‘NIL TENURE’ APPROACH TO INVASIVE ANIMAL MANAGEMENT IN AUSTRALIA – EXTENDING THE PARADIGM

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Abstract: Research into control measures for wild dogs and foxes in Australia is yielding improved tools and techniques. Despite these advances and no matter how effective the innovation, the mobility and prevalence of these invasive animals in the Australian environment renders effective management an elusive goal. Often, failure of adoption, at the appropriate scale, is a major impediment to effectiveness. In NSW, wild dogs are estimated to be present in almost 30% of Rural Land Protection Board jurisdictions, and there is some evidence that their density has increased over the last 20 years.

Wild dog attacks in the Brindabella and Wee Jasper valleys of southern NSW have had significant financial, social and environmental impacts over a long period. In 2000, local landholders, RLPBs and State agencies committed to a ‘nil tenure’ approach, involving affected stakeholders in planning and implementing an agreed solution. The result has been a 75% reduction in stock losses (Hunt 2002).

This paper:
- outlines the ‘nil tenure’ approach and its success in the Brindabella and Wee Jasper valleys;
- discusses the opportunities for and limitations to the approach; and
- outlines plans to employ the paradigm in the recently-announced Australian Invasive Animals Cooperative Research Centre’s projected ‘demonstration sites’.

RESULTS

Nil tenure and the Brindabella / Wee Jasper wild dog/fox control program

The nil tenure approach can be defined as the collective identification of an invasive animal problem, irrespective of tenure boundaries and legal obligations, and a stakeholder- community commitment to implementing a solution.

The Brindabella / Wee Jasper wild dog/fox control program adopted a nil tenure approach and is amongst the most successful, documented, examples of district canid control. In this case study the stakeholders were:
- Local landholders
- National Parks and Wildlife Service
- Yass Rural Lands Protection Board
- NSW State Forests

The action sequence and investments in the Brindabella /Wee Jasper case ran:
Grass-roots’ concern over wild dog attacks raised at a meeting of the New South Wales National Parks and Wildlife Service South West Slopes Regional Advisory Committee and local landholders in Wee Jasper on the 9th November 2000. A high level of social impact was recorded, on top of economic and environmental damage. The meeting agreed to work on a local solution to the wild dog issue.

Planning – a ten-person working group was established in December 2000, drawn from the agencies and local landholders. Triple-bottom-line impacts were documented. Impact mapping (with tenure boundaries absent) identified historic stock loss areas and wild dog residential areas (commonly remote bush areas) and transit routes to grazing areas. Based on this mapping, the available control options were considered and the most effective combination of specific-site bait stations and trapping were selected.

Only when solutions had been resolved was a tenure overlay produced for the impact/control site map and subsequent cost-sharing agreements.

A cooperative plan for a nine-month trial was endorsed and implemented.

A “Cooperative Wild dog/Fox Control Plan” for July 2002 to June 2005 was developed and published.

A 5-year plan (2005-2010) will be signed off in May 2005.

Investments
The Brindabella / Wee Jasper wild dog/fox monitoring program in 2001-2 cost participating agencies approximately $18,000 in cash. The control program was budgeted at $268,120 in total.

The costs were split between agencies as follows:

<table>
<thead>
<tr>
<th>Agency</th>
<th>% of the effected area under their control</th>
<th>% of program costs</th>
<th>3 year investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Forests</td>
<td>35%</td>
<td>33%</td>
<td>$89,400</td>
</tr>
<tr>
<td>NPWS</td>
<td>41%</td>
<td>39%</td>
<td>$102,798</td>
</tr>
<tr>
<td>Yass RLPB – representing private lands</td>
<td>24%</td>
<td>28%</td>
<td>$75,972</td>
</tr>
</tbody>
</table>

These figures do include community group inputs or the Working Group’s labour.

Characteristics of the nil tenure approach
The Brindabella/Wee Jasper experience suggests that the following list of factors necessary to successfully initiate a nil tenure exercise are:

1. a history of significant economic, social and environmental damage;
2. experience that a problem is not manageable on a single property – resolution possible only by integrated local management;
3. local area includes a number of different tenures;
4. there is a local ‘champion’ to militate for action;
5. there is willingness to invest in planning, identification of objectives and obtaining pre-activity data;
6. there is a ‘community’ commitment to a multi-year action-plan and reaching agreed objectives;
7. commitment to wide and on-going consultation, information dispersal and media exposure;
8. availability of effective tools, techniques and local skilled personnel;
9. continued monitoring and evaluation (‘before and after’ measurements to confirm scale of problem, benefits, return on investment etc).

Results of the Brindabella/Wee Jasper Plan’s implementation
The initiative produced striking results, with a clear correlation between investment in coordinated control and reduction in stock losses (Fig. 1).

![Graph showing stock losses and resource commitments (Hunt 2002).](image)

**Fig. 1** Stock losses and resource commitments (Hunt 2002).

Wider adoption of nil tenure?
Following the demonstrated benefits of the approach, it was proposed in 2004 that the NSW RLPB State Council accept *nil tenure* for management of other terrestrial vertebrate pests across NSW. Despite in-principal acceptance, there are only a few recently initiated examples of the approach being subsequently applied. All states do however have requirements for ‘best management practice’ for invasive animal control. For example:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Statement</th>
</tr>
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<tbody>
<tr>
<td>Commonwealth Rabbit Threat Abatement Plan¹</td>
<td>“The success of this threat abatement plan will depend on cooperation between all key stakeholders, including land owners and land managers, community groups, local government, State and Territory conservation and pest management agencies… Success will only be achieved if all participants are prepared to allocate adequate resources to achieving effective on-ground control …”</td>
</tr>
<tr>
<td>Qld Pest Animal Strategy 2002-2006</td>
<td>“Consultation and partnership arrangements between local communities, industry groups, State government agencies and local governments must be established to achieve a collaborative approach to pest management.”²</td>
</tr>
<tr>
<td>NSW ‘Outfox the fox’ program (Walter et al. 2004)</td>
<td>NHT funded 3 year trial to match 1080 baiting effort against lambing rates to determine the effectiveness of group baiting regimes. Preliminary findings confirm fox’ resilience to control; intersection of public/private interests is at the core of any successful strategy.</td>
</tr>
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</table>

Three perspectives on the demand for a nil tenure approach

1. From the perspective of agencies and policy development, the commentary of Prof Tony English in a report to NPWS (English and Chappel 2002) on management of invasive animals is instructive:

“A conventional scientific approach has almost invariably been taken in defining feral animal problems, focusing on agricultural and biodiversity impacts. Increasingly, this approach seems inadequate for dealing with the complexity and conflict surrounding invasive animal control. An interdisciplinary approach to the problem is therefore recommended. While scientific and technical information is essential … the dominance of this information can reinforce community perceptions that feral animals are a national park problem and not related to the broader causes and conditions. Proposing a solution which addresses wider community values, rather than one which focuses on the ecological problem (which may be seen by some as a narrow scientific or environmental goal), will provide a more convincing argument. This approach will hopefully see a reduction in the all too common ‘blame game’ in relation to feral animals, which is of benefit to nobody.”

2. From the perspective of landholders, polled by PAC CRC at Wimmera Field days, March 2005:
Approximately 150 landholders polled about the importance of all stakeholders in adoption of best management practices (BMP) for fox control – 60% acknowledged they could not control pest impacts simply by adopting BMPs themselves, they:
• wished to see an integrated approach,
• needed help in developing such an approach and
• had little faith in government agencies being able to control invasive animal problems.

3. From the perspective of peak industry bodies, the message is similar. Australian Wool Innovation Ltd has recently (2005) held discussions with WA woolgrowers about the possibility of a nil tenure approach to fox/dog problems in the rangelands.

The ‘pluses and minuses’ of nil tenure

<table>
<thead>
<tr>
<th>Where nil tenure may be appropriate</th>
<th>Where likely to be inappropriate</th>
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<tr>
<td>Problem species exhibits clear and repeated cross-tenure behaviour.</td>
<td>Problem species exhibit no clear predictable pattern of activity or problem highly localised</td>
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</table>
| Impacts acknowledged by all tenure-holders (or sufficient majority) | ● Problem most effectively handled on each effected property.  
● Not all affected tenure-holders accept there is a major problem, (e.g. wild dog attacks in mixed grazing regions likely to effect lambing rates more than calving, so cattle farmers may be less effected than wool-growers.) |
<p>| Recruitment process not so fast that control impractical | Recruitment /reinvasion pace too fast or unpredictable (e.g. insect swarms) |
| Practical solutions available | No large-scale practical solution available (e.g. for cane toads) |</p>
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<tr>
<td>Commitment to multi-seasonal, integrated, program</td>
<td>Medium-term resource commitment not available</td>
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| Coincidence of public and private interests | • Diversity of ownership and different statutory obligations applying to publics vs private land;  
• Diversity of property management plans within a region and consequent lack of common purpose; |
| Scale is appropriate | Scale too wide to secure community consensus |
| NRM and on-farm economic objectives coincide | Divergence of NRM and on-farm economic objectives |
| Investment available – govt cash, landholder time | Not all effected landholders willing /able to invest (e.g. hobby farmers, absentee landholders). |

**Planned activity of AIA CRC and opportunities to trial nil tenure**

The Australasian Invasive Animals CRC will begin on 1st July 2005 and its research and applications acknowledge that management of invasive pests is complex because it exists in a social context.

Any bio-physical solutions to invasive pests must be grounded in a solid science-based understanding of the problem. Solutions must, however, also address the problem in its practical, social, ethical, and legislative context. AIA CRC will use between ten and fifteen Demonstration Sites to research the practical management of invasive animals in different social (e.g. land tenure, ethical challenges) and technical (e.g. pest species, ecosystems) environments across Australia. Demonstration projects will be the focus for participatory action research programs to discover how to manage complex invasive pest control. Where there is the opportunity to apply the principle identified in this paper, they will be.

Demonstration sites, which are now being developed with the CRC’s partners, will be the first ‘port-of-call’ for new AIA CRC research products and strategies. Biocontrol methods (carp), baits (fox, wild dog, invasive pig, rabbit, cat), viruses (house mouse, carp, rabbit), and lures (fox, wild dog, carp, invasive pig) and innovative strategies that move beyond simplistic single-species / single-solution concepts will be ground proofed through exhaustive and publicly critiqued ecological experimentation.

**REFERENCES**


