

# HEARTLANDS



## Towards Sustainable Land Use in the Murray-Darling Basin



Land and water degradation, especially dryland salinity, poses a serious long-term threat to the sustainability of the Murray-Darling Basin. Changed management of agricultural landscapes, including well-targeted revegetation on a broad scale, is the most viable means to reverse the ongoing environmental degradation.

The *Heartlands* initiative will develop efficient strategies for well-targeted land use change in the Murray-Darling Basin. It will support implementation of the strategies, and verify their effectiveness.

*Heartlands* is an innovative long-term program combining on-ground-works with research and development. Scientists will work closely with catchment managers and the community to:

- Support catchment management
- Help to rehabilitate the landscape in a way that is sensitive to the needs of society and the communities affected
- Assist rural communities to manage land use change
- Estimate the benefits and costs of changed land management
- Provide confidence that the proposed solutions work.

***Heartlands* is developing and applying the knowledge required to target revegetation works for maximum benefit.**

# Heartlands Research Projects

## Integration and Adoption

- Dynamic Catchment Design
- Community Participation and Adoption
- Adaptive Management
- Knowledge Transfer

## Designing Land Use Change

- Groundwater Processes
- Maintaining Water Yield
- Water Quality and Aquatic Ecosystems
- Restoring Biodiversity
- Catchment Economic Analysis

## Production Systems

- Low Rainfall Farm Forestry
- Greenhouse Gas Abatement
- Mosaic Farming Systems

- Land Resource Information

The *Heartlands* initiative includes integrated research projects grouped under three headings:

## Integration and Adoption

*Heartlands* will combine knowledge of production systems, catchment processes, and social and economic imperatives within focus catchments to produce:

- Recommendations for landscape vegetation design
- Systems of adaptive catchment management
- Identification of incentives and instruments needed to support land use change.

The knowledge that has been developed in focus catchments will be transferred to other parts of the Basin.

## Designing Land Use Change

These projects contribute to the landscape vegetation design options by improving understanding of important catchment and regional scale processes. Appropriate land resource information is necessary.

## Production Systems

Catchment management starts at the individual farm. The *Heartlands* initiative is developing alternative farm production systems that are economically viable as well as being environmentally sustainable.



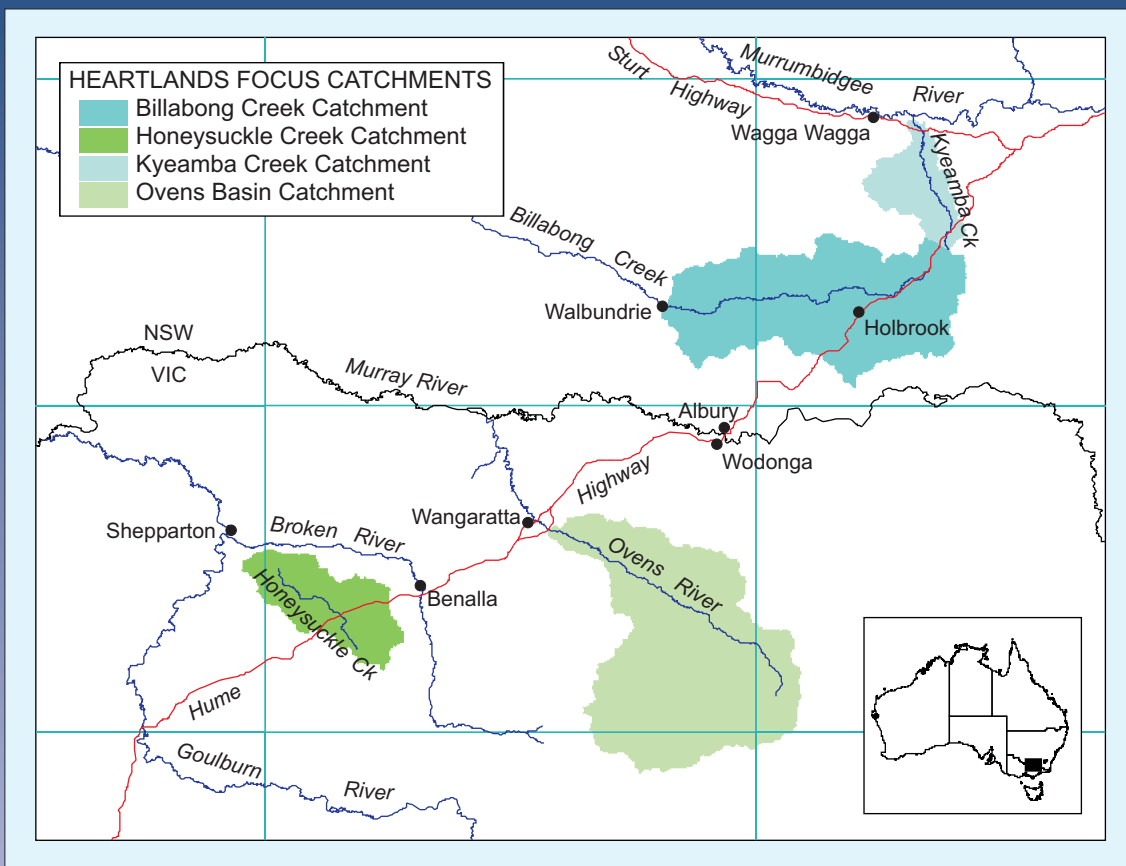


### The *Heartlands* Initiative Will:

- Contribute to new land use options that combine commercial success with sustainable resource use
- Provide ability to locate appropriate land management options - reforestation, environmental plantings, and improved agriculture - in specific locations in a catchment to maximise environmental benefit
- Build understanding of the extent and nature of land use change necessary to meet salinity and water quality targets, maintain water security and enhance biodiversity conservation
- Verify the effectiveness of landscape design strategies in meeting these environmental imperatives whilst providing long-term economic returns
- Provide practical support for community-based catchment planning, monitoring, and the implementation of adaptive catchment management processes
- Deliver support for policy initiatives to help in implementing necessary land use change.

***Heartlands* will build on existing knowledge and related research being undertaken by CSIRO and other organisations**





**Knowledge will be extended from the focus catchments to other areas in the Murray-Darling Basin.**

Field research, implementation and monitoring of the land use change will take place in four catchments (100,000 to 300,000ha in size) in the south-eastern Murray-Darling Basin. The two primary focus catchments are Billabong Creek (Upper Murray, NSW) and Honeysuckle Creek (Goulburn-Broken, Victoria). Work will also be carried out in Kyeamba Creek (Murrumbidgee, NSW) and in the Ovens Basin (North East, Victoria).

### Collaboration

The *Heartlands* initiative is run as a consortium led by CSIRO and the Murray-Darling Basin Commission. Other groups participating include Catchment Management Boards and Authorities, State natural resource management agencies, Landcare groups, landholders, and extension staff. An essential element of *Heartlands* is to work jointly with other initiatives to achieve appropriate landscape rehabilitation.



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