Natural Basingstoke

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Site Management for Biodiversity: Tools & Techniques

Marion Wolstencroft

Course Overview

- Course Lead: Marion Wolstencroft (Natural Basingstoke, Advisor Board member for Flora)

- Aim: Participants become confident in basic knowledge of:
  - **ecological terms and principles**
  - the purpose and content of **Site Management Plans**
  - the purpose and approach to **Site Surveying and Monitoring**

Course Content

Three Main Topics – all linked:

1. Talking Ecology – Some technical terms in Ecology and their relevance to conservation volunteer groups

2. Site Management Plans - Essential content of all good Site Management Plans

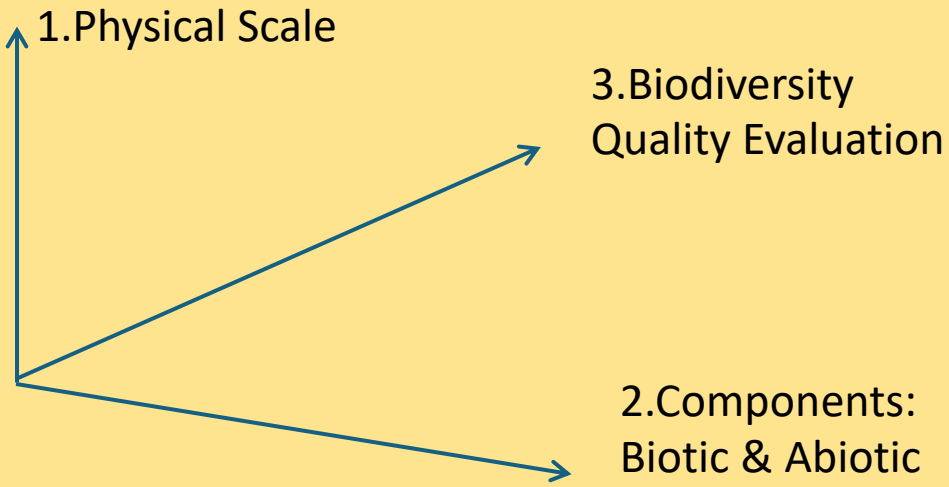
3. Site Surveying and Monitoring – Understanding what is happening on your site in the short and medium term

- Relationship between this course and May 2025 session on Flora Surveying, Seed Collecting and Seeding for Biodiversity.
- Reference material for this course and 2025 seed course is being combined to avoid duplication or confusion and will be available online.

1. Talking Ecology

Open University FREE Open Learning course on "Environment, Ecology and Ecosystems":
https://www.open.edu/openlearn/nature-environment/environmental-studies/introducing-the-environment-ecology-and-ecosystems/

1. Talking Ecology - the dimensions



1.1 The scale - Terminology

Biome – large geographic region with distinct climate and characteristic plant and animal communities

Ecosystem - the living and non-living components of an environment – i.e. including water, temperature, light level, soil etc.

Habitats & habitat type – the physical features and all the living organisms in a particular area that interact with each other

Organisms- single living species of plant, animal or micro-organism

1.2 The Ecosystem Components: Living and non-living

The 10 primary categories:

A – Woodland and scrub
B – Grassland and marsh
C – Tall herb and fen
D – Heathland
E – Mire
F – Swamp, marginal and inundation
G – Open water
H – Coastland
I – Exposure and waste
J – Miscellaneous

Set out in **UK Habitat Classification (UK Hab) System** produced by Joint Nature Conservation Committee

The full list of 55 lowland habitats:

A1	Woodland
A1.1	Broadleaved woodland - semi-natural
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2	Coniferous woodland
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3	Mixed woodland
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2	**Scrub**
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered

B	**Grassland and marsh**
B1	Acid grassland
B1.1	Acid grassland - unimproved
B1.2	Acid grassland - semi-improved
B2	Neutral grassland
B2.1	Neutral grassland - unimproved
B2.2	Neutral grassland - semi-improved

J2	**Misc. -Hedges**
J2.1.1	Intact hedge - native species-rich
J2.1.2	Intact hedge - species-poor
J2.3	Hedge with trees

1.3 Quality and Rarity of Nature Legislation & Planning (1)

SSSIs

- Since 1981 focus on rare and disappearing high quality green spaces has been concentrated on SSSIs (national designation set by Natural England, Scotland etc.)
- SSSIs comprise over 1 million hectares or 8% of total land area in England
- Aim is protection from encroachment and deterioration
- But ....water bodies in particular suffering from externally generated pollution not easily controlled and issues with management funding.

LNRs and SINCs

- A county level/district level designation, set by 'responsible authorities' (e.g.: HCC)
- Covers a further 9% of land area
- Much less comprehensively protected from degradation.

1.3 Quality and Rarity of Nature Legislation & Planning (2)

Section 41 Species of Principal Importance (Natural Environment & Rural Communities Act 2006)

- Formerly known as UK Biodiversity Action Plan (BAP) Species
- Includes habitats
- Operated locally at county level.

Legislation providing classification and protection of green spaces was overhauled again by the **Environment Act 2021**:

- development of **Local Nature Recovery Strategy (LNRS)**
- introducing the concept of **Biodiversity Net Gain**.

Biodiversity is now the buzzword of the decade……

1.4 Planning, Legislation & Nature

Legislation is continuing to evolve, and Local Authority action is guided by that legislation:

- Biodiversity Duty under Environment Act – led to Biodiversity Strategy in Basingstoke District
- Local Nature Recovery Strategy (at county level) - now a significant driver for Local Authority policy and action.
- Nature Restoration Fund & Environmental Delivery Plans (Planning & Infrastructure Act 2025) - now incentivises developers to fund large scale recovery plans rather than delivering on-site solutions.

Upcoming:

- Update to National Planning Policy Framework (NPPF) 2025 – Draft under consultation

1. Talking Ecology

Discussion: Comments and questions on terminology and legislation

Course Content

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1. Talking Ecology – Some technical terms in Ecology and their relevance to conservation volunteer groups

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3. Site Surveying and Monitoring – Understanding what is happening on your site in the short and medium term

2. Documenting Site Management Plans (2)

A Site Management Plan is not a historical document, read once, agreed and then stuck on a shelf, it is the dynamic recording of a process

- **Long term aims and strategy**
  - starting point
  - aims and actions
  - periodic reviews and feedback
- **Short & medium term - coordination of resources**
  - annual coordination of action
  - alignment of resource from all contributors
- **Projects, and results evaluation**
  - development of improvement projects
  - evaluation of results of management actions
  - sharing the facts with the landowner and the community

2.1 Long term aims and strategy (1)

- **Aims of site management, start date and major review cycle -** Normally a 5-year review cycle (many old site plans had 10-year review cycles which groups found did not work for them).
- **Site definitions and facilities -** Do not change much and are best recorded on a site map for quick reference: boundaries, paths, access etc. plus any topographical context and relevant historical data.
- **Defining habitat areas** – Following the habitat type (UK Hab) coding for the first 3 digits and a unique assigned number which ensures that each distinct habitat area can be referenced separately for management and work planning purposes.
- **Managing habitat areas -** indicating, for each habitat area identified above, how each area is to be managed, on what length of cycle (annual, biennial, etc.) and by whom, with the resource implications.

2.1 Long term aims and strategy (2)

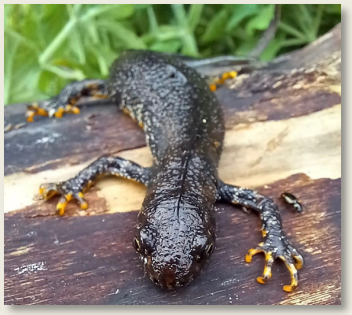
- **Biodiversity monitoring strategy –** indicating the techniques best used to capture a range of data and the periods over which data has been recorded or is expected to be recorded, enabling biodiversity trend analysis.

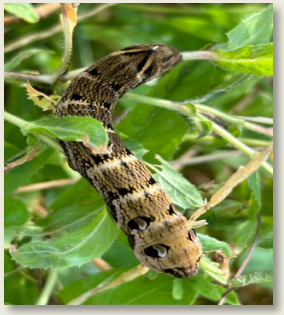
- **Biodiversity database -** both baseline data from initial surveys and periodic results of other surveys of flora and fauna.

- **History of site management –** for the record…

Having introduced the concepts of recording the ongoing site management process and its aims you will find further details in Appendices A and B.





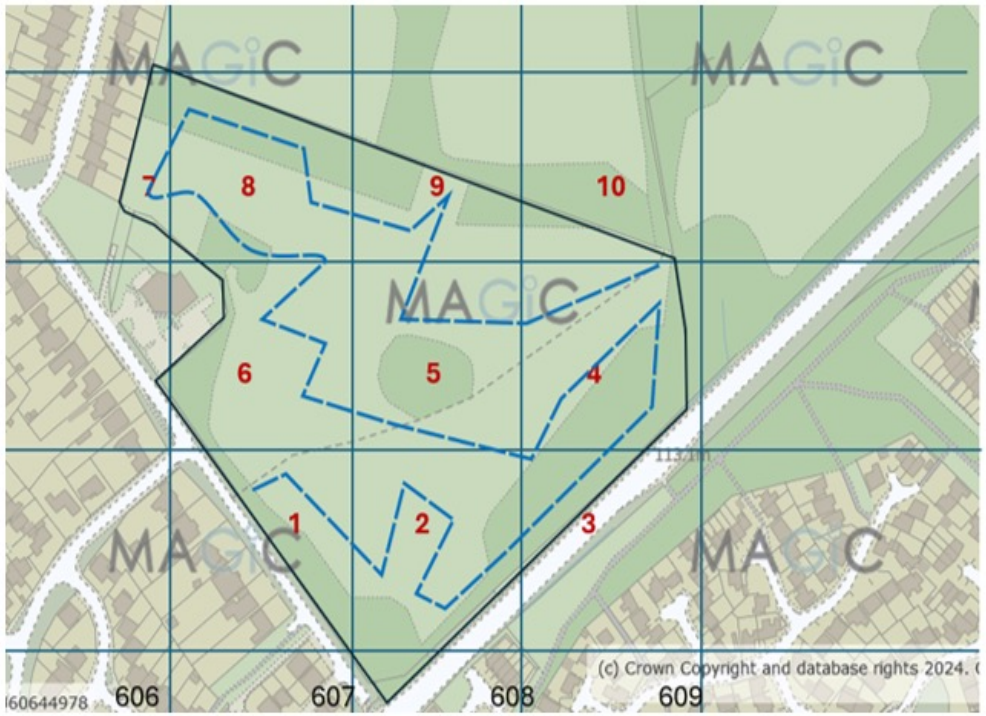


2.1.1 Site Maps:
Basic tool for data sharing, planning and data capture

In Site Management and in Site Surveying & Monitoring a key tool is a site map:

- We looked at site maps in the May ‘25 course on flora and seed collecting.
- A good site map is the basis for recording and sharing site management information, on habitat areas, mowing regimes, surveying strategy, species distribution data and much more.

Example: Down Grange Meadow site map



SECTOR	1	2	3	4	5	6	7	8	9	10
Centroid Grid Ref	SU6065 4965	SU6075 4965	SU6085 4965	SU6085 4975	SU6075 4975	SU6065 4975	SU6055 4985	SU6065 4985	SU6075 4985	SU6085 4985

2.2 Short and Medium Term: Implementation, review & development (1)

Annual Review:

- Programme of annual site visits with Rangers, resulting in annual Work Plans
- Should sit **within the Framework of a Site Management Plan**
- Focused on key habitats and species
- Sets priorities, allocates resources, timetables activities

Periodic Site Management Plan Review - the questions to be answered in 5-year reviews:

- Has the original plan been implemented?
  -what was added, or not implemented, or only partly implemented?
- What is the result?
- What changes for the next 5 years?
  - objectives added, deleted or changed; management actions added, deleted or changed; Resources and timeframe amendments

2.2 Short and Medium Term: Implementation, review & development (2)

BUT!!

- Many sites currently have no site management plan, aged or incomplete plans
- There will be a programme to progressively produce up to date Site Management Plans

2.3 Projects and Results evaluation

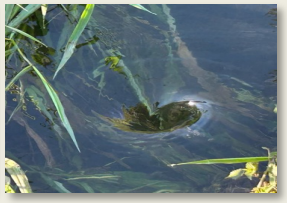
Managing for increased biodiversity

- what does that mean?
- what are the inputs?
- what results are you aiming for?

The timescale for project preparation, operation, evaluation

Trends in biodiversity - collecting and evaluating the data

- how do you know you are making a difference?
- how do you measure causes and effects?
- BDBC annual species surveys are first step in measuring impact.


2. Site Management Plans

Discussion: Comments and questions on Site Management Plans

Course Content

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3. Site Surveying and Monitoring
Why and how?

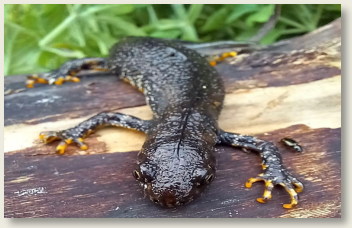
Why?

- to inform better site management by yourselves and the Ranger team
- to evidence the progress of biodiversity for the community, service providers & policy makers
- so that you can answer the question – what lives on your site, what is rare and why, what is missing and why?

How?

- gathering of comparable data over a number of years
- accumulation of data in a shared database (iRecord data within HBIC)
- data analysis over time and across sites to demonstrate what is really happening and sharing data trends





3. Site Surveying and Monitoring
What?

Monitoring general ecological health can be done in several ways:

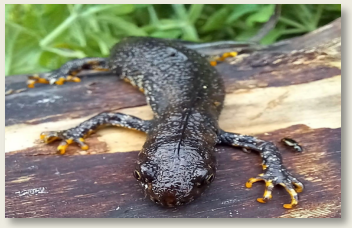
- General habitat assessment:
  - grasslands - Rapid Grassland Assessment
  - water habitats - water quality testing
  - woodlands - vegetation structure & ancient woodland indicators
  - soil - quality testing (carbon levels, nutrient monitoring)

- Indicator Species Surveying (as a 'proxy' for wider ecological health)

All involve the basic survey processes.....

Data Gathering, Data Accumulation & Data Analysis





3.1 Data Gathering, Data Accumulation, Data Analysis: Example – Flora surveys

Maps are the basic starting point in Surveying and Monitoring – a site map showing the grid refencing for the area and identifying the centre point of each reference square (the centroid).

Survey data capture decisions:

- What species or species range are you focused on? One small group or a whole category of flora?
- How large an area are you surveying? One section or the whole site?

The answers to these questions determine whether you can do a simple census count or need to use a sampling technique.

Several ways of sampling to arrive at representative data for the whole area – aggregated observation by several people or quadrat analysis of sample patches of the area - scored as a DAFOR code for each species identified.

This is considerably more time consuming than a simple census of one species and not described in detail here. The best way of learning to do that is in the field, in practice, and there will be several opportunities to do that this summer across several sites.

3.3 Data Gathering, Data Accumulation, Data Analysis

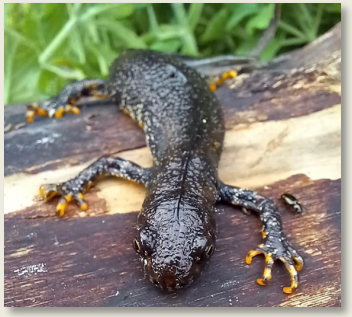
We have the ability to accumulate, store and share data as never before

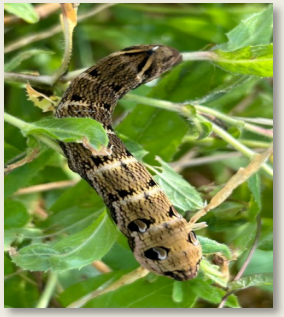
- Vehicle for collecting that data is **iRecord**, universally available across the UK and easy to use as a single species report or an uploaded spread-sheet of data from a survey

- The data repository for Hampshire is kept by **HBIC** (Hampshire Biodiversity Information Centre) based in Winchester …

What we need now is the basic data, collected at source, to start building the picture of biodiversity as we find it, identify it and report it.

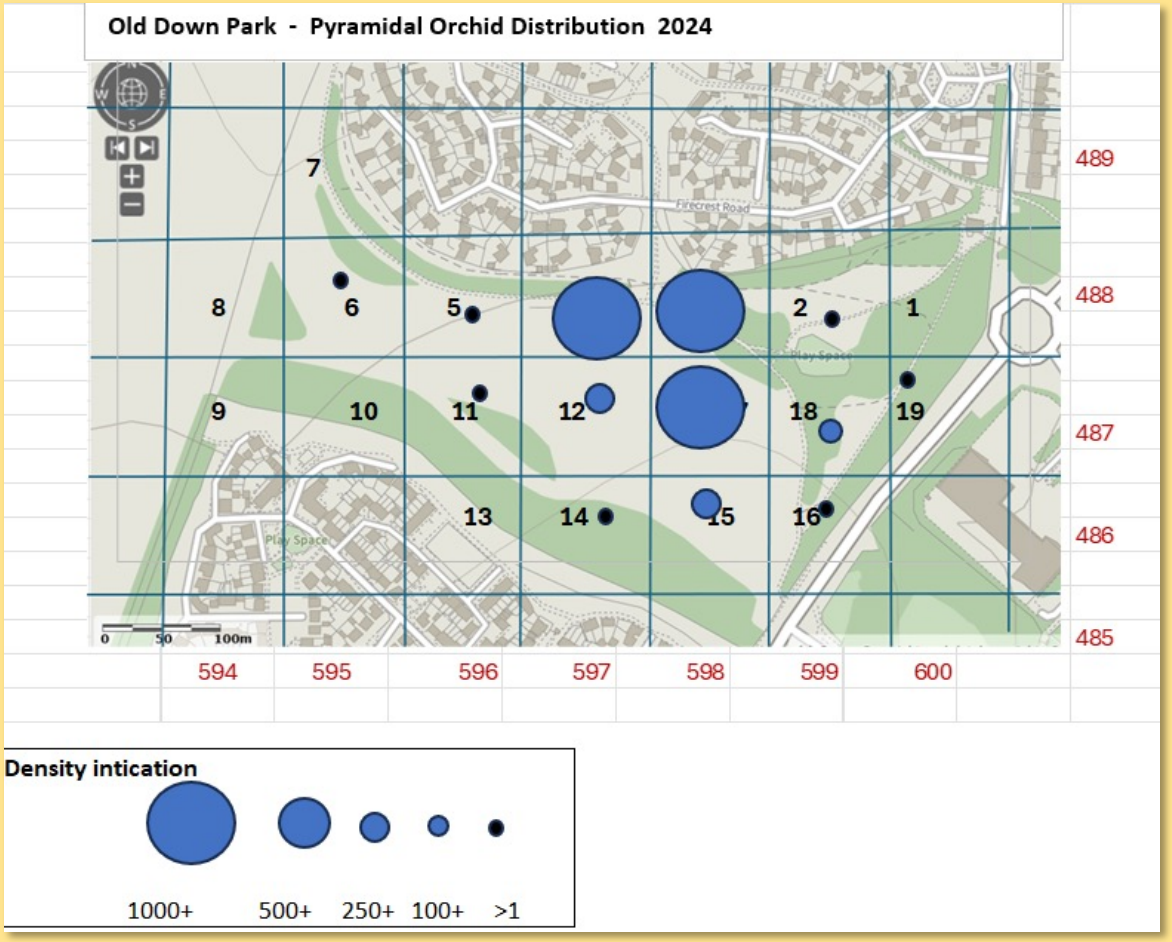






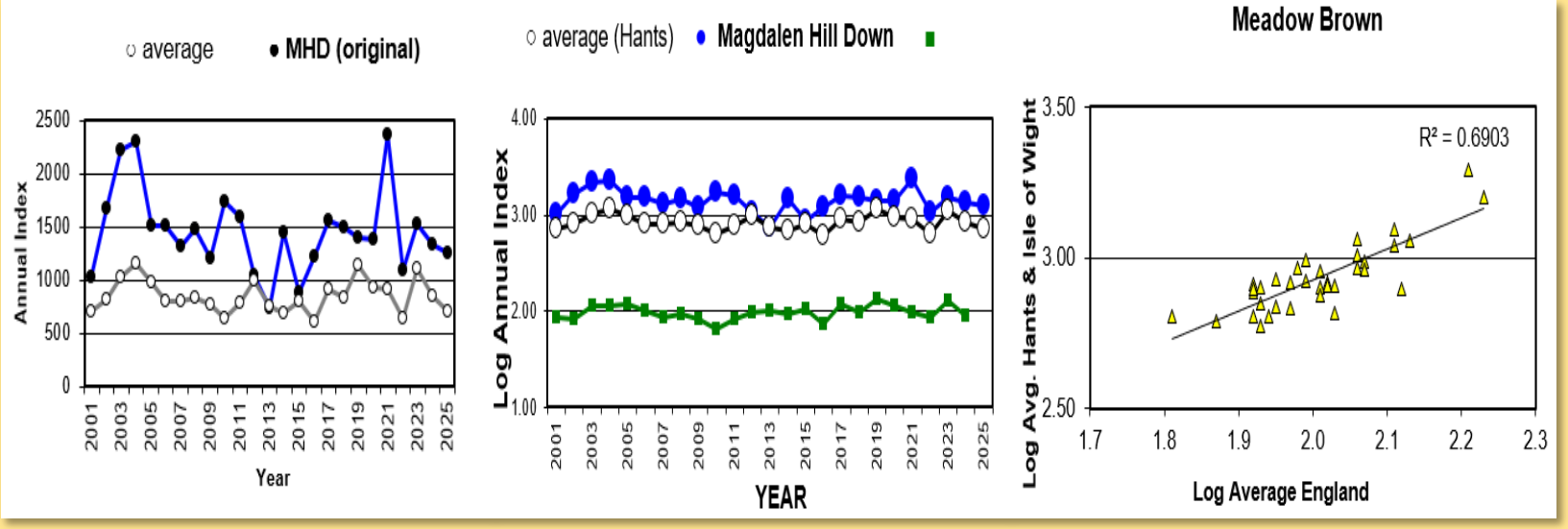
3.3 Data Gathering, Data Accumulation, Data Analysis (to inform management action): Example - Flora

The results of the 2024 pyramidal orchid census on Old Down Park illustrated graphically - over 5000 orchids counted.



3.3 Data Gathering, Data Accumulation, Data Analysis (across sites & across time): Example – Butterflies

- Butterfly Conservation receive huge amounts of transect data for the whole of the UK and can undertake sophisticated analysis of long-term trends....



3. Site Surveying and Monitoring

Discussion: Comments and questions on site surveying and monitoring

Next Steps

On Your site:

- Habitat and species knowledge
- Habitat management knowledge and skills
- Site surveying programme and skills
- Biodiversity improvement discussions
- Species specific actions – e.g. Seed collecting '26

Natural Basingstoke contribution and support:

- Tools
- Training
- Resources (£ and people).....

Coming soon:

- Site Management Plans – format for updated plans being agreed with BDBC
- Meadow Management & Surveying Training Course (5th June)
- HWNG Community Event – Pollinator Survey Training (16th May)
- Woodland Management Course being investigated

What else would help?




Natural Basingstoke

Site Management for Biodiversity: Tools & Techniques

Appendices

Appendix A : Site Management Plans – Notes 1

Check list of contents

- **Cover** - **Title of plan [“Site Management Plan – ‘*name of site*”]**, Logos (BDBC, NB, conservation group), configuration control (issue date/ version no.), name of conservation group, picture of site
- **Introduction** - Index, site definition, high level purpose of the plan, start date and duration of the plan, site designation (LNR, SINC etc.), site location **-** geographical location of site (inc map, grid refs/ W3W)
- **Site Description** - Ownership, size, facilities, boundaries (location, type, and maintenance/ ownership), site users
- Terrain/ Topology/ Geology/ Soils / Hydrology/ History (land use, conservation)
- Other important facets (heritage, archaeology....)
- Policy context (relationship to LNRS, Rights of Rivers, River Catchments etc.)
- Detailed map/ plan of the site, showing: Key features, entrances & pathways
- Entrance W3W/ grid references, overview of habitat types, full protected species list
- Location of additional supporting documents.
- **Defining Habitat Areas** **-** Map and detail of habitat sections (chalk downland, ancient woodland, etc....), classification (inc habitat area/ size)
- Key species (Protected species/ BAP species, etc)

Appendix A : Site Management Plans – Notes 2

Check list of contents (continued)

- Current condition/ Risks (inc. invasive species, habitat fragmentation, hydrological issues), and restoration opportunities.
- **High level objectives & management approach -** management objectives and biodiversity goals for habitat/ species .
- **Managing Habitat areas -** For each habitat area (chalk downland, ancient woodland, etc....) management objectives and biodiversity goals (inc. conservation, monitoring and enhancement)
- Schedule of conservation activity (considering habitat size), including frequency for completion of all sections, assessment of the annual operational 'burden' this presents and realism check.
- Repeating annual maintenance actions & Seasonal Task Plan (including delivery model/ ownership – roles & responsibilities), incl. mowing , coppicing and seed sowing.
- **Projects** (nature restoration, inc S106 opportunities)
- **Monitoring** Measurement of conservation outcomes- for habitats (indicators and frequency, species surveying (indicators and frequency), submission to HBIC etc.
- corrective action, annual review of outcomes , review of rolling conservation plan (10, & 5-year objectives).
- **Links to survey data.**

Appendix B: Surveying Resources

Useful resources for surveying:

- Joint Nature Conservation Committee guidance: https://jncc.gov.uk/our-work/citizen-science-survey-methods-and-tools/
  Overview leading to specific surveying opportunities and techniques

- BDBC species survey methodologies;
  - Covering: Bats, Lepidoptera (butterflies and moths), Herpetofauna (reptiles only) - Copies available on request.
  - Historic surveys: Dormice, Hellebores

Note: Protected Species can only be handled by trained/ licensed individuals (e.g. Great Crested Newt, Hazel Dormouse, bats). Licensed volunteers:

- Great Crested Newt – Alan Wilkinson
- Hazel Dormouse – Jim Andrews