NSW Weed Biocontrol Taskforce

PROSPECTUS

Partnership model: a shared investment model to sustainably fund biological control
ACKNOWLEDGEMENTS

This project is supported by Meat & Livestock Australia with funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program.

This prospectus was produced by the Steering Committee of the NSW Weed Biocontrol Taskforce, comprising: NSW DPI, NSW National Parks and Wildlife Services, Horizon Ecological, the NSW Weeds Society, Local Councils: Clarence Valley, MidCoast, Rous County, Hunter Regional Weeds, and Local Land Services: Central Tablelands, North Coast, North West.

Weeds Action Program provides support for research and rearing of biocontrol agents at NSW Department of Primary Industries facilities in Orange and Grafton.

NEW SOUTH WALES
WEEDS ACTION PROGRAM

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Dear Investor,

On behalf of the executive it gives me great pleasure to invite you to become a member of the NSW Weed Biocontrol Taskforce.

The Taskforce recently underwent a programme restructure to allow for greater flexibility and value to investors by implementing a shared investment model. This innovative model, supported by the Australian Department of Agriculture and Water Resources (DAWR), NSW Department of Primary Industries (NSW DPI) and Meat & Livestock Australia (MLA), is designed to facilitate collaboration, drive innovation and provide an efficient biocontrol agent delivery pipeline for members.

At a time where the efficient use of resources for the sustainable management of weeds is vital, the Taskforce provides an exceptional opportunity for leveraging resources and building a culture of collaboration in weed management across NSW and beyond to address the challenges together.

I commend this proposal to you and look forward to welcoming you as an investor.

Yours Sincerely,

Royce Holtkamp

CHAIR, NSW WEED BIOCONTROL TASKFORCE
The challenge

Weeds cause significant impacts to the Australian economy, environment and community. The agricultural economic impact of weeds in Australia is estimated at $4.5 billion per year¹. Costs to the environment are thought to be of a similar magnitude. Several widespread weeds are known to affect human and animal health, while others are detrimental to communities – environmentally, socially and economically. Mitigating these impacts for agriculture, the environment and communities is vitally important.

There is an increasing need to apply self-sustaining management technologies when it comes to managing weeds. For example, an increasing incidence and geographical spread of herbicide resistance for many weed species in agricultural systems is driving the need for sustainable non-chemical weed control options. Herbicide resistance is a major impediment to agricultural productivity and sustainability. Moreover, the control and management of weeds using herbicides in environmentally sensitive areas, such as water bodies or where weeds are among threatened species, is particularly challenging.

For more than a century, the applied discipline of biological weed control (biocontrol) has been successfully implemented as an approach to alleviate issues caused by problematic plant species (weeds). Put simply, “biocontrol is the use of the invasive plant’s naturally occurring enemies to help reduce its impact”.²

A key advantage of biocontrol over other weed control options (e.g. chemical, mechanical and grazing pressure) is that when natural enemies (agents) are widely established they exist permanently in the ecosystem and are mostly self-perpetuating.


This innovative approach offered an early indication of its potential during the first part of the 20th Century with the outstanding success achieved against common prickly pear (Opuntia stricta) with Cactoblastis moth (Cactoblastis cactorum). Since then, Australia has continued to develop and implement biocontrol (using both insects and pathogens) against a plethora of weed targets, both agricultural and environmental.

Limited and sporadic funding during the past decade has resulted in a decline of national weed biocontrol research, development and extension (RD&E) capacity. Maintaining long-term funding can be challenging in the face of competing priorities for RD&E support.

This prospectus aims to obtain a shared financial and in-kind commitment to weed biocontrol across the state of New South Wales. This includes establishing a ‘buy-in’ from a network of state-wide sources to obtain sustainable funding and a clear perspective and direction for weed management across the state.

RIGHT: Larval damage and pupal cases of jewel beetle (Hylaeogena jureceki) feeding on the host vine weed species cat’s claw creeper (Dolichandra unguis-cati).
Biocontrol as a solution

History has shown biocontrol to be one of the most cost-effective, self-sustaining weed management technologies on offer. Biocontrol is continually under scientific refinement to not only maximise return on investment, but also maximise safety and impact.

The collective national return on Australia’s biocontrol program investment by 2005 was on average 23:1, in direct economic returns to agriculture and health, not including environmental benefits3, which is un-paralleled for any other widespread weed management approach. When employed under a rigorous set of operating principles, the technology is sustainable and requires little further investment after agents are established. Biocontrol remains a national RD&E priority under the Australian Weeds Strategy and within the endorsed national strategic plans for each of the Weeds of National Significance (WONS).

Biocontrol is an economical, effective and environmentally sound method, but is a long-term technique with an extensive discovery-to-delivery pipeline. Biocontrol does not eradicate a weed, but can reduce, or suppress it to a level where it can be controlled with other methods.

The development cost of weed biocontrol agents is much lower than that for the development of a new herbicide. Moreover, biocontrol agents, in comparison to herbicides, do not require re-application and are an important component of a sustainable and environmentally friendly management solution to be incorporated into integrated weed management (IWM) plans.

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NSW Weed Biocontrol Taskforce partnership: the way forward

The Taskforce comprise of a voluntary collaboration of members from a number of like-minded agencies responsible for managing weeds. The role of the Taskforce includes: obtaining and facilitating commitment and investment, mass-rearing and establishment of agents, monitoring, training, prioritising agents for action in NSW, and communication of research progress. Bi-annual meetings involve updates, training, field visits and demonstrations.

A key deliverable under the NSW Invasive Species Plan is to “Maintain and expand the NSW weed biocontrol taskforce”. To achieve this, a shared investment model is being implemented in NSW.

The Taskforce originally provided a coordinated approach to promote biocontrol, secure resources to mass rear agents, and provide establishment and monitoring in the field, but was limited geographically and financially. To build capacity across the state the Taskforce is now funding and promoting biocontrol research alongside rearing, release and monitoring programs (implementation activities) through a shared investment commitment.

This model has enabled the setting of priorities and pooling of support and funding, linking local, state and national collaborators, including local government, Local Land Services (LLS), NSW Department of Primary Industries (NSW DPI), Office of Environment and Heritage (OEH) (including NSW National Parks and Wildlife Service – NSW NPWS) to national experts and funding agencies.

The model is proving highly successful and is laying the groundwork for further co-investment in a coordinated, collaborative effort. An example of such commitment is the consolidated NSW support for the second successful Rural Research and Development (R&D) for Profit Program led by AgriFutures (formally Rural Industries Research and Development Corporation — RIRDC) — “New biocontrol solutions for sustainable management of weed impacts to agricultural profitability”. This shared investment model incorporates the successes and challenges learned from other established biocontrol funding models.

The NSW Weed Biocontrol Taskforce priorities are guided by established prioritisation frameworks for environmental and agricultural weeds.4,5

NSW DPI is the lead agency and legal entity responsible for the overarching governance of the Taskforce. The Taskforce has a robust financial management structure, to ensure effective allocation and use of financial resources. Rous County Council is the legal entity appointed for managing finance on behalf of the Taskforce. A Memorandum of Understanding between NSW DPI and Rous County Council facilitates the administration of Taskforce funds. The Taskforce Steering Committee provides overarching financial direction. To ensure transparency and overall objectives of the Taskforce are being met, a governance technical working group will annually review and regulate financial management decisions.

Rous County Council is a proclaimed Local Government entity operating under the NSW Local Government Act 1993. As such it is responsible for adhering to all financial reporting and audit requirements of that Act and its associated regulations. Funds received on behalf of the NSW Weed Biocontrol Taskforce are treated as externally restricted assets in Council’s financial statutory reports.

The allocation of funds to support new and existing biocontrol projects is an ongoing activity for the working group and the Taskforce.

Taskforce funds can be used to leverage other investment. Details regarding the investment structure and governance are detailed within the Taskforce Terms of Reference (ToR).

The Taskforce is overseen by a Steering Committee, which consists of representatives from: NSW DPI, local councils, OEH, NSW NPWS and LLS.

External advisors and corresponding members to the Taskforce include:
- CSIRO Australia
- Queensland Department of Agriculture Fisheries and Forestry (DAF)
- Department of Primary Industries and Regions, South Australia (PIRSA)
- Meat & Livestock Australia (MLA)
- Agriculture Victoria (DEDJTR).

Taskforce member resources include:
- NSW DPI’s insect biocontrol quarantine facility — Orange Agricultural Institute (OAI)
- NSW DPI rearing facilities — OAI and Grafton Primary Industries Institute (GPII)
- Access to Australia’s leading weed biocontrol practitioners.
INSET ABOVE: Madeira beetle (P. correntina) eggs deposited on the underside of a Madeira vine (A. corifolii), leaf.

MAIN IMAGE: Coral cactus cochineal (D. tomentosus) destroying its coral cactus host (C. fulgida var. mamilata).
Why invest in the Taskforce?

Joining the Taskforce and participating in the shared investment model provides investors with:

- **an integrated and sustainable management strategy** — With the number of herbicide-resistant weed species on the rise, you will be aligning your organisation with the attributes of this environmentally friendly and self-sustaining technology. Including biocontrol in an IWM program, reduces overall herbicide use, helping alleviate future impacts of herbicide resistance.

- **improved economic return in weed management** — Biocontrol is the most cost-effective solution for landscape-scale management of many weeds, with historical benefits outweighing costs by up to 23:1.

- **increased access to biocontrol agents and training** — You will have access to agents and up-to-date technical information and training.

- **access to knowledge** — The Taskforce offers a wealth of knowledge to help communicate and take action on widespread weeds.

- **assurance you are partnering with Australia’s most respected research practitioners in weed biocontrol** — Establish your organisation as a key partner involved in innovative weed management practices.

- **a greater chance of success** — By leveraging future investment and strengthening community engagement, greater on-the-ground impact can be achieved.

- **certificate of contribution** — Investors will receive formal recognition of participation.

- **improved collaboration, sharing of knowledge and information** — As a Taskforce partner you can communicate face-to-face with other partners, and build and maintain networks within the community.

- **a boost in patronage** — The community will see benefits of the partnership, and will be encouraged to provide support.

- **improved standing and profile within the community** — Your organisation will benefit from public recognition for taking a proactive approach to weed management.

- **intellectual contribution to programs and priorities** — Members of the Taskforce are actively involved in the decision-making process regarding planning and prioritisation of programs.

- **opportunities for collaboration** — Taskforce partners have the potential to collaborate in research trials and hold workshops within regions of interest.

* Depending upon the level of investment as detailed within membership of the Terms of Reference and / or at discretion of the Steering Committee.
Timeframe for investment

Organisations expressing interest in investing in the Taskforce should consider this as a long-term proposition. While the Taskforce encourages an annual financial commitment, it also recognises this option is not always possible, thus in-kind commitments are recognised. Fee-for-service will be negotiable and allocated to an applicable investor category. The NSW Weed Biocontrol Taskforce acknowledges that any Expression of Interest (EoI) is non-binding.

ABOVE LEFT: Pupal case of jewel beetle (H. jureceki) within foliage of host cat’s claw creeper (D. unguis-cati).

ABOVE RIGHT: Hyacinth weevil (Neochetina bruchi) feeding on host water hyacinth (Eichhornia crassipes) foliage.

LEFT: Jewel beetle (H. jureceki) feeding on host cat’s claw creeper (D. unguis-cati).
Details regarding various membership level options can be found within the organisational structure of the Taskforce and partner packages (Table 1).

The Taskforce’s direction and project portfolio will be guided by members and designed cooperatively with investors and stakeholders.

Potential investors are encouraged to engage as soon as possible with the NSW Weed Biocontrol Taskforce. Together we will aim to develop cost-effective biocontrol solutions to invasive weeds.

How to become an investor in the Taskforce

ABOVE LEFT: Jewel beetle (H. jureceki) larval damage and pupal cases on host plants of cat’s claw creeper (D. unguis-cati).

ABOVE RIGHT: Madeira beetle (P. correntina) later stage larval instar feeding on leaf margin of host Madeira vine (A. cordifolia) foliage.

LEFT: Madeira beetle (P. correntina) early stage larval instar feeding on leaf margin of host Madeira vine (A. cordifolia) foliage.
Table 1. Organisational structure of the taskforce and partner packages

**NSW WEED BIOLOGICAL CONTROL TASKFORCE**

The Taskforce consists of three tiers:

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<thead>
<tr>
<th>Benefits</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
<th>Platinum</th>
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<tbody>
<tr>
<td>Biocontrol agent access</td>
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<td>Regular reports including information on biocontrol status in NSW</td>
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<tr>
<td>Access to training, information exchange and networking opportunities</td>
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<td>Empowered with knowledge to help communicate and take action against widespread weeds</td>
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<td>Certificate of contribution</td>
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<td>Access to expertise for direct discussions twice per year</td>
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<td>Potential to collaborate with research trials and/or a workshop</td>
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<td>Strategic contribution to programs</td>
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<tr>
<td>Public recognition of contribution to biocontrol</td>
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Note: Fee-for-service will be negotiable and allocated to an applicable investor category.

* For further details on organisation structure, including membership roles and responsibilities see the Terms of Reference for the Taskforce.
Weeds cause significant impacts to the economy, environment and community. There is an increasing need to apply self-sustaining management technologies, such as biocontrol, when implementing successful integrated weed management (IWM) strategies. Boom-and-bust funding is a common scenario for the sciences, but these long-term problems do not meet the short-term funding cycles. We need a shared financial and in-kind commitment to weed management across the state. Thank you for your interest in joining us in this cooperative approach to developing tomorrow’s biocontrol solutions for invasive weed management.

The undersigned (Chief Executive or authorised officer) warrants that their organisation provides an in-principle commitment to:

- participate in the NSW Weed Biocontrol Taskforce and its collaborative biocontrol programs, administered by NSW DPI
- become a party to, and to contribute cash and in-kind resources, as indicated as a NSW Weed Biocontrol Taskforce Member or in a Partner Declaration.

The undersigned and NSW Weed Biocontrol Taskforce acknowledge that this Expression of Interest is non-binding.

Name of authorised officer: ____________________________________________
Position: ___________________________________________________________
Organisation: _______________________________________________________
ABN: ______________________________________________________________

Signature: ___________________________________________________________

NSW Weed Biocontrol Taskforce investor type:
- Bronze: $500-$1000
- Silver: $1000-$5000
- Gold: $5000-$50,000
- Platinum: >$50,000
- In-kind contributions: _____________________________________________

RD&E priorities: ______________________________________________________
RD&E capabilities: ___________________________________________________ Implementation priorities: ________________________________________________

Date: _____/_____/_____

RETURN TO:
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