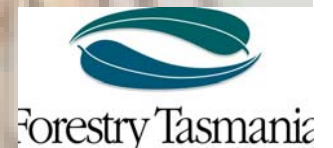


Early responses of bird assemblages to clearfelling and its alternatives at Warra, Tasmania.

*Paul Lefort,
Simon Grove,
Andrew Hingston,
Michael MacDonald,
Bill Brown.*

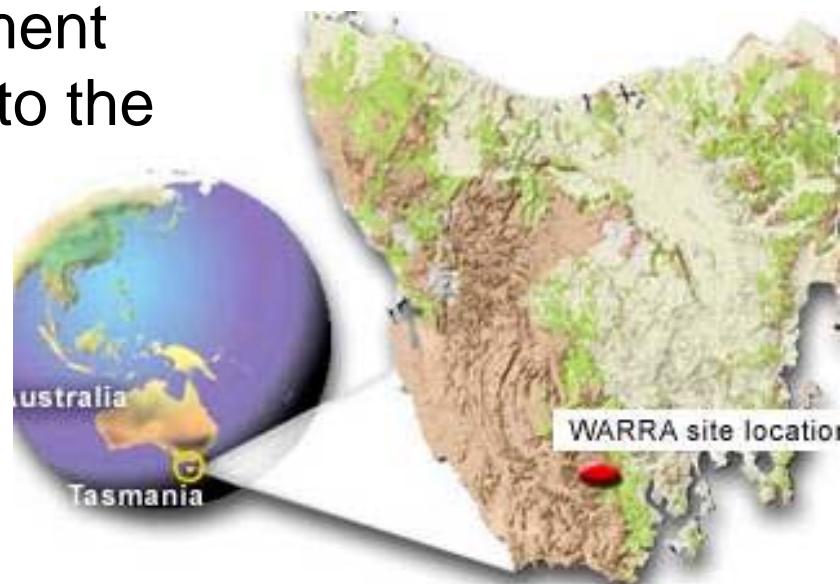


warra
LONG TERM ECOLOGICAL RESEARCH

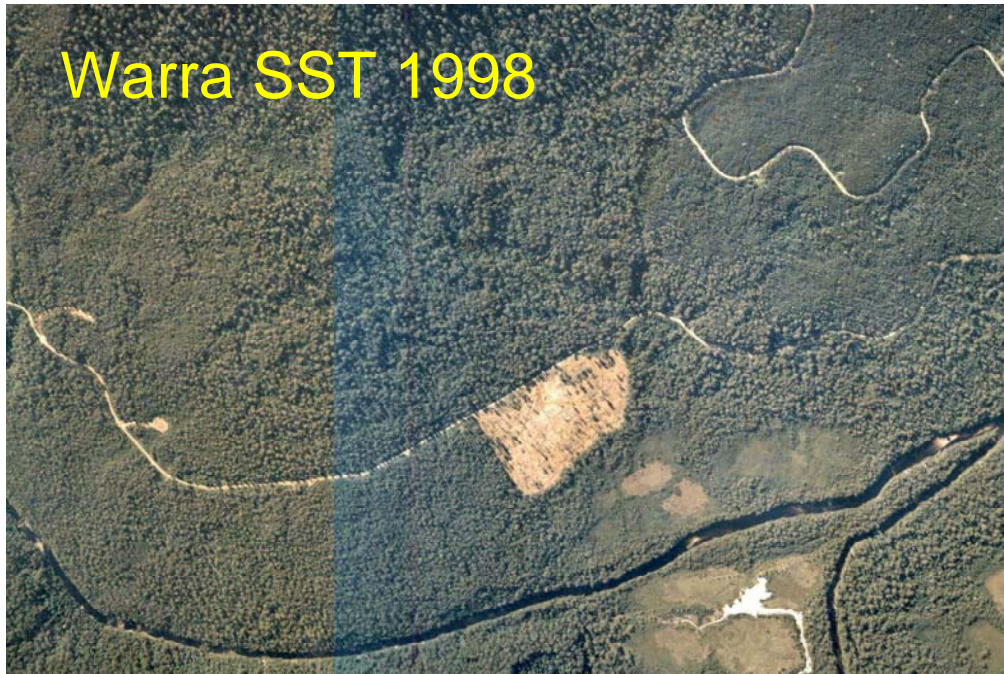


Why study birds at Warra?

- Since 1998 Forestry Tasmania (FT) has been conducting a silvicultural systems trial (SST) at Warra in Tasmania; the bird study is part of the ecological assessment of this trial
- Birds complement other groups being studied
- In 2005 the Tasmanian Government required FT to seek alternatives to the clearfell, burn and sow (CBS) logging method.



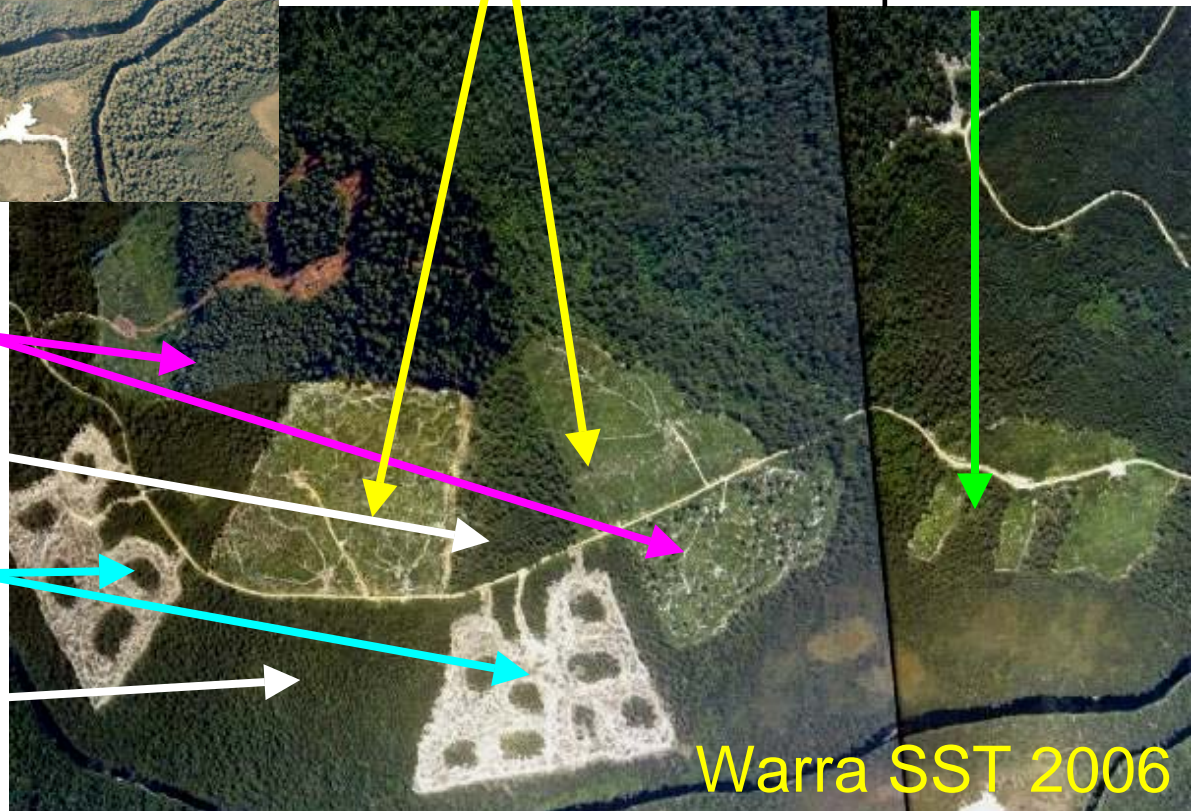
What is the Warra SST?



Warra SST 1998

Clearfell, burn & sow CBS

Stripfell STR



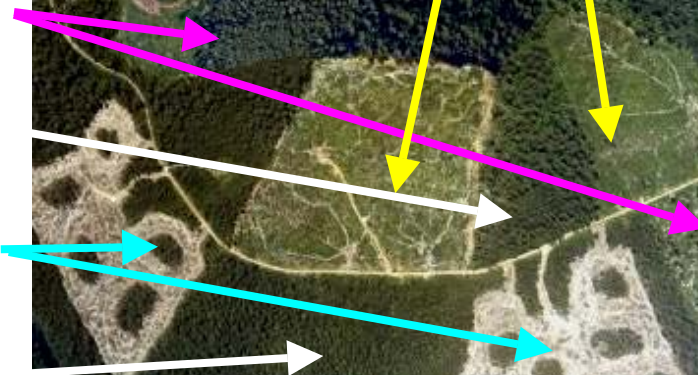
Warra SST 2006

Dispersed retention DRN

Corridor control CON

Aggregated retention ARN

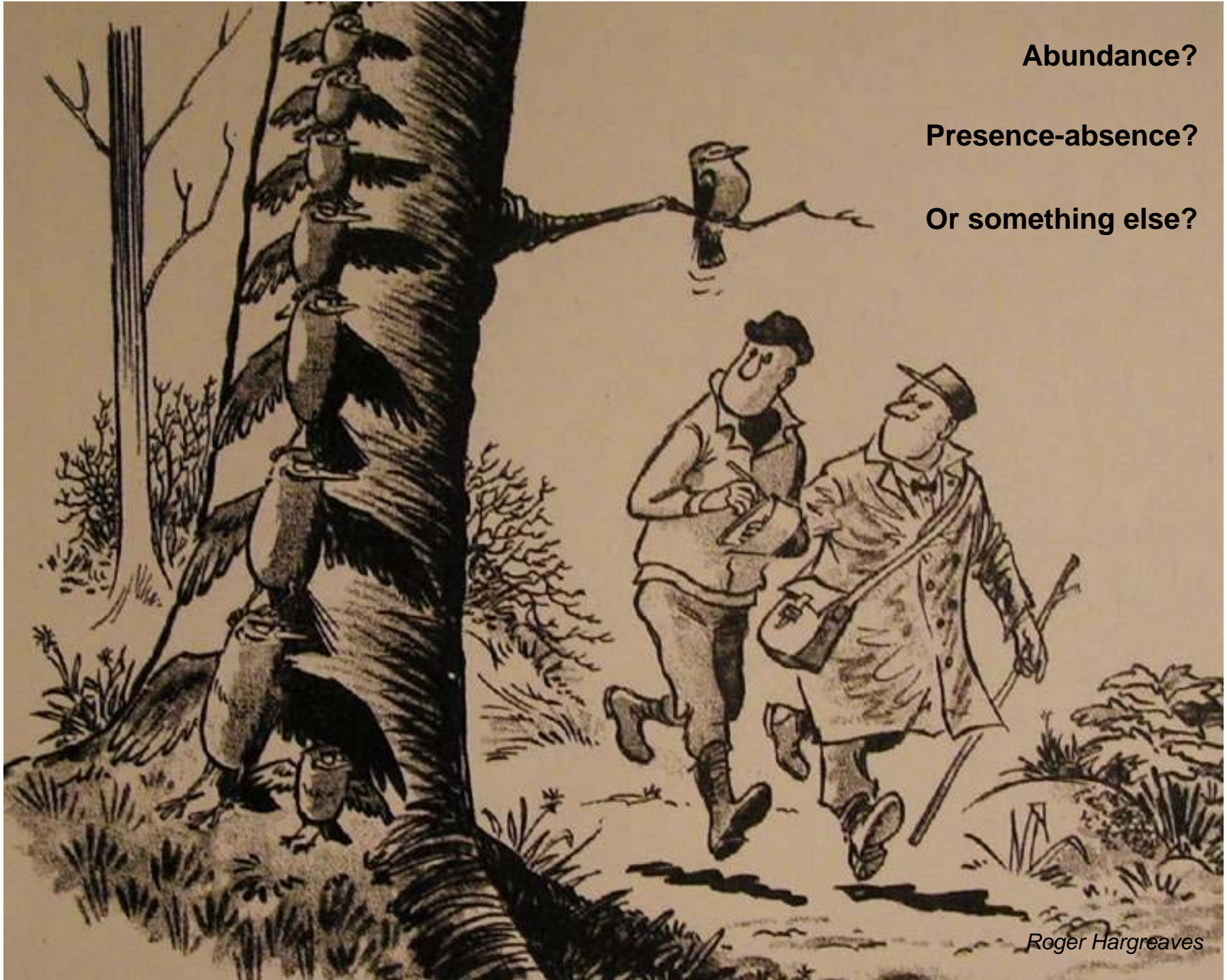
Mature forest control CON



Abundance?

Presence-absence?

Or something else?



Roger Hargreaves

Methodology

- Mean relative incidence
- 5 minute point counts, 25m radius, approx 1 per ha, repeated 7 times in each surveying season (spring)
- a “B.A.C.I.” design



Analysis so far...

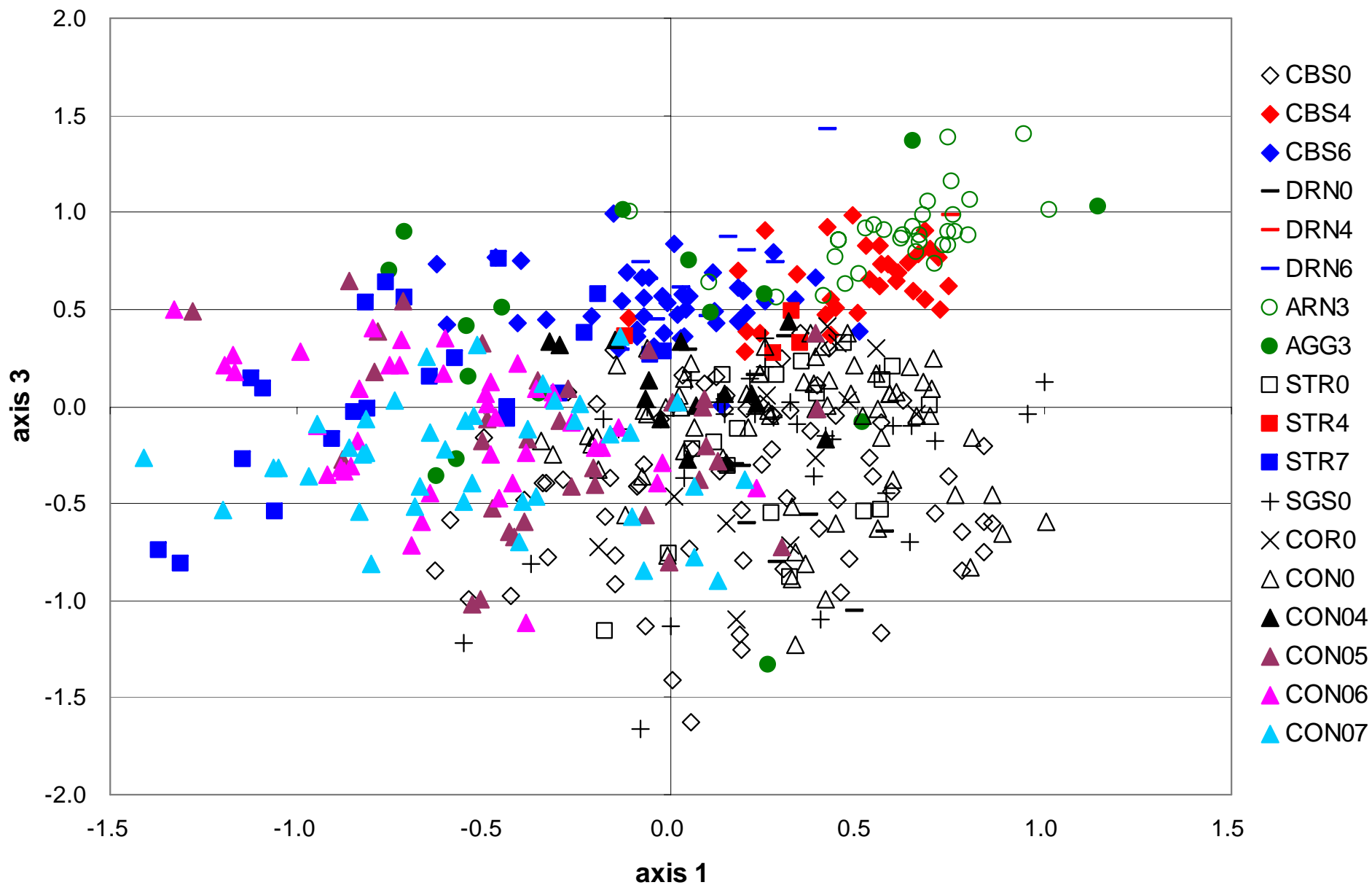
NMS ordination:

- Compare pre-logged areas - were they similar?
- Compare mature forest control areas over time.
- Analyse data for treatments at 3-4 and 6-7 years post-logging, and compare with mature forest controls of the relevant years.

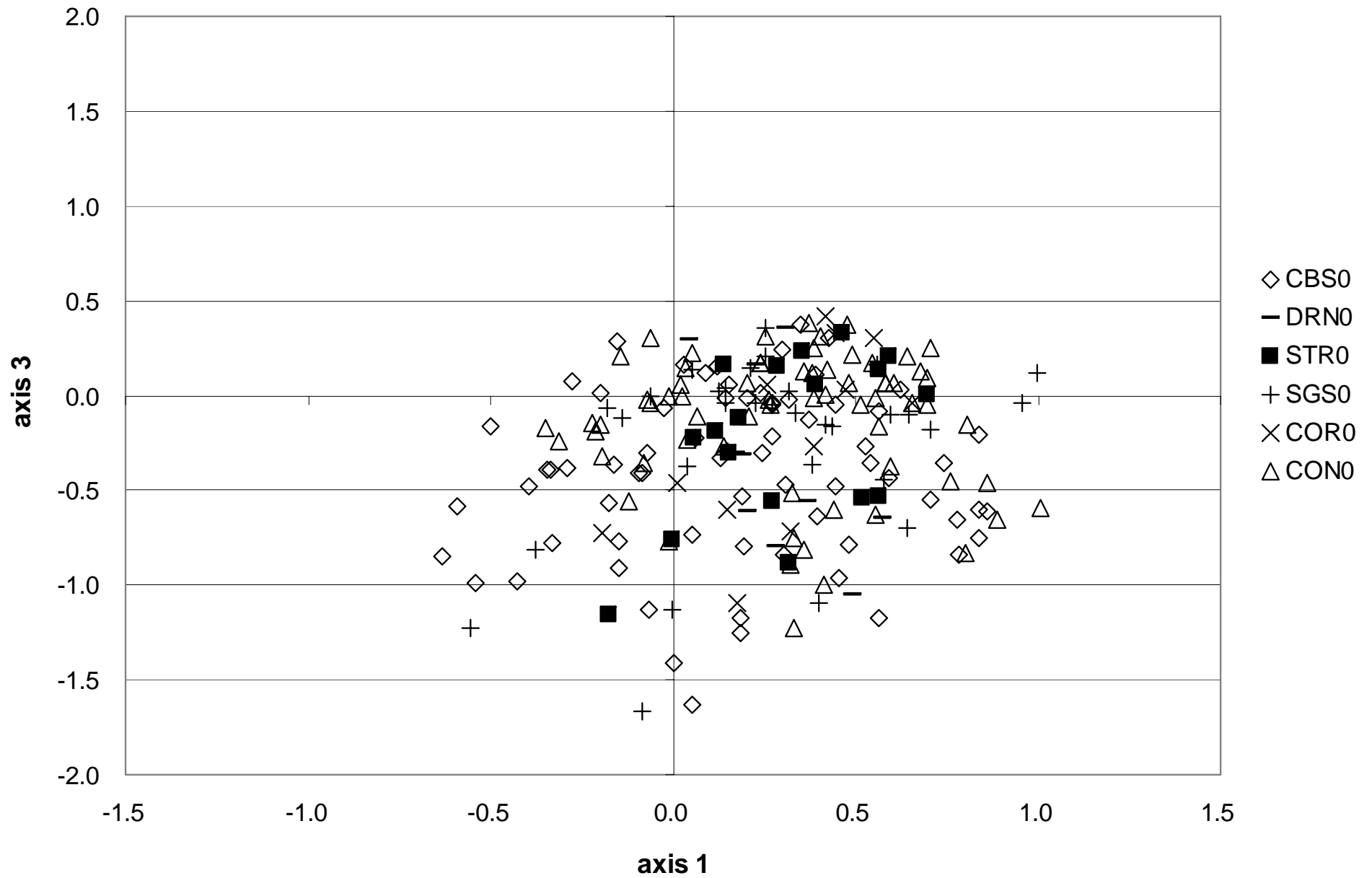
Mean-relative incidence (or probability of occurrence)

- Analyse response of bird guilds and individual species to the various treatments.

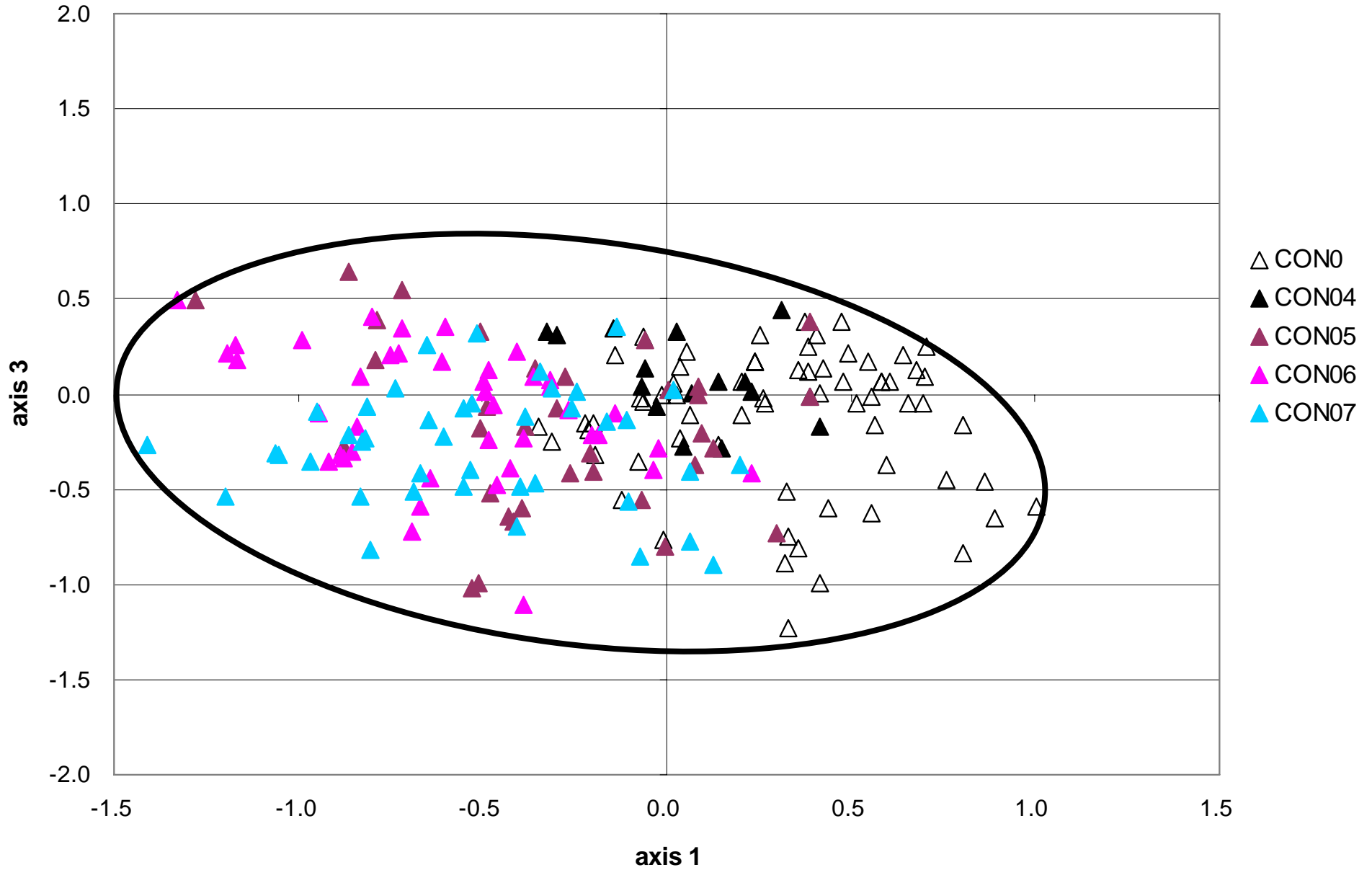
NMS ordination of bird data by treatment (all year-points)



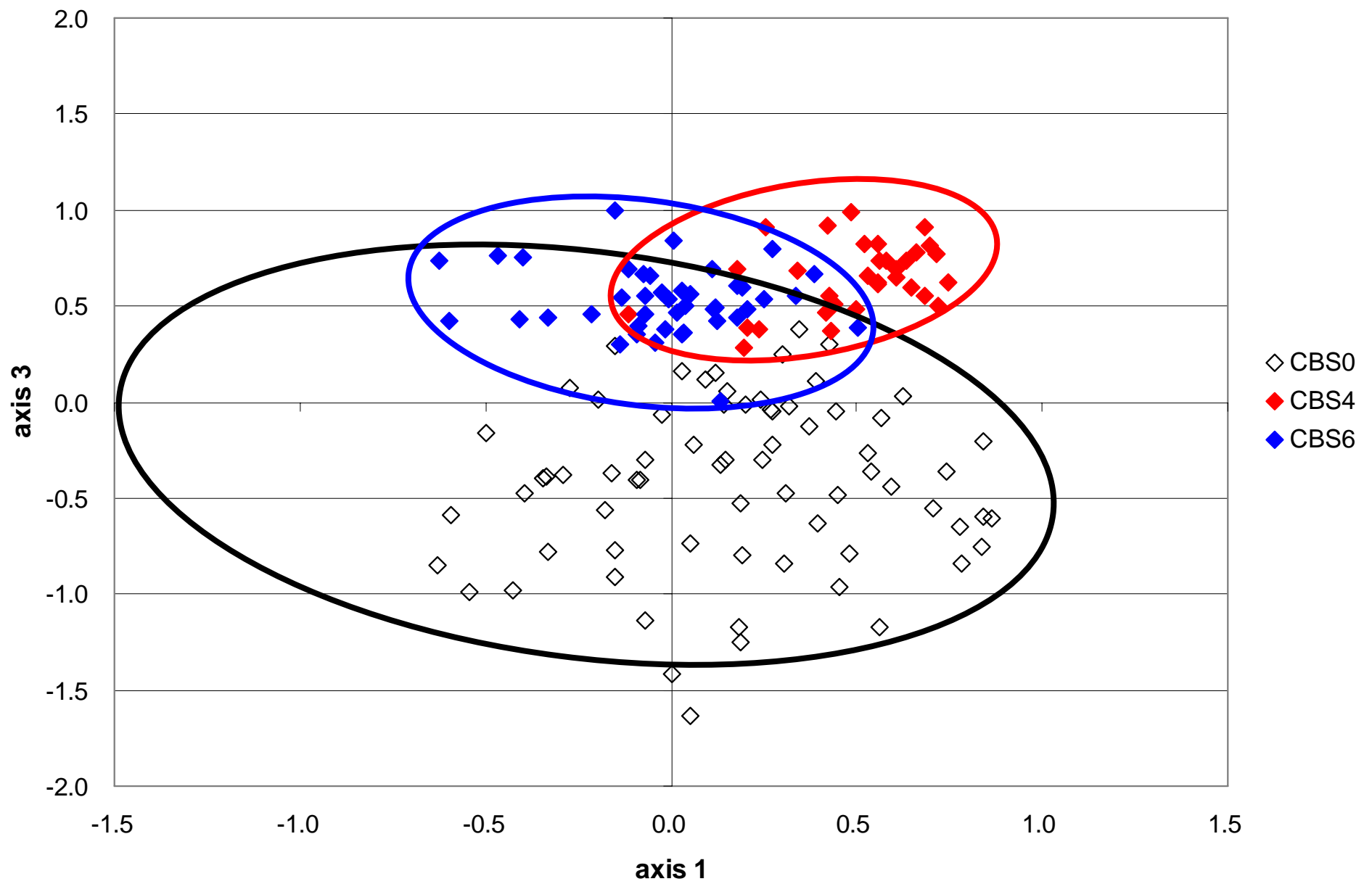
NMS ordination of bird data by all areas pre-logged (1998)



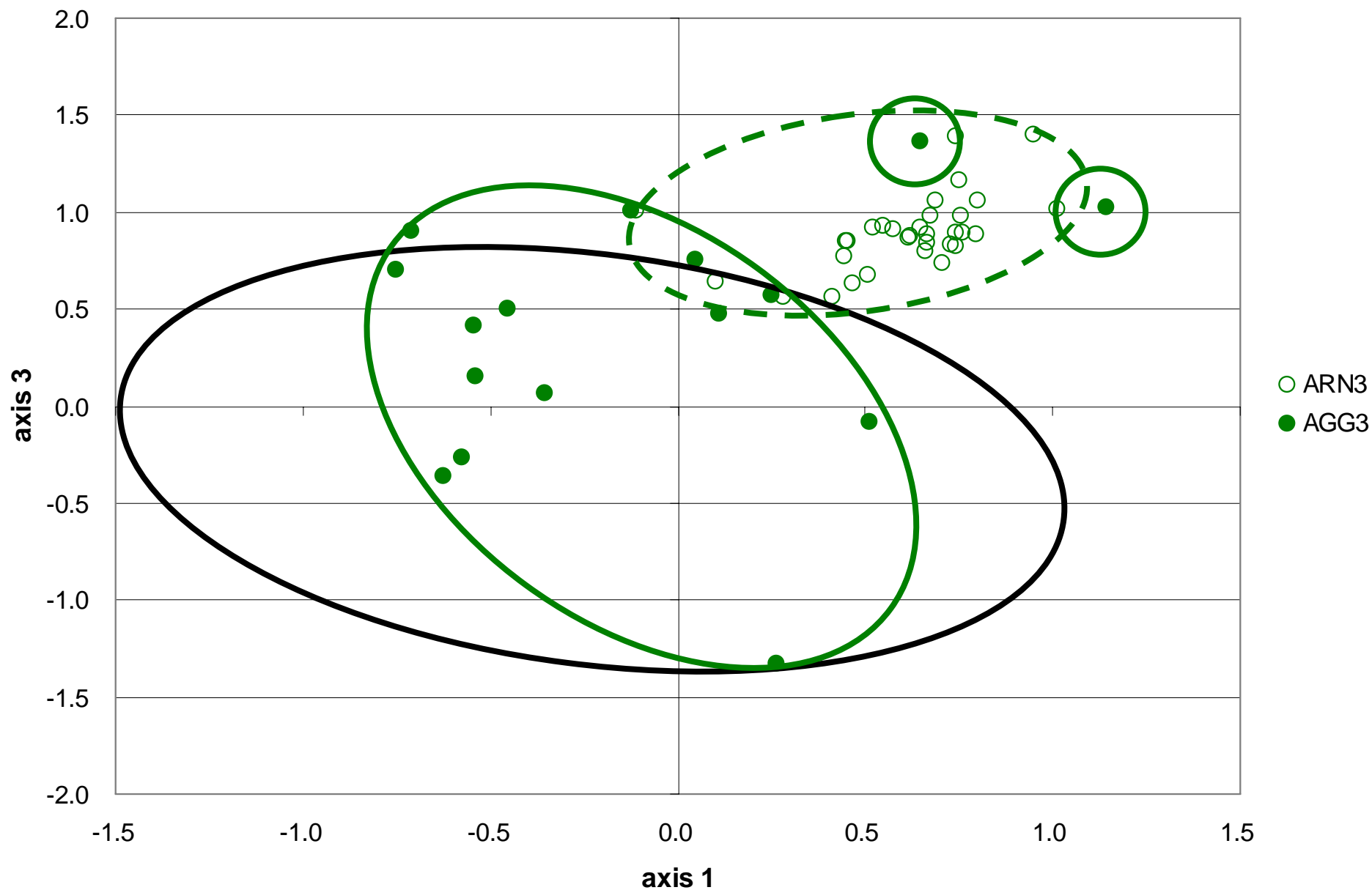
NMS ordination of bird data by mature forest controls



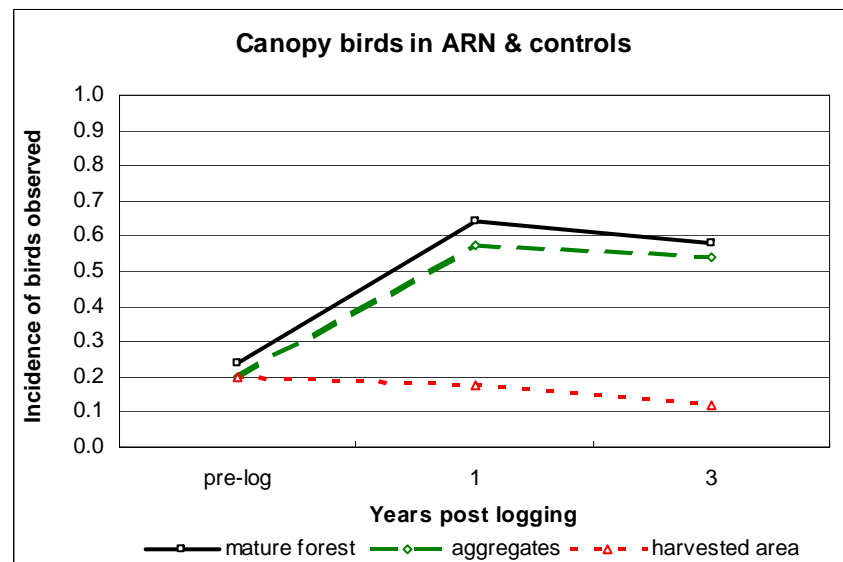
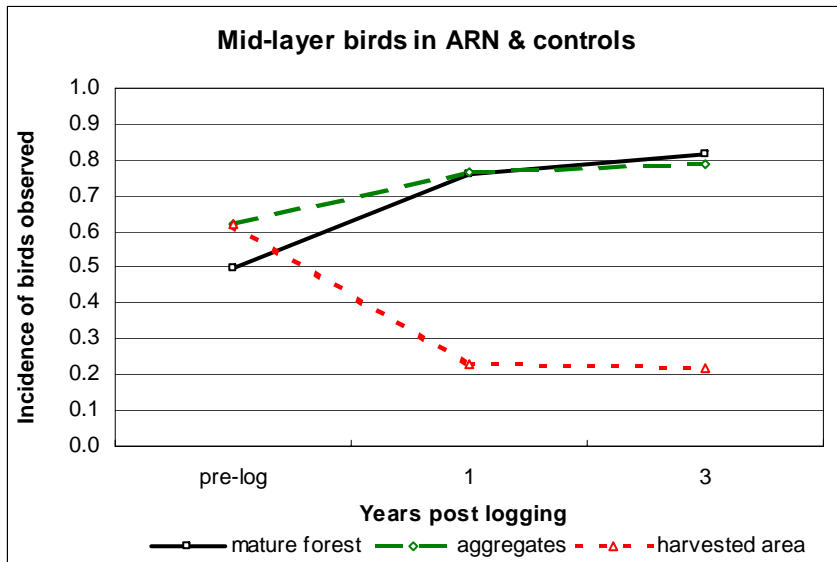
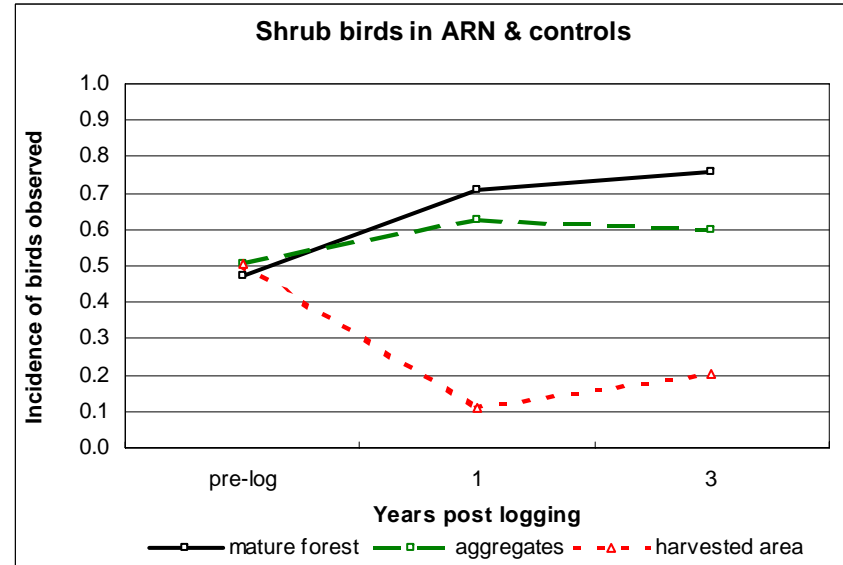
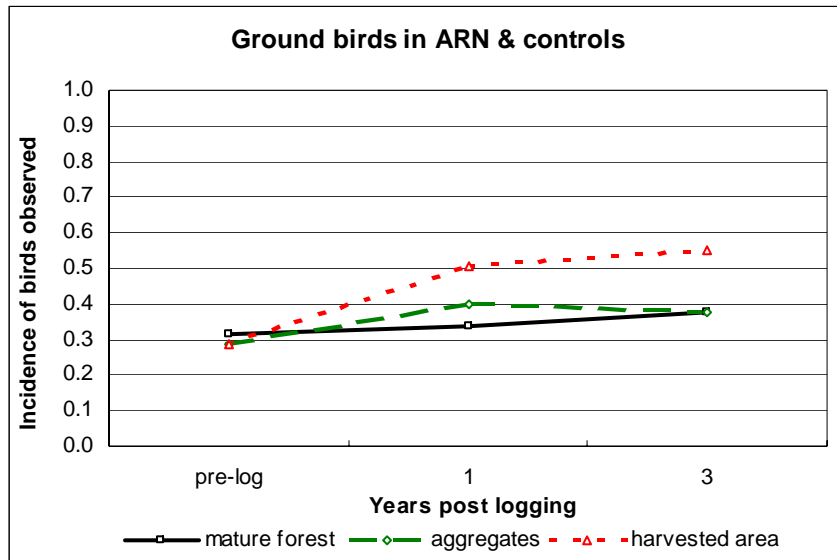
NMS ordination of bird data by treatment (clearfell, burn & sow)



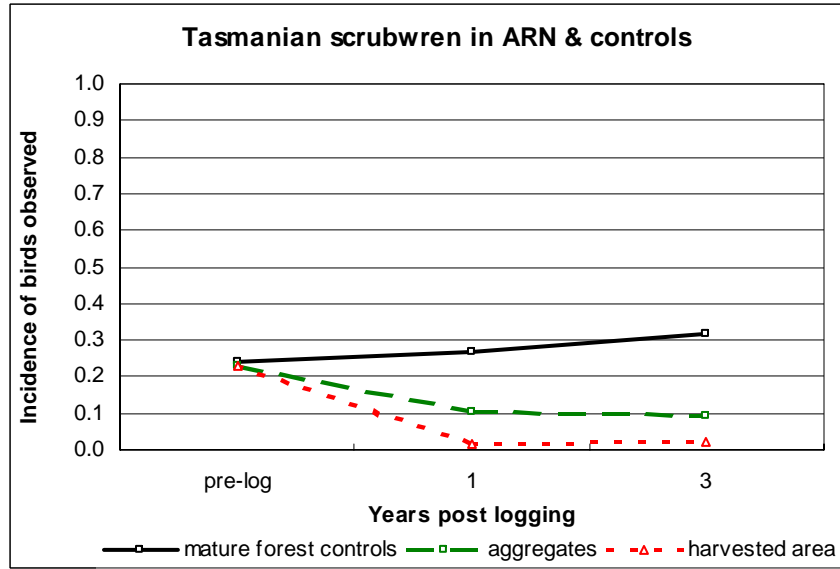
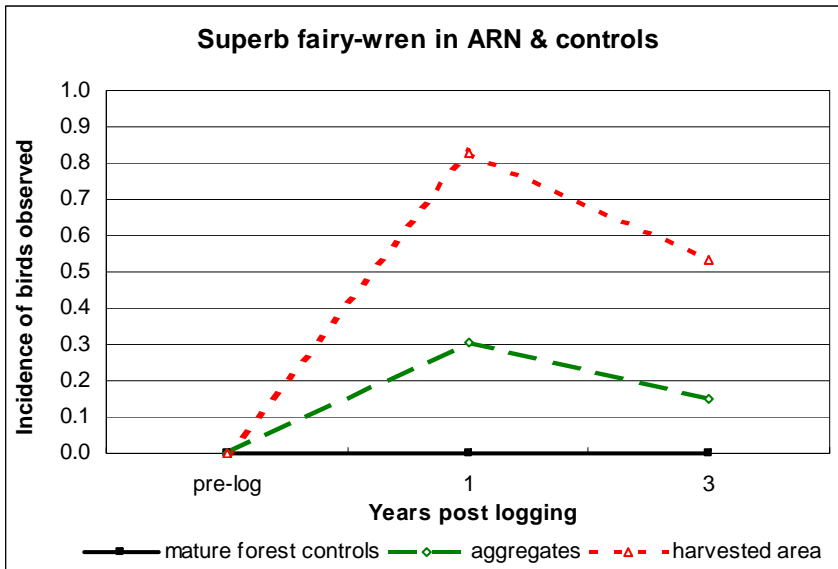
NMS ordination of bird data by treatment (aggregated retention)



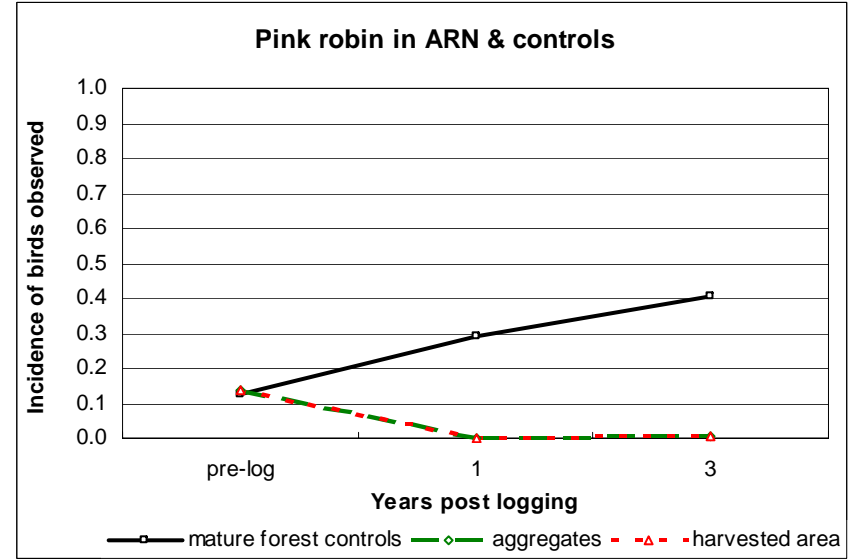
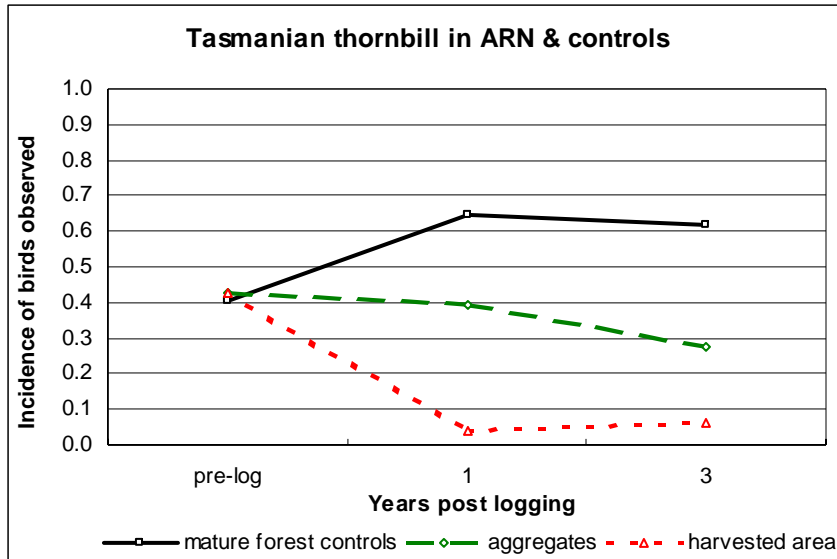
Response of different bird guilds to the ARN treatment



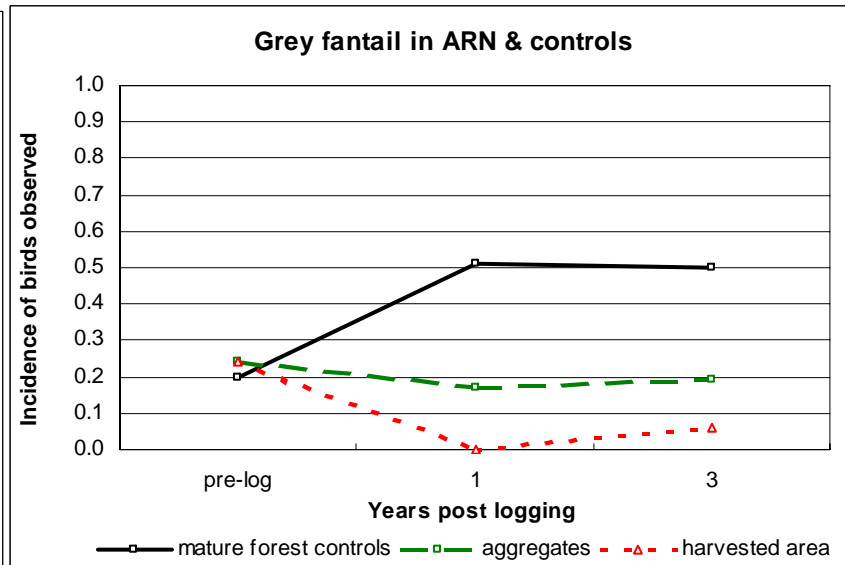
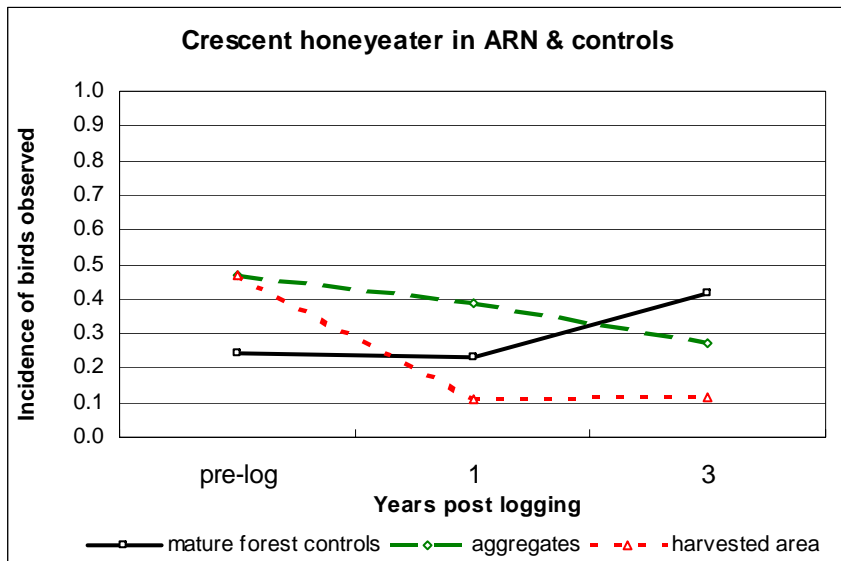
Response of ground-bird species to the ARN treatment



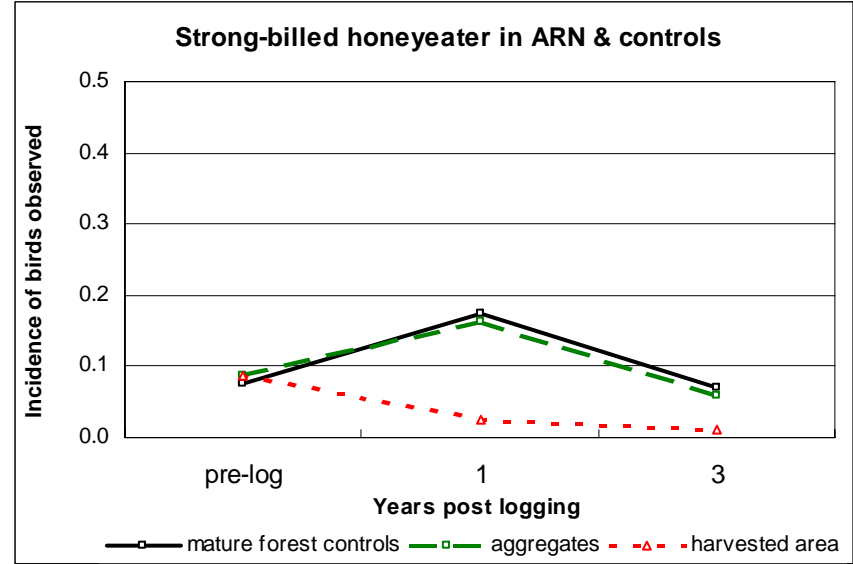
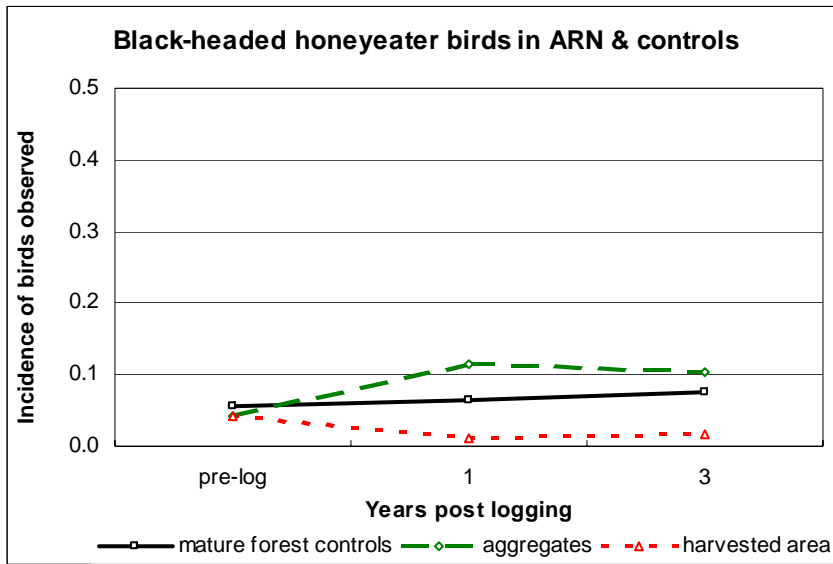
Response of shrub-bird species to the ARN treatment



Response of mid-layer-bird species to the ARN treatment



Response of canopy-bird species to the ARN treatment



Effect of habitat on bird species assemblage



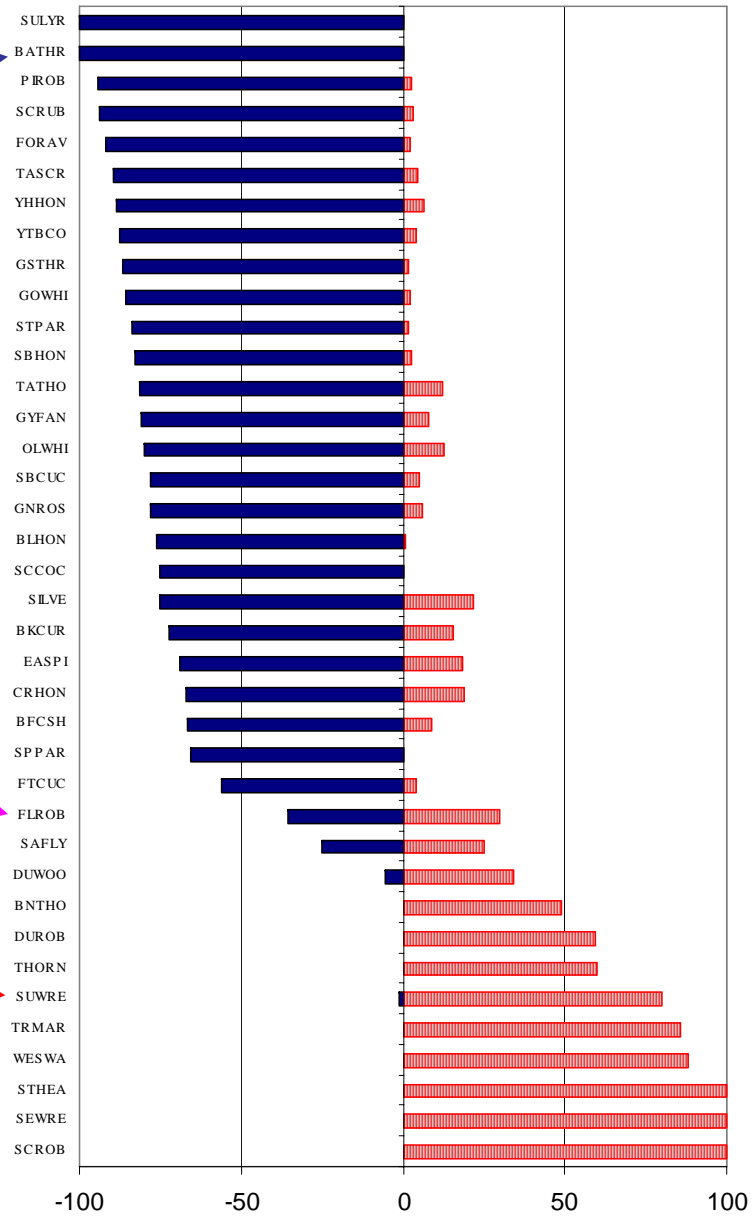
Mature forest specialists



Generalists



Open-country birds



% observations by habitat

■ Mature forest ■ Regen

Conclusions

- Mature forest controls don't stay the same (landscape effect?)
- Treatment effects can be shown for individual bird species, guilds and the entire avifauna
- Retained aggregates (and strips) retain much of the original mature forest avifauna
- Harvested parts of ARN show no detectable difference from similar age CBS
- Ability to monitor bird assemblage as forest regrows over time
- Results from the bird study will contribute to the synthesis of research findings from the Warra SST.

Acknowledgements

- Simon Grove, Tim Wardlaw - FT
- Glen McPherson - for help with statistics
- Alan Fletcher - for all the bird photographs
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Australian Government



Forestry Tasmania