Simulated Interceptions

Malcolm McKinnon

TELLING THE STORY

Salinity management is not a particularly charismatic field of endeavour. Aside from depressing images of dead trees, standing like gravestones in salty paddocks or in barren lakes, we encounter few images which evoke any real sense of the issue or the efforts being made to address it.

For the Sunraysia region of north west Victoria and south western New South Wales, salinity management is a critical issue, underlying the fundamental viability of its industrial base and the health and vitality of the natural environment. Major strategies are in place to confront the salinity issue on a number of fronts, driven by a consortium of industry and government agencies.[1] There are important stories to be told, illustrating the ingenuity, perseverance and cooperation of a diverse community of organisations and individuals working together for a sustainable industry and environment.

Canberra-based artist Megan Jones created work which manifests some of these stories in a genuinely evocative and appropriately innovative manner. Using digital audio-visual media, she creates dynamic, multifaceted and interactive simulations of the local environment which dig beneath the surface, engaging the mind and senses. Under the overall title *Sites of Interception*, the artworks document and evoke an appreciation of the complex network of salinity management mechanisms spanning Sunraysia.[2]

SIMULATING THE FLOW

Sites of Interception allows the viewer to experience the journey of the water, from its source at the River Murray through a complex route of irrigation and subsequent drainage. Each of the artworks combine a series of images and sounds which, together, simulate the flow of the water and document various points of interception within the physical environment - from natural aquifers and lagoons to constructed drains and channels.

The works are made up of a series of panoramic images, each comprising a dozen photographs stitched together so as to appear seamless. Scanned into a computer, these images are then presented to the viewer through an interactive window. The computer invites the viewer to move around, across and into the simulated environment, to play a game which is essentially a simulated journey from place to place.

Artist Megan Jones documents sites at Psyche Bend Lagoon.

Digital Imaginng: Megan Jones

The work provokes thinking about sites and processes that many of us tend not to consider. Where does all that water end up, the stuff we see flowing down the irrigation channels towards all those thirsty grape vines, citrus trees and vegetable crops? Water disappears into underground pipes or into the soil, but these artworks pursue the elusive liquid molecules like a beagle on the scent, a detective on the case.

Each sequence of images commences with an aerial satellite photograph of the area in question. The satellite image provides initial orientation not just to the lay of the land, but also its bio-chemical make-up, the colouration of the image

serving to identify the locations of water and salt. The satellite picture also enables an overview of the sequence of sites depicted within the artwork. From this starting point, the viewer is encouraged to zoom in and look around on the ground.

Motion is the key to all of these images. Water and salt are dynamic elements, always moving from one place to another. Salinity, of course, is an issue where down-stream impacts are crucial. It's not sufficient to look at any one site as the root of the problem or the source of its remedy. All of the images contained in the artwork include "wet-spots" which function as points of interconnection, moving the viewer along to the next site in the sequence.The artwork, like the depicted environment, functions as an interconnected and cyclic phenomenon.

Artist Megan Jones docu
at Lake Ranfurly.
Digital Imaging: Megan

A CONSTRUCTED AND DOCTORED ENVIRONMENT

There is always something remarkable about crossing over the clearly defined intersection where dry mallee meets verdant horticultural industry. Entering Sunraysia, one moves from a landscape of stunted eucalypts and cereal crops growing on rolling expanses of cleared red sandhills and flat plains into a tightly constructed, geometric environment of vines, citrus, olives, stone fruits and vegetables, laid out in straight lines and dissected by snaking irrigation channels. Driving out south west of Mildura, it's impossible not to be amazed by the dynamic spread of new horticulture. Large-scale plantations of wine grapes colonise land where broad-acre farmers have, until recently, been scratching around for decades. Horticultural industry in this region is undergoing rapid expansion, and new irrigation infrastructure extends the diversion of river water even further out into the dry lands. The radical environmental transformation initiated by the Chaffey brothers a century ago and extended through intensive soldier settlement after World War I keeps rolling inexorably onwards.

How sustainable is all of this intensive horticulture, and what measures are being taken to moderate radical impacts on the natural environment and eco-system? In particular, what steps are being taken to minimise any increased salinisation of land and water, an issue which clearly represents the greatest immediate threat to the health and productivity of the entire Murray Darling Basin. The Murray Darling Commission's most recent salinity audit, released in October 1999, presents a grim picture of a seriously unbalanced eco-system. The Commission's report predicts that the amount of salt moving through the landscape will have doubled to 10,000,000 tonnes per year by 2100.[3] The 'salt of the earth' is as natural and authentic as the aphorism suggests, but with the ecological checks and balances profoundly disturbed, a natural element becomes a steadily marching, toxic blight.

In light of alarming reports and forecasts like these, it is important to appreciate that concerted and successful work is being undertaken to reduce and manage salinity. In Sunraysia there's a raft of integrated strategies to encourage more efficient irrigation and improved drainage. Key initiatives include irrigation management courses, subsidies for installation of better designed irrigation equipment, more extensive soil surveys, increased drainage and groundwater monitoring and major drainage diversion works in some areas. All of these strategies are having a positive impact, measurable in terms of reduced water consumption and a reduced level of salt discharge into the river system. Clearly, this is important work. But how can all of these efforts be represented and communicated?

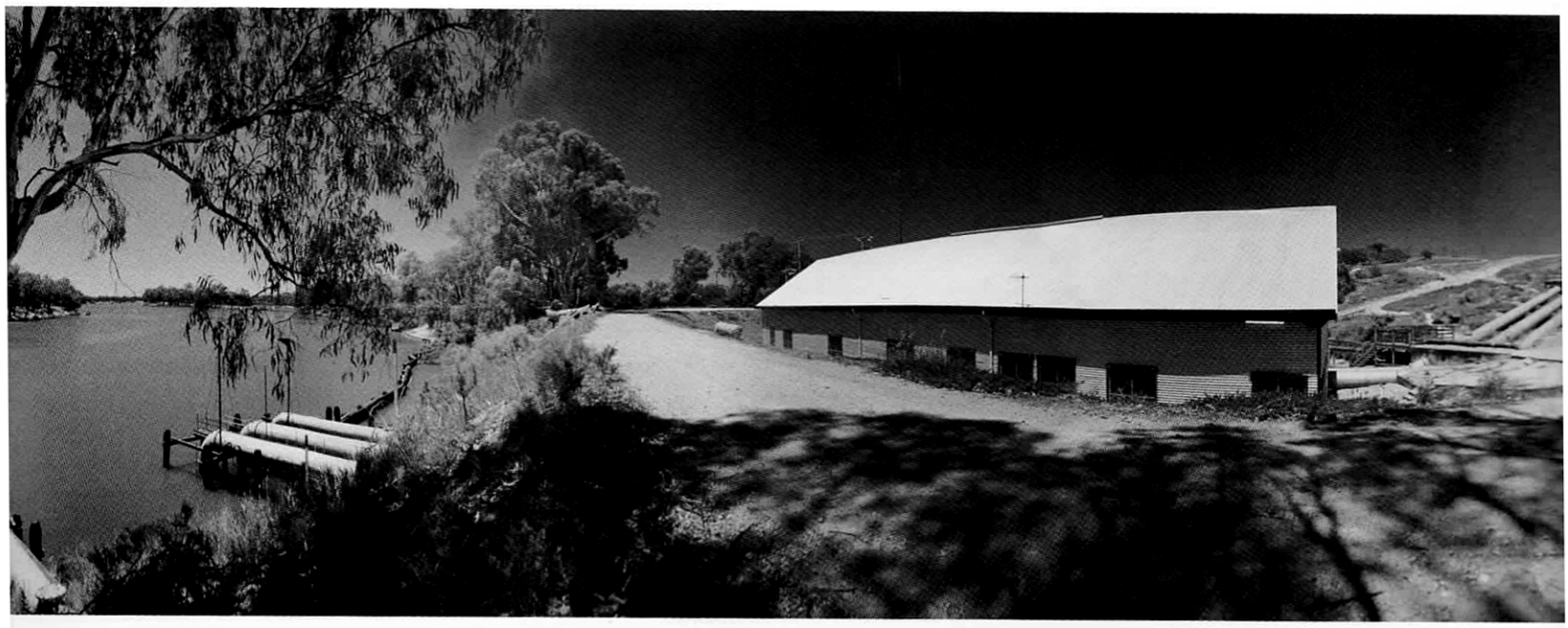
BUILDING THE PICTURE

In constructing the artworks, selection of appropriate sites was a crucial issue. It was essential that each site represented significant characteristics of the irrigation and drainage process, functioning as an essential component of the overall story.

Creation of the artworks required collection of material through conventional and digital photography, as well as digital video and audio recording, all of these materials being manipulated in constructing the finished work. The artist undertakes an enormous amount of work - scanning, editing, cutting and pasting to create an effective montage and juxtaposition of images and sounds.

In order to understand the enormity and complexity of salinity management, Megan Jones consulted extensively with a diverse range of local people who live and work with the issue. Fieldwork involved broad-ranging tours to document specific landscape sites, capturing the diversity of landscape, water quality, vegetation and agricultural practices.

Just as importantly, the fieldwork also enabled the artist to appreciate the philosophy and the genuine social commitment underlying salinity management endeavours in Sunraysia. The artist became acutely aware that the issue is not just one of physical infrastructure, nor is it simply a story of scientists and engineers developing technical solutions to an environmental problem. Salinity affects the daily lives of many people living in Sunraysia - it's not somebody else's problem, to be rectified by a distant benevolent agency. The development of a multifaceted strategy to address the issue has required significant local community commitment, recognising radical and fairly immediate local impacts and implications. One of the implicit challenges and intentions of the artworks, then, is to somehow evoke a sense of this social commitment, and to illustrate the broad base of local participation and engagement in implementation of salinity management strategies. The artworks attempt to do this not only through selection and construction of visual images, but also through inclusion of local within the ambient sounds audio component. Once again, the dynamic and multifaceted nature of the artworks mirrors the reality of salinity management practices.



Megan Jones, Sites of Interception, 2000
Digital Panorama,
Merbein Pumping Station, Victoria, lifts water from the Murray into the Merbein irrigation system.
Digital Imaging: Megan Jones

Megan Jones, Sites of Interception, 2
Remote control channel along Merbe
irrigation system. The gate uses state
the art computer technology to regula
water flow according to user require
Digital Imaging: Megan Jones

DESCRIBING THE INTERFACE

Quicktime VR (virtual reality) is a computer software program which functions as a kind of electronic canvas. It builds upon the tools of the landscape artist to represent encountered realities in a new way, by introducing third dimensional elements of motion and time to the observation experience. The combination of the seamlessly constructed 360° panorama with user interactivity enhances the experience of viewing landscape photographs, as the viewer has co-creative control to frame, fragment and emphasis elements of the image. Through engaging a computer mouse or joystick, viewers select sites through the map and then cruise around specific panoramas, experiencing visual and audio recordings of the landscape. The documentation of a site using this technique unwraps the location and reveals the all-encompassing view to be explored through a moving frame and adjustable field of view. This new media experience gives physical locations a virtual and universal locality, offering the individual a uniquely directed interaction with a screen event.

A METAPHOR FOR THE LANDSCAPE

Sunraysia is almost entirely a constructed and regularly modified landscape. Dwell long enough within it, and it's possible to lose sight of the multiple layers of intervention which have created the place. It's the same illusion as the one practised in the creation of neo-Arcadian parks and gardens in Palladian England, or in romantic landscape paintings from the 18th and 19th Centuries.

Megan Jones' artworks replicate and make explicit this deliberate construction of environment and place. Similarly, they might easily be perceived simply as realist portrayals or detached, clinical documentation. In fact, the construction of the artworks is as deliberate and contrived as the landscape itself. Pieces of the picture are put together in order to guide the viewer along a complex route of interconnected sites. The 'wet-spots' or points of connection in the artworks simulate the channels, underground pipelines and interception pumps which transport water and salt from one part of the landscape to another. In putting together a circuit of simulated landscapes, the artworks take nothing for granted - in the same way, the salinity management schemes seek to engineer maximum control over the flow of natural elements through a constructed environment.

SAMPLING A SITE - THE MILDURA-MERBEIN GROUNDWATER INTERCEPTION SCHEME

The Sunraysia region is crossed and dissected by almost 90,000 kilometres of drainage lines. Developed and installed intensively since the 1930's, the combined drainage lines are three times as long as the inlet system which delivers irrigation to crops.

The Mildura-Merbein Saline Groundwater Interception Scheme is a massive feat of hydraulic engineering. Opened in 1980, the scheme involves 17 extraction points between Mildura and Merbein, discharging drainage and artesian waters into Lake Ranfurly. Re-lift pumps then transfer this water to the Wargan Basin, 13 kilometres away. The Interception Scheme prevents saline water from entering the river. It is estimated that, each year, the system prevents 25,000 tonnes of salt from entering the river.

Stephen Smith (foreground), Chairman of the Sunraysia Salinity Management Plan, shows writer Malcolm McKinnon sites on the Mildura-Merbein saline groundwater interception scheme.

Digital Imaging: Megan Jones

Megan Jones has constructed a comprehensive and evocative series of 9 interconnected panoramic landscape images to document and simulate the Interception Scheme. These images include: groundwater interception pumps; sites where intercepted water drains into Lake Ranfurly and Lake Hawthorn; obsolete pumps (pre-dating the interception scheme); exterior and interior views of a re-lift pumping station; and Wargan Basin disposal sites. These images might then connect the viewer to another series of panoramas documenting the Merbein irrigation supply and related drainage infrastructure.

The 360° panoramas surround and engulf, scanning the full horizon. These images, each offering scope for concentrated exploration, join together in a sequential pattern or web, encouraging and facilitating easy exploration of complex mechanisms spread across a broad landscape. Together, they make accessible and intelligible a vast, integrated series of irrigation and drainage mechanisms which, outside of their depiction through this artwork, are certainly difficult to assimilate. (A map of the Mildura-Merbein Interception Scheme, or the information provided on an obscurely located bronze plaque commemorating the Scheme's opening, will not effectively communicate the dimensions, the mechanics or the tangible reality of the thing.)

Of course, there are limitations inherent to the media employed within this project. The artworks generally depict only the above ground components of the interception schemes, omitting the sub-surface dimensions of the story. As well, they cannot really convey some of the tactile sensations encountered in the actual landscape - the crystalline shimmer or powdery crust of leached salt sitting at the edge of a drain or furrow. Nevertheless, the audio-visual scope and dynamics presented through these virtual landscapes do present us with a powerful and accessible facsimile of the genuine article.

IN SUMMARY

Sunraysia is essentially an arid region, its survival entirely dependent upon the Murray River. Community and industry leaders recognise the need to work cooperatively and imaginatively in order to ensure a sustainable future. There are no simple solutions, and answers to the various interrelated environmental, economic and cultural questions facing the region are not to be found in any one, readily accessible location.

Megan Jones' work with the Consortium of Land, Water and Salinity Management Groups has developed artworks which can function as an innovative and effective communication tool, facilitating increased critical engagement and positive attitudinal change. It is hoped that the work will help to demystify essential processes and mechanisms being used to manage salinity, bringing the broader community (both within Sunraysia and in the more distant metropoli) more effectively on board.

MALCOLM McKINNON – Malcolm is an artist and planner with bases in Sydney and in the Flinders Ranges in South Australia. His grandfather was a soldier-settler and fruit-grower at Red Cliffs, in Sunraysia.

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[1] The Consortium of Land, Water & Salinity Management Groups includes the Mallee Catchment Management Authority, the Lower Murray Darling Total Catchment Management Authority, the Sunraysia Salinity Management Plan, Nangiloc Colignan Waterway Management Committee and the Murray Darling Water Management Action Plan. These agencies oversee implementation of the Sunraysia Salinity Management Plan, addressing salinity problems across the Mildura, Merbein, Red Cliffs and Robinvale irrigation areas.

[2] *Sites of Interception* will be presented as a finished work in a variety of media at the Mildura Arts Festival in March 2000. From March 2000, the work will also be universally accessible as a web-site *(see www.ruralnet.net.au/~sunrise21)* and as a CD Rom.

[3] Paraphrased from reports in: *The Age*, 'Salinity Report Warns of Disaster', 23 October 1999, *The Australian*, '... Barren the Next', 30 October, 1999 and *The Sydney Morning Herald*, 'Bitter Harvest', 3 December, 1999.

[4] Paraphrased from *Sunraysia Salinity Management Plan* - Status Report, 30 June, 1998.

[5] Paraphrased from artist statement by Megan Jones, (personal communication) 25 November, 1999.