Additions to the Flora of the Continental Northwest Territories from the Great Slave Lake Area

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Eleven species are reported as new to the flora of the continental Northwest Territories. The new native species include Artemesia dracunculus, Chenopodiun leptophyllum, Eleocharis erythropoda, Panicum capillare, Schoenoplectus pungens and Symplocrichum lanceolatum subsp. hesperia var. hesperia. New alien species reported include Achillea ptarmica, Chamaenerion angustifolium, Galium aparine, Malva neglecta and Silene cseri. Sonchus arvensis, previously reported, is based on material referable to a subsp. alpinus. Forms new to the flora include Achillea millefolium f. rosea and Actaea rubra f. neglecta. Locations, habitats and distinctive features are provided for the additional taxa. The Hay River lowland ecoregion is a floristically rich area that deserves more botanical exploration.

Key Words: Additions, range extensions, vascular plants, Northwest Territories, Canada.

Phytogeographic aspects

Native species
All but one (Chenopodium leptophyllum) of the additional native species are southern plants now reaching their northern limits at Hay River. This region south and west of Great Slave Lake is already known to be a distinctive phytogeographic zone where many southern species reach their northern limits and is also an area where many arctic and alpine plants are absent but otherwise occur throughout NWT (e.g., Raup 1947, page 66 lower figure). The area has been designated as the Hay River lowland ecoregion (number 64) of the Taiga Plain ecozone (Ecological Stratification Working Group 1995). It was designated as the Southern Boreal Province by McJannet et al. (1995).

The climate warming trend in northern Canada will make it possible for plants to extend their distributions

Table 1. Locations, habitats, collection dates and latitude and longitude of places in Northwest Territories where additions to the flora were discovered by P. M. Catling in 2003.

<table>
<thead>
<tr>
<th>Habitat and Location</th>
<th>Date</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>periodically flooded shore of Hay River</td>
<td>30 July 2003</td>
<td>60.4900</td>
<td>115.7304</td>
</tr>
<tr>
<td>open vacant land and shoreline at port of Hay River</td>
<td>30 July 2003</td>
<td>60.8214</td>
<td>115.7304</td>
</tr>
<tr>
<td>bank of Hay River near West Channel bridge N side of Hay River</td>
<td>30 July 2003</td>
<td>60.8536</td>
<td>115.7743</td>
</tr>
<tr>
<td>bulldozed area beside Niven Lake, N side of Yellowknife</td>
<td>30 July 2003</td>
<td>62.4603</td>
<td>114.3745</td>
</tr>
<tr>
<td>vacant lots in Yellowknife</td>
<td>30 July 2003</td>
<td>62.4500</td>
<td>114.4300</td>
</tr>
<tr>
<td>open sand prairie, Taltson River W of Fort Smith</td>
<td>23 July 2003</td>
<td>60.3554</td>
<td>111.2760</td>
</tr>
<tr>
<td>open rocky ridge, Ingraham Trail, E of Yellowknife</td>
<td>28 July 2003</td>
<td>62.5037</td>
<td>114.2764</td>
</tr>
</tbody>
</table>
northward but warming is not likely to be an explanation for new records of native species reported here. Warming to the extent of promoting northward range extension may not have occurred yet and the new native species are easily overlooked in cursory botanical inventory. Consequently they are likely to be long-established in the area. Unlike the Fort Simpson, Fort Smith and Wood Buffalo areas in the Hay River lowland, the region of Hay River itself has not been sufficiently studied from a botanical viewpoint. There are only few and small collections from the area including those of W. H. Lewis in 1951 (at DAO) reported by Cody (1956) and collections made in 1971 by L. Dahike (at CAN and WAT) and by P. Ducruc, both included in Porsild and Cody (1980). An examination of the maps in Porsild and Cody (1980) indicates that many plants likely to occur in the area have not been recorded.

Introduced species

There are few published studies of the flora of man-made disturbed habitats such as the Norman Wells pipeline study (Cody et al. 2000). In an unpublished report involving the non-cultivated urban flora of Yellowknife, Steinecke (2001*) gathered information on 135 sites within the city limits. The sampled habitats included roadsides, lawns and vacant lots. A total of 142 species were recorded in the town, 55% of which were alien. Of these, 25 are additions to the flora (Porsild and Cody 1980; Catling et al. 2005*), including Acer negundo L., Aconitum sp., Alopecurus occidentalis Scribn. & Tweedy (probably A. arundinaceus Sobol which is not new), Amsinckia menziesii (Lehm.) Nels. & Macbr., Artemisia absinthium L., Campanula rapunculoides L., Dianthus barbatus L., Halenia deflexa (Smith) Giseb., Hordeum vulgare L., Malva rotundifolia L., Panicum miliaceum L. (introduced with bird seed around feeders but possibly not persisting), Portulaca oleracea L., Ranunculus repens L., Rheum rhabarbarum L., Rumex crispus L., Setaria glauca (L.) Beauv., Sonchus uliginosus Bieb., Spiraea cf. betulifolia Pallas and Tropaeolum sp. Since this interesting study is unpublished and there are no specimen vouchers, the records are not accepted as additions, but they are nevertheless of interest and, hopefully, they will be supported by vouchers in the future.

As settlement expands and road traffic increases it is likely that more introduced species will expand into the region by gradual spread along corridors of disturbed habitats such as roads, but also through long distance dispersal by people incidentally transporting soil and seeds on or in vehicles. That such spread of alien species is continuing is suggested by the additional species reported by Steinecke (2001*, listed above) and the five additional alien species reported here. The latter originated from open disturbed sites in either the town of Yellowknife or the town of Hay River. More alien species are expected to enter the region and some may begin to impact native flora and fauna, but with the possible exception of Phalaris canariensis L. (recently reported to be a local problem), there is little evidence of spread into native plant communities.

Annotated List of Additional Species

**Achillea millefolium** L. f. rosea Rand. & Redf.  
**Yarrow** (rose-flowered form)

Although the species is well known from NWT, this unusual form with deep rose-purple (instead of white) ligules has not been recorded previously. Found in a bulldozed area beside Niven Lake on N side of Yellowknife, it is occasionally cultivated and likely a garden escape.

**Achillea ptarmica** L.  
**Pearl Yarrow**

Found in an open bulldozed area beside Niven Lake on N side of Yellowknife, this introduced species differs from *A. sibirica* Ledeb. in its serrated instead of pectinate leaves and longer ligules to 5 mm. This species is sometimes introduced with “wildflower” seed mixtures.

**Actaea rubra** (Ait.) Willd. f. neglecta (Gillman) Robins.  
**Red Baneberry** (white berry form)

This white-fruiting form of this native plant is abundant in some parts of the extensive North American range, but previously only “bright red or rarely pink” fruits have been reported for NWT (Porsild and Cody 1980). Several plants were found on a wooded bank of the Hay River near bridge on north side of town.

**Artemisia dracunculus** L.  
**Dragon Wormwood**

This native, linear-leaved species of dry hills and prairies was expected to be discovered in NWT by Porsild and Cody (1980). It was found in open sandy ground on banks of the Hay River at Hay River.

**Chaenorhinum minus** (L.) Lange  
**Dwarf Snap-Dragon**

This distinctive, glandular-hairy, introduced plant was frequent in open gravelly areas and along the railway at the port of Hay River. The 5-7 mm flowers are bluish-purple with yellow in the throat.

**Chenopodium leptophyllum** (Moquin-Tandon) Nuttall ex S. Watson  
**Narrow-Leaf Goosefoot**

Porsild and Cody (1980) listed this species but excluded it based on the Richardson specimen collected at Fort Franklin on Great Bear Lake “where it was surely an ephemeral introduction.” Clements and Mosyakin (2003) show its occurrence in Alberta near the NWT border but not in NWT. It was found on a disturbed sandy portion of an open prairie slope adjacent to the Taltson River east of Fort Smith. At this location it occurred around an open sandy blowout on dry, open, south-facing slopes dominated by *Carex siccata* Dewey with *Calamagrostis purpurascens* R. Brown and many other native species of dry, open ground, including *Agrisits scabra* Willdenow, *Arabis holboellii* Horne-
man, *Anemone multifida* Poiret and *Pinus banksiana* Lamb. It was also found on top of a rocky ridge E of Yellowknife. This was also a natural, open and rather dry plant community dominated by native species, including *Androscace septentrionalis* L., *Arctostaphylos uva-ursi* (L.) Spreng., *Artemisia hyperborea* Rydb., *Calamagrostis purpurascens* R. Br., *Carex supina* Willd., *Juniperus communis* L., *Juniperus horizontalis* Moench, *Rosa acicularis* Lindl., *Saxifraga tricuspidata* Ait. and *Senecio pauperulus* Michx. The flora was entirely native and had not been disturbed by man. Consequently *Chenopodium leptophyllum* is considered native.

**Eleocharis erythropoda** Steudel

**BALD SPIKE-RUSH**

Frequent on the periodically flooded shore of the Hay River at Hay River, this native plant was reported for the Northwest Territories by Smith et al. (2002) but accidentally omitted from the recent compilation of additions (Catling et al. 2005*) so included here. It differs from *E. palustris* (L.) Roemer & Schultes by the basal scale completely or nearly surrounding the stem (instead of incircling only 2/3) and relatively narrow stems 0.3-1.4 mm thick (instead of 0.5-5 mm thick). See under “*Panicum capillare*” for associated species.

**Galium aparine** L.

**CLEAVERS**

Found in vacant lots and disturbed open places in Yellowknife, this species differs from *G. triflorum* by the retrorse barbs on leaves and stems. There are possibly both native and introduced races; the plant of open disturbed sites is probably introduced.

**Malva neglecta** Wallr.

**DWARF MALLOW**

A few plants of this introduced species were found in vacant lots in Yellowknife. This is the first report of a species of *Malva* in NWT. The rounded leaves and axillary flowers with petals twice as long as the sepals are distinctive.

**Panicum capillare** L. var. *occidentale* Rydberg

**COMMON PANIC GRASS**


**Schoenoplectus pungens** (Vahl) Pall. (Scirpus americanus auct. non Persoon)

**COMMON THREE-SQUARE BULRISH**

This native plant was frequent along the periodically flooded shore of Hay River at Hay River. It is distinctive in the lateral (instead of terminal) inflorescence with stemless spikelets and the sharply three-angled stems. This occurrence may be an extension of known range of approximately 700 km based on Packer’s (1983) map. See under “*Panicum capillare*” for associated species.

**Silene cserei** Baumg.

**BALKAN CATCHFLY**

Found along the railway and in adjacent open sandy soil at port of Hay River, this tall introduced species (2-8 dm) has 3 styles, lacks glutinous bands on the stem and is without an inflated calyx.


**WESTERN WILLOW ASTER**

This native plant was found on the periodically flooded shore of Hay River at Hay River and at the port of Hay River. At least 100 plants were seen and they had either white or blue ray flowers. This species has green leaves 5-15 mm wide instead of purplish-green leaves less than 5 mm wide as in *A. borealis* (T. & G.) Prov. (previously *A. junciflorus* Rydberg). Unlike *A. spathulatus* Lindley, the stems are pubescent. This species is well known from the Lake Athabasca area of northern Alberta.

**Additional Notes**

*Sonchus arvensis* L. subsp. *uliginosus* (Bieb.) Nyman (S. *arvensis* var. *glabrescens* Guenth., Grab. & Wimmer, S. *uliginosus* Bieb.)

This introduced species is frequent in disturbed sites at Hay River and Yellowknife, but is not an addition because the inclusion of "*Sonchus arvensis* L." in Porsild and Cody (1980) is not based on material of subsp. *arvensis* but rather on material referable to this variety (based on examination of specimens collected at Hay River (Cody 4839, DAO) and on the Mackenzie highway (Thieret 6172, DAO).

**Acknowledgments**

Suzanne Carriere, Ecosystem Management Biologist, Wildlife & Fisheries Division, Department of Resources, Wildlife & Economic Development, provided extensive help and support. Bill Cody, Curator Emeritus, with AAFC in Ottawa provided essential information and comments on the manuscript. Deborah Johnson and Mike Fournier assisted with plant collecting.
Documents Cited (marked * in text)


Literature Cited


Received 31 March 2005
Accepted 1 September 2005

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Errata The Canadian Field-Naturalist 119(3)


(page 449) Sonchus arvensis subspecies uliginosus: Thiert reported this in 1963 Sida 1(3): 169 as S. arvensis var. glabrescens from the Yellowknife Highway (Hwy 3). My appreciation to Michael Oldham for bringing these to my attention.

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