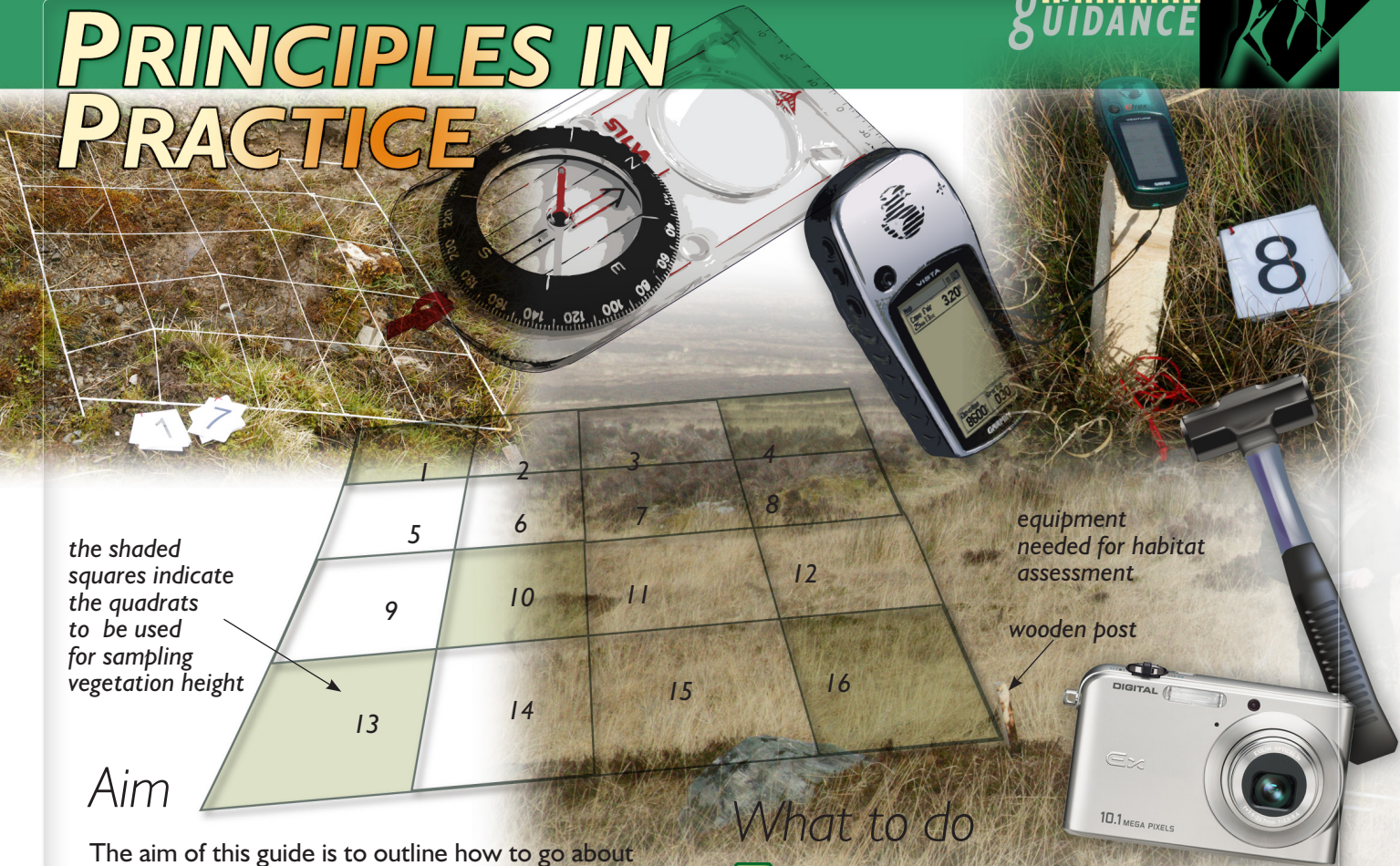# PRINCIPLES IN PRACTICE

the shaded squares indicate the quadrats to be used for sampling vegetation height

equipment needed for habitat assessment

wooden post

Aim

The aim of this guide is to outline how to go about establishing a habitat monitoring baseline. The guide describes what time of year is best for each habitat, how to establish plots and what other factors to consider. The guide Habitat Impact Assessment: Principles should be regarded as an essential introduction to this subject.

Example forms for recording habitat data can be found in the Reference section.

What to do

3 Establish the baseline by setting out the marked ('permanent') plots. Plots should be marked by wooden posts (approximately 5 x 5 x 20 cm) and their location recorded by GPS. Posts or tags should be small enough to minimise their attention by deer, hammered below vegetation height, or located at a fixed distance (e.g. 10m) from the plot.

Dwarf shrub heath Blanket bog, Tall herbs, Springs	Flushes	Woodland (all objectives)	Woodland (impacts to regeneration), Willow
Minimum of 30 random plots per habitat area. Each plot marked by a small wooden post, tagged and located by photograph and GPS. Each plot 2 x 2 m subdivided into sixteen 0.5 x 0.5 m quadrats. bearing recorded	Marker posts set away from the flush (located by GPS) and a compass bearing taken to the plot. At least one plot placed randomly on each flush. Each plot 1 x 4 m subdivided into sixteen 0.5 x 0.5 m quadrats. bearing recorded	Use Nearest Neighbour Method[1] to calculate number of points to assess per compartment – at least 20 sample points with 5 trees (100 trees). Each point marked by a wooden post and located by photograph and GPS. Each seedling is marked by a tag round its base.	Mark at least one seedling within each plot or randomly mark seedling willows to give a minimum of 30 per compartment. A post (10m from the seedling/willow) is located using GPS. In addition, a peg may be placed 1m from the seedling/willow. Each seedling/willow marked by a tag around it's base.

bearing recorded

Recommended months for measuring deer impacts

Habitat	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dwarf shrub heath	A	A	R	R	R	R	R	R	A	A	A	A
Blanket bog	A	A	A	A	R	R	R	R	A	A	A	A
Flushes & springs	A	A	A	A	A	R	R	R	A	A	A	A
Native & commercial woodland	A	A	A	R	R	A	A	A	A	A	A	A
Willow scrub				A	R	R	A	A				
Tall herbs				A	A	R	R	R	A			

recommended □ acceptable □ not recommended

remember to number each plot individually before taking a photograph to help future identification

recording the compass bearing from a marked post

When?

[3] The impact assessment itself should be done at the time of year indicated in the table. Outwith this period plants are less easy to identify and impacts less easy to measure.

When establishing plots

[3] Be aware of ground nesting birds. Avoid placing plots where birds are showing alarm behaviour. Avoid any disturbance of ground nesting birds during wet or windy conditions.

♦ Minimise trampling. Try not to cause more impact than what you are measuring!

♦ If conducting impact assessment on designated sites consult SNH.

Identifying plants and impacts

The BPGs on habitat impact assessment illustrate the key plant species and impacts required in each guide. It is recommended that additional plant field guides are used to help in species identification. Similarly, for impacts the SNH field guide[2] provides a more detailed description of assessing current and historic impacts e.g. 'normal, carpet, topiary and drumstick' growth forms of heather.

Interpreting results

Is it deer?

Other herbivores may also be present and causing impacts – insects, birds, sheep, hares, rabbits and goats.* Three things can help determine which animals are likely to be having the biggest effect:

♦ Presence of dung (note difficulties in separating sheep dung from deer dung);

♦ Browsing signs on plants measured;

♦ Relative numbers from counts etc.

Is it damage?

Deer are herbivores, herbivores eat vegetation, therefore deer will always have an impact on their habitat. The BPGs describe how to measure grazing and trampling impacts by deer. Assessing the measured impacts against the objectives (private or public) for the habitat area will determine whether the impacts are 'damaging'.** The effect of continuing the current impacts on the habitat also need to be considered – are they sustainable or will they lead to damage or deterioration?

Impacts are also likely to be interpreted as 'damage' if:

♦ Unpalatable plants (i.e. which deer do not normally eat) are being browsed;

♦ Heavy or high impacts are widely found.

How to analyse

Initially, impacts measured will form a baseline. Subsequent monitoring in relation to objectives will determine whether impacts are sustainable or potentially damaging.***

* BPG Woodland Damage:Recognition of Cause
** DCS Guide Damage: Definition & Assessment
*** BPG Habitat Impact Assessment: Analysis & Interpretation

[1] Nearest Neighbour Method for Quantifying Wildlife Damage to Trees in Woodland. Forestry Commission Practice Note. See BP Contacts
[2] Guide to Upland Habitats, Surveying Land Management Impacts. Angus Macdonald, Penny Stevens, Helen Armstrong, Philip Immirzi and P Reynolds. 384 pages, 2 volume set, 50 col photos. Scottish Natural Heritage. See BP Contacts