95	9	104	66	14	11	3	94	198
ESIS	37KR1021	85	11	96	22	5	4	1	32	128
ESIS	37KR1022	56	19	75	39	9	7	1	55	130
ESIS	37KR1023	88	30	118	35	8	6	1	50	168
ESIS	37KR1025	66	45	111	69	11	7	14	100	211
ESIS	37KR1026	106	9	114	89	14	9	18	130	244
ESIS	37KR1027	201	170	372	118	18	12	23	171	543
ESIS	37KR1028	197	44	241	80	18	14	3	114	355
ESIS	37KR1030	61	43	105	60	13	10	2	86	191

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	37KR1032	41	19	60	66	15	11	2	95	155
ESIS	37KR1033	45	19	65	68	15	12	2	96	161
ESIS	37KR1040	81	6	87	41	6	10	1	58	145
ESIS	37KR1042	154	19	173	90	20	16	3	129	302
ESIS	37KR1047	59	14	73	7	2	1	0	10	83
ESIS	37KR1051	120	18	138	101	22	18	4	143	281
ESIS	37KR1052	146	26	172	151	32	27	5	214	386
ESIS	37KR1054	77	36	113	16	3	3	1	22	135
ESIS	37KR1055	45	26	71	84	18	14	3	119	190
ESIS	37KR1056	62	29	91	81	16	12	8	116	207
ESIS	37KR1057	81	48	130	25	6	4	1	35	165
ESIS	37KR1058	83	41	123	60	11	8	8	88	211
ESIS	37KR1059	75	51	127	10	2	2	0	15	142
ESIS	37KR1060	110	51	161	12	3	2	1	18	179
ESIS	37KR1061	125	28	153	53	9	6	9	77	230
ESIS	37KR1062	115	20	135	11	3	2	0	16	151
ESIS	37KR1063	108	25	133	12	3	2	0	16	149
ESIS	37KR1064	54	20	74	9	2	2	0	13	87
ESIS	37KR1065	74	19	93	32	7	6	1	46	139
ESIS	37KR1066	68	9	77	15	3	3	1	21	98
ESIS	37KR1068	94	9	103	27	5	5	1	38	141
ESIS	37KR1069	77	64	141	51	9	6	8	74	215
ESIS	37KR1070	68	23	92	42	5	5	5	57	149
ESIS	37KR1071	35	15	50	36	7	7	1	50	100
ESIS	37KR1072	88	34	122	26	6	5	1	37	159
ESIS	37KR1073	77	19	96	16	4	3	1	23	119
ESIS	37KR1074	61	24	85	18	4	3	1	26	111
ESIS	37KR1076	88	58	146	35	8	6	1	50	196
ESIS	37KR1078	67	25	92	69	12	8	11	100	192
ESIS	37KR1084	102	59	161	126	20	12	26	184	345
ESIS	37KR1089	29	41	70	57	6	7	7	76	146
ESIS	37KR1095	75	68	143	119	13	10	21	162	305
ESIS	37KR1108	68	22	90	27	6	5	1	38	128
ESIS	37KR1109	76	16	92	17	4	3	1	25	117
ESIS	37KR1116	69	11	79	20	5	4	1	29	108
ESIS	37KR1127	51	47	98	56	10	10	11	86	184
ESIS	37KR1130	92	57	149	99	18	20	3	140	289
ESIS	37KR1135	49	31	80	89	12	9	14	123	203
ESIS	67BI2841	68	53	121	126	20	13	24	182	303

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	67BM1720	115	55	170	160	22	17	25	224	394
ESIS	67BM1721	109	107	216	118	24	18	10	170	386
ESIS	67BM1722	136	104	239	75	12	8	15	109	348
ESIS	67BM1723	123	54	178	61	10	8	9	88	266
ESIS	67BM1724	165	80	245	143	23	15	27	207	452
ESIS	67CR1838	99	89	188	201	31	29	28	288	476
ESIS	67CR1839	34	0	34	12	2	3	2	19	53
ESIS	67CR1840	51	101	152	122	19	12	24	177	329
ESIS	67CR1841	74	65	139	61	10	7	11	89	228
ESIS	67FB1830	32	16	48	46	5	5	2	57	105
ESIS	67FB1831	18	2	19	185	27	19	29	260	279
ESIS	67FB1832	86	16	102	93	20	16	3	132	234
ESIS	67FB1833	81	13	94	49	6	8	4	67	161
ESIS	67FC1953	21	24	45	80	8	9	8	104	149
ESIS	67FC1954	110	43	154	107	15	13	18	153	307
ESIS	67FC1955	53	41	94	135	15	15	15	180	274
ESIS	67FC1956	29	60	89	130	13	14	14	171	260
ESIS	67FC1958	0	997	997	41	4	3	7	55	1052
ESIS	67FC1959	79	26	105	39	7	6	2	53	158
ESIS	67FC1960	51	38	89	142	16	17	14	189	278
ESIS	67FC1962	30	385	415	146	18	13	26	203	618
ESIS	67FC1963	111	92	203	156	26	17	27	226	429
ESIS	67FC1964	49	283	332	118	18	12	24	172	504
ESIS	67FC1965	49	0	49	161	16	16	18	211	260
ESIS	67FC1966	0	575	575	87	9	8	15	118	693
ESIS	67FL1729	163	87	250	47	6	6	6	64	314
ESIS	67FL2742	107	68	175	84	13	8	17	122	297
ESIS	67FL2756	195	103	298	28	3	3	6	39	337
ESIS	67FL2759	35	189	225	33	5	4	8	49	274
ESIS	67FL3704	0	903	903	12	1	1	2	17	920
ESIS	67FL3705	127	150	277	87	12	10	13	121	398
ESIS	67FM1821	65	6	71	18	3	4	2	26	97
ESIS	67FM1836	145	54	199	85	14	10	14	123	322
ESIS	67FM1837	102	46	148	198	32	20	37	287	435
ESIS	67FM2828	40	85	125	91	15	10	16	131	256
ESIS	67GP1703	38	350	388	29	4	7	5	44	432
ESIS	67GP1704	282	297	580	87	11	8	17	123	703
ESIS	67GP2703	93	42	135	95	21	16	3	135	270
ESIS	67GP2708	61	46	107	73	7	8	8	96	203

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	67GT2844	192	343	535	38	4	3	7	51	586
ESIS	67GT2845	86	59	145	76	12	10	15	113	258
ESIS	67GT2846	98	35	134	225	47	37	13	322	456
ESIS	67JL2836	56	50	105	131	26	19	12	188	293
ESIS	67JL2837	59	95	154	128	14	10	23	175	329
ESIS	67JT2829	31	0	31	8	2	3	1	13	44
ESIS	67JT2830	131	18	149	39	6	5	3	53	202
ESIS	67LB1801	28	24	51	207	30	30	10	277	328
ESIS	67LB1802	46	27	74	16	3	3	1	22	96
ESIS	67LB1803	344	440	783	16	2	2	3	22	805
ESIS	67LB1805	4	16	21	28	4	4	3	38	59
ESIS	67LB1806	75	25	100	29	4	4	2	38	138
ESIS	67LB1807	77	8	85	39	5	6	3	52	137
ESIS	67LB1809	0	475	475	25	3	2	5	34	509
ESIS	67LB1810	98	51	148	70	12	13	6	101	249
ESIS	67LB1811	0	518	518	4	0	0	1	5	523
ESIS	67LB1813	82	26	108	57	9	6	11	82	190
ESIS	67LB2801	83	68	151	87	13	12	14	125	276
ESIS	67LB2802	26	8	34	60	6	8	4	78	112
ESIS	67LB2803	42	12	54	39	9	7	2	55	109
ESIS	67LB2804	51	44	95	82	15	11	10	117	212
ESIS	67LB2805	52	44	95	114	21	15	14	164	259
ESIS	67LB2806	58	12	69	40	9	7	1	57	126
ESIS	67LB2807	55	42	98	49	9	14	7	79	177
ESIS	67LB2808	36	41	77	47	7	7	7	68	145
ESIS	67LB2809	0	280	280	124	20	14	22	179	459
ESIS	67LB2810	120	63	183	115	17	11	23	166	349
ESIS	67LB2811	91	20	111	56	10	9	2	77	188
ESIS	67LB2812	51	28	79	83	13	9	15	121	200
ESIS	67ND1914	193	31	224	138	20	14	25	197	421
ESIS	67RB1009	76	46	122	89	9	10	9	117	239
ESIS	67RB1010	48	64	112	39	4	4	7	54	166
ESIS	67RB1011	352	26	378	109	11	14	9	143	521
ESIS	67SH1716	57	71	128	47	10	8	2	67	195
ESIS	67SH1717	132	55	187	88	14	12	13	127	314
ESIS	67SH1718	116	15	131	90	16	11	15	131	262
ESIS	67SH1719	404	27	430	157	24	15	31	227	657
ESIS	67SH2730	92	60	152	79	17	14	3	113	265
ESIS	67SH2731	70	26	95	205	25	25	21	276	371

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	67SH2732	85	20	105	73	8	8	8	96	201
ESIS	67SH2733	88	30	119	30	6	5	2	44	163
ESIS	67SH2734	106	431	537	57	8	10	5	79	616
ESIS	67SH2735	51	19	69	201	20	22	19	262	331
ESIS	67SH2736	119	97	216	158	24	21	24	227	443
ESIS	67SH2737	113	27	140	86	10	10	10	115	255
ESIS	67SH2738	95	16	110	81	8	9	8	106	216
ESIS	67SL2816	183	29	211	86	13	8	17	125	336
ESIS	67SL2817	70	57	127	130	20	13	26	189	316
ESIS	67SL2818	50	72	122	121	20	13	23	177	299
ESIS	67SL2819	117	73	190	130	21	19	17	186	376
ESIS	67SL2820	51	57	108	84	9	8	12	113	221
ESIS	67SL2822	62	27	89	57	9	6	11	83	172
ESIS	67SL2823	45	33	78	125	21	16	19	181	259
ESIS	67SL2825	55	38	93	52	12	9	2	75	168
ESIS	67SR1001	136	101	237	150	23	15	30	217	454
ESIS	67SR1003	85	43	127	92	15	12	12	130	257
ESIS	67SR1004	101	58	159	114	18	11	23	166	325
ESIS	67SW1820	34	41	74	94	9	10	10	123	197
ESIS	67SW1842	71	72	143	83	13	9	16	121	264
ESIS	67SW1843	109	41	150	77	11	7	15	110	260
ESIS	67SW1844	71	41	112	106	11	8	19	145	257
ESIS	67SW1845	110	17	128	97	16	10	17	140	268
ESIS	67SW1846	67	73	140	75	8	8	8	99	239
ESIS	67SW1847	107	85	192	180	28	19	34	261	453
ESIS	67SW1848	62	58	120	43	7	11	7	69	189
ESIS	67SW1849	103	64	167	50	8	11	8	78	245
ESIS	67SW1850	50	42	92	69	10	7	14	100	192
ESIS	67SW1938	84	39	123	83	10	17	14	124	247
ESIS	67SW1939	99	44	143	64	10	23	16	112	255
ESIS	67SW1944	67	29	96	197	20	22	19	257	353
ESIS	67SW1945	59	57	116	72	7	8	7	94	210
ESIS	67SW2826	261	33	295	205	31	35	22	293	588
ESIS	67SW2827	43	45	87	80	10	9	11	110	197
ESIS	67SW2847	58	41	100	83	10	11	9	113	213
ESIS	67SW2848	194	41	235	64	7	5	12	87	322
ESIS	67SW2849	44	31	75	48	5	6	7	65	140
ESIS	67SW2850	70	41	111	36	6	12	8	61	172
ESIS	67SW2851	117	29	146	57	6	6	8	78	224

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	67WC1948	41	47	87	71	8	8	12	98	185
ESIS	67WC1949	73	230	302	46	5	4	9	63	365
ESIS	67WC1950	81	51	131	93	16	11	15	135	266
ESIS	67WR1814	33	19	51	55	6	7	3	70	121
ESIS	67WR1815	19	26	45	64	6	7	3	80	125
ESIS	67WR1816	49	466	515	110	19	16	19	163	678
ESIS	67WR1817	43	44	87	67	7	6	11	91	178
ESIS	67WR2815	41	108	149	63	9	7	12	91	240
Fyles 1986	Site 1	32	21	53	14	2	3	1	20	73
Fyles 1986	Site 2	40	10	50	34	4	4	2	44	94
Fyles 1986	Site 3	46	18	63	68	7	6	3	84	147
Fyles 1986	Site 4	79	37	116	72	11	9	13	105	221
La Roi and Pluth 1986	BE1	25	9	34	61	7	7	6	80	114
La Roi and Pluth 1986	BE2	565	138	704	151	24	16	28	219	923
La Roi and Pluth 1986	BE3	48	7	55	54	6	6	5	71	126
La Roi and Pluth 1986	CF11	184	27	211	139	17	14	19	188	399
La Roi and Pluth 1986	CF13	182	31	213	54	7	7	6	74	287
La Roi and Pluth 1986	CF15	85	20	105	78	8	9	8	102	207
La Roi and Pluth 1986	CF16	168	10	178	86	9	10	9	112	290
La Roi and Pluth 1986	CF3	50	61	111	76	12	9	15	112	223
La Roi and Pluth 1986	CF9	96	42	138	109	13	12	13	148	286
La Roi and Pluth 1986	FC1	161	204	364	113	18	11	22	164	528
La Roi and Pluth 1986	FC2	117	306	423	105	16	10	20	151	574
La Roi and Pluth 1986	FC3	135	569	704	95	15	10	19	139	843
La Roi and Pluth 1986	FC4	201	57	258	149	26	20	19	214	472
La Roi and Pluth 1986	FC5	59	32	91	140	14	15	14	182	273
La Roi and Pluth 1986	FC6	46	16	63	135	17	16	13	181	244
La Roi and Pluth 1986	HC1	197	17	214	167	26	16	33	243	457
La Roi and Pluth 1986	KN1	24	10	34	23	2	3	3	31	65
La Roi and Pluth 1986	KN10	115	96	211	146	23	14	29	212	423
La Roi and Pluth 1986	KN11	518	107	625	125	18	13	22	178	803
La Roi and Pluth 1986	KN12	40	546	586	85	9	8	13	115	701
La Roi and Pluth 1986	KN13	96	23	119	84	8	9	9	110	229
La Roi and Pluth 1986	KN2	116	8	124	28	3	3	3	37	161
La Roi and Pluth 1986	KN3	125	24	148	112	13	13	12	150	298
La Roi and Pluth 1986	KN4	88	96	183	112	17	13	16	158	341
La Roi and Pluth 1986	KN5	133	8	140	78	8	8	8	103	243
La Roi and Pluth 1986	KN6	78	39	116	107	12	13	10	141	257
La Roi and Pluth 1986	KN7	48	16	64	93	9	10	9	121	185

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
La Roi and Pluth 1986	KN8	49	37	85	75	8	8	7	98	183
La Roi and Pluth 1986	PS11	89	39	128	86	13	11	9	119	247
La Roi and Pluth 1986	PS12	74	19	93	91	13	11	12	126	219
La Roi and Pluth 1986	PS13	70	15	85	67	13	10	6	95	180
La Roi and Pluth 1986	PS14	109	27	136	57	6	7	6	75	211
La Roi and Pluth 1986	PS20	51	55	106	56	6	6	6	75	181
La Roi and Pluth 1986	PS233	373	117	490	120	20	14	19	173	663
La Roi and Pluth 1986	PS241	44	71	115	54	7	6	5	72	187
La Roi and Pluth 1986	PS243	81	26	107	92	11	11	8	122	229
La Roi and Pluth 1986	PS245	68	21	89	62	6	7	7	81	170
La Roi and Pluth 1986	PS246	41	31	71	96	10	11	10	126	197
La Roi and Pluth 1986	PS247	64	26	90	110	15	14	10	149	239
La Roi and Pluth 1986	PS248	67	18	85	88	9	10	9	115	200
La Roi and Pluth 1986	PS249	28	37	66	87	10	10	10	116	182
La Roi and Pluth 1986	PS257	97	281	378	88	14	10	15	128	506
La Roi and Pluth 1986	PS267	142	21	163	111	19	15	12	157	320
La Roi and Pluth 1986	PS6	127	14	141	100	13	12	10	134	275
La Roi and Pluth 1986	PS7	48	20	68	100	16	16	7	139	207
La Roi and Pluth 1986	PS8	49	22	71	95	11	12	8	126	197
La Roi and Pluth 1986	PS9	66	24	90	76	9	9	7	101	191
La Roi and Pluth 1986	SA10	106	22	127	79	8	9	8	103	230
La Roi and Pluth 1986	SA11	110	13	123	87	9	10	8	113	236
La Roi and Pluth 1986	SA12	70	8	78	29	3	3	4	38	116
La Roi and Pluth 1986	SA13	41	447	488	99	13	9	17	139	627
La Roi and Pluth 1986	SA14	72	31	103	67	7	8	7	88	191
La Roi and Pluth 1986	SA15	33	57	90	33	3	4	4	44	134
La Roi and Pluth 1986	SA16	26	16	41	65	7	7	6	85	126
La Roi and Pluth 1986	SA17	65	43	107	84	9	9	11	112	219
La Roi and Pluth 1986	SA19	59	24	83	22	2	2	3	29	112
La Roi and Pluth 1986	SA20	57	21	78	37	4	4	6	50	128
La Roi and Pluth 1986	SA21	237	30	266	111	13	13	12	147	413
La Roi and Pluth 1986	SA22	117	29	147	115	13	13	12	153	300
La Roi and Pluth 1986	SA26	71	48	119	114	12	12	15	152	271
La Roi and Pluth 1986	SA27	17	9	27	17	2	2	2	23	50
La Roi and Pluth 1986	SA3	118	45	163	144	22	16	26	207	370
La Roi and Pluth 1986	SA4	95	507	602	85	13	9	15	123	725
La Roi and Pluth 1986	SA5	134	4	138	92	12	11	12	127	265
La Roi and Pluth 1986	SA50	114	15	129	119	18	14	16	167	296
La Roi and Pluth 1986	SA51	140	68	208	120	18	13	21	171	379

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
La Roi and Pluth 1986	SA52	69	66	136	148	15	16	15	194	330
La Roi and Pluth 1986	SA53	44	19	64	80	8	7	12	107	171
La Roi and Pluth 1986	SA54	35	36	71	58	6	6	6	77	148
La Roi and Pluth 1986	SA55	14	13	27	20	2	2	3	27	54
La Roi and Pluth 1986	SA56	173	28	202	11	1	1	2	15	217
La Roi and Pluth 1986	SA57	22	30	52	67	7	7	8	89	141
La Roi and Pluth 1986	SA58	26	15	41	42	4	5	5	56	97
La Roi and Pluth 1986	SA59	207	107	314	91	9	10	9	119	433
La Roi and Pluth 1986	SA6	91	22	114	162	25	20	20	227	341
La Roi and Pluth 1986	SA60	27	40	68	72	9	11	9	101	169
La Roi and Pluth 1986	SA61	28	43	71	100	10	11	12	133	204
La Roi and Pluth 1986	SA62	42	23	65	145	15	16	15	190	255
La Roi and Pluth 1986	SA63	33	7	40	11	1	1	1	15	55
La Roi and Pluth 1986	SA64	17	20	37	160	16	18	15	209	246
La Roi and Pluth 1986	SA65	140	63	204	78	12	8	15	112	316
La Roi and Pluth 1986	SA67	40	50	90	93	9	10	10	123	213
La Roi and Pluth 1986	SA68	96	15	111	134	15	17	16	182	293
La Roi and Pluth 1986	SA69	179	150	328	96	15	13	18	142	470
La Roi and Pluth 1986	SA7	73	13	86	107	12	11	14	144	230
La Roi and Pluth 1986	SA70	139	30	170	99	17	12	17	144	314
La Roi and Pluth 1986	SA71	122	16	138	91	14	10	15	131	269
La Roi and Pluth 1986	SA72	67	117	184	122	18	14	20	174	358
La Roi and Pluth 1986	SA73	73	109	182	106	18	13	16	153	335
La Roi and Pluth 1986	SA74	53	61	114	94	16	12	13	134	248
La Roi and Pluth 1986	SA75	137	49	186	85	14	10	16	125	311
La Roi and Pluth 1986	SA76	65	77	142	106	11	11	12	140	282
La Roi and Pluth 1986	SA77	80	73	153	69	8	11	9	98	251
La Roi and Pluth 1986	SA78	82	15	97	108	12	12	13	145	242
La Roi and Pluth 1986	SA79	70	23	93	108	12	11	13	144	237
La Roi and Pluth 1986	SA8	32	22	53	42	4	5	4	56	109
La Roi and Pluth 1986	SA80	74	23	97	91	11	9	13	125	222
La Roi and Pluth 1986	SA81	173	27	200	97	15	10	19	140	340
La Roi and Pluth 1986	SA82	151	211	362	129	20	15	21	184	546
La Roi and Pluth 1986	SA83	108	47	155	147	16	16	18	197	352
La Roi and Pluth 1986	SA84	47	43	90	84	13	8	17	122	212
La Roi and Pluth 1986	SA85	37	10	47	115	12	13	12	152	199
La Roi and Pluth 1986	SA86	47	23	71	76	8	8	9	101	172
La Roi and Pluth 1986	SA9	16	17	33	22	2	3	3	29	62
La Roi and Pluth 1986	WF1	29	14	42	40	5	4	5	54	96

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
La Roi and Pluth 1986	WF10	45	60	105	65	8	8	7	88	193
La Roi and Pluth 1986	WF11	30	15	45	67	7	7	8	89	134
La Roi and Pluth 1986	WF2	241	26	267	131	22	14	23	190	457
La Roi and Pluth 1986	WF3	149	75	225	119	19	12	24	173	398
La Roi and Pluth 1986	WF4	67	51	118	105	13	11	16	145	263
La Roi and Pluth 1986	WF5	119	20	139	119	13	15	14	160	299
La Roi and Pluth 1986	WF6	161	85	245	60	9	6	12	87	332
La Roi and Pluth 1986	WF7	287	77	363	55	8	5	10	79	442
La Roi and Pluth 1986	WF8	68	9	77	99	10	11	10	130	207
La Roi and Pluth 1986	WF9	236	58	295	125	20	13	25	182	477
ESIS	67KT2832	35	19	55	18	3	5	2	28	83
ESIS	67KT2833	63	20	83	15	2	2	2	21	104
ESIS	67KT2834	33	72	105	21	3	4	2	30	135
ESIS	67KT2835	29	16	44	22	3	5	2	32	76
ESIS	34CB2460	180	44	225	55	6	9	7	76	301
ESIS	34CB2465	90	25	114	122	13	17	12	163	277
ESIS	34CB4645	91	43	134	47	5	5	6	63	197
ESIS	34CB8565	70	88	157	84	8	9	9	110	267
ESIS	34CB8598	117	46	163	67	7	11	9	94	257
ESIS	34CB8614	212	280	492	68	9	19	13	108	600
ESIS	34CB8616	100	59	159	24	4	10	6	44	203
ESIS	34CB8621	334	44	379	74	10	22	15	120	499
ESIS	34CB8622	172	29	201	25	4	6	7	42	243
ESIS	34ET4448	159	16	176	50	10	10	3	74	250
ESIS	67GC3922	429	0	429	154	16	26	13	209	638
ESIS	67HT4929	204	17	221	106	15	35	22	177	398
ESIS	37KR1029	76	47	123	61	14	12	3	90	213
ESIS	37KR1035	67	12	79	10	2	2	0	14	93
ESIS	37KR1036	216	29	245	104	15	25	3	146	391
ESIS	37KR1037	69	25	94	22	3	5	1	31	125
ESIS	37KR1038	226	28	255	85	17	18	3	122	377
ESIS	37KR1039	106	5	111	36	7	8	1	51	162
ESIS	37KR1045	53	19	72	123	28	24	5	180	252
ESIS	37KR1046	73	42	115	19	4	4	1	27	142
ESIS	37KR1048	85	24	109	82	18	16	3	119	228
ESIS	37KR1136	107	68	175	49	8	5	10	72	247
ESIS	67FL1725	0	610	610	9	1	2	2	13	623
ESIS	67FL1726	217	248	465	40	7	6	5	57	522
ESIS	67FL1727	0	686	686	0	0	0	0	0	686

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ESIS	67FL1731	74	60	134	64	5	3	4	76	210
ESIS	67FL1732	0	958	958	8	1	2	1	12	970
ESIS	67FL1733	25	12	37	67	5	4	4	81	118
ESIS	67FL1737	74	141	215	3	1	0	1	5	220
ESIS	67FL1738	126	372	498	35	6	5	6	53	551
ESIS	67FL2739	197	223	420	44	7	4	9	64	484
ESIS	67FL2740	99	99	198	82	7	4	5	98	296
ESIS	67FL2741	79	49	128	84	7	5	6	102	230
ESIS	67FL2743	153	51	204	82	15	11	11	119	323
ESIS	67FL2744	66	502	568	44	6	9	5	65	633
ESIS	67FL2745	14	28	42	79	8	6	5	98	140
ESIS	67FL2746	112	53	165	81	18	15	4	118	283
ESIS	67FL2747	183	128	312	49	8	5	10	71	383
ESIS	67FL2749	88	92	180	29	5	3	7	44	224
ESIS	67FL2753	91	59	150	39	5	4	6	54	204
ESIS	67FL2755	137	59	196	72	8	5	9	94	290
ESIS	67FL2757	155	62	217	65	11	8	11	96	313
ESIS	67FL2758	37	468	506	62	10	7	11	89	595
ESIS	67FL3702	343	120	463	95	15	9	19	139	602
ESIS	67FL3703	179	146	325	47	9	5	10	71	396
ESIS	67FL3706	151	87	238	146	24	16	25	211	449
ESIS	67CS1823	88	5	93	22	2	1	2	26	119
ESIS	67CS1824	40	20	60	66	10	6	13	96	156
ESIS	67CS1825	41	20	61	36	3	3	3	44	105
ESIS	67CS1826	69	8	77	35	3	2	2	43	120
ESIS	67CS1828	29	20	49	21	2	2	1	25	74
ESIS	67CS1829	38	17	55	29	2	2	2	35	90
ESIS	67CS1822	33	68	101	19	2	2	4	27	128
ARNEWS	PLOT 905	222	4	226	24	4	8	6	43	269
ARNEWS	PLOT 906	37	6	43	31	5	10	5	51	94
ARNEWS	PLOT 907	142	22	165	49	6	12	7	74	239
ARNEWS	PLOT 915	242	9	251	68	8	13	9	98	349
ARNEWS	PLOT 901	231	7	238	25	4	4	2	35	273
ARNEWS	PLOT 902	247	32	279	71	10	11	5	96	375
ARNEWS	PLOT 903	148	7	155	48	8	6	4	65	220
ARNEWS	PLOT 904	340	6	346	58	10	7	4	79	425
ARNEWS	PLOT 908	144	51	195	65	9	16	10	100	295
ARNEWS	PLOT 911	185	7	191	74	12	9	5	100	291
ARNEWS	PLOT 912	959	14	973	34	6	8	5	54	1027

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ARNEWS	PLOT 913	555	23	578	34	6	10	6	56	634
ARNEWS	PLOT 914	676	114	790	28	5	10	8	50	840
Knapik et al. 1988	Plot 12	66	0	66	8	2	3	2	15	81
Knapik et al. 1988	Plot 13	59	21	80	8	2	3	2	15	95
Knapik et al. 1988	Plot 22	63	45	108	27	5	5	2	39	147
Knapik et al. 1988	Plot 23	83	72	155	74	7	16	3	100	255
Knapik et al. 1988	Plot 25	90	59	149	48	10	8	2	68	217
Knapik et al. 1988	Plot 36	75	59	134	79	11	6	16	112	246
Knapik et al. 1988	Plot 37	71	99	170	48	10	8	2	68	238
Knapik et al. 1988	Plot 51	65	27	92	9	2	3	2	16	108
Knapik et al. 1988	Plot 52	83	21	104	8	2	3	2	14	118
Knapik et al. 1988	Plot 60	172	55	227	52	11	9	2	74	301
Knapik et al. 1988	Plot 66	73	66	139	32	5	6	2	45	184
Knapik et al. 1988	Plot 7	77	28	105	49	7	9	3	68	173
Knapik et al. 1988	Plot 71	114	35	149	46	6	5	8	65	214
Knapik et al. 1988	Plot 90	78	49	127	81	17	14	3	116	243
Knapik et al. 1988	Plot 95	66	15	81	65	14	11	3	92	173
ARNEWS	PLOT 818	450	22	472	16	3	3	1	23	495
Halliwell and Apps 1997	MAN AIH-14 (1)	117	43	159	27	6	5	1	38	197
Halliwell and Apps 1997	MAN AIH-30 (1)	147	24	171	13	3	2	1	19	190
Halliwell and Apps 1997	MAN AIM-1 (1)	64	92	156	4	1	1	0	6	162
Halliwell and Apps 1997	MAN AIM-20 (1)	271	7	278	7	1	1	0	9	287
Halliwell and Apps 1997	MAN BDH-3a (1)	109	97	206	3	0	0	1	4	210
Halliwell and Apps 1997	MAN BDH-3b (2)	101	68	169	4	0	0	1	5	174
Halliwell and Apps 1997	MAN BIH-1a (1)	63	23	86	22	3	3	4	32	118
Halliwell and Apps 1997	MAN BIH-1b (2)	106	302	408	27	3	2	5	36	444
Halliwell and Apps 1997	MAN BIH-1c (3)	93	130	223	14	2	1	3	20	243
Halliwell and Apps 1997	MAN BIH-9 (1)	78	28	106	25	3	2	4	35	141
Halliwell and Apps 1997	MAN BIL-2 (1)	29	371	399	3	0	0	1	5	404
Halliwell and Apps 1997	MAN BIM-12a (1)	107	139	246	25	3	2	5	34	280
Halliwell and Apps 1997	MAN BIM-1a	69	30	98	25	3	2	5	35	133
Halliwell and Apps 1997	MAN BIM-1b (2)	100	103	203	33	4	3	6	46	249
Halliwell and Apps 1997	MAN BMH-6 (1)	68	66	134	25	3	2	4	34	168
Halliwell and Apps 1997	MAN BMH-7 (1)	102	127	229	53	6	4	10	73	302
Halliwell and Apps 1997	MAN BML-21 (1)	437	184	620	5	1	0	1	7	627
Halliwell and Apps 1997	MAN BMM-8a (1)	73	103	176	39	5	4	6	54	230
Halliwell and Apps 1997	MAN BMM-8b (2)	83	243	326	9	1	1	2	12	338
Halliwell and Apps 1997	MAN JDH-3 (1)	16	36	52	4	1	2	1	8	60
Halliwell and Apps 1997	MAN JDM-1 (1)	40	11	51	1	1	1	1	4	55

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
Halliwell and Apps 1997	MANJIH-2 (1)	35	19	54	14	2	3	2	20	74
Halliwell and Apps 1997	MANJIL-1 (1)	21	17	38	17	2	3	1	22	60
Halliwell and Apps 1997	MANJIM-4 (1)	21	13	34	12	3	4	2	21	55
Halliwell and Apps 1997	MANMW-1a (1)	94	26	120	25	4	3	3	35	155
Halliwell and Apps 1997	MANMW-2a (1)	92	33	125	31	3	3	5	42	167
Halliwell and Apps 1997	MANP-AM-1 (1)	377	17	394	45	9	8	2	63	457
Halliwell and Apps 1997	MANP-JM-1 (1)	375	16	391	51	8	8	2	69	460
Halliwell and Apps 1997	MAN S-AD-1 (1)	339	18	357	7	2	2	1	12	369
Halliwell and Apps 1997	MAN SO-M-1 (1)	334	22	356	17	3	4	2	26	382
Halliwell and Apps 1997	MAN T-AM-1 (1)	166	12	177	43	9	7	2	62	239
Halliwell and Apps 1997	MAN T-BI-1 (1)	334	33	367	40	4	3	7	55	422
Halliwell and Apps 1997	MAN TE-OA (1)	285	21	306	38	8	7	1	54	360
Halliwell and Apps 1997	MAN TE-OBS (1)	0	102	102	30	3	3	5	41	143
Halliwell and Apps 1997	MAN TE-OJP (1)	47	13	60	21	4	6	3	33	93
Knapik et al. 1989	Plot 8802	55	5	59	20	3	4	2	29	88
Knapik et al. 1989	Plot 8808	122	49	171	115	25	15	5	161	332
Knapik et al. 1989	Plot 8810	49	32	81	91	8	4	14	117	198
Knapik et al. 1989	Plot 8815	81	16	98	34	4	6	3	47	145
Knapik et al. 1989	Plot 8824	44	472	516	35	4	5	7	50	566
Knapik et al. 1989	Plot 8829	39	2	41	11	2	3	1	17	58
Knapik et al. 1989	Plot 8832	47	20	67	8	2	3	1	14	81
Knapik et al. 1989	Plot 8835	66	8	74	23	3	5	2	33	107
Knapik et al. 1989	Plot 8836	63	0	63	9	2	3	1	15	78
Knapik et al. 1989	Plot 8837	62	10	72	22	3	4	2	32	104
Knapik et al. 1989	Plot 8838	61	276	337	37	4	5	7	53	390
Halliwell and Apps 1997	MAN G-BI-1 (1)	188	27	215	28	3	2	5	38	253
Halliwell and Apps 1997	MAN G-BI-2 (1)	156	24	180	25	3	2	5	34	214
ARNEWS	PLOT 204	68	33	102	61	4	7	3	76	178
ARNEWS	PLOT 216	306	41	347	38	6	10	5	59	406
ARNEWS	PLOT 217	405	79	484	54	9	14	9	86	570
ARNEWS	PLOT 218	586	25	610	36	7	12	2	57	667
ARNEWS	PLOT 219	575	22	597	36	5	8	2	50	647
ARNEWS	PLOT 224	361	26	387	61	8	44	5	118	505
ARNEWS	PLOT 209	199	39	237	58	8	10	7	83	320
ARNEWS	PLOT 210	208	56	264	54	7	10	4	76	340
ARNEWS	PLOT 211	150	23	173	42	5	6	2	55	228
ARNEWS	PLOT 212	274	21	295	31	5	11	4	51	346
ARNEWS	PLOT 213	324	33	356	27	3	7	3	39	395
ARNEWS	PLOT 214	169	60	229	33	5	8	3	49	278

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ARNEWS	PLOT 215	748	31	779	55	7	14	9	84	863
ARNEWS	PLOT 221	596	27	624	34	5	9	6	53	677
ARNEWS	PLOT 222	345	26	371	32	5	8	1	47	418
ARNEWS	PLOT 223	661	12	673	32	5	9	1	47	720
Kingston et al. 1995	Dickey Lake Road	146	16	162	72	12	29	4	117	279
Kingston et al. 1995	McIntyres Mountain	157	54	211	83	16	41	6	145	356
Kingston et al. 1995	West Brook Road	347	62	409	105	16	61	36	218	627
Kingston et al. 1995	West River Station	240	28	268	67	20	33	11	122	390
ARNEWS	PLOT 816	111	43	154	64	13	12	4	93	247
ARNEWS	PLOT 817	205	19	224	50	8	5	9	73	297
ARNEWS	PLOT 502	34	348	382	31	4	3	6	43	425
ARNEWS	PLOT 503	167	33	200	31	5	8	1	45	245
ARNEWS	PLOT 504	599	22	621	59	9	13	4	84	705
ARNEWS	PLOT 505	672	20	692	99	13	36	3	150	842
ARNEWS	PLOT 509	162	78	240	23	2	1	2	28	268
ARNEWS	PLOT 510	229	44	273	33	3	3	6	44	317
ARNEWS	PLOT 511	173	48	221	23	3	5	4	36	257
ARNEWS	PLOT 512	83	7	90	59	5	3	4	71	161
ARNEWS	PLOT 513	140	48	188	35	3	2	5	45	233
ARNEWS	PLOT 514	276	9	285	6	1	2	3	13	298
ARNEWS	PLOT 515	273	7	280	20	2	3	2	27	307
ARNEWS	PLOT 516	136	24	160	42	9	7	2	59	219
ARNEWS	PLOT 520	82	13	95	26	5	4	1	37	132
ARNEWS	PLOT 521	49	40	89	12	1	1	1	15	104
ARNEWS	PLOT 522	49	33	83	22	2	1	2	26	109
ARNEWS	PLOT 523	55	16	72	14	2	1	2	18	90
ARNEWS	PLOT 524	71	45	116	32	3	2	2	39	155
ARNEWS	PLOT 527	246	11	258	46	8	21	2	76	334
ARNEWS	PLOT 528	294	54	348	33	6	14	2	54	402
ARNEWS	PLOT 529	118	40	157	26	4	4	1	35	192
ARNEWS	PLOT 530	88	57	145	46	5	4	8	63	208
ARNEWS	PLOT 531	157	24	181	34	6	5	2	46	227
ARNEWS	PLOT 532	78	81	159	44	9	8	2	63	222
ARNEWS	PLOT 533	214	30	244	46	8	8	3	65	309
ARNEWS	PLOT 534	37	33	70	41	9	7	1	58	128
ARNEWS	PLOT 535	376	33	409	10	2	2	0	14	423
ARNEWS	PLOT 536	92	27	119	25	2	1	2	30	149
ARNEWS	PLOT 537	397	28	425	23	4	4	1	32	457
ARNEWS	PLOT 538	502	10	512	37	8	6	1	53	565

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
ARNEWS	PLOT 506	162	20	182	67	6	25	2	100	282
ARNEWS	PLOT 507	286	6	292	107	10	40	3	161	453
ARNEWS	PLOT 508	367	12	379	88	8	33	3	132	511
ARNEWS	PLOT 517	153	22	175	23	3	5	2	32	207
ARNEWS	PLOT 518	180	7	186	17	3	4	1	24	210
ARNEWS	PLOT 519	615	7	622	46	6	30	12	94	716
ARNEWS	PLOT 525	216	4	220	53	5	20	2	79	299
ARNEWS	PLOT 526	173	10	183	45	8	21	2	75	258
ARNEWS	PLOT 220	253	9	263	40	6	36	7	88	351
ARNEWS	PLOT 313	195	19	214	49	7	12	1	69	283
ARNEWS	PLOT 315	199	23	222	117	13	22	2	153	375
ARNEWS	PLOT 319	149	60	209	59	8	10	1	78	287
ARNEWS	PLOT 320	137	74	210	52	8	16	4	80	290
ARNEWS	PLOT 321	221	69	289	42	7	14	5	67	356
ARNEWS	PLOT 322	360	22	382	76	9	15	1	101	483
ARNEWS	PLOT 324	40	18	59	17	2	4	2	25	84
ARNEWS	PLOT 325	508	52	561	25	4	9	5	42	603
ARNEWS	PLOT 326	269	68	337	15	2	3	2	22	359
ARNEWS	PLOT 301	262	27	289	61	8	20	2	92	381
ARNEWS	PLOT 302	280	19	299	43	4	14	1	62	361
ARNEWS	PLOT 303	144	46	190	48	7	12	4	71	261
ARNEWS	PLOT 304	169	65	234	41	6	8	4	58	292
ARNEWS	PLOT 305	112	39	151	25	4	5	3	35	186
ARNEWS	PLOT 306	218	36	254	115	14	44	6	179	433
ARNEWS	PLOT 307	155	57	212	51	7	16	4	77	289
ARNEWS	PLOT 314	226	23	248	55	8	17	2	81	329
ARNEWS	PLOT 316	238	59	297	28	3	2	5	38	335
ARNEWS	PLOT 317	242	45	287	36	4	4	7	51	338
ARNEWS	PLOT 308	415	7	423	76	13	34	3	126	549
ARNEWS	PLOT 312	188	10	199	89	12	39	3	142	341
ARNEWS	PLOT 819	73	48	121	54	11	8	5	78	199
Halliwell and Apps 1997	SASK ADH-2 (1)	68	38	106	15	3	3	1	21	127
Halliwell and Apps 1997	SASK ADM-3(1)	118	18	136	5	1	1	0	7	143
Halliwell and Apps 1997	SASK AIH-3 (1)	51	37	87	44	9	7	2	63	150
Halliwell and Apps 1997	SASK AIM-13 (1)	52	34	86	38	8	7	1	53	139
Halliwell and Apps 1997	SASK AMH-16 (1)	50	32	82	35	8	6	1	50	132
Halliwell and Apps 1997	SASK AMM-12 (1)	38	20	58	55	11	10	2	78	136
Halliwell and Apps 1997	SASK B?L (1)	0	186	186	9	1	2	2	13	199
Halliwell and Apps 1997	SASK B-AM-1 (1)	56	25	81	8	2	1	0	12	93

Appendix 3B. Continued

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
Halliwell and Apps 1997	SASK BDH-4 (2)	0	467	467	2	1	2	1	6	473
Halliwell and Apps 1997	SASK BDL-20 (1)	78	141	220	30	3	2	5	40	260
Halliwell and Apps 1997	SASK BIH (1)	147	28	176	15	2	1	2	20	196
Halliwell and Apps 1997	SASK BMH (2)	37	31	68	62	6	7	7	82	150
Halliwell and Apps 1997	SASK BMH-9 (1)	0	597	597	43	5	4	7	59	656
Halliwell and Apps 1997	SASK BMM-1b (2)	143	140	283	29	3	3	5	39	322
Halliwell and Apps 1997	SASK Jail House(1)	51	11	62	66	14	11	4	95	157
Halliwell and Apps 1997	SASK JDM-8 (1)	16	44	61	3	1	1	1	6	67
Halliwell and Apps 1997	SASK JIH-7 (1)	35	22	57	24	4	6	4	38	95
Halliwell and Apps 1997	SASK JMH-10 (1)	10	18	28	40	5	6	3	53	81
Halliwell and Apps 1997	SASK JMH-5 (1)	42	31	73	52	6	5	8	70	143
Halliwell and Apps 1997	SASK JMH-A1 (1)	38	21	59	48	6	6	6	66	125
Halliwell and Apps 1997	SASK JMH-A2 (2)	40	28	68	51	7	6	6	70	138
Halliwell and Apps 1997	SASK JMM-5 (1)	34	2	36	38	4	6	3	51	87
Halliwell and Apps 1997	SASK JMM-6 (1)	20	26	46	29	3	4	2	38	84
Halliwell and Apps 1997	SASK JMM-8a (1)	10	12	22	25	3	4	2	33	55
Halliwell and Apps 1997	SASK JMM-8b (2)	11	11	22	37	5	7	3	53	75
Halliwell and Apps 1997	SASK M-BD-1 (1)	0	211	211	3	0	0	1	4	215
Halliwell and Apps 1997	SASK MW-1a (1)	98	48	145	73	14	15	10	112	257
Halliwell and Apps 1997	SASK MW-1b (2)	98	34	132	53	8	6	9	76	208
Halliwell and Apps 1997	SASK NI-J-1 (1)	55	44	99	8	2	3	1	14	113
Halliwell and Apps 1997	SASK PA-BM-1(1)	84	45	129	62	8	6	10	85	214
Halliwell and Apps 1997	SASK PA-M-1 (1)	97	31	129	68	13	10	7	98	227
Halliwell and Apps 1997	SASK PA-M-2 (1)	56	23	78	32	7	5	1	45	123
Halliwell and Apps 1997	SASK POM-MW (1)	49	21	70	59	13	10	3	84	154
Halliwell and Apps 1997	SASK POM-OBS (1)	349	210	559	53	6	5	9	72	631
Halliwell and Apps 1997	SASK POM-OJP (1)	127	20	147	62	7	8	4	81	228
Halliwell and Apps 1997	SASK TE MW (1)	104	24	129	29	6	5	2	42	171
Halliwell and Apps 1997	SASK TE-OA (1)	97	28	125	32	7	6	1	46	171
Halliwell and Apps 1997	SASK TE-OBS (1)	61	44	106	26	3	3	5	36	142
Halliwell and Apps 1997	SASK TE-OJP (1)	37	11	47	21	3	4	2	30	77
Halliwell and Apps 1997	SASK TF-YA (1)	167	34	201	2	1	1	0	3	204
Halliwell and Apps 1997	SASK TF-YJP (1)	57	12	69	6	2	3	2	13	82
Halliwell and Apps 1997	SASK F-AM-1 (1)	142	28	170	48	10	8	2	68	238
Halliwell and Apps 1997	SASK F-BD-1 (1)	70	30	100	14	2	1	2	19	119
Halliwell and Apps 1997	SASK F-BI-1 (1)	251	21	272	18	2	2	3	25	297
Halliwell and Apps 1997	SASK F-BM-1 (1)	273	318	591	41	4	3	7	56	647
Halliwell and Apps 1997	SASK F-BM-2 (1)	34	14	48	16	2	3	3	23	71
Halliwell and Apps 1997	SASK F-BM-3 (1)	256	23	279	22	2	2	3	29	308

Appendix 3B. Concluded

Original source ^a	Original source ID	Mineral soil carbon	Organic soil carbon	Total soil carbon	Stem wood carbon	Stem bark carbon	Branch carbon	Foliage carbon	Total live tree carbon ^b	Total ecosystem carbon ^b
Halliwell and Apps 1997	SASK F-JD-1 (1)	87	18	105	4	2	3	1	9	114
Halliwell and Apps 1997	SASK F-JM-1 (1)	58	28	86	32	4	4	4	43	129
Halliwell and Apps 1997	SASK F-JM-2 (1)	71	14	85	27	3	5	3	38	123
Halliwell and Apps 1997	SASK F-JM-4 (1)	0	50	50	17	2	3	3	25	75
Halliwell and Apps 1997	SASK F-JM-5 (1)	225	22	246	23	3	3	4	32	278
Halliwell and Apps 1997	SASK F-M-1 (1)	200	24	224	25	3	4	2	34	258

^aARNIEWS = Acid Rain Early Warning System (D'Eon 1994), ESIS = Alberta Ecological Sita Data (Resource Data Branch 2002).

^bTotals may differ slightly from sum of components because of rounding.

^cData appears in the order produced by ACCESS.

