A Ranger's Handbook

Aerial and Ground Shooting

Managing Feral Pigs for Biodiversity Conservation in Cape York

Balkanu

Cape York Development Corporation P/L

This series of handbooks helps you choose suitable methods for the control of feral pigs and the monitoring of their impacts on biodiversity in your region. The techniques it describes have been used on Cape York Peninsula, Australia, but the ideas can be applied in similar environments in other regions.

To choose what will work best in your area, it is important to understand the techniques that are available and their limitations. These handbooks provide a brief overview of the available options.

There are multiple techniques for both control and monitoring. Often the best approach for successful control is a combination of techniques (as opposed to just one). Knowing what impacts you want to monitor will drive your decision for a monitoring technique.

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Important Preface

Any control activity undertaken must:

- Have the permission of relevant TO's and landholders and authorities
- Be undertaken by licensed and trained personnel using approved firearm safety protocols for storage, transport and field use
- Use appropriate firearms and methods for the purpose.

Background

Aerial shooting is an effective method of reducing feral pig populations. The shooter is often armed with a semi-automatic, large calibre rifle or shotgun for efficiency.

Purpose

Aerial shooting is best applied in flat, open areas with high pig densities. This technique is particularly good at quickly reducing large numbers of pigs or maintaining populations at a low level in combination with other on-ground methods. It is considered the most effective method to reduce pig populations, and is cost effective when pig densities are high and in open areas. When pig

density is low or there is dense vegetation, other, on-ground methods are more suitable.

Prerequisites

- Large amount of funding (shoots need to be repeated)
- Permission from TO's/landholder to aerially shoot
- Access to helicopter and shooting contractors
- Ability to deliver aviation fuel (AVGAS) to site
    - Open area to land helicopter at base/camp
    - Ideally: open terrain and high density of pigs

Planning and Site Selection

Thorough planning of an aerial shoot is essential as they are logistically complicated. Ensure you have produced itineraries for your team, organised AVGAS fuel drops, booked the helicopter, pilot and shooter, and have on-ground support if needed. The planning of a shoot should start at least two months before it is conducted.

Your base needs to have a clear landing site for safe landing and refuelling.

Due to the high cost of running a helicopter and hiring a shooter, it is critical to do some reconnaissance and have some information on where to shoot. Ideally shooting should be conducted in areas without dense vegetation, like open flood plains. Using the helicopter to assess the population pre-shoot will provide good information in providing locations for where to shoot. It also provides pre-control data to monitor the effects of aerial shooting on the feral pig population. Having a method to record the number and location of culled pigs is important to monitor their distribution between seasons.

A base or camp from where to base the shooting operation should be located centrally to the shoot area to minimise costs in flying to and from the shooting

location. For example, in a 5-day shoot, with twice a day shooting, if a camp is located 10 minutes from the shooting area, you lose 20 minutes out of a 2 hr 30 minute session (40 minutes a day/3 hours 20 minutes in the 5-day program). This equates to a loss of roughly $3,200 which could be used for another shooting session if the camp was located centrally.

Method

Once everyone has arrived at the base/camp and assessed the shooting sites, there are a few more things to consider before taking off.

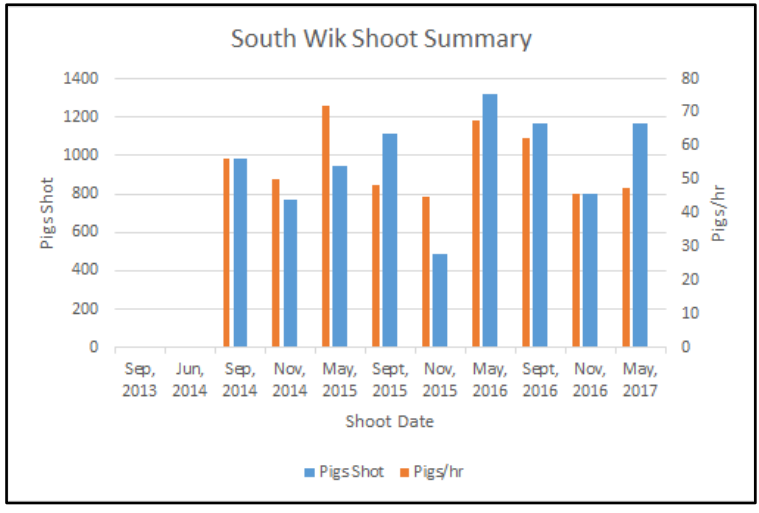
- Introduce the team if it is their first meeting. Ideally your shooter and pilot are already familiar with each other, as the trust between them is essential
- Check the pilot has done pre-flight checks/services on the machine (they should be doing this anyway)
- Go over the shoot locations with both the pilot and shooter
- Ensure the shooter is familiar with the device used to record culled pigs
- Ensure the helicopter is fuelled
- Plan each shoot before the session, so no time is wasted in the air and the person at camp knows where the team is

Investigate when the best season is in your area to conduct aerial shoots. Wet season shoots are productive and protect the wetlands as they begin to recede.

- Shoot during the first 3 hours of daylight and the last 3 hours of daylight
  - Morning shoots: Aim to take off at first light
  - Afternoon shoots: Aim to take off 3 hrs before last light.

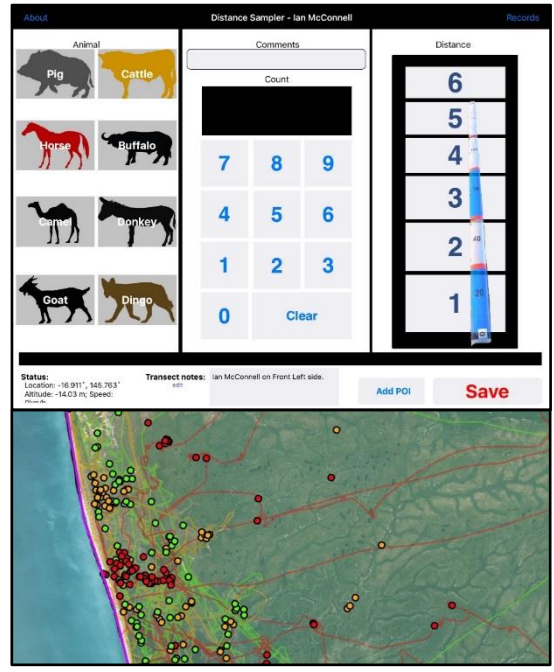
In the Biodiversity Fund project, it was initially predicted that the dry season shoots would be the most productive. It was thought that pigs would be

concentrated on the few remaining waterholes left. However, the wet season shoots proved most effective in terms of numbers of pigs shot, and more importantly, the efficiency of finding and shooting them.



Shooting data from 4 years of shoots at South Wik shows wet season (May) shoots were more efficient (pigs/hr) than dry season shoots (Sept/Nov).

It is important to keep a record of all pigs that are shot for reporting purposes, but it's also helpful for mapping pig hotspots. By using, '*Distance Sampler*', an iPad application developed specifically for aerial feral animal surveys and shoots, it is possible to both count and map where pigs are shot. Knowing where pigs frequently visit can help make future shoots more efficient and better inform on-ground control techniques.



Ground Shooting

Ground shooting can be an effective way to control small numbers of pigs at local sites, especially if you visit them frequently and have a firearm available.

Background

Ground shooting is a method of control using firearms to cull feral pigs from the ground. Coordinated or opportunistic ground shooting can be an effective way of maintaining low density pig populations and protecting important sites. While it has limitations in its ability to effectively reduce a large population, it can be a great tool to use while conducting other work on country.

Purpose

Ground shooting can be used opportunistically, but is more effective when reliable locations of pigs are known. It is best used to remove small numbers of pigs at known locations or to protect significant sites. Frequent shooting at a site can result in pigs learning to avoid that site and not visiting it again. It is not ideal to control mobs of pigs as they are fast and mobile and easily escape once they reach vegetation.

Prerequisites

To conduct the work without a contractor you will need all of these:

- Firearm licenses
- Firearms
- Gun safe (for base and vehicles)
- Lockable carry case for safe field use.

It is also helpful:

- To know reliable locations of pigs
- Have access to sites.

Planning and Site Selection

Planning and site selection for ground shooting is fairly straightforward. Opportunistic shooting is having a firearm with you whilst working at sites in the off-chance a pig is seen. Coordinated ground shooting requires knowledge of sites where pigs are seen frequently and a basic plan to shoot.

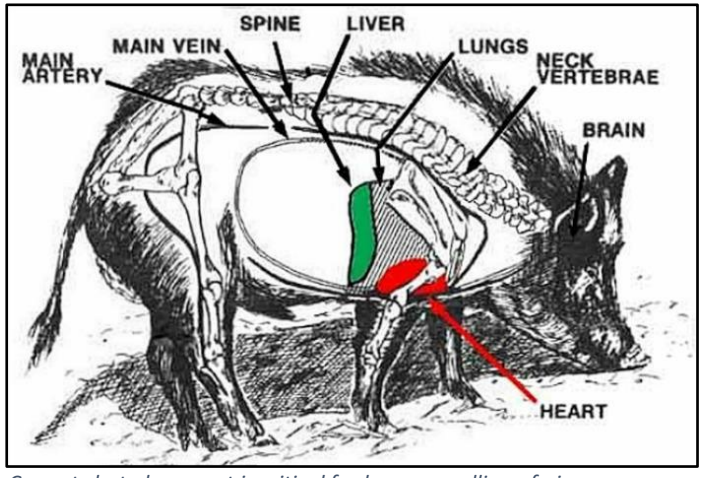
Knowing how to position yourself is important when ground shooting. Use trees and grass to give yourself cover as you approach, while keeping an open window to shoot should the pig spook. Shoot only if absolutely confident the target is a pig.

Method

Coordinated ground shooting needs to consider a few factors to produce the best outcome. The time of day will affect the presence of pigs and each site may be different (e.g. shooting pigs on a beach would be best done at night, whereas shooting pigs at a swamp would be best in the day). Often early mornings or late afternoons are best for pigs moving around, feeding and watering; the middle of the day is best for pigs wallowing in the water and sometimes feeding; night time is best for spotlighting but has its limitations.

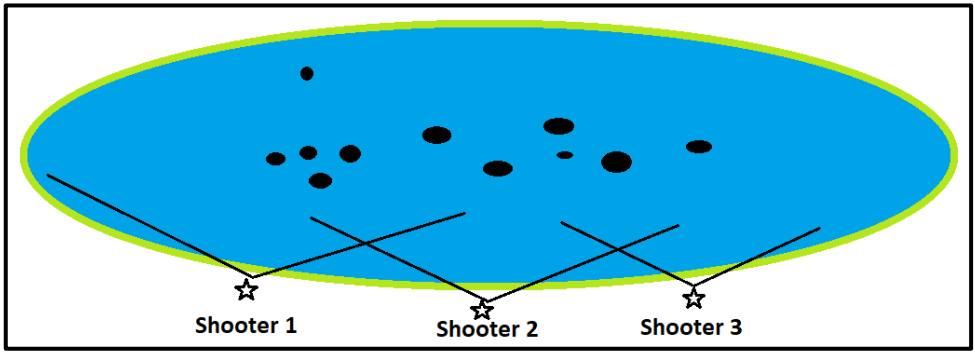
Shooting animals MUST always be done with respect and care given to the animal. The animal must be dispatched as quickly and humanely as possible. While pigs are pests, they are still animals and deserve respect, even when they are dead. If photos are taken, treat the animal as a once-majestic beast; clean blood from the animal, don't hold its' ears and sit it upright.

Once a site and time is chosen, selecting your shooters and approach is the next aspect to consider. Choosing experienced shooters is a must. **Firearms are dangerous and must be used responsibly.** Care and respect must be given to the animal and all animals must be killed humanely. This means accurate shooters and firearms are necessary.



Correct shot placement is critical for humane culling of pigs.

When approaching the site, it is important to quietly drive in from downwind of the site, park the vehicle a distance away and walk into the wind up to the site. This way your scent is blown away from the site and your noise is limited. If pigs are at the site, discuss the shooting plan before getting too close. An ideal plan would be to separate shooters (if 2 or more) by 20m in a line and not shooting an angle more than 135° (see below image).



Hunting

Hunting is a great pastime, however it is extremely inefficient at reducing populations of pigs. It also requires extensive knowledge on animal behaviour and weapons to be conducted humanely.

Background

Hunting for feral pigs is a favourite pastime of many Australians and Cape York is renowned for some of Australia's best hunting. Hunting methods usually include, but are not limited to, dogging, bowhunting and to some extent, rifle shooting. All of these methods are viable; however, their impact at a population level is often minimal. A clear distinction between hunting (recreational) and control (work) is necessary. In most cases, using hunting as the method of control will not only exhaust your funding, but will often result in low cull numbers and a waste of work time. In a few, very select circumstances hunting may be a practical choice.

Purpose

Hunting is best used when pig density and population is low and the land is inaccessible for other control methods. It is best used to remove the last few individuals in an area.

Prerequisites

Hunting needs to be viewed as an acquired skill and not simply something everyone is capable of. Therefore, experience or training in the select hunting technique is an absolute must, otherwise injury to rangers or cruelty to the animal

may result. The location of the animals needs to be known. Hunting requires the hunter to go to the animal, unlike most of the other control methods where the animal comes to the control site. If a reliable location for pigs is not known, time will be wasted searching for them.

Method

We will not describe the hunting methods in detail here as we do not recommend their use for ranger related work.

Bowhunting doesn't require a firearm license, however it requires an exceptional level of patience and skill, and is significantly slower and less successful than rifle hunting.

References

Two great aerial shooting manuals can be found here:

- http://www.territorystories.nt.gov.au/jspui/bitstream/10070/212930/1/Feral_Animal_Control_Manual.pdf
- http://www.pestsmart.org.au/wp-content/uploads/2012/12/PIG002_aerial-shooting_web.pdf

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