Fighting feral animals for production and biodiversity outcomes.

Darren Marshall

Queensland Murray-Darling Committee
“Working together – healthy landscapes, viable communities”
Outline

- Biology and Ecology
- Distribution and abundance
- Impacts
- Control techniques
- Current Research
- Future research
Biology

- Adult male 80-100kg, Female 50–60kg, exceptional animals up to 260kg+
- In favourable conditions breeding occurs all year round
- Females have a 21 day oestrus cycle, gestation 113 days, litter of 4–10 piglets depending on age, weight and food supply
- Sow can successfully mate 2–3 months of farrowing, allowing 2 litters per year in a good season
- Weaning occurs after 2-3 months
- Sexual maturity reached when sows weigh 25kg
- Few animals live more than 5 years
Ecology

• Pigs have few sweat glands so are required to drink more water and wallow to cool off
• Prefer dense cover for protection from sun and main predators – humans.
• Female and juveniles live in small family groups with home range of 2-20sqkm
• Adult males are typically solitary with home range of 8 - 50sqkm
• These ranges vary with season, food availability and disturbance
• Feral pigs generally shy nocturnal animals sheltering through the day making it hard to accurately estimate numbers
Ecology

• Natural spread of pigs along watercourses depends on good seasons and has largely occurred in last 50 -100 years
• Pigs have high energy and protein requirements, which are not available all year round – reason they often hit agricultural crops.
• The need for them to move and find these food requirements is a weakness in their ecology that can be exploited for management purposes.
• Omnivorous and extremely opportunistic. Prefer green feed and will eat crops, They root extensively for tubers, worms and soil invertebrates. Will prey on small animals and eggs. Stock losses occur primarily with lambs and goat kids.
Where are they?
In Queensland
Control Techniques

- Ground shooting
- Hunting
- Aerial shooting
- Trapping
- Fencing
- Poisoning (ground & aerial)
Ground Shooting/ Hunting

- Opportunistic or planned
- Use dogs to find/hunt pigs
- Dispatch with rifles, knives
- Bowhunting
Is recreational/commercial hunting effective at control?

- Usually hunt in high density areas only
- Success is group-size dependant
- Hunters very selective in animals they remove
- Introduction of pigs into other areas?

- **BUT** – can be a significant help??
Do harvesters have an effect on feral pig populations
TRAPPING
Trapping

Advantages

- Economical
  - Flexible, can be incorporated into normal farm activities
  - Traps can be re-used
  - Cost of traps offset by selling animals
- Doesn’t interfere with normal behaviour
- Takes advantage of opportunities
- Safest form of control – good for settled areas
Trapping

Disadvantages

• Must be checked regularly
• Labour intensive to construct and maintain
• Not suitable for large scale use
• Success dependant on food availability
• Bias?
Trap Designs
Trapping

Side-hinged door

Many triggers available – but “pig-trigger” works
Where in the Landscape to Position Traps
Poisoning

- Great for removing bulk of population with the least amount of effort
- Ground or aerial baiting
  - Ground
    - 1080 grain/meat
    - Phosphorus
  - Aerial
    - 1080 meat
Poisoning

Advantages
• Widely accepted
• Fast and effective
• Cheap!!

Disadvantages
• Best result with free-feeding
• Non-target risks
Aerial Shooting

Use a helicopter, usually small and nimble e.g. R22

Use where pigs are in inaccessible areas, poisoning and/or where pre-feeding isn’t an option
Aerial Shooting

Advantages
– Access to most areas during most times
– Rapid knockdown
– Can be used over large areas
– Cost is reasonable

Disadvantages
– Can disperse pigs
– Costs increase as density decreases
– Not applicable to all areas/situations
A broad scale control program with landholders whilst undertaking solid research to inform our future investment into feral animals.
Components of the project

• Initial feral pig density surveys
• Research to influence land managers
  – Damage to Production
  – Damage to Biodiversity
  – Disease Spread
  – GPS and Radio Collaring
• On ground control techniques
• Monitoring
  – Ongoing feral pig density surveys

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Feral pig density surveys

Aerial Survey’s – Nov 07, Mar 08, Aug 08, Nov 08, Apr 09, Aug 09, Nov 09, Apr 10.
Approx 1 feral pig per square km
How do we coordinate control of feral pigs, dogs, foxes and cats

Baiting, Trapping, Commercial Harvesting, Aerial Shooting, Recreational Shooting
Green - Free fed and baited
Yellow - Free fed. No uptake, no bait required
Red - Not free fed. Not baited

‘Hog gone’ trial with IACRC
June 2010
Overcoming challenges for control

- Coordinated control over a large enough area to have an impact on numbers.
- Formation of syndicate groups for baiting programs.
- Increased trap use.
- Do harvesters have an impact on ferals.
Research

Damage to Production
Damage to Biodiversity
Disease Spread
GPS and Radio Collaring
Agricultural Impacts

- Damage to grain, cane, fruit and vegetable crops
- Damage to pastures and competition with grazing animals
- Lamb predation
- Damage to fences, water sources

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Determine the cost of feral pig damage to crop production

Chick pea damage at planting

Forage Sorghum damage
Preliminary findings of Sorghum Damage.

- 23 paddocks totalling 5272 ha assessed
- 0.1 – 5.6% damage
- Mean $19/ha lost to feral pigs

- Assuming this is representative
  - Queensland
    - 545,000 ha sorghum, ~$10 million

- Even at low feral pig numbers, damage still considerable
- Control is quite cheap!!
- = Control is worthwhile!
Biodiversity Impact

- 113 fox stomachs and
- 53 cat stomachs.
- Over 70 feral pig stomachs being analysed.

<table>
<thead>
<tr>
<th>FOX</th>
<th>% of Stomachs</th>
<th>CAT</th>
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<tbody>
<tr>
<td>94%</td>
<td>Mice</td>
<td>87%</td>
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<tr>
<td>7%</td>
<td>Bird</td>
<td>23%</td>
</tr>
<tr>
<td>37%</td>
<td>Invertebrate</td>
<td>28%</td>
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<tr>
<td>4%</td>
<td>Dasyurid</td>
<td>15%</td>
</tr>
<tr>
<td>1%</td>
<td>Dragon sp.</td>
<td>4%</td>
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<tr>
<td>4.4%</td>
<td>Frog</td>
<td>0%</td>
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<tr>
<td>0%</td>
<td>Rat</td>
<td>0%</td>
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<tr>
<td>7%</td>
<td>Lagomorph</td>
<td>2%</td>
</tr>
<tr>
<td>23%</td>
<td>Carrion</td>
<td>0%</td>
</tr>
</tbody>
</table>
Disease Spread

- Sydney University PhD student looking at the interaction between feral pigs and Domestic Piggeries
- Also testing for disease that may be transferred to humans or stock (leptospirosis, Brucellosis)
- Of 33 pigs shot last week 15 infected with leptospirosis and 2 with brucellosis
GPS and Radio Tracking

Boar 3, first capture.

Boar 1, re-collared.
Why track feral animals

• Where do pigs, foxes and cats spend time in the landscape?
• Track animals over a period of time and seasons.
• Target control programs.

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Top 5 ways to improve feral pig management

• greater co-ordination and co-operation in baiting programs
• refine control practices
  • sufficient bait density and coverage
  • timing & techniques e.g. use a variety of techniques
• don’t leave ‘hunting reserves’ for hunters!
• greater understanding of pig habits (e.g. distribution)
• improve monitoring of feral pig abundance and impact
Contact information

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