

Using the Visual and Performing Arts to Encourage Pro-Environmental Behaviour

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Edited by

David Curtis

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Ghost Fountain © Claire Tracey, 01/06/2020

Ghost Fountain was created to house plastic waste collected from Melbourne City. Designed as a silhouette of the public fountain, *Ghost Fountain* is intended to highlight unseen plastic pollution and explore outdated, euro centric water management systems that function in our cities. Historically the fountain was designed as a filter and communal place to source freshwater in a city, but in the contemporary urban landscape these ornamental structures often run dry or are filled with chemically treated water whilst our public waterways are polluted and undrinkable. How can we reimagine our water management practices to serve the people and the environment? Could our contemporary fountains act as catchment points for plastic waste? *Ghost Fountain* explored these ideas during its six month long installation at Grant's reserve in Melbourne City Centre.

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PREFACE

This book is the second in a series on the use of the visual and performing arts in promoting environmental sustainability. In this book we focus on the use of the arts in encouraging pro-environmental behaviour. In some cases the artworks described herein are integrated into transformative actions, either to rehabilitate ecosystems or to foster ecologically sustainable development. Other artists aim to evoke indignation in the viewer, or to educate and provide an awareness of the consequences of our actions. Still others aim to create a feeling of emotional affinity and empathy for the natural environment.

The book brings together 28 contributors who examine different roles of the arts in encouraging pro-environmental behaviour. There is a wide range of practitioners represented here, including visual and performing artists, natural resource management practitioners, social researchers, environmental educators, research students and academics. All the contributors participated in the Third National EcoArts Australis Conference in May 2019 at the University of Wollongong, New South Wales, Australia. Most made oral presentations, while some ran workshops or presented visual art (including video art) or posters.

As with the first book in the series, within these pages you will find an extraordinary range of artistic practices, ranging from sculptures or installations made from discarded rubbish to intimate ephemeral artworks placed in the natural environment; from theatrical presentations incorporated into environmental education programs to socially critical paintings and literature; from artworks made by a solitary artist working alone to collaborative artworks that involve many from the community. An interesting development is occurring within ecoarts practice where artists are combining in multi-artists collectives, or are collaborating with scientists or industry and many chapters here provide examples of this.

The book provides convincing evidence that artistic methods provide valuable tools to enhance communication about the environment and degradation, and create empathy for nature. Artistic methods can also help us find new ways of looking at a problem or to express solutions and can facilitate community processes. These authors show that the arts and artists will be an important part of changing our society so that we exist more sustainably into the future.

ACKNOWLEDGEMENTS

I would like to sincerely thank all the practitioners who have contributed to this book. There is a wonderful range of people who have made contributions, including artists, performers, people working in natural resource management, social researchers, academics and community facilitators. Their passion for their craft and commitment to promoting pro-environmental behaviour is appreciated.

The book arose from the third National EcoArts Australis conference in May 2019 at the University of Wollongong, New South Wales, Australia. I would like to thank the Ecoarts Australis board: Dave Carr, Juliet Scrine, Andrew Parker, Thor Blomfield, Lindsay Sharp, Garry Slocombe, Theresa Huxtable, and Gabrielle Quigley. Thanks also to others who worked hard to make that conference a success: Neil Cairns, Karen Stone, Jenny Atchison, Siobhan Poynton, Virginia Settre, Deborah Redwood, McKenzie Scrine, Greer Taylor and Jennine Primmer.

Thanks to all the reviewers of the contributions in the book. All papers were reviewed by two reviewers.

Sincere thanks to Cambridge Scholars Publishing for their support in the process of producing this book (and the first in this series also), and in particular Adam Rummens, Sophie Edminson and Amanda Millar.

Finally a personal thanks to my wife Fran for her support and assistance.

David Curtis
Editor

SECTION I:

OVERVIEW: LINKING ART, SCIENCE, POLICY AND SUSTAINABILITY ACTION

CHAPTER ONE

USING THE ARTS TO ENCOURAGE PRO-ENVIRONMENTAL BEHAVIOUR:

INTRODUCTION

DAVID CURTIS

As I write this Introduction, the world is in the grip of a fast-moving catastrophe: the Coronavirus pandemic. Governments around the world have responded swiftly, closing down entire economies to halt the spread of the disease. Among the collateral damage has been the arts sector — considered ‘non-essential’ it has been one of the hardest hit sectors of the economy. And yet, despite lockdowns, loss of contracts and income, performers and artists have responded by continuing to create, demonstrating their role in helping to foster wellbeing and community resilience and cohesion ... not ‘non-essential’ at all!

The rapid response of governments to the catastrophe in fast motion of the virus has contrasted dramatically with their lackadaisical response to another catastrophe that is unfolding in slow motion — climate change. How the arts can assist in ameliorating the scale of the intractable and wicked problem of climate change and other similarly challenging environmental problems such as land degradation and loss of biodiversity, is the subject of this book.

It is the contention of these authors that the visual and performing arts have an important role in helping to encourage our society to reduce its environmental impact. The ways that artists can enact this role are as varied as the arts practices they use and include:

- collaborating with scientists and/or sustainabilists¹ to assist the public in coming to an increased understanding of various environmental issues;
- working in the realm of environmental education;
- collaborating with industry to highlight issues and change the culture of particular organisations;
- collaborating with communities using participatory arts practices;
- acting as a Trojan Horse and using music, performance or the beautiful design of revegetation projects to bring people together and incidentally to celebrate ecological restoration;
- working in multi-artist teams; or
- simply working as an individual artist making a personal or thoughtful response to a particular landscape and communicating a love and empathy for natural areas or expressing deep concern about a particular issue.

This book is the second in a series on the use of the visual and performing arts in promoting environmental sustainability. The first in the series (*Building Sustainability with the Arts* — Curtis, 2017) explored somewhat similar themes so the two make a good companion pair. The significant difference between the two, as evidenced by the presentations at the two conferences on which the books were based, is the increasing degree to which artists who are interested in using their craft to promote pro-environmental behaviour are developing collaborations with scientists and sustainabilists, are increasingly working in multi-artist collectives, are developing collaborations with particular industries, and are further developing participatory, community-based arts practices. To my mind these developments are highly significant and greatly strengthen the more usual (and no less valid) way of artists working as individuals making a response to particular environmental issues or to the natural environment itself.

¹ ‘Sustainablist’ is a term that Marda Kirn (Chapter 2) has coined to describe sustainability professionals — people working practically and ‘on the ground’ in the areas of planning, implementation, and management of energy, water, transportation, food and agriculture, forestry, waste, housing, and health, as well as urban planning, policy, and social marketing.

What is pro-environmental behaviour?

The environment is, technically speaking, anything that exists outside of the self (Heberlein 1981), and conceptually the environment can range from the very local to the global. Although the term is usually associated with the biophysical or 'natural' world, it has also been used to apply to a multitude of varying spatial and psychological surroundings and circumstances. (Gooch, 1995)

The 'environment', broadly defined, can encompass the physical surroundings and conditions affecting people's lives; conditions or circumstances of living; the external conditions affecting the growth of plants and animals; or a structure designed to be experienced from the inside (Hughes *et al.*, 1995). Several terms relating to the environment have been standardised by Johnson *et al.* (1997) and these definitions will be followed in this book. A 'natural environment' is defined as one that is 'relatively unchanged or undisturbed by human culture'. A 'non-natural environment' is therefore one that is 'relatively changed, modified or created by our cultural activities'. Whilst the 'environment' can have a broader meaning, in this book authors mainly use it to describe the natural environment. The broader term 'nature' encompasses the physical power causing all the phenomena of the material world, these phenomena (including plants, animals, landscapes etc.), uncultivated or wild areas, and the countryside (Hughes *et al.*, 1995).

'Environmental degradation' is defined by Johnson *et al.* (1997) as 'any change or disturbance to the environment perceived to be deleterious or undesirable'. Soil and land degradation are defined similarly, by substituting for the word 'environment'. When 'degradation' is encountered in the literature it mostly refers to artificial changes or disturbances by humans with a 'perceived decrease in the natural condition or state of an environment'. However, they emphasise the relativism of these terms. A degraded environment for one species might not be degraded for another, or a particular environment might be degraded for one purpose but not another.

'Environmental behaviour' will be used throughout the book when referring to behaviours that have a significant effect on the environment and which have been the subject of public policy by governments or representations by interest groups to protect the environment. Frequently authors in this collection use the term when referring to behaviours that impact on the natural environment, although in some cases they may also be using the term in relation to agricultural and urban environments. Most human behaviours ultimately impact on the natural environment either

positively or negatively (and sometimes in combination), and certain activities reduce the level of environmental degradation. Behaviour that is intended to reduce environmental impact is frequently referred to as pro-environmental behaviour (Jackson, 2005) or conservation behaviour (Monroe, 2003). Sometimes it is difficult to identify the most suitable pro-environmental behaviour, as all behaviours may have an environmental impact, often unknown, and the best alternative might be locally specific and less harmful than other alternatives to the best of current knowledge (Monroe, 2003).

Australia's record on the environment is one of the worst in the world. It has one of the highest levels of per capita emissions of greenhouse gases among all countries in the developed world, one of the heaviest ecological footprints², and one of the highest rates of biodiversity decline and extinction. While Australians live in a country of outstanding natural beauty, environmental abundance and economic prosperity, present day wealth is being bought at the expense of future environmental quality. Despite the efforts of governments, non-government organisations and individuals, the natural environment continues to worsen in many ways. Reasons for this include the dominance of the discourse of consumerism and growth, over other measures of prosperity and quality of life.

There are many factors that affect environmental behaviour of individuals, including social factors (e.g. physical structures, institutional factors and social norms) and, individual factors (e.g. a person's situation, their values, beliefs, attitudes, and personal characteristics). The ways that these factors interact are complex (Jackson, 2005).

How can the visual and performing arts encourage pro-environmental behaviour?

The environmental literature, environmental sociology and social psychology literature are all largely silent on the role of the arts in affecting environmental behaviour. This is despite the fact that many of the factors identified by social psychologists as affecting environmental behaviour are similar to the various social impacts of the arts in educating, modifying beliefs or providing moral guidance (Belfiore & Bennett, 2006).

² The impact of a person or community on the environment, expressed as the amount of land required to sustain their use of natural resources.

In structuring this collection, I have drawn upon four typologies that describe the social impacts of the arts. Lister (2003) divided art that dealt with the environment into three categories: (1) art that observes and interacts with the (usually natural) environment; (2) art that reclaims or improves physical environments in a tangible sense, such as ecological art; and (3) art that engages with the social environment with pedagogical or activist intent, such as community art. Like Lister, Collins (2004) divided art that deals with the environment into three categories: (1) the lyrical-creative response; (2) the critical engagement response; and (3) the transformative response. In their analysis of 150 philosophers, writers, artists and intellectuals Belfiore & Bennett (2006) showed how views of the social impacts of the arts had changed historically in Western civilisation since the ancient Greeks. Their taxonomy of the social effects of the arts lists eight categories: (1) art creating corruption or distraction; (2) art creating catharsis; (3) art creating personal wellbeing; (4) education and self-development through the arts; (5) moral improvement and civilisation through the arts; (6) the arts as a political instrument; (7) the arts as a means of social stratification and identity construction; and (8) the autonomy of the arts and the rejection of instrumentality.

My own typology of how the arts may shape environmental behaviour was based on research over several years involving around 100 key informant interviews and the analysis of some eight case studies (Curtis 2007). From this research, three pathways emerged through which the arts can shape pro-environmental behaviour: (1) communicating information; (2) connecting people with the natural environment (that is, creating empathy for the natural environment); and (3) embedding the arts in ecologically sustainable development (Curtis *et al.*, 2014; Curtis, 2017).

The model used to structure the contributions in this book combines my typology with those of Lister (2003) and Collins (2004) — see Figure 1. The various chapters have been arranged along these lines.

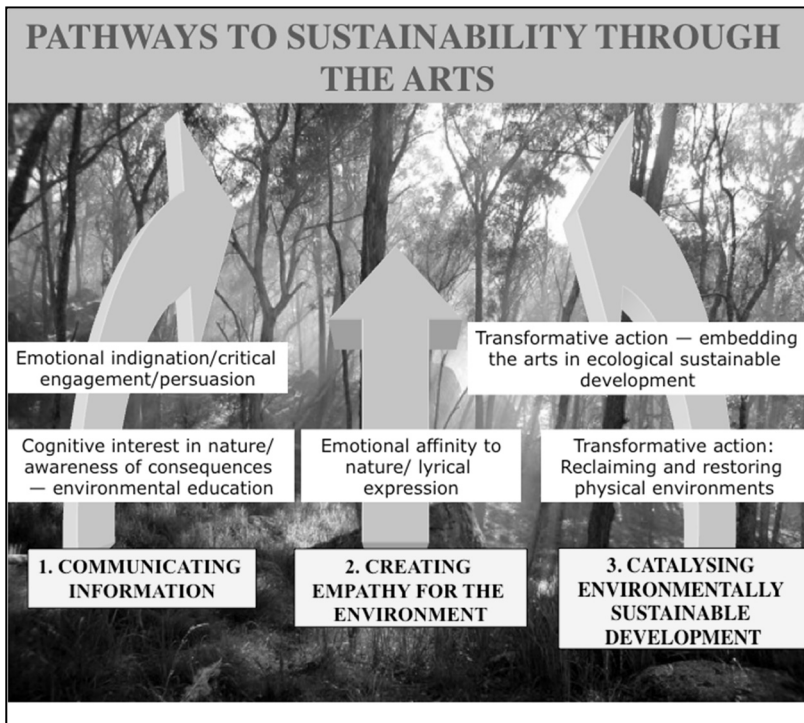


Figure 1: Pathways to encouraging pro-environmental behaviour through the arts.

In scientific fields, we are used to seeing scientists conduct objective ‘pot trials’ to compare different treatments. Unfortunately assessing the effect of the arts on behaviour is not necessarily as simple (Figure 2). Most of the contributors in the book base their assessments of the effect of their art projects on their own practitioner perceptions. In some cases they provide measured audience responses (e.g. Jill Sampson in Chapter 14, Deborah Redwood in Chapter 17 and Sally Shaw in Chapter 27). Others provide examples where quite spectacular effects on the behaviour of individuals or institutions followed the art projects (e.g. Marda Kirn in Chapter 2 and Claire Tracey in Chapter 5).

More generally, there is little evaluation of the efficacy of the arts in promoting pro-environmental behaviour and there is a real need for social scientists to turn their minds to this.

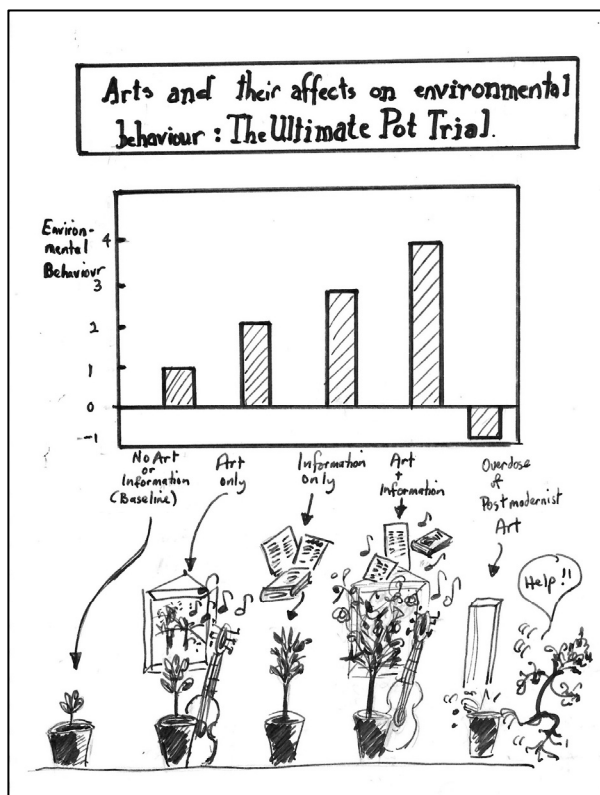


Figure 2: If only it were so simple! Image: David Curtis, 2009.

As the examples in this book show, artistic methods provide valuable tools to enhance environmental education, and using methods such as singing, painting, theatre, role playing, and comedy will help people to remember an environmental message better, and even more importantly, to associate the environment with positive thoughts and images. Further, artistic methods can be used to improve processes — that is, they can help us find new ways of looking at a problem or to express solutions and their use can stimulate creative thinking, or the cohesiveness of a group can be improved. Finally, our relationship with the environment is determined by our entire culture and since the arts is integral with the culture, a society that is living sustainably within the environment will reflect this in its arts.

The question of whether we must change the culture first so that we live more sustainably within the environment and then the arts follow – or whether the arts can help change the culture is a chicken and egg question. The important thing to realise is that if we are to change our society so that we exist more sustainably into the future, the arts and artists, will be an important part of that change.’

How to read this book

The book has brought together 28 contributors. All participated in the Third National EcoArts Australis Conference in May 2019 at the University of Wollongong, New South Wales, Australia³. A wide range of practitioners is represented here, including visual and performing artists, natural resource management practitioners, social researchers, environmental educators, research students and academics.

There are different ways a reader may approach this book:

- By theme: the contributions have been organised into six broad themes described in Figure 1, and the following summary of each chapter follows this structure. (An alternative list of themes is provided in Table 1);
- By artform (see Table 2);
- By environmental issue (see Table 3);
- By artistic approach (see Table 4).

Section I: Overview: linking art, science, policy and sustainability action

In the first section of the book two authors from the USA provide an overview and framework with which to view the rest of the chapters. In Chapter 2 **Marda Kirn** provides an action-based toolkit for transdisciplinary science/arts/sustainability collaborative projects, while in Chapter 3 **Cecily Miller** provides a framework to view different kinds of arts projects that have an environmental focus.

Marda Kirn is the founding director of EcoArts Connections in Boulder, Colorado, USA. They bring the arts together with science, social justice, Indigenous, and other ways of knowing to inspire people of all ages and walks of life to live more sustainably in all domains —

³ See <http://www.ecoartsaustralis.org.au/events-and-projects/conference-2019-using-the-visual-and-performing-arts-to-encourage-pro-environmental-behaviour/>

environmentally, economically, socially/culturally, and personally. EcoArts Connections works collaboratively to commission, produce, and present performances, exhibits, talks, discussions, convenings, and youth programs. In Chapter 2, Marda makes the case that to achieve behavioural change in individuals (and across society more generally) there needs to be a linking between the cognitive, the emotional and the doing (see Figure 3). In her words:

Science can provide the WHAT: the observable evidence. The arts can provide the SO WHAT: what does it mean to me and why should I care? ‘Sustainablists’ (e.g. sustainability professionals) can give us the NOW WHAT, THEN WHAT, and HERE’s WHAT of sustainability solutions.

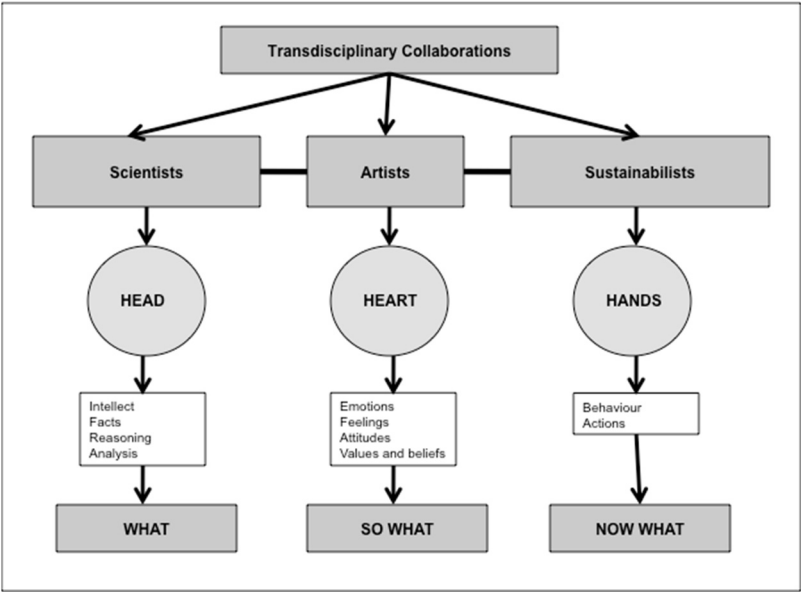


Figure 3: Framework to view the interaction of the arts, science and sustainablists in driving collaborative projects for sustainability. After Marda Kirn (Chapter 2).

Marda provides several examples of where these collaborations have occurred to achieve impressive outcomes for the environment and provides a step-by-step guide to how to achieve such collaborations.

Cecily Miller served as a leader in the field of community arts in the USA for more than 20 years, after which she founded Spark Art to work as

an independent consultant and curator. The mission of Spark Art is to partner with artists, organisations, and community groups to create public art that is inspired by the qualities of place and explores the concerns of people. In Chapter 3, she provides a framework with which to view arts projects that have environmental goals, and examples of each (see Table 1).

Table 1: Themes describing what the arts can do to influence pro-environmental behaviour (from Cecily Miller, Chapter 3).

Themes of what the arts can do	Chapters in this book
Art can convey the experience of being in nature	9, 11
Art can reveal the sacred in nature	10, 19, 20, 21, 22, 23, 24
Art can challenge current models and expand ideas of what is possible	2, 5, 6, 7, 8
Art can heal the earth	7, 11, 13
Art can diminish fear, make the serious fun, even funny!	18, 28
Art can make it real, and provide a space for reacting with feeling	2, 14, 15, 16, 17, 20, 25, 26, 27
Art can make the ordinary important	16
Art can celebrate sustainable alternatives	6, 8, 9
Art has the power to bring people together	4, 9

Section II: Transformative action — embedding the arts in ecologically sustainable development

The second section of the book comprises five chapters that describe projects or practices in which the arts are embedded in initiatives that promote ecologically sustainable development. These include examples where the artist works directly with a community (Laura Donkers – Chapter 4) or a company (Claire Tracey – Chapter 5), where a group of artists collaborates with scientists and the food industry (Jodi Newcombe – Chapter 6), where an artist develops collaborative processes with the community (Gabrielle Quigley – Chapter 7) or where a group of artists use their skills to promote active transport solutions (Gilbert Grace – Chapter 8).

Laura Donkers is a practicing eco-social, multi-media artist whose work is rooted in the idea of co-creativity, working interactively with communities and environments. She has been based for 30 years in the Outer Hebrides, UK, as a horticulturalist, artist and researcher. In Chapter 4, she describes eco-social practice that is developed by artists working

directly in communities. She has found that by acting as conduits, catalysts, or activators, eco-social artists can help to highlight important community and environmental knowledge. They can then generate a more inclusive approach to addressing environmental and societal issues, including increasing awareness of climate change, and in the process expanding the potential of what art can do.

Claire Tracey is a researcher and artist exploring ideas of sustainability and creative collaboration. Situated in the field of public art, Claire collaborates with arts and culture institutions, corporate businesses and international enterprises to create large scale assemblages using waste items generated by the organisations themselves. In Chapter 5 Claire describes how a student-initiated recycling and studio project created long-term engagement and sustainable action within an international corporation, promoting institutional change towards achieving environmental sustainability in the workplace. The project connected artists and designers with businesses to make environmentally themed work across multidisciplinary fields for a multi-audience exhibition. Following her project the corporation she collaborated with adopted a greatly increased program of waste reduction and recycling.

Jodi Newcombe is a curator and creative producer specialising in generating and evaluating creative sector models for engaging society in imagining and shaping a more sustainable future. In 2010 she founded Carbon Arts following a career as an environmental economist and sustainability consultant. Through practical example and professional reflection, her chapter (6) demonstrates a model of practice for a creative producer; a role that can be regarded as instrumental in embedding art into the process of transitioning society towards a more sustainable future. The case study for this chapter is the Australian Future Foods Lab event called *Of This Earth*. Over a space of an evening, 100 audience members were led through an elaborate and multi-sensory journey into the history of food, the history of land management in Australia and the possible futures before us.

Gabrielle Quigley is an art educator based in Wollongong in New South Wales who has taught across galleries and secondary and tertiary institutions, studied Steiner education and is now a visual arts teacher and a member of the community-based Circus WOW. In Chapter 7, she investigates participatory arts practices that have had an ecological or social transformative function by providing three examples of this approach. She then highlights the social sculptures of Joseph Beuys and Shelley Sacks as strong examples of art practices that create the necessary transformative and meaningful experiences to help address our social and

environmental issues and promote ‘golden thread’ moments. The result is an expanded idea of ‘art’.

Gilbert Grace is a visual and multimedia artist residing in Sydney, trained in fine art and with thirty years of active practice. A keen observer of environmental issues, Gilbert encourages personal agency and autonomy through active transport. In Chapter 8, he describes his own artistic practice in which he seeks to encourage cycling in the urban context through the use of visual and performing art. He describes his work in forming the multi-artist collective (ARTcycle Inc.) and several projects they have planned or carried out for the Sydney Green Ring, a 34-kilometre cycle path through the suburbs of Sydney.

Section III: Transformative action — reclaiming and restoring physical environments

The third section of the book comprises five chapters that describe ways that the arts have been integrated into ecological restoration projects or similar activities. Figure 4 provides a model to view the chapters in this section. In some cases, a chapter describes an ecological art project (such as Catherine van Wilgenburg’s example of an ecological art project built into a project concerned with grassland restoration — in Chapter 13). In the case of the chapters by David Carr (Chapter 9) and Sue Stevens (Chapter 11) they describe projects more concerned with ecological restoration in which a visual arts sensibility has been brought to bear. The process of landscape and ecological restoration can be a creative process in its own right (as Sue Stevens shows). Within the revegetation movement more generally there is an emergence of an ‘ecological aesthetic’ in Australia (Curtis, 2008). Whilst landscape aesthetics may not be essential in farm planning or ecological restoration, aesthetic considerations may be a significant motivator for people interested in land care, particularly in light of the changes in rural demographics. The chapters by Cecily Miller (Chapter 3), Claire Tracey (Chapter 5) and Gabrielle Quigley (Chapter 7) also provide examples of ecological art projects.

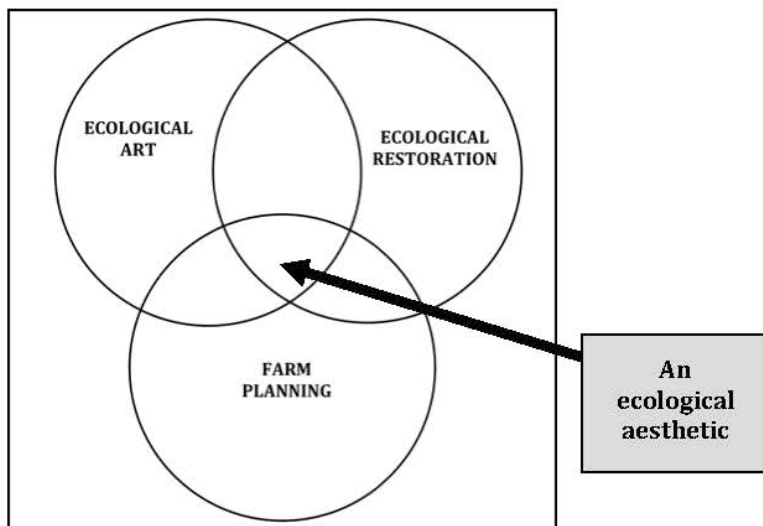


Figure 4: Diagram showing the overlap between ecological art, ecological restoration and farm planning (Curtis, 2008).

David Carr is an ecologist and musician who works in northern New South Wales. For 30 years he has worked in agricultural landscapes with farmers and graziers to encourage better management of the natural environment. In Chapter 9 he describes The Black Gully Festival, a music festival that acts as a ‘Trojan horse’ in that people attend primarily to listen to live music, but during the course of the event are exposed to environmental messages from local groups, art projects or festival protocols such as recycling, waste reduction and use of renewable energy.

Louise Fowler-Smith is an eco-artist whose practice-led research has focused on the veneration of trees. In Chapter 10, she explores this, specifically in India, and reveals how this practice has the ability to protect trees – and how it led to the formation of an eco-artist collective called The Tree Veneration Society. Over the years since its formation, this eco-arts collective has offered a variety of workshops, interactive exhibitions and events incorporating participatory artforms. Through these activities, the Society has been able to reach numerous cross-cultural communities that may not normally attend an art exhibition and have witnessed people express delight, enchantment and a changed perception of the tree.

Sue Stevens is a holistic and action-focused ecological restoration practitioner whose current work is focussed on the repair and re-creation

of natural landscapes and fauna habitat in coastal Sydney. In Chapter 11 she describes a project that, while primarily a land restoration project, was designed in a non-conventional way to make it interesting and aesthetically pleasing, thus inspiring a greater appreciation of local native flora and encourage pro-environmental behaviours in local residents and visitors to the area.

Leanne Thompson is a multidisciplinary artist and member of the Kandos School of Cultural Adaptation. While operating in the wider field of sculpture and public art, Leanne's practice enhances collaboration and community engagement outside conventional art spaces. In Chapter 12, she describes *Terrain of Belonging*, an ongoing project to establish connections within the context of socially engaged art in the public domain. The project consists of research undertaken during numerous land residencies, a current series of community weaving workshops and a future land based sculptural installation in collaboration with farming elder, Paul Newell, who has pioneered regenerative agriculture.

Catherine van Wilgenburg is the Director of Living Colour Studio Art and Architecture. Her interdisciplinary collaborative eco-arts practice straddles painting, performance art, installation and community cultural development projects. It is inspired by relationships with Wurundjeri elders, environmental and Gunaikurnai elders. In Chapter 13, she traces the early steps of the Ecoarts Working Group in the Chain of Ponds/Moonsee Ponds Creek Collaboration to the west of Melbourne, Australia. The Working Group engages with Indigenous Wurundjeri artists and designers in developing traditional knowledge-based artworks along the catchment to acknowledge their cultural heritage. She reflects on her own experiences as a community-based eco-artist and some of the challenges she has had in gaining the essential involvement from Indigenous people, as well as some of the challenges facing artists involving themselves with projects in the general area of natural resource management and ecological sustainability.

Section IV: Emotional indignation/critical engagement/persuasion

According to behavioural theory, the act of persuasion can have a powerful effect on influencing behaviour (Jackson, 2005) and the persuasive ability of the arts has been recognised since Aristotle (Belfiore & Bennett, 2006). In this section of the book, five artists describe how they have engaged with difficult environmental issues and have used their craft to help persuade the public towards adopting pro-environmental

behaviour. The issues these chapters address are varied, including coal mining, the impacts of tourism, climate change and pollution on islands, the death of millions of fish due to drought in the Darling River and climate change and waste. Their practices are similarly varied, with Jill Sampson (Chapter 14) forming a group of over 400 artists to collectively respond to the destruction of bird habitat, Penny Sadubin (Chapter 16) working with multiple schools and their students, Deborah Redwood (Chapter 17) working with communities in Africa, Australia and the USA, Marty Branagan (Chapter 18) describing his time working in environmental activist groups and Lea Kannar-Lichtenberger (Chapter 15) working as an individual artist.

Jill Sampson is a visual artist, Bimblebox Art Project coordinator and the curator of *Bimblebox 153 Birds*. Her work explores the land, stories, place and the changes and challenges in our environment. In Chapter 14, Jill describes a project that she coordinated involving some 450 artists, musicians and writers from around the world. They created artworks celebrating the (now) 158 bird species recorded at the Bimblebox Nature Refuge in Queensland, threatened by the impacts of coal mining. The various elements of the Bimblebox Art Project have created a cultural presence and voice that moves beyond the boundary of the nature refuge. The three exhibitions have been seen by approximately 58,000 people across Australia. This number has been greatly augmented by numerous articles, blogs, websites and social media, additional exhibitions and writings of the participating artists.

Lea Kannar-Lichtenberger is an artist who explores the human impact on islands and isolated environments. In Chapter 15, she examines three islands in the Pacific Ocean, namely the Galapagos Islands (Ecuador), Lord Howe Island (Australia) and Deception Island (Antarctica) through the combined windows of art and science. Through her on-site research as an artist she explores how contemporary consumer culture is impacting on the idealised concept of a vacation. Using the persuasive power of her art, she seeks to engage her audiences emotionally and critically.

Penny Sadubin is a visual artist based on the south coast of New South Wales. In her practice she often collaborates with other artists or the public and encompasses diverse media and approaches. In Chapter 16, she describes a collaborative sculptural installation that was created as a response to the death of thousands of fish in the Darling River due to drought exacerbated by climate change and over-extraction of water for irrigation. The project engaged with eight schools to create the installation and collaborated with manufacturers using 3-D printing technology.

Sadubin used the process of its creation to educate the school students about those environmental issues.

Deborah Redwood is a visual artist based in Wollongong NSW. Her practice encompasses sculpture and installation and her work uses recycled materials, particularly metal. In Chapter 17, she describes art workshops that she ran in Cairns (Australia), Boston (USA) and Kenya (Africa) in which she used recycled/waste materials to create sculptures or natural materials to create ephemeral installations. Redwood aimed to reveal the anti-entropic nature of art-making as a means to highlight the effects of climate change. Using surveys and interviews to evaluate the effectiveness of the approach employed, she found that the information gained by participants could create an emotional response that could then generate ideas for pro-active approaches towards climate change and promote pro-environmental behaviour.

Marty Branagan is Senior Lecturer and Convenor of Peace Studies at University of New England, where he holds an annual Nonviolence Film Festival and is a writer and artist. In Chapter 18 he describes his novel *Locked On! The Seventh and Most Illegal in the Hitchhiker's Guide Trilogy*. Using the genre of the comic science fiction novel, he aimed to throw light current climate activism, and to demonstrate graphically the potential of non-violence. In this chapter he describes his novel and how he aimed through it to educate, entertain, create optimism and hope, inspire action, and show the power of ordinary people acting both as individuals and more importantly, together, at a grassroots level.

Section V: Emotional affinity to nature/ lyrical expression

Indignation about environmental degradation or a cognitive interest in nature are good predictors of a person's likelihood of adopting pro-environmental behaviour (Kals, *et al.*, 1999). These authors also found that an emotional affinity with nature is as just as powerful a measure to predict pro-environmental behaviour. The arts have a considerable ability to enhance emotional affinity with nature (Curtis, 2009). In this section, seven artists describe how their work seeks to create or increase in their audiences an emotional affinity with nature. In the cases of Toni Roberts (Chapter 19), Cassandra Bossell (Chapter 21), Sharon Jewell (Chapter 23) and Greer Taylor (Chapter 24), they are responding to natural environments and their deep connection to them, while Renata Buziak and Vicki Kelleher (Chapter 20) are responding emotionally to severe land degradation (soil erosion) and Penny Dunstan (Chapter 22) to our relationship with soil. Some of the artists have collaborated with scientists (Bossell, Buziak

and Kelleher) while the others take a personal route of immersing themselves in the environment.

Toni Roberts is a designer and artist whose work focuses on shaping experiential, spatial and material environments that connect audiences with ideas. Her work includes interpretive projects for museums, zoos, and other public contexts. In Chapter 19, she argues that motivating pro-environmental behaviour is not as simple as telling people what to do or why. Rather, she argues, motivation to adopt pro-environmental behaviours is driven by a sense of connection through relationships with the issue or place, a sense of kinship, and feelings of care. She presents an excerpt of her multi-artform project *Inklings* (that incorporates visual, sculptural and performance artforms) and draws on diverse fields of knowledge to support this proposition. Toni's experience in developing interpretive environments for museums and zoos has convinced her that art and design have a special role to play in encouraging a sense of connection with the natural world through relational, ecological approaches, without the need to rely on moralistic messaging, or didactic instruction.

Vicki Kelleher is an experimental spoken word artist and poet and **Renata Buziak** is a photo-media artist, educator and researcher whose practice includes experimental photography, intercultural and art-science research and cross-disciplinary collaborations. Together they were involved in a multi-artist collaboration with a scientific institute researching soil erosion, a cause of pollution of the Great Barrier Reef (Chapter 20). They conclude that by reflecting through listenings, soundings, spoken words, movement, and photo-media, as a multi arts collective they were able to open audiences in a multitude of ways and of connecting more deeply with this vulnerable landscape.

Kassandra Bossell is an artist based in Sydney who works across various modes of sculpture and installation. In Chapter 21 she describes a collaboration between ecologist Garry Daly and herself. They worked together to create an exhibition that consisted of a single large art installation that sought to bring together human and non-human perspectives of ecosystems. Their installation (one of ten in the art gallery) had some 16,000 visitors over the exhibition period. Large crowds filled programs that included art activities and open-mike brainstorming sessions about future directions and personal agency within the climate crisis. From their perspective, their artwork evoked feelings of wonder and empathy in viewers, who expressed responsibility and care for the local ecology.

Penny Dunstan is a Newcastle-based artist, agronomist and writer with a specific interest in Hunter Valley land management and open-cut coal mining rehabilitation. In Chapter 22 she describes her installation

Sixteen Earth Bowls in which bowls are fashioned from Hunter Valley topsoils from Wonnarua Country. Through these works she aimed to open a dialogue with our conceptual understandings of the land we inhabit and to inform our choices to view it as dirt or soil or earth. Are the bowls made from dirt to be cleaned away or soils which are to be seen as a resource and provider for human wants? Or are they ritual objects made from a sacred material, earth?

Sharon Jewell lives and works on Canaipa Island, South Moreton Bay, Queensland. Her materially diverse art practice explores how the sensory immediacy of the world, together with memory, intercept in visual and written expression. In Chapter 23 she describes a multi-artist collaboration creating ephemeral art in the environment of Canaipa Island. She argues that the valuing of place is a necessary phase in establishing pro-environmental behaviour. Art, in the sense that she and her fellow artists use it, is not restricted to a didactic role, but actively engages in practices that honour and celebrate and connect us with the land in which we find ourselves. Therefore, for her, pro-environmental behaviour involves a recognition of poetic and aesthetic forces.

Greer Taylor is an artist whose art practice spans many mediums. In Chapter 24 she provides an overview of her arts practice, focusing on ephemeral artworks in wild places, ephemeral art workshops, gallery work, public artworks and poetry. Inspired by nature, Taylor aims for her works to be a voice for nature. As she says:

By speaking up as an artist and as a human being for nature in whatever form it takes, be it through painting, sculpture, poetry, music, performance, protest, farming, gardening, dance or conversation ... we show that there is a space for these new thoughts and pro-environmental actions are indeed called for ...

Section VI: Cognitive interest in nature/ awareness of consequences/environmental education

A major component of many models to explain why people adopt pro-environmental behaviour is an awareness of the consequences of one's actions — in other words a cognitive interest in nature (Jackson, 2005). Through their ability to synthesise complex ideas and to communicate them to non-specialist audiences, the visual and performing arts have a great ability to assist in developing an interest in the environment or extending one's knowledge about it and the consequences of our actions. This makes them valuable in enhancing the teaching of scientific or environmental material and to raise awareness about environmental issues

in a wide range of contexts. The power of the arts to move the emotions (whether that be through humour, anger or feelings of care, as we have seen in the other sections of this book) can make them especially efficacious in helping to inform different audiences.

In this section four authors describe their work in using both the visual and performing arts to enhance environmental communication. Svetlana Trefilova (Chapter 25) and Anastasia Tyurina (Chapter 26) are visual artists who work collaboratively with scientists and who, through their photographic work, bring to life different environmental problems — the terrible plant disease Myrtle Rust in the case of Trefilova, and water pollution in the case of Tyurina. Sally Shaw and Michael Connor use performance to educate their audiences — in the case of Shaw, Christian youth, and in the case of Connor, the general public.

Svetlana Trefilova is a Brisbane-based artist whose main research interest is in art and science collaborative practice and studying microscopic structures of native botanical species. In Chapter 25 she describes her work with scientists studying a disease affecting many Australian native plants — the Myrtle rust disease. She has found that her images can be of significant help in public education, giving the viewers a better understanding of invisible elements of our ecosystem. Her study of Myrtle rust disease and conversion of this newly acquired knowledge into paintings can raise public understanding of everybody's role in protecting our environment. The other outcome of this project was that it successfully showed how beneficial art and science collaborations can be for both artists and scientists — and as a result for the broader society and the fragile ecosystems that surround us.

Anastasia Tyurina is a new media artist whose practice fuses art and design with science and technology. In Chapter 26, she explores the relationships between science, arts and technology from the standpoint of water and ecology. She outlines her approaches in creating a body of studio research that examines the artistic value of the scientific images of micro-scale water drops and the possible social effects of this practice. She has found that her artistic photomicrographs can offer ways to engage and collaborate with various stakeholders, and to deliver educational objectives. The viewer can perceive the differences between images and see the pattern of contamination in certain areas. Through her work, she hopes to contribute to a responsible attitude towards water resources and an understanding of water's significance through emotional response in the viewer.