

# Flora Protection Order - bryophytes

## *Hamatocaulis vernicosus*

**Status:** Near Threatened; listed on the Flora Protection Order, Bern Convention & EU Habitats Directive

**Location:** Scragh Bog, Co. Westmeath

## Species Records

Taxon	Vice County number	Taxon Site	Locality / habitat	Grid Reference	Date	Recorder	Protected site
<i>Hamatocaulis vernicosus</i>	23	11	Scraw Bog, Portnashangan, Mullingar	N45	1946.	Harris, K.C.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Portnashangen; Scraw bog	N45	1953.	Thomson, J.S.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Portnashangen; Scraw bog	N45	1966.	King, A.L.K.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scraw Bog, Portnashangan	N45	1966.	Thomson, J.S.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Portnashangan; Scraw Bog	N45	1970.	King, A.L.K.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Portnashangan; Scraw Bog	N45	1971.	King, A.L.K. & Synnott, D.M.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N423589	2004.	Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan); Plentiful, over several square metres. Wet fen	N42475900	2007.09.10	Holyoak, D.T., Hodgetts, N.G. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan); Large patches at base of Carex & Menyanthes in wet fen; ca 105 m alt.	N42525896	2007.09.10	Holyoak, D.T., Hodgetts, N.G. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan)	N42535896	2007.09.10	Holyoak, D.T., Hodgetts, N.G. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan)	N42565895	2007.09.10	Kingston, N., Lockhart, N., Holyoak, D.T. & Hodgetts, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N42555895	2007.09.10	Holyoak, D.T. & G., Lockhart, N., Hodgetts, N.G. 7191	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan)	N42555895	2007.09.10	Holyoak, D.T., Hodgetts, N.G. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog (SE. of Portnashangan); Wet fen	N4259	2007.09.10	Holyoak, D.T., Hodgetts, N.G. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4221159237	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4223159256	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4226659135	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4230459287	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4230959047	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4231759290	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4231959177	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
<i>Hamatocaulis vernicosus</i>	23	11	Scragh Bog	N4231959295	2009.07.31	Campbell, C.	SAC000692

Hamatocaulis vernicosus	23	11	Scragh Bog	N4233259273	2009.07.31	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4233959065	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4234259265	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4234659258	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4235459252	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4235658959	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4236659201	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4238159218	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4239359110	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4239859115	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4241058786	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4241358780	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4241959128	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4243759143	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4244059142	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4244259020	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4244359022	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4244658866	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4244659131	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4245058870	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4246358907	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4249659058	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4255558955	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4257458947	2009.07.31	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4216359365	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4216459325	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4217059346	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4217859329	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4218259330	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4219259335	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4219759337	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4221059346	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4221359421	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4221459420	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4221459421	2009.08.13	Campbell, C. & Lockhart, N.	SAC000692



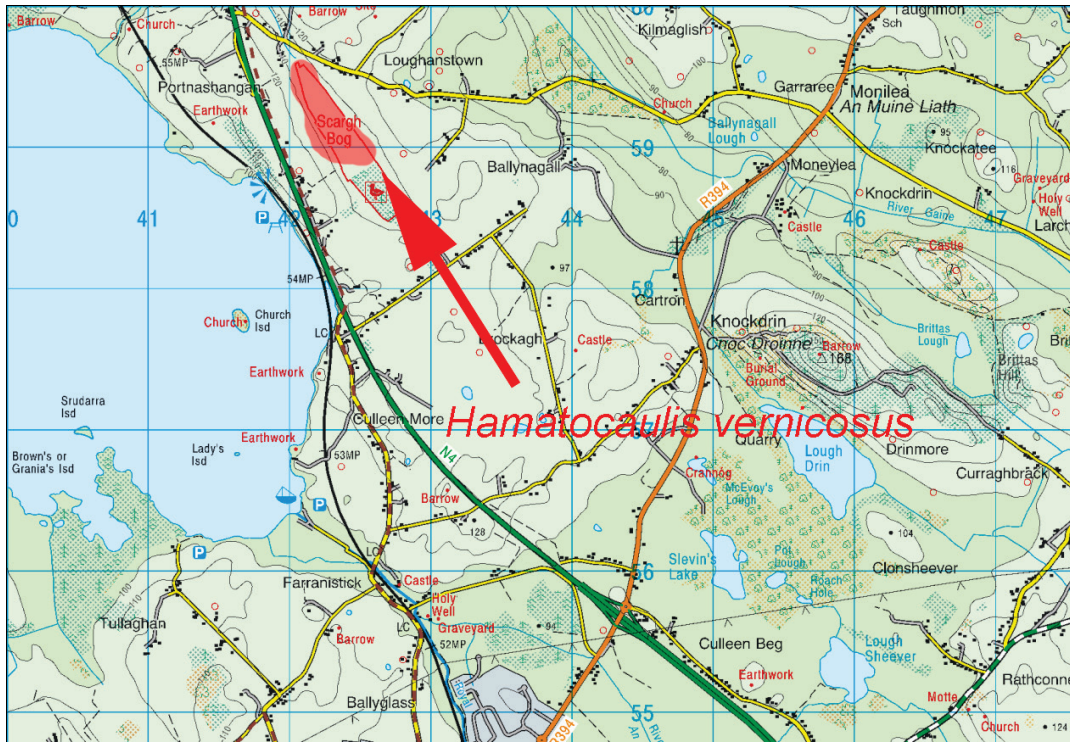
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224759370	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224759378	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224859371	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224859376	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224959372	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4224959376	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4225059372	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4225059373	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4225159373	2009.08.13	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4225159374	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4225259373	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4231159049	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4231159049	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4231659293	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4231659294	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4231859176	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4243859020	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4243859021	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4243959144	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692
Hamatocaulis vernicosus	23	11	Scragh Bog	N4255858951	2009.08.26	& Lockhart, N. Campbell, C.	SAC000692

The detailed Discovery map, field notes, plot data, aerial photograph and site photographs are from:

Campbell, C., Hodgetts, N. & Lockhart, N. (2015) Monitoring methods for *Hamatocaulis vernicosus* Mitt. Hedenäs (Slender Green feather-moss) in the Republic of Ireland. *Irish Wildlife Manuals*, No. 91. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Ireland.

Campbell, C. (2013). *Conservation of selected legally protected and Red Listed bryophytes in Ireland*. Ph.D. Thesis, University of Dublin, Trinity College.

### Location (1:50,000 Discovery map)



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Location (detailed map)



<p>Produced by: Paul Duffy and Teresa Tuttle Conservation Planning National Parks and Wildlife Service Date: 26th February 2013</p>	<p><b>Conservation Objectives</b> <i>Hamatocaulis vernicosus</i> (Natura code: 1393)</p>	<p>0 100 200 400 Metres</p>	<p>N Map Version 1.0</p>
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## Field Data Sheet - Rare and Threatened Bryophyte Survey 2007

2007-093

Species <u>Hamatocaulis vernicosus</u>		Vice-county number H 23	Vice-county Co. Westmeath
Locality <u>Scragh Bog</u> (SE. of Portnashangan)		Land Owner/Occupier	cSAC/pNHA? no. 692
Grid Ref. N 4256/5895 (A) N 4252/5896 (B)	GPS? <input checked="" type="checkbox"/>	alt. (m) ca 105	Date d/m/y 10/9/2007
Recorder NG Hodgetts, N. Loochart, N Kingston, DT Holyoak		Sketch Map of Site showing Location of Species: indicate North (arrow) and scale	
Describe substrate(s), e.g. rock/ soil/ tree type; wet/moist/dry, sunny/shaded habitat features e.g. aspect, slope, vegetation cover/height (A) in shallow water in fen, amongst sedges, grasses + herbs; (B) large patches at base of <u>Carex</u> and <u>Manganthes</u> in wet fen.		Size of Population <u>Locally</u> <u>plentiful, with patches extending over several m<sup>2</sup>, e.g. at N4247/5900</u>	
Sporophytes present (stage) <u>—</u>		Locality Map (1:50 000 if possible)	
[or copy of part of 1:50 000 sheet no. <u>41</u> attached to this page]		Associated Species <u>with Calliergon giganteum,</u> <u>Climacium dendroides,</u> <u>Calliergonella cuspidata,</u> <u>Bryum pseudotriquetrum;</u> <u>Carex spp.; Manganthes</u> <u>reticulata</u>	
Photographs <u>—</u>		Threats and proposed Conservation Measures Site immediately threatened: <u>yes / no</u>	
New record at this site / older record refound		Voucher specimen no. (A) DTH 07-387, (B) DTH 07-388	

## Field notes from Neil Lockhart, 13 July 2004

Tall *Carex appropinquata* sedge meadow. Very extensive population of *H. vernicosus* covering hectares of the fen and associated with the *C. appropinquata*/*C. lasiocarpa* zone. Possibly the largest population that I've seen.

Vegetation ungrazed, ca. 40 cm tall; Herbs 100%; Bryophytes 60%

Associates (with Braun-Blanquet cover):

[ <i>Hamatocaulis vernicosus</i>	3]	<i>Filipendula ulmaria</i>	2
<i>Agrostis stolonifera</i>	2	<i>Galium palustre</i>	1
<i>Calliergon giganteum</i>	2	<i>Galium uliginosum</i>	1
<i>Calliergonella cuspidata</i>	1	<i>Holcus lanatus</i>	1
<i>Caltha palustris</i>	2	<i>Lychnis flos-cuculi</i>	1
<i>Carex appropinquata</i>	2	<i>Menyanthes trifoliata</i>	4
<i>Carex lasiocarpa</i>	1	<i>Plagiomnium</i> sp.	1
<i>Climacium dendroides</i>	1	<i>Potentilla palustris</i>	2
<i>Epilobium palustre</i>	1	<i>Trifolium repens</i>	+
<i>Equisetum fluviatile</i>	1	<i>Valeriana officinalis</i>	1

## Field notes from Nick Hodgetts, David Holyoak, Naomi Kingston & Neil Lockhart, 10 September 2007

*H. vernicosus* growing in shallow water in fen, amongst sedges and herbs and large patches at base of *Carex* and *Menyanthes* in wet fen. Locally plentiful, with patches extending over several m<sup>2</sup>, e.g. at N4247/5900.

Associates:

*Bryum pseudotriquetrum*  
*Calliergonella cuspidata*  
*Calliergon giganteum*  
*Carex* spp.  
*Climacium dendroides*  
*Menyanthes trifoliata*

## Field notes from Christina Campbell, Neil Lockhart & Noeleen Smyth, 26 August 2009 & 1 & 8 September 2010

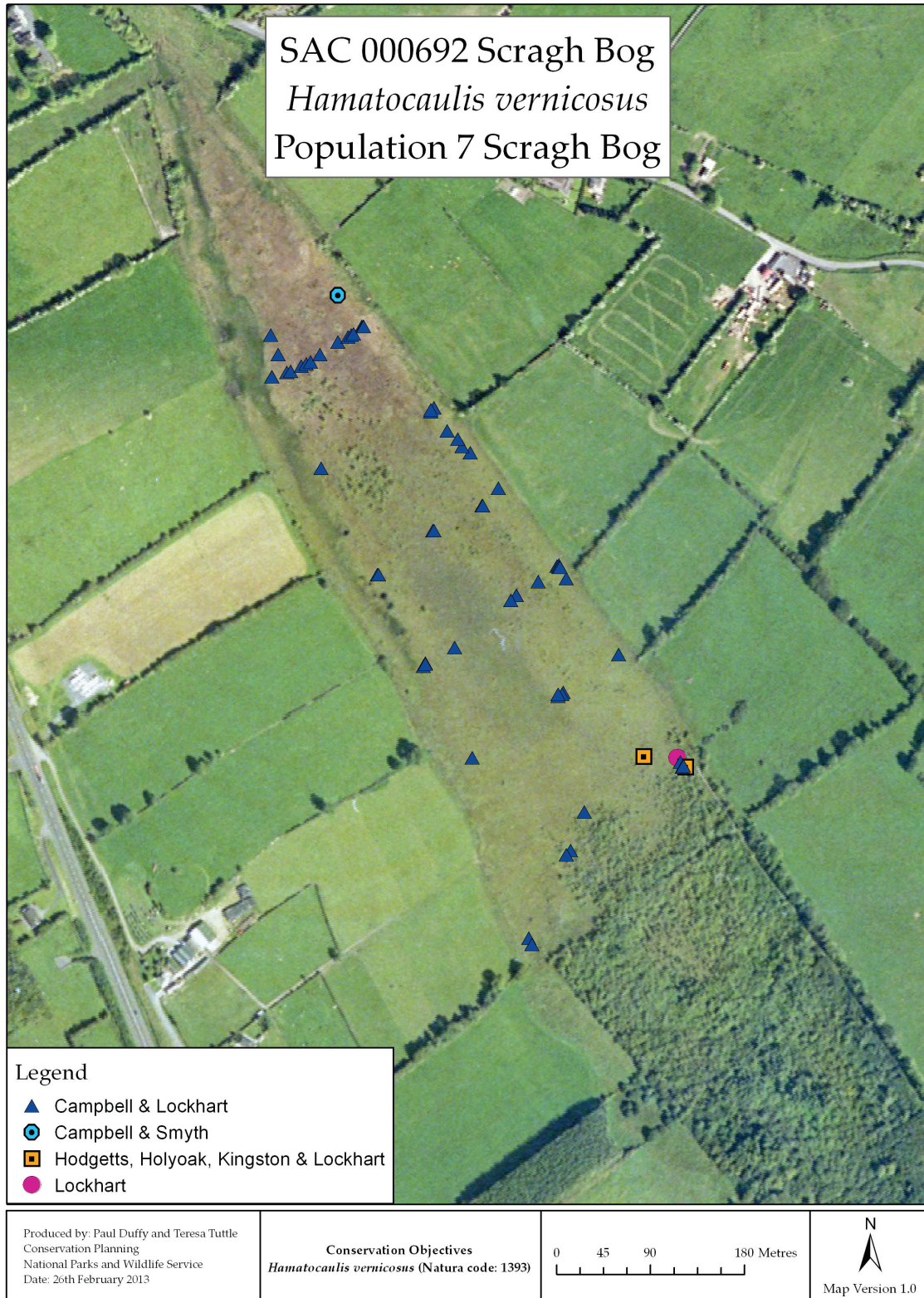
Seven plots (2 x 2 m) containing *H. vernicosus* were recorded at the population site, three in August 2009 and four in September 2010. All plots were recorded on a floating scraw with a peat depth of over 240 cm. (The maximum depth of peat at Scragh Bog found by O'Connell (1980) was 8.7 m.) Plot 1 was recorded in the north-eastern side of the fen in the vicinity of a *Salix aurita* shrub. Plot 2 was in the centre of the fen; *Calluna vulgaris* and *Erica tetralix* were recorded within it. Plot 3 was recorded near the boardwalk at the north-east end and contained *Salix cinerea* subsp. *oleifolia*. Plot 4 had the highest cover (Domin 7) of *Vaccinium oxycoccos* and also contained *Erica tetralix*. The highest cover of *Betula pubescens* was recorded in plot 5; plot 6 was recorded in more open conditions and had the highest cover of *H. vernicosus*. Plot 7 was also recorded near the centre of the fen, but not as many species of acidic bog were present as in Plot 2.



Scragh Bog	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7
Date	26.08.09	26.08.09	26.08.09	08.09.10	08.09.10	08.09.10	08.09.10
GPS	N42438 59144	N43317 59176	N42557 58952	N42250 59372	N42319 59295	N42310 59049	N42437 59017
Altitude (m.s.l)	108.41	107.7	104.89	101.71	106.68	106.46	103.99
Slope (degrees)	0	0	0	0	0	0	0
Aspect	0	0	0	0	0	0	0
Surface water depth (cm)	13.5	27.0	14.3	7.1	17.8	20.0	19.8
Surface water pH	6.50	6.48	6.77	6.34	6.55	6.54	6.52
Surface water conductivity ( $\mu$ S/cm)	405.5	324.0	526.0	278.5	306.5	433.0	384.5
Ammonium (NH <sub>4</sub> ) (mg/l)	0.10	0.02	0.09	6.00	0.02	0.04	0.01
Nitrate (NO <sub>3</sub> ) (mg/l)	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Orthophosphate (O-P) (mg/l)	0.031	0.005	0.021	0.083	0.036	0.005	0.005
Total phosphate (TP) (mg/l)	0.067	0.015	0.144	0.109	0.059	0.017	0.012
Peat depth (cm)	240	240	240	240	240	240	240
No. of shoots in 10 x 10 cm area	169	20	421	103	116	384	56
<i>Hamatocaulis vernicosus</i> cover (%)	20	3	12	8	70	85	3
Mean vegetation height (cm)	65.0	82.0	79.0	94.3	52.8	51.0	62.8
Max. vegetation height (cm)	95	130	220	114	225	75	118
<b>Cover (Domin):</b>							
Total cover	10	10	10	10	9	10	9
Tree cover	0	2	4	6	6	0	4
Shrub cover	5	6	0	7	4	0	4
Grass cover	5	4	5	3	4	0	0
Rush cover	0	0	4	8	5	1	1
Sedge cover	8	7	6	7	8	9	8
Forb cover	8	5	7	5	7	7	5
Fern/ fern allies cover	3	1	4	0	1	0	0
Bryophyte cover	9	9	8	10	9	10	9
Litter cover	4	4	3	5	2	2	2
Bare soil cover	0	0	0	5	0	0	0
Surface water cover	3	5	6	3	7	7	6
<b>Associated spp. cover (Domin):</b>							
<i>Agrostis stolonifera</i>	4	0	4	3	1	0	0
<i>Andromeda polifolia</i>	0	0	0	1	0	0	0
<i>Aneura pinguis</i>	0	0	0	0	0	0	3
<i>Angelica sylvestris</i>	1	0	1	1	1	0	4
<i>Apium nodiflorum</i>	0	0	0	0	0	0	1
<i>Aulacomnium palustre</i>	4	5	0	3	0	0	0
<i>Betula pubescens</i>	0	2	1	0	5	0	0
<i>Calliergonella cuspidata</i>	7	2	8	9	9	8	5
<i>Calliergon giganteum</i>	2	4	4	6	5	5	8
<i>Calypogeia muelleriana</i>	0	2	0	0	0	0	0
<i>Caltha palustris</i>	0	0	0	0	0	2	2
<i>Calluna vulgaris</i>	0	4	0	0	0	0	0
<i>Campylium stellatum</i>	0	4	0	0	0	0	4
<i>Cardamine pratensis</i>	0	0	+	1	0	0	0
<i>Carex appropinquata</i>	5	0	5	0	0	0	0
<i>Carex echinata</i>	3	0	0	0	0	0	0
<i>Carex lasiocarpa</i>	5	7	4	7	8	8	7
<i>Carex limosa</i>	4	0	0	0	2	4	2
<i>Carex nigra</i>	0	0	1	0	0	0	0
<i>Carex rostrata</i>	0	0	0	0	0	2	0
<i>Climacium dendroides</i>	4	0	2	0	0	0	0
<i>Drosera rotundifolia</i>	0	3	0	0	0	0	0
<i>Epilobium palustre</i>	3	0	2	1	1	0	0
<i>Equisetum fluviatile</i>	3	1	4	0	1	0	0
<i>Eriophorum angustifolium</i>	0	0	0	1	0	1	1
<i>Erica tetralix</i>	0	4	0	1	0	0	0
<i>Festuca rubra</i>	4	0	0	0	0	0	0
<i>Filipendula ulmaria</i>	2	0	4	0	0	0	0
<i>Galium aparine</i>	0	0	0	1	0	0	0
<i>Galium palustre</i>	0	0	3	2	4	1	0
<i>Galium uliginosum</i>	4	0	0	0	0	0	0
<i>Holcus lanatus</i>	3	0	2	0	4	0	0
<i>Hydrocotyle vulgaris</i>	0	0	0	0	0	2	0
<i>Hylacomium splendens</i>	0	2	0	0	0	0	0

Scragh Bog (continued)	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7
<b>Associated spp. cover (Domin):</b>							
<i>Juncus acutiflorus</i>	0	0	4	8	5	1	1
<i>Lemna minor</i>	0	0	3	0	0	0	0
<i>Lemna trisulca</i>	0	0	2	0	0	0	0
<i>Lychnis flos-cuculi</i>	6	0	0	0	0	0	0
<i>Mentha aquatica</i>	+	0	2	2	5	1	1
<i>Menyanthes trifoliata</i>	8	5	5	4	6	7	5
<i>Molinia caerulea</i>	0	4	0	0	0	0	0
<i>Parnassia palustris</i>	0	0	0	0	0	0	1
<i>Pedicularis palustris</i>	0	0	0	4	0	0	0
<i>Plagiomnium elatum</i>	1	0	0	0	0	0	0
<i>Poa trivialis</i>	1	0	3	0	0	0	0
<i>Polytrichum strictum</i>	0	5	0	0	0	0	0
<i>Potentilla erecta</i>	0	1	0	0	0	0	0
<i>Potentilla palustris</i>	6	0	4	3	4	0	0
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	0	0	4	6	5	0	4
<i>Salix repens</i>	0	3	0	0	1	0	1
<i>Schoenus nigricans</i>	0	2	0	1	0	0	2
<i>Scorpidium cossonii</i>	0	4	0	0	0	0	0
<i>Scorpidium revolvens</i>	0	4	0	0	0	0	4
<i>Scorpidium scorpioides</i>	0	3	0	0	0	0	6
<i>Sphagnum subnitens</i>	0	7	0	0	0	0	0
<i>Succisa pratensis</i>	2	3	0	4	2	0	0
<i>Trifolium repens</i>	2	0	0	0	0	0	0
<i>Vaccinium oxycoccos</i>	5	4	0	7	4	0	4
<i>Valeriana officinalis</i>	1	0	0	1	3	0	0
<i>Veronica scutellata</i>	0	0	+	0	1	0	0
<i>Viola palustris</i>	0	0	0	0	1	0	0

### Aerial photograph



## Site photographs



Photograph 1: Overview of habitat of *Hamatocaulis vernicosus* at Scragh Bog.



Photograph 2: Plot 3 containing *Hamatocaulis vernicosus* at Scragh Bog, facing east, August 2009.



Photograph 3: Plot 5 containing *Hamatocaulis vernicosus* at Scragh Bog, facing north, September 2010

## Management & Conservation

### General

- Afforestation
- Peat extraction
- Drainage
- Eutrophication

### Potential site-specific threats/issues

- No specific threats identified

Excerpt from:  
Lockhart, N., Hodgetts, N. & Holyoak, D. (2012). *Rare and Threatened Bryophytes of Ireland*. Belfast: National Museums Northern Ireland Publication No. 028.

*Mosses*

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***Hamatocaulis vernicosus*** (Mitt.) Hedenäs

syn. *Amblystegium vernicosum* (Lindb.) Lindb., *Drepanocladus vernicosus* (Mitt.) Warnst.

**Status in Ireland:** Near Threatened; **Status in Europe:** Vulnerable

Varnished Hook-moss

Shining Sickle Moss

Slender Green feather-moss

**Identification**

A medium-sized to rather robust pleurocarpous moss with pinnately branched, procumbent to ascending stems up to 12 cm long, that grows amongst other plants or

forms green, dull green or brownish (rarely reddish) tufts or patches. Stem leaves are strongly falcato-secund (so the shoot apex is often hooked like a walking stick), ovate and tapering to an acuminate apex, with the base erect and the

## RARE AND THREATENED BRYOPHYTES OF IRELAND

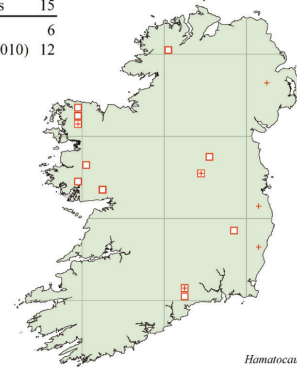


upper part of the leaf rather abruptly curved, the leaf base concave, usually strongly plicate and with a red colour often present in a transverse band. The leaf margins are plane and entire, the costa extends half to three-quarters of the way up the leaf, mid-leaf cells are linear and the alar cells are short but do not form differentiated auricles. Capsules are shortly cylindrical, curved and exserted on a long, smooth seta. *H. vernicosus* has often been misidentified in the past, but errors are easily avoided through careful attention to microscopic characters (including lack of stem hyalodermis, plicate leaves lacking differentiated alar cells) along with the characteristic erect leaf base and suddenly curved upper part of the leaf.

#### Distribution in Ireland

Records are accepted from 14 localities in seven vice-counties: Waterford (Sgillige Loughs, 1966–2010; beside R. Nire in Comeragh Mountains, 1963–2010; Coumtay, 2007); W. Galway (W. side of Lough Mask, 1983–2010; Maam Cross, 1987; NW of Gortachalla Lough, 2004–2010); Wicklow (E. of Yellowford Cross Roads, 1975); Meath (between Lough Bane and Drumone, 1978); Westmeath (Scragh Bog, 1946–2010); W. Mayo (ESE of Lough Nambrackkeagh, 1987; Largan More, 1999–2010; Rathavisteen, 1999; Uggool, 1999) and W. Donegal (Meentygrannagh, 1999–2010). Older records are from Wexford (Pallis Bridge, 1969); W. Mayo (between Bellacorick and Dooleeg, 1958) and Down (by River Lagan above Lisburn, 1901). In addition there are numerous known errors of identification and reports unsupported by specimens, including all reports from 12 additional vice-counties (S. Kerry, N. Kerry, Clare, NE Galway, Kildare, Longford, Roscommon, Sligo, Leitrim, E. Donegal, Antrim and Londonderry).

Number of Hectads	15
+ Old (pre-1970)	6
□ Recent (1970–2010)	12



Hamatocaulis vernicosus

#### Ecology and biology

Its typical habitats are in intermediate fens which are usually influenced by springs, often mineral-rich (but usually not rich in calcium) and often slightly nutrient-enriched, from the lowlands to at least 310 m altitude. It avoids shade, habitats that dry out and eutrophicated places. In Ireland, it has been found in upland flushes, lowland fens and on seasonally flooded lake margins. Species present close by at different Irish sites include *Calliergon giganteum*, *Pseudocalliergon trifarium*, *Campylium stellatum*, *Cinclidium stygium* and *Sphagnum contortum*, as well as *Saxifraga hirculus*, sedges and other herbs. Its habitats are very similar elsewhere in Europe (cf. Hedenäs & Kooijman 1996, Hedenäs 1999, Bosanquet *et al.* 2006, Štechová & Kučera 2007, Štechová *et al.* 2008).

The plants are perennial. It is a dioicous species and capsules are rare (perhaps unknown in Ireland), maturing in summer. Gemmae, bulbils and tubers are absent, but vegetative propagation doubtless occurs from detached leaf and stem fragments.

#### World distribution

Widespread in N. Europe from N. Sweden, N. Finland and arctic Russia southwards; much more local in S. Europe, where known southwards to WC Spain, the SE Alps and the Caucasus. It is listed as *Extinct* in Luxembourg, *Critically Endangered* in the Netherlands, *Endangered* in Germany and Spain, *Vulnerable* in Bulgaria, the Czech Republic and Finland, *Near Threatened* in Sweden and Switzerland and 'declining' in Norway. It is assigned to a Circumpolar Boreal-montane floristic element in Europe. Elsewhere, it is known in SW, C. and N. Asia, Japan, N. America, Greenland, Dominican

Republic and mountains of S. America (Peru). *H. vernicosus* comprises two cryptic species (see below).

#### Threats

Six of the eleven Irish populations that were known before 1990 (55%) had apparently been lost by 2007, one due to large-scale peat extraction, another to afforestation and the remaining four to various combinations of drainage and eutrophication. Similar factors underlie widespread declines in N. and C. Germany (Meinunger & Schröder 2007). Its extinction in E. England (E. Anglia) over the past few decades is attributed largely to eutrophication from adjoining agricultural land (Holyoak 1999). Current threats to Irish populations are probably similar to the causes of loss in the past, with eutrophication of groundwater potentially threatening even some fens on protected land.

#### Conservation

*H. vernicosus* is listed on Appendix 1 of the Bern Convention, protected under the EU Habitats Directive and covered by the Flora (Protection) Order, 1999 in the Republic of Ireland. A majority of the extant Irish populations are on protected land. In the last decade, new surveys have revealed many previously overlooked populations in some regions of Europe (e.g. C. and S.

Wales: Bosanquet *et al.* 2006) and large populations are known in the boreal zone of Fennoscandia, suggesting that despite losses of many regional populations it is not threatened in Europe as a whole. However, Hedenäs & Eldenäs (2007) have recently demonstrated that *H. vernicosus* comprises two cryptic species, one clade widespread in Europe and also occurring in the USA, the other known only south of the boreal zone in Europe but also in Peru and NE Asia. Three British samples are all referable to the latter clade; no molecular studies have been carried out on Irish plants. Štechová & Kučera (2007) analyse effects of habitat management intended to benefit the species in the Czech Republic, finding that it was positively influenced by mowing only at a site with high vascular plant cover, and that gap cutting was only beneficial at sites with a low water table.

**Protected sites with recent records:** Ballycroy National Park; Carrowmore Lake Complex SAC; Comeragh Mountains SAC; Connemara Bog Complex SAC; Glenamoy Bog Complex SAC; Holdenstown Bog SAC; Lough Carra/Mask Complex SAC; Lough Corrib SAC; Meentygrannagh Bog SAC; Owenduff/Nepin Complex SAC; Scragh Bog Nature Reserve; Scragh Bog SAC; **Unprotected sites with recent records:** between Lough Bane and Drumone.