

Osmunda regalis

COMMON NAMES

royal fern

BIOSTATUS

Exotic

CONSERVATION STATUS

Not applicable

CATEGORY

Vascular

STRUCTURAL CLASS

Ferns

SIMPLIFIED DESCRIPTION

Tall deciduous fern, up to 2 m tall, occasionally with a trunk, fronds of two types, mostly large, up to 3 m long and 75 cm across divided into small flat leaflets up to 7 cm long by 1.8 cm across, with upper fronds sometimes made up of small rounded segments, like a bunch of grapes, turning from green to reddish brown in summer.

FLOWER COLOURS

No flowers

DETAILED DESCRIPTION

Rhizomes forming thick erect trunks to 150 cm tall. **Fron**s 30–300 × 20–75 cm, ovate, 2-pinnate, glabrous except when very young, dimorphic with the outer ones sterile and inner fertile. **Fertile fronds** bearing sterile pinnae at base and much reduced fertile pinnae at apex. **Sterile secondary pinnae** in up to 15 pairs, 2–7 × 0.8–1.8 cm, narrowly oblong, obtuse, ± truncate at base, often with a rounded lobe on one side. **Fertile secondary pinnae** to 3 × 0.4 cm, densely covered with clusters of sporangia.

SIMILAR TAXA

No other fern has the combination of deciduous dimorphic fronds.

DISTRIBUTION

Scattered from Northland to Wellington, locally abundant in Waikato.

HABITAT

Fens often under open mānuka and grey willow (*Salix cinerea*), other wet peaty habitats including roadside drains, occasionally on exposed clay banks adjacent to water bodies.

GENUS

Osmunda

FAMILY

Osmundaceae

AUTHORITY

Osmunda regalis L.

ENDEMIC FAMILY

No

FLOWERING

Late spring to autumn



Osmunda regalis. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



Osmunda regalis. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.

FRUITING

Late spring to autumn

YEAR NATURALISED

1890

ORIGIN

Almost cosmopolitan apart from Australasia

REASON FOR INTRODUCTION

Ornamental plant or as fibre-bearing plant for orchid cultivation.

TOLERANCES

Tolerates frost, wet, moderate shade, poor and acidic soils.

CONTROL TECHNIQUES

Can be controlled manually, mechanically or herbicidally depending on situation.

LIFE CYCLE AND DISPERSAL

Perennial. Wind dispersed spores.

WETLAND PLANT INDICATOR STATUS RATING

OBL: Obligate Wetland

Almost always is a hydrophyte, rarely in uplands (non-wetlands).

NATIONAL PEST PLANT ACCORD SPECIES

This plant is listed in the 2020 National Pest Plant Accord. The National Pest Plant Accord (NPPA) is an agreement to prevent the sale and/or distribution of specified pest plants where either formal or casual horticultural trade is the most significant way of spreading the plant in New Zealand. For up to date information and an electronic copy of the 2020 Pest Plant Accord manual (including plant information and images) visit the [MPI website](#).

ENVIRONMENTAL WEED (2024)

This plant is named in a list of 386 environmental weeds in New Zealand 2024 prepared by DOC. 759 candidate species were considered for inclusion on this new comprehensive list of environmental weeds in New Zealand. The species considered were drawn from published lists of weed species, lists of plants that must be reported or managed by law if observed, existing national and regional programmes and agreements for pest management, and species already managed by the Department of Conservation (DOC). Candidate species were then assessed to see if they were fully naturalised and whether they have more than minor impacts in natural ecosystems. Read the full report [here](#).

NVS CODE

OSMREG

REFERENCES AND FURTHER READING

Webb CJ, Sykes WR, Garnock-Jones PJ. 1988. Flora of New Zealand, Volume IV. Naturalised Pteridophytes, Gymnosperms, Dicotyledons. Botany Division, Department of Scientific and Industrial Research, Christchurch, NZ. 1365 p.

Popay I, Champion P, James T. 2010. An illustrated guide to common weeds of New Zealand, 3rd edition. NZ Plant Protection Society Inc, Christchurch, NZ. 416 p.

ATTRIBUTION

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA). Features description from Webb et al. (1988). Some of this factsheet information is derived from [Flora of New Zealand Online](#) and is used under a [Creative Commons Attribution 3.0 New Zealand](#) licence.

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/osmunda-regalis/>

PDF DATE

08 June 2026