

# Flora Protection Order - bryophytes

## Leiocolea rutheana

**Status:** Endangered; listed on the Flora Protection Order

**Location:** Formoyle, Co. Mayo

### Species Records

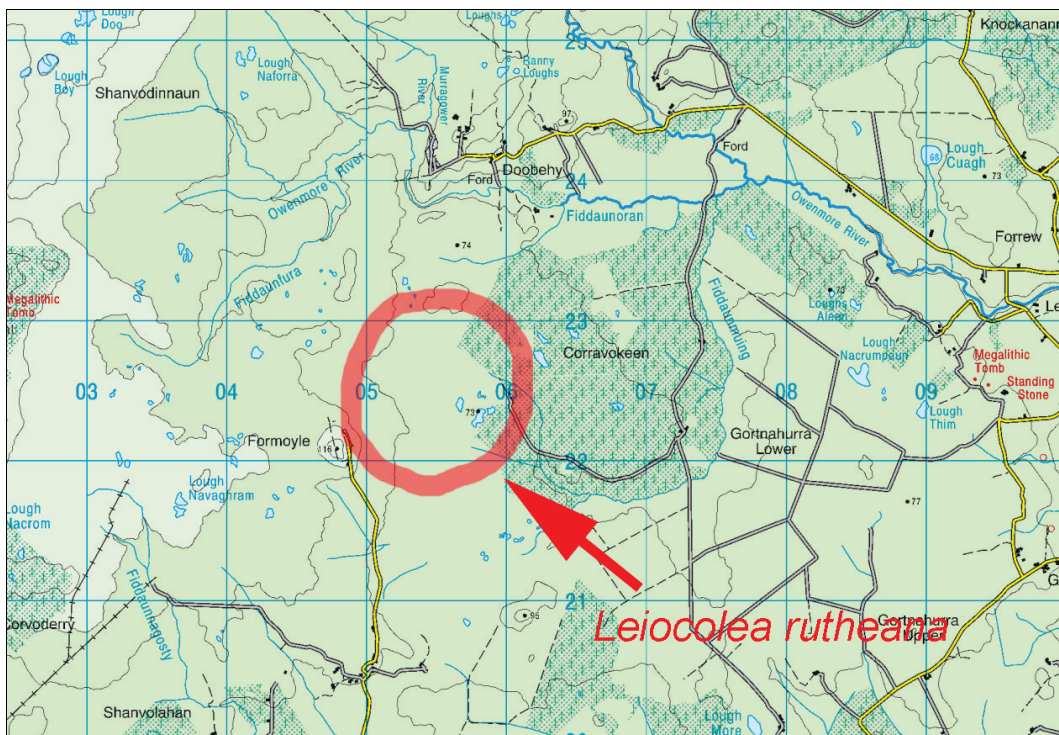
Taxon	Vice County number	Taxon Site	Locality / habitat	Grid Reference	Date	Recorder	Protected site
<i>Leiocolea rutheana</i>	27	01	2.5 km N of Formoyle	G02	1998.	Lockhart, N.	SAC001922
<i>Leiocolea rutheana</i>	27	01	E of Formoyle: wet hollows in extensive calcareous fens, ca 75 m alt.	G02	2003.05.19	Lockhart, N. & Holyoak, D.T.	SAC001922
<i>Leiocolea rutheana</i>	27	01	Formoyle	G02	2009.10.14	Campbell, C. & Lockhart, N.	SAC001922
<i>Leiocolea rutheana</i>	27	01	Formoyle	G02	2010.10.20	Campbell, C. & Lockhart, N.	SAC001922

#### References:

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

Lockhart, N.D. 1989. *Leiocolea rutheana* (Limpr.) K. Muell. New to Ireland. *Journal of Bryology* **15**: 525–529.

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



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Field Data Sheet - Rare and Threatened Bryophyte Survey 2003

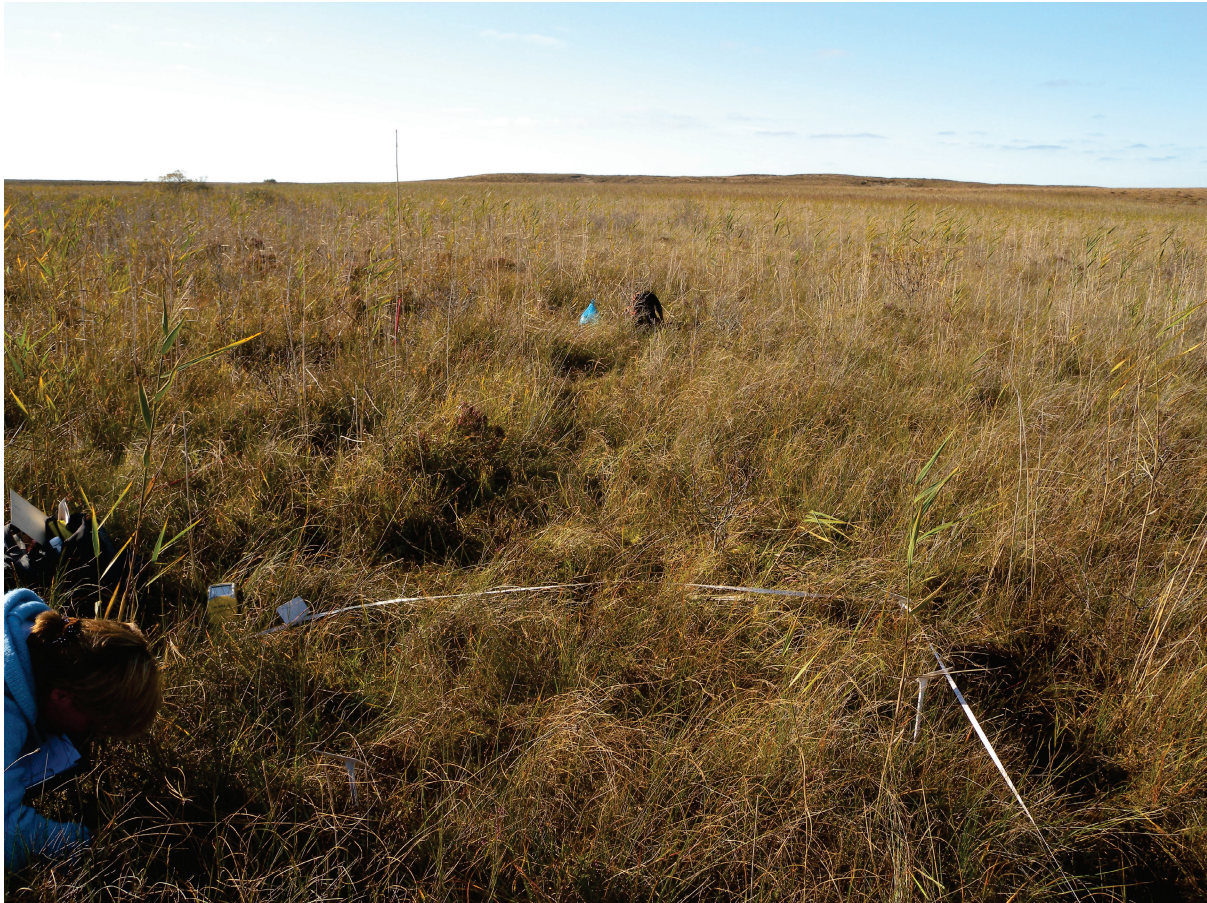
2003 - 201

Species <u>Leiocolea rutheana</u>		Vice-county number H 27	Vice-county West Mayo
Locality E. of Formoyle		Land Owner/Occupier	eSAC/pNHA? <input checked="" type="checkbox"/> no. 1922
Grid Ref. G 05 - 22 -	GPS?	alt. (m)	Date d/m/y 19/5/03
Recorder N. Lockhart & D.T. 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  Wet transitional fen / flushes	
Size of Population <u>small amounts</u> <u>seen in 3 places</u>		Sporophytes present (stage) <u>none</u>	
Locality Map (1:50 000 if possible)  [or copy of part of 1:50 000 sheet no. attached to this page]		Associated Species	
Photographs <u>—</u>		Threats and proposed Conservation Measures Site immediately threatened: <u>yes</u> / no	
New record at this site / older record refound <u>Discovered here by N. Lockhart</u>			
Voucher specimen no. <u>—</u>			

## Aerial photograph

No aerial photograph available.

## Site photographs



Photograph of plot containing *Leiocolea rutheana* at Formoyle, October 2009 (Campbell, C. 2013)

## Management & Conservation

### General

- The habitat of this species is very rare and fragile in Ireland and potentially subject to the following threats:
- Reduction in grazing levels leading to coarse vegetation and scrub
- Drainage
- Lowering of the water table

### Potential site-specific threats/issues

- Damage by ecologists doing monitoring work
- Specimen collection and damage by botanists

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

RARE AND THREATENED BRYOPHYTES OF IRELAND

***Leiocolea rutheana*** (Limpr.) Müll.Frib. var. *rutheana*

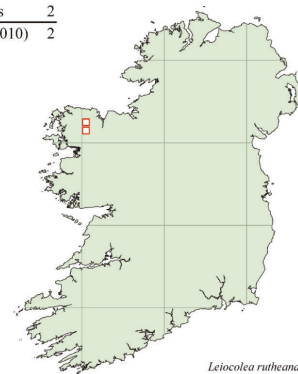
Lesser Fen Notchwort

syn. *Jungermannia rutheana* Limpr., *J. schultzei* Nees, *Lophozia rutheana* (Limpr.) M.Howe, *L. schultzei* (Nees) Schiffn.

**Status in Ireland:** Endangered (B2a, biii, D); **Status in Europe:** Least Concern



Number of Hectads	2
Recent (1970–2010)	2



*Leiocolea rutheana* var. *rutheana*

**Identification**

This is a fairly large olive green to purple-brown leafy liverwort growing among other plants or forming tufts or thin mats with ascending, unbranched shoots up to 6 cm long and 5 mm wide. The blunt, shallowly two-lobed leaves (divided to <math>< \frac{1}{4}</math>) and relatively conspicuous underleaves are typical of *Leiocolea*. The postical leaf insertion is distinctly decurrent, and the underleaves

are large and multiciliate, unlike related species. *L. gillmanii* is somewhat similar but is usually a pale green and generally smaller plant, has slightly smaller leaf cells and much smaller underleaves. *L. bantriensis* and *L. collaris* also resemble *L. rutheana*, but are dioicous rather than paroicous. *L. rutheana* has two varieties, var. *laxa* and var. *rutheana*, but only the latter occurs in Ireland.

### Distribution in Ireland

First discovered in Ireland in 1987 (Lockhart 1989b), this plant is now known from three sites all close to one another in W. Mayo: Brackloon Lough (1987–2010), Doobehy (1998 and 2010) and near Formoyle (1998–2010).

### Ecology and biology

*L. rutheana* var. *rutheana* is an obligate calcicole and occurs in calcareous fens, where it grows intermixed with other bryophytes in wet hollows and lawns, usually in open places unshaded by herbaceous vegetation. It often grows more or less at water level or even submerged. Frequent associates include *Campylium stellatum*, *Ctenidium molluscum*, *Sphagnum contortum*, *S. warnstorffii*, *Aulacomnium palustre* and *Tomentypnum nitens*, with *Schoenus nigricans* and *Molinia caerulea*. Hydrological and phytogeographical studies of the sites are described by Lockhart (1989b, 1991). Always lowland, it grows at 65–75 m in Ireland.

It is parocous and occasionally fertile; sporophytes were recorded in Ireland for the first time in 2010 (C. Campbell, pers. comm.). Gemmae are absent.

### World distribution

*L. rutheana* var. *rutheana* is among a group of species, including *Tomentypnum nitens*, *Paludella squarrosa* and *Meesia triquetra*, which are considered to have postglacial relictual distribution in Ireland. Elsewhere, this species

is scattered and rare in most of northern Europe, and absent in the south, but more frequent in Fennoscandia and northern Russia. Listed as *Critically Endangered* in Germany, *Endangered* in Britain, Poland, Latvia and Lithuania, *Vulnerable* in Svalbard, *Rare* in Estonia. In Europe, it is assigned to a Circumpolar Boreo-arctic montane floristic element. It also occurs in Siberia, the Russian Far East, N. America and Greenland.

### Threats

The habitat of this species is very rare and fragile in Ireland. The main threats are probably reduction in grazing levels, which could lead to coarse vegetation and scrub development, and agricultural improvement through drainage and lowering of the water table.

### Conservation

The small area where this species is known to occur should be treated as a conservation priority and managed for the preservation and promotion of the fen habitat. As the habitat is so fragile, great care should be taken to avoid damage while conducting survey and monitoring work. *L. rutheana* is protected in the Republic of Ireland by the Flora (Protection) Order, 1999.

**Protected sites with recent records:** Bellacorick Bog Complex SAC; **Unprotected sites with recent records:** none.