Department of Sustainability and Environment

Engaging the community in native fish recovery following bushfire

Black Saturday Victoria 2009 – Natural values fire recovery program

Fern Hames





Engaging the community in native fish recovery following bushfire

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Department of Sustainability and Environment Arthur Rylah Institute for Environmental Research 123 Brown Street, Heidelberg, Victoria 3084

This project is No. 31 of the program 'Rebuilding Together' funded by the Victorian and Commonwealth governments' Statewide Bushfire Recovery Plan, launched October 2009.

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Front cover photo: Australian Trout Foundation members, Arthur Rylah Institute staff and Marysville Youth Incorporated members revegetate Barred Galaxias site in Marysville (Angus Bell)

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Acronyms

ARI	Arthur Rylah Institute				
ATF	Australian Trout Foundation				
CFoC	Caring for our Country				
DPI FV	Department of Primary Industries, Fisheries Victoria				
DSE	Department of Sustainability and Environment				
GBCMA	Goulburn-Broken Catchment Management Authority				
IAP2	International Association Public Participation Spectrum				
MDBA	Murray-Darling Basin Authority				
NECMA	North East Catchment Management Authority				
NFS	Native Fish Strategy				
PV	Parks Victoria				
тсм	Temporary Captive Maintenance				
VBRRA	Victorian Bushfire Reconstruction and Recovery Authority				
VRFish	Victorian Recreational Fishers				

Summary

This project was developed to provide effective community engagement for a suite of fire recovery projects supporting two threatened native fish; Barred Galaxias and Macquarie Perch.

Effective community and stakeholder engagement was recognised as important to ongoing, long term recovery processes for these species. It was also expected that there would be social and economic benefits with respect to community involvement (including the indigenous community) in planned community events. Activities were planned to share knowledge about the fish and fire recovery actions, and build longer term advocacy, using the full spectrum of community engagement adopted by DSE (ranging from 'inform' through to 'empower' and known as IAP2). Actions include 13 presentations (local, national and international), two fact sheets, two posters, nine activities/ events/ tours, input to two signs for Barred Galaxias, development of two dedicated signs for Macquarie Perch and development of one interpretive bridge in Marysville. Communities actively participated in fire recovery actions through involvement in spawning investigations for Macquarie Perch and revegetation of a fire affected site for Barred Galaxias. Outcomes of these actions include the successful connection of communities to the recovery stories of the fire-affected fish populations and more effective partnerships aimed at supporting longer term recovery for the two species. Recommendations for future engagement of post-emergency communities are provided.



1 Introduction

This project was developed to provide effective community engagement for a suite of projects being undertaken under the Natural Values Recovery program (Projects 14, 16 and 18) and Caring for our Country funding (CFoC project GB02). These projects aimed to provide support for Barred Galaxias and Macquarie Perch conservation and restoration activities after the 'Black Saturday' fires which occurred in 2009. Effective engagement was recognised as important to ongoing and long term recovery processes for these species by gaining support amongst stakeholders and the community and building understanding into future management actions, including those undertaken by landholders. It was also expected that there would be social and economic benefits with respect to community (including indigenous community) involvement in planned community events.

The February 2009 Victorian bushfires impacted on populations of two nationally threatened fish species; Macquarie Perch *Macquaria australasica* and Barred Galaxias *Galaxias fuscus*. The impacted Macquarie Perch population in King Parrot Creek is one of only a few populations remaining in Victoria subsequent to its decline from a previous distribution throughout the south-eastern region of the Murray-Darling Basin. Barred Galaxias is Victoria's only endemic freshwater fish. The range of Barred Galaxias has declined significantly, with only 12 populations remaining in the cool upper headwaters of the Goulburn River system. Seven of these populations were impacted by fires and drought in 2006–07 and in February 2009 the Kilmore East Murrindindi North fire impacted on the remaining populations (Raadik *et al.* 2009).

Following the 2009 fires, the relevant creeks for both threatened species were surveyed and the risk of sediment mobilisation and significant reduction in water quality was assessed to be high enough to trigger salvage translocation of fish to temporary captive maintenance (TCM). Macquarie Perch from King Parrot Creek were temporarily held at the Department of Primary Industries (DPI) Fisheries Victoria Snobs Creek Centre, Eildon and were subsequently returned to the Creek once conditions improved (December 3 2009). Barred Galaxias from eight sites were salvaged and temporarily held in chilled aquaria at the Arthur Rylah Institute, Department of Sustainability and Environment (ARI DSE), Melbourne. These fish were also progressively returned to their natal streams as conditions improved (between December 2009 and March 2011).

For Macquarie Perch, continued concerns persisted about the effect of sediment on eggs and how this may impact on recruitment into the population. So few Macquarie Perch populations remain in Victoria (and indeed the Murray-Darling Basin) that successful recruitment in the remaining sites is critical. Understanding of spawning and recruitment is fragmented and more information is clearly required to enable effective actions aimed towards providing more suitable spawning and recruitment conditions. Seeking community engagement in investigations of Macquarie Perch spawning in King Parrot Creek was considered to be valuable in contributing to those investigations and building future support for the species. Communities in the fire impacted district had also already demonstrated strong advocacy for these fish populations in the past, had helped identify key sites to target fish for post-fire salvage and were keenly interested in the fire recovery actions undertaken. This project aimed to support their continued advocacy and keep the community well informed. There was also an evident need for information about the species and fire recovery actions to reach a wider audience and build greater understanding of natural values issues and recovery, and support for future actions.

The Marysville community had also begun to build advocacy for Barred Galaxias populations and there was a need to maintain momentum and support for planned activities. In addition, the opportunity arose to build on tentative steps to collaborate with the Australian Trout Foundation (ATF) to support Barred Galaxias and dissipate historic conflict. The early steps to build a positive partnership and the high profile of the fires in the Marysville district provided a good foundation to explore a new level of collaboration.

This report describes the engagement processes undertaken with relevant fire-affected communities to support both fish species and makes recommendations to inform future postemergency engagement efforts.

1.1 Objectives

Objectives for the project were identified as follows:

- 1. Sharing knowledge and building advocacy
 - To increase the level of knowledge and understanding within the community of the challenges, risks and opportunities in recovery of threatened Macquarie Perch and Barred Galaxias fish populations
 - To establish a long term commitment of individuals and organisations to support recovery actions for Barred Galaxias and Macquarie Perch.
- 2. Community participation in fish recovery
 - To enable members of local fire affected communities to participate in threatened fish recovery activities.

1.2 Actions

To deliver these objectives, the project planned to:

- Consult with relevant agencies, stakeholders and scientists
- Support community involvement in existing Natural Values Recovery Program projects for the two species, including spawning site identification for Macquarie Perch in King Parrot Creek
- Deliver educational presentations about threatened native fish and fire recovery processes and actions to relevant communities in the Kilmore-East Murrindindi North Complex Fire area
- Deliver presentations to other relevant stakeholders on fire recovery actions currently being undertaken
- Develop and install educational signage at key sites to inform the broader community about threatened fish populations at specific sites and impacts on those populations
- Develop and implement community events to build understanding of fire recovery actions and build ongoing advocacy for the two species
- Distribute relevant information material through appropriate networks and at relevant events
- Complement existing Natural Values Recovery Program and CFoC projects for these two species.

2 Methods

DSE uses an engagement model based on the widely adopted International Association Public Participation Spectrum (IAP2, DSE 2005). This approach provides continuity for engagement processes, from one-way communication (informing) to consulting, involving, collaborating and ultimately empowering individuals and groups in decision making. Engagement is defined as "planned and purposeful relationship building for decision making to achieve project outcomes, the relationship being both internal and external to DSE" (DSE 2010).

In this project, a Communication Strategy was developed to identify the relevant stakeholders and audiences,

the key messages and appropriate engagement levels and tools for each. Active decisions were made around timing of engagement and best engagement methods for each audience and phase. Such decisions were regularly reviewed, particularly as new groups and champions emerged. Some methods were selected simply to provide information, while signage was designed to provide tangible and enduring information well into the future. Other methods were aimed at building relationships and long term advocacy and empowering communities. The Engagement Plan (Table 1) provides a summary of the engagement approach, including the identified stakeholders.

Table 1. Engagement Plan outlining the involvement of each stakeholder group.

ENGAGEMENT COMPONENT							
INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER			
Marysville /Triangle community Flowerdale community Government agencies (DSE, Parks Victoria, DPI FV, GBCMA, MDBA) Landcare groups Murrindindi Shire Marysville Heart precinct project team Gallipoli Park Management Committee Broader community`	Gallipoli Park Management Committee Murrindindi Shire Moore's Road Committee of Management DSE Indigenous community (Taungurung) Community Recovery Committees	Landcare groups Australian Trout Foundation Cathedral Cluster schools Local service groups Flowerdale Environment Engine	ARI specialists (for Barred Galaxias and Macquarie Perch) Murrindindi Shire Parks Victoria Marysville Heart precinct project team Gallipoli Park Management Committee Triangle Arts Group Australian Trout Foundation Cathedral Cluster	Flowerdale Environment Engine Strath Creek Landcare group Triangle Arts Group			
Tools:	Tools:	Tools:	Tools:	Tools:			
Media Releases Radio program Fact Sheets Posters Displays Signage Presentations Text messages Video	Presentations Field trips Briefings	Briefings Meetings Field trips Actions, e.g. revegetation day Involvement in spawning investigation	Meetings Site visits Field Day Actions, e.g. revegetation day	Meetings Reports Involvement in activities such as spawning investigation			
Promise:	Promise:	Promise:	Promise:	Promise:			
We will keep you informed	We will keep you informed, listen to and acknowledge your concerns and provide feedback on how your input influenced the decision	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how your feedback influenced the decision	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible	We will implement what you decide			

3 Results

For each affected fish species, a suite of activities were planned for each of the two objectives: sharing knowledge and building advocacy, and community participation in fish recovery. Case studies for community participation in fish recovery are presented for each species.

3.1 Sharing knowledge and building advocacy

A suite of actions were undertaken to share knowledge and build understanding about the threatened native fish species in the fire-affected area. These actions focussed largely on the Inform end of the engagement spectrum, but also included actions which Consulted and Involved people, and invited and initiated Collaboration and Empowerment.

Events were aimed to:

- support community involvement in fire recovery for the two species
- deliver educational presentations about threatened native fish and fire recovery processes to relevant communities in fire affected areas
- deliver presentations to other relevant stakeholders on fire recovery actions
- offer community events to build understanding of fire recovery actions and build ongoing advocacy for the two species
- distribute relevant information material through appropriate networks and at relevant events, and
- develop and install educational signage at key sites to inform the broader community about threatened fish populations at specific sites and impacts on those populations.

Actions included 13 presentations, two fact sheets, two posters, nine activities/events/tours, input to two signs about Barred Galaxias, development of two dedicated signs about Macquarie Perch and development of one interpretive bridge. Details are as follows:

Presentations:

- VR Fish meeting: 'Native Fish Strategy' presentation (including fire recovery actions) May 2009
- Murray-Darling Basin Authority (MDBA) Native Fish Forum September 2009 Albury: presentation 'Bushfire and threatened species' (Lyon & Hames 2009)
- Goulburn Broken Catchment Management Authority (GBCMA) Research Day September 2009: presentation 'Healthy Fish, Healthy Rivers – Fish & Fires'
- Murrindindi Climate Network Annual General Meeting Molesworth, November 2009: presentation 'Fish & Fires'

- DSE Biodiversity and Ecosystem Services senior staff tour November 2009
- Alexandra Secondary College presentations to senior students studying threatened species: 'Healthy Fish, Healthy Rivers Fish & Fires' November 2009
- Strath Creek Landcare Group meeting March 2010: presentation 'Healthy Fish, Healthy Rivers – Fish & Fires'
- MDBA NFS team tour July 2010 (Figure 10)
- MDBA Native Fish Forum 2010 Canberra: presentation 'Fish & Fires: Victorian bushfire recovery 18 months on' September 2010 (Hames 2010)
- MDBA Native Fish Awareness Week 2010 launch: short presentation and activities for young people, performance of Barred Galaxias song by Triangle Arts Group and kindergarten children, Welcome to Country and ochre painting activities by Taungurung elder. November 2010
- Development and distribution of a Questionnaire seeking input and feedback on an interpretive bridge design in Marysville (Figure 1). The questionnaire was available at the Native Fish Awareness Week event, Lake Mountain Music Festival event, Marysville Rebuilding Advisory Centre / Information Centre, Marysville supermarket centre information desk and Marysville DSE office.
- DSE forests staff accompanied Barred Galaxias translocation to new site December 2010 (Figure 10)
- YMCA Youth Holiday Program Lake Mountain Day: stream-side walk & talk and kite-making activity, focussing on Barred Galaxias January 2011 (Figure 10)
- Lake Mountain Music Festival: display on fire recovery actions for fish, consultation with local people on interpretive bridge design for Marysville, focussing on Barred Galaxias. March 2011
- Upper Goulburn Field Naturalists meeting, Alexandra: presentation 'The Native Fish Strategy and Fish & Fires' March 2011
- Flowerdale Community Recovery Group/ Environment Engine special meeting, presentation 'Native Fish. Maccas and the King Parrot Creek' March 2011
- Alexandra Secondary College presentations to senior students studying threatened species: 'Healthy Fish, Healthy Rivers Fish & Fires' March 2011
- Barred Galaxias Art Installation, Marysville Playspace opening April 2011
- Marysville Information Centre; display April 2011– ongoing
- Flowerdale Community Recovery Group/ Environment Engine multi-agency meeting May 2011

- Triangle Community Fire Recovery Presentation Evening, Buxton: presentation 'Focus on Fuscus – Native Fish Fire Recovery' June 2011
- Wangaratta High School presentation to students studying threatened species: 'Fish & Chips, Snags & Ladders' (including fire recovery actions) June 2011
- 6th World Recreational Fishing Conference, Berlin: presentation on the ATF Marysville project as a Case Study in building collaboration with recreational fishers, 'Science & recreational fishery management – how can we improve the collaboration?' August 2011 (Publication in prep.)
- Fact Sheet: Barred Galaxias Fire Recovery Actions (Appendix 1)
- Fact Sheet: Macquarie Perch Fire Recovery Actions (Appendix 1)
- Poster: Barred Galaxias Fire Recovery Actions (Appendix 2)
- Poster: Macquarie Perch Fire Recovery Actions (Appendix 2).

Signage:

- Input to new signage at Keppel Falls, Lady Talbot Drive (Barred Galaxias, Appendix 3)
- Input to new DSE signage at Beauty Spot Nature Trail walk, Marysville (Barred Galaxias, Appendix 3)
- Development of Macquarie Perch signage for Moore's Road Reserve, Flowerdale and Burslem's Bridge, Strath Creek (Figure 5) (installed in Native Fish Awareness Week 2011).
- Development of Barred Galaxias interpretive elements in new Marysville Heart Precinct (interpretive bridge) (Figure 1 and Appendix 3).

Media:

- Alexandra & Eildon Standard
- Triangle News
- Flowerdale Flyer
- Strath Ck Landcare Newsletter
- The Age
- UGFM local radio (Appendix 3).

bridge, Marysville.

Figure 1. Concept design for Barred Galaxias interpretive

Barred Galaxias Interpretive Bridge Artist Impression Nov 2010

3.2 Community participation in fish recovery

Specific groups and communities were targeted to build longer term advocacy for the threatened fish species in the fire affected area. Engagement actions across the whole spectrum (from inform to empower) were employed to build partnerships and ownership. Actions to encourage active participation in fish recovery are described below.

3.2.1 Macquarie Perch

Participation in the recovery of Macquarie Perch was facilitated through:

- Involvement of Strath Creek Landcare group members in spawning investigations in King Parrot Creek (Figure 2) and
- Active support to establish a Flowerdale stakeholder group to advocate and act for Macquarie Perch in the longer term (Figure 4).

3.2.1.1 Case Study – Strath Creek Landcare Group

The Strath Creek Landcare Group has demonstrated solid advocacy for the Macquarie Perch population in King Parrot Creek for several years. The Group has hosted presentations on the Macquarie Perch at Group meetings, implemented substantial riparian revegetation, assisted with a local 'Perch in Peril' awareness campaign and included information about the species and its threats in regular Group newsletters. Immediately after the 2009 fires Group members provided valuable advice on specific stream sites to collect fish for salvage.

The concurrent fire recovery project "Identification and protection of key spawning habitats for Macquarie perch in King Parrot Creek" (Kearns *et al.* 2011) provided an opportunity to directly involve Strath Creek Landcare Group members in activities which would help continue to build awareness of and connection with the Macquarie Perch population. The activity was also expected to inform ongoing habitat rehabilitation by landholders and support longer term advocacy.

Group members met ARI research staff at pre-arranged sites along King Parrot Creek in November 2010 and assisted with checking and re-setting fyke nets, collecting debris from larval nets and sorting debris for eggs (Figure 2). This effort proved useful in assisting researchers as well as in creating valuable opportunities for extended conversations about the creek, the fish population, threats, recovery and rehabilitation and strengthened ongoing understanding and advocacy by the group for the Macquarie Perch population in the creek. Information about the activity was shared in the Group's newsletter (Figure 3). Group members also provided advice to a meeting organised by the neighbouring Flowerdale community to support Macquarie Perch in their local stretch of King Parrot Creek.



Figure 2. Strath Creek Landcare group involvement in Macquarie Perch spawning investigation, King Parrot Creek.



Figure 3. Strath Creek Landcare Group Newsletter, with Macquarie Perch update.

3.2.1.2 Case study – Flowerdale community

After the 2009 fires, Community Recovery Committees were established in 33 fire-impacted areas (www.rdv.vic.gov.au/ fire-recovery-unit/local-communities). These groups formally ended on 30 June 2011 but many of the key representatives have remained active and are contributing to ongoing fire recovery activities in a range of organisations. Many communities have built substantial community capacity through the recovery committees and this capacity is being transferred into new forums.

In Flowerdale, the Community Recovery Committee has morphed into several 'Work Engines', one of which is the Flowerdale Environment Engine. This group received funding support from the DPI Fisheries Victoria 'Adopt-a-Stream' program to undertake weed (blackberry) control in the vicinity of King Parrot Creek. After consultation with DSE, the group (involving approximately 70 landholders) readily agreed to adjust their weed control program to consider potential threats to Macquarie Perch. A presentation about the Macquarie Perch population to a group meeting triggered a very strong interest in the group to do more to support the fish population and advocate for the Macquarie Perch (Figure 4). The group then established a multi-agency group to explore the development of a catchment plan for the valley and explore a suite of rehabilitation actions. The group drew together representatives from DSE, the GBCMA, DPI Fisheries Victoria, the MDBA Native Fish Strategy, Murrindindi Shire, the Moore's Road Reserve Committee of Management and the Strath Creek Landcare Group (Figure 4). The GBCMA provided funds to support development of a King Parrot Creek Management Plan and Regional Development Victoria provided funds to support habitat rehabilitation.

The establishment of these groups, processes and partnerships provides good support to ongoing, long term advocacy and support for the Macquarie Perch population in King Parrot Creek. As an initial step, signage about the population and fire recovery actions was designed (Figure 5) and installed at two sites on King Parrot Creek; the Moore's Road Reserve Flowerdale (Figure 5) and Burslem's Bridge Strath Creek.











Figure 5. Macquarie Perch signage developed for King Parrot Creek and installed at Moore's Road Reserve, Flowerdale.





3.2.2 Barred Galaxias

Participation in the recovery of Barred Galaxias was facilitated through:

- On site actions to connect the ATF with scientists and managers and build a constructive partnership, and
- Support to the local Marysville community to advocate and act for Barred Galaxias.

3.2.2.1 Case Study – Australian Trout Foundation

There has been a significant level of conflict in the past between some trout anglers and scientists working to protect threatened native fish species such as the Barred Galaxias. The conflict has precluded the development of a good relationship or dialogue between the two perspectives, and resulted in significant misunderstandings. Barred Galaxias has suffered a severe decline, especially since the introduction of Rainbow trout and Brown trout in Victoria, as the small (up to 160 mm) fish is vulnerable to predation by these introduced trout species (Raadik *et al.* 2009).

In 2008 renewed efforts were made to establish an effective relationship between the different parties, improve communication and understandings and resolve the conflict. Conversations began between the relevant individuals and stakeholders, the conflict was examined, and commitments were made to continue dialogue and work together on some small, achievable, tangible issues which could demonstrate a collaborative approach and build the relationship.

The February 2009 fires had a particularly large impact on the small town of Marysville, resulting in a major media profile for the area and an outpouring of broader community generosity and a desire to help the district in a myriad of ways. Marysville is at the heart of Barred Galaxias country. Scientists undertook fish salvage from some sites and translocated them to temporary captive maintenance in chilled aquaria until the habitat in natal streams improved. This story also generated substantial media profile (e.g. Figure 6).

The high profile of stories around the Marysville bushfires, coupled with the subsequent desire of people to help, and the improving relationship and trust built between the trout anglers and scientists provided a foundation for taking action. A group of trout anglers from the Australian Trout Foundation worked with ARI staff to re-vegetate a stretch of stream in Marysville recognised as Barred Galaxias habitat and also re-aligned some large woody debris in the adjacent Marysville Lake to provide habitat for the entire fish community in the lake (Figure 7). The activity provided an opportunity for the anglers and scientists to meet, talk, work together, share lunch, and commit to working together on further projects.

The ATF subsequently used images of the day's activities to promote to its constituents that such activities are part of their role, and that they are supportive of threatened species programs. Although only a small and simple activity, the day provided an example of the capacity of the two perspectives to work together and a basis for future collaboration.

Since then, there has been further collaboration in a range of activities and projects, including an oral histories project, planning and participation in activities forming

part of an annual Native Fish Awareness Week and substantial discussion and subsequent agreement and support for extra translocation and monitoring sites for the Barred Galaxias. The ATF has also undertaken the role of 'Guardian of the Trout Barrier' in Marysville – a highly significant demonstration of resolution of the past conflict, and an indication that there has been substantial improvement in support for the Barred Galaxias and its long term recovery actions.

Figure 6. Article in The Age, 7 March 2009.



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Figure 7. Australian Trout Foundation revegetation day to support Barred Galaxias, including snag realignment and fishing clinic, Marysville Lake. Revegetation in conjunction with Marysville Youth Incorporated group.



3.2.2.2 Marysville Community

In a collaborative partnership with this project, the annual MDBA Native Fish Strategy Native Fish Awareness Week launch was held in Marysville to celebrate fire recovery actions for threatened fish.

Local Taungurung elder Uncle Roy Patterson delivered a Welcome to Country, and staff from the MDBA, DSE, Parks Victoria, GBCMA and Native Fish Strategy personnel from all around the Murray-Darling Basin

led a suite of activities. Students from four local schools (Alexandra Secondary College, Alexandra Primary School, St Mary's Primary School and Marysville Primary School) and the Marysville playgroup/ kindergarten children participated in a set of rotating sessions learning about native fish and river health, and creating sculpture and painted Barred Galaxias in art workshops (Figure 9). Separate art workshops were delivered by Uncle Roy (ochre art), a local artist (wire fish sculptures) and the Triangle Arts Group (painted shoe innersoles to resemble Barred Galaxias). The event was well supported by local community members representing the Gallipoli Park Management Committee, the Triangle Arts Group and the Marysville Lions Club.

This involvement was followed up with valuable advice and support from the Gallipoli Park Management Committee in developing interpretive displays for Barred Galaxias around Marysville. The Triangle Arts Group took on a particularly strong advocacy role for the Barred Galaxias through: writing and performing a song about the fish at the Native Fish Awareness Week launch event (Figure 8); developing Barred Galaxias signage (including Braille) for the new Marysville Playspace; facilitating the creation of more than 100 Barred Galaxias 'fish on sticks'; conducting a Barred Galaxias parade of these sticks at the high-profile Playspace opening event and creating

a temporary art installation of these 'fish on-sticks' in the creek (Figure 9). The group also maintained a strong interest and involvement in the development of interpretive elements for Barred Galaxias in the Marysville Heart Precinct, including attending multi-stakeholder meetings and providing design ideas and feedback. These actions have established a strong foundation for ongoing, long term support, as well as involvement in and advocacy for Barred Galaxias recovery actions.

Figure 8. Barred Galaxias song prepared and performed by Triangle Arts Group at Native Fish Awareness Week launch, Marysville. Song sheet includes information box about Barred Galaxias and was distributed to all participants in the Marysville event.



Figure 9. Triangle Arts Group: consultation around Marysville barrier redesign and interpretive elements (with Gallipoli Park Management Committee), Braille sign, art activity and Barred Galaxias song performance at Native Fish Awareness Week launch, Barred Galaxias parade at Playspace opening, Marysville.



Figure 10. Other engagement activities: Lake Mountain YMCA holiday activity, DSE Forest Officer visit to Barred Galaxias translocation, MDBA visit.



4 Discussion

Outcomes from effective engagement were expected to include increased community understanding and advocacy for both species, and effective linkages between a range of projects supporting fire-affected threatened fish populations. These outcomes were met through building on old and new relationships, being mindful of timing of engagement, being flexible and being open to possibilities.

Long term monitoring of Barred Galaxias and Macquarie Perch populations over the last few years has proved to be invaluable in supporting emergency response for these species. Of particular importance was information on specific locations of high priority fish populations, to support targeted site assessments and salvage actions. Just as this investment is recognised, well-established relationships with stakeholders were also important in supporting the emergency response and recovery processes. Existing relationships and networks and established trust enabled rapid and effective connections with communities and agencies post-fire, when time constraints precluded relationship-establishment. Such existing relationships laid the foundation for a positive and productive response to a range of issues.

Existing relationships also enabled the recovery process and effective communications to begin early and avoid community misunderstandings around recovery actions or perceived inaction. Indeed there is merit in beginning recovery whilst still in a suppression/response stage, rather than transitioning to recovery as a separate, subsequent process. Such a continuum would be very effectively supported by appointing natural values officers in Incident Management Teams and by actively accessing local knowledge from both natural values specialists and stakeholder/community engagement staff.

Although it is important to begin engagement with communities at an early stage post-emergency, it is also important to be mindful that different people in the community will have had a wide range of experiences and will be at very different stages of dealing with the event and those experiences (Hawe 2009). When events involve substantial human trauma, we must be highly sensitive to likely responses, and recognise that people's focus will be on immediate human needs in the immediate post-emergency phase. Messages around natural values responses must be carefully timed. Our methodology involved very careful consideration of timing of various forms of engagement and, particularly in early stages, was directed to special interest forums, organised by community members for an audience well ready for such information, to which we contributed information about fire recovery for natural values.

Genuine and effective engagement can really only occur when we have a good understanding of a particular community, including its values, priorities and champions. Existing relationships and understandings of the relevant communities from pre-fire engagement were useful, but it was critically important to also recognise the changes in those communities. Recent research (Gordon 2009) indicates that post-impact communities are generally far more complex and fractured, with altered perspectives and priorities, than their pre-impact state. This was apparent in the post-fire community in 2009. Existing champions were key contacts throughout this process, and new organisations and emerging leaders were also important. It was important to identify all the relevant individuals and groups, and actively scan for new leaders and groups as they emerged.

Figure 11. ATF banner demonstrating actions to support threatened species.



qua River Projects

Such was the scale of the 2009 bushfires that there was enormous media profile of particular communities. The media exposure generated enormous goodwill from the broader community, and instigated many strong responses from people to provide help in a range of ways. This provided opportunities to engage people or organisations in conversations which previous to this event may have proved difficult. Although in the past, there had been a poor relationship, with much distrust, between the Australian Trout Foundation (ATF) and some native fish scientists and conservationists in Victoria, the ATF was keen to become actively involved in a fire recovery project in the Marysville district. This opportunity was seized and the group undertook revegetation at a Barred Galaxias site. This activity has subsequently been used by the ATF to demonstrate their support for threatened species (Figure 11). The ATF has subsequently become involved in further conversations exploring Barred Galaxias recovery, such as support for new translocation sites, and have also become 'Guardians of the Trout Barrier' in Marysville. Such actions represent a significant shift in the relationship between the two perspectives. These actions also demonstrate the power of small, simple activities to provide a step towards more complex actions and positive outcomes in threatened species management in the longer term.

During the fire recovery period, communities learnt much and became very adept at governance and effective community processes. In some instances, this increased community capacity has supported the evolution of very effective community groups undertaking longer term advocacy for environmental issues and management. For example, the Flowerdale Fire Recovery Committee worked very successfully in the immediate post-fire phase to secure recovery support for the Flowerdale area which was responsive to the needs and priorities of the community, rather than externally driven. This committee evolved into several 'work engines' - one of which is the Flowerdale Environment Engine. This group secured funding from DPI FV for an 'Adopt-A-Stream' project to undertake blackberry control along King Parrot Creek, involving 70 landholders. The group then connected with DSE staff in this project, modified their weed control activities to support the nationally threatened Macquarie Perch in the creek, held a community meeting to provide information about the Macquarie Perch (supported by this project) and have formed a multi-agency group to work towards developing a catchment plan for King Parrot Creek. The GBCMA and Regional Development Victoria are making substantial investments to support development of the catchment plan and habitat rehabilitation. The elevated capacity of the community to provide active engagement with a wide group of stakeholders, combined with active engagement through this project generated substantial local advocacy and State funding to support longer term recovery for both the catchment and the community.

It was evident in the myriad of connections with individuals throughout this project that the stories of natural values recovery (in this case fish) had the power to effectively support human recovery. People strongly identified with the stories of fish being moved from their fire-affected 'homes' and living in a more secure environment until their 'home' recovered. The synergies of their shared journey supported strong attachments by the community to the threatened fish and is continuing to support solid ongoing advocacy which we expect to persist in the longer term. An expert international panel (Hawe 2009), has noted five essential components of successful community recovery, including:

- Safety;
- Calming;
- Hope;
- Connectedness;
- Self and collective efficacy (i.e. confidence, power, capacity to get life back together).

The stories of fish recovery gave people hope and reconnected them back to the environment. This project's range of activities also supported the principles listed above and feedback from participants suggested that they have also contributed to a sense of community connectedness and capacity to 'get life back together'. Involving people in decision making around issues such as interpretive design features was essential to this process. This is consistent with findings which recommend recovery programs employ actions which reconnect people to place, and which empower people to play active roles in the recovery process (Hawe 2009, Gordon 2009, VBRRA 2009).

This project carefully considered the use of appropriate media for different messages or objectives. For this reason, general communications about designing interpretive elements in Marysville targeted local media (e.g. the Triangle News local weekly newsletter and displays at local venues such as the supermarket and Information Centre). More focussed individual discussions, which provided the opportunity to answer questions and address concerns, were enabled through events such as staffed displays at the Native Fish Awareness Week launch in Marysville and the Lake Mountain Music Festival.

Metropolitan media was targeted for broader interest messages such as success in breeding Barred Galaxias (see Appendix 4). Text messages were used to disseminate immediate updates to key stakeholders (such as the rediscovery of Barred Galaxias in Robertson's Gully near Marysville, exactly two years post-fire). The development of some of the communication tools during this project was hampered by outdated IT technologies on DSE and PV computer systems. To make the best use of emerging social media and engaging methods of communication, it is recommended that State government computer systems (e.g. internet browsers) be updated to reflect the need to readily and regularly use such technologies and more effectively engage with a range of stakeholders and the broader community.

Project recommendations can be summarised as:

- Invest in building and maintaining relationships with key stakeholders in communities and agencies supporting threatened species on an ongoing basis to support 'surge' demand during emergency events
- Appoint natural values officers in Incident Management Teams, as well as connecting natural values specialists and engagement specialists as required to begin recovery at the earliest possible stage
- Identify changes in community structure in a postemergency community and connect with both new and emerging organisations and leaders
- Apply adaptive management principles to ensure flexibility and adaptability of staff working with postemergency communities
- Organise and schedule information sharing to acknowledge people are at different are stages of recovery. Early events in particular should 'piggy back' on relevant existing organisations' events, to enable optin for those interested
- Share stories of natural values recovery to assist human recovery and build connections for both short and longer term advocacy
- · Genuinely involve people in decision making
- Use appropriate media and invest in keeping up to date.

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Appendix 1 Fact Sheets



Bringing native fish back

Barred Galaxias is a small fish, growing up to 160mm, but generally between 70-90mm. They can be relatively long-lived; fish have been aged up to 13 years old.

Barred Galaxias (Galaxias fuscus) is a nationally threatened native freshwater fish highly restricted in distribution to just 11 populations in 22 known sites in the headwaters (above 400m elevation) of the Goulburn River catchment in the Central Highlands of Victoria. It is Victoria's only endemic freshwater fish.

Fire impacts on Barred Galaxias

Of the known Barred Galaxias sites, 12 are within the boundary of the February 2009 wildfires, including those in Robertson's Gully, Little Rubicon Creek, Taggerty River, S Creek, Upper Taggerty River, Keppel Hut Creek, Luke Creek, Kalatha Creek, Criss Cross Creek and Torbreck Creek.

Another 8 sites were affected by the 2006/07 fires around Mt Buller.

All of these populations had already been impacted by several years of low flows due to drought.

Fires can impact on fish particularly through reductions in water quality because of increased sediment loads, increased water temperature (both directly during fire and through loss of shading post-fire), lowered dissolved oxygen, increases in stream pH and increases in nutrients (particularly nitrogen and phosphorous). Other impacts may include loss of shading and protective cover, loss of in-stream debris and habitat, and increased exposure to predation from birds and other fish species.

Fire can also result in the burn or collapse of existing instream barriers (such as logs) protecting Barred Galaxias populations from trout predation. New barriers may also form in some small streams, potentially increasing fragmentation of fish populations.



Galaxias fuscus; Photo T.A. Raa

Emergency Actions

In March 2009, in anticipation of poor water quality following the fires and potential fish deaths and possible extinction of Barred Galaxias populations, DSE ARI staff surveyed and rescued Barred Galaxias from 8 severely fire-affected sites.

Salvaged fish were transferred to secure aquaria at the DSE's Arthur Rylah Institute (ARI), Melbourne. Each population was held in a separate tank, with a separate, chilled, recirculating water supply.

In April 2009 a major rain event occurred in the fireaffected area washing large volumes of silt and ash down many of the Barred Galaxias streams.

All Barred Galaxias sites have been regularly monitored post-fire to assess habitat rehabilitation and suitability for fish return. Some sites have taken years to rehabilitate. Three populations were returned to their natal streams in December 2009, and three more populations were returned in June 2010. Fish from S Creek near Buxton were returned in November 2010 and the last population to be retained at ARI; those from Robertson's Gully near Marysville, were finally returned in February 2011.

In-stream barriers at Barred Galaxias sites are also being assessed and maintained to prevent trout predation. The man-made predator barrier in Marysville has been repaired and the site revegetated by community groups.

This project is funded by the Victorian and Commonwealth governments' 'Rebuilding Together' – Statewide Bushfire Recovery plan, launched in October 2009.















Recovery Actions

In addition to the emergency actions, several other recovery projects are now underway, including:

Ongoing monitoring of natal streams and predator detection surveys.

Research into improved spawning success for Barred Galaxias; investigating when and where fish lay eggs and assessing the benefits of installing additional spawning substrate (especially in sediment-affected streams). Fish have now also been successfully bred at ARI



ediately post-fire. Photo: Pete Fairbroth

Establishing new Barred Galaxias populations by translocating fish from impacted sites to new locations within the species' native range. Potential translocation sites for Barred Galaxias have been assessed and two trial translocations conducted.

Investigating Barred Galaxias population genetics to inform conservation management.

This work is being carried out by the Department of Sustainability and Environment's Arthur Rylah Institute.



Post-fire sediment flow in Leary's Creek Marysville: a Barred Galaxias site. April 2009. Photo: Fern Hames.

www.dse.vic.gov.au

Native Fish Awareness Week event

In November 2010 the Murray-Darling Basin Authority's Native Fish Strategy launched Native Fish Awareness Week in Marysville, to celebrate the resilience of the Barred Galaxias and share news about fire recovery actions.

Interpretive signage about the Barred Galaxias and the trout barrier in Marysville is also being developed for Marysville township.



Post fire stream surveys. Photo: S. Nicol.

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Macquarie Perch: fire recovery actions

Macquarie Perch (Macquaria australasica) is a medium sized, native freshwater fish typically found in the cool, upper reaches of the Murray-Darling Basin in Victoria, New South Wales and the Australian Capital Territory.

Macquarie Perch are generally less than 1kg in weight and less than 350mm length, but have been recorded up to 3.5kg and 465mm. The fish is bluish-grey or black-grey in colour, with a large white eye, rounded tail and prominent pores on the snout and around the eyes. Adults have a pronounced lateral line down the side of their body.

This species was once abundant but has declined dramatically since the 1970s, and remaining populations are relatively small and isolated. Macquarie Perch is currently listed nationally as endangered (Environment Protection and Biodiversity Conservation Act 1999) and listed as a threatened species under the Victorian Flora and Fauna Guarantee Act 1988.

There are less than ten populations remaining in Victoria.

Fire impacts on Macquarie Perch

One such population of Macquarie Perch exists within King Parrot Creek in the Goulburn Catchment. During extensive bushfires in February 2009, several sections of the creek were burnt to the water's edge resulting in a significant loss of riparian vegetation. Before the fires, this population had already been impacted by several years of low flows due to drought and ongoing water extractions, and by habitat damage.

Fires can have a devastating impact on fish particularly through reductions in water quality as a result of increased sediment loads, increased water temperatures (both directly during fire and through loss of shading post-fire), lowered dissolved oxygen, increases in stream pH and turbidity and increases in nutrients (particularly nitrogen and phosphorous). This can cause the death of individual fish and, if severe enough, may lead to the elimination of entire populations.



Department of Sustainability and Environment

Macquaria australasica Photo: Murray-Darling Basin Authority

Emergency actions

To protect the Macquarie Perch from heavy sediment loads entering King Parrot Creek, 35 individuals were temporarily translocated to secure hatchery facilities at the Department of Primary Industries Snobs Creek Centre. These fish were placed in both outdoor ponds and tanks and fed natural food.

In December 2009, these fish were returned to King Parrot Creek after the water quality and riparian vegetation in the creek had recovered sufficiently from the fires. These fish were tagged with internal 'PIT' microchip tags to enable their identification in future surveys

This project is funded by the Victorian and Commonwealth governments' 'Rebuilding Together' – Statewide Bushfire Recovery plan, launched in October 2009.











Macquarie Perch: fire recovery actions

In addition to the emergency actions, several other recovery projects are now underway, including:

- Ongoing monitoring of King Parrot Creek.
- Regular water quality monitoring by local monitors.
- Research into Macquarie Perch spawning, investigating when and where fish lay eggs and assessing sediment impacts to enable targeted habitat protection and rehabilitation works.
- Assessment of the benefits of installing additional habitat ('Lunkers') in King Parrot Creek.
- Working with the Macquarie Perch Recovery Working Group to further investigate genetics and breeding of Macquarie Perch.

This work is being carried out by the Department of Sustainability and Environment's Arthur Rylah Institute



Clockwise from above: a juvenile Macquarie Perch; monitoring of Macquarie Perch spawning; a Macquarie Perch egg (inset); tagging Macquarie Perch before release back into the creek. Photos: Fern Hames.



for Environmental Research.



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Appendix 2 Posters



VBRRA Natural values fire recovery project 31

Natural values for fire recovery program

Macquarie Perch -Macquaria australasica

lacquarie Perch is a medium sized, nationally threatened freshwater fish, which has suffered rrious decline in the Murray-Daring Basin, especially since the 1980s. In Victoria, less than 10 spulations remain, and one of these – in King Parrot Creek- was impacted by the 2009 fires.



Macquarie Perch. Photo: MDBA

Project Aims:

This project aimed to build awareness of fire recovery actions for fish and also build on the existing strong local advocacy for the Macquarie Perch population in King Parrot Creek. Directly involving local people in fire recovery actions was expected to enhance understandings of the species needs and threats, and further support ongoing habilat rehabilitation. Much of the Macquarie Perch habitat on this waterway runs through private property so land Care networks are important in the longer term recovery of the species. The project also aimed to extend the waverness and advocacy for the species and the King Parrot Creek population from the Strath Creek community upstream to the Flowerdale area.







Land Care members sorting debris for Macquarie Perch eggs to assist with spawning study

Department of Sustainability and Environment













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Signage (also Fact Sheets, various media)

Establishment of King Parrot Creek multi-agency group and Flowerdale Environment Engine to work to support Macquarie Perch and develop & implement a King Parrot Creek Management Plan



For further information contact Fern Hames: (03) 5772 0273 or fern.hames@dse.vic.gov.au

Acknowledgements: Assistance provided by ARI staff Tarmo Raadik, Joanne Kearns, Renae Ayres, Jarod Lyon and Steve Saddlier and PV staff Sam Strong.

This project is funded by the Victorian and Commonwealth governments' 'Rebuilding Together'– Statewide Bushfire Recovery plan, launched in October 2009.

Land Care group participation in checking nets and sorting stream debris for Macquarie Perch eggs as part of breeding study







Department of Sustainability and Environment

This project aimed to engage the general community of the Marysville /

Triangle District to build awareness, advocacy and support for the species generally and awareness of fire recovery actions undertaken. Awareness

and understanding are expected to encourage future community actions

vulnerability of Barred Galaxias and the establishment of an effective and collaborative partnership with this community. It is hoped that this partnership can work towards a shared vision of improved river health.

Lake Mountain Music Festival: fire recovery display & bridge design consultation

to address the existing threats to Barred Galaxias, such as reductions in water extraction from the creek and rehabilitation of native riparian vegetation. The project also aimed to build a positive relationship with the

trout fishing community, to support improved understanding of the

Engaging the Community with **Threatened Species Recovery**

VBRRA Natural values fire recovery project 31

Natural values for fire recovery program

Barred Galaxias – Galaxias f uscus

Barred Galaxias is a small freshwater fish endemic to upper headwater streams of the Goulburn River catchment, Victoria. A nationally endangered species, it has suffered severe decline in range and abundance due to varying impacts including trout predation and competition, bushfire and drought. Populations affected by the 2009 fires cluster around the township of Marysville.



Barred Galaxias, *Galaxias f uscus.* Photo: Tarmo Raadik

Australian Trout Foundation and Marysville Youth Inc revegetation of Marysville trout barrier site

Project Aims











National launch of Murray-Darling Basin Authority's Native Fish Awareness week, Marysville. Fuscus focus with presentations, fuscusart, and performance of The Barred Galaxias song by local Thraige Arts Group. Display of fire recovery actions and community consultation on proposed interpretive bridge. Resulted in a range of media reports.

Extensive community consultation and several onsite meetings for interpretive bridge and signage, Leary's Creek, Marys



Other actions included: • Input to DSE signage at 'Beauty Spot' • Presentations to Upper Goulburn Field Naturalists Club, 2 MDBA Native Fish Forums, GBCMA Research Forum, local students and Murrindindi Climate Network. • Direlay at Meanville JaGeneration Control S

Display at Marysville Information Centre & Marysville Sustainability Expo







MCA Holiday Program Lake Mountain: stream walk, talk & kite flying





For further information contact Fern Hames: (03) 5772 0273 or fern.hames@dse.vic.gov.au

Acknowledgements: Assistance provided by ARI staff Tarmo Raadik, Joanne Kearns, Renae Ayres, Jarod Lyon and Steve Saddlier and PV staff Sam Strong.

This project is funded by the Victorian and Commonwealth governments' 'Rebuilding Together'— Statewide Bushfire Recovery plan, launched in October 2009.



Appendix 3 Marysville Signage

Concept design for Barred Galaxias interpretive bridge, Marysville. Bridge is currently under construction (November 2011).



Marysville Signage



Detail of disks for Barred Galaxias interpretive bridge, Marysville.

Marysville Signage

Barred Galaxias sign installed at Keppel Falls walk by Parks Victoria- input provided to content by project staff.



Welcome to Keppel Falls

Where ancient rock helps shape the future of an endangered fish

Here, at over 700 metres above sea level, the Taggerty River cascades over ancient rocks formed 359 to 416 million years ago during the Devonian Period or 'The Age of Fishes', a time famous for the evolution of thousands of species of fish.



As it happens, today these falls help to protect the endangered Barred Galaxias (*Galaxias fuscus*) by acting as a natural barrier to separate the Barred Galaxias from downstream populations of introduced trout, their main predator.



Healthy Parks Healthy People

Barred Galaxias photo courtesy of Tarmo A.



Barred Galaxias sign installed at 'Beauty Spot' walk Marysville by DSE- input provided to content by project staff.

life in the streams

It's unlikely you'll see them, but it's good to know they're here.

This creek is home to the Barred Galaxias – a critically endangered small, brightly coloured, orange fish that is now only found in upper reaches of some mountain streams in central Victoria.

The Barred Galaxias is a scaleless fish that grows up to 150mm in length and may live for up to 15 years. It is the only native fish in creeks where it is found.

Barred Galaxias feed on insects they ind in the water and breed by laying sticky' eggs under large rocks. They are best distinguished from the more common Mountain Galaxias by their bright corange yellow colour and the dack vertical hars on the sides of the body.

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Appendix 4 Media



Alexandra Standard June 8 2011.

Understanding fire recovery report

By Julia Foletta

Appendix Second Integrate Second Seco eral Department of Second a (DSL) staff were derilled an in Memorral Hall on June 3 logs spicement pre-

induced at 21 of

DMK

ed in the 1825s.

The Age Friday 25 February 2011.

AustAsia Aquaculture magazine.

Histoité

Trout fishers work to support endangered native fish

Members of the Australian Bour Foundation, the leading organisation impre fishers, have worked with scientists born Vic DSE to support a population of the critically andongieved Barred Galaxias.

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Many of these populations used adversely ultrated during the February 2000 haudulessi prompting a mucae (in sifti of assessi lises/ind of these hals sciences from Department of menubolity of fasticoursers (DSE), to

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many of the Barrod Galaxias remains. So the DSE scientists should be to be com-gonulated for their foreight and spitch accium.

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Salinity and temperature control

According to ABOI Tartini Randih, 400 July seem Beld In source temperature, that alonely memoload during to the weld We field them at 9% to within and hilow LPC in summer," he says "from so they were provid ministeral in our hepet then they were preving interests or we sep-them to a higher (alighed) isoscolic) whi ity activated 2-3,000 EC 1-2,8ppc) there there recented 40 EC. This is a unremove method whose holding on transporting streaml names. The Sared Galaxies



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itshab working bee

According to DMP Narive Fish Sear Coordinator Fern Halves, it was an echectic usia of over thirty people who authored has four or measurant the

Five-star treatment may save Nemo

By BRIDIE SMITH SCIENCE AND TECHNOLOGY REPORTER

THE fight to save one of Australia's most endangered fish has had a win, with scientists breeding a large number of the striped fish known as "Victoria's Nemo" in captivity for the first time.

Numbers of barred galaxias have suffered from fire and drought, while introduced fish such as trout prey on the native fish, leaving the species facing extinction.

However, scientists from the Arthur Rylah Institute in Heidelberg have announced their attempts to save the species have had success, with a captive breeding program producing 1400 young.

Department of Sustainability and Environment senior scientist Tarmo Raadik said the result was good news for the long-term conservation of the species.

The barred galaxias - burnt orange in colour with black bars on either side, and slimy skin instead of scales - is Victoria's only native freshwater fish. There are just 13 known populations in existence, all of them in



Endangered barred galaxias.

the cool mountain streams of Victoria.

Not all wild conditions can be replicated in captivity and this has caused scientists problems when designing captive breeding programs.

The researchers pulled out

all the stops to give this generation the best start possible.

"We went the full mile," Mr Raadik said. "We went the luxury suite, not the backpacker accommodation."

Water was chilled to 8 degrees with pumps used to oxygenate the water. Almost all of the eggs hatched and the 8 mm larvae survival rate hurdle in other trials - was as good as 100 per cent.

The juvenile fish were released in December into the streams around Marysville and Toolangi where they were collected as eggs last September.

Regrowth magazine – December 2010.

Native Fish Awareness Week launched at Marysville

The Murray-Darling Basin Authority launched Native Fish Awareness Week in Marysville in mid-November. Staff from across the Basin attended the event in Marysville, which was hosted by the Department of Sustainability and Environment and the Goulburn-Broken Catchment Management Authority. The launch included a number of environmental education activities for local school students.

The students participated in hands-on activities such as boat building, Aboriginal painting and Murray Cod and Freshwater Catfish games, all the while learning about a suite of fire recovery actions undertaken in the district for the nationally-threatened **Barred Galaxias** (Galaxias fuscus). Community members were also invited to provide feedback on a concept design for an interpretive bridge over the existing predator barrier in Leary's Creek in Marysville, which prevents trout accessing the protected Barred Galaxias population upstream. Local artists provided fish-inspired art activities and, with local students, performed a song they had written about the Barred Galaxias.





Fishy Day at Marysville

On Friday 12th November the Murray-Darling Basin Authority (MDBA) launched its annual Native Fish Awareness Week in Marysville. Each year activities are held all around the Murray-Darling Basin to celebrate native fish. Events include visits to river rehabilitation projects: educational activities with students: carp musters: river-storysharing sessions, and meetings with researchers, local government, Catchment Management Authorities, aboriginal communities and fishing clubs, At this year's Basin-wide launch in Marysville, about 30 staff associated with the MDBA's Native Fish Strategy travelled from the length of the Basin; from Queensland, NSW, Canberra and South Australia, to participate in the launch. Jody Swirepik, Executive Director of Natural Resource Management at the MDBA launched the event and a Week of almost 40 activities. Marysville was chosen for the national launch because it provided an opportunity to celebrate and share the story of local fire recovery actions undertaken by the Department of Sustainability and Environment (DSE) for the small, nationally threatened freshwater fish the Barred Galaxias (Galaxias fuscus) which only occurs in the cool streams of the upper Goulburn River catchment.

Triangle News, community newsletter – December 10 2010.

Uncle Roy Patterson delivered a Welcome to Country and ran some ochre painting sessions, using local ochre. Students from Alexandra Primary School, St Mary's Primary School Alexandra, Marysville Primary School and Alexandra Secondary College rotated around a suite of activities including a Freshwater Catfish Game, Murray Cod Game, Blackwood-seed-Boat racing, and fishy art and craft activities using wire and ochre. The Marysville Kindergarten children also came along and did some beautiful artwork and performed a marvellous song about the Barred Galaxias, in partnership with the Triangle Arts Group.

Visitors inspected displays on native fish and the fire recovery actions for Barred Galaxias, and were invited to get involved in developing the design for a bridge over the predator barrier in Leary's Creek. The barrier in the creek is designed to protect the small native Barred Galaxias upstream in the creek from predation by the introduced trout downstream.

An 'interpretive bridge' (photo) is planned to sit above the barrier and link the Marysville Heart precinct with Gallipoli Park and provide information about the barrier and the fish it is protecting. A broad concept drawing has been developed to begin the conversation around what the final design would look like and some initial feedback has already been received.

If you would like to make comments or get involved please contact Fern Hames, Native Fish Strategy Coordinator at DSE Alexandra (Fern.Hames@dse.vic.gov.au or tel 5772 0273). Copies of the concept drawing and feedback sheets are also available at the Marysville RAC building, Marysville Information Centre and DSE Marysville office. Many people contributed to a great day in Marysville. Grateful thanks are extended to Jody Swirepik, the MDBA Native Fish Strategy team, Arthur Rylah Institute DSE staff and Parks Victoria staff (especially Sam Strong and

Tara Sanders) for coming along and

delivering activities, to Uncle Roy, to



the Triangle Arts Group (especially Julia Peddie and Sharon Bourke) for art and song, to the Marysville Lions Club for marquee hire and morning tea, to the Australian Trout Foundation for lunch, to Nat Morandi and the Gallipoli Park Management Committee, to Carolyn Weeks for her wacky wiry fish creations, to participating school staff and students, and to all who came along and joined in.

Special thanks are also extended to the funding bodies who have supported our fire recovery actions, including the Federal Government's Caring for our Country fire recovery program and the Victorian Bushfire Reconstruction and Recovery Authority (VBRRA). Media

Alexandra Standard 15 December 2010.



Triangle News, community newsletter -

October 29 2010.

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Native Fish Awareness Week Marysville Friday **12 November** 10am - 2pm Be a part of Native Fish Awareness Week Welcome to

Country Update on fire recovery actions

for the nationally threatened Barred Galaxias Draft design for the Marysville barrier-bridge: seeking community comment Join in ochre painting Fish activities for









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students FREE morning tea and BBQ lunch (by Australian Trout Foundation)

pre-registered local school

Where: Adjacent to RAC building, Marysville

34

The Alexandra & Eildon Standard, Wednesday 16 February 2011.

Holiday program studies fauna

Children from the Alexandra and Cathedral area participating in the YMCA's summer school holiday program recently gained a special insight into some of the threatened fauna species impacted by the 2009 bushfires.

Twenty six enthusiastic young visitors at Lake Mountain Alpine Resort learnt some of the methods used to track down nationally threatened species, such as the Alpine Bog Skink, Alpine Tree Frog, and our state faunal emblem, the Leadbeater's Possum.

Parks Victoria Ranger, Jo Antrobus, has been involved with a number of threatened species monitoring programs since the fires. She was keen to show the children how the animals have survived in the alpine environment in the Yarra Ranges National Park.

"Many of these animals are really shy, so as researchers, we need to use a variety of techniques to find evidence of their survival since the fires. This work will help us take care of these animals in the future, and to learn more about how they survive the impacts of fires," Jo said.

Inspired by demonstrations of small mammal trapping and motionsensor cameras, the group then took a short walk to a creek crossing on Royston Road. Fern Hames, Victorian Native Fish Strategy Coordinator at Department of Sustainability and Environment (DSE), described how important healthy stream habitat is for the survival of the remarkable, finger-length sized Barred galaxias (Galaxias fuscus).

She hopes that further knowledge of the fish's existence in the area will help locals identify the fish if they see them.

"Many of these children live near local streams that could provide perfect habitat for potential unrecorded populations of this little orange fish," Fern said. She urged the group to report any possible sightings to the local DSE office in Alexandra.

Demonstrating both creativity and newfound knowledge of these species, the group constructed kites that featured these animals. Lake Mountain Resort kindly provided an indoor workspace to build and decorate some highly individual flying machines. Many of these were launched, as supervisors and children raced down the grassy toboggan run on a perfect summer's afternoon.

The activity was supported by the Victorian Bushfire Appeal Fund and funded through the Commonwealth Government's Caring For Our Country program as part of Parks Victoria's Bushfire Recovery Program.



The Alexandra & Eildon Standard, Wednesday 13 April 2011.

The Alexandra & Eildon Standard, Wednesday 25 May 2011.

The Alexandra & Eildon Standard, Wednesday May 25, 2011 - Page 7

Recovery research

Speakers from a range of agencies and research organisations will present a summary of some of the research projects undertaken for threatened species as part of public land fire recovery programs in the Cathedral Valley and Lake Mountain region at Buxton on Thursday June 2.

region at Buxton on Thursday June 2. The presentations from the Department of Sustainability and Environment's Arthur Rylah Institute; Parks Victoria, Zoos Victoria and Adams and Simmons Ecological Consulting will provide some of the amazing and new insights discovered: Leadbeater's Possum, Lake Mountain Alpine Bog ecosystems, Buxton Gum, Barred Galaxias; as well as a number of other threatened species in the Yarra Ranges National Park.

The evening will also provide insights into how the environment is responding to the fire and follow-up environmental conditions.

There will be opportunity to discuss with the presenters their findings in these environments as they regenerate after the 2009 fires.

A free light evening meal and refreshments will be provided but an RSVP to 13 19 63 is required for catering purposes.

It's on June 2 at the Buxton Memorial Hall, Maroondah Highway, Buxton from 5.45pm until 9.30 approximately.



The Alexandra & Eildon Standard, Wednesday 6 April 2011.

Members of the Flowerdale Landcare Work Engine, who attended the evening slide show with Joanne Kearns (DSE) and Fern Hames (DSE), realise just how big a mature Murray Cod can grow.

Both Fern Hames from the Department of Sustainability and Environment (DSE) Alexandra and Joanne Kearns from DSE Arthur Rylah Research Institute (ARI) gave a very enthusiastic, informative and humourous presentation on 'Maccas' to the Flowerdale Landcare Work Engine last Tuesday night.

The discussion on Macquarie Perch (Maccas) and many other native fish species was held to inform and to encourage local interested landowners, residents and landcare members on the vital importance of native fish to the health of our rivers and waterways.

The facts of the evening discussions were bleak and everyone learnt that many of our fish species are threatened by numerous hazards attributed to the loss of natural habitat; such as dams, weirs and excessive land clearing. Consequently, native fish stocks have been reduced to about 10 per cent of their previous abundance.

With less native vegetation cover (after the fires or excessive clearing along streams), the water becomes hotter'in the summer sun and the dissolved oxygen in the water decreases. The surviving fish then struggle, with less cover to hide under and much hotter and dirtier water to live in. Much work will be required to counter this threat to our native fish and their habitat. Groups such as the Flowerdale Landcare Work Engine are vitally important to starting a nationwide 50 year recovery plan that both Joanne and Fern are working towards across the Upper Goulburn catchment. It is hoped that if land managers and fisher folk work together, then maybe in 2060, native fish may increase again to 60 per cent of their original abundance.

Good News

The challenge is on to increase our united efforts across the catchment.

Fortunately, the King Parrot Creek supports a good population of Macquarie Perch and after the 2009 fires, 35 surviving fish from the local population were rescued and returned in November 2009 to help kick start the recovery of these magnificent animals. These fish were fitted with microchip that allows researchers to track the fish over many years.

What you can do to help

Removing old trees, logs and branches may make the river 'look nice and tidy', but actually harm many of our native fish. Similarly, the removal of snags also harms tortoises, crabs, crayfish and many other animals such as platypus, water rats and water birds.



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