

Case Study: Surveying NRM managers in the Riverina to determine aquatic weed resource needs

Aquatic weeds pose a serious threat to productivity and biodiversity in the Murray-Darling Basin (MDB). Increasing stakeholder interest, knowledge and capacity to reduce the spread of aquatic weeds within the Basin holds national importance. New South Wales (NSW) has a strong Natural Resource Management (NRM) network that includes weed, water and land managers, who work with each other and the community to reduce the spread and impact of aquatic weeds. To support these NRM managers, the Murray Local Land Services (LLS), Western Riverina Noxious Weeds Advisory Group (WRNWAG) and the Office of Environment and Heritage (OEH) collaborated on a project to reduce the spread of aquatic weeds in the MDB (Cherry and Bosse 2014). The collaborative project focused on assisting weed and water managers, policy makers and planners to understand existing aquatic weed threats and to provide them with tools and information to reduce the risk of spread, including linking with weed manager networks to gain assistance in controlling high risk species before they spread.

Initial engagement activities focused on delivering presentations and resources to water advisory groups, talking with regional field staff, environmental water managers and irrigation companies, and visiting key surveillance sites. The message from all weed and water managers was consistent – there is a need for increased awareness of aquatic weeds and training in their identification. While most environmental water managers were aware of the threat of invasive weeds, this was typically in a general sense or with regard to terrestrial weeds. However all managers were keen to receive information and guidance on how to incorporate risk management strategies for aquatic weeds into their programs. Thus, developing and distributing this information was a key role for this project.

Recognising Water Weeds: providing training and surveying participants

Aquatic weeds have the ability to spread long distances coupled with rapid growth, thus early detection of new infestations is critical. So, to address the need for improved aquatic weed identification, project partners worked with the NSW Department of Primary Industries (DPI) to deliver a number of ‘*Recognising Water Weeds*’ courses (NSW I&I 2009; see link below) which were conducted in the spring of 2014, across the NSW Riverina in the towns of Yanco, Albury, and Deniliquin. The courses were offered to NRM professionals and other stakeholders, at no cost to participants or their organisations, to enhance basic knowledge and skills of aquatic weed identification. During the one-day course, participants were provided with an introduction to aquatic

weeds including: legislation, environmental impacts, aquatic plant recognition techniques and correct disposal of aquatic weed materials. There was a focus on invasive water plants that pose a high risk to the MDB, including sagittaria (*Sagittaria platyphylla* (Engelm.) J.G.Sm.), alligator weed (*Alternanthera philoxeroides* Mart.), cabomba (*Cabomba carolinina* A. Gray), water hyacinth (*Eichhornia crassipes* (Mart.) Solms), and Mexican water lily (*Nymphaea mexicana* Zucc.) [see Champion et al 2008 for further information on high risk aquatic plants]. Furthermore, the courses facilitated networking between public and private land and water managers, to share their experience and knowledge with each other and integrate new skills into their management practices.

These courses also provided the aquatic weeds project coordinator a means to engage with NRM professionals across the region and collect information, through the conduction of a survey on knowledge gaps and future needs for aquatic weed management. Analyses of the results of the survey were used to further refine the MDB Aquatic Weeds Project, in order to tailor the project's outputs to the specific needs of weed and water managers in the region.

The survey and its results

On the day of the '*Recognising Water Weeds*' course, a questionnaire (in paper format) was given to all participants to complete prior to the start of the course. A follow-up electronic questionnaire was emailed to participants six weeks later, with a 21 day deadline for completion. Of the 81 total participants, 50 completed questionnaires both before and after their participation in the course. Questions asked participants to self-rate their level of knowledge and interest in aquatic weeds and their ability to identify potential aquatic weeds. The questionnaires also contained open-ended questions seeking suggestions or comments regarding weed identification and training resources, and management procedures and processes (see below to link for full report, including questionnaire forms).

The results of the survey indicate that a great majority of participants were pleased with the content and duration of the course, highlighting that it was comprehensive, well delivered and provided an important opportunity to network amongst both weed and water managers. After attending the '*Recognising Water Weeds*' course, all participants felt their aquatic weed identification skills improved. Participants also noted the value of aquatic weed training and the need for this to be available to the wider community. Survey results indicated that most course participants were able to correctly identify the key agencies and local representatives to report aquatic weed incursions. However, many participants did not recognise the need to contact Regional Weed Advisory Groups or Local Land Services, suggesting that the role played by these bodies may not be well understood.

There was also limited knowledge of specific weed reporting procedures and of the contributions by various state agencies to weed management. While beyond the scope of the course, knowledge of adequate control methods for aquatic weeds was highlighted as a gap by participants. A comprehensive analysis of results can be found in the [Aquatic Weeds Training and Awareness: Survey results from the New South Wales \(NSW\) Murray Region](#) report.

The survey presented a valuable opportunity to identify knowledge gaps for weed and water managers in the Riverina, assess the reasons for these gaps, and incorporate solutions to address some gaps into the MDB Aquatic Weeds Project. Specifically, analyses of the survey results identified a need for clear and informative resources on aquatic weed identification and best practice control methods. This significant result suggests that such resources, despite being publicly available, may not currently be distributed on a platform that is accessible to all weed and water managers at local, regional and national levels, as well as other active partners in the MDB, such as community groups. A single platform that encompasses both identification and control information will assist in achieving successful MDB aquatic weed management.

Turning results into action - addressing needs revealed in the surveys

In response to survey results, the MDB Aquatic Weeds Project partners produced a *Murray-Darling Basin Aquatic Weeds Toolkit*, developed in the form of a website, which encompasses aquatic weed identification and control information and links, along with a range of other resources for NRM managers and the wider community. For more information on the Toolkit please refer to the [Case Study: Coordinating catchment-scale aquatic weed risk management](#).

By engaging weed and water managers through the training courses and surveys, the MDB Aquatic Weeds Project successfully tailored project outputs to provide a resource that can greatly assist in the management of aquatic weeds in the MDB. Analysis of survey results and practitioners' comments may also reveal potential opportunities for supporting agencies and groups, such as Local Land Services and regional weed groups, to gain understanding of where they can best direct efforts to assist weed and water managers. For example,

- By providing training in aquatic weed identification and control to broader audiences (e.g. water users such as boaters or fishermen, community groups and local landowners adjacent to or connected to waterways)
- Developing and/or delivering clearer instruction or guidance on weed reporting pathways and protocols

- Widely distributing up-to-date information, for instance through an e-newsletter, on changes in legislation, newly declared weeds, weed hotspots, etc.

The full report of the survey, including all comments, questionnaires and further analysis of responses, can be found [here](#). This information is available for use by any groups who may be interested in assisting to improve MDB aquatic weed management in future.

This case study highlights the value of targeted surveys to gain a better understanding of needs and knowledge gaps. Similar surveys should be considered in future, especially when delivering training or information sessions, as linking the survey with these types of events can provide access to a specific target audience that may have a greater understanding of the field of interest (e.g. aquatic weeds).

References

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