**ParrotNet Workshop, Canterbury, UK, September 11th-12th 2014**

**Title:** Systematic Review Workshop

**Venue:** Grimond Seminar Room 1, University of Kent, UK

**Organisers:** Dr Assaf Shwartz, Dr Zoe Davies

**Annotated agenda and workshop minutes**

Attending participants:

Jim Groombridge (UK), Simon Tollington (UK), Zoe Davies (UK), Dave Leech (UK), Hazel Jackson (UK), James Taylor (UK), Debbie Fogell (UK), Tristan Pett (UK), Wolfgang Nentwig (Switzerland), Diederik Strubbe (Belgium), Bram D'hondt (Belgium), Alvaro Luna (Spain), Dailos Hernandez (Spain), Luis Reino (Portugal), Assaf Shwartz (Israel), Maya Tzunz (Israel)

Apologies:

Tim Blackburn (UK), Francois Chiron (FR)

**Topics covered**

The meeting included a review of the concept of systematic reviews and existing frameworks for assessing impacts of alien species in order to assist in consolidation of guidelines necessary for creating a protocol for conducting a systematic review to assess the impacts of parrots in Europe. Those topics were presented and discussed during the first day and the following day was dedicated for taking decisions on the framework that will be adopted in this systematic review.

**The concept of systematic review (Zoe Davis)**

One of ParrotNet's objectives is estimating what influence invasive parakeets have on our lives, considering both social perceptions and physical aspects such as disease transmission or agricultural damage. Systematic review is an excellent tool to achieve these goals, because it aspires to present a comprehensive, unbiased image of all current findings on the topic of focus. This is done by creating a search protocol, specifically defining questions and terms to be included, and criteria by which results are filtered. The protocol is then published for comments and review to assure its accordance with declared search objectives.

Once the protocol is complete and approved, a search is carried out. The information found is then examined, reviewed, and synthesized into a final published review.

The workshop aimed to create guidelines and allow progress towards design of a protocol of the ParrotNet systematic review.

**GISS - Generic Impact Scoring System (Wolfgang Nentwig)**

Designed for the creation of an objective risk assessment, this framework relies on published scientific literature. Expert opinions, extrapolations and estimations are excluded, and therefore questions regarding probabilities or future scenarios are not addressed.

Each species is given a score based on the intensity of its impact (scaled 1-5, or 0 if no impact is detected or unknown). Two possible fields of influence were defined, economic and environmental, and within each six additional subcategories (e.g., completion, predation, impact on agriculture). Such calculation for each examined species allows a definite ranking of the extent of their impact, regardless of them possibly belonging to different phyla.

**Harmonia+ (Bram D'hondt)**

Using a detailed questionnaire, this risk assessment scheme for potentially invasive species allows experts to share their knowledge regarding a specific species at a defined spatial extent, as well as indicating their level of certainty in regards to their answers.

The questionnaire comprises a series of 30 questions, grouped in modules by the different stages of invasion. Using predefined weights and calculation algorithms, answers are processed into scores for each species at stake, enabling a user to compare different species by their final scores.

In order to convert the answers into quantitative indications, a few decisions have to be made prior to filling in the questionnaire: which modules (stages of invasion) are relevant to the matter at stake, what weights should be given to different domains of impact (e.g., should mild damage to infrastructure receive the same weight as mild damage to human health) and what are the mathematical guidelines for calculating scores (e.g., can a species with a great environmental impact receive the highest score, or must it also have an impact on human health).

**On overview of the four main impact risk assessments: Unified Classification, Harmonia+ NAPRA and GISS (Diederik Strubbe)**

The four main frameworks were presented in a comparative manner. The advantages and shortcomings of each of the frameworks were discussed in light of the objectives of WG1.

**Accepted guidelines**

* The objective of the systematic review is to map the evidence on the impacts of parrots and highlight knowledge gaps.
* We will be working to create an impact assessment, as opposed to a risk assessment. Positive impacts, therefore, will be reviewed as well as negative impacts.
* We will adopt a holistic approach, distinguishing between 3 situations: existing information indicating an impact, existing information indicating no impact, and a knowledge gap – no existing information.
* The review will relate to all species of invasive parrots in Europe defined as "established" by DAISIE, 14 species in total.
* We will be reviewing impacts at a global scale (i.e. in other invaded regions outside Europe as well), and findings will be classified as "European" or "Global".
* Any data on the abundance or density of the species will be collected from published literature that deals with impact. However, no special attempt will be made to search for this data, as this will be done by WGs 2 & 3. On a later stage we could use the outputs from WG 3 to assess the scale of impact (but this is not the objective of the systematic review).
* Work will be divided by building blocks, defined using the GISS categories and Harmonia+ domains:
  + Environmental impacts will include:
    - Impacts on plants or vegetation (herbivory)
    - Impacts on animals (predation, parasitism)
    - Impacts on species through competition
    - Impacts through transmission of diseases (pathogens, parasites)
    - Impacts through hybridization
    - Impacts on ecosystem
  + Plant health impacts will include:
    - Impacts on agriculture
    - Impacts on forestry
  + Animal health impacts will include:
    - Impacts on animal production
  + Human health impacts will include:
    - Impacts on human health
    - Impacts on human social life
  + Impacts on infrastructure will include:
    - Impacts on human infrastructure
* Searches will be divided by the abovementioned categories. Each category will be given to a work team and be searched for separately, by terms and phrases set by the team.
* Results in foreign languages can be first translated using Google Translate, for a quick review of the title and abstract. Should they appear relevant, we will ask for assistance from a ParrotNet member who is a native speaker.
* Information will be gathered both on islands and on mainlands, locations on which the species are invasive.
* Search main guidelines:
  + To obtain results as relevant as possible, searches will be defined to retrieve PDF, word and power point files, originating from the following only:
    - Published science
    - Governmental publications
    - NGOs
    - Bachelor/Master Theses
  + An independent search will be conducted for information from predefined NGOs.
* The review will aim to include dissertations, reports, as well as peer reviewed publications and policy briefs.

**Matters still to be discussed**

Results will be divided into several categories in regards to the type/quality of their research methods; for instance, "mechanistic", "correlative", "counterfactual", etc. The exact relevant framework for research quality will be decided on at later stages, perhaps within each of the small working groups that will cover the different components of impacts.

**Upcoming steps**

* Regarding existing information about frameworks for invasive parrots, Wolfgang and Diederik will accordingly send Hazel a list of relevant research and publications of the Belgium, Dutch and German governments. Hazel will then upload these to a joint Google Drive.
* Zoe will start working on writing up a draft protocol, which will be sent to workshop attendees for comments prior to the ParrotNet meeting in Seville.