

# factsheet

## A community approach

### managing weeds on a catchment scale - Sixth Creek Catchment



### The problem and history

Community groups play a significant role in protecting remnant native vegetation from the degrading impact of environmental weeds. However, without a strategic approach and a high degree of coordination between a diversity of stakeholders, many community groups can find the issue of weeds overwhelming.

This case study demonstrates how the Sixth Creek Catchment Group (SCCG) in the Mount Lofty Ranges of South Australia developed a whole-of-catchment approach to weed management. Their approach, which engaged a wide range of different landholders and landcare groups, has led to a strategic management of environmental weeds.

### Sixth Creek Catchment

The Sixth Creek Catchment is situated in the Mount Lofty Ranges east of Adelaide, South Australia. The Mount Lofty Ranges is one of the most biologically diverse regions in South Australia. It also supports a significant proportion of South Australia's population and primary production. The Mount Lofty Ranges has been extensively cleared and only 7% of the original vegetation remains.

Sixth Creek is the largest sub-catchment of the Torrens River, Adelaide's largest metropolitan waterway. The steep terrain surrounding Sixth Creek has protected much of the 6600 hectare catchment

**Project:** Sixth Creek Catchment

**Participants:** landholders, landcare and government agencies.

**Location:** Mount Lofty Ranges, surrounding Adelaide, South Australia

**Ave annual rainfall:** 1120 mm

**VET sector resource:** RTD3505A

*Maintain natural areas, RTD5404A*

*Coordinate the pest management strategy in a regional or broader context, RTD5802A Support group and*

*community changes in natural resource management.*

from being developed. It is one of the few catchments surrounding Adelaide where nearly 50% of the original native vegetation remains.

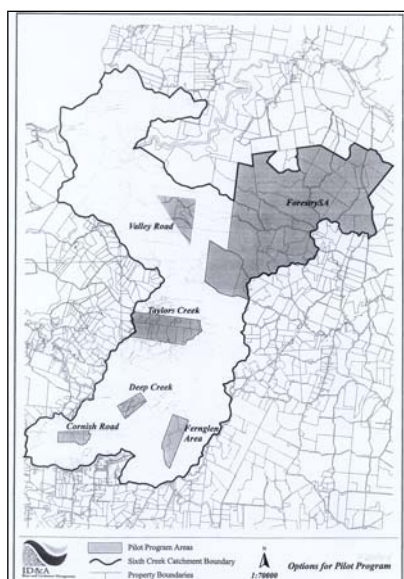
The catchment consists of large areas of Stringybark forest (*Eucalyptus obliqua* & *E. baxterii*), with rare vegetation associations scattered throughout.

Most of the remnant vegetation is on private land with much of it being threatened by weeds. Woody weeds

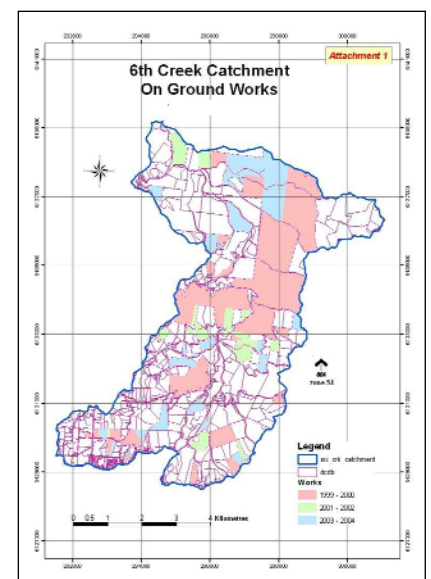
including blackberry, gorse, broom and olive are the greatest concern as they increase the fuel load and risk of fire.

There are over 700 landholdings within the Sixth Creek Catchment. The dominant land use includes:

- apple and cherry orchards
- vineyards
- urban and rural living
- national parks
- plantation forests and
- grazing.



Six sub-catchment pilot sites, 1998.  
Source: ID & A River & Catchment Management



Sixth Creek Catchment Current On Ground Work Sites, 2006.  
Source: SCCG

These species displace the understorey species, which normally stabilise the soil against erosion and can also act as filters removing excess fertilisers and other contaminants.

Awareness of the issue of weeds has been very high for a considerable time in the Sixth Creek Catchment. Several small landcare groups in the catchment attempted to address the issue of weeds in localised areas but had little significant impact. Serving enforcement notices for proclaimed weeds was also having little long-term impact.

The management of weeds was well beyond the skills and resources of most private landholders. It was recognised that a greater level of coordination, support and resources was going to be required to make any impressionable difference.

### Development of a catchment approach

In 1998 the Basket Range Landcare Group decided to scale up their vision, resulting in the formation of the Sixth Creek Catchment Group (SCCG). This group sought to build community ownership in taking a holistic and coordinated approach to caring for their catchment.

There were a number of steps taken in developing and implementing the



An example of a degraded watercourse with weeds.  
Photo: SCCG

Sixth Creek Catchment Group held stakeholder meetings to build community ownership in taking a holistic and coordinated approach to caring for the catchment.

A survey was developed to determine priority issues and management options for the catchment.

Sixth Creek Catchment Group formed partnerships with local agencies for technical support.

A long-term catchment management plan was developed which included a whole-of-catchment weed control strategy to be overseen by a management committee.

Funding opportunities were explored and the group secured initial funding from the National Heritage Trust (NHT).

Six sub-catchment pilot sites were established using criteria related to protecting species, position in the catchment, conservation value etc.

An education program was seen as critical to implementing the sub-catchment pilot program. This involved an 8-week (one subject per week) course, information kits, technical assistance in developing individual property plans and providing a website.

Financial assistance was offered to landholders to help them implement plans. Landholders contributed 50% of the cost through in-kind contributions (eg time and equipment).

Long term monitoring and evaluation is carried out to check on-ground works, revegetation, water quality and soil erosion. The group continues to manage and seek external funding to continue the programs.

whole-of-catchment approach by the Sixth Creek Catchment Group (see figure left).

The results of the consultations indicated that the management of weeds was seen as critical in protecting the native vegetation as well as reducing the impact of fires, reducing soil erosion and restoring water quality.

### Integrating options into a management plan

The weed management strategy developed by the Sixth Creek Catchment Group included:

- Mapping the main woody weeds by aerial photography
- Maintenance of a landholder database
- Compilation of information resource kits covering a range of natural resource management issues
- Development of landholder education courses
- The identification of significant and high profile areas to be targeted for initial on-ground works
- A landholder assistance program providing technical support and financial incentives for developing and implementing a property management plans and
- A program of on-going monitoring and evaluation.



Due to the steep terrain, most of the work has to be carried out by hand.  
Photo: SCCG

## Implementing a weed management program

To ensure a balance of planning and action, implementation of the strategy commenced through establishment of six sub-catchment pilot sites which involved a number of landholders. The sites, identified using aerial photography and local knowledge, were prioritised based on their importance and potential in:

- engaging a range of stakeholders
- managing weeds at the head of the catchment
- protecting threatened or endangered species
- maintaining the integrity and linkages between large tracts of intact bushland and
- contributing to improved soil conservation and water quality.

The pilot sites chosen were (see map page 1):

1. Deep Creek- selected because of the rare and endangered plant species
2. Fernglen area - selected because it was at the top of the catchment and contributing to continual re-invasion
3. Cornish Road - selected because the water quality from this area of arable land at the top of the catchment needed to be improved. Woody weeds (blackberry) were disguising soil erosion issues and displacing ground cover species, which would normally assist in filtering out sediment and contaminants
4. Taylors Creek - selected because it is a tract of significant native vegetation being threatened by encroaching weeds
5. Valley Road - Selected because of it's significant native vegetation surrounding a national park and abutting forestry land

6. Forestry SA - selected because the land is too steep for forestry and this land was being restored to native vegetation.

## Supporting landholders

Support to landowners, seen as critical to implementing the sub-catchment pilot program, was provided by:

- an education program based on the opportunity to attend an 8-week course
- information kits
- technical assistance in developing individual property plans and
- financial assistance to implement plans on agreement that landowners also contributed to 50% of the costs in-kind (eg their time and equipment).

## Management tools

The management of woody weeds in each of the pilot sites varied according to the terrain, the dominant weeds and the principal management outcome.

Due to the steep terrain all herbicide spraying was done by hand. For the main pilot site protecting rare and endangered species, only cut and swab techniques were used to minimise the potential for off-target damage.

In many areas infestations of weeds, such as blackberry, were so dense they made access difficult. In these situations brush cutting techniques were used to cut tracks into the dense infestations to permit hand spraying.

Fire is a favoured management tool particularly for broom. Broom seeds remain viable in the soil for years. Fire seems to promote the germination of the broom seeds. If follow up control is carried out within the first year after a fire, this can significantly reduce the seed stock and encourage natural regeneration. However, in steep inaccessible terrain, surrounded by residential properties, the use of fire requires a high level of technical support.



An example of a typical weedy site before, during and after fire showing natural regeneration in the years following fire.

Photos: SCCG

## Monitoring outcomes

The catchment group keeps track of their progress and change in the condition of the catchment through a long-term monitoring program. Monitoring is carried out by a single project officer to ensure consistency in the information recorded. Monitoring involves recording photo-points, vegetation surveys of both the weeds and native regeneration as well as measuring water quality.

## Natural resource outcomes

Monitoring of the on-ground works undertaken indicates the health of the Sixth Creek Catchment is steadily improving:

- photo points indicate a reduction in density of invasive weeds and consequently fuel load within the pilot sites
- vegetation survey and photo points suggest an increase in the area of regenerating native species within the control sites and
- soil erosion sites in the upper catchment have been rehabilitated.

Water quality monitoring along Sixth Creek is providing baseline data, which may be used to indicate the impact of the weed control and other soil conservation on water quality over time.

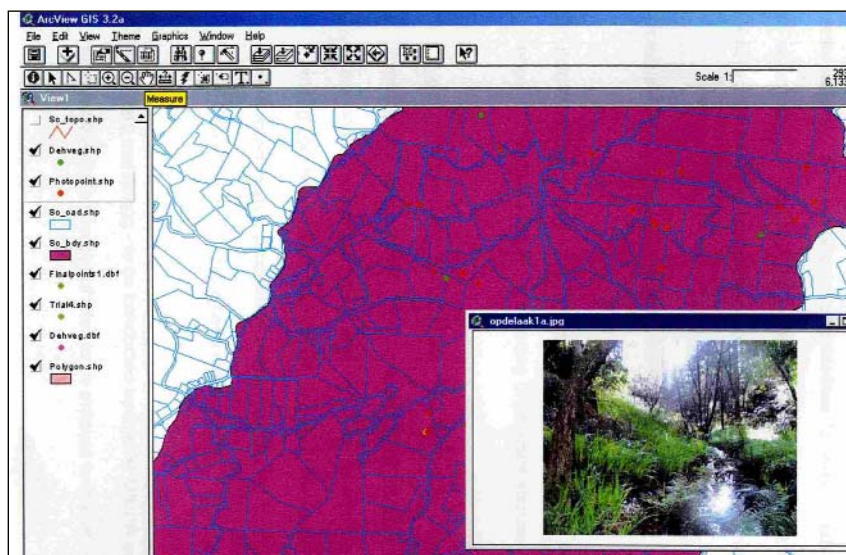
## People outcomes

One of the greatest benefits of Sixth Creek Catchment Management Program has been the change in attitude. Don Cranwell, a key driver in the whole catchment approach said "building community ownership was critical to the success of the program and has been far more successful than merely relying on compliance". With the number of properties involved increasing from 40 to 80 and smaller landcare groups linking their works with the overarching catchment program, there has been an increase in the area being managed.

## Reflections and future directions

The need for providing landholder support and information is ongoing, as there is a relatively high turn over of land ownership with properties being bought by those seeking a rural lifestyle. Keeping people engaged in a long-term program is stressful, particularly under short-term funding programs. However the catchment approach has instilled a lot of community pride and determination.

The success to date has encouraged the Sixth Creek Catchment Group to expand. They hope to join with neighbouring sub-catchments of the Torrens River to build an even more comprehensive catchment approach.



A monitoring database contains progress photos and vegetation surveys for participating properties.  
Photos: SCCG

For further information visit the Weeds CRC's website: [www.weeds.crc.org.au](http://www.weeds.crc.org.au)

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**Further reading:** <http://www.sixthcreek.com/>



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