



EVALUATION

OF THE EFFECTIVENESS

AND EFFICIENCY

OF THE WILD DOG CONTROL PROGRAM

IN WESTERN AUSTRALIA

May 2003

Mr Chris Richardson
Chairman
Agriculture Protection Board of Western Australia
3 Baron-Hay Court
SOUTH PERTH WA 6151

Dear Chris

The Panel commissioned by the Board in November 2002, to evaluate the operational performance of Western Australia's current Wild Dog Control Program, has now completed its deliberations.

I have pleasure in forwarding to you our final report and recommendations.

The Panel met "face-to-face" twice during the course of its work. All other contact was limited to email, fax and telephone conferencing, in order to keep associated costs to a manageable level. Following the Board's agreement to broaden input to the evaluation (ie. beyond the "desktop" assessment initially envisaged), formal submissions and representations were welcomed via public media release, as well as by specific written invitation to affected Shires and my direct approach to the WA Farmers Federation Inc., and the Pastoralists & Graziers Association of WA Inc. A number of submissions and comments were received in response, thereby confirming the Panel's expectation that the degree of public interest in the subject matter is considerable.

I am pleased to be able to confirm that the conclusions and recommendations contained within this report have the unanimous support of all Panel members, as well as the support of the Departmental support staff concerned.

After careful consideration, the Panel has concluded that there is no "silver bullet" or magical quick fix for the high numbers of wild dogs being observed at present. Rather, it believes that the medium to long term management of wild dog numbers in Western Australia will require a return to the ongoing and widespread deployment of all available control methods in combination ie. aerial baiting, ground baiting, trapping and opportunistic shooting. In the view of the Members, any shorter-term response can only attempt to "fast-track" the longer-term solution.

This said, it is clear that certain aspects of the current Control Program can, and need to be improved, so as to maximise the return on the considerable sums of money spent by land managers and State government alike. I trust that you will find the Panel's recommendations in this respect to be of benefit to the longer-term future of the Program.

All Panel Members and Departmental support staff are to be congratulated for the enthusiastic manner in which they embraced the evaluation. I was particularly pleased that the industry members took advantage of the essentially unrestricted agenda, to raise and to vigorously debate, a whole range of relevant issues. The resulting report thus represents an industry perspective on the wild dog problem.

It has been my absolute pleasure to work with such a committed group of people. I now look forward to assisting the Board and the Department with their efforts to implement the recommended changes.

Yours sincerely

Michelle Allen
CHAIRMAN
WILD DOG EVALUATION PANEL / MEMBER, APB

30th May, 2003

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INTRODUCTION

Wild dogs, including dingo-dog hybrids (*Canis familiaris dingo* x *Canis familiaris familiaris*) and domestic dogs (*Canis familiaris familiaris*) running wild in agricultural and pastoral areas, are presently regulated under the *Agriculture and Related Resources Protection Act 1976* within Western Australia. Both species are assigned to category A5 across the whole of the State, meaning that landholders must reduce and keep their numbers under restriction. Note in this context and throughout the Panel's Report, the term "landholder" is intended to include owners and/or managers of both private and public lands.

Following ongoing reports/complaints over record numbers of wild dogs and associated escalations in the numbers of attacks on stock across a wide area of the State, a formal evaluation of effectiveness and efficiency of the current Wild Dog Control Program, was commissioned by the Agriculture Protection Board of WA (APB) in late November 2002.

The Board appointed a Panel of suitably experienced producers and initially asked it to conduct a 'desk top' analysis of the current control Program's operational performance, including its management, planning, implementation, research and resource needs.

The intent was that the Panel critically examine every element of the existing Program, including both aerial and ground components, in the hope that areas could be identified and fine-tuned so as to deliver improved outcomes for industry. At the same time, the Panel was asked to "think outside the square", recognising there may well be different approaches that have not previously been considered. The APB made it clear that absolutely everything to do with the Wild Dog Control Program was "on the table" for discussion and review. Industry was encouraged to have its say, and tell it exactly the way they saw it. It is important that the evaluation be remembered in this context, for fear its findings might otherwise be criticised or dismissed as lacking the scientific rigour normally associated with a formal review. In commissioning the evaluation, the APB deliberately set out to establish what the 'clients' thought, and to provide them with the opportunity of delving deeply into the operational Control Program. Given the collective industry experience brought to the table, the report's findings would be ignored at the reader's peril.

For the purposes of general guidance, rather than a rigid reporting framework, some issues seen to be key to the conduct of the Control Program were identified "up front" These included:

- the involvement of landholders in the planning and execution of the control program;
- strategic planning at a local, regional and State level;
- impacts of recent policy/operational procedures regarding 1080 and strychnine;
- assessment of baiting effectiveness (how effective are current baiting programs, both ground and aerial, at achieving their goals in a cost effective and efficient manner);
- assessment of bait production protocols (size of meat baits, bait attractiveness, uptake in good seasons and poor seasons);
- bait rack ownership and risks associated with investment and future access;
- control on pastoral leases, other public lands, mining leases and Aboriginal lands;
- legislative impediments to effective control;
- options for bait production (including economics);
- future operational program direction;
- future research requirements; and
- pilot of a new landholder engagement process using historic track logs and landholder knowledge of baiting sites.

The Panel gathered in Perth for the first of its meetings on 17th February 2003. The bulk of this meeting was devoted to compiling a list of relevant issues and suggestions for change etc. These were summarised and formally passed to the Department of Agriculture, with a request that specialist staff with responsibility and/or expertise in wild dog control provide comment on the feasibility of suggested actions.

At the same time, in recognition of the high public interest in the issue, the Panel also sought and secured APB endorsement to invite wider input. Public submissions were invited via a general media release in mid-February 2003. Local Government Authorities considered likely to be affected were simultaneously invited to make comment. The key industry organisations (WA Farmers and Pastoralist's Graziers Association) were also contacted directly by the Panel Chairman and invited to comment.

The Panel met again in Perth on 3rd April 2003, to consider the response from the Department as well as submissions and comments received from other interested parties. Via email/fax and a series of telephone conferences, a summary of the Panel's conclusions and recommendations was developed and delivered to the APB by way of interim report, in time for the Board's scheduled meeting on 23rd April 2003. At that time, the Panel sought and secured the APB's approval to extend the evaluation until the end of May 2003, to allow sufficient time to complete its deliberations and to submit its final report.

EXECUTIVE SUMMARY

In late November 2002, following ongoing reports/complaints over record numbers of wild dogs and associated escalations in the numbers of attacks on stock across a wide area of the State, the Agriculture Protection Board of WA (APB) commissioned a formal evaluation of the effectiveness and efficiency of the current Wild Dog Control Program. A Panel of suitably experienced producers representative of the Zone Control Authorities affected by the impacts of wild dogs was convened under the Chairmanship of Board Member Mrs Michelle Allen (Northampton), to analyse the current control Program's operational performance, including its management, planning, implementation, research and resource needs.

The objective of the evaluation was to provide an opportunity for industry to have its say on the present and future composition and conduct of the Wild Dog Control Program within Western Australia. The APB encouraged industry to raise any matters it believed pertinent, and to "pull no punches" in its assessment of the current Program. Although technical and scientific support was provided throughout by relevant specialist staff of the Department of Agriculture, input of this nature was deliberately kept at the periphery, in order to draw on the considerable practical experiences and first-hand observations of the Panel Members themselves.

Following several face-to-face meetings, numerous telephone conferences and consideration of a wide range of public input, the Panel reached four main conclusions:

- (1) *that landholder complacency, a scaling down in the amount of ground control work carried out, and a gradual over-reliance on aerial baiting, have all contributed significantly to the progressive build-up of wild dog numbers in Western Australia;*
- (2) *that, despite hopes and assertions to the contrary, there was no "silver bullet" or overnight quick-fix to address the high numbers of wild dogs being observed across a wide section of Western Australia's pastoral and agricultural areas;*
- (3) *rather, that the medium to long term management of wild dog numbers in WA will require a move away from the present over-reliance on aerial baiting, and a return to the sustained and widespread deployment of **ALL** available control techniques in combination (ground baiting, aerial baiting, trapping and shooting); and*
- (4) *that, with attention to detail and some changes in approach, the overall effectiveness of the current Control Program could be significantly improved.*

Panel Members developed a large number of recommendations for the Board to consider. In terms of key changes which would assist in improving the effectiveness of the current Control Program, five in particular stand out:

- (1) **better planning** – *State and regional control strategies, developed with input from all landholders as appropriate; group planning at a local level, facilitated by the Board's existing Zone Control Authorities (ZCAs), to discuss and agree on best use of available resources, and particularly to plan bait placement into areas of identified/known dog activity, BEFORE any baiting is carried out; planning focus on a strategic landscape rather than an individual property basis;*
- (2) **better oversight** – *ZCA responsibility for regional oversight and evaluation as to effectiveness; annual ZCA review, with feedback on performance and recommendations for change communicated to the APB/Department of Agriculture; APB/Department of Agriculture to be assisted with policy development and implementation via a specialist group of producers;*
- (3) **strengthened community ownership** – *input to control work from all landholders within a given area, not just the pastoralists and the farmers but rather the government instrumentalities, the mining interests, the Aboriginal Communities and others - in recognition that wild dogs are mobile pests and therefore control efforts need the co-operation of all landholders to be truly effective*
- (4) **ready-to-lay baits to facilitate more ground baiting** – *in order to break the present over-reliance on aerial baiting, pastoralists and farmers need to be able to buy quantities of factory-made baits at a competitive unit price, to complement the Rhodamine Oat already available. The latter are extremely useful for field-preparation of larger quantities of baits, but require that the landholder take the time to obtain and suitably prepare their own supplies of fresh meat. The ability to purchase and to carry smaller quantities of ready-to-lay dried meat baits would enable landholders to quickly and easily place ground baits at strategic points, whilst going about their normal duties (eg. mill runs).*

(5) **better information on trends** – at present, there is little good information on overall dog numbers, dog movements and dog impacts; this makes assessments as to the effectiveness of current control efforts very difficult, and limits the Control Program's ability to respond quickly to changes in the status quo; some early warning of increasing dog numbers is needed (eg. desert animals moving closer to pastoral/farming areas) so that control efforts can be targeted to avoid numbers building up on a broader front.

With respect to funding, Members noted the catalytic role played by the APB/Department of Agriculture staff in ensuring the continuation of an effective Wild Dog Control Program, and expressed concern that this role be jeopardised by the re-focusing of government resources within and away from the agricultural portfolio. In recommending a number of improvements to make better use of existing resources, the Panel recognised that funding to the Wild Dog Control Program was substantially inadequate in some areas of the State. It was agreed that overall funding levels would need to be monitored carefully and reviewed again in a further 12 months. Modifications to the legislative mechanism by which the existing Agriculture Protection Rate was set (for Pastoral areas only) were highly desirable to allow greater revenue raising flexibility at an individual zone level, whilst retaining the \$ for \$ matching contribution from the State.

Members also allowed themselves time to consider how additional resources could best be made use of, should they become available at some point in the future. The Panel firmly believed that any short-term response should consist of:

- a) a targeted campaign to get individual pastoralists and farmers to lay more ground baits themselves
- b) increased accessibility of ground baits – production of factory made meat baits, complemented by additional coordinated community baiting programs as necessary
- c) additional aerial baiting 'runs' where likely to be of benefit
- d) more targeted use of experienced 'doggers' to trap the really cunning/troublesome dogs
- e) a targeted campaign to get non-pastoral/farming landholders to become involved in the control program, and to undertake control work on their lands as necessary to avoid pests impacting on the neighbouring lands.

In the context of additional funding, the Panel also discussed the Shire of Laverton's request to the Minister for \$1.0million to allow short-term input of extra doggers to 'get on top' of the present high numbers of wild dogs. Members were adamant that local knowledge, as well as considerable experience, were both critical to a dogger's success or failure. As such, the sudden influx of people unfamiliar with a certain area and/or without considerable dogging experience, was likely to divert resources away from their best use. The Panel observed that local pastoralists and farmers themselves were likely to have the best local knowledge. Some would also have good knowledge of baiting and trapping techniques. Where experienced doggers were currently employed to do all ground control, additional funds could perhaps better be used to "free up" their time for the "problem" dogs, with the more routine work being transferred to local pastoralists/farmers instead of "raw recruits".

MEMBERS OF THE EVALUATION PANEL

- **Mrs Michelle ALLEN (Chairperson)** – farmer and member of the Agriculture Protection Board
- **Mr Keith ANDERSON (Panel Member)** – pastoralist, Jubilee Station (Kimberley Zone)
- **Mr Wade SAMBELL (Panel Member)** – pastoralist, Warambie Station (Pilbara Zone)
- **Mr Mark HALLEEN (Panel Member)** – pastoralist, Boolardy Station (Carnarvon Zone)
- **Mr James PITMAN (Panel Member)** – pastoralist, Karbar Station (Meekatharra Zone)
- **Mr Bill JOHNS (Panel Member)** – pastoralist, Killara Station (Meekatharra Zone)
- **Mr David McQUIE (Panel Member)** – pastoralist, Bulga Downs Station (Kalgoorlie Zone)
- **Mr Peter BROWN (Panel Member)** – pastoralist, Arubiddy Station (Nullarbor) / Member of the Agriculture Protection Board
- **Mr Ron DAWSON (Panel Member)** – farmer, NE Wheatbelt
- **Mr Tony RICHMAN (Executive Officer)** – Manager, Agriculture Protection Board

Officers of the WA Department of Agriculture provided technical support ie. **Mr Ron PAYNE**, Wild Dog Activity Specialist, **Mr Rod WILLIAMS**, District Manager, Carnarvon, **Mr Greg PICKLES**, Program Manager, Animal Pests and, **Mr Peter THOMSON**, Senior Research Scientist, Vertebrate Pests.

TERMS OF REFERENCE

The following specific Terms of Reference were approved by the Agriculture Protection Board at its meeting on 17th December 2002 (item 6.3.1 refers):

1. *assess the likelihood that the current Wild Dog Control Program will achieve its stated objective of minimising the impact of wild dogs on productivity, sustainability and market access (reference also be made to issues associated with public safety and community good);*
2. *make recommendations to the Agriculture Protection Board regarding the Program's performance, future direction and resourcing; and*
3. *report on the pilot of a modified landholder engagement process for the planning and implementation of the Wild Dog Control Program.*

Note: in the context of the above conclusions, the term "landholder" is intended to include owners and/or managers of both private and public lands.

FINDINGS

Term of Reference 1: assess the likelihood that the current Wild Dog Control Program will achieve its stated objective of minimising the impact of wild dogs on productivity, sustainability and market access (reference also be made to issues associated with public safety and community good);

The Panel noted that the effectiveness of current control efforts is difficult to reliably monitor and measure, given the general lack of good information on overall dog numbers, dog movements and stock losses/stock impacts. Although the Department has implemented certain attempts to collate information from producers on their stock losses, Members felt that the numbers so obtained were likely to be 'rubbery' at best, given they were only estimates and that, in many instances, the cause of the loss would not be established with certainty. The Panel also felt they were likely to be incomplete, with some producers unaware of their total stock numbers at any given time and others choosing not to report dog impacts. Certainly, better information and a more complete understanding of the impacts of wild dogs is needed for the future. Panel Members considered that Department of Agriculture research staff could play a role in helping to devise a more rigorous means of monitoring movements in wild dog population numbers. Some early signals that numbers are increasing (ie increased dogs moving from desert areas to pastoral etc) would clearly be useful in order to invoke a more targeted control effort to avoid them becoming established in larger numbers on a broad front. It was suggested the Pastoral Lands Board also be asked to utilise its annual requirement for a Statutory Declaration from Pastoralists, as a vehicle to more formally collect better information on dog impacts.

In looking for root causes as to why numbers of wild dogs may have built up within Western Australia, Panel Members concluded that landholder complacency, a scaling down in the amount of ground control work carried out, and a gradual over-reliance on aerial baiting, have all contributed significantly. Members agreed that the total control effort of today is significantly less than that carried out 20 or even 10 years ago. The reasons for this are many and varied ie:

- the cost-price squeeze has seen the available manpower (including the number of privately employed doggers) on many pastoral and farm properties fall dramatically;
- there are no longer the same number of doggers employed to undertake work on public lands;
- younger pastoral lessees and farmers (new to the business) may be less well informed as to the potential economic losses posed by dogs;
- the numbers of suitably experienced "doggers" have also fallen away as younger generations are increasingly less inclined to adopt the harsh and lonely lifestyle;
- many enterprises have turned from sheep to cattle in light of the lower input costs and potential for higher economic returns; and
- changes in land tenure/land use are increasing the areas of the State no longer used for pastoral and agricultural production.

The overall participation of land managers in Control Program activities was also found to be deficient in many instances, giving rise to examples in which the efforts of conscientious land owners/managers was being compromised by the inaction of others who either refused to participate or were not invited to participate. Clearly, given that wild dogs are very mobile pests, the effectiveness of control activity is only likely to be maximised where all the owners/managers within a given area come together to discuss and agree on the best use of available resources. The importance of the active involvement of all Government land managers is vital, as the area of the State which they collectively control (currently 93% of the State's land area) is also increasing, as is the area controlled by land managers such as Mining Companies, Aboriginal Communities and others.

Panel Members were concerned to note an increasing reliance by land managers on aerial baiting, to the exclusion of other forms of control. Whilst aerial baiting was originally introduced to deliver baits into inaccessible areas, so as to complement the ongoing ground baiting, trapping and shooting carried out by pastoralists, farmers and dedicated doggers, it appears the level of ground control has fallen away over time. Members noted many cases of which they were aware wherein the relevant land manager now relies totally on aerial baiting alone, with no other form of dog control work undertaken on their property at all. Some have shifted this responsibility to contract doggers

employed under Dedicated Animal Group Agreements whilst others have simply chosen to do nothing at all. The demand being placed on the relatively few contract doggers in operation was growing as a consequence, and unsustainably. The Panel believes that there is an attendant need to re-evaluate how these doggers are used, in order to free them up to once again concentrate on the more cunning / troublesome dogs, with the more routine preventative control being carried out by the land managers themselves, in conjunction with other duties.

In many instances, the noted decline in dog control has accompanied a corresponding change in enterprise from sheep to cattle production. Cattle producers have traditionally not viewed the wild dog as such a threat, because individual dogs will not usually attack the larger animals. However, when hunting in packs, wild dogs are known to be more successful in bringing down larger prey. They have been observed bringing down and seriously injuring / maiming full-grown cows in such circumstances. Clearly then, young calves and weaners can be just as vulnerable as sheep, and less attention to dog control by cattle producers can be economically misguided.

The increasing reliance on aerial baiting and associated decline in other forms of control work had led some to criticise and/or question the effectiveness of the former. However, from other quarters of the pastoral and agricultural sectors, the Panel noted strong support for the effectiveness and continued use of aerial baiting. Research advice confirmed to the Panel that aerial baiting does work, as long as it is properly implemented. However, landholders must appreciate that wild dogs are less likely to take baits when there is abundant food available (previous research has shown that dogs prefer their natural, fresh prey). As such, aerial baiting was unlikely to be completely effective in isolation, and it was unrealistic to expect that it would remove all wild dogs from a given area. Clearly then, its adoption (by some) as an ultimate tool to solve all dog problems is not a good strategy and there is an obvious need to get back to a situation in which *all* of the available control methods are used in combination i.e. aerial baiting, ground baiting, trapping and opportunistic shooting. A given aerial baiting program must be followed by strategic ground baiting around waterholes and known dog habitats, to ensure maximum effectiveness.

An examination of the issue as to whether or not the aerial baiting programs previously conducted had been 'properly implemented' gave rise to questions as to the efficacy of the current formulation of the 1080 bait. Again, research advice confirmed that the product was known to be lethal to dogs. Indeed, continued access to the existing 1080 poison will be a vital pre-requisite for the Program's future, as will the use of Strychnine on jawed traps. In these respects, the Panel urges the Department, and the Board, and affected industry members, to continue to lobby the Australian Pesticides and Veterinary Medicines Authority (formerly the National Registration Authority) in the strongest possible terms.

Members noted instances in which the baits had not necessarily been delivered into the right spots and at the right times. Bait placement is critical. The Panel's research advice confirmed that baits must be placed near dog leads, known habitats and hunting/drinking areas for maximum effect. The traditional practice of individual property owners flying as navigators and directing where to drop baits for maximum effect was developed to ensure baits were placed 'where the dogs were'. However, Members related instances in which this intention was not always translated into practice. Cases in which inexperienced work hands had been asked to fly in place of the property owner were numerous, as were instances of baits being dropped in large numbers in just one or two areas of the properties concerned, and still other examples of where baits were dropped along the boundaries of individual properties, irrespective of whether dogs had been observed in the vicinity or not. The Panel felt that significant gains in both efficiency and effectiveness could be achieved if the target locations for the baits were agreed on the ground (in a community planning process) before any flying was undertaken. Ideally, this pre-planning would occur with the aid of topographical property and district maps, and with property owners pooling their collective knowledge of the location of dog problems, in order to ensure the baiting became more strategic across the local landscape. In this way, more baits would be routinely targeted to areas of known dog 'leads', habitats, drinking spots and hunting areas. Currently, there is still a tendency for each aerial baiting 'run' to focus on an individual property on an 'equity' type basis when, in fact, it may be necessary in some regions to place higher numbers of baits in one area than another (due to geographic requirements etc.). At subsequent planning sessions, the opportunity exists to fully oversee and integrate all data pertaining to wild dog control. For example, reviewing last year's bait placement in relation to this year's areas of dog activity and so on.

In addition to greater emphasis on planning, the Panel also noted a need to secure the involvement of all landholders within a given area, and to support them appropriately by ensuring key

Departmental staff are available in the key locations at the key times to assist with enquiries, required (1080) approvals etc. Members feel that it is vital that local communities take more direct ownership of the Control Program, with the Department of Agriculture staff performing more of a support/advisory role. Whilst legally, all landholders have a responsibility to control wild dog populations on, and in relation to, land which they own/occupy (*Agriculture and Related Resources Protection Act 1976*, sections 39 [State government], 42 [Local government] and 49 [private]), Members noted that not all landholders currently participated in Program activities. In certain cases, this was believed to compromise the diligent efforts of others, giving rise to thoughts that non-participating landholders should be forcibly compelled to undertake activities such as aerial baiting, to ensure there were no gaps in the area of coverage.

The Panel noted that the APB had certain powers to require private landholders to undertake control work under the current legislation, and where they might fail to do so, the APB could have the work carried out by a third party and legally recover the associated cost from the landholder. However, although the obligations of holders of government lands were the same, the APB had no power to compel other government agencies to meet their control obligations. It was agreed that the current regulatory provisions for the management of non-compliance (with critical aspects of the Wild Dog Control Program) are in need of updating and strengthening to ensure the implementation of a fully transparent, active and equitable control program for this pest across whole regions. In addition, a heightened role for the APB's Zone Control Authorities was discussed. Panel Members believe these statutory bodies are ideally placed to take on a more active role in planning, facilitating and coordinating local dog control efforts. This facilitation role should include the drawing together of all land owners and managers within a given area.

Statewide coordination, oversight and evaluation of the effectiveness or otherwise of annual control efforts currently rests with the APB. Panel Members are of the view that the Board's task in this regard could be usefully complemented with the assistance of a Panel of Producers/industry representatives convened specifically to take a closer interest in the delivery of services on behalf of the broader group of stakeholders. Such a Panel would ideally be of a standing nature (advantages of continuity of knowledge), but perhaps could also include some rotation of membership to avoid problems with stagnation / over-familiarity with the Program. General coordination of activity between Zones would also be greatly assisted by the development of an agreed Statewide control strategy.

The availability of a reasonably priced, ready-to-lay and factory-produced bait is seen as important pre-requisite to encouraging land managers to get back into the habit of putting out ground baits whilst going about their normal duties. Although Rhodamine Oats can already be purchased for this purpose, the associated task of obtaining fresh meat, cutting it up into suitable sizes, impregnating the poisoned oat and then letting the baits cure does require additional investment of the landholder's time and energy. The process therefore lends itself to the preparation of larger quantities of baits, as typically required for a community baiting drive. Panel Members firmly believed that more ground baits would be laid if they were readily available in a pre-manufactured form and could just be put out whilst the landholder was doing a routine mill run or checking stock etc. The Members were pleased to note the Department of Agriculture has already applied for approval to register a ready-to-lay factory dried meat bait, to complement the existing Rhodamine Oat.

The Panel concluded that there is no "silver bullet" or magical quick fix for the high numbers of wild dogs being observed at present. Rather, it believes that the medium to long term management of wild dog numbers in Western Australia will require a return to the ongoing and widespread deployment of all available control methods in combination ie. aerial baiting, ground baiting, trapping and opportunistic shooting. In the view of the Members, any shorter-term response can only attempt to "fast-track" the longer-term solution.

To summarise, if the participation rates of land managers in the overall Program activity are increased, if the placement of baits generally (but aerial baits more particularly) is better planned and made more strategic, and if the present prime reliance on aerial baiting is replaced by the widespread use of the full range of available control techniques, Panel Members have every confidence that the refined control Program will succeed in bringing dog numbers/attacks back under control, and in keeping them under control. Despite the present (high) dog numbers being reported, the Panel believes it entirely reasonable to conclude that the current situation was likely to have been far worse had not the current control Program been in operation. In this latter respect, Members were mindful of anecdotal accounts of older industry members who can recall even worse dog numbers 30 years ago - only their concerted and sustained effort over a number of seasons managed to bring those numbers back to a more manageable level, and the same is likely to remain true today.

FINDINGS (continued)

Term of Reference 2: make recommendations to the Agriculture Protection Board regarding the Program's performance, future direction and resourcing;

The Panel identified a number of issues during its deliberations. A number of recommendations were made in order to address these issues. Prior to finalising its deliberations, the Panel sought comment from the Department's specialist staff on each of these recommendations:

1. COORDINATION AND PLANNING OF CONTROL ACTIVITIES AT LOCAL, REGIONAL AND STATE LEVELS

- a) Facilitate a formal process to strategically plan future wild dog baiting activity - planning to be at local, regional and whole-of-State levels. In place in some areas already but need to ensure it happens in the Pilbara and Kimberley as well. Process is also useful to decide whether to ground bait or to use aerial baiting. In some instances, baits currently dropped from the air would be better placed from the ground.
- b) Mobilise Zone Control Authority Chairmen (District Managers) and Deputy Chairs (Industry Representatives) in coordinating roles; use all Zone Control Authority officials to ensure coordination of activities among neighbouring zones. Most important that the industry members of the ZCAs adopt a high profile in this role.
- c) Have the ZCAs identify the active group (eg LCDDC, "Best Prac", Beef Planning) to drive the planning process, region by region. The ZCA will have the key role but this should not preclude other groups from assisting as necessary – use whatever arrangement works best locally. Make sure the pastoral ZCAs can use member "proxies" to assist also.
- d) Involve all the land managers, the scientists and the doggers, as well as key staff. The Department of Agriculture will support the process but, to be effective, industry must own it.
- e) Provide updated tracklog maps showing previous season's flight path data, land systems & watering points to underpin future planning sessions. Start with the basics. Use individual station maps at a scale that's used by most lessees [1:250,000]. Stage 2; publish larger maps showing whole-of-zone activity. These can then be integrated to show the whole-of-State picture. Need to get all baiting on the maps eventually ie ground as well as aerial.
- f) Strategically plan and get agreement on bait drop locations in advance of baiting being undertaken. May still need some flexibility to vary the plan once airborne (ie. in the event that watercourses thought to contain water are, in fact, dry or fresh evidence of previously unknown dog activity is sighted).
- g) Target creek beds, known dog leads, dog habitats, and water holes in preference to "straight line" baiting (it is conceded that dogs sometimes follow roads but baits adjacent to roads are probably best laid from the ground rather than from the air). Once again, known dog problem areas should be marked on suitable maps in advance of decisions being taken as to where to bait.
- h) Investigate the use of hand-held GPS to avoid sole reliance on suitably equipped aircraft; look for options to allow local use of available aircraft. The current reliance on contract aircraft with in-built GPS systems means that aircraft are not always available for bait runs where and when needed. The economics of bringing them from other areas of the State also can preclude pastoralists from doing an extra local bait run when they see the need. However, any alternative arrangements need to ensure the continued accuracy of the GPS data – inaccuracies and inconsistencies have the potential to seriously mislead decision-making. Suggest alternatives be piloted on a smaller scale before being adopted widely. Bait locations can always be digitised from a map, where hand-held GPS units are not available.
- i) Link in with the local dog control activities of all public land managers.

2. BAIT PRODUCTION & DELIVERY

- a) Explore ways in which the doggers currently employed by the Dedicated Animal Groups (DAGs) can be used to cost-effectively undertake ground baiting on Un-allocated Crown Land (UCL).
- b) Examine ways to provide accreditation to selected pastoralists/industry reps. to enable them to inject baits and to train others in the use of rhodamine oat baits. Only employees of the Departments of Agriculture and of Conservation and Land Management and individuals approved by the Commissioner of Health can legally use 1080 concentrate red. Pastoralists/industry representatives wishing to inject baits for community bait drives would need to complete a 2-3 day Licensed Pest Control Operators course (\$1,500). The Zone Control Authorities may wish to

fund this, where additional qualified personnel are required. Compliance with the prevailing legislation would need to be emphasised, so that industry's continued access to 1080 poison was not jeopardised. Restriction of Strychnine for use on jawed traps only would also need to be emphasised. Carcass baiting with Strychnine is ILLEGAL.

- c) Review current Dedicated Animal Group (DAG) areas with a view to making them more manageable for individual doggers
- d) Examine alternative cost effective options for supplying baits that are currently prepared 'in the field'. Should the option of 'in field' bait preparation be removed, then an immediate alternative supply of baits must be available to industry. The APB's Forrestfield Bait Production Unit (BPU) currently has an annual production capacity of 1,000,000 dried meat baits. It is currently producing 800,000 dried meat baits per year for CALM's Western Shield (Fox) Control Program. Department of Agriculture staff currently inject between 800,000 and 1,000,000 fresh meat baits for aerial and ground baiting of wild dogs each year. Therefore, if the 'field preparation' option was suddenly removed and the CALM order continued, the BPU would not have sufficient capacity to cope with the total demand. However, a whole of government approach for bait product research, manufacture and wholesale is presently being finalised. Registration for a 6mg Wild Dog Dried Meat Bait, to be produced in the factory, has been submitted to the Australian Pesticides and Veterinary Medicines Authority for consideration. When approved, this will enable land managers to buy quantities of factory-made Wild Dog baits. This is desirable so that the land managers can carry some with them whilst traversing their properties on other duties, and can then ground bait in key locations as necessary. Rhodamine Oats will still be available but field preparation of baits using these oats is both messy and time consuming and not a lot have been sold as a consequence. In addition, the Department of Agriculture is working with the Department of Conservation and Land Management on the prospect of registering a 6mg salami-style wild dog bait based on the latter's 'Pro bait' for fox control.
- e) Consider whether there are any other ways to complement the production of fresh meat bait preparations in the field that will be more cost effective, efficient and acceptable to the responsible authorities (eg. the Australian Pesticides and Veterinary Medicines Authority's "1080 review").

3. DOGGERS

- a) Explore additional financial incentives to attract/retain doggers. Panel Members acknowledged that one of the typical dogger's main costs was fuel. They encouraged land managers (both private and public) to offer to 'top up' the dogger's vehicle as a practical form of minimising the latter's costs / increasing their disposable income. The impact of GST on dogger's incomes also needed further investigation. It appeared that doggers had been required to absorb the full cost of GST without offsetting increases in their incomes. The rising costs of sickness/accident and public liability insurance was also becoming a major impost for the average dogger. The Panel recommended the Department of Agriculture/APB examine ways in which this might be more cost-effectively provided centrally, rather than relying on individual doggers to arrange their own cover.
- b) Explore alternative sources of dogging manpower – short-term use of retired doggers, Aboriginals, other. Members noted that a wide range of non-traditional sources could also provide additional dogging manpower eg. some cattle producers, contract goat musters, Aboriginals employed by the Police Stock Squad, the Commonwealth's Community Development & Employment Program and so on. One Member advised his local Shire had offered to contribute \$20,000 as a short-term relief measure.
- c) Consider an appropriate system of performance-based reward for doggers, to increase their accountability. Members felt the growing dog numbers and growing cost pressures left no alternative but to improve the efficiency and effectiveness of all Control Program expenditure. This included the considerable annual investment in doggers. There was a need to define more clearly the situations in which doggers were to be used. Currently, they were being used to do all the work on behalf of some landowners. In reality, the Panel felt the owners concerned ought be carrying out the routine control work themselves (ground baiting particularly, but also trapping and shooting as necessary), with the doggers being used solely to 'mop up' ie. get the more cunning / troublesome dogs.
- d) Explore the options to train new doggers. Members were adamant that local knowledge, as well as considerable experience, were both critical to a dogger's success or failure. As such, the sudden influx of people unfamiliar with a certain area and/or without considerable dogging experience, was likely to divert resources away from their best use. The Panel observed that local pastoralists and farmers themselves were likely to have the best local knowledge. Some would also have good knowledge of baiting and trapping techniques. Where experienced

doggers were currently employed to do all ground control, Members believed it appropriate that efforts be made to “free up” their time for the “problem” dogs, with the more routine work being transferred to local pastoralists/farmers instead of “raw recruits”.

4. EXTENSION AND EDUCATION

- a) Draft a specific strategy to increase the participation of both landholders and landusers in control activities
- b) Continue widespread extension of basic wild dog control strategies – ALL of them - aerial, ground, trapping etc (high turnover of lessees, thus lack of knowledge & consistency - enormous education effort needed)
- c) Use the expertise of people like Peter Thomson at planning and training events – 1080 best practice & working dog safety
- d) Use experienced doggers to train younger/newer lessees on how to prepare ground baits, where to lay the baits for maximum effect, how and particularly where to set a dog trap (repeat the successful Albion Downs training day at other regional venues). Given dogging was dedining as a profession, Panel Members felt it essential that the ‘older hands’ make themselves available for training days and be prepared to share their skills and experiences. This commitment would need to be built into their income structure to reinforce the importance placed on it.
- e) Send best practice guidelines for dog control to all pastoral lessees (with their Agriculture Protection Rate assessment / via Pastoral and Ag Memos)
- f) Convert existing Farmnotes into a format/language that pastoralists and farmers can understand / identify with, in order to improve the uptake of the extension material (eg. how and where to set a trap in pictorial/diagrammatic form)
- g) Seek greater co-operation of Departments managing public lands; include Local Government through Shire Rangers for control of straying dogs around town boundaries and Environmental Health Officers involved in dog health program with Aboriginal Communities
- h) Approach Pastoral Lands Board to add specific questions on dog numbers and dog impacts to the annual Statutory Declaration that must be completed by all lessees – use this method to collate stock loss information as supporting material for wild dog control and publish summaries of the financial impacts in Farmnote style to highlight value of lost potential income. Members acknowledged there may be some problems with accuracy of individual estimates but felt that the trends over time should be reasonably consistent.
- i) Publish suitable material to re-emphasise importance of no-baiting zones around townsites and built-up areas / highlight potential implications for continued access to 1080 in WA
- j) Provide data on non-payers of Agriculture Protection Rates to the Zone Control Authorities – ensure baits are only being distributed to those who pay, and seek cost recovery from non-payers

5. FUTURE RESEARCH

- a) Investigate alternative baits to introduce some variety and avoid current reliance on dried meat bait. Members noted that CALM’s “Probait” (being developed for fox control initially) held most promise. The Department of Agriculture was already working closely with CALM with a view to adapting this material for use on wild dogs. Department of Agriculture Research Staff were separately monitoring developments in other fields (including Australian Wool Innovation funding for canid bait work).
- b) Investigate development of collaborative research project with CALM looking at bait attractiveness and alternatives (see above)
- c) Consider a Department of Agriculture trial of CALM’s “Probait” in a zone this current baiting season. Departmental advice suggested this was not possible until CALM had finalised its bait “matrix”. With that finalised, it was hoped a trial might commence in the Autumn of 2004.
- d) Investigate a suitable liquid lure to make dried meat baits more attractive to dogs, with a view to increasing bait uptake. Members noted advice that CALM is currently considering further attractants / flavour enhancers for its “Probait” product. Research advice separately warned that available food supply has the predominant impact on bait uptake – the search for a “silver bullet” bait lure had the potential to misdirect efforts that could otherwise be put into better bait preparation and placement, and alternative control measures. Despite this, Department of Agriculture staff were continuing to monitor relevant work in Queensland and the USA.
- e) Look at ways in which dog numbers can be reliably monitored during season – without benchmarks, we can’t measure whether baiting has been effective, whether additional control is still required etc. Members felt the lack of rigorous measures was a key issue for the future of the

Program. It appeared to be an area that the Centre for the Management of Arid Environments could be asked to have a look at.

- f) Consider appropriate collaboration with the Centre for the Management of Arid Environments (Kalgoorlie)
- g) Evaluate the Ecosystem Management Unit (EMU) process as a possible future mainstay of planning for baiting activity
- h) Add scientific rigour to trials looking at helicopters vs fixed wing aircraft for bait delivery. Noted the Pilbara Zone Control Authority intended funding a trial for a further 12 months.

6. STATE WIDE

- a) Actively pursue links with other land managers (Department of Conservation and Land Management, Department of Land Administration, Indigenous Land Corporation, Mining Companies & others) – offer them maps showing regional baiting activity as a first step; highlight areas where their inactivity may be compromising the integrity of existing control efforts. Members felt this was likely to be more effective at the regional level but noted with pleasure that it was also already being taken up at both Senior Officer and Ministerial level.
- b) Investigate options to reduce price of factory-prepared baits – decrease in price via increase in throughput (collaboration with CALM etc.)
- c) Ensure key staff are available for peak activity times; coordinate staff placement so that there is a better blend of experience and youth
- d) If enactment of the *Agriculture Management Bill* looks like bogging down, seek Ministerial approval to amend the existing *Agriculture and Related Resources Protection Act 1976* so that we can begin setting differential Agriculture Protection Rates without losing the \$1 for \$1 matching Government contribution, and so that we can use industry representatives to chair the Zone Control Authorities. With respect to funding, Members noted the catalytic role played by the APB/Department of Agriculture staff in ensuring the continuation of an effective Wild Dog Control Program, and expressed concern that this role be jeopardised by the re-focusing of government resources within and away from the agricultural portfolio. In recommending a number of improvements to make better use of existing resources, the Panel recognised that funding to the Wild Dog Control Program was substantially inadequate in some areas of the State. Members believed that overall funding levels would need to be monitored carefully and reviewed in a further 12 months time. Modifications to the legislative mechanism by which the existing Agriculture Protection Rate was set (for Pastoral areas only) were highly desirable to allow greater revenue raising flexibility at an individual zone level, whilst retaining the \$ for \$ matching contribution from the State.
- e) Investigate the concept of mandatory baiting to deal with those land managers presently compromising the effectiveness of control activities
- f) Consider using existing powers under S50/S52 of the *Agriculture and Related Resources Protection Act 1976* in order to enforce participation in control program activities, where it is not forthcoming voluntarily. Legal advice had indicated that assessed compliance (or non-compliance) with the relevant provisions of the existing legislation could not be based on impact, and that the undertaking of insufficient control work had to be proven. Members felt the Zone Control Authorities should be in a position to determine which landholders were not “doing enough”. However, they needed some general guidelines developed, to assist them in applying this responsibility consistently across different areas of the State. Members felt that appropriate provisions should also be built into the *Agriculture Management Bill*.
- g) Investigate options for the re-allocation of funds (\$300-400,000) to enable an “emergency response” type reaction to address current high numbers of wild dogs and then let the revised program manage the problem. The Panel discussed the Shire of Laverton’s request of the Minister for \$1.0million to allow short-term input of extra doggers to ‘get on top’ of the present high numbers of wild dogs. Members were adamant that local knowledge, as well as considerable experience, were both critical to a dogger’s success or failure. As such, the sudden influx of people unfamiliar with a certain area and/or without considerable dogging experience, was likely to divert resources away from their best use. The Panel observed that local pastoralists and farmers themselves were likely to have the best local knowledge. Some would also have good knowledge of baiting and trapping techniques. Where experienced doggers were currently employed to do all ground control, additional funds could perhaps better be used to “free up” their time for the “problem” dogs, with the more routine work being transferred to local pastoralists/farmers instead of “raw recruits”. Members firmly believed that any short-term response should consist of:

- a targeted campaign to get individual pastoralists and farmers to lay more ground baits themselves;
- increased accessibility of ground baits – production of factory made meat baits, complemented by additional coordinated community baiting programs as necessary;
- additional aerial baiting ‘runs’ where likely to be of benefit;
- more targeted use of experienced ‘doggers’ to trap the really cunning/troublesome dogs;
- a targeted campaign to get non-pastoral/farming landholders to become involved in the control program, and to undertake control work on their lands as necessary to avoid pests impacting on the neighbouring lands.

FINDINGS (continued)

Term of Reference 3: report on the pilot of a modified landholder engagement process for the planning and implementation of the Wild Dog Control Program.

The Panel noted with interest details of the recent pilot exercise conducted by the Carnarvon Office and supervised by the Department of Agriculture's District Manager, Rod Williams. All Members firmly believe it is the "way of the future".

One of the biggest advantages offered by the modified approach is that it involves ALL the land managers within a given area, not just the pastoralists/farmers. Members agree that the Department of Conservation and Land Management, the Department of Land Administration, the Shires, Mining Companies, Aboriginal Communities and other small landholders all need to be intimately involved, to ensure that all are "doing their bit" and that the inaction of a few does not compromise the conscientious efforts of the remainder. The Panel is mindful that the percentage of the State's non-metropolitan land mass which is controlled by government agencies is already high and increasing. Hence it is critical that the government land managers also be involved to the same degree as private individuals.

Another advantage of the modified approach is the opportunity it provides to increase the effectiveness of the current aerial baiting operations through better detailed planning. Members noted a range of anecdotal evidence suggesting the planning and implementation of aerial baiting is currently inadequate – little pre-planning on the ground, just take to the air and "drop the baits where I tell you to"; property manager themselves suffers from air-sickness or is otherwise unavailable to act as navigator (may send the local Jackeroo/Jillaroo or an inexperienced farm hand up in their place, but associated lack of knowledge of where the dogs are/where to place the baits for greatest effect may have a big bearing on the overall effectiveness); other accounts of property managers taking to the air to navigate but ordering that large numbers of baits be 'dumped' in certain spots just so they can cut-short the duration of the flight.

The Panel also noted with interest, the use of the Environmental Management Unit (EMU) process in the Kalgoorlie region as an aid to more strategic planning and also to formally capture the local knowledge of where the problems are on a given property (latter is important for continuity but often not present under current approaches). Members felt the EMU process may not suit all, but was a useful vehicle for those more advanced in their planning and use of technology.

It seems clear that provision of standard maps at appropriate scales will be a key requirement for the future – the widespread availability of Geographic Information System (GIS) facilities and the advent of cheap and reliable Global Positioning System (GPS) technology now make it possible to store aerial and ground baiting data as layers, to be superimposed over a given property map at will.

The Panel believes the Zone Control Authorities to be well placed to play a coordinating role between properties – they need to be supported with appropriate information and technical advice to do the job properly. The ZCAs are also well placed to use their local networks to gather feedback on progress and to recommend further improvements to a central body with responsibility for whole-of-State performance of the Wild Dog Control Program. Although this responsibility currently rests with the Agriculture Protection Board, the Board could usefully be assisted by convening an Industry-based Panel once per year, to evaluate the outcome of the year's control activities and to adopt a whole-of-State perspective in recommending further changes to the Board itself. Certainly, the Panel believes the industry stakeholders need to take more of an interest in the details of Program delivery.

SUMMARY OF CONCLUSIONS

Note: in the context of the following conclusions, the term "landholder" is intended to include owners and/or managers of both private and public lands in pastoral and agricultural areas of Western Australia.

The following conclusions have the unanimous support of the Evaluation Panel members:

- There is no "silver bullet" or magical fix for the high numbers of wild dogs being observed at present. Medium to long term management of wild dog numbers in Western Australia will continue to require the ongoing and widespread deployment of all available control methods in combination ie. aerial baiting, ground baiting, trapping and opportunistic shooting. Any shorter-term response can only attempt to "fast-track" the longer-term solution.
- With greater emphasis on planning and landholder engagement, the current resources available to the Wild Dog Control Program could be deployed even more efficiently and for even more effect.
- Properly implemented, aerial baiting does work, but it is unlikely to be completely effective in isolation and its adoption (by some) as an ultimate tool to solve all dog problems is not a good strategy.
- Bait placement is critical. Baits must be placed near dog leads, known habitats and hunting/drinking areas for maximum effect.
- The involvement of all landholders within a given area is critical to the Wild Dog Control Program's future success. Currently, not all landholders participate in the Program, thereby compromising the diligent efforts of others.
- The effectiveness of current control efforts is difficult to reliably monitor and measure, given the general lack of good information on overall dog numbers, dog movements and stock losses/stock impacts. Stock losses/impact can only be estimated. A more effective monitoring process is critical for the future.
- Legally, all landholders have a responsibility to control wild dog populations on, and in relation to, land which they own/occupy (*Agriculture and Related Resources Protection Act 1976*, sections 39 [State government], 42 [Local government] and 49 [private]).
- Being very mobile pests, wild dog control efforts are likely to be most effective if coordinated among adjoining landholders, and strategically focused on and around known wild dog leads, refuges and habitats.
- Dogs are less likely to take baits when there is abundant food available (previous research has shown that dogs prefer their natural, fresh prey).
- Landholder complacency, a scaling down in the amount of ground control work carried out, and a gradual over-reliance on aerial baiting have all contributed significantly to the current high numbers of wild dogs being reported in widespread areas of Western Australia.
- Continuing access to 1080 poison (*sodium fluoroacetate*) and to Strychnine is critical to the ability of landholders to adequately control wild dog numbers.
- Current regulatory provisions for the management of non-compliance (with critical aspects of the Wild Dog Control Program) are in need of updating and strengthening.
- Attempts to increase overall landholder participation in control Program activities will be quickly compromised if key Departmental staff are not available in the key locations at the key times to assist with public enquiries and required (1080) approvals.
- More uniform and equitable funding arrangements are urgently needed to ensure the effective control of plant and animal pests across broad areas of the landscape and spanning multiple forms of land tenure/land management.

SUMMARY OF RECOMMENDATIONS

Note: in the context of the following recommendations, the term "landholder" is intended to include owners and/or managers of both private and public lands in pastoral and agricultural areas of Western Australia.

The following recommendations have the unanimous support of the Evaluation Panel members:

1. That the current Wild Dog Control Program be further supported by the development of State and regional control strategies, with input from *all* landholders as appropriate.
2. That the strategy development process review the present investment in aerial and ground baiting contracts, with a view to ensuring each control technique is used most appropriately and for maximum complementarity.
3. That the Board re-convene an Evaluation Panel on an annual basis, specifically to review Statewide performance of the Wild Dog Control Program and to recommend on any changes necessary to the State Control Strategy. Panel to predominantly be comprised of producer representatives (pastoralists and farmers), but with other stakeholders (Government, Aboriginal Community representatives) as appropriate.
4. That, within the broad framework of an agreed State Control Strategy, the Board's Zone Control Authorities (ZCAs) be charged with responsibility for regional oversight of wild dog control activities, including planning, coordination, review, reporting and annual evaluation of effectiveness.
5. That the Department of Agriculture supply ZCAs with the information and technical support necessary to effectively oversee regional wild dog control activities i.e.
 - topographical maps of all landholdings (both private and public) within their jurisdictions (at suitable scale)
 - overlays of aerial baiting previously undertaken ("flight paths")
 - information on property ownership / management
 - information on current wild dog control work known to be undertaken on each property
 - property level data on financial contributions to the current Control Program (extreme pressure to be brought to bear on 'non-payers' by ZCA and Board as necessary).
6. That the ZCAs coordinate planning sessions involving all landholders within a suitable area, to identify risks and agree on how best to target resources accordingly. Planning sessions to honestly and openly review existing use of resources (location and timing of aircraft use, allocation of baits, access to doggers etc) to ensure each is used most appropriately and for maximum strategic effect; also that each is properly integrated with complementary landholder control activities.
7. That the effectiveness of aerial baiting be routinely improved through coordinated pre-planning sessions with all adjoining landholders:
 - strategic bait placement within the landscape to be agreed on the ground and in advance of any flying being undertaken, so as to concentrate delivery of baits to known dog leads, refuges, habitats
 - numbers of baits to be allocated according to strategic need rather than to ensure notional equality among leases i.e. if an area is a bad dog area, with rugged country and numerous 'leads' (and areas of favourable dog habitat), it should get more baits than an area that has a handful of dogs in generally accessible country (latter can and should be more effectively baited from the ground).
8. That, in addition to the existing Rhodamine Oat (which requires 'field' preparation), in order to facilitate increased landholder ground baiting, the Board also make available through its Bait Production Unit, an affordable, pre-manufactured, ready-to-lay dried meat bait.
9. That the Board/Department continue to expedite an additional ready-to-lay dog bait based on CALM's developing 'Pro-bait' sausage technology (bait variety is desirable to increase uptake).
10. That the Board ask its ZCAs to consider funding suitable landholders to be trained as Licensed Pest Control Operators, so as to be in a position to legally inject field-prepared meat baits for additional 'community baiting' drives as required.

11. That the Department of Agriculture ensure that it has sufficient appropriately skilled and suitably experienced staff based in its regional offices to handle public enquiries and necessary (1080) approvals, especially during critical times leading up to aerial and ground baiting campaigns.
12. That a suitable communication strategy be developed and implemented, with a view to encouraging all affected landholders, to participate in a revised Wild Dog Control Program. It is recommended the Strategy include as a minimum (a) an annual 'fax out' to all affected landholders, advising of forthcoming planning sessions, (b) information on 'best practice' control methods for individual landholders and for Declared Animal Groups, (c) as well as information on the potential economic impacts of wild dogs on individual agricultural businesses. All information provided should be written with the target audience in mind ("de-boffinised").
13. That the Agriculture Protection Board approach the Pastoral Lands Board with a view to using the latter's annual Statutory Declaration to collect information from pastoral lessees on the stock impacts sustained in a given financial year as a result of wild dogs.
14. That the Board commission further scientific work aimed at developing a multi-criteria index of wild dog damage, to assist with longer term monitoring of trends and the overall effectiveness of the Wild Dog Control Program.
15. That the Board commission further scientific evaluation of the possibilities of applying an attractant to the commonly used baits, to increase their uptake by wild dogs.
16. That the Board continue to monitor developments in the area of fertility control, with a view to the possible adaptation of this technique to assist in controlling wild dog numbers.
17. That the opportune use of helicopters for improved precision of aerial bait placement continue to be evaluated.
18. That the Board examine use of section 50(1)(b) of the *Agriculture and Related Resources Protection Act 1976* as a means of compelling landholders, where necessary, to participate in coordinated ground and aerial baiting activities authorised by the relevant ZCA. The Panel believes there is a case for 'mandatory baiting', to ensure the diligent efforts of the majority are not compromised by the refusal of a minority of landholders to participate. However, the Panel also recognises that 'mandatory baiting' must either co-exist with, or otherwise override, the present requirement that landholders individually authorise any 1080 baiting undertaken on their properties; also that properties without signs of wild dog populations will pose special difficulties.
19. That the Board ensures future regulatory provisions for the management of non-compliance with authorised control activities are suitably strengthened, such that recalcitrant landholders can be more easily forced to participate.
20. That the Board move to amend or otherwise replace section 60(3) of the *Agriculture and Related Resources Protection Act 1976*, such that a General (Agriculture Protection) Rate can be set at a different quantum within each pastoral Zone Control Authority jurisdiction, without loss of the current "dollar for dollar" matching contributions from State Government, and without need of any fixed relationship to the Rate within the other pastoral Zones. The current maximum rate of 8 cents in the dollar of the unimproved value of the land to be retained.
21. That the Board continue to lobby the Australian Pesticides and Veterinary Medicines Authority (formerly the National Registration Authority) in the strongest possible terms to re-affirm the importance of the continued availability of 1080 poison (and Strychnine) to enable Western Australian landholders to adequately control wild dog numbers.
22. That current requirements for the physical security of 1080 baits/Strychnine crystals held "on-property" be reviewed and, if necessary, strengthened so as to minimise the risk that accidental or deliberate misuse could lead to them being banned.
23. That the Board and the Department continue to use all means at their disposal to ensure government landholders are aware of, and comply with, their obligations to control wild dogs on government held lands. Variation in control efforts is currently a problem at regional level. There is a need for direction at State level to ensure more consistency in approach.

24. That, if additional funding becomes available in the short term, it is used broadly across all available control methods, rather than being targeted at any one in isolation eg. second aerial baitings in areas where this will likely benefit (West Kimberley, other), plus additional baits to encourage increased baiting by landholders, plus additional dogger time for reactive control work and 'problem' dogs in worst hit areas etc.
25. That, given the heightened interest in the issue of wild dogs, the Board consider making this report publicly available, in the process stressing the need for the greater involvement of all landholders in the associated control Program and confirming, once again, the need for a combination of available control measures, rather than a sole reliance on aerial baiting.

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