

B7

# Bracken

Scientific name:

*Pteridium aquilinum*

Perennial plant (herb) in the Bracken family (Dennstaedtiaceae)

## B7.1 What is Bracken?

- Long-lived (perennial), polycarpic (flowers many times) competitive dominant.
- Rapid growth from a relatively shallow below ground rhizome (root) in late spring and a dense, compact canopy restricts native plant species access to light – dominates open sites if left unmanaged.
- Often confused with other native ferns and sometimes with invasive knotweeds during the winter months. Bracken is the only fern with branched stems found in the UK.
- Plant poisons (phytotoxins) contained in the plant are toxic to humans and livestock and may be toxic to other native plant species (allelopathic).





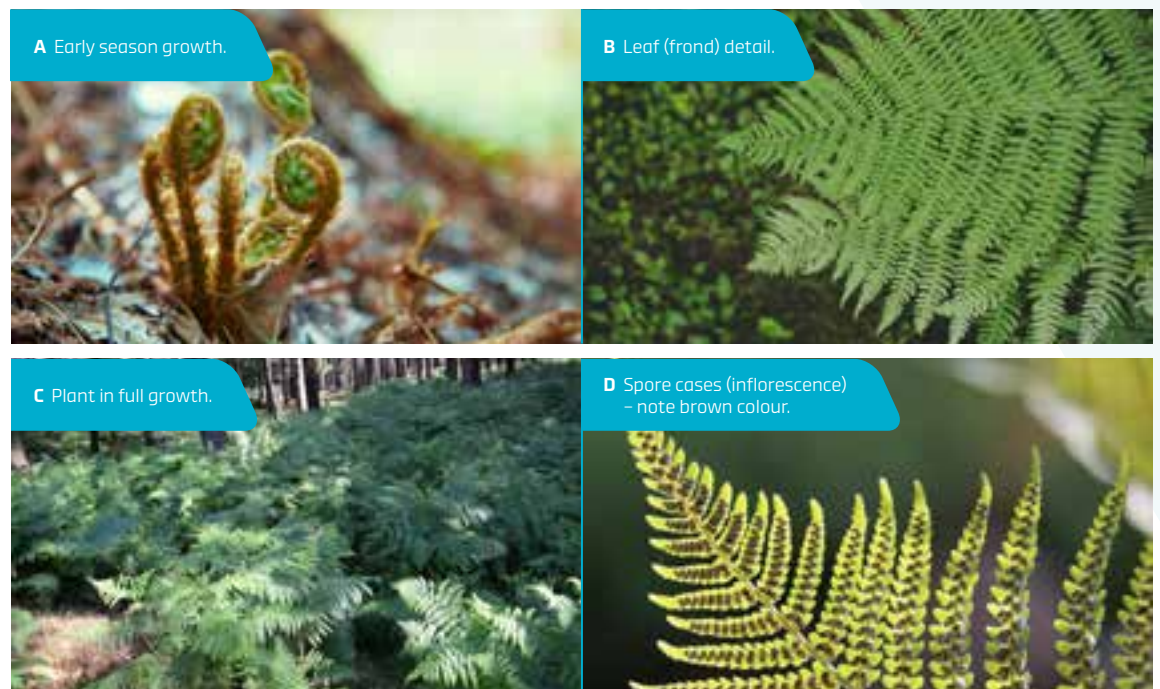




## B7.2

### What does Bracken look like throughout the year

#### Bracken



## B7.3

### How does Bracken grow and spread?

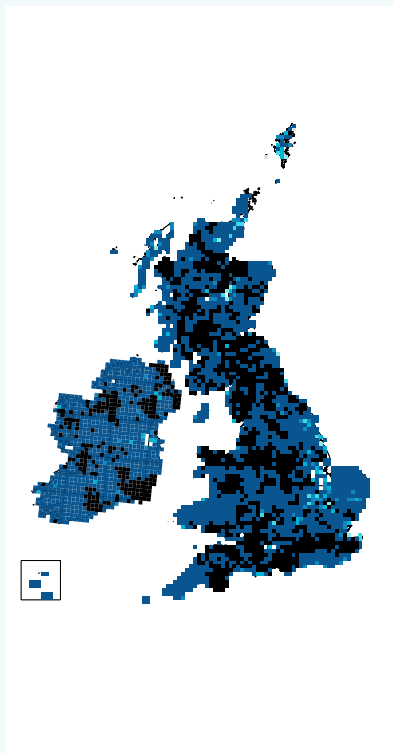
- Reaches up to 2-5m tall in full growth.
- Spreads mainly by direct rhizome (root) expansion and vegetative (asexual, clonal) dispersal via fragments of plant material created by human activities (e.g. agricultural practices) and natural disturbance processes (e.g. animals). Rarely, spread occurs via sexually produced wind-dispersed spores (sporangia).
- Growth in waterlogged soils is limited.
- UK distribution still increasing in upland areas.





## B7.4

- Pre 1930
- 1930 - 1949
- 1950 - 1969
- 1970 - 1986
- 1987 - 1999
- 2000 - 2009
- 2010 - 2019
- 2020 onwards



© BSBI 2021

## Where does Bracken grow?

Common habitats where Bracken is found include:

- > Woodland
- > Heath
- > Moors
- > Agricultural areas (hill pasture)
- > Waste ground
- > Roadsides
- > Railway embankments and cuttings
- > Rivers and other watercourses (riparian habitats)
- > Cliffs and sand dunes (rare)

The map shows where Bracken is found in the UK and Ireland.



## Timing of Bracken growth stages and treatment application

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Growth stages: approximate – weather and altitude dependent</b>	Frond emergence			■	■								
	Frond growth			■	■	■	■	■	■	■	■		
	Spore ripening								■	■	■		
	Die back									■	■		
	Dormancy	■	■										■
<b>Treatment application – physical</b>	Cultural and physical					■	■	■	■	■			
	Biological (grazing)												
<b>Treatment application – chemical</b>	Selective (asulam)							■	■	■			
	Non-selective, non-residual (glyphosate)							■	■	■			
<b>Treatment notes</b>	<p>Eradication using any control method is unlikely due to an extensive below ground rhizome; however, effective long-term control and management is possible.</p> <p>When we talk about effective control and management of established, mature stands of Bracken with herbicides, what we are describing is 'knocking out' points where stems emerge from the below ground network of rhizomes (roots) year after year. As time goes on, fewer and fewer of these rhizomes produce new stems in the following spring. Effective management of the below ground rhizome bud bank involves effective herbicide application at specific timings in the growing season.</p> <p>Long-term chemical control and management can only be achieved using asulam (only available under Emergency Authorisation (EA) and glyphosate-based herbicides applied between July and September.</p> <p>Cutting (e.g. flail mower) twice per year in summer can be used to reduce population density, though there are likely to be access issues for large equipment in upland areas, control methods must be applied indefinitely and there are higher labour requirements and CO<sub>2</sub> emissions associated with these treatments.</p>												

## Acknowledgements

## Image acknowledgements

Map courtesy of the Botanical Society of Britain and Ireland (© BSBI 2021)

## References

1. **Bracken Control Group** (2021)
2. **Grime et al.** *Castlepoint Press* (2007)
3. **Le Duc et al.** *Ann. Bot.* (2000)
4. **Le Duc et al.** *J Appl Ecol* (2003)
5. **Marrs et al.** *J. Ecol* (2006)
6. **Rose Warne** (2016)
7. **Stace** *C&M Floristics* (2019)



