

# ***Write it up!***

**Case studies of sustainability education projects  
from around NSW**

## **North Katoomba Catchment Restoration and Action Project**

*A holistic approach to managing natural resources*

An innovative, holistic approach to catchment management  
that has become a model for the sustainable management of natural resources.

**By Geoffrey Smith, Blue Mountains City Council, 2008.**



our environment *it's a living thing*



# Snapshot

## Aim

The overall aim of The North Katoomba Catchment Restoration and Action Project (NKRAP) is to involve the local community and other key stakeholders in a holistic catchment restoration project that delivers long-term environmental outcomes (sustaining the natural capital), while exploring how to build community and live sustainably within the area (sustaining the social capital).

## Location

This project is based in North Katoomba, in the Blue Mountains of New South Wales

## Who is involved?

- Blue Mountains City Council
- North Katoomba, Marmion Road, Katoomba Creek & Minihaha Bushcare Groups
- North Katoomba Organic Community Gardens
- North Katoomba and Community Gardens Living Streams Streamwatch Groups
- Aboriginal Cultural Resource Centre, Katoomba
- K@toomba Men's Shed
- North Katoomba Mountain Living Group and North Katoomba residents
- GreenCorp and Conservation Volunteers Australia volunteers
- Charles Sturt University Bathurst (evaluation)
- A&S Bushcare Services

## Good practice education for sustainability principles

The project demonstrates best practice education for sustainability principles as follows:

### ***The project is interdisciplinary and holistic***

The North Katoomba Catchment Restoration and Action Project is an innovative holistic approach to catchment management that is being adopted as a model for how Blue Mountains City Council sustainably manages its natural resources. Through a multifaceted approach, the project has successfully engaged the local community from its inception and using their vision for the area was able to pull together state government authorities, local businesses and other agencies to work collaboratively to create a range of sustainable on-ground outcomes and promote collaboration between all stakeholders. Through its whole of catchment and multi-disciplinary methodology this project demonstrates how to deliver significant and long-term outcomes in natural resource management, which can be transferable to not only other priority catchments within the Blue Mountains LGA, but with other Councils within the Hawkesbury-Nepean Catchment and throughout NSW.

### ***The project is values-driven***

Key environmental issues in the catchment including stormwater runoff, land clearing, unconsolidated sediments and weed invasion led Council to develop a project that includes community engagement and education to minimise impacts and accelerate catchment rehabilitation through joint partnerships. Project objectives were determined by research into current issues, their causes and impacts in the catchment and what could be done about them.

Methods used to implement the project include:

- The formation of a focus group to create a vision for the catchment and to identify and recommend on-ground works;
- The establishment of community groups to monitor and work on rehabilitating the catchment as well as increasing the level of community involvement;
- Inter-agency collaboration to jointly deliver programs and on-ground works to achieve greater value for money;
- Community catchment days to educate and involve residents in on-ground activities and actions;
- Catchment pledges engaging the community in making changes on their own property and adopting sustainable practices that will benefit the catchment; and
- 'Broom Blitz' events engaging the community in targeted weeding days, which fosters a feeling of achievement by residents as they work toward a realistic goal.

### ***The project encourages critical thinking and problem solving***

The formation of a North Katoomba focus group comprised of local environmental activists who had already demonstrated a long-term commitment to their local environment through participating or even starting local Bushcare, Landcare and Living Streams Streamwatch volunteer groups. Their local expertise was essential in helping identify the most pressing environmental issues and suggesting ways in which they could be tackled using community engagement and support which is critical in achieving any long-term on-ground outcomes. Through previous grant funded projects it became evident that if bush regeneration works did not involve long-term follow-up either through long-term contracts with local bush regeneration companies or having a team of dedicated Bushcare volunteers to maintain the primary treatment works, often the funding was wasted and the sites quickly reverted to their former degraded states (weed plumes, erosion etc).

### ***The project is multi-method***

The Blue Mountain Living course was developed as an integral part of NKCRAP to encourage local residents in the catchment to adopt more sustainable practices at home. Mountain Living was delivered by a team of BMCC staff together with local experts in sustainability using a variety of teaching/learning methodologies. One of the more successful methodologies was the 'hands on' training held at the North Katoomba Organic Community Gardens where participants built compost heaps, no-dig gardens and other permaculture techniques.

During the catchment investigation phase local residents were invited to present to the group the environmental issues that they considered to be the most important for their catchment and share any ideas and examples of actions that might be taken. This was followed by individual property visits where expert staff worked with them to identify key issues such as invasive weed species that might escape into the surrounding bush, how to manage greywater, stormwater and look for potential rainwater harvesting opportunities.

### ***The project facilitates participatory decision-making***

A focus group made up of active community participants was established during the initial phases of the project (not the start but we quickly learned the value of local knowledge and engagement) who help point out the major issues in the catchment that they were concerned with and Council staff worked collaboratively with a range of state and federal agencies and funding programs to provide resources for on-ground implementation of their ideas and suggestions. Each stage was reviewed and through action research methodology the next phase was refined and improved so by the later stages of the project the outcomes being generated were well beyond the initial expectations.

### ***The project is locally relevant***

A major component of the project involved working with existing or supporting the establishment of new community groups including the K@toomba Men's Shed, the North Katoomba Organic Community Gardens, the Katoomba Neighbourhood Centre, and local Bushcare and Streamwatch groups to address the range of issues relevant to them. Several innovative sustainable living (Mountain Living) courses were run in this catchment which were also used as a trial and template to develop the Mountain Living program which is now being delivered in other priority catchments throughout the Blue Mountains.

## **Funding**

The Local Government Advisory Group to the Hawkesbury Nepean Catchment Management provided funding over a 3 year period of approximately \$180k with matching funding from Council. The community was successful in obtaining a \$90k Environmental Trust grant to tackle the post fire Broom issue. A Community Water grant of \$35k was used to install rainwater tanks and a waterwise garden site at the K@toomba Men's Shed and North Katoomba Organic Community Gardens. The URCP contributed over \$250k for stormwater and bush regeneration works in the catchment. The Aboriginal Cultural Research Centre received 2 grants totalling \$70k to establish the bush foods botanic gardens.

# The Project

The North Katoomba Catchment Restoration and Action Project (NKCRAP) has successfully engaged the local community and, using their vision for the area, has been able to pull together state government authorities, local businesses and other agencies to create sustainable on-ground outcomes.

Through its multidisciplinary methodology, this project demonstrates how to achieve significant and long-term outcomes in natural resource management. These are transferable not only to other priority catchments within the Blue Mountains, but within the broader Hawkesbury-Nepean catchment and throughout NSW.

## Background

The community in the North Katoomba catchment first became mobilised when the 'Blue Pool' at the bottom of Minihaha Falls, once known as 'the bottomless pool', became totally filled with sand and sediment from the catchment. The pool had been used in the past as a popular recreation area and many locals reported jumping off the waterfall without any risk of touching the bottom because the water was so deep. The pool has also traditionally been a special area for the Dharug people with particular significance to the women, and has been visited by Aboriginal elders from around Australia.

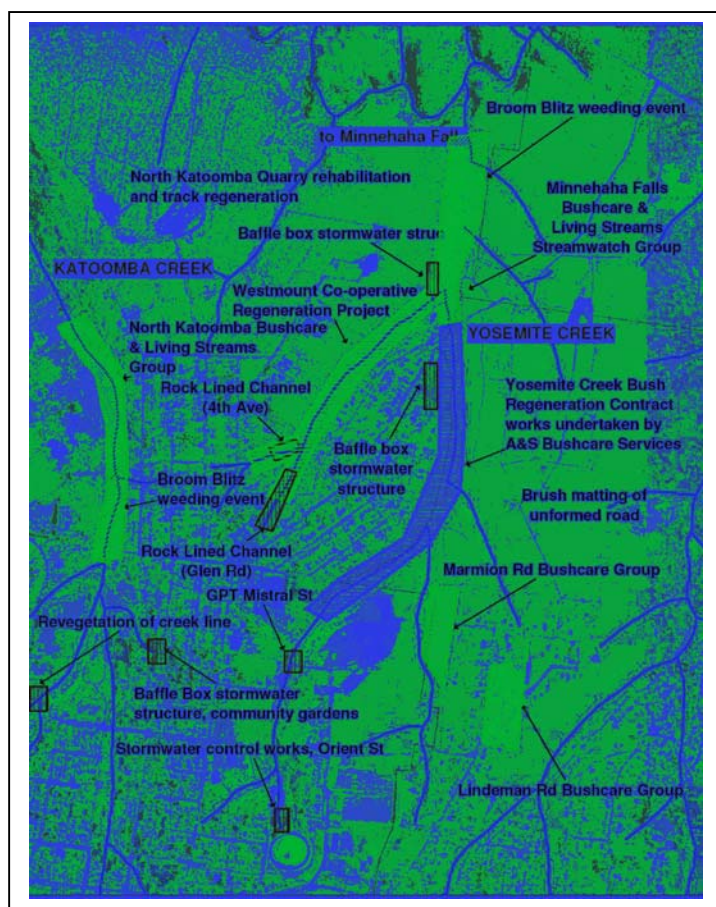


*The 'bottomless' pool at Minihaha Falls in the 1960s and in 2006*

Since 1998, Council and a number of government agencies had been undertaking a variety of programs and on-ground works designed to improve the North Katoomba catchment. The catchment had been selected as a priority sub-catchment under the State Government's Urban Runoff Control Program (URCP) and Councils Catchment Assessment and Prioritisation Program (CAPP) due to issues such as extensive riparian degradation, in-stream erosion, channel instability, sedimentation, bushfires and weed encroachment, all of which had the potential to impact the surrounding Blue Mountains World Heritage Area and Grose Wilderness Area downstream.

Major works were being carried out in the catchment by the URCP, the RTA, Sydney Water and Council aimed to improve North Katoomba and address some of the key issues related to water quality, stormwater and urban runoff. Unfortunately, many of these actions actually created new or bigger problems, many of which would have gone undetected if not for the local community, who had been actively involved in volunteer activities such as Bushcare and had intimate knowledge of their catchment.

It soon became apparent that without working collaboratively with the local community, catchment improvement projects would not be effective or sustainable in the long-term.



*The North Katoomba Catchment*

## Objectives

- To engage the community in all aspects of the project through the formation of a representative focus group.
- To create new volunteer groups and support existing groups, including Bushcare, Living Streams Streamwatch, the North Katoomba Organic Community Gardens, the Aboriginal Cultural Resource Centre and the K@toomba Men's Shed.
- To help build a sense of place in the North Katoomba catchment by conducting a range of community catchment events and hands-on workshops for residents and students of North Katoomba Primary School.
- To engage the Aboriginal community in long-term restoration of key sites, including the pools within the catchment identified as significant sites to the Dharug people, and the planting of a 'Bush Foods' botanic garden within the existing community garden that caters for the indigenous community living in Katoomba.
- To develop a Sustainable Mountain Living course to promote the adoption of sustainable practices for household and businesses within the catchment, including the sealing or stabilisation of driveways, the installation of rainwater tanks and prevention of the spread of weeds from private properties into the surrounding bushland.
- To run a sediment source control campaign with residents, builders and businesses to prevent sediment export at or close to the source.
- To identify priority issues in the catchment and implement sustainable remediation works designed to conserve local scheduled and vulnerable, threatened or endangered ecological communities and species, in particular Blue Mountains Hanging Swamp complex; Blue Mountains Riparian Complex; Blue Mountains Water Skink (*Eulamprus leuraensis*); Giant Burrowing Frog (*Helioporus australicus*) and increase biodiversity by improving habitat connectivity and wildlife corridors.
- To create and implement a North Katoomba Weed Management Plan and hold targeted Scotch Broom (*Cytissus scoparius*) weeding days ('Broom Blitz') in the catchment following germination of thousands of plants after the 2002 bush fires.
- To promote inter-agency collaboration to jointly deliver programs and on-ground works to achieve best practice and greater value for money.
- To provide additional support for existing community projects and programs run through the Katoomba Neighbourhood Centre.
- To promote a sense of community within the catchment by building on the connectivity established during the bushfires and from an annual community water week 'Festival of Joy' held at the Community Gardens.

## **Outcomes**

NKCPAP has now been running for five years and has delivered triple bottom line outcomes through improved catchment health, an enhanced local economy and an active and engaged local community.

### ***Economic outcomes***

- State agencies have invested over \$5M in the past decade in the North Katoomba catchment. Through feedback from the local community involved in the NKCRAP and liaison from Council staff, work practices have improved to be more environmentally sensitive and areas in the catchment have been restored where previous environmental damages occurred.
- Over \$500k of state and federal grant funding for NKCRAP was expended for on-ground works in the catchment.
- Council Green Team staff (many who live in the Katoomba catchment) and local bush regenerator contractors (based in and employing locals from the North Katoomba community) were engaged using NKCRAP grants totalling over \$175k for weeding and revegetating riparian zones throughout the catchment.
- Contractors/Council sourced local progeny plants from Katoomba based community nursery 'Wild Plant Rescue' to repair riparian zones and improve habitat connectivity (over 5000 tube stocks).
- Over 30 driveways were sealed or stabilised by local residents to stop erosion.
- Rainwater tanks were installed in 35 households, and 3 tanks at the Community Gardens and 2 tanks at the K@toomba Men's Shed using local suppliers.

### ***Environmental outcomes***

- Six new stormwater quality improvement devices (SQIDs) were installed and improved maintenance schedules for existing devices were developed.
- Volunteers/Council removed target weed species and rehabilitated over 15km of riparian corridor.
- 350m of instream stabilisation work using rock lining restored riffles, improving biodiversity.
- Over 5km of eroding dirt road edge was sealed.
- 15km of unused trails were closed and rehabilitated in Mike Eades Reserve, North Katoomba.
- 3km of unvegetated road verges were mulched/turfed.
- Illegal vehicular access to reserves was blocked at 15 points to prevent damage from 4WDs.
- Joint Council/Sydney Water initiatives resulted in 35 houses installing rainwater tanks, reducing the impacts of stormwater on the local creek system.
- Several severely degraded walking tracks were restored in Mike Eades Reserve, reducing erosion and sedimentation.



- Conservation Volunteers Australia closed off and brush matted the length of an eroded unformed road leading into a hanging swamp in North Katoomba.
- Over 5000 native species were planted in riparian zones by contractors and Bushcare groups.
- The North Katoomba Weed Management Plan was devised and implemented, and over 6210 hours of work has been completed by volunteers and contractors.
- Two old Council quarries were rehabilitated in North Katoomba and North Leura.
- Council's depot was upgraded to include stormwater retention basins, improved sediment controls and specialised storage for unconsolidated materials.
- Council's Head Office installed a range of water and energy saving measures and joined the ICLEI Cities for Climate Change program with energy and water plans and targets.

### ***Social outcomes***

- A North Katoomba focus group was formed to give direction for ongoing catchment improvement works.
- Three Blue Mountains Sustainable Living courses were conducted with over 75 residents in North Katoomba. Participants were offered follow-up visits by Council's Community Weeds Officer to develop a property plan and receive one-on-one training in how to remove unwanted weed species and replace with natives. Vouchers for local providence natives from local community nursery Wild Plant Rescue were also provided.
- Two new Living Streams Streamwatch groups were established for Yosemite and Katoomba Creeks.
- 25 households joined the Bush Backyards program and prepared property plans.
- Five catchment crawls have been conducted with local school students, residents, and visitor groups identifying catchment issues and engaging them in monitoring activities.
- Catchment newsletters were distributed to all residents in the catchment, which contained maps, identified source points of pollutants and detailed the remediation efforts and the outcomes.
- Three community catchment days have been conducted to promote sustainable living in the North Katoomba catchment.
- Two special Broom Blitz events were held, with over 90 Bushcare volunteers removing broom seedlings along creek lines 5km down into the Grose Wilderness.
- Over 200 catchment pledges were signed by residents outlining a range of sustainable actions they were willing to implement.
- A waterwise gardening demonstration site was established at the Community Gardens with rainwater tanks, drip irrigation, no-dig gardening and mulching techniques, permaculture and organic gardening.

- The ACRC created a Bush Foods Botanic Garden with support from the World Heritage Institute.
- Four annual Festivals of Joy were held at the Community Gardens with over 1500 participants per year with a range of workshops and entertainment with an environmental and water theme during Water Week.
- The K@toomba Men's Shed was successful in obtaining a community water grant to install rainwater tanks at the Shed and Community Gardens.
- The heritage walking-track to Minihaha Falls was restored.
- Lithgow Green Corps spent a day calculating sediment loads in the pools along Yosemite Creek and under Minnehaha Falls a pool once over 30m deep now filled with sediment. They calculated that over 54,000 tonnes of sediment had been deposited in the pool.
- Partnerships with all stakeholders were built on and improved, including those with local residents, community groups, State government agencies, other groups (URCP, HNCMA), the Aboriginal community and local businesses.

Possibly the best long-term outcome for this project is the high level of involvement of the North Katoomba community and the ongoing community engagement in natural resource management.

## **Success of the project**

The project has been deemed a huge success for many reasons. These include the number and scope of on-ground works undertaken; the partnerships and associations created; the level of collaboration between all stakeholders; the level of community engagement and the subsequent education and empowerment of the community.

NKCRAP received the NSW Local Government Award 2004 for Excellence in the Environment and the National Award for Local Government for Integrating Biodiversity Conservation into Planning and Management in 2005, and was selected for the Department of Environment and Conservation's (DEC) 'Leading Practice Showcase' in 2006 and was presented at the 'Integrating Sustainability into Local Government Symposium' in 2008.

## **Lessons learned**

The key lesson from NKCRAP is that achieving sustainable on-ground environmental outcomes and improved catchment health is only possible through actively supporting and empowering the local community. Those wishing to implement similar projects in their communities should remember:

### ***Engage the local community from the start***

A number of well-meant catchment improvement initiatives were being undertaken by State Agencies and Council without involving the local community that resulted in newer and sometime larger problems being created that would have gone undetected if not for the commitment and dedication of a number of community volunteers. The most sustainable outcomes for the North Katoomba catchment came about only once the community was fully engaged and were able to share their local knowledge and have real input into the decision-making process for on-ground works.

### ***Stay committed for the long haul***

Feedback from the various focus groups and community volunteers strongly indicated that one of the main reasons for the success of the NKRAP was the commitment made by Council that it was in for the long-term. The community especially appreciated that once the major grant funded primary works had been completed there would be ongoing support and resources to maintain and continue to enhance the North Katoomba catchment. As a result the community involvement continues to grow and the seed projects including the bush foods project and the K@toomba Men's Shed have gained enough momentum to stand on their own.

## **Conclusion**

NKCRAP is now being adopted as a model by Blue Mountains City Council in the sustainable management of its natural resources. The high level of involvement by residents and stakeholders in planning and implementing the project has turned what often used to be confrontational into a collaborative and much more effective approach to natural resource management.

This approach has promoted a sense of place and community by actively engaging the community and has encouraged the adoption of sustainable behaviours and practices that will continue to benefit the catchment well into the future.

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