# Field Trip Reports

As soon as a monitoring trip has been completed, use shared R scripts to create a Word document that gives a standard descriptive overview of the survey results that can be used:

* By the Ecologist to identify certain types of errors in the data and correct them in the central database while the survey is fresh in mind (also identify errors in historic data can fix if possible).
* By the Ecologist to get a simple overview of the monitoring data for the reserve relatively easily, providing a springboard (and freeing up time) for more detailed statistical analysis that can’t be done in a one-size-fits-all generic script (questions may vary, assumptions and fit of statistical models need to be individually checked, etc).
* To share with Reserve Managers and interested volunteers (after correcting errors and re-creating the report). Could potentially add photos😊. The idea is for the report to be accessible to a wide audience, even though it does have some technical information. We can work on improving clarity for a broad audience (eg some info could be moved to the Appendix) or individual ecologists can delete parts they think aren’t useful.

# About the Bird Field Trip Report

Monitoring on Bush Heritage reserve is generally designed to evaluate i) the status of our Conservation Targets (usually vegetation type) and/or ii) the impact of our management actions.

The field trip report therefore groups results by either conservation targets or management zone, when the user specifies which stratification variable they want to use, and makes sure that the status of each survey site is specified in the Site data (see instructions below and in script for more detail).

The bird field trip report assumes that survey data collected into the central database via Survey123 is available for BirdLife 20min/2ha surveys. Optionally, the report can also include external birdlife survey data in a separate spreadsheet and bird minutes survey data. Both of these additional types of data are available for the example case, Charles Darwin Reserve (DARW). Note that external birdlife survey data must be formatted in exactly the same way as the Analysis Outputs for birdlife surveys (create a different version of parent ID to identify unique surveys eg by concatenating site-datetime-observer, see example case in DARW Data subfolder).

Focal bird species (eg threatened species, or threats such as miners) and focal functional groups could be included by specifying the species/group of interest and adding import of a species list with functional group status etc, but hasn’t been done yet.

Weather data is an option that could be included, but hasn’t yet (the more complexity, the more potential for things to break, so see how we go with the current levels of complexity).

# How to create a Bird Field Trip Report

You should have downloaded the program R, and the program R studio to your computer.

The first time you try this, skip step 6 (customising for your own purposes) and just create the report with the scripts as they are for the example case to make sure that works.

1. Download the shared code folder from the R code sharing space on sharepoint ([R code sharing](https://bushheritageaustralia.sharepoint.com/:f:/r/sites/SciCon/Shared%20Documents/Ecological%20data%20analysis/R%20code%20sharing?csf=1&web=1&e=LHmxcD)) to your onedrive/computer:
2. Create sub-folders for your reserve in the ‘Data’ and ‘Outputs’ subfolders, using BHAs standard 4-letter reserve code (see below if you’re not sure what it is).
3. In the ’Data’ subfolder you just created for your reserve, add data for your reserve downloaded from Sharepoint [Analysis outputs](https://bushheritageaustralia.sharepoint.com/:f:/r/sites/SciCon/Shared%20Documents/Ecological%20data%20analysis/Analysis%20outputs?csf=1&web=1&e=kDdlFY):
   1. Birdlife data for your reserve, select the .csv file with reserve code suffix from this folder: [M05.050 BirdLife Survey](https://bushheritageaustralia.sharepoint.com/:f:/r/sites/SciCon/Shared%20Documents/Ecological%20data%20analysis/Analysis%20outputs/M05.050%20BirdLife%20Survey?csf=1&web=1&e=q8qSEW)
   2. If present, Bird Minutes data for your reserve, in a subfolder of the birdlife survey folder above: [M05.040 Bird Minutes Survey](https://bushheritageaustralia.sharepoint.com/:f:/r/sites/SciCon/Shared%20Documents/Ecological%20data%20analysis/Analysis%20outputs/M05.050%20BirdLife%20Survey/M05.040%20Bird%20Minutes%20Survey?csf=1&web=1&e=8a7xU6)
   3. Site data for your reserve, select the .csv file with reserve code suffix from [Sites](https://bushheritageaustralia.sharepoint.com/:f:/r/sites/SciCon/Shared%20Documents/Ecological%20data%20analysis/Analysis%20outputs/Sites?csf=1&web=1&e=dpDA8U). **CHECK the TargetName** column has correct values e.g. none missing, for all the sites surveyed (fix if needed, keeping the column name the same, and ask Systems & Data team to update centrally). If you want to stratify by management, **ADD** **a new column called ‘Management’** and label each site with its designated management zone (e.g. Revegetated/Intact). If you are interested in the interaction between conservation targets and management, for the purposes of this descriptive summary, use the same ‘Management’ column (Revegetated Woodland/Intact Woodland/ Revegetated Heath/Intact Heath).
4. Open the R project file ‘Field trip report - Birds.Rproj’ (from within R Studio if needed).
5. Use File->Open File to open two R scripts in the R subfolder of the shared code folder: ‘Bird Field trip report base script.R’, ‘Bird Field trip report.R’
6. Read & follow the instructions at the start of the base script, eg specify details of the reserve and year, whether you want to stratify by conservation target or management etc. Save the changes.
7. *Compile* the script ‘Bird Field trip report.R’ (Ctrl+shift+K, or press the report icon in the left-most set of icons at the top of the script).
8. Cross your fingers and wait for the word doc report to open! The alert about links is because there is a hyperlinked table of contents at the start of the report (okay to accept).