



Naming and shaming turf weeds



Dr Terry Mabbett offers guidance in spotting and dealing with the most troublesome weeds you'll encounter on and around the course

Weeds are plants in the wrong place and all broad-leaved plants are weeds in managed turf. Rough grasses such as (Yorkshire fog) and Anthoxanthum odoratum (sweet vernal grass) and even perennial ryegrass (Lolium perenne), the latter widely used in amenity and non-fine sports turf, are weeds in professional sports turf.

Managers wanting greens dedicated to fine turf grasses like bents (*Agrostis* spp) and fescues (*Festuca* spp) regard *Poa annua* as a weed, 'cut and dried'. Others happily tolerate and use *Poa* on golf greens and tees.

Weeds may have completely different growth habits outside of managed turf. Creeping buttercup (*Ranunculus repens*) hugs the ground, its runners slipping unobtrusively through turf, while plants may reach 40cm or higher in uncut grass. Bird's foot trefoil's (*Lotus corniculatus*) behaves in the same way with creeping stems becoming vining stems and using long grass stems for support.

Deciding which plants are weeds is the easy part - identifying them is the harder part. Grouping plants, whether by weed characteristics or plant family, is the easiest way to proceed. Sorting out the Asteraceae (e.g. dandelions and daisies), Fabaceae (clovers), Ranunculaceae (buttercups), Rosaceae (cinquefoils) and Plantaginaceae (plantains) takes around half of turf weeds out of the identification equation.

That done you are left with small distinct groups and individuals such as the plantains, slender speedwell, self-heal, mouse-eared chickweed, sorrels, parsley piert, dove's-foot cranesbill, and field woodrush (main image) to identify and deal with.

Common weed characteristics

Turf weeds have one or more characters in common:

- Ground hugging habit with growing points close to the soil surface to escape the mower's blades

- Rosette arrangement of leaves and/or mat growth habits blocking light and shade out grasses

- Underground food storage organs like tap roots for anchorage and survival under adverse conditions. Ability to grow new plants from pieces of tap root left in the ground after unsuccessful attempts at physical removal

- Efficient vegetative reproduction by stolons (creeping stems) that 'slip' through the turf rooting as they grow to make new plants. Ability to grow new plants from stem pieces detached during mowing

- Choreographed sexual reproduction with flower heads at ground level, a long flowering period sometimes throughout the year (ephemerals). Short seed maturation period, efficient seed dispersal, no special seed germination requirements and accumulation of large seed banks outside of turf

- Resistance to drought and tolerance of herbicides

Weeds in managed turf

Dandelions and lookalikes (Asteraceae)

A common characteristic of the Asteraceae is composite flower heads of many individual flowers called florets. Dandelion (*Taraxacum officinale*) and daisy (*Bellis perennis*) are the most well-known of this plant family.

Dandelion's success is down to a strong deep seated tap root and a rosette of large light blocking leaves. Dandelions flower through spring and summer to generate large seed banks outside turf. Prostrate biotypes growing in fine turf bear short-stalked flowers which escape mowing.

As summer turf dries out dandelions are matched by weeds which closely resemble dandelions and have the same weed credentials.

Most common is cat's ear (*Hypochaeris radicata*) with rosettes of leaves close to the ground and long fleshy tap roots with similar capacities for regeneration following unsuccessful attempts to dig them out. Prolific seed set and efficient

wind dispersal of hairy-fruits, like those of dandelion, allows efficient colonisation of threadbare turf.

Smooth hawk's beard (*Crepis capillaris*) with rosettes of jagged leaves is very hard to distinguish from dandelion, but the flowers are smaller with several per stalk. Like dandelion it has a long fleshy tap root and is just as difficult to shift.

Mouse-ear hawkweed (*Hieracium pilosella*) lacks a tap root but has creeping stems arising from a rosette of stiff leaves curved and furry just like the rodent's ear. Mouse-ear hawkweed is the easiest of the 'dandelion-like' weeds to control.

Common daisy has rosettes of spoon shaped leaves with scalloped edges. Creeping stems produce an extensive mat of leaf rosettes especially in 'shaved' and compacted turf.

The composite flower comprising outer white ray florets and bright yellow inner disc florets closes at night, hence the old English name 'days-eye' from which the contemporary name 'daisy' evolved.

That's not quite the end of the Asteraceae because a number other plants which are not generally found in fine turf can invade and exploit damaged turf on tees by using un-replaced divots as germination sites. These include common ragwort (*Senecio jacobea*) and sowthistles (*Sonchus* spp), both frequently found on tees close to large seed-banks such as those on railway embankments.

Yarrow (*Achillea millefolium*) is the worst weed the Asteraceae has to offer and one of the most difficult turf weeds to control. Creeping stems root at intervals facilitating fast spread, while the finely divided waxy leaves make yarrow high resistant to drought. Yarrow leaves are hard to wet making it difficult to effectively cover this weed with herbicide spray.

Close up on the clovers (Fabaceae)

White clover (*Trifolium repens*) – A perennial mat-forming weed colonising turf by creeping stems which root at the nodes. Dark green trifoliate leaves are borne on slender and erect leaf stalks and each leaflet has a white band or 'halo' near to its base. White clover has a long flowering period from May to October. White flower heads sometimes tinged with pink are borne on long slender pedicels (flower stalks).

Bird's foot trefoil (*Lotus corniculatus*) – Also a perennial 'clover' with creeping stems which do not root, even though they grow just beneath

the soil surface. A sturdy taproot anchors the plant and confers high resistance to drought. Leaves appear trifoliate, but actually bear an additional pair of bract-like leaflets close to the stem to make five leaflets in all.

Bird's foot trefoil is fast-spreading and mat-forming especially on well-drained soils derived from sand, chalk or limestone. It flowers from May to August with attractive yellow/orange heads streaked with red and comprising 5-8 pea-like flowers.

Lesser trefoil (*Trifolium dubium*)

Though only an annual weed lesser trefoil (yellow suckling clover) is more difficult to control than white clover. Creeping stems are slender and fast growing but do not root like those of white clover. However, it still manages to colonise large patches of turf especially on dry non-acidic soils when the grass is sparse. A long flowering period from May to October produces a succession of small, round and pale yellow flower heads

Black medick (*Medicago lupina*) – Black medick is not a common weed but will show up on dry impoverished turf. With slender creeping stems, a prostrate habit and well-defined trifoliate leaves it is difficult to distinguish from lesser trefoil. Unlike lesser trefoil each leaflet ends in sharp point and is hairy and feels sticky to touch.

Ranunculaceae, Rosaceae and Plantaginaceae

Three species of buttercup may crop up in turf although creeping buttercup (*Ranunculus repens*) with its ground hugging habit and rooting runners is the biggest problem for fine turf, spreading aggressively in neglected swards especially on heavy wet soils. Bulbous buttercup (*R. bulbosus*) does not have runners but a bulbous base acting as a food store and survival organ.

Meadow buttercup (*R. acris*) is more of a problem in amenity grassland, growing fast in uncut swards to produce a mass of tall yellow flowers starting in May.

Not all bright yellow flashes in turf grass are buttercups because the cinquefoils belong to the Rosaceae. Trailing stems root at regular intervals for fast spread in under-nourished turf irrespective of whether the soil is saturated or desiccated.

Leathery leaves of the plantains and arranged in rosettes crop up in turf wherever there is neglect.

The very broad-leaved *Plantago major* (broad-leaved plantain) and *P. media* (hoary plantain or lamb's tongue), with oval prominently ribbed leaves, are distinguished by the latter having 'no' leaf stalk. *P. lanceolata* (ribwort plantain) has a rosette of lance-shaped leaves. All thrive in shaved turf on dry compacted soil.

Die-hard duo

Slender speedwell and self-heal, two totally unrelated weeds, are among the most frequently occurring and difficult to shift from fine turf.

Slender speedwell is not the sort weed you notice until its mauve-blue flowers appear in spring. Though rarely setting viable seed it is one of fastest spreading weeds of managed turf. Mowing spreads slender speedwell, the pieces of cut stem carried on grass cutting equipment to fall off and root elsewhere.

Self-heal is one of the smaller members of the mint and nettle family (Labiatae) with prostrate biotypes common in managed turf. Prostrate creeping stems root at the nodes to make compact spreading plants. Self-heal is unlikely to go unnoticed in turf. From June to October erect and square cross-sectioned (angular) flowering stems bear thick, tubular clusters of tiny bright blue flowers.

Tiny trio

Tiny turf weeds are difficult to spot in the cold light of late winter afternoons, when greenkeepers get first insights into what spring will bring.

These include parsley piert (*Aphanes arvensis*) with bunched parsley-like leaves and creeping hairy stems; dove's foot cranesbill (*Geranium molle*) a tiny wild geranium with spreading stems, pink flowers, long-beaked fruits and prominently lobed flat leaves which give the name; and tufted leaf rosettes of pearlwort (*Sagina procumbens*) the most diminutive of all.

A rush which looks like a grass

Field woodrush (*Luzula campestris*) looks and grows like a grass which makes it difficult to distinguish virtually impossible to control with herbicides without damaging turf grasses.

Field woodrush shows up during spring as large patches of chestnut coloured panicles (flower heads) evident on fairways, especially if mowing is delayed by very wet weather.

RIGHT PAGE FROM TOP TO BOTTOM

COLUMN ONE (LEFT):

Self-heal in full flower with a lone white clover

Yellow pea like flowers of bird's foot trefoil

Yellow suckling clover is a drought resistant weed

Dove's-foot cranesbill is a tiny wild geranium

COLUMN TWO (RIGHT):

Slender speedwell already spreading fast in the cold light of a late January afternoon

White clover flowering in earnest across the fairway in June

Yarrow is the ultimate drought resistant turf weed



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