

Knowledge of your woodland is a prerequisite for successful management but when you start out, unless you are very fortunate, you are likely to have significant information gaps. Even if you do have a lot of prior knowledge it is best to organise it in a systematic manner. This Advisory Note is intended to lay out the types of information you will need to prepare your woodland management plan. The list of information you need for management planning is long, but don't be put off. As explained further in Advisory Note 3 *Woodland management planning* you can start managing your woodland straightaway using the best information available; you can then make provision for further surveys in your management plan. This Advisory Note will point you towards pre-existing data on your woodland and provide some simple ideas for carrying out your own woodland surveys.

## What do you need to know?

Your starting point is a basic description of your woodland in its *current state*. Once you have a clear picture of what is there now you can decide what activities are needed to move the woodland closer to your vision. This description of current state should be as objective as you can make it so it can also serve as a *baseline* against which you can evaluate progress with your management objectives in the future. The description of the *current state* of your woodland should, ideally, include:

- Tenure & legal issues
- History including recent management regimes
- Value and use by people
- Biodiversity – what lives in your woodland
- Trees - species, ages and sizes

As well as an understanding of the current state of your woodland, you also need to have an appreciation of the living and *changing nature* of your woodland. To do this you will need an understanding of:

- Ecology – what is happening in your woodland, and
- Silviculture - Latin *silvi-* (forest) + culture (as in growing) i.e. what you do with the trees.

An understanding of ecology will help you understand the kind of changes that may take place in your woods if you did nothing. A knowledge of ecology and silviculture will help you understand how your

woodland might respond to a range of practical interventions (cutting trees, planting different species etc).

The rest of this Advisory Note briefly outlines what is involved in the collation of these seven different sets of information. Oliver Rackham's book 'Woodlands' is recommended for those who want a more in depth introduction to broadleaved woodlands. While the Forestry Commission has a wide range of publications some of which are free to download or order.

Rackham O. (2006) *Woodlands*. New Naturalist Library 100. Collins.

Forestry Commission publications

[http://www.forestry.gov.uk/website/publications.nsf/\\$\\$Search](http://www.forestry.gov.uk/website/publications.nsf/$$Search)

## Tenure and Legal issues

Legal tenure (ownership) of your woodland is usually one of your first concerns as your group will not be able to manage the woods unless you have undisputed rights to make decisions. There are a number of ways your group can acquire such rights; from purchasing the freehold, through leases and co-management arrangements to informal agreements. Your options may vary – the freehold may be for sale and so purchasing it may be the only way forward, or the land might belong to the County Council, so an informal agreement maybe all that is required. So, the first information you require will be about the ownership of the site and the legal basis on which you might acquire rights to manage it:

- Who owns the site?
- What options are available to acquire rights to manage the woods?
- Are the owners willing to negotiate with your group?

Ownership of land in the UK is treated as personal information and is kept confidential which can sometimes make it very difficult to find out who holds the deeds to a parcel of neglected woodland. The Land Registry holds details of ownership for about half the land in England and Wales but the scheme is voluntary and a lot of rural land which is not in the hands of major landowners is not registered. The Land Registry data is available for you to search in one of their local offices or online. If this draws a blank then you could

ask around the local community, neighbouring farmers etc. to see if they know who the land may belong to. (<http://www.landregistry.gov.uk/>)

Besides land ownership you also need to identify any other legal constraints on your site. Are there any restrictions on the site, say in the deeds, or because of a statutory designation for conservation or because it has been registered as Open access? It is very important to check for public rights of way – your County Rights of Way and Access Officer should be able to help check the status of paths or tracks in your woodland. It makes a big difference if they are Bridleways (horses and bicycles allowed), Footpaths (pedestrian access only) or Permissive (use at the landowners discretion). The owner of the land has a statutory duty of care for public rights of way but not for permissive access.

## History

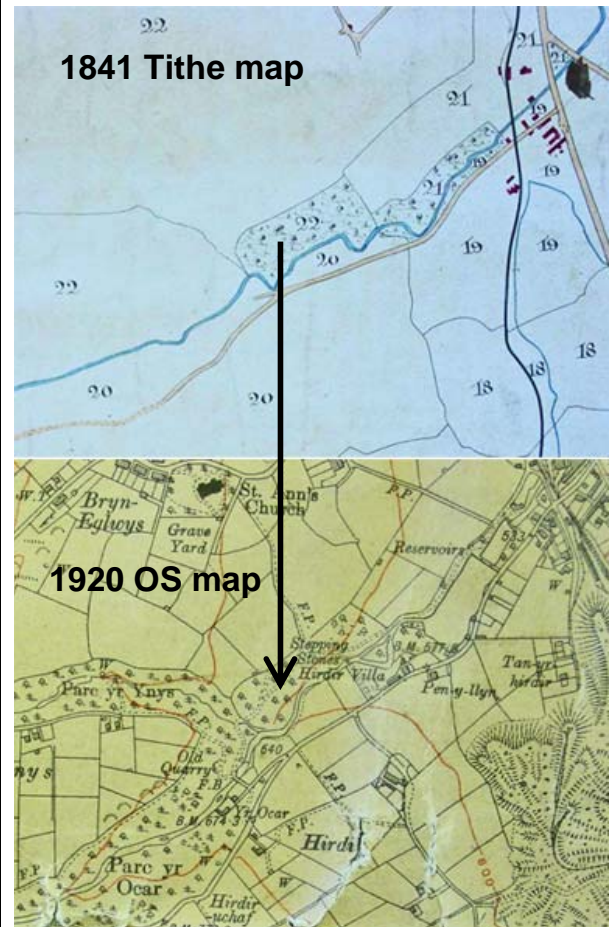
Trees are often the oldest living things in the landscape, woodlands can be ancient and even if there are no trees, the site itself will have a history. Knowledge of the history of your woods helps put it into context and will help you to understand why it is there, how it came to be as it is and what it might mean to people. You can manage your wood successfully without knowing its history but it is likely your understanding of the woods will gain depth if you know its story.

### Pre-history

The past in Wales stretches back into pre-history and woodland owners have a duty of care for archaeological and historical artefacts on their land. Since Victorian times, records of such features in the landscape have been catalogued but records are by no means complete and there is always the chance that a ground survey will throw up new discoveries. Such surveys are expensive (unless you have a willing volunteer archaeologist), and are not expected for routine woodland management.

What you are expected to do is to take due care of known archaeological sites especially those which are listed by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW). Internet search engines for known sites or monuments are currently evolving but you should be able to access what you need from either Coflein, CARN or Historic Wales). You could also approach your local archaeological trust who may have more intimate knowledge of your area (contact details for all are given on the Historic Wales website). If you have historic artefacts or sites then the CADW conservation publications are a good place to look for advice on how best to care for them. The Forestry Commission

### Woodland history from old maps



Credit: Coetir Mynydd

also has some useful pages which explain the difference between archaeology which now happens to be in a woodland and features which point towards historic use or management of the woodland. The Forestry Commission also offer advice on particular issues to address when dealing with care of historic monuments in a woodland.

### Sources:

Royal Commission on the Ancient and Historical Monuments of Wales <http://www.rcahmw.gov.uk/>

Online search for archaeological features: <http://www.rcahmw.gov.uk/HI/ENG/Search+Records/>

Historic Wales – map search <http://jura.rcahms.gov.uk/NMW/start.jsp>

CADW <http://www.cadw.wales.gov.uk/>

FC Woodland and Archaeology pages <http://www.forestry.gov.uk/fr/INFD-5W2F23>

Forestry Commission (1995) *Forests and archaeology guidelines*. (Free - order by calling 0844 991 6500 or email [forestry@mrm.co.uk](mailto:forestry@mrm.co.uk))

### Local and oral history

This is more recent history for which we have written records or stories passed down in local communities or families. Researching local history, which involves digging in local and national archives, scouring old newspapers and interviewing older members of the community, can be both fascinating and frustratingly open-ended. You may need to be ruthless and focus only on local and oral history and records directly related to tree planting and fellings in your woodland.

Oral history is extremely worthwhile for social cohesion (interviewing older people can also be a great exercise for young people) as well as obtaining valuable insights into your wood. If you are considering recording oral history you may be able to get funding from the Heritage Lottery Fund and from Menter Iaith for Welsh language projects. A good example of what can be done with oral history for forestry is the **Story of the Forest** project (Newborough, Dyfi, Coed y Brenin, Tywi and Pembrey Forests - Forestry Commission 2002).

You may be able to recruit volunteers interested in local history to undertake archive and historical research for your woods. Indeed this can be a very worthwhile contribution to your woodland for people who are not able to take on board responsibilities or tackle heavier physical work. If this is the case, include historical research as an activity within the management plan.

In addition to local oral history, there may be many formal sources of information or records that you can access. Indeed you may need to be ruthless and focus only on records related directly to tree planting and felling in your woodland. A bare minimum of information would be: the age of the woodland; rough age of the trees and the most recent management interventions e.g. clear felling. Recommended reading to put your woodland into context is Bill Linnard's definitive history of Welsh forestry.

#### Sources:

Linnard W (2000) *Welsh Woods and Forests: A History*. Gomer Press.

Heritage Lottery Fund

<http://www.hlf.org.uk/ourproject/projectsbysector/cultureandmemories/>

Story of the forest (oral history of Coed y Brenin)

<http://www.forestry.gov.uk/forestry/INFD-5PWDJF>

### Value and use by people

Your wood is managed by a group that either represents, or works closely with, the community who live close to your site. Most community woodland groups have objectives which seek to maintain or

develop local use and appreciation of the wood. To be able to do this effectively you need to know something of how people use and value it now as well as in the past. There is a lot of overlap between what you can do to obtain this information, the history projects mentioned above and the community appraisals in Advisory Note 1 **Getting to know your community**. The reason community surveys are also mentioned here is to highlight that this time you are interested in the interaction between people (as individuals and groups) and your woodland. You need this information to:

- (a) build a picture of who does what, where in your woods,
- (b) what the woods mean to the people that use them,
- (c) provide quantitative evidence of use to support funding proposals and
- (d) to enable you to monitor how people react to changes in the woods.

There are a range of techniques you can use to obtain such information. The methods used by larger agencies such as the Forestry Commission and County Councils are *passive* i.e. they simply count numbers of people walking down a path or cars in the car park. The advantage of these methods is they yield objective and repeatable measures of the number of users which are good for monitoring.

Often funding proposals will expect to see such data to support an application for funding access; it is often easier to collect real data (e.g. by having people tally passers-by for a fixed period of time) than to persuade sceptical funding agencies to accept proxy measures (i.e. indirect evidence of regular use such as worn footpaths). In LlyG we have been discussing the difficulties of quantifying visitor numbers and are hoping to be able to acquire some footpath counters which members can borrow/or take out on loan. In the meantime, be creative and look around for things which you might be able to correlate to the numbers of people passing through (such as width of the bare strip down the middle of a footpath) and use these as proxies to monitor the changes in the intensity of use of your woods.

Although counts of people are a good way of demonstrating that people use your wood, they don't tell you much about what they think and feel about the woods and what they value most within it. To get at this you will need to *interact* with your users. Such methods usually involve talking to people or at least observing what they do. Questionnaire surveys are fine but there are a number of things it's worth considering carefully beforehand:

- Who are the people you wish to approach? If it's the whole community – maybe post your questionnaire through letterboxes; if it's the people who use the woods – stand at the entrance to the woods with a clipboard.
- How many questionnaires you might need completed to represent your community – will it be 10's, 100's or 1000's? - if its big numbers you might want to find someone who is competent with statistics to help with your data analysis.
- Only ask questions which are really relevant, keep away from personal ones (e.g. 'What is your name and address?' or 'How old are you?' and keep the questionnaire SHORT.
- Think carefully about the questions you ask – it is particularly important that they are not 'leading' i.e. suggest the answer you might like to hear in the question. So don't ask 'Would you prefer native trees?' to which most people will think you expect them to say 'Yes'. Ask 'Are there any trees you particularly like? What do they look like?'
- Leave some questions open-ended so people can introduce things you may not have thought of.
- It's also easier if you can make the questionnaire fun – turn it into a treasure hunt where people have to answer questions about what they think about the woods at each location.

Don't just think about recreational use - also consider if there are people who may be using the woods as part of their livelihood - Are people picking berries for sale? Do local B&Bs host mushroom picking weekends?

### Youth-led consultation for Parc yr Bwlch

This was an exercise undertaken with funding from the Russell Commission Fund (now GwirVol) which used Action competence methodology with young people in the village youth club. The young volunteers designed a questionnaire and delivered four copies to each house in the village (172 houses). They returned the next week and collected 164 completed questionnaires. The youngest person who had a questionnaire completed for them was 7 months old and the oldest was 96. What was remarkable was that there was near universal agreement that the forest was most valued as a quiet place that everyone enjoyed as a natural place full of wildlife. This is not what you might expect people to say about a monoculture Sitka spruce plantation but it's not wrong – it's what people think and feel about *this place*. Some of the comments people made about the forest

are:

"It looks like a fairytale"

"we go there looking for elves and fairies with the kids"

" ...a place for the kids to go on their own without adults"

"It's a place to chill and hang out with mates"

"great for making dens and stuff"

"There's plenty of room there for everyone to enjoy the woods"

"It's a special place."

"It's a healing place"

## Biodiversity

Biodiversity is a term which sounds quite technical but can most simply be understood as referring to *what lives in your woodland* with the emphasis being on rarer species and places with the greatest diversity (number) of species. As with archaeology there are two aspects to biodiversity; as a responsible woodland manager you are expected to exercise a duty of care for listed habitats and species and you can set off on a quest to get to know intimately every species in your woods. There are a great many books on woodlands and conservation in the UK – and it is difficult to recommend one that will tell you all that you might want to know. The Natural History Book Society (NHBS) is a good place to find out what is currently in print though you may then wish to order the book from your local library or shop around for a second hand copy.

Natural History Book Society <http://www.nhbs.com>

### Checking for BAP habitats and species

As a responsible manager for any area you need to check if your area qualifies as a Biodiversity Action Plan (BAP) habitat or any BAP species are present. BAP habitats and species are those for which Wales is judged to have particularly responsibility at European level and are afforded statutory protection under the European Habitats Directive. The best place to learn more about the BAP habitats and species for Wales is the **Wales Biodiversity Partnership**. This site also includes links to your County Biodiversity officer and your Local Biodiversity Action Plans (LBAPs) which set out priorities and actions at county level. Almost all native woodland types are BAP priority habitats and if you have a mature woodland you may also have one or more BAP species. A good guide to which priority species you might have in your woodland is your LBAP – check the habitat plan for woodland and also for woodland species which have their own species plan.

It would also be worth asking around, especially your County Biodiversity officer or local Wildlife Trust.

Having determined which priority species you may have, you should try and confirm whether or not they are present in your woods. However, don't get too carried away – there are a lot of obscure species on the BAP lists – start off with the easy ones; otter, red squirrel, dormice, bats, barn owls, cuckoo etc.

#### Light trapping moths



Photo: Jenny Wong

#### Recording biodiversity

Biodiversity recorders, sometimes called *amateur experts* tend to specialise in a specific set of species (or taxon (singular); taxa (plural)) such as birds or mushrooms. There are a whole series of specialist societies at national and local level which tend to aggregate around the main taxa e.g. birds or botany and each appoints a County recorder who curates (checks the validity) records submitted to the society database and to the local biodiversity records centres. There are four local records centres for Wales and each acts as a hub for people interested in biodiversity. Each offers training, promotes events, alerts for current specialist surveys and can put you in contact with the County recorders for your area. All these data are submitted to the National Biodiversity Network (NBN).

An easy first step for deciding which priority species to look for is to check the National Biodiversity Network (NBN) Gateway. You can search the database online for single species and zoom into your site to see if it has

been recorded near you. There are a few shortcomings of these data: they are only displayed as at the resolution of a 2 x 2 km grid square (known as a *tetrad*) so it is not possible to precisely locate a sighting and records span several decades and so may be out of date. Records are also somewhat serendipitous as they can only arise if a volunteer recorder who can reliably identify the species is present so for some taxa the maps may tell you more about the distribution of recorders than species. An absence of a record does not mean the species is not there – it may be that no-one has looked. These data should therefore be treated as a **guide** to what you might expect to find in your woods and not as a definitive source of information.

You should confirm the presence of any priority species that looks as if it may be present with a field survey by a competent recorder. You may be able to locate such a recorder by enquiring at your local Records Centre, Wildlife Trust, specialist societies or other expert networks. Many of these recorders will be volunteers and may be local and willing to help your group but you should be prepared for reciprocity – i.e. if they help you, give them something in return. If you set out to amass a complete checklist of all species present, expect it to take several years and lots of goodwill from experts unless you have people who can take advantage of the many free (or low cost) training events run by the Records Centres. Even so there are many taxa for which experts able to reliably identify species are few and far between. Charismatic taxa such as birds, flowering plants and butterflies tend to be better served. However, experts for taxa such as fungi, bats, micro-moths and bryophytes (mosses) can be hard to find, the species themselves can be impossible to identify without specialist equipment and they contain many species. Be realistic in what you take on!

You may be able to persuade your County Biodiversity officer or your local CCW officer to come and visit your woods to advise on biodiversity conservation. Use these opportunities circumspectly – you should expect one visit but in the current funding regimes, probably not more than one and even this limited service may be withdrawn. So have a stack of questions and the most knowledgeable person you have in the group available to extract as much as you can from any visit.

Remember also that not all biodiversity is good. If present, non-native invasive species such as Rhododendron or Himalayan balsam will be a real threat to your woods and will need to be managed. So check for these as well as the priority species.

#### Sources:

BAP priority lists

<http://www.biodiversitywales.org.uk/species-35.aspx>

LBAPs for Wales

<http://www.ukbap.org.uk/GenPageText.aspx?id=30>

Local records centres <http://www.lrcwales.org.uk/>

NBN Gateway <http://data.nbn.org.uk/>

**I got one!**



Photo: Bryan Dickinson

### **Connecting with existing biodiversity surveys**

One easy way of starting out with biodiversity recording is to adopt existing volunteer surveys. A good example of the type of survey you could do is the RSPB Big Garden Bird Watch. This is an annual event which has been running for 30 years for which volunteers are asked to count birds for an hour over the last weekend in January. Results are submitted online or sent into RSPB who then add your data to an online database and in due course, prepare a report. You could encourage members to do their counts and submit them to you as well as RSPB. Over time this can build an interesting picture of what is happening with the birds in your locality as well as being a useful contribution to national conservation efforts.

Birds might be the most popular taxa to survey but there are similar volunteer based surveys you could contribute to for mammals e.g. the Great Nut Hunt for dormice or the Mammals on Roads for people who don't mind investigating road kills. For the more squeamish there are surveys for wildflowers and for bugs, for those attracted to lots of legs. Most of these surveys are not intended for woodland, but getting people interested in biodiversity is a great way to enhance their appreciation of the woods and the data will help put your woods into context. Check your local records centre for ongoing surveys.

Some species are just too specialist for the general public and require special knowledge or equipment. If you know that a survey for such species is happening in your area then you may be able to persuade them to include a visit to your woods as part of their survey.

### **Sources:**

Big Garden Bird Watch

<http://www.rspb.org.uk/birdwatch/>

Mammal surveys

<http://www.ptes.org/index.php?cat=6> and

[http://www.mammal.org.uk/index.php?option=com\\_content&view=article&id=326&Itemid=385](http://www.mammal.org.uk/index.php?option=com_content&view=article&id=326&Itemid=385)

Wildflowers

[http://www.plantlife.org.uk/things\\_to\\_do/wildflowers\\_count/](http://www.plantlife.org.uk/things_to_do/wildflowers_count/)

Bugs <http://www.buglife.org.uk/getinvolved/surveys>

### **DIY biodiversity surveys**

There are going to be very many more interesting species in your woods than those listed as priority species. One of the more engaging and inclusive woodland activities is learning more about the plants and animals which live in it. Wildlife walks for local school children, bat walks, fungi forays, moth nights and foraging are all events you can hold in a woodland which have a wide appeal, help draw people to your group and provide useful biodiversity records. You may have a local expert who already does fungi forays or bat walks who may be willing to hold an event in your woods. Most of these experts will be doing this voluntarily in their free time and may come for free for a chance to visit a new site or make a small charge. You should ask them to send you the list of species they found in your wood and give you their evaluation of your woods and any suggestions they would like to make.

Don't forget to ask around for people in your community who are bird watchers or have a special interest in nature. They may already have detailed knowledge of what lives in the woods and may be willing to join your group (if they haven't already) and take some responsibility for surveying the woods for the species of interest to them.

If you have people who are interested in learning more about biodiversity but aren't yet experts your local records centre should have a notice board or calendar of training opportunities in different taxa which are often free or for a small charge. You may need to 'pay back' for the training by sending in records or joining in an organised survey but you could also invite the course to come to your woodland.

You could also organise a simple tick-box based questionnaire for easily identifiable species of interest. The example given is a survey sheet that was prepared for use in the village as well as the woods, as wildlife doesn't stop at the fence. You could prepare something similar for people to complete as they walk through the woods or organise a biodiversity day

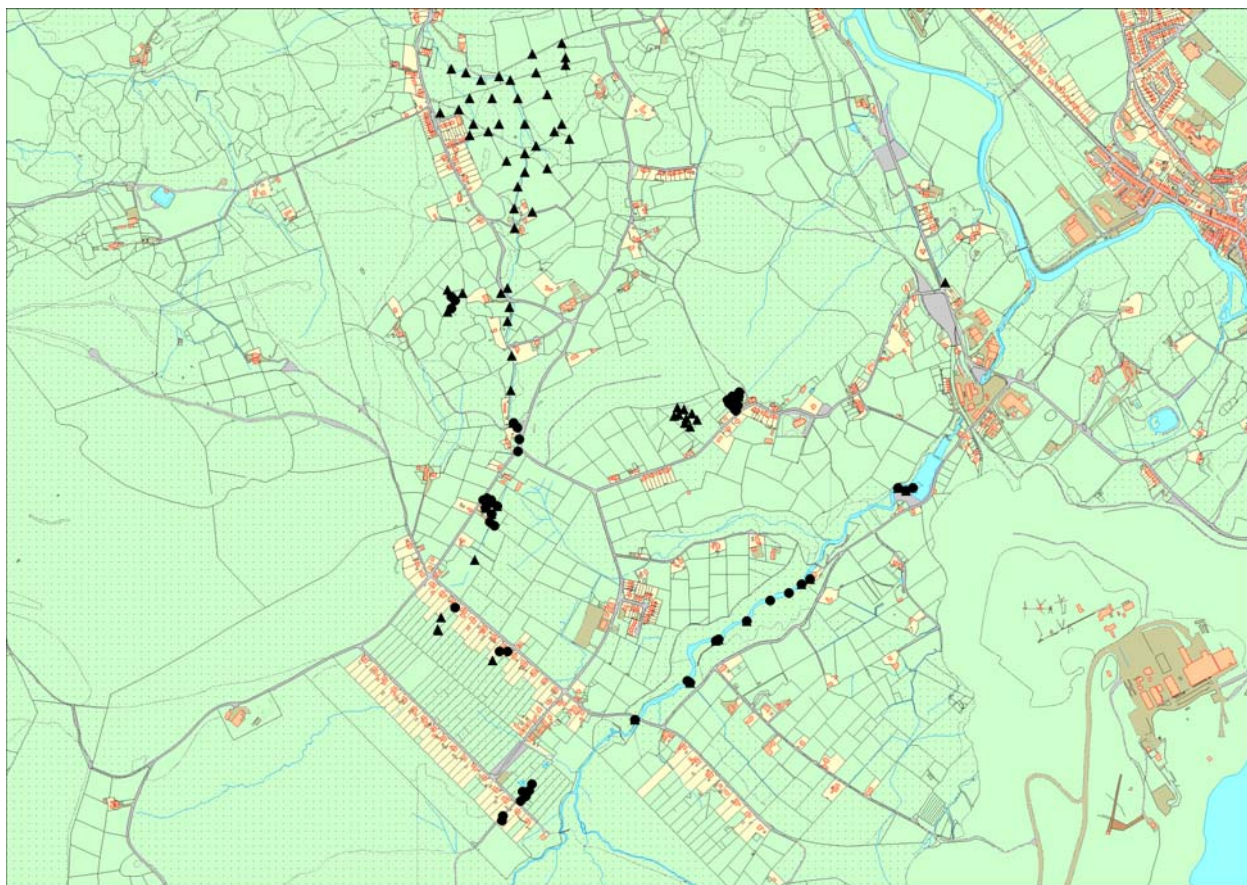
when you have volunteers comb the woods for signs of animals, birds or fungi. Be inventive!

Remember that you will never list everything in your woods and you can effectively manage your woods without any biodiversity surveys. As long as the woods are in good condition and protected from grazing, fires, excessive noise or trampling, the wildlife will be fine. However, you may wish to consider including biodiversity surveys as an activity in your management plan as it can fulfil many objectives.

### **Mapping biodiversity**

Maps are indispensable in the collation and sharing of information of any kind but come into their own as interactive tools for getting a grip on the biodiversity in your area. They can be used for strategic planning and monitoring (see example), as a visual display of your management plan and as a quick, high impact way of conveying information.

#### **Use of map for control of non-native invasive species**



Map: Coetir Mynydd

*Spot map for Himalayan balsam in Mynydd Llandygai, late summer 2009. Dots are sites which were cleared, triangles uncleared sites. Clearance was targeted on the river upstream of the woodland owned by Coetir Mynydd. In 2010, the cleared sites were re-visited and re-cleared and we discovered that many of the owners of properties we weren't able to visit took it upon themselves to clear their areas. Most of the village is now clear of Himalayan balsam. Further follow-up is planned for 2011 as it will take at least one year without the plant before we can say it's really gone and even then vigilance against re-invasion will be needed. We were fortunate to be the highest village on the river so we can push the 'invasion front' back down the hill.*

The most important thing you need to make a map is a geographical location for your item of information i.e. the grid reference for a bird sighting. There are various ways you can locate your data, read off the grid reference from your OS map, take a distance and bearing from a fixed point on an OS map (field corner, building etc.) or use a GPS (though you will need an expensive one to get good accuracy with a woodland).

Displaying maps is also something which can be very low tech or highly sophisticated. Here are a few suggestions along this gradient:

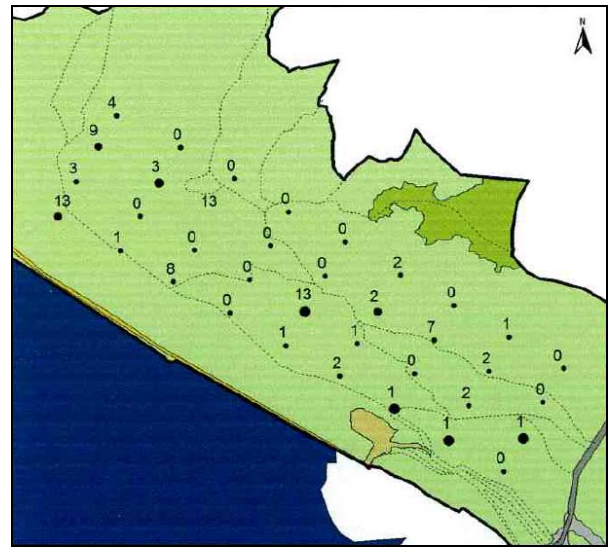
- **Child's play:** Buy an OS map and some sheets of tracing paper and box of coloured pencils. If you want to put it on your website or email it – then use a scanner. Use free software e.g. Paintbox if you want to add titles or tidy up your map.

- **Cheap and cheerful:** For something a bit slicker, you can use the graph facilities in spreadsheet programs such as Excel. Organise your data so you have two columns: the first should contain eastings (the x axis of the OS map) and the second northings (the y axis of the OS map) (which will be termed series 1). Highlight the block of data and create a Chart of the X-Y Scatter type. This will create a simple plot of points, join the dots to 'draw' simple maps. You can add extra columns and include them as additional series to display more than one set of points at a time. Each series can be a different size, shape or colour. The map will be pretty crude but you can 'float' it over a scanned map to make it look better. This is limited in scope but with a bit of fiddling you can produce useful maps at next to no cost.
- **Technical but cheap:** Invest in a middle of the range GPS unit which has the new high-sensitivity aerial and a micro-SD card or cable to download waypoints to a computer. Use this to collect your data and transfer it directly into a geographical information systems (GIS) package. There are several of these which are shareware and can be downloaded free if you can't afford the MapInfo or Arc software (which will cost thousands of pounds), but want a professional system. MapWindow should be able to do handle everything you need and is free. There are also programs you can use on digital handheld devices (smart phone etc.) which can help with species identification and record observations using an inbuilt GPS. CyberTracker is free to download while AditSite you have to pay for (though at the time of writing there is an unsupported free download) which also contains identification guides for UK animals and plants. If you decide to set up a GIS for your wood then you can also download basemaps of a range of conservation features from the CCW website  
<http://www.mapwindow.org/>  
<http://www.cybertracker.co.za/>  
<http://www.aditsite.co.uk/>  
<http://www.ccw.gov.uk/interactive-maps.aspx>

## Trees

Trees have been left to the end of this Note – not because they are the least important but because they are the most distinctive attribute of a wood and can sometimes dominate people's approach to woodland management. As we have seen there is a lot more in a wood than just the trees. Nevertheless trees are the main structural element in a wood and you obviously need to know something about them.

**Distribution of saplings stripped by goats in Coed Dinorwic**



*Credit: Carolina Llavallol*

If you want to be more involved in the management decisions i.e. the design and silviculture of your woodland then it is useful to do your own tree survey and perhaps create maps showing features important to your group and community. Compared to the numbers of species in your woods there will be relatively few trees and probably not more than 10 main species which are fairly easy to identify. Get yourself a tree identification leaflet and learn your trees. The Field Studies Council have a moderately priced laminated fold-out guide to trees available in both English and Welsh <http://www.field-studies-council.org/>. Armed with your guide, a tape measure and your GPS you can now map your trees in as much detail as you wish. The foresters conventional measurement of tree size is what is termed 'diameter at breast height' this is the diameter of the tree at 1.3 m from the ground. You can buy special diameter tapes on which you can read off diameter from the tape wrapped around the tree. If you don't have one of these use a long metre tape and divide the circumference by 3.142. If you find any exceptionally big trees the Woodland Trust may be interested in it for their Ancient Tree Hunt <http://www.ancient-tree-hunt.org.uk/>. If you have extensive areas of young trees then you would simply map the area of the stand, record the species and measure a few trees to indicate their size.

You don't have to map your trees – you can simply walk your site – are there places where trees are bigger? Smaller? Sickly? Overgrown with brambles or rhododendron?

Turning your tree survey into a social activity for everyone is a great way of strengthening your group and providing volunteer opportunities. In forestry

terms this is called 'participatory inventory' and a search on these terms in an internet search engine should yield publications developed for tropical forests you should be able to adapt for use by your group.

## Ecology – natural processes

To be able to make effective choices about things you need to do now you need to be able to predict how the plants and animals in your wood will react to alternative actions. At its simplest this means you need to know something of **what is happening** in your woodland – i.e. the natural processes occurring on your site and the lifestyles and interactions between the species within it – we term the study of these dynamics *ecology*. The main processes you need to look for are *regeneration* i.e. new plants appearing = appearance and growth of baby trees!, *mortality* i.e. trees falling and dying and species composition i.e. are the plants present on the woodland floor changing over time?

### Oak seedlings – what happens next?



Photo: Jenny Wong

An appreciation of the ecology of your site is essential if you are to work with rather than against nature, and it is always cheaper and more effective to work with the flow. Although ecology can be a pretty hard-core science, you do not need to dive into the academic literature or become a Victorian-style naturalist to build up useful knowledge of your woods. What is important is to become intimate with your woods so you can pick out the details. Walk your site regularly with an enquiring mind – what is happening?

- There is no regeneration ... but is this because the trees aren't setting seed? The squirrels eat them before they fall? Lots of seedlings appear in the spring just to be eaten by sheep? Or are seedlings present but not of the species you want to see?
- We opened up the tree canopy – what is happening? Are there more understorey

species flowering now? What happened to the ferns?

- We're worried about non-native invasive species – is the area dominated by these species increasing or decreasing? Is there a relationship between erosion and new patches of invasive species? Which method of control has been most effective?

Make notes and photographs of what you observe if you wish but mostly walk your woods with your eyes open.

## Silviculture

Silviculture is the manipulation of trees to provide a specific product. It covers the planting, timing of any thinning operations and the age and/or size of the final crop trees. Good silviculture is both an art informed by local ecological knowledge and a sympathy for the site and the application of forest science which provides insights into the growth and development of trees.

You obviously need to know something of the silvicultural system that has been applied to your woodland. Although this is obviously the case for a commercial conifer woodland, even if you have an old oak woodland it may well have been planted or formerly coppiced. Look out for thinning, note whether the canopy is open (you can see the sky) or closed (you need a torch), what is the depth of crown (fine branches and leaves) is the stand a mix or a single species?

To find out more about past silvicultural regimes (i.e. plans) you need to get hold of any available maps and documentation related to woodland management (design plans, compartment maps etc.). It is useful to have some forestry expertise to interpret this information and to advise on how best to look after and develop the standing trees bearing in mind the way they have been managed until now. Recruiting a local forester is the way that most groups acquire forestry skills.

Even if you have a forester it is still useful to ask for site visits by your local forestry advisors; maybe a woodland planner, the Forestry Commission Woodland Officer or the County Council Tree officer. As with biodiversity advisors this may well turn out to be a one-off opportunity, so use it well.

If you apply for a woodland management grant under Glastir Woodlands which will be available from 2013 you will get the services of a Woodland Planner who should be able to advise on a silvicultural regime which will achieve your objectives e.g. a gradual change of species or introduction of continuous cover forestry (CCF).

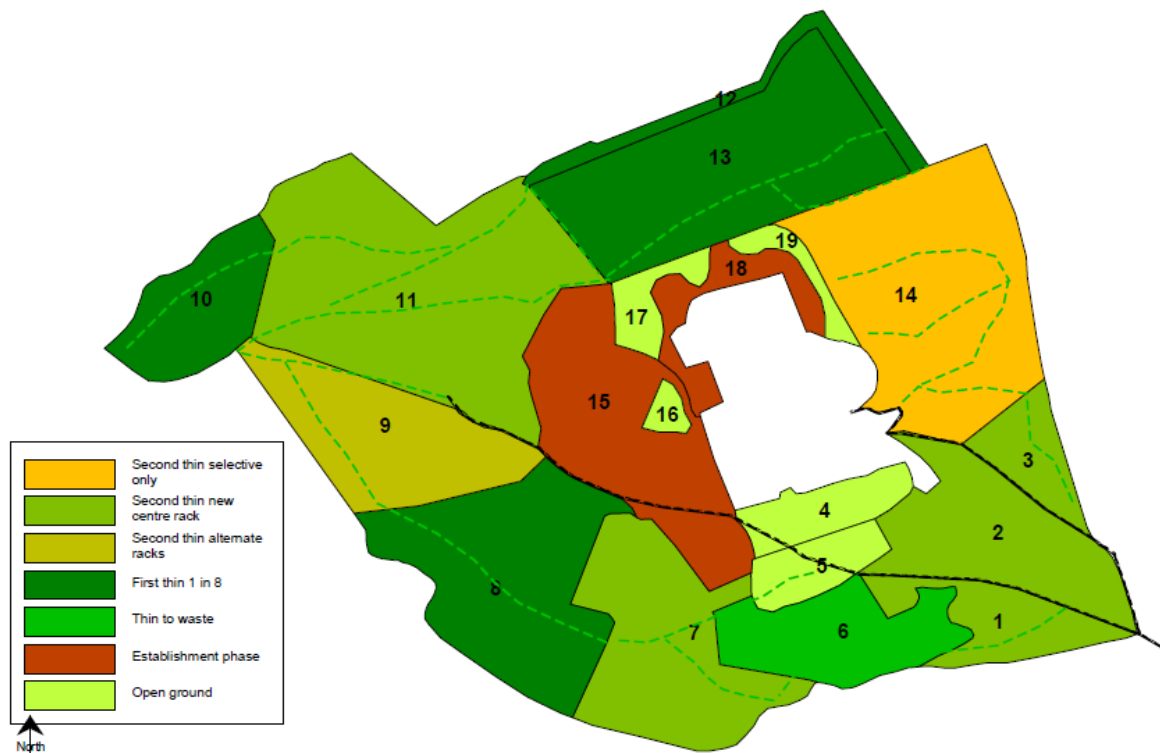
If your woodland contains large native trees or contains species such as Wood anemone or Bluebells which indicate that the site has been woodland for some time you should start by checking if it is listed on the register of **Ancient and Semi Natural Woodland (ASNW)**. This is a register of sites which are thought to have been continuously wooded since at least 1600. You can check whether your wood is listed by contacting the Countryside Council for Wales (CCW). ASNW woods are some of the most valuable Welsh conservation sites and attract higher rates for grants. At a slightly lower grade are the Plantations on Ancient Woodland Sites (PAWS) which are sites which have been continuously wooded but where they are now covered with plantation species- most often conifers. Such sites are high priority for restoration to native species and a more natural structure and the Woodland Trust is a good source of advice on how to recognise and manage such sites.

### Continuous cover forestry

*Most commercial forest plantations can be converted to continuous cover forestry and provide multiple benefits combining economics, the environment and a huge variety of social benefits. Don't be put off by trained foresters who are unfamiliar with continuous cover and who may try and put you off. Transformation (the gradual change from even-aged to continuous cover, un-even aged woodland) is a risk management exercise and can be adapted to a wide variety of situations. The more advanced the age of a plantation or the more exposed the less likely continuous cover transformation will result in completely irregular woodlands in a short space of time. However the process takes you closer to the goal of creating multifunctional woodland and facilitates future developments of species and structural diversity. It often does work in spite of the scaremongering; you get nothing without trying.*

*Phil Morgan, SelectFor*

### Silvicultural prescriptions on a compartment map



Map: Phil Morgan, SelectFor

If your wood is a **commercial plantation** then you need to get hold of any information you can about the silvicultural regime e.g. when the trees were planted, last thinned when clear felling was intended to take place etc.. This means requesting compartment, felling and re-stock maps, copies of old management plans and asking local forestry workers and neighbours to

relate what they remember of when trees were felled or planted or describe the appearance of the woods in the past. If your land has been managed by the Forestry Commission then you should ask for a copy of the *sub-compartment database* records, the *stock map* and the current and past *design plans*.

## Sources:

Maps of Ancient and Semi Natural Woodland: GIS Help Desk, C/O Enquiries, CCW, Maes-y-Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DW Tel: 0845 1306229 email: [enquiries@ccw.gov.uk](mailto:enquiries@ccw.gov.uk)

Woodland Trust

<http://www.woodlandtrust.org.uk/en/why-woods-matter/what-are-they/types/ancient-woodland/Pages/ancient-woods.aspx>

### *If you don't have any trees yet*

Your wood maybe a brownfield or even a green expanse of grass with the woodland a vision of the future. In such cases you need to think carefully about the woodland potential of your site. Walk your site and make notes of the substrate (soil, building rubble, slate waste), existing vegetation, slope, water availability (standing water? dries out in the summer?), the vegetation in the surrounding areas and whether there are any nearby trees to kick start natural regeneration.

Armed with these notes get hold of the Forestry Commission Ecological Site Classification – this is a computer model which shows how different species will grow and suggests which species would naturally grow on your site. If you apply for a Glastir planting grant, your Woodland Planner will be able to do this for you but do get them to provide opportunities for your group to be part of the decision of which trees you will put on the site. If you don't have access to a Woodland Planner then ask around – local foresters or woodland ecologists should all be able to offer good advice.

## Top tips

- WALK YOUR SITE – as regularly as you can in all seasons
- Share the work – make it fun and participatory
- SHARE WHAT YOU LEARN
- Document everything - it will become the baseline against which you evaluate your management plan
- You will never know everything so don't wait for perfect knowledge before writing your management plan

This Advisory Note has been prepared for Llais y Goedwig by Jenny Wong of Coetir Mynydd based on a presentation prepared for the Summer 2010 Woodland Management Roadshow.

Llais y Goedwig is a voluntary association of community woodland groups that formed in November 2009 to provide a voice for community woodlands. We want to share experiences, support each other and enhance local woodlands to benefit the people of Wales. These are a growing series of Advisory Notes that focus on different aspects that we hope will be useful to our members and others interested in community woodlands in Wales.

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The myForest service promotes sustainable woodland management by providing online tools for woodland managers and businesses

#### Own or manage a woodland?

- map your woodland
- record an inventory
- create a management plan
- market your woodland products

