

GOANNA NEWS No 53.

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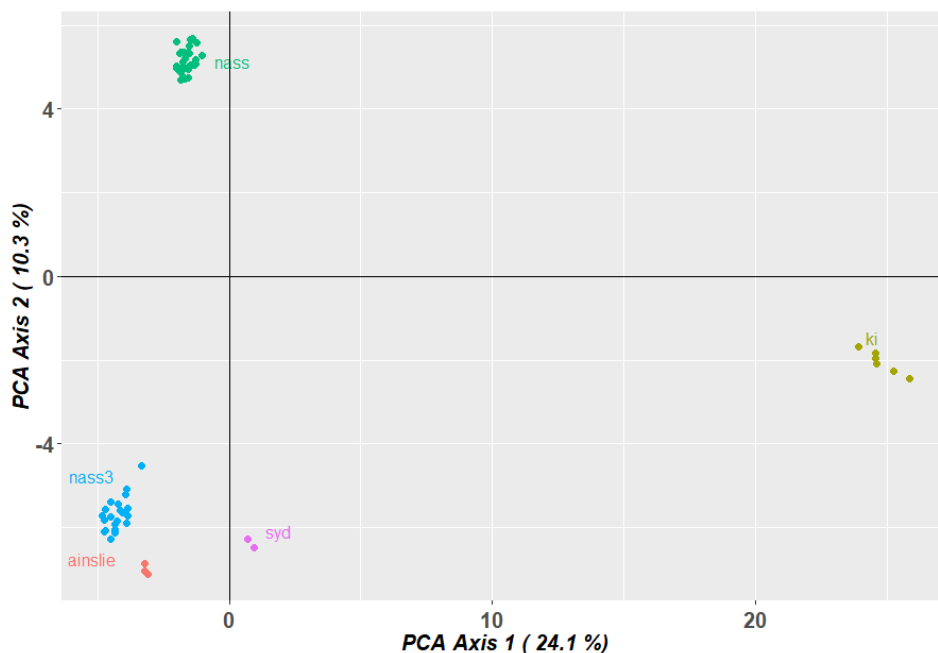
It has been a long time since the last issue of Goanna News because I (Don Fletcher) made this a light goanna season in order to concentrate on some other things. But now there is some interesting news, including about DNA results and photo processing.

DNA Results

The analysis of DNA samples from Rosenberg's Goannas (RG) collected throughout the project was the major component of our 2022/23 ACT Environment Grant and associated NPA funding. For various reasons the work was delayed but the results are more than worth the wait.

In a promising preliminary result, there is an indication of notable genetic distance between RG from the disjunct eastern occurrence in NSW and the ACT, and the main occurrence in WA, SA and western Vic. The eastern RGs are larger, coloured differently and they behave differently. At this stage the western occurrence is represented in the DNA data by only six samples from Kangaroo Island, the brown dots labelled **ki** in Figure 1. The eastern occurrence is represented by green, blue, red and pink dots labelled **naas**, **naas 3**, **ainslie** and **syd**. More DNA sampling is needed from both occurrences to help decide whether the eastern occurrence is a separate sub species. We are applying for approvals and developing a plan to do that.

Figure 1: Principal Components Analysis of DNA samples from Rosenberg's Goannas

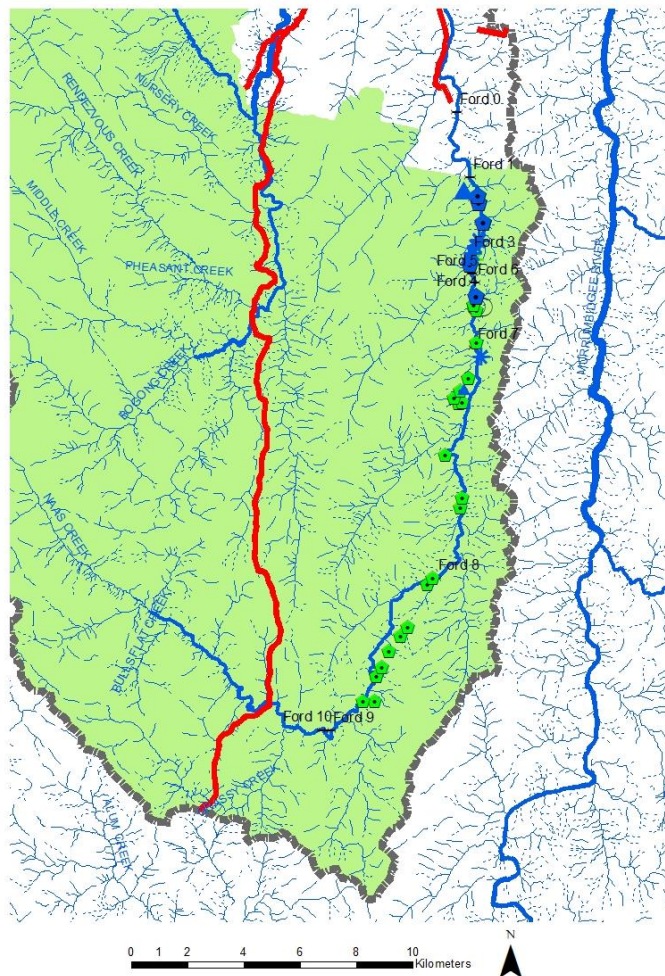


More surprisingly, the results also show there are two kinds of RG in the Naas Valley, one of which is restricted to the upper valley (Figure 2) where there are no mounds of the Gluegun Termite *Nasutitermes exitiosus* which is essential for breeding. This throws up a lot of questions that demand further investigation.

To answer the questions that have the strongest conservation implications, it is necessary to have goanna DNA from elsewhere in the ACT and region. Outside Naas Valley, RG are mostly too rare to be trapped efficiently, so

We are appealing for fresh roadkills so potentially you can help. If you find a dead RG that would be fresh enough to eat if you were very hungry, contact me urgently on 0428 48 9990 and put the carcass in a refrigerator (not a freezer). Older (less edible) carcasses are of value too, but are not urgent. They should be labelled with the collection location, and other details, then frozen for collection later.

Figure 2: Blue symbols (called 'naas3' in Figure 1) and green symbols ('naas') identify capture locations of two genetic forms of Rosenberg's Goanna. Pentagons = males; Stars = females; green shading = Namadgi National Park.



A recent meeting of our goanna committee agreed on sites and shared names of local contacts to help us get fresh blood samples (only 30 μ l) from Rosenberg's Goannas in WA, SA, NSW and ACT. Also we want 2-5 samples from the closely related Gould's Goanna (*V. gouldii*) for comparison and up to 10 from the Tree Goanna (*V. varius*), in case the Naas situation is due to introgression of genetic material from this species. We also want to revisit Naas valley to confirm the result obtained and to search for females of the 'naas' type. A line of traps at approximately equal spacing down the valley can do that, and contribute to other goals, if started in late September.

NaturMapr set up for future access to data from our project

To preserve our records and make them readily accessible to researchers in 10, 20 or 30 years from now, detailed records of 115 Rosenberg's Goanna captured in the NPA Goanna Project have been uploaded to NatureMapr (formerly Canberra Nature Map) (Figure 3) including microchip numbers, body size measurements and face photos. **Many thanks to Sam Shi and Jen Smits** for doing this useful work. It increased the number of Rosenberg's Goannas records in NatureMapr by around a quarter. In the figure, notice the broken 'stripe' of records south of Caloola Farm along Naas Valley nearly to Brayshaws Homestead, which is mostly the ones they added.

Figure 3: An image from NatureMapr showing locations of Rosenberg's Goanna records, including records of an additional 115 individual goannas along the Naas Valley Fire Trail.



Naas Valley

Hooray! The access road into **Naas Valley** has been repaired. After the loss of vehicle access in 2021/22, we found it was just too hard to continue the research using mountain bikes, so we removed our equipment. Thanks to the repairs, access should be good for the 2024/25 goanna season, starting next September.

Ainslie Majura

The only thing happening at Ainslie Majura is that we have a camera on a well known goanna burrow beside a fire trail (Figure 4). The first record in Nature Mapper of a goanna in this burrow was submitted by local conservationist **Silke S**, in October 2020. Since then, photos reveal the burrow has been used by four goannas at different times, Rex, Rambo, Rum and Robin2. In recently downloaded images Rambo is seen mating with Robin2, just like he did last year.

Figure 4: Rambo and Robin2 face the camera



This is a poor burrow (e.g. it is shaded in winter) so its high level of use makes me wonder if burrows are in short supply at Ainslie Majura, or if we still do not know all the most important factors that make particular burrows attractive.

Photo processing

We have 1.8 million images from the 2022/23 camera trapping survey at Ainslie Majura. Some 0.4 M were looked at manually before I stopped this work. It seemed that we could do a better job with less effort by volunteers if we used one of the computer programs that promise to help process camera trap images. Reality intervened on that front but fortunately **Simon Kravis** stepped up and volunteered to try adapting some of his existing software.

Simon has been beaver away ever since and we are almost ready to ask a group of people to try using Simon's new **CamTrapPro** to do the work. Simon has produced an excellent manual and a video showing how to use his program.

I will be looking for an initial group of 10 volunteers to help tag photos with the identity of species shown in them, using CamTrapPro. I will send a separate email with more information when we are ready, but if you are very keen, let me know now. Each volunteer will be handed a 1 Tb solid state

drive containing photos to process. When the drives are returned, I will consolidate the data from the tagged photos and prepare a brief report. We can use the manually processed photos to help evaluate the performance of the automated method. So far it seems very good.

About Goanna News and the NPA Goanna Project (repeated every issue)

Goanna News is an occasional series of emails from me, containing photos and updates from the NPA Goanna Project. They are often prepared with the help of the other members of the Goanna Project Committee – John Brickhill, Enzo Guarino, and Rosemary Hollow. (And Brian Green is a part-time committee member who the other committee members consult on biological matters.)

I have two email groups, this Goanna News one and one about upcoming activities. The latter changes constantly because it is mainly for people planning to come out in the field in the near future. Please let me know if you would like to be added to, or removed from, either group.

Aside from the emails, there are various other communications about the project. Occasionally there are articles in the NPA Bulletin. We have written 13 so far. They provide a more succinct account than Goanna News, after a longer delay. Also there are social media posts, talks to community groups and the odd media interview. Our plan for the NPA Goanna Project is the Project Outline, which has been updated annually until this year. It lists project achievements and states our aims and how we intend to achieve them. The Project Outline is available by emailing me.

If you participate in goanna field activities more than twice, I will suggest you join the National Parks Association, ACT. As well as supporting the ACT community group that lobbies governments about management of protected areas in the ACT region, and supporting the goanna project, there are many other benefits from membership, and it is amazingly cheap at \$22 per year (non-concession) for a family. Have a look at www.npaact.org.au. Also checkout and follow our Facebook and Instagram pages for updates on our activities including walks, work parties, monthly meetings with guest speakers, and the goanna project.

Don Fletcher, John Brickhill, Enzo Guarino and Rosemary Hollow.