



BLUE MOUNTAINS WORLD HERITAGE INSTITUTE – CURRENT PROJECTS – May 2014

* Project category: 1=minor project with minimal resource requirement; 2=post-graduate project; 3=major project with significant resource requirement

1. NATURAL AND CULTURAL HERITAGE PROGRAM

#	Flagship Program	Approval/project category*	Status	Project Title	Funding	Time frame	Researchers / Partners	Details
1.1	Healthy Ecosystems & Communities	Board-approved Project category 2A (top-up scholarship)	Current	Phytophthora dieback in the Greater Blue Mountains World Heritage Area	Research operating funds: \$11.5 k/year (incl 1.5k/yr BMWHI fee) Botanic Gardens Trust. PhD candidate awarded a Sydney University scholarship; top-up scholarship \$11.5k/yr	PhD 3 years 2010-2012	PhD candidate Zoe Joy-Newby. Supervisors David Guest , USyd; Ed Liew, Botanic Gardens Trust; Dan Ramp, UNSW; & DECCW.	<p>OVERALL AIM: To better understand the role of Phytophthora in vegetation dieback in the Greater Blue Mountains World Heritage Area (GBMWHA) and to facilitate better-informed policy and decision-making and risk management by assessing the level of threat that this pathogen is posing to the WHA. This project will build on the modelling capacity developed by the ARC Managing Ecosystem Change project.</p> <p>Research questions:</p> <ul style="list-style-type: none"> • Where is dieback within the GBMWHA? • Is it caused by Phytophthora? Is Phytophthora only playing a contributory role? What species of Phytophthora are involved? • What factors are associated with the incidence and spread of this disease? • How bad is the disease? Does something need to be done, and if so, what? <p><i>Update Feb 2013: Further distribution and threat modelling complete. Investigating leaf spectra and remote sensing options for detecting P. cinnamomi. OEH considering management response to BMWHI Phytophthora Report.</i></p> <p><i>Update May 2013: Zoe-Joy analysing data from leaf spectra lab trials. Planning to submit Aug 2013. OEH considering management response to BMWHI Phytophthora Report which will need to be finalised by 30 June 13. Graham Wilson (OEH Statewide Pest Mgt) is incorporating BMWHI Phyto Report into a statewide biosecurity strategy.</i></p> <p><i>Update Aug 2013: On track to submit before end Aug.</i></p> <p><i>Update Nov 2013: Zoe-Joy is waiting to hear back from markers. The hyperspectral work and the Phytophthora cinnamomi risk model work will be presented at the 13th biennale Australasian Plant Pathology Society Conference, NZ in Nov 2013.</i></p> <p><i>Update Jan 2014: Final thesis submitted 24 Jan 2014</i></p>

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1.2	Healthy Ecosystems & Communities	Board-approved Project category 2A (top-up scholarship)	March 2013	Top up PhD scholarship – investigate the ecology and policy of wild dogs in the GBMWA	\$10k/yr for 3 yrs BMWHI top up. \$6k Central West CMA. UNSW supporting field work	PhD – 3 years	Daniel Hunter (PhD student, UNSW). Supervised by Mike Letnic, and co-supervised by Rosalie Chapple	<p>Interdisciplinary research/fieldwork to quantify the effects of predators (wild dogs, foxes, cats and quolls) on small to medium sized mammals as well as larger macropods and how this, in turn, can induce trophic cascades and influence various other aspects of ecology. There is an urgent need for more research into predator effects on ecosystems due to the significant amount of resources dedicated to their management in the case of invasives and conservation in the case of the quoll. Research findings will better inform NRM and park management policy and practice. Work carried out in Wollemi, Yengo and Nattai National Parks.</p> <p><i>Update Nov 2013: Work is progressing well despite some set-backs due to fires in Oct/Nov 2013. 3 field sites surveyed as part of the long-term study on trophic cascades and the role of dingoes in the forest ecosystems. Initial results indicating that removing dingoes positively affects fox and cat abundance. This in turn negatively affects small mammal abundance and diversity. The key observation at this stage of the research is that where you have dingoes, you also have a healthier ecosystem with less invasive mesopredators and more native small-medium mammals. Research will be presented at the Ecological Society of Australia and New Zealand annual conference in Auckland on November 25, 2013.</i></p> <p><i>Update Jan 2014: He has undertaken 4 monitoring trips to date. Dan presented at the Ecological Society of Australia Conference 2013 in Auckland on “Guard dog: the dingo protects small native mammals from invasive predators in eastern Australia” reporting on research in GBMWA & Myall Lakes National Park. His paper was received with a great deal of interest.</i></p> <p><i>Update Jan 2014: Daniel has chosen three study sites (Yengo, Blue Mtns/Kanangra and Wollemi) with each site presenting opportunities for monitoring baited and unbaited areas as a comparison. A more detailed research outline and update are available. Getting access to the Park for field trips is at times restricted by fire or due to conflicting advice from the SCA for access to scheduled lands in Blue Mtns/Kanangra – his recent field trip was cancelled the day before due to this conflicting advice.</i></p> <p><i>In 2014 Daniel will address the broader policy aspects of his research including conducting interviews with policy-makers. The aim of this component of his research is to realistically address how his research findings may be used in policy and management and to better understand the barriers to its uptake.</i></p> <p><i>Daniel is in the Wollemi at end Jan/early Feb and then plans to be in Kanangra/BM in mid-Feb.</i></p>

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1.3	Healthy Ecosystems & Communities & An Effective Buffer Zone	Project category 1	Feb 2013	Revegetation Capertee National Park	Env Trust Grant. \$20k to BMWHI	3 yrs	Dr. Alex Baumber will lead project working closely with HNCMA ,CVA, OEH Mudgee & Greening Australia	<p>Revegetation trials in woodland- riparian habitats in Capertee NP. Project aims to assess the most cost effective ecological restoration in the context of important woodland bird habitat with high densities of macropods. BMWHI will prepare experimental design, support implementation and then monitor results.</p> <p><i>Update May 2013: Site visit undertaken to Capertee NP in late Feb involving BMWHI, NPWS, Hawkesbury-Nepean CMA and Conservation Volunteers Australia. This was followed by a letter of agreement with NPWS outlining BMWHI's research role over the next three years (signed in April). The project research plan is currently being developed by BMWHI in stages. The first section was completed in Mar to allow the direct seeding component to proceed in autumn. The second section covering advanced seedling planting in spring is currently being drafted for distribution to potential contractors. A full draft plan is expected by 30 June 2013.</i></p> <p><i>Update Nov2013: Revegetation research plan was finalised in June and an annual report submitted 30 June by HNCMA. Contractor (Landscape Constructions) submitted quote for advanced seedling in July (accepted by NPWS). Direct seeding has been undertaken by Greening Australia (under separate HNCMA grant) on October 9th. Alex Baumber undertook first monitoring visit on November 7th (no growth evident but lines surveyed and plan revised for autumn advanced seeding planting).</i></p> <p><i>Update Jan 14: Second monitoring visit undertaken on 23 January 2014. On track for planting of advanced seedlings in autumn 2014, with lines now marked out for different treatments to prevent macropod browsing (guards, blood & bone etc). No germination from direct seeding in October 2013 due to dry conditions, but substantial weed growth where soil was disturbed. Further weed spraying planned prior to autumn plantings.</i></p> <p><i>Update May 2014: Very low rainfall over summer has resulted in no germination from the direct seeding after 6 months and a likely postponement of the advanced seedling planting to spring 2014. Good rainfall in April has enabled ripping to occur, but planting is unlikely before spring due to the risk of frost. A partnership has been established with UTS on the project, with Dan Ramp and Jonathan Webb supervising an honours student to investigate the movement of kangaroos and wallabies in response to resource availability using camera traps. This will provide useful information on which parts of the trial site may be most affected by macropod browsing.</i></p>
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1.4	Healthy Ecosystems & Communities	Project category 1	Current commenced Feb 2013	Investigating the capabilities of hyperspectral remote sensing in detecting fugitive metals around the Yerranderie Silver Mine in the Blue Mountains National Park	Australian Center for Sustainable Mining Practices (ACSMP); School of Mining Engineering UNSW. Supported by BMWHI. \$30K internal grant.	1 yr	Dr. Simit Raval Prof. Ros Taplin	<p>This project aims to assess the impacts of mining in the Blue Mountains National Park through hyperspectral remote sensing. Recent findings of high levels of heavy metals in some water courses in the National Park generate serious concerns about the remediation of old mines. This project will employ hyperspectral remote sensing of the Yerranderie mine area to identify heavy metal pollution. Supplementary ground-based sampling, laboratory based testing and airborne imaging will be done. The procedure developed could also be used for other sites with waste problems at reduced cost.</p> <p><i>Update Nov 2013: NPWS has granted their approval for the project some time ago however, consent from SCA took a while and was received only last week. The airborne campaign was undertaken on 6th November over the area (approx. 5km x 6km). Field sampling will start from 13th Nov. 60-80 samples of soil and vegetation will be collected from the area.</i></p> <p><i>Update Jan 2014: 10 soil samples collected by Zoe Joy-Newby were analysed to scope the extent of heavy metal. SCA didn't grant approval to access Yerranderie via shorter route due to safety concerns. 53 soil samples collected during the field campaign (13-16 Nov 2013) and analysed for chemical composition at UNSW Analytical Centre. Collection of leaves from the trees was an issue, advice/assistance required from NPWS. Currently spectral measurements of these samples are underway at the Laboratory of Imaging of the Mining Environment (LIME). Unfortunately airborne data captured on 6th Nov is unusable due to technical problem during the flight, planning to re-fly. A journal paper is expected by March 2014.</i></p>
1.5	Healthy Ecosystems & Communities	Project category 1	Approved	The Bleichert Ropeway-A Community Study of Industrial Heritage.	C/wealth Your Community Heritage Grants - \$23,600 grant + \$34,500 in kind totaling \$58,100	1 yr	Scenic World OEH NPWS BMWHI Community groups such as Springwood Bushwalkers	<p>Project aims at documenting the heritage of the ropeway and engaging the community in future conservation &/or interpretation. Ropeway crosses private land (Scenic World) and National Park (NPWS).</p> <p>The project will raise community awareness of the region's mining heritage and the fascinating story of the Bleichert Ropeway. A field survey will be conducted with the support of UNSW, Scenic World, NPWS and members of the Springwood Bushwalking Club. The survey will accurately inventory remaining heritage items in the valley using a state-of-the-art, tablet-based recording system. Additional historical records will be linked to the inventory to ensure a complete and accurate record of the Ropeway. A report will be prepared documenting the Ropeway and making recommendations on its cultural significance and conservation/interpretation. A community event will be held at Scenic World to report back on the project. As a spin off to the project we will also produce a computer simulation of the Ropeway to illustrate its operation and how it failed.</p> <p><i>Update Aug 2013: Initial meetings held with Phil Hammon (Scenic</i></p>

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2. SUSTAINABLE DEVELOPMENT PROGRAM

#	Flagship Program	Approval	Status	Project Title	Funding	Time frame	Researchers / Partners	Details
2.1	Coping with Climate Change & Healthy Ecosystems & Communities	Project category 3 (major project)	Approved	Low Carbon Tourism: Building Sustainable Communities	Concept discussions on going with the Low Carbon Living CRC & other partners. Commitments to date: BMLOT \$20,000 (\$5K cash); BMCC \$20,000 (\$5K cash). LCL CRC \$228K over 3 yrs.	3 yrs	BMWHI led consortium of partners including: LCL CRC: OEH; BMLOT; BMCC; Rail Corp; Go Get; TAFE etc.	<p>Proposal in development for 18mths for submission to Low Carbon Living CRC and other partners.</p> <p>Proposal to be synthesised but would cover following components:</p> <ol style="list-style-type: none"> 1. Baselines & benchmarks – research on demand, size of the footprint, feasibility assessment and scoping pilot projects 2. Branding & certification – including National Landscapes 3. Education & training 4. Tourism experience – including voluntary tourism and responding to BMLOT's niche marketing of the WHA 5. Low Carbon Incentives – IT, Google, Apps 6. Financial mechanisms – to return benefit/investment in GBMWA as the foundation tourism asset <p>Project design has focused on two interrelated components: the first being to work with the tourism industry to reduce its carbon footprint through improved and more sustainable operations. Free audits and action plans are being conducted with a range of businesses across different sectors in the Upper Blue Mtns. The second component aims to develop the consumer demand for low carbon tourism services/experiences through awareness and incentive programmes supported by BMLOT, BMCC and OEH. The project is being piloted in the Upper Blue Mountains with aspirations to roll it out to the GBM National landscape and over time to other National landscapes across Australia. The project is an enabling initiative aimed at catalysing change in the tourism industry and ultimately community wide change toward a more sustainable low carbon future.</p> <p><i>Update Aug 2013: Project approved. Activities underway – tourism sector audits, app development, biodiesel negotiations with transport providers. Partnerships with BMLOT, BMCC & NPWS being finalized.</i></p> <p><i>Update Nov 2013: Project progressing. Additional project grant funding in train in partnership with BMLOT and BMCC. 120 local tourism businesses approached to partner the project in carbon auditing and incentive schemes. Publicist engaged and publicising the project. BMWHI a partner in the launch of Grand Cliff Top Walks where the project will trial the Smartphone App. Project showcased at LCLCRC symposium. Field trip bid linked to 2014 World Parks Congress successful and will showcase the project. Efforts underway to introduce biodiesel to BM. Negotiations continuing with TAFE on capacity development for LCT.</i></p>

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3. COMMUNITY ENGAGEMENT

#	Flagship Program	Board approval	Status	Project Title	Funding	Time frame	Researchers / Partners	Details
3.1	Healthy Ecosystems & Communities	Project category 2)	Phase 1 Completed	Community fire-risk: a lesson in time	Federal DSEWPC Your Community Heritage Grants. Sharing Community Heritage Stories sub program.	Total project \$88,727 (YCH 22,727, RFS 40,000, OEH 23,000, BMCC 3,000)	Submitted by BMWHI with OEH and RFS as partners. Laura Zusters (researcher & filmmaker) will lead the work supported by BMWHI Research Mgr.	<p>Focus on social research into 1957 Leura fires. Oral history and community awareness event; related short film documentary</p> <p>Goals:</p> <ol style="list-style-type: none"> 1. Understanding the evolution of community resilience to fire: a lesson in time. 2. Enhancing community involvement and participation in responding to fire risk under varying climate change scenarios. 3. Fostering maturity in prevention, resilience and adaptive management strategies. <p>Key questions:</p> <ol style="list-style-type: none"> 1. Is the community more resilient to fire risk than 50 years ago? 2. What lessons have been learned since the catastrophic fires of 1957 and how has bush fire safety, awareness, response & risk perception changed? 3. How has knowledge and science influenced community behaviour since 1957? 4. Has exposing the community to the events of 1957 resulted in enhanced bush fire safety awareness? <p>Second phase of Fire Stories is proposed for a 6mth period at \$40,000 (see below) The project aims to evaluate the effectiveness of bushfire risk communication strategies on fire preparedness and response in the Blue Mountains, and in particular to obtain feedback from communities about the effectiveness of two specific strategies, namely the <i>Fire Stories</i> project & film, and the NSW RFS Bushfire Survival Plans. Four stages are proposed including:</p> <ol style="list-style-type: none"> 1. Stage 1: Community survey 2. Stage 2: Stories – case studies of behavioural change catalysed by the original project and informed by more recent fire events (Oct 2013) 3. Stage 3: Community Event to bring together original project and second phase and t rescreen Fire Stories film 4. Stage 4: Report synthesis and finalisation <p><i>Update Feb 2013: RFS grant successful (advised Jan 2013). Project proceeding on track with Project Reference Group established and proposals firming. Proposed May-Jun community event.</i></p> <p><i>Update May 2013: Project progressing well. Additional \$3,000 provided by BMCC. Additional \$8,000 provided by OEH to offset increased film costs. In kind sponsorship from Gazette Newspaper & Edge Cinema. YCH grant</i></p>

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