ATLAS OF THE FLORA OF NEW ENGLAND:
SALICACEAE TO BRASSICACEAE

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ABSTRACT
Dot maps are provided to depict the distribution at the county level of the taxa of Magnoliophyta: Salicaceae to Brassicaceae (corresponding to Flora of North America, Volume 7 (Flora of North America Editorial Committee 2010)) growing outside of cultivation in the six New England states of the northeastern United States. The maps treat 205 taxa (species, subspecies, varieties, and hybrids, but not forms) based primarily on specimens in the major herbaria of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, with most data derived from the holdings of the New England Botanical Club Herbarium (NEBC). Brief synonymy (to account for names used in standard manuals and floras for the area), habitat, chromosome information, and common names are also provided.

KEY WORDS. Flora, New England, atlas, distribution, Brassicaceae, Capparaceae, Cleomaceae, Limnanthaceae, Resedaceae, Salicaceae, Tropaeolaceae

This article is the eighth in a series (Angelo & Boufford 1996, 1998, 2000, 2007, 2010, 2011, 2012) that will present the distributions of the vascular flora of New England in the form of dot distribution maps at the county level (Fig. 1). The atlas is posted on the internet at http://neatlas.org, where it will be updated as new information becomes available.

This project encompasses all vascular plants (pteridophytes and spermatophytes) at the rank of species, subspecies, and variety growing independent of cultivation in the six New England states. Hybrids are also included, but forms and other ranks below the level of variety are not. The dots are based on voucher specimens primarily in New England herbaria (of colleges, universities, botanical gardens, and public museums) representing reproducing populations outside of cultivated habitats. This eighth installment includes the families in Magnoliophyta: Salicaceae to Brassicaceae corresponding to the families treated in Flora of North America, Volume 7 (Flora of North America Editorial Committee 2010). Of the 205 taxa treated, 109 are not native to the region – a surprising 53%. Future accounts will treat the distribution of additional non-monocot angiosperms.

The habitat data are distillations from a variety of sources augmented by our own field observations. An attempt was made to indicate habitat information as it applies to a particular taxon in New England rather than to the entire range of the taxon. Such information is omitted where habitat is not indicated on the label and where we also lack personal knowledge of the plant in New England. All omissions of habitat information are for a few introduced taxa and for all hybrids.

We plan to gather this series of articles, together with additional background material, into a separate volume upon completion of all the installments. It is our hope, in the meantime, that these articles will stimulate additional field work to supplement the distributions portrayed in the maps.
The New England Botanical Club herbarium has proven to be the most important resource for this project. We are eager to receive information on voucher specimens in public herbaria documenting range extensions and filling county gaps in distributions. Similarly, because the atlas of the New England flora will be continuously updated as new information becomes available, we are eager to receive notification of published corrections of cytological information and new, documented chromosome counts for taxa in the New England flora.

MATERIALS AND METHODS

Materials and methods are as outlined in Angelo and Boufford (1996) and at http://neatlas.org/Intro-Pterid&Gym.html, and are not repeated here.

TAXONOMY AND FORMAT

The taxonomy and nomenclature adopted for this work essentially follow that of the Flora of North America project, except that families, genera, and species are arranged alphabetically. The families and their circumscription do not necessarily reflect current views on relationships or composition. The Angiosperm Phylogeny Website (Stevens 2001 onwards) should be consulted for a continuously updated treatment of families and their inclusive genera. Named and unnamed hybrid taxa are placed alphabetically at the end of the genus in which they occur. Unnamed hybrids combine the names of the progenitors alphabetically by epithet. Taxa that are not native to New England are indicated by uppercase text. Unpublished names are not used, even if publication is pending.

Chromosome numbers are taken primarily from Flora of North America, Volume 7 (Flora of North America Editorial Committee 2010) and from Missouri Botanical Garden’s Index to Plant Chromosome Numbers [website (http://mobot.mobot.org/W3T/Search/ipcn.html); St. Louis, MO].

Synonymy is provided primarily with respect to names accepted in standard manuals covering New England published from 1950 onward, including Fernald (1950), Gleason (1952), Gleason and Cronquist (1991), and Seymour (1982). Synonyms have not been provided where the distribution for the synonymized name does not include New England.

The following list (which includes excluded taxa) will aid readers in finding familiar names that have been transferred to other taxa:

\[
\begin{align*}
\text{Capparaceae} & \rightarrow \text{Cleomaceae} \\
\text{Alyssum} (\text{in part}) & \rightarrow \text{Aurinia} \\
\text{Arabis} (\text{in part}) & \rightarrow \text{Arabidopsis} \\
\text{Arabis} (\text{in part}) & \rightarrow \text{Boechera} \\
\text{Arabis} (\text{in part}) & \rightarrow \text{Turritis} \\
\text{Armoracia} (\text{in part}) & \rightarrow \text{Rorippa} \\
\text{Brassica} (\text{in part}) & \rightarrow \text{Sinapis} \\
\text{Cardaria} & \rightarrow \text{Lepidium} \\
\text{Cleome} (\text{in part}) & \rightarrow \text{Peritoma} \\
\text{Cleome} (\text{in part}) & \rightarrow \text{Tarenaya} \\
\text{Coronopus} & \rightarrow \text{Lepidium} \\
\text{Dentaria} & \rightarrow \text{Cardamine} \\
\text{Neobeckia} & \rightarrow \text{Rorippa} \\
\text{Neotularia} (\text{in part}) & \rightarrow \text{Braya} \\
\text{Rorippa} (\text{in part}) & \rightarrow \text{Nasturtium}
\end{align*}
\]
The following species have been reported from our area but are excluded for the reasons noted:

*Arabis procurrens* Waldein & Kitaibel  [no voucher for wild occurrence found; reported from Massachusetts]

*Diploptaxis erucoides* (Linnaeus) de Candolle  [no voucher for wild occurrence found; reported from Massachusetts]

*Draba aurea* Vahl ex Hornemann  [specimen collected from Barnstable Co., Massachusetts lacks information to indicate wild occurrence]

*Draba lactea* Adams (*D. allenii* Fernald)  [no specimen located; reported from Maine]

*Draba nivalis* Liljeblad  [specimen collected from Barnstable Co., Massachusetts lacks information to indicate wild occurrence]

*Lepidium hirtum* (Linnaeus) Smith  [no specimen located; reported from Maine]

*Lepidium ramosissimum* A. Nelson  [no specimen located; reported from Maine]

*Malcolmia maritima* (Linnaeus) W.T. Aiton  [no specimen located; reported from New Hampshire]

*Rorippa sessiliflora* (Nuttall) Hitchcock  [specimen from Massachusetts is deemed not to represent wild occurrence]

*Salix aurita* Linnaeus  [no specimen located; reported from Massachusetts]

*Salix daphnoides* Villars  [no specimen located; reported from Massachusetts]

**ANGIOSPERMAE (MAGNOLIOPHYTA) - ANGIOSPERMS**

**BRASSICACEAE**

*Alliaria petiolata* (M. Bieberstein) Cavara & Grande—Garlic Mustard (Figure 2). $2n = 42$. Shaded roadsides, waste places, fields, thin woods. From Eurasia, northern Africa.  [*A. officinalis* Andrzejowski ex M. Bieberstein]

*Alyssum alyssoides* (Linnaeus) Linnaeus—Pale Madwort (Figure 2). $2n = 32$. Dry fields, roadsides, waste places. From Eurasia, northern Africa.

*Arabidopsis lyrata* (Linnaeus) O’Kane & Al-Shehbaz subsp. *lyrata*—Sand Cress (Figure 2). $2n = 16, 32$. Dry ledges (especially basic soil), gravels, sands. [*Arabis lyrata* Linnaeus]

*Arabidopsis thaliana* (Linnaeus) Heynhold—Mouse-ear Cress (Figure 2). $2n = 10$. Sandy roadsides, waste places, dry fields. From Eurasia.

*Arabis alpina* Linnaeus—Alpine Rock-cress (Figure 3). $2n = 16$. Calcareous rocks, alpine meadows.

*Arabis caucasica* Willdenow—Garden Rock-cress (Figure 3). $2n = 16$. Waste places. From southwestern Asia.
Arabis pycnocarpa M. Hopkins var. pycnocarpa—Hairy Rock-cress (Figure 3). $2n = 32$. Dry, calcareous ledges. [A. hirsuta (Linnaeus) Scopoli var. pycnocarpa (M. Hopkins) Rollins]

ARMORACIA RUSTICANA P. Gaertner, B. Meyer & Scherbius—Horseradish (Figure 3). $2n = 32$. Moist soil of waste places, roadsides, fields. From Eurasia. [A. LAPATHIFOLIA Gilibert]

AURINIA SAXATALIS (Linnaeus) Desvaux—Basket-of-gold (Figure 4). $2n = 16$. Rock outcrops. From Eurasia. [ALYSSUM SAXATILE Linnaeus]

Barbarea orthoceras Ledebour—American Yellow-rocket (Figure 4). $2n = 16$. Streambanks, swamps, wet rocks.

BARBAREA STRICTA Andrzejowski—Small-flowered Winter-cress (Figure 4). $2n = 16$. Roadsides, waste places, fields, usually in moist soil. From Eurasia. [B. VULGARIS W.T. Aiton (in part) misapplied]

BARBAREA Verna (Miller) Ascherson—Early Winter-cress (Figure 4). $2n = 16$. Roadsides, fields, waste places. From Eurasia.

BARBAREA VULGARIS W.T. Aiton—Common Winter-cress (Figure 5). $2n = 16$. Roadsides, fields, waste places, usually in moist soil. From Eurasia, northern Africa. [B. VULGARIS var. ARCUATA (Opitz ex C. Presl) Fries; B. VULGARIS var. BRACHYCARPA Rouy & Foucaud]

BERTEROA INCANA (Linnaeus) de Candolle—Hoary Alyssum (Figure 5). $2n = 16$. Dry fields, roadsides, waste places. From Eurasia.

BERTEROA MUTABILIS (Ventenat) de Candolle—(Figure 5). $2n = 74, 111, 148, 185$. Roadsides, waste places. From Eurasia.

Boechera canadensis (Linnaeus) Al-Shehbaz—Sicklepod (Figure 5). $2n = 14$. Rocky wooded slopes, rich woods. [Arabis canadensis Linnaeus]

Boechera grahamii (Lehmann) Windham & Al-Shehbaz—Purple Rock-cress (Figure 6). $2n = 21$. Ledges. [Arabis brachycarpa (Torrey & A. Gray) Britton; Arabis divaricarpa A. Nelson misapplied]

Boechera laevigata (Muhlenberg ex Willdenow) Al-Shehbaz—Smooth Rock-cress (Figure 6). $2n = 14$. Dry, rocky, wooded slopes, shaded ledges (chiefly calcareous), rich woods. [Arabis laevigata (Muhlenberg ex Willdenow) Poiret]

Boechera missouriensis (Greene) Al-Shehbaz—Green Rock-cress (Figure 6). $2n = ?$. Dry ledges, rocky woods. [Arabis missouriensis Greene]

Boechera stricta (Graham) Al-Shehbaz—Drummond’s Rock-cress (Figure 6). $2n = 14$. Rocky slopes, ledges. [Arabis drummondii A. Gray]

BRASSICA JUNCEA (Linnaeus) Czernajew—Indian Mustard (Figure 7). $2n = 36$. Fields, waste places, roadsides. From Eurasia, Africa. [B. JUNCEA var. CRISPIFOLIA L.H. Bailey]

BRASSICA NAPUS Linnaeus—Turnip (Figure 7). $2n = 38$. Fields, waste places, roadsides. From Eurasia, Africa. [B. NAPOBREASSICA (Linnaeus) Miller]
**BRASSICA NIGRA** (Linnaeus) W.D.J. Koch—Black Mustard (Figure 7). $2n = 16$. Fields, waste places, roadsides. From Eurasia, Africa.

**BRASSICA OLERACEA** Linnaeus—Cabbage (Figure 7). $2n = 18$. Waste places. From Eurasia, Africa.

**BRASSICA RAPA** Linnaeus—Field Mustard (Figure 8). $2n = 20$. Fields, waste places, roadsides. From Eurasia, Africa.

**Braya humilis** (C.A. Meyer) B.L. Robinson subsp. *humilis*—Northern Rock-cress (Figure 8). $2n = 28$, 42, 56, 70. Calcareous cliffs and talus. [B. *humilis* var. *leiocarpa* (Trautvetter) Fernald; *Neotorularia humilis* (C.A. Meyer) Hedge & J. Léonard]

**BUNIAS ORIENTALIS** Linnaeus—Turkish Rocket (Figure 8). $2n = 14$. Roadsides, waste places. From Eurasia.

**Cakile edentula** (Bigelow) Hooker var. *edentula*—American Sea-rocket (Figure 8). $2n = 18$. Sandy sea beaches.

**CAMELINA MICROCARPA** de Candolle—(Figure 9). $2n = 40$. Fields, roadsides, railroads. From Eurasia, northern Africa.

**CAMELINA SATIVA** (Linnaeus) Crantz—Gold-of-pleasure (Figure 9). $2n = 40$. Fields, roadsides, waste places. From Eurasia.

**CAPSSELLA BURSA-PASTORIS** (Linnaeus) Medikus—Shepherd’s-purse (Figure 9). $2n = 32$. Roadsides, fields, waste places. From Eurasia, northern Africa. [C. *BURSA-PASTORIS* var. *BIFIDA* Crépin; *C. RUBELLA* Reuter]

**Cardamine bellidifolia** Linnaeus—Alpine Cress (Figure 9). $2n = 16$. Alpine brooks, wet, mossy rocks at high altitudes.

**Cardamine bulbesa** (Schreber ex Muhlenberg) Britton, Sterns & Poggenburg—Spring Cress (Figure 10). $2n = 16, 56, 64, 80, 96, 112$. About springs, wet woods, meadows. [C. *rhomboidea* (Persoon) de Candolle]

**Cardamine concatenata** (Michaux) O. Schwarz—Pepper-root (Figure 10). $2n = 128-256$. Rich, moist woods, calcareous rocky banks. [*Dentaria laciniata* Muhlenberg ex Willdenow]

**Cardamine dentata** Schultes—(Figure 10). $2n = 64$, ca. 80. Margins of shallow water, often calcareous, swampy woods. [*C. pratensis* Linnaeus var. *palustris* Wimmer & Grabowski; see Marhold 1994, also Marhold (pers. comm.)]

**Cardamine diphyllea** (Michaux) Alph. Wood—Crinkleroot (Figure 10). $2n = 96$. Rich, moist woods. [*Dentaria diphyllea* Michaux]

**Cardamine douglassii** Britton—Purple Cress (Figure 11). $2n = 56, 64, 96, 112, 144$. Rich, moist woods.

**CARDAMINE FLEXUOSA** Withering—Woodland Bitter-cress (Figure 11). $2n = 32$. Fields, roadsides, disturbed areas. From Eurasia.

**CARDAMINE HIRSUTA** Linnaeus—Hairy Bitter-cress (Figure 11). $2n = 16$. Roadsides, fields, waste places. From Eurasia.
CARDAMINE IMPATIENS Linnaeus—Narrow-leaved Bitter-cress (Figure 11). 2n = 16. Shaded grasslands, roadsides, disturbed areas, open woodlands. From Eurasia.

Cardamine longii Fernald—(Figure 12). 2n = ? Tidal estuaries, tidal marshes.

Cardamine maxima (Nuttall) Alph. Wood—Large Toothwort (Figure 12). 2n = 120, 124, 132, 138, 156, 161, ca. 208. Rich woods, woodland streambanks. [C. anomalala (Eames) K. Schumann; Dentaria anomalala Eames; D. maxima Nuttall]

Cardamine parviflora Linnaeus—Sand Bitter-cress (Figure 12). 2n = 16. Dry, rocky or sandy woods, ledges. [C. parviflora var. arenicola (Britton) O.E. Schulz]

Cardamine pensylvanica Muhlenberg ex Willdenow—Common Bitter-cress (Figure 12). 2n = 32, 64. Springs, brookside, pond shores, swamps. [C. pensylvanica var. brittoniana Farwell]

Cardamine pratensis Linnaeus—Cuckooflower (Figure 13). 2n = 16. Meadows, moist grounds.

Cardamine hybrids—

Cardamine concatenata (Michaux) O. Schwarz × C. maxima (Nuttall) Alph. Wood—(Figure 13). [C. × incisa K. Schumann; Dentaria × incisifolia Eames ex Britton]

CHORISPORA TENELLA (Pallas) de Candolle—Purple Mustard (Figure 13). 2n = 14. Roadsides, fields, waste places. From Eurasia, northern Africa.

CONRINGIA ORIENTALIS (Linnaeus) Dumortier—Hare’s-ear Mustard (Figure 13). 2n = 14. Roadsides, fields, waste places. From Eurasia.

Descurainia incana (Bernhardi ex Fischer & C.A. Meyer) Dorn—Mountain Tansy-mustard (Figure 14). 2n = 14, 28. Calcareous gravels, roadsides. [D. richardsonii O.E. Schulz]

Descurainia pinnata (Walter) Britton subsp. brachycarpa (Richardson) Detling—Green Tansy-mustard (Figure 14). 2n = 14, 28. Roadsides, dry, rocky or sandy soils.

DESCURAINIA SOPHIA (Linnaeus) Webb ex Prantl—Flixweed (Figure 14). 2n = 28. Roadsides, waste places. From Eurasia.

DIPLITAXIS MURALIS (Linnaeus) de Candolle—Annual Wall-rocket (Figure 14). 2n = 42. Waste places, roadsides. From Eurasia, Africa.

DIPLITAXIS TENUIFOLIA (Linnaeus) de Candolle—Perennial Wall-rocket (Figure 15). 2n = 22. Waste places, roadsides. From Eurasia, Africa.

Draba arabisans Michaux—Rock Whitlow-grass (Figure 15). 2n = 96. Rock outcrops, usually calcareous or dolomite.

Draba cana Rydberg—Ashy Whitlow-grass (Figure 15). 2n = 32. Calcareous cliffs. [D. breweri S. Watson var. cana (Rydberg) Rollins; D. lanceolata Royle - misapplied]

Draba glabella Pursh—Smooth Whitlow-grass (Figure 15). 2n = 64, 80. Rock outcrops, usually calcareous. [D. glabella var. orthocarpa (Fernald & Knowlton) Fernald]
**Draba incana** Linnaeus—Twisted Whitlow-grass (Figure 16). $2n = 32$. Rock outcrops, usually calcareous.

**Draba reptans** (Lamarck) Fernald—Carolina Whitlow-grass (Figure 16). $2n = 16, 30, 32$. Fields, ledges, dry sands.

**DRABA VERNA** Linnaeus—Common Whitlow-grass (Figure 16). $2n = 14, 16, 20, 24, 28, 30, 32, 34, 36, 38, 40, 52, 54, 58, 60, 64$. Roadsides, fields, waste places, open, dry places. From Eurasia, northwestern Africa. [*D. VERNA* var. *BOERHAAVA* (H.C. Hall) Dumortier]

**ERUCA VESICARIA** (Linnaeus) Cavanilles subsp. *SATIVA* (Miller) Thellung—Arugula (Figure 16). $2n = 22$. Waste places, roadsides, fields. From Europe, Africa. [*ERUCA SATIVA* Miller]

**ERUCASTRUM GALLICUM** (Willdenow) O.E. Shulz—Dog Mustard (Figure 17). $2n = 30$. Waste places, roadsides, railroads, fields. From Europe.

**ERYSIMUM CHEIRANTHOIDES** Linnaeus—Wormseed Mustard (Figure 17). $2n = 16$. Waste places, roadsides, railroads, fields. From Eurasia, northern Africa.

**ERYSIMUM HIERACIFOLIUM** Linnaeus—European Wallflower (Figure 17). $2n = 81$. Roadsides, waste places, fields. From Eurasia.

**ERYSIMUM INCONSPICUUM** (S. Watson) MacMillan—Small-flowered Prairie-rocket (Figure 17). $2n = 26$. Railroad embankments, roadsides, dry, open soil. From farther west.

**ERYSIMUM MARSCHALLIANUM** Andrzejowski ex M. Bieberstein—(Figure 18). $2n = 48$. Moist thickets. [*E. DURUM* J. Presl & C. Presl; Note: Dr. Ihsan Al-Shehbaz (pers. comm.) believes the Grand Isle Co., VT voucher to be *E. VIRGATUM* Roth]

**ERYSIMUM ODORATUM** Ehrhart—Pannonian Wallflower (Figure 18). $2n = 14, 32$. Wool waste. From Eurasia.

**ERYSIMUM REPANDUM** Linnaeus—Spreading Wallflower (Figure 18). $2n = 16$. Waste places, roadsides. From Eurasia, northern Africa.

**EUCLIDIUM SYRIACUM** (Linnaeus) W.T. Aiton—(Figure 18). $2n = 14$. Waste places, roadsides. From Eurasia.

**HESPERIS MATRONALIS** Linnaeus—Dame’s-rocket (Figure 19). $2n = 24$. Roadsides, waste places, thickets. From Eurasia, northern Africa.

**IBERIS AMARA** Linnaeus—Rocket Candytuft (Figure 19). $2n = 14$. Waste places, especially dumps. From western Europe.

**IBERIS SEMPERVIRENS** Linnaeus—Evergreen Candytuft (Figure 19). $2n = 22$. Fields, waste places. From Europe.

**IBERIS UMBELLATA** Linnaeus—Globe Candytuft (Figure 19). $2n = 14, 16, 18, 34$. Waste places. From Europe.

**ISATIS TINCTORIA** Linnaeus—Dyer’s Woad (Figure 20). $2n = 14, 28$. Roadsides, fields, waste places. From Eurasia, northern Africa.
**LEPIDIUM CAMPESTRE** (Linnaeus) W.T. Aiton—Cow-cress (Figure 20). $2n = 16$. Waste places, fields, roadsides. From Eurasia.

**LEPIDIUM CORONOPUS** (Linnaeus) Al-Shehbaz—Swine-cress (Figure 20). $2n = 32$. Waste places, fields, roadsides. From Eurasia, northern Africa. [**CORONOPUS SQUAMATUS** (Forsskål) Ascherson]

**LEPIDIUM DENSIFLORUM** Schrader—Prairie Peppergrass (Figure 20). $2n = 32$. Roadsides, waste places, railroads. From farther west or south.

**LEPIDIUM DIDYMUM** Linnaeus—Lesser Wort-cress (Figure 21). $2n = 32$. Waste places, roadsides, fields. From South America. [**CORONOPUS DIDYMUM** (Linnaeus) Smith]

**LEPIDIUM DRABA** Linnaeus—Hoary Cress (Figure 21). $2n = 32, 64$. Roadsides, waste places, fields. From Eurasia. [**CARDARIA DRABA** (Linnaeus) Desvaux]

**LEPIDIUM HETEROPHYLLUM** Bentham—Smith’s Pepperwort (Figure 21). $2n = 48$. Roadsides, fields, waste places.

**LEPIDIUM LATIFOLIUM** Linnaeus—Dittander (Figure 21). $2n = 24$. Waste places, tidal shores. From Eurasia, northern Africa.

**LEPIDIUM PERFOLIATUM** Linnaeus—Clasping Pepperwort (Figure 22). $2n = 16$. Roadsides, railroads, fields, waste places. From Eurasia, northern Africa.

**LEPIDIUM RUDERALE** Linnaeus—Roadside Pepperwort (Figure 22). $2n = 16, 32$. Roadsides, waste places, railroads. From Eurasia.

**LEPIDIUM SATIVUM** Linnaeus—Garden Cress (Figure 22). $2n = 16, 32$. Roadsides, waste places. From Eurasia.

*Lepidium virginicum* Linnaeus subsp. *virginicum*—Wild Pepper-grass (Figure 22). $2n = 32$. Roadsides, waste places, dry, open soil.

**LOBULARIA MARITIMA** (Linnaeus) Desvaux—Sweet Alyssum (Figure 23). $2n = 24$. Waste places, roadsides. From Eurasia, Africa.

**LUNARIA ANNUA** Linnaeus—Honesty (Figure 23). $2n = 30$. Roadsides, waste places. From Europe.

**MICROTHLASPI PERFOLIATUM** (Linnaeus) F.K. MEYER—Perfoliate Penny-cress (Figure 23). $2n = 14, 28, 42$. Fields, waste places. From Eurasia, northern Africa. [**THLASPI PERFOLIATUM** Linnaeus]

**NASTURTIUM MICROPHYLLUM** Boenninghausen *ex* Reichenbach—(Figure 23). $2n = 64$. Brooks. From Europe. [**N. OFFICINALE** W.T. Aiton var. **MICROPHYLLUM** (Boenninghausen *ex* Reichenbach) Thellung; **RORIPPA MICROPHYLLA** (Boenninghausen *ex* Reichenbach) Hylander *ex* Á. Löve & D. Löve]

**NASTURTIUM OFFICINALE** W.T. Aiton—True Water-cress (Figure 24). $2n = 32$. Brooks, ditches, springheads. From Eurasia, northern Africa. [**N. OFFICINALE** var. **SIIFOLIUM** Reiche; **RORIPPA NASTURTIUM-AQUATICUM** (Linnaeus) Hayek]
—Nasturtium hybrids—

**NASTURTIIUM × STERILE** (Airy Shaw) Oefelein—(Figure 24). [N. MICROPHYLLOM Boenninghausen ex Reichenbach × N. OFFICINALE W.T. Aiton; RORIPPA × STERILIS Airy Shaw]

**NESLIA PANICULATA** (Linnaeus) Desvaux—Ball-mustard (Figure 24). 2n = 14. Railroads, waste places, fields, roadsides. From Eurasia, northern Africa.

**RAPHANUS RAPANISTRUM** Linnaeus—Wild Radish (Figure 24). 2n = 18. Fields, waste places, roadsides, railroads. From Eurasia.

**RAPHANUS SATIVUS** Linnaeus—Garden Radish (Figure 25). 2n = 18. Fields, roadsides, waste places. From Eurasia.

**RAPISTRUM RUGOSUM** (Linnaeus) Allioni—Bastard Cabbage (Figure 25). 2n = 16. Waste places, roadsides. From Europe. [R. RUGOSUM var. VENOSUM (Persoon) de Candolle]

**RORIPPA AMPHIBIA** (Linnaeus) Besser—Great Yellow-cress (Figure 25). 2n = 16, 32. Quiet water, shores, waste places. From Eurasia.

**Rapippa aquatica** (Eaton) E.J. Palmer & Steyermark—Lake-cress (Figure 25). 2n = 24. Lakes, quiet streams. [Armoracia aquatica (Eaton) Wiegand; A. LACUSIRIS (A. Gray) Al-Shehbaz & V.M. Bates; Neobeckia aquatica (Eaton) Greene]

**RORIPPA AUSTRIACA** (Cranz) Besser—Austrian Yellow-cress (Figure 26). 2n = 24. Low fields, muddy shores, ditches. From Europe.

**RORIPPA GLOBOSA** (Turczaninow ex Fischer & C.A. Meyer) Hayek—Wind Cauliflower (Figure 26). 2n = 16. Waste places. From eastern Asia.

**Rorippa palustris** (Linnaeus) Besser subsp. palustris—Marsh Cress (Figure 26). 2n = 32. Shores, damp openings, ditches. [R. palustris subsp. fernaldiana (Butters & Abbe) Jonsell; R. islandica (Oeder ex Murray) Borbás var. fernaldiana Butters & Abbe; R. islandica var. islandica misapplied]

**Rorippa palustris** (Linnaeus) Besser subsp. hispida (Desvaux) Jonsell—(Figure 26). 2n = 32. Shores, damp openings, waste places. [R. islandica (Oeder ex Murray) Borbás var. hispida (Desvaux) Butters & Abbe; R. islandica var. islandica misapplied]

**RORIPPA SYLVESTRIS** (Linnaeus) Besser—Creeping Yellow-cress (Figure 27). 2n = 32, 40, 48. Wet roadsides, meadows, other wet places. From Eurasia.

—Rorippa hybrids—

**RORIPPA × PROSTRATA** (J.P. Bergeret) Schinz & Thellung—(Figure 27). [R. AMPHIBIA (Linnaeus) Besser × R. SYLVESTRIS (Linnaeus) Besser]

**SINAPIS ALBA** Linnaeus—White Mustard (Figure 27). 2n = 24. Roadsides, waste places, railroads. From Eurasia. [BRASSICA ALBA (Linnaeus) Rabenhorst; B. HIRTA Moench]

**SINAPIS ARVENSIS** Linnaeus—Charlock (Figure 27). 2n = 18. Waste places, fields, roadsides. From Eurasia. [BRASSICA KABER (de Candolle) L.C. Wheeler; B. KABER var. PINNATIFIDA (Stokes) L.C. Wheeler; B. KABER var. SCHKUHRIANA (Reichenbach) L.C. Wheeler]
**SISYMBRIUM ALTISSIMUM** Linnaeus—Tumble-mustard (Figure 28). 2n = 14. Waste places, fields, roadsides. From Eurasia, northwestern Africa.

**SISYMBRIUM IRIO** Linnaeus—London Rocket (Figure 28). 2n = 14. Roadsides, railroads, waste places. From Eurasia, northern Africa.

**SISYMBRIUM LOESELII** Linnaeus—False London Rocket (Figure 28). 2n = 14. Waste places, fields, roadsides. From Eurasia.

**SISYMBRIUM OFFICINALE** (Linnaeus) Scopoli—Hedge-mustard (Figure 28). 2n = 14. Waste places, fields, roadsides. From Eurasia, northern Africa. [S. OFFICINALE var. LEIOCARPUM de Candolle]

**SISYMBRIUM ORIENTALE** Linnaeus—Indian Hedge-mustard (Figure 29). 2n = 14. Waste places, roadsides. From Eurasia, northern Africa.

**Subularia aquatica** Linnaeus subsp. americana G.A. Mulligan & Calder—Awlwort (Figure 29). 2n = 30. Submersed at sandy lake shores.

**TEESDALIA NUDICAULIS** (Linnaeus) W.T. Aiton—Shepherd’s Cress (Figure 29). 2n = 36. Sandy fields, roadsides, waste places. From Eurasia.

**THLASPI ARVENSE** Linnaeus—Field Penny-cress (Figure 29). 2n = 14. Roadsides, waste places, fields. From Eurasia.

**TROPIDOCARPUM GRACILE** Hooker—Dobie Pod (Figure 30). 2n = 16. Wool waste. From farther west.

**Turritis glabra** Linnaeus—Tower-mustard (Figure 30). 2n = 12, 16, 32. Rich, open woods, ledges, fields, railroads. [Arabis glabra (Linnaeus) Bernhardi]

**CLEOMACEAE**

**PERITOMA SERRULATA** (Pursh) de Candolle—Rocky Mountain Beeplant (Figure 30). 2n = 34, 60. Waste places. From farther west. [CLEOME SERRULATA Pursh]

**Polanisia dodecandra** (Linnaeus) de Candolle subsp. dodecandra—Clammyweed (Figure 30). 2n = 20. Sandy or gravelly shores. [P. graveolens Rafinesque]

**POLANISIA DODECANDRA** (Linnaeus) de Candolle subsp. TRACHYSPERMA (Torrey & A. Gray) H.H. Iltis—Sandyseed (Figure 31). Roadsides. From farther west and south. [P.TRACHYSPERMA Torrey & A. Gray]

**TARENAYA HASSLERIANA** (Chodat) H.H. Iltis—Pink-queen (Figure 31). Waste places, roadsides. From South America. [CLEOME HASSLERIANA Chodat; C. SPINOSA (Jacquin) Rafinesque - misapplied]

**LIMNANTHACEAE**

**Floerkea proserpinacoides** Willdenow—False Mermaid (Figure 31). 2n = 10. Alluvial woods, usually wet.
RESEDACEAE

RESEDA ALBA Linnaeus—White Mignonette (Figure 31). $2n = 40$. Waste places, roadsides. From Eurasia, northern Africa.

RESEDA LUTEA Linnaeus—Yellow Mignonette (Figure 32). $2n = 48$. Fields, roadsides, waste places. From Eurasia, northern Africa.

RESEDA LUTEOLA Linnaeus—Dyer’s Rocket (Figure 32). $2n = 24, 26$. Waste places. From Eurasia, northern Africa.

RESEDA ODORATA Linnaeus—Garden Mignonette (Figure 32). $2n = 12$. Waste places. From northern Africa.

SALICACEAE

POPULUS ALBA Linnaeus—White Poplar (Figure 32). $2n = 38$. Roadsides, waste places, field borders. From Eurasia.

Populus balsamifera Linnaeus—Balsam Poplar (Figure 33). $2n = 38$. Alluvial soils, streambanks, rich, low woods. [P. balsamifera var. subcordata Hylander]

Populus deltoides W. Bartram ex Marshall subsp. deltoides—Cottonwood (Figure 33). $2n = 38$. Streambanks, lake shores, floodplains.

Populus grandidentata Michaux—Bigtooth Aspen (Figure 33). $2n = 38$. Dry woods, recent burns, hillsides.

Populus heterophylla Linnaeus—Swamp Poplar (Figure 33). $2n = ?$ Swamps, flooded bottomlands.

POPULUS NIGRA Linnaeus—Lombardy Poplar (Figure 34). $2n = 38, 57$. Roadside, old house sites. From Eurasia. [P. NIGRA var. ITALICA Münchhausen]

POPULUS TREMULA Linnaeus—European Aspen (Figure 34). $2n = 38$. Waste places. From Eurasia.

Populus tremuloides Michaux—Quaking Aspen (Figure 34). $2n = 38, 57, 76$. Dry, open woods, recent burns and clearings, roadsides. [P. tremuloides var. magnifica Victorin]

—Populus hybrids—

Populus × canadensis Moench—(Figure 34). [P. deltoides W. Bartram ex Marshall subsp. deltoides × P. NIGRA Linnaeus]

POPULUS × CANESCENS (Aiton) Smith—Gray Poplar (Figure 35). [P. ALBA Linnaeus × P. TREMULA Linnaeus]

Populus × heimburgtii B. Boivin—(Figure 35). [P. ALBA Linnaeus × P. tremuloides Michaux]

Populus × jackii Sargent—Balm-of-Gilead (Figure 35). [P. balsamifera Linnaeus × P. deltoides W. Bartram ex Marshall subsp. deltoides; P. × gileadensis Rouleau]

Populus × rouleauiana B. Boivin—(Figure 35). [P. ALBA Linnaeus × P. grandidentata Michaux]
Populus × smithii B. Boivin—(Figure 36). [P. grandidentata Michaux × P. tremuloides Michaux]

SALIX ALBA Linnaeus—White Willow (Figure 36). 2n = 76. Low moist ground, along streams, shores, roadways. From Eurasia. [S. ALBA var. CALVA Michaux; S. ALBA var. CALVA (Linnaeus) Stokes]

Salix amygdaloides Andersson—Peach-leaved Willow (Figure 36). 2n = 38. Lake shores, low woods.

Salix arctophila Cockerell ex A. Heller—Northern Willow (Figure 36). 2n = 76. Alpine meadows.

Salix argyrocarpa Andersson—Labrador Willow (Figure 37). 2n = 76. Alpine or subalpine meadows.

SALIX ATROCINEREA Brotero—Rusty Willow (Figure 37). 2n = 76. Marshes, wooded wetlands. From Europe.

SALIX BABYLONICA Linnaeus—Weeping Willow (Figure 37). 2n = 76. Streambanks, shores, low grounds, near settlements. From Asia.

Salix bebbiana Sargent—Bebb Willow (Figure 37). 2n = 38. Damp thickets, springy places.

Salix candida Flüggé ex Willdenow—Hoary Willow (Figure 38). 2n = 38. Calcareous bogs and swamps.

SALIX CAPREA Linnaeus—Goat Willow (Figure 38). 2n = 38. Thickets, roadways. From Europe.

SALIX CINEREA Linnaeus—Gray Willow (Figure 38). 2n = 76. Sandy or gravelly, freshwater shores, wet thickets, moist waste places. From Eurasia.

Salix cordata Michaux—Dune Willow (Figure 38). 2n = 38. Sandy or gravelly shores, beaches, dunes.

Salix discolor Muhlenberg—Pussy Willow (Figure 39). 2n = 76, 95, 114. Damp thickets, freshwater shores, swamps. [S. discolor var. overi C.R. Ball]

SALIX ELAEAGNOS Scopoli—Olive Willow (Figure 39). 2n = 38. Shores, rocky banks. From Europe. [S. INCANA Schrank]

Salix eriocephala Michaux—Wand Willow (Figure 39). 2n = 38. Low thickets, pond shores, streambanks, swamps. [S. cordata Muhlenberg var. abraska Fernald; S. rigida Muhlenberg; S. rigida var. angustata (Pursh) Fernald]

Salix herbacea Linnaeus—Dwarf Willow (Figure 39). 2n = 38. Mossy rocks in alpine areas.

Salix humilis Marshall var. humilis—Prairie Willow (Figure 40). 2n = 38, 76. Dry thickets, openings, dry, mixed woods. [S. humilis var. hyporhysa Fernald; S. humilis var. keweenawensis Farwell]

Salix humilis Marshall var. tristis (Aiton) Griggs—Dwarf Prairie Willow (Figure 40). 2n = ? Dry barrens, open woods, swampy areas in woods. [S. humilis var. microphylla (Andersson) Fernald; S. occidentalis Walter]
**Salix interior** Rowlee—Sandbar Willow (Figure 40). $2n = 38$. Sandy or silty alluvial soil, river sandbars, streambanks, shores. [S. interior var. exterior Fernald; S. exigua Nuttall subsp. interior (Rowlee) Cronquist]

**Salix lucida** Muhlenberg—Shining Willow (Figure 40). $2n = 76$. Low grounds, freshwater shores, swamps. [S. lucida var. angustifolia (Andersson) Andersson; S. lucida var. intonsa Fernald]

**Salix myricoides** Muhlenberg—Blue-leaf Willow (Figure 41). $2n = \ ?$ River thickets, gravelly shores, usually in calcareous soil. [S. glaucophylloides Fernald]

**SALIX MYRSINIFOLIA** Salisbury—Dark-leaved Willow (Figure 41). $2n = 114$. Waste places, roadsides. From Eurasia.

**Salix nigra** Marshall—Black Willow (Figure 41). $2n = 38$. Streambanks, shores, rich, low, woods.

**Salix pedicellaris** Pursh—Bog Willow (Figure 41). $2n = 38, 57, 76$. Sphagnum bogs and swamps, sphagnous shores. [S. pedicellaris var. hypoglauca Fernald; S. pedicellaris var. tenuescens Fernald]

**Salix pellita** (Andersson) Bebb—Satin Willow (Figure 42). $2n = 38$. Streambanks, shores, rich, thickets.

**SALIX PENTANDRA** Linnaeus—Bay-leaved Willow (Figure 42). $2n = 38$. Roadsides, meadows, shores, waste places. From Eurasia.

**Salix petiolaris** Smith—Slender Willow (Figure 42). $2n = 38$. Meadows, river thickets, low, moist openings in deciduous woods. [S. gracilis Andersson; S. gracilis var. textoris Fernald; S. × subsericea (Andersson) C.K. Schneider]

**Salix planifolia** Pursh—Tea-leaved Willow (Figure 42). $2n = 57, 76$. Alpine, subalpine and boreal meadows, streambanks, wet thickets.

**SALIX PURPUREA** Linnaeus—Purple Osier (Figure 43). $2n = 38$. Low, wet ground. From Europe.

**Salix pyrifolia** Andersson—Balsam Willow (Figure 43). $2n = 38$. Bogs, swamps, damp thickets.

**Salix sericea** Marshall—Silky Willow (Figure 43). $2n = \ ?$ River thickets, swamps. [S. coactilis Fernald]

**Salix serissima** (L.H. Bailey) Fernald—Autumn Willow (Figure 43). $2n = 76$. Calcareous marshes, bogs and swamps.

**SALIX TRIANDRA** Linnaeus—Almond Willow (Figure 44). $2n = 38 (44), 57, 88$. Streambanks, waste places. From Eurasia.

**Salix uva-ursi** Pursh—Bearberry Willow (Figure 44). $2n = 38$. Exposed, rocky, alpine areas.

**SALIX VIMINALIS** Linnaeus—Osier (Figure 44). $2n = 38$. Streambanks, roadsides, freshwater shores. From Europe.

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**Salix hybrids**

**SALIX ALBA** Linnaeus × S. petiolaris Smith—(Figure 44).
Salix bebbiana Sargent × S. eriocephala Michaux—(Figure 45).

Salix bebbiana Sargent × S. humilis Marshall var. humilis—(Figure 45).

Salix bebbiana Sargent × S. petiolaris Smith—(Figure 45).

Salix × besschelii B. Boivin—(Figure 45). [S. bebbiana Sargent × S. discolor Muhlenberg]

Salix candida Flüggé ex Willdenow × S. pellita (Andersson) Bebb—(Figure 46).

SALIX CINEREA Linnaeus × S. eriocephala Michaux—(Figure 46).

Salix cordata Michaux × S. sericea Marshall—(Figure 46).

Salix × cryptodonta Fernald—(Figure 46). [S. bebbiana Sargent × S. candida Flüggé ex Willdenow]

Salix discolor Muhlenberg × S. eriocephala Michaux—(Figure 47).

Salix discolor Muhlenberg × S. humilis Marshall var. humilis—(Figure 47).

Salix discolor Muhlenberg × S. petiolaris Smith—(Figure 47).

Salix discolor Muhlenberg × S. pyrifolia Andersson—(Figure 47).

SALIX × EHRHARTIANA G. Meyer—(Figure 48). [S. ALBA Linnaeus × S. PENTANDRA Linnaeus]

Salix eriocephala Michaux × S. lucida Muhlenberg—(Figure 48).

Salix eriocephala Michaux × S. myricoides Muhlenberg—(Figure 48).

Salix eriocephala Michaux × S. pedicellaris Pursh—(Figure 48).

Salix eriocephala Michaux × S. petiolaris Smith—(Figure 49).

Salix eriocephala Michaux × S. sericea Marshall—(Figure 49).

SALIX × FRAGILIS Linnaeus—Crack Willow (Figure 49). [S. ALBA Linnaeus × S. EUXINA I.V. Belyaeva; S. × RUBENS Schrank]

Salix × grayi C.K. Schneider—(Figure 49). [S. argyrocarpa Andersson × S. planifolia Pursh]

Salix humilis Marshall var. humilis × S. petiolaris Smith—(Figure 50).

Salix humilis Marshall var. humilis × S. sericea Marshall—(Figure 50).

Salix humilis Marshall var. tristis (Aiton) Griggs × S. petiolaris Smith—(Figure 50).

Salix × jesupii Fernald—(Figure 50). [S. ALBA Linnaeus × S. lucida Muhlenberg]

Salix lucida Muhlenberg × S. serissima (L.H. Bailey) Fernald —(Figure 51).

Salix × peasei Fernald—(Figure 51). [S. herbacea Linnaeus × S. uva-ursi Pursh]
**SALIX × PENDULINA** Wenderoth—Weeping Willow (Figure 51). [S. BABYLONICA Linnaeus × S. EUXINIA I.V. Belyaeva]

*Salix petiolaris* Smith × *S. sericea* Marshall—(Figure 51).

*Salix rubella* Bebb ex C.K. Schneider—(Figure 52). [S. candida Flüggé ex Willdenow × S. eriocephala Michaux]

**SALIX × SEPULCRALIS** Simonkai—Weeping Willow (Figure 52). [S. ALBA Linnaeus × S. BABYLONICA Linnaeus]

**SALIX × SMITHIANA** Willdenow—(Figure 52). [S. CAPREA Linnaeus × S. VIMINALIS Linnaeus; S. × SERICANS Tausch]

**TROPAEOLACEAE**

*TROPAEOLUM MAJUS* Linnaeus—Garden Nasturtium (Figure 52). $2n = 28$. Waste places, roadsides. From South America.

*TROPAEOLUM MINUS* Linnaeus—Dwarf Nasturtium (Figure 53). $2n = ?$ Roadsides near dwellings. From South America.

**ACKNOWLEDGMENTS**

We thank the curators and directors of the herbaria of the New England Botanical Club, the Harvard University Herbaria, the University of Massachusetts, the University of Vermont, and the University of Connecticut for allowing access to their collections. For the University of Maine herbarium we used their exceptional online database of Maine specimens. We are grateful also to Karen Searcy for facilitating access to the herbarium and to the notebooks of Harry E. Ahles at the University of Massachusetts (Amherst) and for kindly answering requests for information after our visit. James Hinds also generously checked information on voucher specimens at the University of Maine (Orono). The following persons checked certain records for us at their respective institutions: Janet R. Sullivan, and Elizabeth F. Allen. In particular we thank the following individuals for repeated checking of specimens at their institution: Robert Capers of the University of Connecticut and Lisa I. Palmer of Dartmouth College. George Argus and Robert Bertin kindly provided information about *Salix* vouchers. Karol Marhold provided information relating to *Cardamine*. Lastly, Ihsan A. Al-Shehbaz generously provided much assistance with questions relating to Brassicaceae. We thank Kanchi Gandhi for nomenclatural advice.

**REFERENCES**

(General references listed in our previous articles are not repeated here; current references for the families treated are in Flora of North America Editorial Committee 2010.)

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(General references listed in our previous articles are not repeated here; current references for the families treated are in Flora of North America Editorial Committee 2010.)


Stevens, P.F. 2001 onwards. Angiosperm Phylogeny Website, version 9, June 2008 [and more or less continuously updated since]. Website (http://www.mobot.org/MOBOT/research/APweb/).

ERRATA

Page 4. For BERTEREA MUTABILIS the chromosome counts stated should be replaced by “2n = 16”.
Page 7. For ERYSIMUM INCONSPICUUM the chromosome count stated should be replaced by “2n = 81”.
Page 10. For POLANISIA DODECANDRA subsp. TRACHYSPERMA the chromosome count “2n = 20” should be added.
Page 10. For TARENAYA HASSLERIANA the chromosome count “2n = 20” should be added.
Page 11. The taxon name “Populus × heimburgii” should read “Populus × heimburgeri”.

For the following taxa the distribution dot shown for Dukes Co, Massachusetts should be moved to Nantucket Co., Massachusetts in the figures indicated (while the taxa might occur in Dukes Co. we did not find a voucher):

**ALLYSUM ALYSSOIDES** (Fig. 2)
**BRASSICA JUNCEA** (Fig. 7)
**CAMELINA SATIVA** (Fig. 9)
**LEPIDIUM SATIVUM** (Fig. 22)
Rorippa palustris subsp. bipartita (Fig. 26)
Salix cordata (Fig. 38)
**TROPAEOLUM MAJUS** (Fig. 52)

For the following taxa the distribution dot shown for Dukes Co, Massachusetts should be deleted in the figures indicated (while the taxa might occur in Dukes Co. we did not find a voucher):

**BRASSICA NIGRA** (Fig. 7)
**CARDAMINE HIRSUTA** (Fig. 11)
**DIPLOTAXIS MURALIS** (Fig. 14)
**LEPIDIUM DIOHYSUM** (Fig. 21)
**NASTUTIUM OFFICINALE** (Fig. 24)
**RORIPPA SYLVESTRIS** (Fig. 27)
**SINAPIS ARvensis** (Fig. 27)
**RESEDA ALBA** (Fig. 31)
**RESEDA LUTEA** (Fig. 32)
**SALIX ALBA** (Fig. 36)
**SALIX ERIOCEPHALA** (Fig. 39)
**SALIX PETIOLEATA** (Fig. 42)
**SALIX VIMINALIS** (Fig. 44)
Figure 1. Key map for counties of the New England states (and Mt. Desert Island, Maine; Block Island, Rhode Island; arbitrary divisions of larger Maine counties and of Coös County, New Hampshire).
Figure 2. Distribution maps.
Figure 3. Distribution maps.
Figure 4. Distribution maps.
Figure 5. Distribution maps.

BARBAREA VULGARIS

BERTEROA INCANA

BERTEROA MUTABILIS

Boechera canadensis
Figure 6. Distribution maps.
Figure 7. Distribution maps.
Figure 8. Distribution maps.
Figure 9. Distribution maps.
Figure 10. Distribution maps.
Figure 11. Distribution maps.
Figure 12. Distribution maps.
Figure 13. Distribution maps.

Cardamine pratensis

Cardamine concatenata

$\times$ C. maxima

CHORISPORA TENELLA

CONRINGIA ORIENTALIS
Figure 14. Distribution maps.
Figure 15. Distribution maps.
Figure 16. Distribution maps.
Figure 17. Distribution maps.

ERUCASTRUM GALLICUM
ERYSIMUM CHEIRANTHOIDES

ERYSIMUM HIERACIFOLIUM
ERYSIMUM INCONSPICUUM
Figure 18. Distribution maps.
Figure 19. Distribution maps.
Figure 20. Distribution maps.
Figure 21. Distribution maps.
Figure 22. Distribution maps.
Figure 23. Distribution maps.

LOBULARIA MARITIMA

LUNARIA ANNUA

MICROTHLASPI PERFOLIATUM

NASTERTIUM MICROPHYLLUM
Figure 24. Distribution maps.
Figure 25. Distribution maps.
Figure 26. Distribution maps.
Figure 27. Distribution maps.
Figure 28. Distribution maps.
Figure 29. Distribution maps.

SISYMBRIUM ORIENTALE
Subularia aquatica
subsp. americana

TEESDALIA NUDICAULIS
THLASPI ARVENSE
Figure 30. Distribution maps.

TROPIDOCARPUM GRACILE

Turritis glabra

PERITOMA SERRULATA

Polanisia dodecandra
subsp. dodecandra
Figure 31. Distribution maps.
Figure 32. Distribution maps.
Figure 33. Distribution maps.

Populus balsamifera

Populus deltoides
subsp. deltoides

Populus grandidentata

Populus heterophylla
Figure 34. Distribution maps.
Figure 35. Distribution maps.
Figure 36. Distribution maps.
Figure 37. Distribution maps.
Figure 38. Distribution maps.
Figure 39. Distribution maps.
Figure 40. Distribution maps.
Figure 41. Distribution maps.
Figure 42. Distribution maps.
Figure 43. Distribution maps.
Figure 44. Distribution maps.

SALIX TRIANDRA

Salix uva-ursi

SALIX VIMINALIS

SALIX ALBA

× S. petiolaris
Figure 45. Distribution maps.
Figure 46. Distribution maps.
Figure 47. Distribution maps.
Figure 48. Distribution maps.
Figure 49. Distribution maps.
Figure 50. Distribution maps.
Figure 51. Distribution maps.
Figure 52. Distribution maps.
Figure 53. Distribution map.