

Rumex thyrsiflorus in the Åland Islands, SW Finland

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Rumex thyrsiflorus has principally an eastern distribution in Europe. The western border of its main distribution area runs from Norway and Denmark to the Netherlands and Germany, Austria and further towards the Balkans. The species has spread as an alien further into western Europe. The majority of the observations in Finland are from the Åland Islands and the southern coastal areas with scattered observations in mid-Finland and very few in the northern part. Whereas most of the observations in the southwestern archipelago areas seem to be of indigenous nature, the bulk of those in the mainland areas are of more or less ruderal character. Several observations are of polemochorous character and *R. thyrsiflorus* has been regarded as a polemochorous species introduced both by Russian and German troops during the second world war. The finds of *R. thyrsiflorus* in the Åland Islands are distributed in time during roughly two phases, in the eastern archipelago during the 1930s and in the mainland area of Åland from 2004 onwards. All the finds from the 2000s are in more or less ruderal habitats. As several of them are on roadsides, *R. thyrsiflorus* has most probably been introduced in Åland, presumably from Sweden, in connection with the improvement of roads.

Introduction

Rumex thyrsiflorus has principally an eastern distribution in Europe. The western border of its main distribution area runs from Norway and Denmark to the Netherlands and Germany, Austria and further towards the Balkans (Rechinger 1960, Jalas 1965, Hultén & Fries 1986). The species has spread as an alien further into western Europe (Rechinger 1960).

Rumex thyrsiflorus occurs in the three Scandinavian countries and Finland (Hultén 1971, Jonzell 2000). It is fairly common in most of Denmark (Fredriksen et al. 2012) and in the southernmost provinces of Sweden (Scania, Halland, southern Blekinge and Öland; Weimarck & Weimarck 1985, Sterner & Lundqvist 1986, Georgsson et al. 1997, Fröberg 2006) with scattered ob-

servations to about 62° 30' N lat. Many observations are known in S Norway with scattered observations in the rest of the country (Artsdatabanken 2020). A few of the Norwegian finds are of, chiefly German, polemochorous origin (Piirainen et al. 1998).

Rumex thyrsiflorus is a fairly common indigenous species in Russian Karelia and the southern part of the Kola peninsula, e.g. on sea shores of the White Sea. Further, it occurs further as an apophyte in dry and mesic meadows and as a ruderate in cultivated and ruderal habitats, e.g. on railroad banks, roadsides and sandy areas (Fagerström 1945, Fagerström & Luther 1945, 1946, Piirainen et al. 1998, Kravchenko 2007).

The majority of the observations in Finland are from the Åland Islands and the southern coastal areas with scattered observations in mid-Finland and very few in the northern part (Eklund 1927b, Jalas 1965, Hultén 1971, Lampinen & Lahti 2019), with the northernmost observation and collection in Virtaniemi in Inari Lapland (H; Piirainen 2001). Whereas most of the observations in the southwestern archipelago areas seem to be of indigenous nature, the bulk of those in the mainland areas are of more or less ruderal character. Several observations are of polemochorous character and *R. thyrsiflorus* has been regarded as a polemochorous species introduced during the second world war by Russian troops, e.g. in N, Hangö (Fagerström 1944, Luther 1948), in N, Kyrkslätt (Niemi 1969) and in Kn, Kuhmo (Fagerström 1957, 1958). The occurrence in Oa, Kris-

tinestad was introduced by German troops (Valovirta 1949).

Rumex thyrsiflorus is regarded as near threatened (NT) in The Red List of Finland (Ryttäri et al. 2019).

Finds in the Åland Islands in the 1930s

The first find of *Rumex thyrsiflorus* in the Åland Islands was at the manor of Bolstaholm in the municipality of Geta (UCS 6713-6715:3106-3108). One specimen was collected by P. Molander in July, 1858 (Fig. 1; Table 1). Unfortunately, no further information, e.g. of the habitat, is given on the label.

Ole Eklund studied the vegetation and flora of the western archipelago areas of Finland Prop-

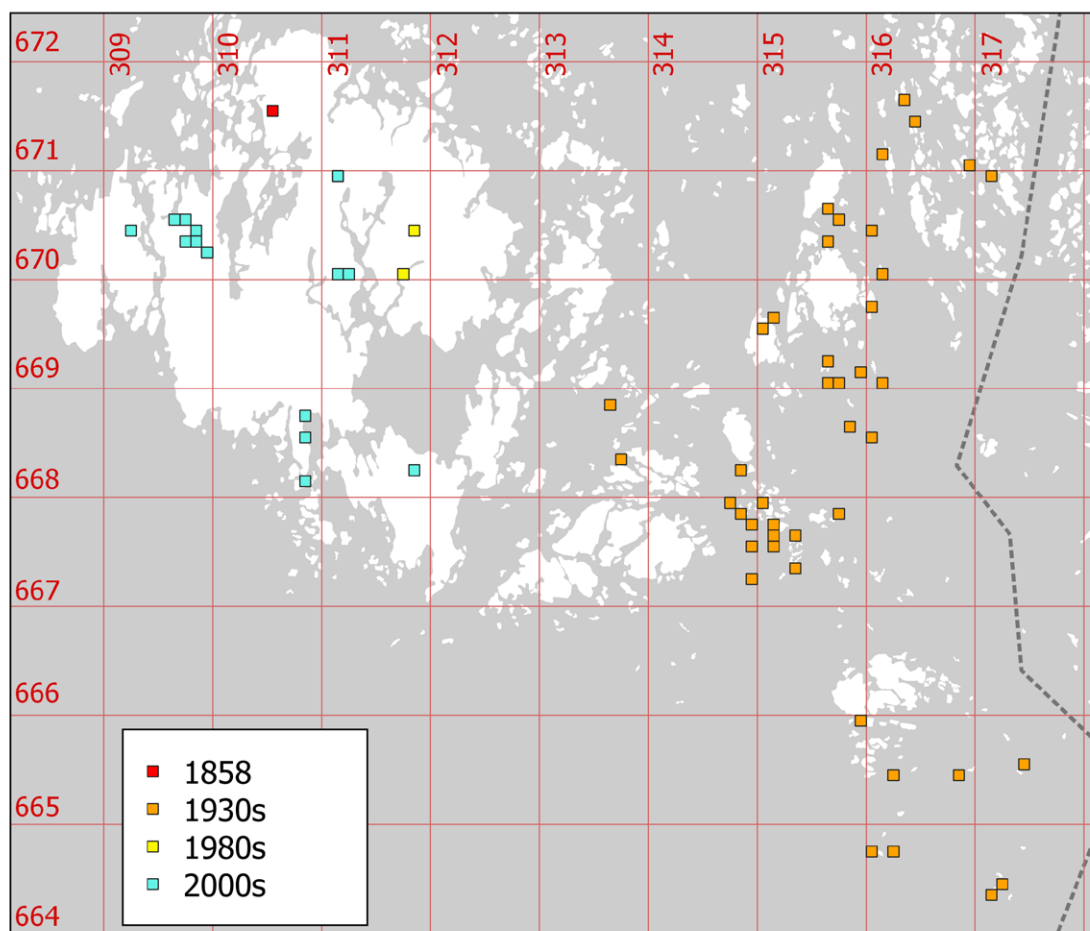


Fig. 1. Distribution map of the finds of *Rumex thyrsiflorus* in the Åland Islands.

er (Ab) and the eastern archipelago areas of the Åland Islands (ÅI), especially during the 1920s and early 1930s. He discovered *Rumex thyrsiflorus* in numerous localities in these archipelago areas. His first find was in the island of Utö in the municipality of Ab, Korpo (now belonging to the town of Pargas) on June 14, 1924. The species occurred scattered or rather sparingly in the littoral zone on sandy soil between boulders on the south side of the island (UCS 6642:3184; H; Eklund 1927a, 1927b, 1958). During the late 1920s and the 1930s, he found the species in several other islands in the archipelago of Ab (Eklund 1958).

During his studies in the four eastern archipelago municipalities of the Åland Islands, namely Brändö, Kökar, Kumlinge and Sottunga, in 1933–1935, Eklund found *Rumex thyrsiflorus* in more than 40 localities (Fig. 1; Table 1; Eklund 1934, 1935, 1936, 1958). The majority of the localities were in uninhabited islands. According to Eklund (1958), *R. thyrsiflorus* is probably a cal-

ciphilic and presumably a hemeradiaphorous species in his study area.

Finds in the Åland Islands from the 1980s onwards

No further information of *Rumex thyrsiflorus* in the Åland Islands is available until 1983 when two observations were made, one in Saltvik Antböle, the other in Sund near the mediaeval castle ruin of Kastelholm (Fig 1; Table 1). These two finds lack further information about the habitat.

From 2004 onwards, more than ten observations of *Rumex thyrsiflorus* were made in the main islands of Åland (Hæggröm & Hæggröm 2010; Fig. 1; Table 1). All these finds were in habitats of more or less ruderal character, chiefly on roadsides. The most impressive stands grew along the road Aspbackavägen in the villages of Bredbolstad and Lillbolstad in the municipality of



Fig. 2. *Rumex thyrsiflorus* grows as a dense edging on the both sides of the eastern part of the road Aspbackavägen in Lillbolstad, the municipality of Hammarland. All photos by the author. 25.VII.2015.



Fig. 3. A stand of *Rumex thyrsiflorus* at the road Aspbackavägen in Hammarland Lillbolstad. 25.VII.2015.

Hammarland in 2015 (Figs. 2–3). Dense stands grew for hundreds of metres, in the same way as seen by me in southern Sweden. The species has spread to a cultivated field next to the road. Nice stands were seen in Mariehamn on a lawn in 2018 (Fig. 4).

Discussion

The finds of *Rumex thyrsiflorus* in the Åland Islands are distributed in time during roughly two phases, in the eastern archipelago during the 1930s and in the mainland area of Åland from 2004 onwards. There is only one recent observation in the eastern archipelago, in Eklund's locality no. 1546, Kumlinge, Borgskär [Abborskär] (von Numers 2017). Three of Eklund's localities, namely no. 1329, Brändö [Kumlinge, Björkö], Varpskär, no. 1331, Brändö, [Fiskö], Högskär and no 1903, Kökar, [Österbygge], Kanskär [Kanskär], were visited by von Numers, but he could not find *R. thyrsiflorus* in these islands (Dr. Mi-

kael von Numers, e-mail November 26, 2019). One reason why *R. thyrsiflorus* has not been observed since the 1930s in the eastern archipelago areas can be the fact that small specimens resemble the common species *R. acetosa* and they have thus escaped detection.

Whereas the two observations in the mainland of Åland in 1983 lack further information about the habitat, all the finds from the 2000s are in more or less ruderal habitats. As several of them are on roadsides, *Rumex thyrsiflorus* has most probably been introduced in Åland in connection with the improvement of roads. According to Orre & Santamala (2003), a mixture of grass seed from Sweden, comprising among others *Agrostis capillaris*, *Festuca rubra* and *Poa pratensis*, was used on new road banks. In south Sweden, *R. thyrsiflorus* has been introduced along roads, because its seeds are included in seed mixtures used on roadsides and road slopes (Rydberg & Wanntorp 2001, Jonsell 2010). The older finds in south Sweden seem to be more or less indigenous, whereas the new ones are chiefly on road-



Fig. 4. One of the nine multistemmed specimens of *Rumex thyrsiflorus* growing on the hillock with Stefan Lindfors's piece of art called Radar II, seen near the crest of the hillock. The vegetation of the lawn is very sparse due to severe drought. Mariehamn, 18.VIII.2018.

sides, railway banks and ruderal sites (Sterner & Lundqvist 1986, Georgsson et al. 1997, Rydberg & Wanntorp 2001, Bertilsson et al. 2002, Edqvist & Karlsson 2007, Jonsell 2010). Several vascular plants which were absent or very rare on Åland during most of the 20th century, have occurred at newly constructed roads during the last two decades (Hæggström 2005a, 2005b, Hæggström & Hæggström 2008, 2015). *Rumex thyrsiflorus* is obviously one of these newly introduced species. It will, most probably, be found in new localities, mainly on roadsides.

Acknowledgements. Mikko Piirainen made good suggestions to the manuscript, Sampsa Lommi provided the distribution map. Thank you very much!

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Table 1. The records of *Rumex thyrsoiflorus* in the Åland Islands (ÅI) according to the database KASTIKKA (Lampinen & Lahti 2019), the author’s annotations and literature. The records are in chronological order. The original information in Finnish, Swedish or German is translated into English. The names of several localities, e.g. islands in the SW archipelago differ from the original annotations and modern maps. Thus, the names in modern maps are given in square brackets. Other additional notes are in square brackets, too. The coordinates are according to the Uniform Coordinate System (UCS): Grid 27 °E. The month in the dates is in Roman numerals. In a few cases the coordinates are more exact than on the labels of the voucher specimens or information in Lampinen & Lahti (2019). When the exact location is not known, the coordinates are given as three plus three numbers (100 km² grid squares). For herbarium acronyms, see Index Herbariorum (2020). – Abbreviations: CAH = Carl-Adam Hægström; EH = Eeva Hægström; (OBS) = observation without voucher specimen; OE = Ole Eklund.

- Geta**, Bolstaholm, UCS 671:310, VII.1858, P. Molander (H).
- Kökar**, [Karlby], the southern of the islands Vidskären [= Söderkobben], gravelly supralittoral seashore, UCS 6654:3162-3163, 17.VI.1933, OE (H). – This locality is mentioned by Eklund (1934) as Vidskärens Storskär, the larger island NE of Söderkobben. This find is not included in Eklund (1958).
- Kökar**, [Österbygge], Storskär [Storoscär], UCS 6654: 3168-3169, 17.VI.1933, OE (OBS) – (No. 1860 in Eklund 1958).
- Kökar**, [Österbygge, Västra] Mörskär [Huslandet], stony seashore, UCS 6643-6644:3171-2, 18.VI.1933, OE (H) – (No. 1864 in Eklund 1958).
- Kökar**, [Österbygge, Västra] Mörskär, Wästerlandet [Båtskär], bedrock depression, UCS 6643:3171, 18.VI.1933, OE (H) – (No. 1863 in Eklund 1958).
- Kökar**, [Karlby], Karlbylandet, the southern promontory, UCS 6659:3159, 12.VIII.1933, OE (OBS) – (No. 1866 in Eklund 1958).
- Kumlinge**, Y-skär SSE of Bergö, UCS ?, 28.VI.1934, OE (four voucher specimens in H). – This locality is an enigma. There is no island called Bergö in the municipality of Kumlinge. The only island called Bergö in

the eastern archipelago area of the Åland Islands is located in the municipality of Vårdö, and no Y-skär (Y-island) is located SSE of that Bergö. There is an island called Yxskär in Kumlinge, but it is not located SSE of any Bergö. Further, Eklund (1958) does not include this locality.

- Kökar**, [Karlby], Långskär, UCS 6647:3162, 27.VII.1934, OE (H) – (No. 1884 in Eklund 1958).
- Kökar**, [Karlby], Karlskär (Kalskär), UCS 6647:3160-3161, 27.VII.1934, OE (OBS) – (No. 1885 in Eklund 1958).
- Föglö**, [Björsboda], Ramsö, pc UCS 6669-6671:3135, or [Överö], Ramsö, pc, UCS 6683-6684:3137-3138, Eklund (1935). – Eklund did not mention which one of the two islands called Ramsö he visited.
- Vårdö**, Bergö, Gåsskär, scattered under junipers, UCS 6688:3136.3137, Eklund (1935).
- Kumlinge**, Borgskär [Abborskär], pc, UCS 6685-6686: 3159-3160, 4.VI.1935, OE (OBS) – (No. 1546 in Eklund 1958). – Found by Dr. Mikael von Numers (von Numers 2017).
- Kumlinge**, (Väster) Vidskär [Västra Vidskär], pc, UCS 6686:3158-3159, 4.VI.1935, OE (OBS) – (No. 1547 Eklund (1958).

Table 1. cont.

- Kumlinge**, Bässkär [Stora Bässkär], st pc, UCS 6690:3157, 5.VI.1935, OE (OBS) – (No. 1549 in Eklund 1958).
- Kumlinge**, Storören, pc, UCS 6690:3156, 5.VI.1935, OE (OBS) – (No. 1550 in Eklund 1958).
- Kumlinge**, [Träskholms Gloholmen], st pc, UCS 6691:3159-3161, 5.VI.1935, OE (OBS) – (No. 1551 in Eklund 1958).
- Kumlinge**, [Nybondas Träskholmen], UCS 6691-6692:3156, 5.VI.1935, OE (OBS) – (No. 1552 in Eklund 1958).
- Kumlinge**, Seglinge, [NW shore area between Hommanäs and Stornäset], UCS 6695-6696:3150, 5.VI.1935, OE (OBS) – (No. 1553 in Eklund 1958).
- Kumlinge**, Seglinge, Norrklubben [Norrklubben], UCS 6696-6697:3151, 6.VI.1935, OE (H) – (No. 1554 in Eklund 1958).
- Kumlinge**, Västra Varpskär, UCS 6703:3156, 6.VI.1935, OE (H) – (No. 1559 in Eklund 1958).
- Kumlinge**, Ingersholm [Ingersholma], south and inner parts of the island, UCS 6697:3160, 7.VI.1935, OE (OBS) – (No. 1560 in Eklund 1958).
- Kumlinge**, Öster Vidskär [Östra Vidskär], UCS 6689-6690:3161, 7.VI.1935, OE (OBS) – (No. 1561 in Eklund 1958).
- Brändö**, [Torsholma], Delskär [Oggholm – Stora Delskär], UCS 6709-6710:3171, 11.VI.1935, OE (OBS) – (No. 1324 in Eklund 1958).
- Brändö**, [Baggholma], Långskär, UCS 6709-6710:3168-3169, 11.VI.1935, OE (OBS) – (No. 1327 in Eklund 1958).
- Kumlinge**, [Enklinge], Enklobb, UCS 6706-6707:3156-3157, 12.VI.1935, OE (OBS) – (No. 1562 in Eklund 1958).
- Brändö** [Kumlinge, Björkö], Varpskär, UCS 6713-6714:3164, 12.VI.1935, OE (H) – (No. 1329 in Eklund 1958). – Not found by Dr. Mikael von Numers (e-mail November 26, 2019).
- Brändö**, [Fiskö], Högskär, UCS 6716:3163-3164, 12.VI.1935, OE (OBS) – (No. 1331 in Eklund 1958). – Not found by Dr. Mikael von Numers (e-mail November 26, 2019).
- Kumlinge**, Lill-Lappo, N part, UCS 6711:3161-3162, 12.VI.1935, OE (OBS) – (No. 1332 in Eklund 1958).
- Kumlinge**, [Enklinge], Gloskär, UCS 6705-6706:3157, 13.VI.1935, Gerda Eklund & OE (OBS) – (No. 1563 in Eklund 1958).
- Kumlinge**, [Enklinge], Granklobben, UCS 6703-6704:3160, 13.VI.1935, OE (OBS) – (No. 1565 in Eklund 1958).
- Kumlinge**, Sejskär [Söjskär Ytterskäret], UCS 6700-6701:3161, 13.VI.1935, Gerda Eklund & OE (H) – (No. 1566 in Eklund 1958).
- Sottunga**, [Husö], Bergskär [Bässkär], UCS 6677-6678:3156-3157, 17.VI.1935, OE (H) – (No. 1709 in Eklund 1958).
- Sottunga**, [Finnö], Skattskär, UCS 6673-6674:3153-3154, 18.VI.1935, OE (OBS) – (No. 1712 in Eklund 1958).
- Sottunga**, [Finnö], Brunskär [Brunnskär], UCS 6672:3149, 19.VI.1935, OE (OBS) – (No. 1713 in Eklund 1958).
- Sottunga**, [Finnö], Stor-Handskär [Stora Hannskär], UCS 6674-6675:3149, 19.VI.1935, OE (OBS) – (No. 1714 in Eklund 1958).
- Sottunga**, [Finnö], Västra ön [Västerön], UCS 6675-6676:3151, 19.VI.1935, OE (OBS) – (No. 1715 in Eklund 1958).
- Sottunga**, [Finnö], Valborgskär, UCS 6675:3151, 19.VI.1935, Gerda Eklund (OBS) – (No. 1706 in Eklund 1958).
- Sottunga**, [Finnö], Torskär, UCS 6676:3153, 19.VI.1935, OE (OBS) – (No. 1717 in Eklund 1958).
- Sottunga**, [Finnö], Drakö [Dragsö], pc, UCS 6677:3151, 20.VI.1935, OE (OBS) – (No. 1721 in Eklund 1958).
- Sottunga**, [Finnö], Norra Öjen (Norro) [Norra Betesön, Norra Betsön], UCS 6679:3149-3150, 20.VI.1935, OE Eklund (OBS) – (No. 1723 in Eklund 1958).
- Sottunga**, [Finnö], SE Pernisklobbarna [Östra Pärneskobb], UCS 6676-6677:3149, 21.VI.1935, Gerda Eklund (OBS) – (No. 1708 in Eklund 1958).
- Sottunga**, [Finnö], Ärlingklubb [Ärnklomma], UCS 6678:3148-3149, 21.VI.1935, OE (OBS) – (No. 1727 in Eklund 1958).
- Sottunga**, [Storsottunga], Eglonskär, UCS 6682:3148, 21.VI.1935-06-21, OE (OBS) – (No. 1734 in Eklund 1958).
- Sottunga**, [Storsottunga], Sånökubb [Sånaklobb], UCS 6682:3148, 22.VI.1935, OE (OBS) – (No. 1735 in Eklund 1958).
- Sottunga**, [Finnö], Bergskär, S part of the island, UCS 6679:3147-2148, 22.VI.1935, OE (OBS) – (No. 1736 in Eklund 1958).
- Kökar**, [Österbygge], Kanskär [Kannskär], UCS 6654-6655:3173-3174, 2.VII.1935, OE (OBS) – (No. 1903 in Eklund 1958). – Not found by Dr. Mikael von Numers (e-mail November 26, 2019).
- Saltvik**, Antböle, Ribacken, UCS 6704:3118, VI–VIII.1983, Aarre Koskinen & O.K. Silkkilä (OBS).
- Sund**, Kastelholm, Stenhagen, UCS 6700:3117, VI–VIII.1983, Aarre Koskinen & O.K. Silkkilä (OBS).
- Saltvik**, Sälis, approx. 50 m E of the main road Getavägen towards Kroklund (so-called Brustå crossroads), one tall specimen at the N roadside, UCS 67090:31110-31111, 1.VII.2004, CAH 8817 & EH (H).
- Lemland**, Rörstorp, scattered stands on the roadsides along the main road Lemlandsvägen, UCS 6682:3118-3119, 15.VI.2005, CAH 9007 & EH (H).
- Finström**, Godby, on the E side of the main road Getavägen about 70 m N of the health center in Godby, a few specimens on ruderal ground, UCS 67006-67007:31119-31120, 1.VII.2006, CAH 9134 & EH (H).

Table 1. cont.

- Finström**, Godby, on the E side of the main road Getavägen about 70 m N of the health center in Godby, two specimens on ruderal ground, UCS 67006-67007:31119-31120, 14.VI.2007, CAH 9363 & EH (H).
- Lemland**, Lemböte, Granholm, at the waste dump at the road Järsövägen approx. 200 m NNW of the road bridge over the strait Nätöströmmar, UCS 668117:310895, 19.VI.2007, CAH (OBS).
- Saltvik**, Sålis / Äfvanåker, so-called Brustå crossroads, on the N roadside approx. 200 m ENE of the main road Getavägen, one specimen on the S roadside approx. 300 m ENE of the main road Getavägen, UCS 67090:31112-31113, 21.VII.2009, CAH & Ralf Carlsson (OBS).
- Eckerö**, Öfverby, a few specimens at the road through the southernmost part of the sandpits on the W side of the road between the cultivated fields Bodåkrarna and Norrängarna, UCS 67042:30926, 20.VI.2010, CAH 9785 & Ralf Carlsson (H).
- Saltvik**, Sålis, at the crossroads Getavägen and Saltviksvägen (so-called Brustå vägskaï), UCS 670901-670908:311101-311129, 15.VI.2014, CAH (OBS).
- Hammarland**, Lillbolstad, on the W side of the road Skarpnätövägen, one specimen on the roadside at Nergård, UCS 670281:309933, 27.VII.2014, CAH & EH (OBS).
- Hammarland**, Sålis, on the W side of the road Skarpnätövägen, one specimen on the roadside about 50 m N of the road Södergårdsstigen UCS 670458:309873, 27.VII.2014, CAH & EH (OBS).
- Hammarland**, Bovik, on the E side of the road Boviksvägen, one multi-stemmed specimen on the roadside about 20 m N of the crossroads towards Berghamn, UCS 670527:309697, 27.VII.2014, CAH & EH (OBS).
- Hammarland**, Bovik, on the S side of the road Boviksvägen approx. 100 m E of the crossroads towards Bovikssjön, one multi-stemmed specimen on the roadside, UCS 670541:309713, 27.VII.2014, CAH & EH (OBS).
- Hammarland**, Lillbolstad, Marielund, on the E side of the road Skarpnätövägen, eight small stands on the roadside from the road Lillbolstadvägen about 60 m towards the southeast, UCS 670299-670303:309906-309910, 25.VII.2015, CAH & EH (OBS).
- Hammarland**, Bredbolstad / Lillbolstad, at the road Aspbackavägen between the roads Boviksvägen and Skarpnätövägen, large and dense stands on both roadsides, especially between the ditch Fly å and the road Skarpnätövägen; further a few stands about 300 m towards the south along the road Boviksvägen and a few hundred metres along the road Skarpnätövägen towards the north, UCS 670331-670351:309776-309878, 25.VII.2015, CAH & EH (OBS).
- Mariehamn**, Öfvernäs, nine multi-stemmed specimens on the hillock with Mr. Stefan Lindfors's piece of art called Radar II, approx. 150–180 m N of Mariebad, UCS 668741-668744:310823-310826, 16.VIII.2018, CAH (OBS).
- Mariehamn**, Öfvernäs, about ten tall specimens on the E roadside of the road Östernäsvägen, at the NE end of the road Juseliusvägen, UCS 668506:10873, 10.VI.2019, CAH (OBS).
- Hammarland**, Bredbolstad, about ten specimens, partly with flower buds, partly wilted, in the pasture N of the road Aspbackavägen about 10-40 m W of the ditch Fly å, UCS 67034:0983, 2019-09-13, CAH & Ralf Carlsson (OBS).