Wild Wester Ross

The Plants and Animals of Gairloch and District

This booklet aims to show most of the wildlife which a non-expert is likely to see and recognise in this part of Wester Ross (Dundonnell to Torridon).

As you spot each plant or animal, you can mark or shade in the small grey box: ☑ ■

Note that –

- It is not possible to give every species recorded in Wester Ross (for example, 924 flowering plants have been recorded!). Numerous rarities have had to be omitted, although some are included for interest.
- In some groups, most of the species which you are likely to see are shown (marked **M** in the Contents, *left*); in others, it is only possible to show a selection (marked **S**), either because the group is so numerous or because identification is so difficult.
- The time of year may affect what you can identify; e.g. flowering plants without their flowers or trees without leaves are more difficult!
- To help with identification you may need to find a good book or website (unfortunately few are available for the lower plants).
- A hint: to aid memory and enjoyment, take your own photograph of each species you find.
- It is illegal to uproot any wild plants without the landowner's permission; picking them is discouraged.
- **Pictures are NOT TO SCALE.**

Naming

Most plants and animals have an informal English name, which is based on appearance, use, habitat, tradition etc. They can be misleading; e.g. Reindeer Moss is a Lichen.

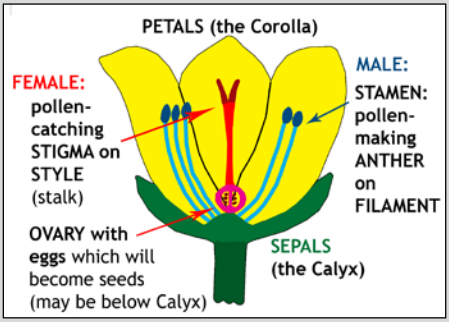
Every known living thing has a Latin name; this is the international scientific naming system developed by Linnaeus. For example, the Daisy is *Bellis perennis*. *Bellis* is the Genus name (like our surname), *perennis* is the Species name (like our first name); there is also a broader Family name which is not normally given here (for the Daisy, the *Asteraceae*). Some names are being changed as a result of recent DNA analysis.

"**sp**" means that it could be any of several different species; "**agg**" means a group (aggregate) of similar species.

WILDFLOWERS

Most

The **higher plants**, which all have flowers, include Wildflowers, Trees and Shrubs (page 9) and Grasses etc (page 12). Some small woody Shrubs (Broom, Gorse, Heathers and berry-bearing plants) are included here with the non-woody (herbaceous) Wildflowers. Some unidentified plants which you see may be garden escapes. **Pond plants** (such as *Potamogeton* and Bladderworts) are difficult, and not shown. Good places to find all kinds of plants are Flowerdale and above Achtercairn.



All flowering plants reproduce by **seeds**, and are **vascular**: i.e. they have systems to transport water and nutrition through the plant, consisting of phloem and xylem (see *Trees*). They contain green chlorophyll, a molecule that absorbs sunlight and uses its energy to synthesise carbohydrates (food) from carbon dioxide and water; this process is called **photosynthesis**.

Wildflowers vary enormously, but most of their flowers are based on the pattern shown here. They are fertilised by insects which are attracted by the petals. The Daisy Family ("Composites"), which is the largest family of all, is different: what looks like a flower is in fact many tiny tubular flowers (yellow in the Daisy) crowded together and surrounded by petal-like **bracts** (modified leaves, white in the Daisy and yellow in the Dandelion).

Here 113 which you are likely to see are illustrated; some less common ones are listed after them. The flowers are arranged by their main colour: **white/green, yellow/orange, red/pink/purple, blue/violet**. Within each colour they are very roughly in flowering order.

Oxalis acetosella
Wood-sorrel

Leaves and flowers are edible, 5 petals

Anemone nemorosa
Wood Anemone

Anemone means Windflower, 6 petals

Stellaria holostea
Greater Stitchwort

Tall, four deeply split petals

Bellis perennis
Daisy

The "day's eye" closes at night

Cardamine pratensis
Cuckooflower

Often pink; also called Lady's Smock

Platanthera sp
Butterfly-Orchids

Lesser and (less common) Greater

Conopodium majus
Pignut

Umbellifer, edible tuber at base of stem

Oenanthe crocata
Hemlock Water Dropwort

Umbellifer, spreading, **poisonous**: don't touch

Menyanthes trifoliata
Bogbean

Grows in shallow lochans and bogs

Trifolium repens
White Clover

Triple leaves (rarely a lucky four!)

Galium saxatile
Heath Bedstraw

Tiny flowers & leaves, abundant, spreading

Urtica dioica
Common Nettle

Stinging hairs inject formic acid

Plantago lanceolata
Ribwort Plantain

One of several species, spike of tiny flowers

Silene uniflora
Sea Campion

Sea cliffs and coasts, bladder-like sepals

Sagina procumbens
Procumbent Pearlwort

Creeping, moss-like, tiny flowers

Heracleum sphondylium
Hogweed

Large roadside umbellifer

Galium aparine
Goose-grass / Cleavers

Sticky leaves and seeds, velcro-like, tiny flowers

Aegopodium podagraria
Ground Elder

Umbellifer, spreads by underground stems

Honkenya peploides
Sea Sandwort

Dunes and shingle, spreading, succulent

Alchemilla vulgaris agg
Lady's Mantle

No petals, greenish sepals

Antennaria dioica
Mountain Everlasting

Tufted flowers, male and female separate

Achillea millefolium
Yarrow

Brush-like leaves, Daisy family

Linum catharticum
Fairy Flax

Tiny inconspicuous flowers and leaves

Sedum anglicum
English Stonecrop

Fleshy leaves, on rock, creeping

Plantago maritima
Sea Plantain

Also likes roadsides (salt!) and paths

Cerastium fontanum
Common Mouse-ear

Sprawling, hairy leaves, split petals

Euphrasia officinalis agg
Eyebright

Tiny colourful flowers, many micro-species

Valeriana officinalis
Valerian

Pink tinge, tall, like an umbellifer

Lobelia dortmanna
Water Lobelia

In lochs up to 3m deep

Rubus fruticosus agg
Bramble

Prickly, fast-growing, edible blackberries

Rubus idaeus
Wild Raspberry

May have edible berries, soft prickles

Achillea ptarmica
Sneezewort

Related to Yarrow, larger flowers, thin leaves

Teucrium scorodonia
Wood Sage

In dry rocky places, dead-nettle family

Filipendula ulmaria
Meadowsweet

Frothy-looking flowers, sweet scent

Nymphaea alba
White Water-lily

In lochs and pools, floating flowers

Angelica sylvestris
Wild Angelica

Large umbellifer (up to 2m)

Cochlearia officinalis
Common Scurvygrass

Coast and hills, concave leaves, not grass!

... var. *alba*
White heathers

Rare white varieties of all three heathers

FLOWER NAMES

Both the Latin and the English names are often interesting. ... ***officinalis*** plants were kept in "official" drug stores for medical purposes; ***sylvatica*** = wood, ***pratensis*** = meadow, ***palustris*** = marsh; ***Saxifraga*** = rock-breaker. A **Wort** is a plant connected with food or medicine: **Sneezewort** roots induced sneezing, **Butterwort** leaves were used to curdle milk. **Lady's** refers to the Virgin Mary. **Scurvygrass** was very useful in the early Navy, providing Vitamin C. **Valerian** made you healthy (Latin *valere*); it is still used.

Primula vulgaris
Primrose

"First Rose", the first sign of Spring?

Ranunculus ficaria
Lesser Celandine

In grassland or beside water

Ulex europaeus
Gorse / Whin

Over-successful very prickly tall shrub

Ranunculus repens
Creeping Buttercup

Spreading, leaf's middle lobe stalked

Ranunculus acris
Meadow Buttercup

Upright, leaf's middle lobe unstalked

Taraxacum agg.
Dandelion

Deep-rooted garden weed; also see opposite

Trollius europaeus
Globeflower

A buttercup, spherical flower, not common

Chrysoplenium oppositifolium
Golden Saxifrage

Beside streams, wet places

Caltha palustris
Marsh-marigold

"Kingcup", large water buttercup

Cytisus scoparius
Broom

Gorse-like shrub but not prickly

Lotus corniculatus
Bird's Foot Trefoil

"Eggs & Bacon", often partly red

Lysimachia nemorum
Yellow Pimpernel

Creeping, in shady places

Potentilla anserina
Silverweed

Silvery many-toothed leaves

Sedum rosea
Roseroot

Coast/mountain rocks, M & F flowers separate

Potentilla erecta
Tormentil

Abundant, long-flowering, 4 petals

Ranunculus flammula
Lesser Spearwort

A buttercup, often in water, narrow leaves

Gnaphalium uliginosum
Marsh Cudweed

Unusual-looking: soft grey leaves, hidden flowers in clusters

Iris pseudacorus
Yellow Iris / Flag

Large, sword-shaped leaves, on wet ground

Melampyrum pratense
Common Cow-wheat

A parasite on other plants

Anthyllis vulneraria
Kidney Vetch

Distinctively downy, not common

Lathyrus pratensis
Meadow Vetchling

Pairs of narrow leaves, not common

Lonicera periclymenum
Honeysuckle

Climbs trees, shrubs and rock, clockwise

Sonchus asper
Prickly Sow-thistle

Multi-headed yellow-flowered thistle

Galium verum
Lady's Bedstraw

Upright with tiny yellow flowers

Hawkweed, Hawkbit, Cat's-ear, etc

Large group of similar "Composites" (p1), hard to distinguish, dandelion-like flowers

Rhinanthus minor
Yellow-rattle

Seeds rattle in their cases when dry

Senecio jacobaea
Common Ragwort

Can be poisonous to grazing animals

Senecio aquaticus
Marsh Ragwort

Larger leaves and flowers, wet ground

Hypericum pulchrum
Slender St John's Wort

Flowers and buds have a reddish tinge

Solidago virgaurea
Goldenrod

Can grow up to high altitudes

Saxifraga aizoides
Yellow Saxifrage

On wet rocky ground

Narthecium ossifragum
Bog Asphodel

Very common, moors; our county flower

Pedicularis sylvatica
Lousewort

Also taller Marsh Lousewort, aka Red Rattle

Geum rivale
Water Avens

Lantern-like flowers, in wet places

Geranium robertianum
Herb-Robert

A small geranium (cranesbill)

Vicia sepium
Bush Vetch

Dry grassland and scrub, Pea family

Silene flos-cuculi
Ragged Robin

Damp ground, grass-like leaves

Rumex acetosa
Common Sorrel

M and F flowers on separate plants

Trifolium pratense
Red Clover

Leaves more pointed than White Clover's

Stachys sylvatica
Hedge Woundwort

Tall, like dead-nettles

Armeria maritima
Sea Pink / Thrift

Coastal rocks and mountain tops

ORCHIDS

Four pink orchids are grouped here to help identification, but they do not flower at the same time.

Orchids are a huge and distinctive family. They can be very variable and often hybridise, so that it may be hard to distinguish them. Others are listed on p8.

Orchis mascula
Early-purple Orchid

The first orchid to flower

Dactylorhiza purpurella
Northern Marsh-orchid

The tallest orchid found here

Dactylorhiza maculata
Heath Spotted-orchid

Most common, spotted leaves, white to pink

Gymnadenia conopsea
Fragrant-orchid

Uniform pink, scented

Rosa canina agg
Dog Rose

Shrub; similar *Rosa sherardii* may be white

Epilobium montanum
Broad-leaved Willowherb

Commonest willowherb

Cirsium arvense
Creeping Thistle

Many-flowered, prickly, stems without spines

Cirsium palustre
Marsh Thistle

Many-flowered, wetter ground, spines on stem

Cirsium vulgare
Spear Thistle

Larger flowerheads, often single, “Scottish”

Chamerion angustifolium
Rosebay Willowherb

“Fireweed”, often on waste ground

Digitalis purpurea
Foxglove

Can be 1.5m tall, 20-80 flowers

Centaurea nigra
Common Knapweed

Like thistles but not prickly

Thymus polytrichus
Wild Thyme

On dry ground, forms low mats, tiny

Rumex obtusifolius
Broad-leaved Dock

Related to sorrel but big leaves

Drosera sp
Sundew

Insect-eating; round & long-leaved species

Erica cinerea
Bell Heather

Larger flowers than Ling, reddish

Erica tetralix
Cross-leaved Heath

Wetter ground, pink, separate stems

Calluna vulgaris
Heather / Ling

Very abundant, drier ground, up to 1m tall

These **BERRIES** have reddish but inconspicuous flowers:

Vaccinium myrtillus
Blaeberry / Bilberry

Common, bright green leaves, tasty berries

Arctostaphylos uva-ursi
Bearberry

Leaves often broadest at tip, low, spreading

Vaccinium vitis-idaea
Cowberry

Leaves widest in middle, less spread, less common

Empetrum nigrum
Crowberry

Common, spiky leaves, edible berries

Viola riviniana
Dog-violet

Also Marsh Violet, less common, paler flower

Hyacinthoides non-scripta
Wild Hyacinth

The English "Bluebell", abundant, rarely white

Ajuga reptans
Bugle

Blue flowers, shiny leaves, damp ground

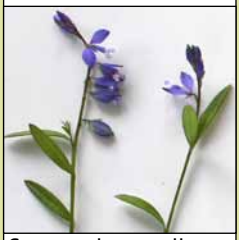
Myosotis secunda
Creeping Forget-me-not

Several similar species, small blue flowers

Pinguicula vulgaris
Common Butterwort

Sticky leaves catch and absorb insects

Polygala serpyllifolia
Heath Milkwort



Common but small and shy

Veronica chamaedrys
Germander Speedwell

Upright speedwell, blue flowers

Veronica officinalis
Heath Speedwell

Creeping speedwell, lilac flowers

Veronica serpyllifolia
Thyme-leaved Speedwell

Less common, small leaves, pale flowers

Scutellaria galericulata
Skullcap

Coast and stream-sides, up to 50cm high

Prunella vulgaris
Selfheal

Common, complex violet flower head

Succisa pratensis
Devil's-bit Scabious

Very common, late flowering

SOME LESS COMMON FLOWERS

Bedstraw, Northern (upright, tiny white flowers)
Bindweed, Hedge (vigorous climber)
Bitter-vetch (red-flowered pea)
Butterwort, Pale (olive leaves, paler flower)
Campion, White (probably introduced)
Colt's-foot (daisy-like but all yellow)
Daisy, Ox-eye (large daisy, probably planted)
Harebell (thin-petalled Scottish Bluebell)
Mullein, Great (very tall, many yellow flowers)
Pennywort, Marsh (umbrella-like leaves)
Sanicle (rather meagre umbellifer)
Shore-weed (fleshy grass-like leaves, in water)
Vetch, Tufted (multiple purple flower-head)
Woundwort, Marsh (paler flowers)

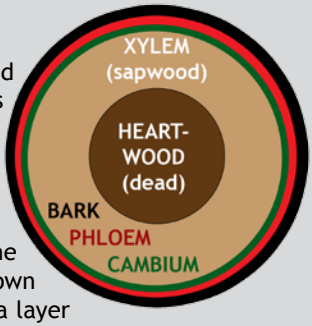
ORCHIDS: Small White, Frog, Early Marsh, Bog; Lesser Twayblade, Narrow-leaved Helleborine

MOUNTAIN FLOWERS (Arctic / Alpine)

Azalea, Trailing (tiny shrub, red flowers)
Bearberry, Mountain (red autumn leaves)
Campion, Moss (dense cushion, pink flowers)
Cloudberry (red/orange divided edible berries)
Dwarf Cornel (black-centred flowers)
Lady's-mantle, Alpine (small Alchemilla)
Saxifrage, Purple (mat-forming, tiny leaves)
Saxifrage, Starry (stalked, white and red)

TREES and SHRUBS

There are about 35 trees and shrubs native to Scotland (i.e. they arrived naturally after the last Ice Age); most of those found in Wester Ross are illustrated here. Others have been introduced for gardens, arboretums or commercial forestry, or accidentally (study the front cover picture!).



Trees have wood for strength and bark for protection. The wood is the **xylem**, which by a remarkable feat of engineering carries water and minerals up the tree from the roots. The minerals are provided by **mycorrhiza**, fungi which live in symbiosis with the tree's roots. Xylem grows every year, forming the rings which can be used to date the tree, and when dead it forms the heartwood.

Forming the inside of the bark is another thin layer called the **phloem**, which carries nutrients (products of photosynthesis) down the tree from the leaves. Both xylem and phloem are made by a layer of cells between them called the vascular **cambium**. If a deer chews the bark right round a tree (ring-barking) the tree dies.

Most species are **deciduous** (dropping their leaves in autumn); others are **evergreen** (keeping their leaves through the winter). Most trees (**broadleaves**) are flowering plants, but the **conifers** seed in a different way. Conifers bear cones and have needle-like leaves; technically, they are gymnosperms, which means that their ovules (eggs) are exposed, not hidden in an ovary like the flowering plants (angiosperms).

Here almost all our **native** trees are shown first, **broadleaves** before **conifers**, then a selection of **introduced** trees. The most recognisable feature of each tree is shown.

Alnus glutinosa
Alder

Likes damp places, often lines river banks

Fraxinus excelsior
Ash

Multiple leaflets, many seeds, black buds

Populus tremula
Aspen

Spreads using suckers, round leaves flutter

Sambucus nigra
Elder

Sprays of white flowers, black berries

Betula pubescens
Downy Birch

Very common, young twigs downy, leaves more rounded

Betula pendula
Silver Birch

Rare here, leaves more triangular and bigger teeth, branches "weep"

Ulmus glabra
Wych Elm

Tall, hairy leaves, round seeds

Prunus avium
Gean / Wild Cherry

Striped bark, cherries edible

Crataegus monogyna
Hawthorn

Thorny, red berries

Corylus avellana
Hazel

Small tree, catkins, nuts, pointed leaf

Ilex aquifolium
Holly

Evergreen, tough, most leaves prickly

Hedera helix
Common Ivy

Evergreen, climbing or shrub

Myrica gale
Bog-myrtle

Common low shrub, scented leaves

Quercus petraea
Sessile Oak

Acorns almost stalk-less on the branches

Sorbus aucuparia
Rowan

5-10 leaflets on a stalk, white flowers

Acer pseudoplatanus
Sycamore

An early introduction, now naturalised

Salix cinerea
Grey Willow / Sallow

Long leaves, damp ground; also Goat W.

Salix aurita
Eared Willow / Sallow

Low scrub, small “ears”; several other species

Juniperus communis
Juniper

Prickly conifer, from creeping to small tree

Pinus sylvestris scotica
Scots Pine

Native pine, needles in pairs, blue-green

INTRODUCTED TREES

Around Gairloch many trees were planted in the 19th century, e.g. in the Flowerdale arboretum. Today there are also commercial forestry plantations, many now being felled and replaced by native trees. A selection is shown here.

Fagus sylvatica
Beech

Tall, smooth pale bark, leaves gold in autumn

Aesculus hippocastanum
Horse Chestnut

Prickly seed cases, conkers, long leaves

Tilia x vulgaris
Common Lime

Often many suckers around base and trunk, heart-shaped leaves

Larix decidua
European Larch

Our only deciduous conifer

Picea sitchensis
Sitka Spruce

Standard forestry tree, dense sharp needles

Pseudotsuga / Abies
Douglas / Noble Fir

Tall ornamental trees, flat hard blunt needles

Tsuga heterophylla
Western Hemlock

Common forestry tree, fewer flat soft needles

Pinus contorta
Lodgepole Pine

Forestry, needles longer and greener than Scots

Chamaecyparis lawsoniana
Lawson's Cypress

Ornamental planting in Gairloch area

Bogwood

You may see old tree remains, mostly pine, buried in peat or uncovered when the peat has eroded. These date from the Bronze Age, about 4000 years ago.

Trees grew better then; but when the climate deteriorated, peat developed and trees could not grow. Attempts today to re-plant these areas meet with limited success.

Simple Conifer Needle key: SPFL — Spruce single, Pine pair, Fir flat, Larch lots

ALIENS!

All our native species colonised a barren landscape after the last Ice Age, about 15,000 years ago, with lichens and mosses arriving first. In the last few hundred years humans have been importing new "alien" species for commercial or horticultural reasons, or by accident. Many of these have not escaped and are harmless (e.g. most garden plants); some have escaped but have fitted in well with the native species (e.g. Orange Hawkweed, Larch); but others have spread out of control, displacing the natives. These are known as "**invasive aliens**". A few native plants also seem to be acting invasively (e.g. Bracken, Gorse); it is possible that this is related to the recent increase in carbon dioxide levels in the air, combined with a reduction in grazing animals (sheep and deer).

Here the main invasive alien **plants** are:

- **Rhododendron ponticum**: a Victorian introduction which has covered large areas; major eradication projects are being undertaken (e.g. south of Loch Torridon).
- **Cotoneaster species**: garden escapes, now found everywhere.
- **Montbretia**: a very successful garden escape (but also takes over gardens!).
- **Lady's Mantle** *Alchemilla mollis*: see the roadsides around Mellon Udrigle.
- **Japanese Knotweed:** a well-known alien, hard to eradicate, but not too serious here.

Two invasive alien **animals** are :

- **American Mink**: from fur farms, a predator of birds and small mammals; there is a project to trap them (sightings should be reported: see *www.scottishmink.org.uk)*.
- **New Zealand Flatworms**: eating and taking over from our earthworms; their effects are uncertain, except a reduction in mole numbers (moles only eat earthworms).

GRASSES, SEDGES & RUSHES Selection

These three types of flowering plants belong to three related families. Their seed is fertilised and spread by the wind, not insects, so they do not need showy petals. There are many species, and it can be difficult to distinguish them. But some are easy; for example, Purple Moor Grass (Molinia) and Deer Grass (actually a Sedge) dominate the moorlands, turning gold in autumn; many old fields are being overrun by Soft Rush.

They are most easily identified by the **flower heads**, but these change as they develop and then dry out. Here only a small selection of the more recognisable and important species is given; you may see many others.

GRASSES: *Graminae* family. About 35 species here. **Round hollow stems**. Very successful and important plants. Their leaves grow from the base rather than the tip, so they keep growing after mowing and grazing; the many small flowers turn into seeds when fertilised.

Dactylis glomerata
Cock's-foot

Hard flower heads, coarse leaves

Cynosurus cristatus
Crested Dog's Tail

One-sided flower heads

Lolium perenne
Perennial Rye-grass

Flowers alternate sides; a lawn grass

Holcus lanatus
Yorkshire Fog

Soft flowers and leaves

Anthoxanthum odoratum
Sweet Vernal

Simplest flower head

Festuca vivipara
Viviparous Fescue

Grows plantlets which drop off

Agrostis capillaris
Common Bent

Very delicate, one flower per stalk, flat leaves

Deschampsia flexuosa
Wavy Hair-grass

Delicate, twin flowers per stalk, stalks often zigzag, round leaves

Deschampsia cespitosa
Tufted Hair-grass

Tall, leaves form a large tussock

Arrhenatherum elatius
False Oat-grass

Typical field grass; long "awn" (spike on flower)

Ammophila arenaria
Marram Grass

On coastal sand dunes, often planted

Phragmites australis
Common Reed

Largest grass, in shallow water or bog

Molinia caerulea
Purple Moor-grass

"Molinia", abundant, tussocks, deciduous

Nardus stricta
Mat-grass

On moorland, and forms mats on hill-tops

SEDGES

Cyperaceae family. About 35 species here. Most have **3-sided solid stems** ("sedges have edges"). The "true sedges" (*Carex, below*) have **spikes**, usually a Male spike at the tip and Female spike(s) on the stem; and **tough evergreen tuft-forming leaves**.

Trichophorum cespitosum
Deergrass

Abundant, autumn colour like deer's hair

Eriophorum angustifolium
Common Cottongrass

Multi-flowered "bog cotton"

Eriophorum vaginatum
Hare's-tail Cottongrass

Single-flowered "bog cotton"

Carex nigra
Common Sedge

F spikes overlap

Carex binervis
Green-ribbed S

Tallest, F spikes spread down stem

Carex panicea
Carnation Sedge

Blue-green leaves, low-growing

Carex echinata
Star Sedge

Narrow leaves in dense tufts

Carex demissa
Common Yellow

Yellowish leaves, low growing tuft

Carex bigelowii
Stiff Sedge

Low, matted, only above 600m

Schoenus nigricans
Black Bog-rush

Note bract at top, very common on wet flushes

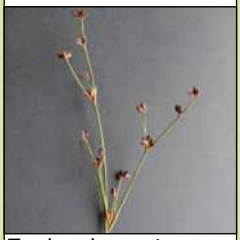
RUSHES

Juncaceae family. About 17 species here. Most have **round stems, often pith-filled** (once used to make candles), evergreen. Flowers may grow out of the side of the stem. They are slow-growing, like wet ground, and can grow in infertile soil.

Juncus effusus/conglomeratus
Soft / Compact Rush

S Rush smooth, abundant; C Rush ribbed, uncommon

Juncus articulatus
Jointed Rush



Top breaks out into branches

Juncus bulbosus
Bulbous Rush

Small, forms tussocks; variable, often reddish; can grow in or floating on water

Juncus squarrosus
Heath Rush

Stiff leaves spread to form a hollow

Luzula sylvatica
Greater Wood-rush

Lush ground-covering green leaves

FERNS

The following sections are **lower plants**, which do not have flowers or seeds but reproduce in other ways. Ferns are **vascular**, and reproduce by dropping **spores** from the spore capsules, called **sori** (singular *sorus*), underneath their fronds. They are **Pteridophytes**; if you study them, you are a Pteridologist.

Spores are microscopic single-celled units which contain the genetic material to make male and female components; water is needed for the female to be fertilised.

The fern's base, with the root, is called a **rhizome**. From it rises a **frond**, which starts as a bare stalk (stipe) and then becomes the leafy blade. A single branch is called a **pinna**, the smallest leaves are **pinnules**. The stalk may divide once (into leaves, e.g. Hard Fern: **uni-pinnate**), twice (into branches with small leaves, e.g. Male Fern: **bi-pinnate**) or three times (e.g. Buckler Ferns: **tri-pinnate**).

Here are shown almost all the ferns you are likely to see. To identify a fern: (1) Is it **uni-, bi-** or **tri-pinnate**? (2) Look at the pattern of the **sori**, on the underside of the frond, choosing a **pinna** well down the stalk. (3) Look at the shape of the **pinnules** (leaflets): how serrated are they? (Problem ferns may be introduced or hybrids).

Pteridium aquilinum
Bracken

Abundant, tri-pinnate, stalks grow out of the ground separately, not in a clump. The most successful fern here. Although it is a native species, it tends to dominate, because most of the plant is underground and virtually indestructible — its rhizomes (in a quarter-kilometre square these may weigh 500 tons!). Its spores are carcinogenic, but it rarely spores.

Dryopteris filix-mas
Male-fern

Bi-pinnate, small teeth on pinnule sides and tip, few scales on stem, deciduous

Dryopteris affinis agg.
Scaly Male-fern

Very similar but small teeth on pinnule tips only, many orange scales on stem, commoner here

Asplenium adiantum-nigrum
Black Spleenwort

Small, in rock cracks

Asplenium ruta-muraria
Wall Rue

Small, in rock cracks

Hymenophyllum sp
Filmy Fern

Tiny, translucent leaves, mini-grape-like spore capsules; with moss

Dryopteris dilatata
Broad Buckler-fern

Less common, large clumps, tri-pinnate, serrated pinnules, deciduous

Athyrium filix-femina
Lady Fern

Common, bi/tri-pinnate, comma-shaped sori, serrated pinnules, deciduous

Oreopteris limbosperma
Lemon-scented Fern

Locally common, bi-pinnate, open ground, sori line rim of pinnule, deciduous

Blechnum spicant
Hard Fern

Upright sporing frond which alone is deciduous, uni-pinnate

Polypodium vulgare
Common Polypody

Damp walls, wood, ground and rocks, uni-pinnate, evergreen

Phegopteris connectilis
Beech Fern

First 2 pinnae at odd angle, bi-pinnate, deciduous

Asplenium trichomanes
Maidenhair Spleenwort

Small, picturesque, on walls and rock, evergreen

Uncommon:

Dropteris aemula
Hay-scented Buckler

Small elegant Buckler Fern, in shaded woodland, concave leaves

Dryopteris oreades
Mountain Male Fern

Like Male Fern but single sori along pinna stems

Osmunda regalis
Royal Fern

Rare, very large pinnules

MOSSES and LIVERWORTS

Selection

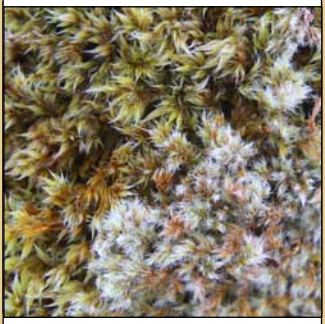
These are Bryophytes, and if you study them you are a Bryologist. Over 350 species have been recorded here, half the UK total. Scotland's west coast provides an ideal habitat for them: moorland, bogs, woodland. They have English names, but they are not often used.

Mosses have stems and leaves; **Liverworts** are like Mosses but simpler, usually with either flat leaf-like lobes or small translucent leaves. They are not vascular, making them relatively simple plants which need wet conditions. They reproduce either (like ferns) with **spores** whose containers can often be seen as capsules on thin stalks; or else simply when a piece breaks off to make a new plant (**vegetative**). They do not have roots but thread-like **rhizoids** which attach them to the rock, tree or ground; this makes them often the first plant to colonise bare ground, even bare rock. They have played an important part in forming our soil in the 15,000 years since the last Ice Age.

These plants are the hardest group to identify and distinguish, often needing a magnifying glass and a good guidebook (hard to find!); size and colour vary, and most genera contain a number of species. Here a small selection of relatively common and easy types is shown. Woodland is a good place to see many of them, often several species growing together. They are usually called by the **Latin Genus name**, as given here.

Fringe-moss

Racomitrium



Abundant on rock, moor and hill, often looks woolly

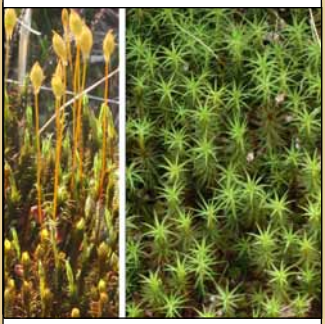
Bog-moss

Sphagnum

Very important, peat-forming, on wet and boggy ground. Holds 20x its dry weight in water. 30 species in Scotland, some can be red; the right-hand one is aquatic ("Drowned Cat"). Collected here in wartime as antiseptic wound dressings; once used as nappies.

Haircap

Polytrichum



Like a mini-forest, often with capped spore-containers

Wood-moss

Hylocomium

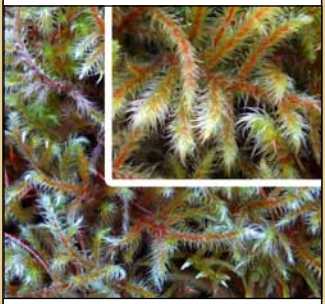
Feather-like fronds, red stems, pointed leaves, bi-pinnate

Tamarisk-moss

Thuidium

Similar, but green stems, more regular shape

Shaggy-moss
Rhytidiadelphus



Several species/sizes, “hairy”-looking branches, red stems; “*squarrosus*” in many lawns

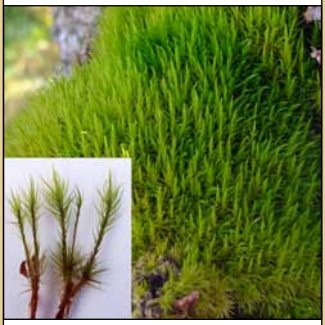
Feather-moss
Pleurozium

Smaller, non-“hairy” branches, reddish stems

Plait-moss
Hypnum

Compact stalks, leaves look “plaited”, several species

Fork-moss
Dicranum

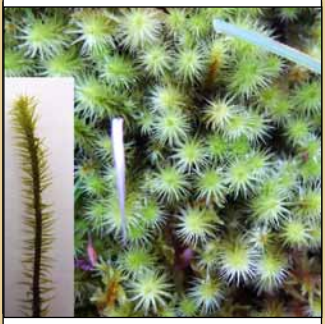


Fronds end in sharp points, can form bright hummocks

Mouse-tail Moss
Isothecium

Forms dense uniform mats on tree trunks and boulders

Golden-head Moss
Breutelia



Smaller and more compact than Polytrichum, bright heads

LIVERWORTS

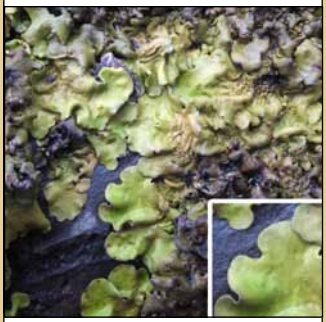
Flapwort
Nardia

Compact, moss-like, on damp rock or wood, common

Purple Spoonwort
Pleurozia

Worm-like, common on damp moorland and hills

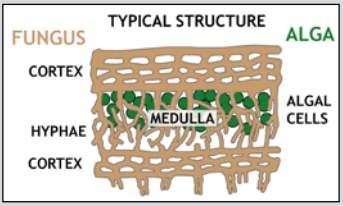
Common / Mountain Liverwort
Marchantia



Flat green lobes, on heath and moorland

LICHENS

These remarkable and unbelievably varied “plants” are found everywhere in Wester Ross. Over 1800 species live in Scotland, thriving in our cool wet climate and clean air. There are not many Lichenologists, and most Lichens do not have English names.



They are not simple plants, but a combination of two organisms living together (**symbiosis**): a **fungus** (the mycobiont, not a plant) and a green **alga** (the photobiont, a plant, <20%). The fungus forms the bulk of the lichen, and is specialised, never being found on its own without its alga. The alga is buried in the fungus, and is not a specialist, often being found on its own. Each helps the other. The alga uses photosynthesis to make food from carbon dioxide and water plus a few minerals, to feed both itself and its fungus. In exchange, the fungus provides protection from excessive dryness or wetness. Pollution damages lichens, so their health is a good indicator of how clean the air and water are.

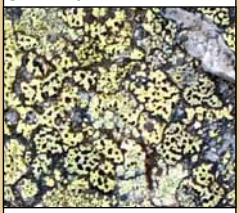
The main body of the lichen is called the **thallus**. It grows very slowly, from 0.5mm to 10mm a year. Lichens usually reproduce vegetatively from special broken-off parts of the thallus (sorelia). The fungus alone can produce spores in sporing bodies of many shapes (apothecia): plates, bowls, goblets, zig-zag lines, red-tipped stalks, etc; but the spore will not survive unless it happens to find the right alga, which seems unlikely!

Many lichens are hard to identify, often needing a microscope and chemicals. Colours vary, depending on how wet or dry it is. To make things easier, here a selection of recognisable lichen types has been given with simple **made-up descriptive English names**. How many more types can you find and give your own name to? Which is your favourite?

Lecanora rupicola
white paint

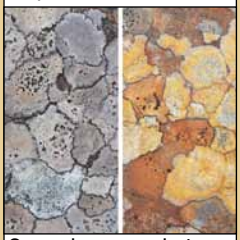
On rock, very common

Rhizocarpon geographicum
green speckled



“geographicum” = the true **Map Lichen**, grows 0.5mm a year

Lecidea sp
map



On rock, more obvious “map” lichens

Verrucaria maura
black paint

Black Tar Lichen. Covers coastal rocks

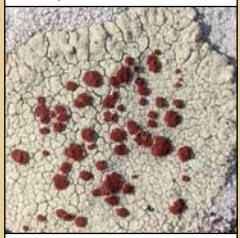
Ochrolechia sp
lumpy crust

Cudbear Lichen. Thick, porridge-like.

Lecanora chlarotera
brown-spotted crust

On trees, irregular brown sporing bodies

Haematomma ventosum
red-spotted crust



On rock, greenish with red sporing bodies

Caloplaca/Xanthoria sp
yellow crust

On coast and rock, very common

Parmeliella plumbea
rosette crust

On trees, not always so shapely

Platismatia glauca
large flake

On trees, chaotic, often grey

Parmelia sp
small flake

On rock, builds up into thick lumps, used for wool dyes (“crotal”)

Lobaria pulmonaria
green leaf

Tree Lungwort. Trees and walls, conspicuous

Lobaria virens
shiny green leaf

On trees, lobed, complex

Peltigera canina
ground leaf

Dog Lichen. On ground, grey to brown

Cladonia uncialis
grey twig

On ground, separate hollow stalks

Sterocaulon vesuvianum
messy twig

On rock, covered in small scales

Bryoria fucescens
straggly beard

On trees and rock, here windblown

Usnea sp
tangled beard

Old Man’s Beard. Trees and rock, thin stalks

Evernia prunastri
green tree bush

Oak Moss. On trees, stiff strap-like stalks

Sphaerophorus globosus
brown bush

Coral Lichen. May be paler and damaged

Cladonia portentosa
green ground bush

Reindeer Moss. Heath and moor, abundant

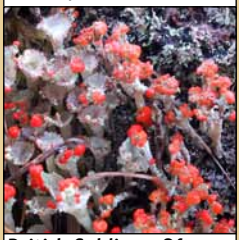
Ramalina sp
green rock bush

On rock, especially coast, stiff stalks

Mycoblastus sp
black spot

On trees or rock, black sporing bodies

Cladonia sp
red cap



British Soldiers. Often under heather.

OTHER PLANTS etc

CLUBMOSSES

Members of the most ancient group of vascular plants, Pteridophytes like the ferns, reproducing by spores from "cones" on the stem tips.

There are 7 species in the UK. These three may be seen here, on moorland or hills.

Huperzia selago
Fir Clubmoss

Mostly unbranched, common on moorland

Lycopodium clavatum
Stag's-horn Clubmoss

Creeping, branched, uncommon

Diphasiastrum alpinum
Alpine Clubmoss

Branched, thinner, common above c400m

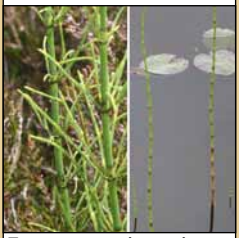
HORSETAILS

Genus *Equisetum*, also Pteridophytes. 300 million years ago they formed forests which have now become coal. Deep rhizomes (roots), hollow segmented stems, thin branches; they reproduce by spores from cone-like structures on their tips. They often hybridise!

Equisetum arvense
Field Horsetail

Single upward-sloping branches, in fields etc

Equisetum fluviatile
Water Horsetail



Fewer or no branches, in ponds and swamps

Equisetum sylvaticum
Wood Horsetail

Divided drooping branches

ALGAE (singular *Alga*)

The simplest true plants, single- or multi-celled. They contain green chlorophyll and photosynthesise, but the green colour is often masked.

They are mostly seen in water (e.g. seaweeds, p36-7), and come in many types.

Trentepohlia aurea
Trentepohlia

On rock, walls and trees (also in lichens)

Cladophora / Spirogyra sp
filamentous algae

Green filaments, in streams and ponds

Chara sp
Stonewort

In fresh water, Horsetail-like

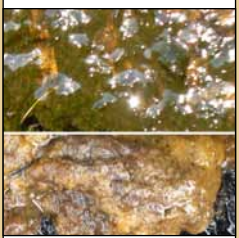
CYANO-BACTERIA

(*formerly called "blue-green algae"*) Primitive (prokaryotes), seen in 3.5 billion year-old fossils, mostly living in water, photo-synthesising, colony-forming.

Gloeocapsa magma
Mountain Dulse

Seaweed-like, on wet rocky moorland

various
slime



Slimy patches on wet rock or ground

Lycogala (L), Muciturbo (R)
SLIME MOULDS

In the Protozoa Kingdom. Amazing creatures, well worth researching online. Mobile colonies appear in many forms.

FUNGI

Fungi (singular *fungus*) are neither plants nor animals, but in a class (Kingdom) of their own over a billion years old; genetically they are closer to animals than to plants. There are thousands of species, many microscopic, doing the invaluable job of recycling decaying vegetation. (See also *Trees* for **mycorrhiza**, and *Lichens*, in which one partner is a fungus.)

Fungi reproduce by spores, but are not vascular and do not photosynthesise. The bulk of a fungus consists of a network (**mycelium**) of thread-like **hyphae**, often invisible under the ground, which feeds on organic matter. The visible part of the fungus is the **fruiting body** which produces the spores, and comes in a remarkable variety of shapes: all different solutions to the problem of dispersing spores. If you study fungi, you are a Mycologist.

3000 species have been found in Wester Ross! A few typical examples are shown here. Some fungi are edible, some are deadly poisonous: do not eat unless you have expert knowledge.

Amanita fulva
Tawny Grisette

Below Birch trees

Amanita muscaria
Fly Agaric

Young domed, older flat, in woodland

Hygrocybe conica
Blackening Waxcap

Turns black, grassland etc

Boletus edulis
Penny Bun

Often very large, mycorrhizal tree partner

Hypholoma fasciculare
Sulphur Tuft

Toadstools, cluster on rotting wood

Cantharellus cibarius
Chanterelle

Irregular yellow-orange trumpet, woodland

Fomes fomentarius
Hoof Fungus

Bracket, growth rings, Birch parasite

Piptoporus betulinus
Birch Polypore

Bracket, Birch parasite, kills the tree

Trametes versicolor
Turkeytail

Bracket, on dead wood, varied colours

Aleuria aurantia
Orange Peel

Bare ground, paths, leaf litter

Xylaria hypoxylon
Candlesnuff

Antler-like, small, on dead wood

Mitrula paludosa
Bog Beacon

Very small, water and boggy ground, Spring

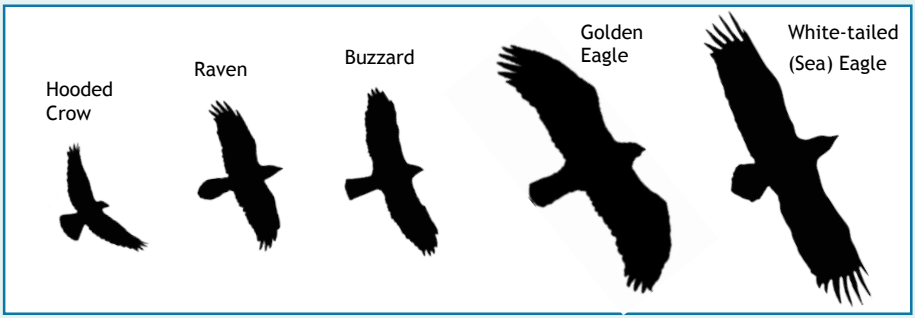
BIRDS

Most

Birds are the remarkably successful last surviving descendants of the dinosaurs. If you study them you are an Ornithologist. They are egg-laying **vertebrates** (animals with backbones) brilliantly adapted for flight. Many birds have learnt to **migrate**, arriving here to spend either the summer (for breeding) or the winter (for milder weather), or passing by as they migrate in spring or autumn. Birds are the most difficult group to photograph!

All the 112 birds you are most likely to see are shown, as far as possible in logical groups. The picture usually shows a male in breeding plumage; females, juveniles and winter plumage may be different. **S = Summer**, migrate to breed here; **W = Winter**, migrate here after breeding; **P = Passage**, visit on migration. Others are **Resident**.

It is tempting in this part of the world to call any high-flying bird an eagle! These silhouettes, drawn to scale, may help you to decide if it is (note that eagles usually glide without flapping)...



SWIMMERS

Cygnus cygnus
Whooper Swan

P/W, yellow beak

Anser anser
Greylag Goose

Small local flocks are resident

Tadorna tadorna
Shelduck

Large colourful duck, nests in hole / burrow

Anas platyrhynchos
Mallard

Most common and familiar duck

Aythya fuligula
Tufted Duck

W, drooping “tuft” behind head

Somateria mollissima
Eider

Black & white duck, soft cooing call, rafts

Anas penelope, crecca
Wigeon, Teal

Two small colourful ducks

Bucephala clangula
Goldeneye

W, huge flock feeds at River Kerry mouth

Mergus serrator
Red-breasted Merganser

Common diving duck on coast

Mergus merganser
Goosander

Similar, rivers and lochs

Gavia stellata
Red-throated Diver

Nests on lochan shore, flies high quacking

Gavia arctica
Black-throated Diver

Larger lochs on islands or artificial rafts

Gavia immer
Great Northern Diver

W, a few non-breeding residents

Tachybaptus ruficollis
Little Grebe

"Dabchick", very small, often dives

Podiceps auritus
Slavonian Grebe

Winter on coast, may breed inland

Fratercula arctica
Puffin

S, at sea, seen from boats, rarely from land

WADERS

Phalacrocorax aristotelis
Shag

Swims low in water, spreads wings to dry

Phalacrocorax carbo
Cormorant

Larger than Shag, white cheek and thigh

Ardea cinerea
Grey Heron

Heronries at Shieldaig Island and Inverewe

Haematopus ostralegus
Oystercatcher

Noisy flocks on shore, beware nests on beaches

Charadrius hiaticula
Ringed Plover

Small and active, beware nests on beaches

Numenius arquata
Curlew

Seen mostly on the shore, evocative call

Numenius phaeopius
Whimbrel

Like Curlew, shorter bill, dark stripes on head

Actitis hypoleucos
Common Sandpiper

S, breeds beside lochs and rivers, loud call

Calidris alpina
Dunlin

Smallest wader, nests on high moors

Tringa nebularia
Greenshank

Greenish bill & legs, nests inland, loud alarm call

Tringa totanus
Redshank

Similar but orange legs and bill

Arenaria interpres
Turnstone

W/P, coast, searches busily for food

GULLS etc

Catharacta skua
Great Skua / Bonxie

Large and aggressive

Larus argentatus
Herring Gull

Commonest gull, pink legs

Larus canus
Common Gull

Smaller, greenish-yellow legs and bill

Larus fuscus
Lesser Black-backed

Mostly S, smaller than Herring G, orange legs

Larus marinus
Greater Black-backed

Largest gull, pink legs

Larus ridibundus
Black-headed Gull

Head white in winter, red legs

Rissa tridactyla
Kittiwake

Like Common Gull, but black legs, yellow bill

Sterna hirundo
Common Tern

S, forked tail, noisy colonies on islands

Cepphus grylle
Black Guillemot

"Tystie", black except white wing patch

Uria aalge
Guillemot

S, sharp beak, white underparts

Alca torda
Razorbill

S, blunt beak

Fulmarus glacialis
Fulmar

A favourite food for Sea Eagles, uncommon

BIRDS OF PREY (see also p22)

Morus bassanus
Gannet

Visitor, probably from St Kilda, high diver

Buteo buteo
Buzzard

Common large raptor, distinctive mewing call

Aquila chrysaetos
Golden Eagle

Nests on cliffs, seen gliding high

Haliaaetus albicilla
White-tailed / Sea Eagle

Broad 2.5m wings, nests in trees (see p29)

Accipiter nisus
Sparrowhawk

Large female and small male, long tail

Falco tinnunculus
Kestrel

Small raptor, now uncommon, hovers

Falco columbarius
Merlin

Thrush-sized raptor, uncommon

Falco peregrinus
Peregrine

Nests on cliffs, fastest flier, loud alarm call

MOOR and WOOD

Lagopus lagopus
Red Grouse

On moorland, not very common here

Lagopus muta
Ptarmigan

Mountain grouse, 700m+, all white in winter

Phasianus colchicus
Pheasant

Large game bird, introduced to Flowerdale

Pluvialis apricaria
Golden Plover

S, lonely places, plaintive call

Vanellus vanellus
Lapwing / Peewit

Mostly S, not common

Gallinago gallinago
Snipe

Zigzag fast low flight, eerie “drumming”

Scolopax rusticola
Woodcock

Mostly W, larger and bulkier than Snipe

Alauda arvensis
Skylark

Mostly S, famous in-flight song

Streptopelia decaocto
Collared Dove

Annoyingly repetitive cooing song

Columba palumbus
Woodpigeon

Largest pigeon, usually in trees

Columba livia
Rock Dove

On coastal rocks, ancestor of city pigeon

Cuculus canorus
Cuckoo

S (Apr-Aug), parasite, male “song” famous

Strix aluco
Tawny Owl

Nocturnal, familiar eerie call

Tyto alba
Barn Owl

May be seen in daytime, pale

Dendrocopos major
Great Spotted Woodpecker

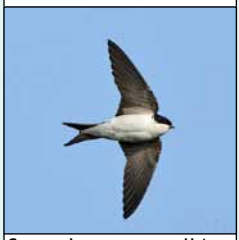
Nests in tree holes, “drums” in early spring

MARTINS (all Summer)

Hirundo rustica
Swallow

S (Apr-Sept), nests in buildings

Delichon urbica
House Martin



S, mud nest on wall/ cliff, white on back

Riparia riparia
Sand Martin

S, nests in holes in sand, blunt tail

CORVIDS

Corvus corax
Raven

Largest crow, playful flier, cronking call

Cardamine pratensis
Hooded Crow

“Hoodie”, highland equivalent of Carrion C

PIPITS

Anthus pratensis
Meadow Pipit

Very common little brown bird

Anthus petrosus
Rock Pipit

Coastal version of Meadow Pipit

Anthus trivialis
Tree Pipit

Less common, “parachute” flight

THRUSHES

Turdus iliacus
Redwing

P, travels in flocks with Fieldfares

Turdus pilaris
Fieldfare

P, large flocks, pale underwings

Turdus torquatus
Ring Ouzel

S, “mountain blackbird”, loud song

Turdus merula
Blackbird

Very successful, well-known songster

Turdus philomelos
Song Thrush

Distinctive song of repeated phrases

WARBLERS (all Summer, often most easily identified by their song)

Turdus viscivorus
Mistle Thrush

Larger than Song Thrush, paler, less common

Sylvia communis
Whitethroat

S, hedges and woods, brief unmusical song

Sylvia atricapilla
Blackcap

S, female brown cap, sweet complex song

Phylloscopus sibilatrix
Wood Warbler

S, mature woodland. song ends in trill

Phylloscopus trochilus
Willow Warbler

S, common, repeated descending song

Phylloscopus collybita
Chiffchaff

S, song loud staccato chiff-chaff

Locustella naevia
Grasshopper Warbler

S, song a remarkable non-stop trill

Acrocephalus schoenobaunus
Sedge Warbler

S, thick brush & marsh, complex coarse song

FINCHES

Fringilla coelebs
Chaffinch

Very successful, found everywhere

Carduelis chloris
Greenfinch

Rather aggressive at bird feeders

Carduelis carduelis
Goldfinch

Some are migrants, unmistakable colours

Carduelis spinus
Siskin

Small lively finch, feeds in trees

Carduelis flavirostris
Twite

Sparrow-like but with small beak, forked tail

Carduelis cannabina
Linnet

Small finch, reddish chest, not common

Carduelis cabaret
Lesser Redpoll

Small, woodland, red patch on head

Pyrrhula pyrrhula
Bullfinch

Unmistakable plump finch

TITS

Loxia curvirostra
Crossbill

Feeds in conifers, some resident, uncommon

Aegithalos caudatus
Long-tailed Tit

Travel around in talkative family flocks

Parus caeruleus
Blue Tit

Small, perky, common garden feeder

Parus major
Great Tit

Regular “bicycle-pump” song

OTHERS

Parus ater
Coal Tit

Less colourful, large head, short tail, agile

Motacilla alba
Pied Wagtail

Feeds running on the ground

Motacilla cinerea
Grey Wagtail

Yellow chest and under tail

Cinclus cinclus
Dipper

Feeds in and under running water, bobs

Troglodytes troglodytes
Wren

Tiny, everywhere, loud song includes a trill

Prunella modularis
Dunnock

“Hedge Sparrow”, creeps on the ground

Erithacus rubecula
Robin

Often tame (thinks gardeners are wild boars?)

Saxicola torquata
Stonechat

Easily alarmed, call “hweet-chac-chac”

Saxicola rubetra
Whinchat

S, white eye stripe, streaky brown upper

Oenanthe oenanthe
Wheatear

S, white eye stripe and above tail, grey back

Muscicapa striata
Spotted Flycatcher

S, flies from branch to catch flies

Regulus regulus
Goldcrest

UK's smallest bird, hyperactive, with Tits

Certhia familiaris
Treecreeper

Creeps up trees seeking insects

Sturnus vulgaris
Starling

Gregarious, noisy, good mimic

Passer domesticus
House Sparrow

Likes to live among humans, noisy flocks

Emberiza schoenicus
Reed Bunting

Sparrow-like, broad white collar, wet places

SOME LESS COMMON OR OCCASIONAL BIRDS

Arctic Skua: slimmer and more agile than Bonxie
Barnacle Goose: P, often stop off at Mungasdale
Black Grouse: now spreading from east, woodland
Brambling: W visitor, the northern Chaffinch, black head
Common Scoter: W, black sea duck, groups do synchronised diving
Corncrake: S, quail-like, has bred at Laide
Dotterel: Summer, colourful wader, on a few mountain tops
Glaucous Gull: rare visitor, large almost white gull
Iceland Gull: W, a few visitors, smaller almost white gull
Jay: small colourful crow, seen recently around Kernsary
Long-tailed Duck: W, small sea duck, occasional sightings
Mute Swan: the commonest swan, but rarely seen here
Osprey: S, large fishing raptor, may visit from nests to the east
Red Kite: fork-tail raptor, reintroduced, occasional visitor from the east
Redstart: S, robin-like, in woodland, increasingly rare
Snow Bunting: mostly W, black and white, some may breed in the hills
Swift: S, swallow-like, a rare visitor
Waxwing: W, crested, flocks visit some years in an "irruption"

White-tailed Eagle nest

White-tailed (Sea) Eagle reintroduction

White-tailed or Sea Eagles were persecuted in Britain for centuries, and the last British bird was shot in Shetland in 1918. In 1975-1985 a reintroduction programme began on the Isle of Rum with 82 young eagles from Norway; the first successful breeding was in 1985. In 1993-8 a further 58 eaglets were released here in Wester Ross on the shores of **Loch Maree**. There are now 100 breeding pairs in Scotland, including several pairs in our area; they are often seen along the coast, and the Beinn Eighe NNR Visitor Centre has a display.

VERTEBRATES

Most

These are animals with backbones. Birds are also vertebrates but in this guide they are treated separately (pages 22-29). Four other groups are shown here, with almost all of the species which live in this area:

Mammals (e.g. deer): warm-blooded animals which suckle their young. Most of them are elusive in the wild; you are more likely to see non-wild mammals such as humans, cats, dogs, sheep and cattle!

Reptiles (e.g. lizards): cold-blooded egg-laying animals; their name means "creepers".

Amphibians (e.g. frogs): cold-blooded animals which can live in water (breathing through their skin) or in air.

Fish (e.g. trout): cold-blooded animals without limbs which can only live in water.

Cervus elephas
Red Deer

Largest UK mammal, M stag F hind

Capreolus capreolus
Roe Deer

Small shy woodland deer, M buck F doe

Cappa hirtus
Feral Goat

Originally domestic, on hills and roadside

Lepus timidus
Mountain Hare

White in winter, not common here

Oryctolagus cunniculus
Rabbit

Not very common here

Vulpus vulpus
Fox

Rarely seen, formerly persecuted

Meles meles
Badger

Nocturnal, lives in a sett, snuffle holes seen

Martes martes
Pine Marten

Largely but not only nocturnal, predator

Mustela erminea
Stoat

Black tip to tail (Also the similar but smaller Weasel, no black on tail)

Felix sylvestris
Wildcat

Numbers unknown, very unlikely to be seen

Lutra lutra
Otter

In sea and freshwater, best seen on the shore

Erinaceus europaeus
Hedgehog

Not common here, hibernates

Talpa europea
Mole (-hill)

The animal is very rarely seen!

Sciurus vulgaris
Red Squirrel

Introduced at Shieldaig (S), Coulin, Inverewe and Dundonnell

Microtus agrestis
Field Vole

Short tail, small ears (also Bank & Water Voles)

Apodemus sylvaticus
Wood Mouse

Long tail, large ears (also House Mouse)

Sorex araneus
Common Shrew

Tiny, long pointed nose

Pipistrellus pipistrellus
Pipistrelle Bat

Seen flying at dusk, hibernates (also Daubenton's and Long-eared)

Lacerta vivipara
Common Lizard

Reptile, hibernates, common

Anguis fragilis
Slow Worm

Reptile, a legless lizard, harmless

Vipera berus
Adder

Reptile, venomous but not aggressive, rare

Rana temporaria
Frog

Amphibian, spawns Feb-Apr

Bufo bufo
Toad

Amphibian, warty skin, walks rather than hops

Triturus helvetica
Palmate Newt

Amphibian, male has webbed back feet

SALMON / TROUT

These fish lay eggs in gravel in fresh running water. Salmon and some Brown Trout ("Sea Trout", mostly female) leave the river when a few years old to feed at sea before returning to their birthplace to breed.
(Other fish: European Eels, Minnows)

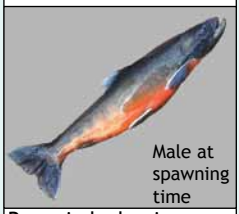
Salmo salar
Salmon

See adults spawning in rivers, November

Salmo trutta
Brown / Sea Trout

In lochs and burns (fishing permits available)

Salvelinus alpinus
Arctic Charr



Rare, in lochs since end of Ice Age, Wester Ross is a stronghold

INVERTEBRATES

Selection

These animals, which make up at least 95% of animal species, have no backbone. Most have hard exo-skeletons and are called **arthropods**, including insects, arachnids, myriapods (millipedes etc), crustaceans (woodlice, marine species).

Here only a tiny selection can be shown, including examples of:

Insects (e.g. flies, beetles): 6 legs, a 3-part body (head, thorax, abdomen) and usually wings; many hatch their young as worm-like **larvae** (singular *larva*) or underwater **nymphs**, which change their shape (**metamorphose**) to become adults.
Arachnids (e.g. spiders): 8 legs and a 2-part body (cephalothorax and abdomen).
Molluscs (e.g. snails): soft unsegmented bodies and often a shell.
Annelids (e.g. worms): soft segmented bodies.

DRAGONFLIES

18 species of Dragonflies and Damselflies breed in the Highlands. Damselflies are smaller and hold their wings parallel with their bodies. The first three here are Dragonflies, seen June-August. They may have spent 5 years as nymphs underwater.

Cordulegaster boltoni
Golden-ringed

Our largest dragonfly, tamer than most

Aeshna cyanea
Azure Hawker

M: black + blue marks
F: brown + greenish

Sympetrum striolatum
Common Darter

M: reddish brown
F: brown + greenish

Pyrrhosoma nymphula
Large Red Damselfly

BUTTERFLIES

29 species occur in the Highlands; some of the most common and familiar are shown here. The simplest difference between butterflies and moths is the antennae: butterflies' usually have a "club" on the end.

Inachis io
Peacock

Often in gardens, hibernates

Vanessa atalanta
Red Admiral

Migrant, wintering in Mediterranean area

Aglais urticae
Small Tortoiseshell

Hibernates, can be seen any month

Cynthia cardui
Painted Lady

Migrant, wintering in Europe

Maniola jurtina
Meadow Brown

Variable colouring, common in grassland

Boloria selene
Small Pearl-bordered Fritillary

Seen in June and July, in damp flowery areas

Erethia aethiops
Scotch Argus

Moorland and damp grassland

Coenonympha pamphilus
Small Heath

Wings always folded when at rest

Coenonympha tullia
Large Heath

Boggy moorland areas, wings folded at rest

Pararge aegeria
Speckled Wood

In shady woodlands

Pieris napi
Green-veined White

The “veins” may fade

MOTHS

More than 200 moth species have been recorded locally, the majority night-flying. There are also very many micro-moths, hard to identify and largely ignored. Most moths have antennae without a “club” on the end. A few day-fliers are shown here.

Pavonia pavonia
Emperor

You are more likely to notice the caterpillar

Lasiocampa quercus
Northern Eggar

The large hairy caterpillar is common

Abraxas grossulariata
Magpie

Abundant in late summer

Zygaena filipendulae
Six-spot Burnet

In flowery places

other examples of
Moth caterpillars

Knotgrass, Drinker and Fox Moths

BEETLES

1 in 4 of all known animal species is a beetle. Nearly 3000 species have been found in Scotland. A famous scientist, J.B.S. Haldane, is said to have commented that the Creator must have “an inordinate fondness for beetles”.

family Carabidae
Ground Beetle

Active hunter and scavenger, often seen

Geotrupes stercorarius
Dor Beetle

Feeds on and buries dung

Cicindela campestris
Green Tiger Beetle

Open areas and paths, fast runner

Nicrophorus sp
Burying Beetle

Buries bodies of small animals to feed larvae

Gyrinus substriatus
Whirligig Beetle

Races around in crazy circles on water. Has two pairs of eyes, one above and one below water.

OTHER INSECTS

A very few typical (and in some cases painful) Highland insects are shown here. Others are well-known: flies, bees, bugs, wasps, hoverflies, grasshoppers, ants, etc.

A million species of insects are known.

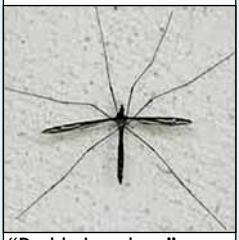
Bombus lucorum
White-tailed Bumblebee

Best-known B-b, smaller Heath B-b is similar

Bombus monticola
Bilberry Bumblebee

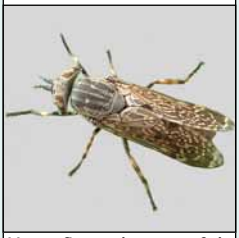
Orange tail, threatened species

Tipula sp
Cranefly



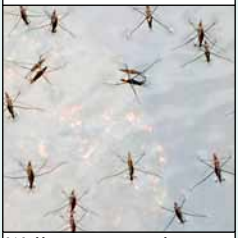
"Daddy Longlegs", major summer hatches

Haematopota pluvialis
Cleg



Horsefly with a painful bite, midsummer

Gerris lacustris
Pond Skater



Walks on water, but also able to fly

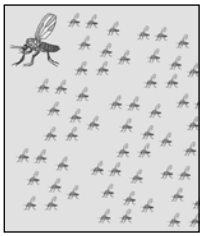
family Aprophoridae
"Cuckoo Spit"

This holds the young of a hopping Spittle Bug

MICROSCOPIC CREATURES

A teaspoon of soil may contain 5 billion organisms, belonging to 10,000 different species (algae, fungi, bacteria, protozoa, actinomycetes, etc) !

Culicoides impunctatus
Midge



Tiny fly, our best known insect!

There are many species of **Midge**, but this is the one most likely to be biting you. Only the female bites, needing blood for a second brood. They hatch in wet soil; a 2m square may produce ½ million midges. They like: over 8°C, under 5mph wind, no sun, no rain, dark clothes.

ARACHNIDS (8-legged, not insects)

Ixodes ricinus
Sheep Tick

Likes our blood, may carry Lyme Disease — remove with care

family Araneidae
Orb Spider

Typical web-making spider

Two styles of
Spiders' webs

Orb: Araneidae
Tangle: Theridiidae

MOLLUSCS

Cornu aspersum
Common/Garden Snail

Nocturnal, leaves a silvery slime trail

Arion ater
Large Black Slug

Often met on grassy paths

Margaritifera margaritifera
Freshwater Pearl Mussel

Endangered, protected; a vital stronghold here

ANNELID

Tubifex sp
Tubifex worm tubes

Strange crowded tubes in muddy puddles

SEASHORE Selection

The flora and fauna of the sea and the tidal margin are specialised: **mammals** adapted to water life, **crustaceans**, **molluscs** (here the shell rather than the animal is shown), saltwater **algae** called seaweeds, etc. Beachcombing and rock-pooling are often full of wildlife interest.

Covered elsewhere: seashore flowers and lichens, sea and coastal birds, and otters (which may be mistaken for seals).

MAMMALS (seen from shore or boats)

Phoca vitulina
Common Seal

Smaller, nicer-looking than Grey

Halichoerus grypus
Grey Seal

Larger, longer nose, no forehead

Delphinus delphis
Common Dolphin

Summer, occasional large schools far out

Tursiops truncatus
Bottlenose Dolphin

Closer inshore, smaller groups

Phocoena phocoena
Harbour Porpoise

Much smaller, often seen in Gair Loch

Balaenoptera acutorostrata
Minke Whale

Commonest whale seen on boat trips

FISH

Cetorhinus maximus
Basking Shark

World's 2nd largest fish, feeds on plankton

Centronotus gunnellus
Gunnel / Butterfish

Eel-like, in rock-pools and seaweed

Taurulus bubalis
Sea Scorpion

Trapped in rockpools, small predator, spines are poisonous

Pomatoschistes minutus
Sand Goby

In sandy shallow water

CRUSTACEANS

various species
Barnacle

Static, mouth protected by plates

Carcinus maenas
Shore Crab

Small, common, popular food for birds

Pagurus bernhardus
Hermit Crab

Very small, uses a seashell as protection

Talitrus saltator
Sandhopper

Small, shrimp-like, in sand and seaweed

SEASHELLS (Molluscs) *best place Mellon Udrigle beach*

Patella
Limpets

Mytilus
Mussel

Cerastoderma
Cockle

Lutraria
Otter (large)

Angulus
Thin Tellin

Dosinia
Rayed Artemis

Mactra
Rayed Trough

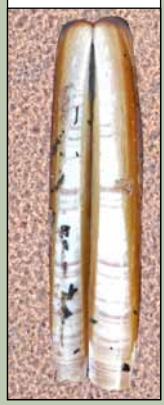
Gari
Faroe Sunset

Periwinkles:
Common

Littorina
Flat

various
Scallops

Ensis
Razor



Gibbula
Flat Top

Nucella
Dog Whelk

Ostrea
Oyster

Trivia
Cowrie

SEAWEEDS (Brown, Green and Red Algae) *best place Shieldaig Bay*

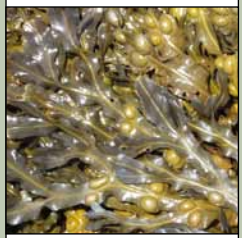
Pelvetia canaliculata
Channelled Wrack

Small, on rocks, upper shore, no air bladders

Fucus serratus
Toothed Wrack

Strap-like fronds, middle-lower shore

Fucus vesiculosus
Bladder Wrack



With air bladders, middle shore

Ascophyllum nodosum
Knotted Wrack

Large, oval air bladders, middle shore

Ascophyllum nodosum var
Crofter's Wig

On shore unattached, unique to West Coast, in sheltered bays

Himanthalia elongata
Thongweed

Thin straps, up to 2m long

Laminaria digitata
Oarweed

Kelp, from lower shore, up to 2m long

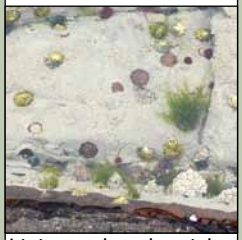
Ulva lactuca
Sea Lettuce

Thin lettuce-like seaweed (green alga)

Cladophora sp
other green algae

Numerous species in sea and pools

Lithothamnion sp
encrusting red algae



Lining rockpools, pink to white (here white)

Lithothamnion sp
Maerl

Coralline red alga, from the sea bed

Actinia equina
Beadlet Sea Anemone

Seen in rockpools, closes to form a blob

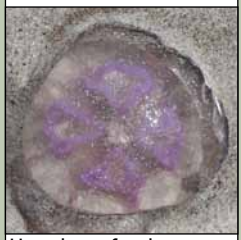
Echinus esculentus
Edible Sea Urchin

Grazes on lower shore seaweeds

Echinocardium cordatum
Sea Potato

Shell of Heart Urchin, burrows 15cm into sand

Aurelia aurita
Common/Moon Jellyfish

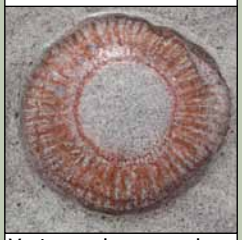


Harmless, feeds on plankton, worldwide

Cyanea capillata
Lion's Mane Jellyfish

Keep clear, dangerous sting, can be huge

Other Jellyfish



Various others may be washed ashore

Asterias rubens
Common Starfish

Predator on crustaceans etc

Marthasterias glacialis
Spiny Starfish

Washed ashore from deeper water

Pomatoceros sp.
Lugworm casts

From a marine Annelid, like an earthworm

Serpula vermicularis
Calcareous Tubeworm

Solid tubes made by a marine worm

Pholadidae family
Piddock holes

Holes in soft rock made by this shelled mollusc

Buccinum undatum
Whelk egg-cases

Common Whelk, laid on seabed, now empty

Scyliorhinus canicula
Dogfish egg-case

Lesser Spotted Dogfish, "Mermaid's Purse"

- A simple Guide to the Flora and Fauna of Wester Ross
- 480 species illustrated
- Tick-boxes to record what you have seen
- Enrich your walks by learning about the diversity of plants and animals

For general information see the companion booklet "Guide to Gairloch and District". You may also be interested in "Wester Ross Rocks", about the area's unique geology.

This guide has been produced by **Jeremy Fenton** with invaluable help from **Barry Blake**, **Peter Cunningham**, **Duncan Donald**, **James Fenton** and **Bruce Ing**.

Photographs have been contributed by the above, along with the owners of two websites: **stevenround-birdphotography.com** and **ukwildflowers.com**. Many thanks to all.

Sold in aid of Gairloch Heritage Museum.

Comments and suggestions can be sent to jeremyfenton@btinternet.com 4/17

You can see wildlife everywhere, but here are a few special places:

- Flowerdale and Achtercairn path systems, on and off the paths
- Gairloch wildlife boat trips
- Beinn Eighe National Nature Reserve visitor centre and nature trails
- Inverewe Garden bird hide and walks
- Laide Wood

... and any beach, wood, moor, village

What is wild?

Wild is other, remote,
defined by the absence of us:
a careless touch and it is gone.
It is the multifarious, unselfconscious
cornucopia of nature,
and our clumsiness has no share in it.

But in the beginning, it is said,
Adam in Eden named the creatures,
and in naming them he knew them,
and in being named and known
they found their meaning.

Walk slow and quiet through nature.
Name all, know all, love all,
and breathe the fresh air of Eden.

Wild is life!