

## Tips for Sampling Roadkill for DNA

Anna J MacDonald

These tips are extracted from a blog post I wrote for WildlifeSNPits, published on 26/04/2015 at <http://wildlifesnpits.wordpress.com/2015/04/26/sampling-roadkill-for-dna/>. For more information please contact me at [anna.macdonald@canberra.edu.au](mailto:anna.macdonald@canberra.edu.au) or on Twitter @Dr\_AnnaM

Here are my top tips for tissue sample collection from roadkill corpses in the field.

- Sample from extremities such as ears, tail tips, toes and [skin](#) as DNA is likely to be better preserved here than in internal organs or muscle tissues from corpses that are several days old. Avoid taking samples from tissues with obvious signs of trauma, decomposition or insect activity, as these are likely to have more DNA degradation. For birds and reptiles you can take blood if the corpse is fresh.
- Store the samples in tubes with a [preservative](#) e.g. 95% ethanol, [salt-saturated DMSO buffer](#) or RNA Later. But don't rely on the preservative alone: for long term viability of samples it is still better to get them to a -80C freezer fairly quickly. NB 70% ethanol is not concentrated enough for long-term DNA preservation!
- Don't try to fit too much tissue into the tube: the preservative buffer needs to be able to soak all the way through the tissue, otherwise it can still rot. Aim for at least twice the volume of buffer as you have sample. Make sure the sample is fully submerged in the preservative.
- Conversely, make sure you take a big enough sample to allow for several DNA extractions, just in case you need to re-extract or share your samples later on. This can be tricky for smaller animals, but if possible I aim for a piece of ear tissue or skin the size of my little fingernail from mammals, or take at least a centimetre from the end of a lizard / rodent tail. For smaller lizards you could sample several toes.
- Make sure that you use tubes that seal properly and that can be frozen. We use 2ml screw-cap tubes with an o-ring in the lid that can be safely stored in our -80 freezers.
- Make sure that the sample from each individual animal gets its own tube - otherwise you will have cross-contamination among samples.
- Make sure that each sample tube is well labelled with a unique sample ID. If you just number the tubes 1-100, you can guarantee you will get confused later. Also make sure the labels won't come off if the tubes get wet or if you spill ethanol on them. Label both the lid and the tube as a backup, or place a small piece of museum paper, labelled in pencil / suitable ink, inside the tube with the sample. NB if you're collecting samples as part of a collaborative project with a genetics lab, you may find that they already have a labelling and storage system in place and will send you pre-labelled tubes with buffer, ready to go.
- Collect as much data about the sample as possible: species, sampling date, sex, GPS coordinates and GPS datum used, condition of the carcass (how fresh) and take a photograph just in case there are questions about species ID later on.
- Make sure that you have the correct permits needed to sample from roadkill if that is legally required in your region.