Centre for Environmental Data and Recording
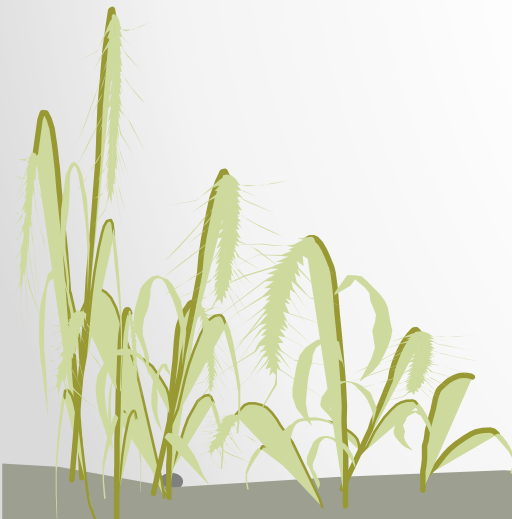
Pauline Campbell

CEDaR Database Officer
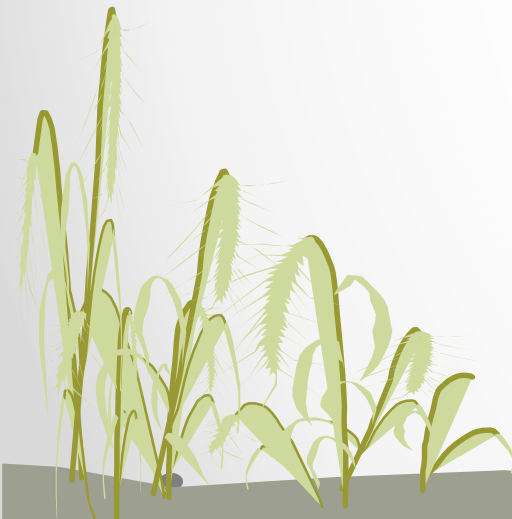
NPMS Partners

Purpose of NPMS

- Not to be confused with NBDC's Plant Monitoring Scheme. NPMS covers **GB and Northern Ireland**.

- The National Plant Monitoring Scheme (NPMS) is a new **long term monitoring** scheme designed to collect data to provide an annual indication of **changes in habitats** by looking at **plant abundance and diversity**.

- Launched **2015**

- NPMS is a **citizen science based project**

How the scheme operates

- The aim of the NPMS is to be <u>simple, repeatable and attractive to volunteers</u>

- It offers <u>three levels</u> of survey: Wildflower, Indicator and Inventory.

- Allows the <u>reporting of species' trends, and changes</u> in the quality of semi-natural habitats.

- Surveyors record the presence and <u>abundance</u> of plant species in 5 plots (most either 5x5m or 1x25m) within a sample of 1 km squares ('monads').

- Plots are located in the majority of terrestrial <u>semi-natural habitat</u>. Improved grassland and agricultural land is not in the scheme.
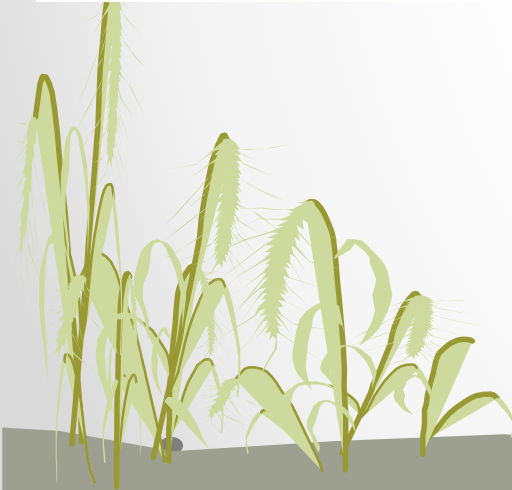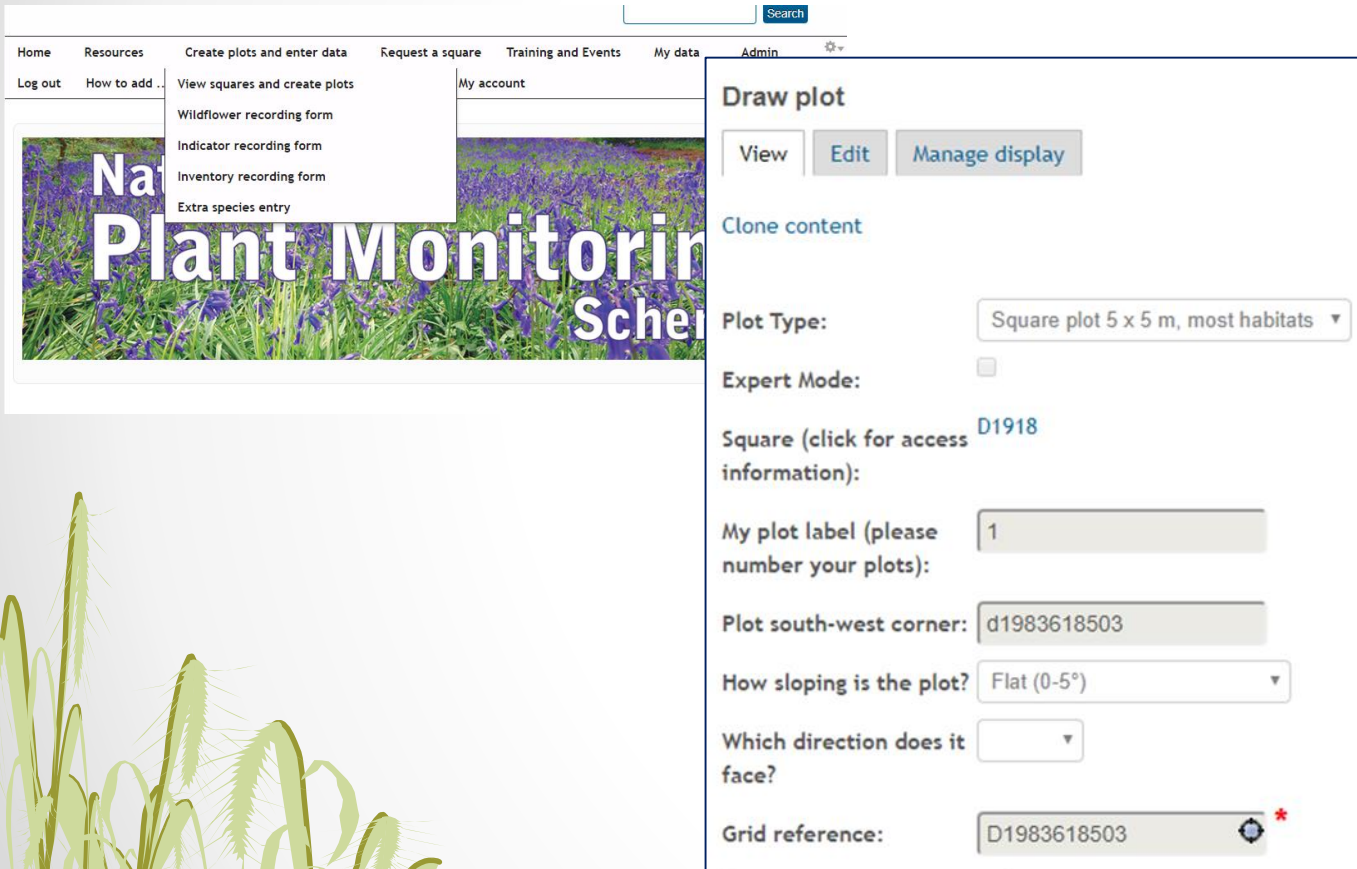
Design

- The NPMS stratified-random selection is weighted towards **monads with a higher cover of semi-natural habitat** (based on existing inventories such as the CEH Land Cover Map).

- For each square, you will receive a map with broad habitats identified

- NPMS calculates areas of each broad habitat being monitored in each monad and adds them to a collective total area for that particular habitat

- The species on the indicator list have been selected as either positive or negative indicators 'Nationally'

- These species are drawn from inventory monitoring data

- Species that are likely to be confused or misidentified were excluded, or in a few cases aggregated (e.g. Arctium minus/nemorosum)
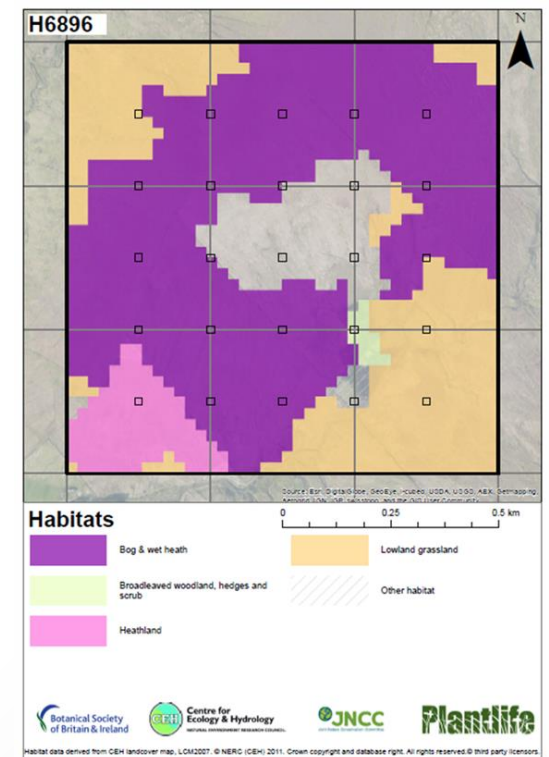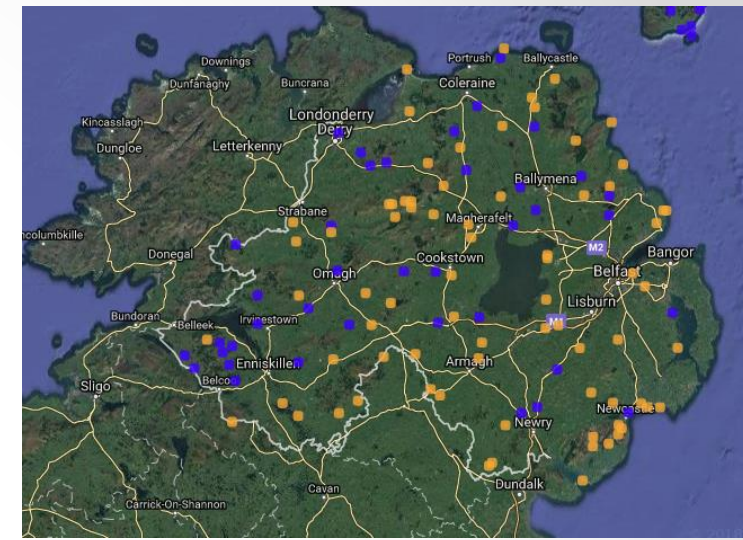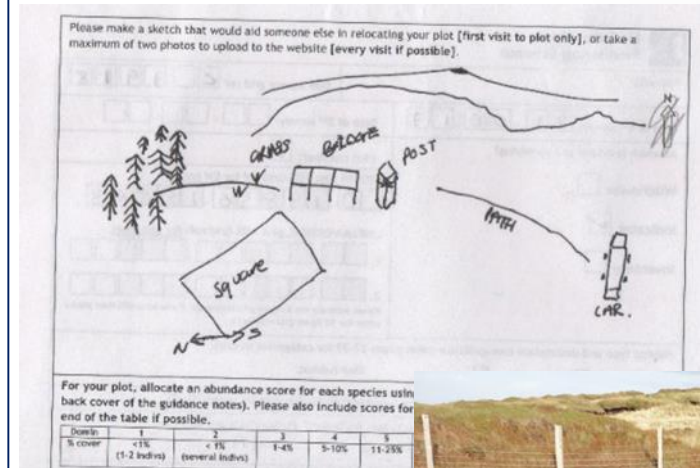
NPMS Data Management

- Data is entered via NPMS online system. Firstly, you will enter details about your plots, upload directions/sketches and photos.

- Then you can select this plot and add data against it.

- This system is iRecord based and will hook into the network of iRecord verifiers, locally and nationally.

NPMS Data Management

- Once the data has been verified, it can be downloaded, shared and will be sent to NBN Atlas.

- Ideally data needs to be collected for 10 years to produce robust trend analysis, but the models being used now can produce some results in shorter terms.

A non-hierarchical linear model was proposed by Walker et al. (2010) for interval-censored cover data. We assume that the unknown percentage cover at site j in year i is expressed as a proportion pij and is observed only to lie within the interval (lij, uij) where lij ≥ 0 and uij ≤ 1. We then assume the logit-transformed proportion is normally distributed: Eqn 3 $logit(pij) = log\ [\ pij\ 1- pij] \sim N(\mu i\ ,\ \sigma 2\ )$ Then the probability of an observation lying within (lij, uij) is simply $\Phi(Uij) - \Phi(Lij)$ where $\Phi(.)$ is the cumulative distribution function of a normal distribution and Uij and Lij are respectively equal to logit(uij) and logit(lij). Finally, to account for change over time, we define the expected coverage in year i via $\mu i = \alpha + \beta Yeari$ with α and β additional parameters to be estimated.
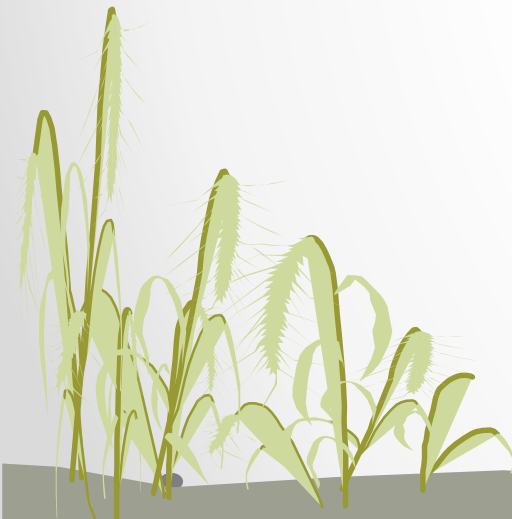
Training Courses

CEDaR have developed a *Species Identification Training Course Programme*. Courses encourage recording, or provide additional training to support recording schemes such as the National Plant Monitoring Scheme.

Bryophytes Training Course, Tattynure.

Aquatic Plants Training Course, Portmore Lough.

MAKING PLANTS COUNT

Early-purple Orchids, among other plants, in a woodland habitat. Richard Revels

Kevin Walker, Oliver Pescott, Felicity Harris, Christine Cheffings, Hayley New, Niki Bunch and David Roy

A new National Plant Monitoring Scheme for the United Kingdom has been launched. Here, the authors explain why it is necessary, and what it can achieve.

Central to the design of the NPMS, will be its capacity to track both positive and negative changes in habitat quality, including those from unpredicted drivers that come to light in the future.

Pauline Campbell
CEDaR Database Officer

pauline.campbell@nmni.com

http://www.npms.org.uk/