



'Feel Blue, Touch Green'

Final Report of a Project undertaken by Deakin University, Barwon Health, Parks Victoria, Alcoa Anglesea, ANGAIR and Surf Coast Shire

with funding from Alcoa World Alumina through the People and Parks Foundation

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people enriched by parks,
parks valued by people



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1.0 INTRODUCTION

Over recent years, acknowledgement of human dependence on nature for material needs (food, water, shelter, etc) as well as for psychological, emotional and spiritual needs has been growing (eg. Wilson 1984; Boyden 1992; Roszak, Gomes & Kanner 1995; Frumkin 2001). Researchers across a range of disciplines, including psychology, environmental health, psychiatry, land use planning, horticulture, leisure and recreation, wilderness, and public health policy, have contributed to an accumulation of evidence in support of the idea that contact with nature is good for human health and wellbeing (Maller et al. 2006).

A study undertaken in 2003-4 by Dr. Mardie Townsend and colleagues from Deakin University into the health and wellbeing benefits of civic environmentalism (typified by membership of a particular park's 'Friends Group') confirmed what was known intuitively: that belonging to such a group and undertaking the activities associated with such a group exposes people not only to the benefits of the natural environment, but also to other people and to opportunities to make a contribution which is socially valued. Three different types of health benefits were identified by members of the particular 'Friends Group' initially studied by the Deakin team: physical health benefits; mental health benefits; and social health benefits.

Physical health benefits related particularly to:

- The opportunities provided through membership of the Group for physical activity/exercise, contributing to cardio-vascular benefits and assisting with management of weight;
- The opportunity to breathe 'fresh air' – the area in which the volunteering was undertaken was seen as an unpolluted environment with associated respiratory health benefits.

Mental health benefits were also identified:

- The spiritual wellbeing of members was seen as benefiting from the sharing of fun with other members – as one person put it, "a good laugh lifts the spirits". Another commented: "You become part of what is around you; you see people enjoying themselves and you benefit from that vicariously".
- The mental relaxation derived from the serenity of the bushland environment, including the sounds of birds and water, was another important mental health benefit. As one person commented: "Being in nature is mentally beneficial, calming". Another person noted that participation in the Group "provides a break in the fast pace of life" and "provides peace".
- A third mental health benefit identified through the study was the fact that membership of the Group provided a source of support or help if any member had a problem relating to the park, and this reduced the level of stress that might otherwise be felt.

While the third group of health benefits were identified as 'social health benefits', evidence from other research suggests that there may well be indirect physical and/or mental health benefits that flow from these.

- Participants in the study noted an increased sense of belonging and connectedness in their local community as a result of membership of the Group.
- In an era when children are constantly warned about 'stranger danger' and parents are afraid to allow their children to leave their home environment unsupervised, the social world of children shrinks. A number of respondents commented on benefits experienced by their children as a result of parents'

membership of the Group. Several people commented on the benefits of the widening of their children's (indeed their families') social circle, while one person specifically highlighted the increase in confidence in her children as a result of interaction with other people in the community.

- A third social benefit noted was a benefit particularly relevant for older people. Not only was membership of the Group seen as offering an opportunity for all people to contribute to sustaining the environment (even those who are unable to undertake physical work – they can have a role in preparation of newsletters and publishing activities), but respondents to this study felt that the existence of the Group also encouraged the elderly people in the community to use the area because it is well maintained.

Given these findings and the published evidence of the health benefits of contact with nature, it was appropriate to develop and trial an intervention through which these benefits could be accessed by people who, for psycho-social reasons, do not normally participate in such activities. The intervention which was subsequently developed, 'Feel Blue, Touch Green', was a pilot research and community development project which aimed to identify and promote the benefits of nature-based activities for mental health and overall wellbeing in a rural/regional area, while contributing to positive environmental outcomes and to community development.

The project was developed initially by staff of Parks Victoria, Barwon Health and Deakin University. The project involved an intervention to support residents of the Geelong and Surf Coast districts of Victoria, who may have experienced stress, anxiety, depression or social isolation, to attain improved mental health through facilitated involvement in the community conservation group ANGAIR (the Anglesea and Airey's Inlet Society for Protection of Flora and Fauna). Participants worked with ANGAIR members, in conjunction with a Research Fellow from Deakin University and representatives from Parks Victoria and/or Alcoa Anglesea, on a range of environmental activities. Involvement of the participants was facilitated by staff from Deakin University with the activity program co-ordinated by Alcoa Anglesea with ANGAIR. Funding for the project was provided by Alcoa World Alumina, through the People and Parks Foundation.

Research findings from the project indicate that participants experienced many health and wellbeing benefits from being involved in 'Feel Blue, Touch Green', including developing ongoing social links, learning social, environmental and personal development skills, gaining increased confidence, stress-reduction, increased motivation and interest in life, enjoyment and other benefits. These findings suggest that involvement in conservation and nature-based activities not only benefits the ecosystems in which we live, but also enhances community cohesion and improves mental health and wellbeing. The research suggests that the development of similar programs in other regions may improve the health of individuals, communities and ecosystems.

This paper documents the context, process and outcomes of the 'Feel Blue, Touch Green' project.

2.0 BACKGROUND

In 2003-2004, Australia spent 9.7% of gross domestic product on health, a substantial increase over the 8.3% spent in 1993-94 (AIHW 2005). Although by international standards Australians enjoy good health, it is also true that some Australians experience poorer health than others (AIHW 2000). Many Australians are experiencing declining mental health, while people living in rural areas often experience inferior health to those living in urban areas. Health concerns may be due in part to declining social capital and ecological health.

2.1 Declining mental health

In Australia, mental disorder is the number one contributor to the disease burden (Mathers et al. 2000). The prevalence of mental disorders is increasing in Australia, with over 7% of people experiencing anxiety and 8% experiencing depression in a 12-month period (Henderson, Andrews & Hall 2000) and the upward trend in the incidence of mental disorders is projected to continue. The Brain Dynamics Centre (Westmead Hospital and the University of Sydney) notes that mental illnesses such as anxiety, depression, addiction, substance abuse, and psychosis “lead to a significant health service burden, social isolation, unemployment, loss of productivity, violence, crime and suicide, and early death” (The Brain Dynamics Centre n.d.). One of the characteristics of depression pertinent to this study is the lack of interest or ability to experience pleasure (Commonwealth Department of Health and Aged Care & Australian Institute of Health and Welfare 1999). By contrast, “mental health describes the capacity of individuals and groups to interact, inclusively and equitably, with one another and with their environment in ways that promote subjective wellbeing, and optimise opportunities for development and the use of mental abilities” (Australian Health Ministers 2003, p. 5). Of particular relevance to this study is information published by BeyondBlue (2002) which highlights the fact that people suffering from mental health problems “often prefer non-medical treatments”.

2.2 Declining rural health

The health of rural Australians is poor in comparison with their urban counterparts. They have higher mortality rates; they experience higher rates of hospitalisation for some causes of illness; and suffer higher rates of some illnesses including depression (AIHW 1998; Baum 1999; Dixon & Welch 2000). As the report *Health in Rural and Remote Australia* states in its opening line, “Australians have long regarded life in the country as healthier than life in the city” (Strong et al. 1998) and country towns provided the focus of this healthiness. Increasingly research is showing that this idealism is misplaced and that inappropriate policy decisions have led to dire consequences for the long-term health and wellbeing of rural inhabitants. ‘Feel Blue, Touch Green’ aims to support the health and well-being of people living in a rural and regional setting.

2.3 Declining social capital

Research has highlighted the role of social capital (defined in terms of networks, trust and norms that facilitate co-operation and cohesion in communities) as a key determinant of health (Kawachi et al. 1997; Runyan et al. 1998; Leeder & Dominello 1999). Despite this recognition of the importance of social capital for health, Putnam (1995) observes that social connectedness and civic engagement – key aspects of social capital – are in decline. In rural communities in particular, health and wellbeing has been found to relate as much to community cohesion as it does to the direct provision of medical services (Mahoney et al. 2001). Research has found that community organisations and leisure activities are key mechanisms by which social capital is established and maintained in rural communities (Townsend, Moore & Mahoney 2002). However, the declining populations of small rural communities have reduced the viability of many community organisations and sporting clubs, thereby undermining social cohesion and consequently, health and wellbeing.

2.4 Declining ecological health

There is growing recognition of the impact of human beings on the health of ecosystems. Australia has an appalling record in relation to ecological sustainability. An article published in *Habitat Australia* (Christoff 2002, p. 10) presented some sad facts about Australia’s record in environmental management:

- Australia is facing a crisis in terms of biodiversity, with the number of bird and mammal species listed as 'extinct, endangered or vulnerable' rising by more than a third (from 118 to 160) between 1993 and 2000.
- The past decade has seen an acceleration of land clearing in Australia, undermining terrestrial biodiversity; Australia annually clears more land than any other country except Brazil, Indonesia, the Democratic Republic of Congo, and Bolivia.
- In this – the driest inhabited continent on earth – we consume more water per capita than almost any other country, and our water usage is increasing (up 65% from 1985 to 1996/97).
- Australia produces more greenhouse gases per capita than any other industrialised country, and our Federal Government has declined to sign the Kyoto Protocol.

Growing evidence demonstrates the important links between ecological health and human health and the bi-directional nature of this relationship is implied in this statement from Curtis (2000, p. 47) who notes:

A range of difficult, long-term environmental problems besets rural Australia. Dryland and irrigation salinity, soil erosion, declining water quality, feral pests and exotic weeds are impacting on agricultural productivity, biodiversity and public health.

2.5 The focus on improving health and wellbeing

While in earlier generations, health was seen as merely the absence of illness or injury, recognition of the limitations of defining health in this way led to the development by the World Health Organisation (1946) of a broader definition of health: "a complete state of physical, mental and social wellbeing, and not merely the absence of disease or infirmity". Subsequent to this redefinition of health, in 1986 the WHO convened a conference in Ottawa, Canada, which had as its central theme the promotion of health by maximising the health values of everyday settings (WHO 1986). The five action areas identified by the Ottawa Charter for Health Promotion recognised the contributions of communities, individuals, health services, policies and environments to optimising human health outcomes (WHO 1986).

The Charter recognised the importance of community engagement in the action area 'strengthen community actions' (WHO 1986). Such engagement offers a means of fostering social connectedness, empowerment and the development of social support networks.

At an individual level, the Charter recognised the importance of 'develop(ing) personal skills', including social skills and life skills, as a way of enabling individuals to exercise control over their own health and that of their environments (WHO 1986).

'Reorient(ation of) health services' was another focus of the Charter, which recognised that health is the responsibility of all people and organisations, not just of health service providers (WHO 1986). Accordingly, within the public health policy sector, the links between human health, the health of societies, and the health of the natural environment are emerging as essential elements of 'build(ing) healthy public policy'. These links are noted in the preamble to the Victorian Health Promotion Foundation's Strategic Priorities 2006-2009:

Investments in the health of our natural environment, ranging from urban parks and healthy waterways to stabilising the global climate, are also investments in the health of our community (VicHealth 2006).

Interestingly, it is not just health services which are undergoing reorientation. The adoption by Parks Victoria, in 2001, of a new slogan and a strong organisational policy direction entitled 'Healthy Parks, Healthy People', signalled the formalisation of recognition by natural resource management organisations of the links between natural environments and human health (Maller et al. 2002).

The inextricable links between humans and their environmental contexts were recognised in the action area 'create supportive environments' (WHO 1986). Although the focus of this action area was on environment defined in broad terms (i.e. not just on environments defined in biophysical terms), nevertheless the Ottawa Charter recognised that environmental protection and the conservation of natural resources are essential elements in the promotion of human health.

Reflecting these trends, this definition of wellbeing provided by the Australian Bureau of Statistics (Trewin 2001, p. 6) recognises the dynamic and multi-faceted nature of human health and wellbeing:

From birth to death, life enmeshes us within a dynamic culture consisting of the natural environment ..., the human made environment ..., social arrangements ..., and human consciousness ... Wellbeing depends on all the factors that interact within this culture and can be seen as a state of health or sufficiency in all aspects of life.

2.6 Volunteering, community participation and health

In the current context of the orientation to 'small government', local communities and community groups (e.g. Landcare and Catchment Management groups) are taking on increased responsibility for managing natural resources. This results in an opportunity for individuals to influence the outcome of such management, both in terms of the environmental impacts and the human health outcomes.

Volunteers provide a major source of labour in the service sectors of many nations, and without them, many service organisations would be unable to function effectively. In the United States of America (USA), for example, the efforts of volunteers were valued recently at \$272 billion (Rotolo & Wilson 2006). Research indicates that 38% of the adult population in the United States of America (USA) is involved in volunteering (Ruiter & De Graaf 2006). According to Eisner (2006) the number of volunteers in the USA is increasing, with larger numbers of Americans volunteering each year since 2002 (perhaps in response to the 2001 terrorist attacks). However, this "multiple-year climb in civic engagement is extremely unusual" and can be expected to reverse over time (Eisner 2005, p.51). While Australian data suggests that between 33% and 41% of adults are involved in volunteer activities (Pope 2005), data from three waves of the European Values Surveys/World Values Surveys indicate that, in the 53 countries included, volunteering rates vary from as low as 5.5% to 74.2% (Ruiter & De Graaf 2006). Although, in the United Kingdom only 16.6% of the adult population is involved in volunteering (Ruiter & De Graaf 2006), recent research commissioned by Scottish Natural Heritage found that a sample of 204 'volunteer involving' organisations in the natural heritage sector involved over 23,000 volunteers and achieved over 91,000 hours of voluntary effort in an average month. The value of this was calculated at over £14,246,706 per annum (Scottish Natural Heritage 2006).

Community participation is not a new concept; however, the meaning attached to the concept appears to have changed over time. According to Roberts (1996, p. 222),

community participation was/is in evidence in the “decision making in many ancient and contemporary indigenous societies”. A 1986 paper by the US National Conference of Catholic Bishops highlighted the importance of community participation in personal identity:

Basic justice demands the establishment of minimum levels of participation in the life of the human community for all persons. The ultimate injustice is for a person or a group to be actively treated or passively abandoned as if they were non-members of the human race.

(National Conference of Catholic Bishops 1986).

Over recent decades, community participation in decision making in western societies has occurred through consultation exercises and more direct means such as lobbying and protest action. However, with the move to small government, community participation has taken on much more of an action orientation. Individuals and community groups are (in their volunteer roles) increasingly taking on responsibilities that were previously held by governments at various levels.

Volunteering can be defined as the contribution of time and effort to assist others without the expectation of pay or other material reward (Curtis 2000; Wilson & Musick 2000). However, it is clear from the literature that volunteering provides benefits not only to the recipient of the voluntary action but also to the volunteer. For example, by participating in groups, volunteers have the opportunity for ongoing learning and skill development (Curtis 2000; Narushima 2005). Similarly, through their volunteering, in addition to gaining a sense of achievement, participants may reap psycho-social benefits resulting from increased social interaction, and bring to fruition their desires and hopes for a better world (Curtis 2000).

Three recent studies of people involved in voluntary care for the environment found that, even in the face of significant health problems, participants’ sense of wellbeing and social connectedness was high and that their capacity to cope with ill health appeared heightened by their involvement in the group’s environmental activities (Townsend 2006). A recent Australian study of volunteers involved in the management of land of high conservation value showed that volunteering within a conservation context is associated with perceived high levels of health and wellbeing, strong social networks and opportunities to develop and use skills (Moore, Townsend & Oldroyd 2006).

While evidence indicates that “volunteering improves health ... it is also likely that healthier people are more likely to volunteer” (Wilson & Musick 2000, p. 161). Typically, volunteers are “middle-aged; more highly educated; higher income earners; property owners; those of higher occupational status; and those who belong to a number of other organisations” (Curtis 2000, p. 49). Lum and Lightfoot (2005) suggest that migrant populations are less likely than native-born people to be involved in volunteering.

The positive impacts on health and wellbeing arising from volunteering occur through a range of mechanisms. As few as three volunteer hours a month on average is associated with better health outcomes in older people and more than 40 hours per year improves life-expectancy (Lum & Lightfoot 2005). Musick and Wilson (2003) found that volunteering over a sustained period is associated with better mental health outcomes and with intrinsic motivations that are inherently more rewarding. According to Oman, Thoresen and McMahon (1999), at an individual health level, “the altruistic features of volunteerism might reduce destructive levels of self-absorption”. Iwasaki et al. (2006, p 174) cite a female with a disability as saying: “Volunteer[ing] is a stress reliever. It’s sort of getting out of myself. Doing something for somebody else.”

One study (Moen, Dempster-McClain & Williams 1992) indicates that volunteer activity undertaken relatively early in life has a ‘payback’ in the form of improved function later in

life. Research data from a US study indicates that volunteering, by providing an opportunity for “engagement in productive activities”, is associated with a reduced risk of disability and death (Glass et al. 1995, cited in Lum & Lightfoot 2005, p. 34). In addition, the communities in which volunteers participate experience improved social cohesion, a greater capacity to advocate for resource allocation, an increased ability to meet new challenges and a “locus for community organisation and identity” (Curtis 2000, p. 49). Volunteering in environment and land management groups has significant environmental outcomes in terms of ecosystem health benefits (Curtis 2000).

2.7 Conservation, nature-based activities and health

Evidence is emerging that the distancing of Australians from nature as a result of increasing urbanisation and urban densification (Evans 2000) is having detrimental health outcomes. Humans evolved in company with other species, and some theorists (e.g. Wilson 1984) suggest that our affinity with nature reflects an inherent biological need for contact with nature. Yet modern humans spend much less time in contact with plants and animals than their forebears did (Katcher & Beck 1987).

Recent research indicates that the deficiency of contact with nature and the excess of artificial stimulation that characterise modern life induce exhaustion (Stilgoe 2001) and undermine human health and psychological wellbeing (Gullone 2000). There is both strong evidence of the beneficial effects of passive contact with nature, and indications that “active and social nature-based interventions” may be particularly helpful in treating “individuals experiencing chronic physical, mental and social ill-health” (Pryor et al. 2006, p. 121).

Horwitz et al. (2001) support the nature-human health relationship, noting the importance of biodiversity in providing community members with a sense of identity or “a sense of place” (p. 255), through creating a unique distinction from other communities. This notion links the psycho-social concept ‘sense of place’ with the biophysical concept of place as an environment. Macintyre, Ellaway and Cummins (2002, p. 133) remind us that the importance of environment or place to human health can be characterised along a continuum roughly following Maslow’s (1968) hierarchy of human needs. At the most basic level, humans need unpolluted air, clean water, adequate food and protective shelter to survive. At the opposite end of Maslow’s hierarchy – the end that relates to ‘self-actualisation’ – humans need supportive personal relationships, a sense of spirituality, opportunities to participate in group activities, and the chance for recreation.

This suggests that an adaptation of the Ottawa Charter may be needed to facilitate recognition of the nature of the relationship between environmental and human health. The health benefits of access to nature and the health detriments resulting from environmental degradation, as well as the role of individuals, industries, communities and governments in undermining or fostering the sustainability of ecosystems (and thus in undermining or fostering human health) need to be acknowledged.

2.8 ‘Feel Blue, Touch Green’: Enhancing health and wellbeing

It is evident that volunteering, nature-based activities, conservation activities, and community development activities, independently and interdependently, have the potential to enhance declining mental, social, physical and ecological health across a range of settings including urban, regional and rural areas. ‘Feel Blue, Touch Green’ offers a model for the provision of opportunities for Australians experiencing depression, anxiety and/or social isolation to be involved as volunteers in nature-based conservation activities as a means of enhancing individual and community health and wellbeing. This report provides a detailed description of the project and an analysis of the project’s outcomes.

3.0 METHODS

The overall aim of the project was to identify and promote the benefits of nature-based activities for mental health and overall wellbeing in a rural/regional area, while contributing to positive environmental outcomes and to community development.

The objectives of the proposed project were as follows:

- To identify the barriers preventing people within the target groups from undertaking nature-based activities in parks;
- To develop strategies to overcome these barriers for the members of those target groups who formed the study sample;
- To design and implement a program of nature-based activities, linked to ANGAIR, for the members of those target groups who formed the study sample;
- To measure the benefits of the program to the participants in terms of health and wellbeing;
- To gain some positive environmental outcomes in the Anglesea Heath;
- To contribute to community sustainability.

The project involved three main phases:

Phase 1 – Project establishment

Phase 2 – Project implementation

Phase 3 – Project evaluation.

3.1 Phase 1 - Project Establishment

Initial discussions about the project began in late 2003, the initiative coming from Parks Victoria. An application to the Department of Human Services Victoria for funding in early 2004 was unsuccessful, but funding was subsequently obtained in July 2004 through the People and Parks Foundation, with Alcoa providing the funding for the project.

The initial phase of the project included the formalisation of the Project Steering Committee and the establishment of a more broadly-based Project Reference Group. The Steering Committee (which was responsible for the development of the project proposal and contributed to ongoing project development, implementation and evaluation) involved Dr. Mardie Townsend from Deakin University, Ms. Carol Mioduchowski from Barwon Health, Mr. Dale Antonysen from Parks Victoria, Ms. Andrea Daley and Ms. Elise Jeffery from Alcoa Anglesea, Ms. Eathorne Mitchell from ANGAIR, Ms. Sharon Rawlings from Surf Coast Shire, and Mr. Peter Brown and Ms. Jo Hopkins from the People and Parks Foundation. In addition, Dr. Megan Moore and later Mr. Matt Ebdon were involved in the Steering Committee during the course of the project, when they were in the position of Research Fellow for the project.

The Project Reference Group acted as a resource to the Steering Committee and the research team, providing an additional source of ideas, knowledge and strategies to enable any problems or issues arising during the course of the project to be addressed.

The Project Reference Group included: a social worker from the Barwon Health region; the anxiety & depression worker from Barwon Health; a representative of Surf Coast Shire; a representative from the Department of Human Services Barwon Regional Office; a representative from the regional office of the Department of Sustainability and Environment; a representative of MindLinks; a representative of a disability group within the region; and a representative of the post-natal depression support group within the Barwon region.

A key element of this phase of the project was the addressing of the first two objectives of the overall project through a series of key informant interviews and a group discussion. Following receipt of approval on 22nd July 2005 from the Deakin University Human Research Ethics Committee to proceed with Phase one of the project, key informant interviews were conducted with a sample of ten relevant people (selected through purposive sampling based on advice from the Project Reference Group). This group included: relevant staff within Barwon Health; a medical practitioner; a representative of MindLinks; a post-natal depression worker from the Barwon region; a local park ranger; local community workers; and a member of ANGAIR

The purpose of these interviews was: to identify the barriers likely to prevent or inhibit use of parks by individuals who are members of the target populations for this study; to identify strategies for overcoming those barriers; and to identify any specific needs or factors which need to be undertaken in designing the nature-based activity program. A copy of the semi-structured interview schedule for key informant interviews is included as Appendix A. The findings of the key informant interviews are detailed below.

Key Informant Analysis

The following analysis represents the information provided by ten key informants from a range of community organizations involved in the areas of health, community, parks and local council.

The advertising of local parks

The key informants generally felt that local parks in the Surf Coast Shire could be better advertised. Many thought that tourism is the main focus of the Shire, and the community in general, and therefore, locals do not receive the enough information. Although most of the respondents acknowledged that locals were well aware that the parks and reserves are there, they added that many residents don't know what it is in the parks, nor are they aware of the benefits that those areas have to offer. A couple of respondents highlighted the fact that nature in the Surf Coast Shire is primarily considered to be the ocean and the coast line and that the parks and reserves are only given a thought, if at all, in the winter months. One respondent thought it was important to protect the natural beauty by providing maps of the area rather than overdoing signage. A couple of respondents mentioned that ANGAIR is not really considered an inclusive group in a community sense. An example provided was an instance where locals wanted to establish a community garden but received active opposition from ANGAIR due to the fact that vegetables were not considered to represent 'natural vegetation'.

Awareness of the benefits of nature

All the respondents acknowledged that there are a number of benefits derived from contact with nature. It was generally considered to provide a therapeutic, calming affect that reduces the stress of everyday life. Several respondents mentioned that being in contact with nature brings people "back to basics" and that it is good for "grounding" people. In terms of mental health, it was considered to be "invaluable." One mental health professional noted that from a clinical perspective it is recommended that people get out into the open with nature because it "re-jigs people's time clock" which is important for people with depression who have become house-bound and isolated. Another clinician stated that "people with depression tend to become too self-focused and when they get into nature the spiritual component makes them feel part of the bigger picture." However, several respondents highlighted the importance of recognizing that not everyone is comfortable in nature, a fact that can be alleviated by education.

The benefits of promoting the use of parks to people who experience mental illness, marginalization and social isolation

The respondents highlighted many physical, psychological and social benefits that could be experienced by people with mental health issues. In terms of psychological benefits, the respondents referred to "a sense of peace", "the positivity of the beauty of nature", and "a sense of well being". The social benefits were the most noted, with 50% of the respondents believing that parks assist in "reconnecting people", and "breaking down social barriers", especially for those who experience mental illness, marginalization and social exclusion. As one respondent stated, "nature is an ideal vehicle for getting people together. There often needs to be a purpose for people getting together and nature is an ideal purpose." Several respondents noted that the main benefit of being in nature is that "it makes you forget about the things you would normally worry about."

Promoting the use of parks to people with mental illness

The majority of respondents noted the difficulties inherent in promoting the use of local parks to people with mental illness, with one stating that "it is not easy to bring people to something unless they want to do it," with another saying "it has got to be made easy." However, many provided sound suggestions as to how this could be overcome. Advertising the benefits was considered the most promising solution: posters that contain visual prompts strategically placed in medical waiting rooms, local supermarkets, libraries and community centres were just some of the suggestions. One respondent suggested that the local tourist industry and commercial operators could work in partnership with health organizations to disseminate the information. Another suggested that people with mental illness that are already involved in nature could be enlisted as mentors to others. The respondent added that nature could become an addiction in much the same way as local surfers are addicted to the ocean and surfing. One mental health professional cited a generic life skills group that has been successful in the local community, suggesting that parks representatives could do a presentation at one of the get-togethers in order to make them aware of the substantial benefits.

External barriers to people with mental illness accessing and utilizing local parks

The majority of respondents cited transport, money and lack of support as the main barriers facing people with mental illness. The very nature of being socially isolated makes people "get lost in themselves and the illness process." The Surf Coast area is especially problematic to negotiate without a private vehicle and buses are few and far between. In fact, some respondents thought that the Surf Coast Shire is raising a new generation of totally dependent youths. A couple of the respondents also thought that the stigma of being labelled with a mental illness is particularly damaging in a small community.

Suggestions for overcoming the external barriers

The two most commonly cited solutions to overcoming external barriers involved community education and a more proactive role on the part of the Shire. One respondent highlighted the need for more evidence-based research on the issue. Half of the respondents suggested strategies that could be adopted by the local council, such as "being creative" regarding both educating the community and providing greater access to council resources, especially the community bus. Another problem involving council initiatives was the structural nature of the area in terms of access to parks and pathways, especially considering the large number of people with prams and elderly retirees. These issues would need to be addressed in council planning.

Internal/personal barriers to people with mental illness accessing and utilizing local parks

Fear, lack of confidence, low motivation, and social stigma were considered to be the most prominent internal barriers. Although it was acknowledged that these factors would vary according to the specific diagnosis, the feeling of already being separate from other community members could exacerbate feelings of vulnerability and the fear of "going somewhere new". As one respondent noted, it is difficult to deal with the "cycle of depression and isolation." Once again, the need for people to be guarded in a small community in order not to be exposed was thought to be a big obstacle. One clinician thought that "getting people to engage will be difficult."

Suggestions for overcoming the internal barriers

Building trust was considered imperative. The majority of respondents believe that this can be achieved through the provision of a supportive and understanding environment. Whilst a couple of the respondents mentioned the importance of routine and structure, many also thought that it is necessary to be flexible to individual needs and idiosyncracies. Many of the respondents thought it essential to inform people of the benefits of being involved and provide clear explanations about what is happening and will happen. Most of the respondents noted the importance of ANGAIR members being educated in mental illness and having specific pre-planned strategies to cope with their role as support workers. The importance of making people "feel comfortable" was noted several times throughout the interviews, as was the "building of trust." One mental health professional suggested the need for a qualified, "charismatic" facilitator.

Specific factors that need to be considered in designing the program

Providing a safe environment with sound supports was considered the most vital ingredient for success. This would involve building trust among volunteers and participants. As one respondent suggested, "you need to separate the person from the illness and have a positive response and demonstrate a positive regard." Many respondents also thought that it is important to offer a variety of activities that cater to individual capabilities and preferences. For example, one suggestion was to offer short and long walks. There also appears to be a fine line between pushing people to attempt new things and maintaining their 'comfort zone.'" Small groups were considered the optimal approach. Once again, predictability was thought to be important by the majority of respondents, that is, knowing what is going to happen at all times.

Additional issues/comments

Most of the respondents praised and supported the implementation of a nature-based activity group for people with mental illness, but cautioned the need to be prepared and organized, especially in the initial stages of the program. As one respondent noted, "it is good to have an activity-based group because some people with mental illness don't want to talk as they would in group therapy, they just want to enjoy it." One respondent thought that a program such as this could be built into Community Health Plans and Municipality Plans in order to stimulate people's mindfulness of the benefits of nature. Two respondents also emphasized the importance of facilitating a "sense of ownership" on behalf of group members. One suggestion aimed at accomplishing this was to involve participants in the development of the program and any review process. Long-term strategies for increasing the use of nature as a therapeutic tool were generally thought to involve comprehensive education of both health professionals and the community.

Recommendations

The following recommendations were developed to increase the likelihood of successful

implementation of the project:

1. In the initial contact phase, identify a person who may be a suitable mentor to other people with mental illness who express interest in joining the group.
2. Play down the 'mental illness' label for the group. Possibly include a couple of people who do not have mental health problems.
3. Once participants have registered to join the group, convene an informal meeting with a facilitator in order to provide a clear understanding of what is involved and also to build rapport and trust. During this meeting it is essential that participants are made feel comfortable, supported and respected as individuals with something to offer.
4. Provide participants with 'a sense of ownership' over their program by adopting a consultative approach.
5. Provide comprehensive maps of the relevant park including all pathways and landmarks. A guided walk through the area prior to commencement would be beneficial.
6. Provide participants with a list of potential activities and ask them to list their interest in order of priority.
7. Activities should be varied according to a range of capabilities and preferences (e.g., short & long walks).
8. Groups should be small (4-6 people maximum).
9. Address all safety issues including appropriate attire and suitable footwear to be worn during activities. Make provision for sunscreen, water, hats etc, for participants.
10. Develop a structured plan of the program including responses to a range of scenarios/problems. Volunteers need to be prepared to handle issues as soon as they arise.
11. Assign a volunteer in each group with the responsibility of picking up on subtle signs of discomfort.
12. Devise and implement an ongoing review process which would involve receiving weekly feedback from participants.

Following completion of the key informant interviews and analysis of the interview data, two group training sessions were conducted with members of ANGAIR, Parks Victoria and Alcoa Anglesea. These sessions (entitled 'Mental Health First Aid' - <http://www.mhfa.com.au/>) and led by staff of Barwon Health, provided familiarisation for the representatives of the various organisations with the range of potential issues confronting participants in the supported nature-based activities. Appropriate strategies for ANGAIR members to use in dealing with these barriers and/or issues were identified, and training in the use of the strategies was provided.

Subsequently, the Project Steering Committee met to finalise the structure and content of the nature-based activity program.

It was anticipated that the activities to be undertaken would need to include:

- tasks/activities appropriate to a wide range of ages and levels of physical capacity;
- a mix of weekday and weekend activities;
- a means by which participants could be actively engaged with members of ANGAIR;
- activities which would allow participants to meet their specific needs (eg. for participants drawn from the post-natal depression group, it was anticipated that this may mean time away from their child/children, which may necessitate the provision of child-care as part of the program);
- provision of an opportunity for social interaction associated with the activities (eg. through a barbecue lunch); and
- some means of recognition of the contribution made by the participants to maintaining the Anglesea Heath (eg. through Certificates of Acknowledgement /Recognition).

A range of possible activities was initially identified, including: walking; weeding; plant propagation; plant identification; planting; wildlife watching; wildlife counting. However, a specific program of activities was drawn up at the time the first participants were recruited.

3.2 Phase 2 – Project Implementation

The main element of the implementation phase of the project was the conduct of the activity program within the Anglesea Heath.

It was intended that a minimum of twenty-five participants would be recruited from within the target populations (i.e. Barwon Health clients from Torquay, Anglesea, Airey's Inlet and the southern side of Geelong who were classified as experiencing anxiety/depression, postnatal depression or mental health problems relating to social isolation). Recruitment was to be undertaken by Barwon Health workers, using a purposive sampling method, based on the judgements of relevant Barwon Health workers as to the suitability of clients within the target populations. Criteria for assessing suitability of clients to participate in the program included: mobility; capacity to interact in a socially appropriate manner; capacity to take instruction; interest in the program.

Prospective participants were encouraged to contact a member of the project team and were provided with verbal and written information regarding the project and were invited to participate if they met eligibility criteria. All participants were provided with written plain language statements regarding their invitation to be involved in the project that were also explained verbally, and all gave informed consent to be involved in 'Feel Blue, Touch Green', in keeping with the requirements of the ethics approval for the project granted by Deakin University.

However, issues related to perceived difficulties with obtaining ethics approval for recruitment of participants via Barwon Health resulted in the decision in May 2005 to recruit from the general community rather than through Barwon Health. Flyers (see Appendix B) were placed in appropriate venues such as libraries, community health centres, neighbourhood houses etc. inviting people to volunteer. Independent GPs were also given details of the project and flyers, so that they could pass them on to any of their patients they thought may be interested. The project was promoted widely in health and community services in Geelong and the Surf Coast (including flyers being distributed to the Geelong Clinic and the Geelong Mood Support Group) and received publicity in local newspapers, newsletters and radio (refer to Appendix E for an example of a media publication). Despite this, few responses were received, and in November 2005 it was decided to revert to the plan to use Barwon Health as a main recruitment source. Participants were to be drawn from the clients who attended services with the adult community and mental health teams or other community based mental health services that are based in the general community and would self-select, on the basis that they

considered themselves to be experiencing depression, anxiety and/or social isolation, or in response to recommendation by staff of Barwon Health. This necessitated additional ethics procedures, but it was hoped that it would also overcome the very poor response rate.

Despite the widespread publicity and the opportunity to recruit via Barwon Health, recruiting participants from the target population group proved challenging and a total of only five participants comprised the initial sample for the project (Cohort 1). Reflecting on the difficulties, the researchers have come to the conclusion that, although commitment to the project was obtained via the Primary Care Co-ordinator of Barwon Health, to obtain the best results in terms of recruitment, it would have been advantageous to have the formal commitment of a range of other Barwon Health staff. Subsequent strategies aimed at increasing the number of participants included direct face-to-face approaches by the Research Fellow to the Geelong Clinic and the Geelong Mood Support Group (Cohort 2). The latter organisation responded to this approach with a request for five clients to participate in the project, which raised the total number of participants to ten. All participants gave informed consent to be involved in 'Feel Blue, Touch Green'.

Each participant in Cohort 1 was asked to commit to a program of at least 10 hours of nature-based activities associated with the Anglesea Heath over a period of 5-8 weeks. This requirement was based on the evidence from educational research that a minimum of ten hours is required for a learning activity to result in a behaviour change. It was intended that participants would experience a mix of activities such as those noted above during the course of the program, but that all activities would be undertaken with members of ANGAIR who volunteered to be part of the activities program.

The nature-based activities carried out by ANGAIR (and therefore available to project participants) include nature walks, weeding, plant propagation, plant identification, planting, wildlife watching and wildlife counting. The wide range of activities offered enabled people to choose from three or four different activities per week and accommodated various interests and abilities. Project partners and ANGAIR volunteers were available at all activities to support the participants. Participants were involved in the project for five to ten weeks and committed to a minimum of ten hours of volunteer work, after which time they had the opportunity to continue as volunteers with ANGAIR.

Short interviews with participants at the commencement of the project indicated barriers people may face to participation and determined any personal needs such as safety, transportation, communication, motivation, child-care and other factors important in maximising the success of the project for participants. The findings of the interviews were used to determine the support needs of participants for the project.

Transport was provided for participants, using the Surf Coast Shire Community Bus and/or a Deakin University car. It was intended that arrangements would be made with an appropriate child-care centre/s for child-care to be available to participants who needed it at no cost to them (the costs of child-care having been built into the project budget). However, none of the participants required this service. Refreshments in the form of bottled water and slices were provided for morning and/or afternoon teas, as a means of encouraging social interaction between the program participants and the members of ANGAIR.

In response to a combination of factors, including feedback from Cohort 1 about the time of day of the activities, and due to the limited availability of Cohort 2 (a group of people involved with the Geelong Mood Support Group), activities outside the normal ANGAIR program were scheduled by Alcoa Anglesea in co-operation with ANGAIR. These took place on six Thursday afternoons with ANGAIR members taking a lead role with most of the activities. However, because these were not regular ANGAIR activities, they involved

only a limited number of ANGAIR members, and representatives of Alcoa Anglesea and Parks Victoria. This meant that participants in Cohort 2 tended to form closer relationships with the Research Fellow, who was the consistent element in their activities, rather than with ANGAIR members as had occurred with Cohort 1.

3.3 Phase 3 – Project Evaluation

The evaluation of the project included both process evaluation and impact evaluation (Hawe, Degeling & Hall 1990).

The process evaluation included an evaluation of the process of the project by the participants, and by Steering Group members including all key stakeholder groups. The sorts of questions which were included in the process evaluation involving participants focused on:

1. Interpersonal issues: how participants felt about participating in the program, with a special focus on how they related to others involved.
2. Service issues: how convenient/appropriate the program was in terms of time, location, cost, etc.
3. Content issues: what was included in the program activities and the extent to which those activities were appropriate.

A combination of formal and informal evaluation strategies was used as part of the process evaluation. Informal strategies included participant observation by the Research Fellow, and informal conversations during the course of project activities. Formal strategies included interviews with participants at the conclusion of the organised program.

It was originally intended to include a focus group with ANGAIR members involved in the program, and interviews with all key stakeholders. However, factors contributing to the decision not to proceed with the focus group and formal interviews included: the relatively small number of ANGAIR volunteers involved in the program; the fact that the Research Fellow was involved in the program and therefore had opportunities for observation and informal conversations with ANGAIR volunteers and key stakeholders during the course of the program; and the open nature of the Steering Group meetings in which key stakeholders' views were shared freely.

Impact evaluation was a key aspect of the project. This included measuring: attitudes; behaviour; social support; health; quality of life/wellbeing; community strength and/or cohesion. The impact of 'Feel Blue, Touch Green' was determined through a combination of informal and formal evaluation strategies, both qualitative and quantitative. Several methods of data collection were employed in this study as triangulation is important to maximise credibility and robustness, reduce bias, increase the scope of the project, provide a range of perspectives and identify any anomalies or discrepancies (Begley 1996).

Formal evaluation strategies captured quality of life, health, wellbeing and participant experiences of being involved in the activities through surveys and interviews. The following elements were also included.

- The MOS 36-item short-form health survey (SF-36), which indicates limitations in activities due to mental and physical health problems and general health perceptions (Ware & Sherbourne 1992).
- The Kessler Psychological Distress Scale (K-10), which is a brief ten-question survey measuring the level of emotional distress experienced by respondents over the previous month (Andrews & Slade 2001).
- Activities of Daily Living (ADL), which is a brief nine-question survey that determines the amount of assistance, or conversely, independence, respondents have in completing usual daily activities such as cooking, shopping and self-care.

- The Medical Research Centre (MRC) Dyspnoea Scale, which is a brief survey that determines the level of respondents' breathlessness (Bestall et al. 1999).
- Emotional State Scale, which is a brief self-report measure, adapted from a variation of the Osgood Semantic Differential Scale (Tyerman & Humphrey 1984) and modified to measure emotional parameters considered important for 'Feel Blue, Touch Green'.
- In-depth, unstructured individual or focus group interviews with participants of approximately one hour.

The SF-36, K-10, ADL and MRC Dyspnoea measures are short surveys that were used at the commencement and again at the completion of the project to determine general health status and change in health, wellbeing and quality of life during the five to ten week time interval participants were involved with the project. These measures were used to indicate impacts of the project but did not control for outside influences such as the effects of medication, variations in mood and life experiences outside of the project.

The Emotional State Scale (ESS) was administered at the commencement and completion of each activity to indicate changes in emotional state across 19 parameters, such as bored-interested, worried-relaxed and happy-unhappy. Participants marked on a line that spans each parameter how they were feeling at that instant in time. The difference between each parameter at the commencement verses completion of each activity was measured in millimetres. The scale is sensitive to emotional changes experienced during a short time period, and in the case of 'Feel Blue, Touch Green', indicated the emotional changes experienced due primarily to activity engagement. The ESS does not control for dependent variables such as natural mood fluctuations, but the impact of these variables is reduced with the changes measured by the ESS occurring across a relatively short time period with little, if any, chance of external factors influencing emotional state.

It should be noted that, for reasons of personal choice, some participants elected not to complete all of the scales or assessments. Given the nature of the cohort being studied, it was deemed appropriate not to compromise participants' sense of wellbeing by insisting that they complete all assessments. All except one of the participants completed at least some of the assessments, so it was possible to make a judgement about the success of the intervention. The one participant who was forced due to medical reasons to withdraw early from the project was observed during her participation to have enjoyed the activities and expressed regret at having to discontinue due to her hospitalisation due to a physical condition. She subsequently sent a letter outlining the benefits she gained from her involvement and her regret at enforced withdrawal (see Appendix D). Where appropriate, her comments have been integrated into the results section of this report.

At the completion of the project unstructured, in-depth interviews were undertaken using a phenomenological approach to conduct and analyse the participants' perspectives of being involved in the project and nature-based activities, thereby identifying phenomena and developing themes which were not pre-determined (Moustakas, 1994). These interviews were conducted for approximately one hour in environments of choice by the participants, such as at a café, and written records of the interviews were documented.

Ideally, outcome evaluation should also be undertaken. However, as this was a pilot project, the monitoring of the sustainability of the attitudes, behaviours and impacts of the project is likely to be a much longer term activity than the project itself. However, in future projects of this nature, key stakeholders should be encouraged to consider undertaking a follow-up outcome evaluation 12 months after the completion of the project. The design of such an evaluation is included as an appendix to this report.

The report also includes as Appendix C the description of a model for future interventions of this nature to be used to enhance the health and wellbeing of people at risk of or suffering mental illness. A prototype 'Feel Blue, Touch Green' implementation kit will be developed as part of the reporting phase of the project.

4.0 RESULTS

The following section presents the results of the evaluation according to the cohort to which the participants belonged. Cohort 1 refers to the initial participants who were recruited via referral and media publicity. Cohort 2 refers to the second wave of activities, the participants for which were recruited directly from the Geelong Mood Support Group.



4.1 Cohort 1

Health Scales

Participants 1, 2 and 4 completed the health scales at the commencement and completion of the project. A summary of the results of the SF-36 scale are presented in Table 1 and indicates that Participants 1 and 4 experienced fair health with many activity limitations at the commencement and completion of the project. Good health with some activity limitations was experienced by Participant 2 at the commencement and completion of the project.

Table 1: SF-36 Results Summary

Participant	Initial	Final
1	81	80
2	85	101
4	82	74
Key		
36-59	Poor health with inability to do most activities	
60-82	Fair health with many activity limitations	
83-105	Good health with some activity limitations	
105-128	Very good health with few activity limitations	
129-150	Excellent health with few/no activity limitations	

A summary of the results of the ADL scale are presented in Table 2 and indicates that Participants 1, 2 and 4 were able to complete their activities of daily living with little or no assistance both at the commencement and completion of the project.

Table 2: ADL Results Summary

Participant	Initial	Final
1	23	23
2	25	24
4	23	22
Key		
9-14	Requires extensive to full assistance with ADL	
15-19	Requires moderate assistance with ADL	
20-25	Requires little, if any, assistance with ADL	

A summary of the K-10 results is presented in Table 3 and indicates that Participant 1 experienced high emotional distress at the commencement and again at completion of the project. Participant 2 experienced low emotional distress at the commencement and again at completion of the project. Participant 4 experienced moderate emotional distress at the commencement of the project and high emotional distress at the end of the project.

Table 3: K-10 Results Summary

Participant	Initial	Final
1	18	18
2	40	45
4	27	18
Key		
10-23	High emotional distress	
24-37	Moderate emotional distress	
38-50	Low emotional distress	

A summary of the MRC results is presented in Table 4 and indicates that Participants 1 and 4 became breathless when hurrying or walking in the periods of commencement and completion of the project. Participant 2 experienced an improvement from becoming breathless when hurrying or walking during the period when she commenced the project to becoming breathless with strenuous exercise during the period she completed the project.

Table 4: MRC Results Summary

Participant	Initial	Final
1	4	4
2	2	5
4	4	4
Key		
1	Breathless with minimal activity	
2	Breathless when hurrying or walking	
3	Breathless when walking slow	
4	Breathless after a short walk	
5	Breathless with strenuous exercise.	

The SF-36, ADL, K-10 and MRC Scales did not conclusively demonstrate a change in health for participants (cohorts 1 and 2). This may be due, in part, to the relatively short duration of participant involvement (six to twelve weeks). These scales may be sensitive to change in the longer term, i.e. greater than three months of participant involvement.



Emotional State Scale (ESS)

The ESS was completed by Participants 1, 2 and 3 over a total of 11 occasions and across three different activity types. A summary of the results of the ESS are provided in Table 5 and pictorially represented in the subsequent graphs, illustrating the changes experienced by participants for each of the emotional parameters. Positive values indicate a positive change for each parameter while negative values indicate the converse from the commencement to completion of each activity. The larger the value, the larger the self-reported change in the emotional parameter.

Given the cumulative (total) values of parameters signify overall emotional change, the ESS indicates that each participant experienced increased positive emotional change across all activities with the exception of one occasion for Participant 1 who experienced an overall negative change during the third activity listed, plant propagation. The overall change of -67 was relatively small compared to the overall positive changes for this participant during other activities, from 138-484. Across participants, certain parameters signified greater positive change than others, notably worried-relaxed and satisfied-unsatisfied, indicating that participants in general felt much more relaxed and satisfied at the completion of activities. Moderate positive change was experienced across 28 emotional parameters and high positive change was experienced across five emotional parameters. In contrast, only one parameter scored a medium level in the negative direction and one parameter scored a high in the negative direction, indicating that participants felt much more positive across a range of parameters on completion of the activities.

Table 5: Emotional State Scale Results Summary

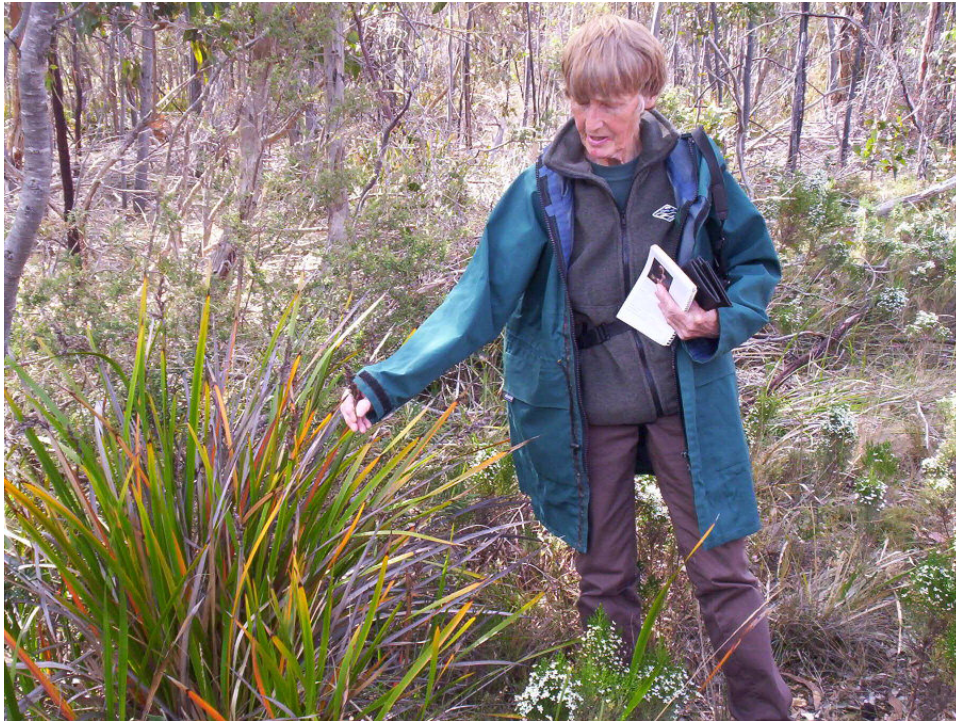
Pa	A	bi	hu	hi	wr	su	hd	ls	tc	uh	ww
1	P	0	34	19	33	1	-16	41	1	13	57
	N	0	0	14	3	9	0	45	0	35	11
	P	20	8	34	14	0	-7	9	0	13	-35
	P	4	-25	13	35	33	56	-6	39	-10	1
	N	29	30	16	28	55	41	3	5	46	16
	W	36	46	24	33	12	-25	7	0	-2	5
T		89	93	120	146	110	49	99	45	95	55
2	N	-2	9	3	10	51	9	11	46	45	8

	N	4	22	-7	-7	28	3	0	3	-2	0
	N	4	27	0	6	34	-1	15	-6	22	0
	N	11	17	3	31	28	4	4	12	4	3
T		17	75	-1	40	141	15	30	55	69	11
3	W	-8	9	8	36	-3	11	25	-6	5	19
T		-8	9	8	36	-3	11	25	-6	5	19

Pa	A	te	ic	sd	ac	is	ia	dc	wt	fu	T
1	P	24	-6	0	0	-20	-4	0	-3	10	184
	N	-3	17	0	1	16	16	-9	-17	0	138
	P	-11	-3	-9	0	-4	-11	-19	6	-72	-67
	P	0	-8	37	47	2	3	0	9	-10	220
	N	43	22	49	4	35	24	8	23	7	484
	W	8	7	22	64	28	0	1	2	-8	260
T		61	29	99	116	57	28	-19	20	-73	1219
2	N	14	23	9	-1	2	4	11	12	12	276
	N	-8	6	22	-3	-3	-18	-4	3	1	40
	N	45	5	20	4	10	25	4	14	9	237
	N	-2	1	-10	7	4	4	3	13	4	141
T		49	35	41	7	13	15	14	42	26	694
3	W	38	6	5	15	25	47	37	-2	0	267
T		38	6	5	15	25	47	37	-2	0	267

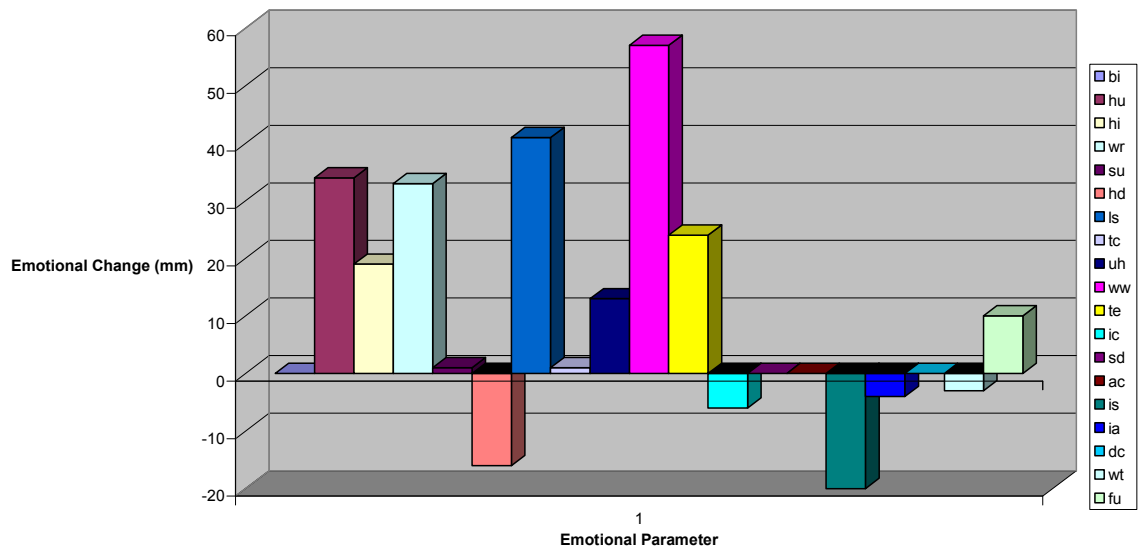
Key		
Pa	Participant 1, 2 or 3	*Changes in emotional state parametric scores may be positive or negative and are measured in millimetres. This scoring key does not apply to the total scores (indicated in bold) as the total scores are the cumulative effects of the parametric scores
A	Activity	
T	Total	
P	Plant propagation	
N	Nature Walk	
W	Weeding	
0-10*	Little or no change	
11-30*	Low change	
31-50*	Moderate change	
51+*	High change	

Parameters			
bi	Bored-Interested	te	Tired-Energised
hu	Happy-Unhappy	ic	Irritated-Calm
hi	Helpless-In Control	sd	Sense of belonging-Disconnected
wr	Worried-Relaxed	ac	Apathetic-Caring
su	Satisfied-Unsatisfied	is	Incapable-Skilful
hd	Hopeful-Despondent	ia	Inactive-Active
ls	Lacking confidence-Self confident	dc	Difficult-Cooperative
tc	Trusting-Cautious	wt	Withdrawn-Talkative
uc	Unhealthy-Healthy	fu	Friendly-Unfriendly
ww	Worthless-Worthy		

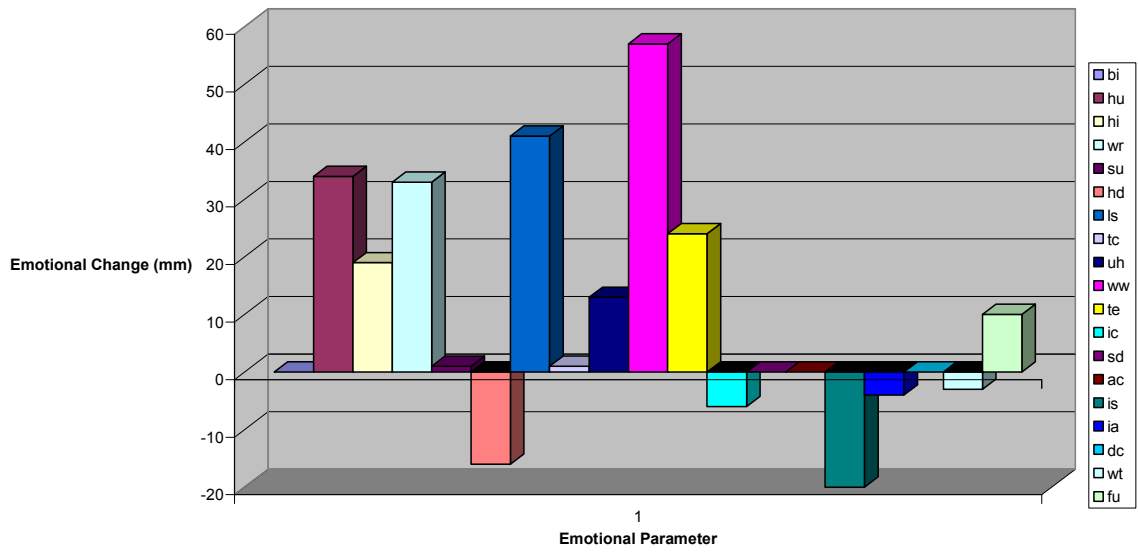


Emotional State Scale Results (Graphs)

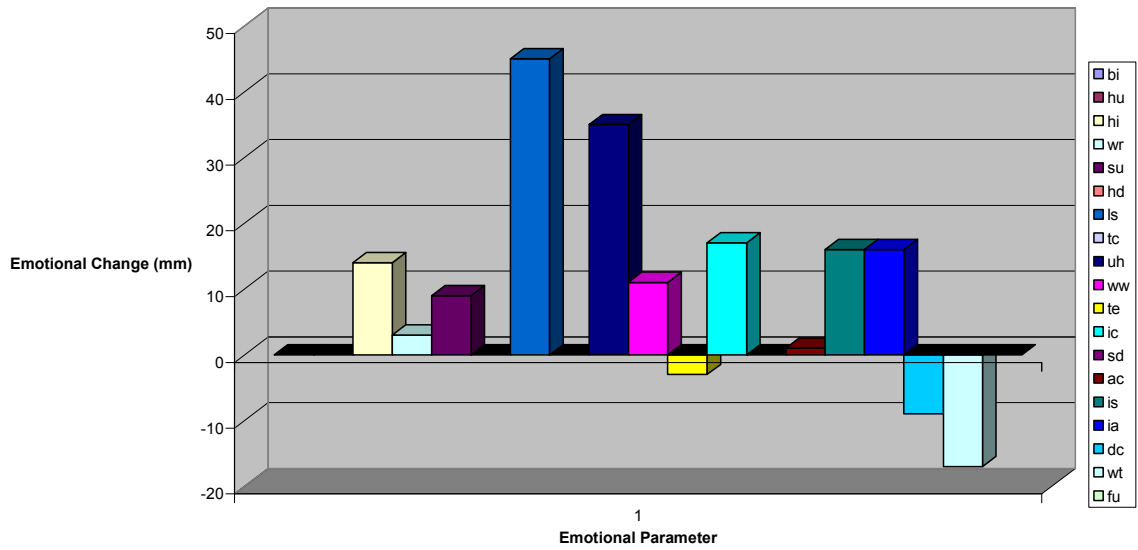
Participant 1 Propagation 1



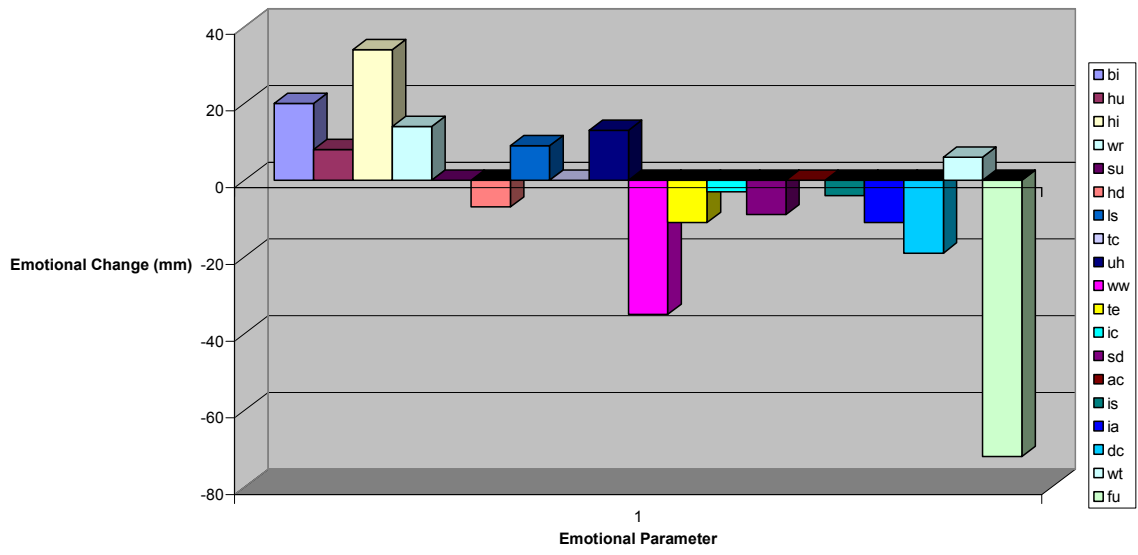
Participant 1 Propagation 1



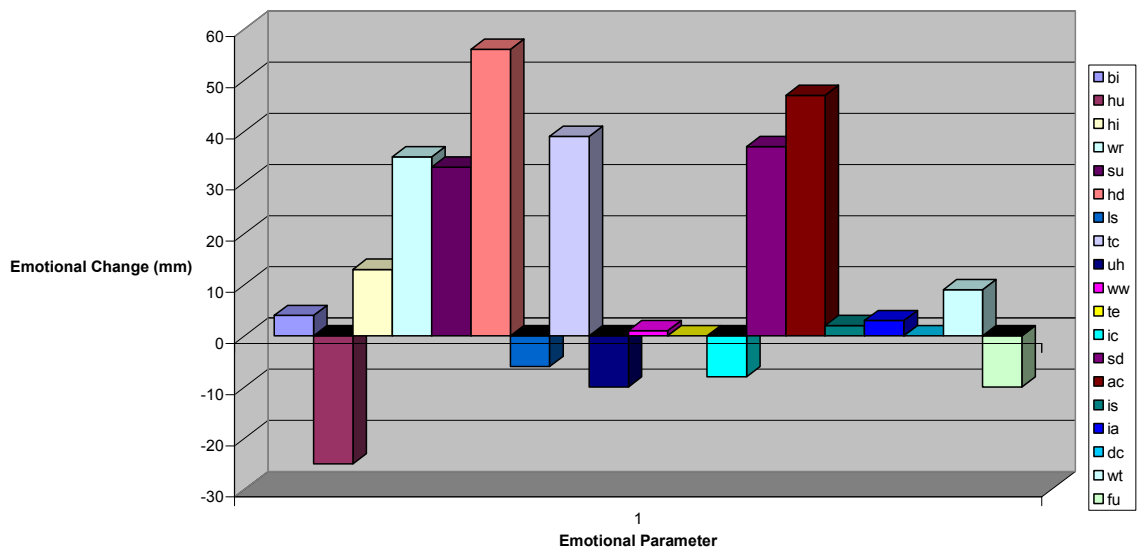
Participant 1 Nature Walk 1



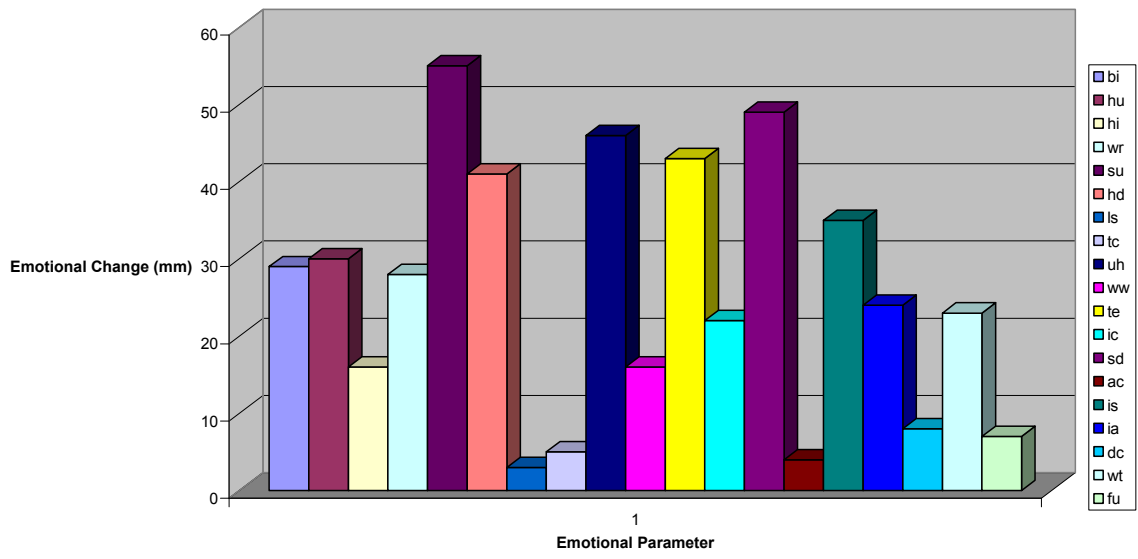
Participant 1 Propagation 2



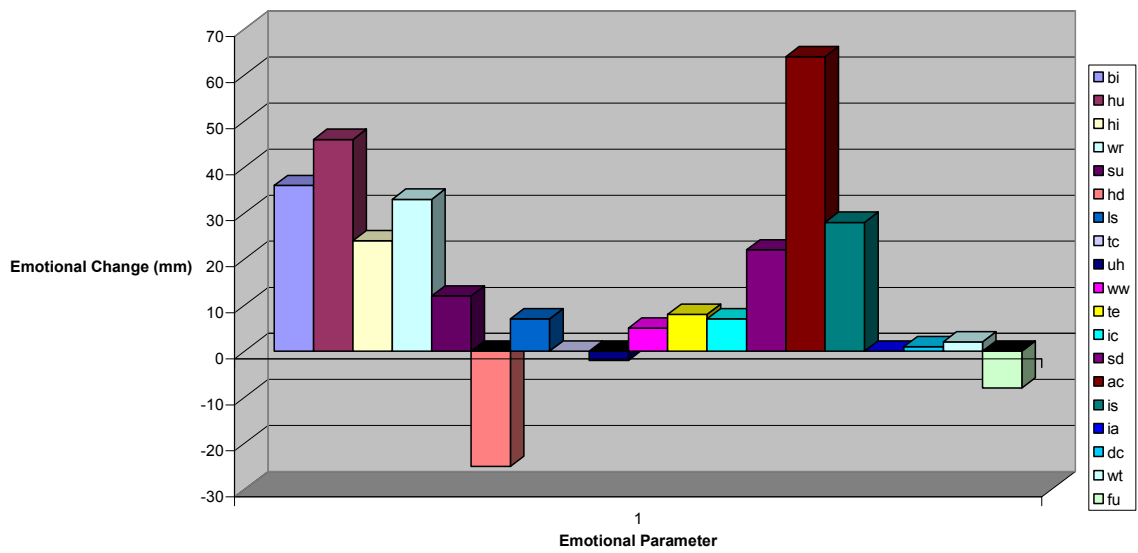
Participant 1 Propagation 3



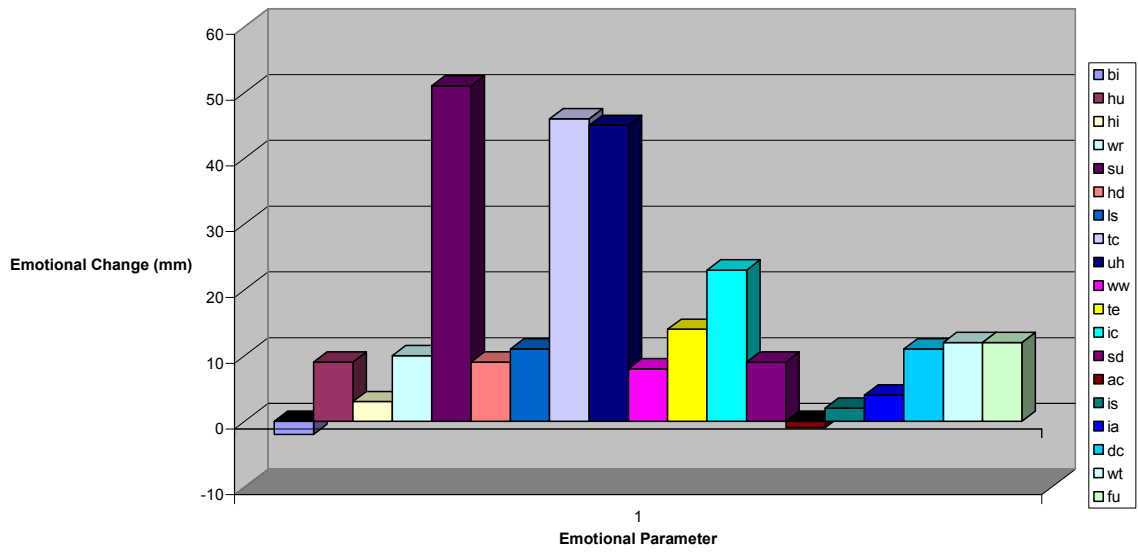
Participant 1 Nature Walk 2



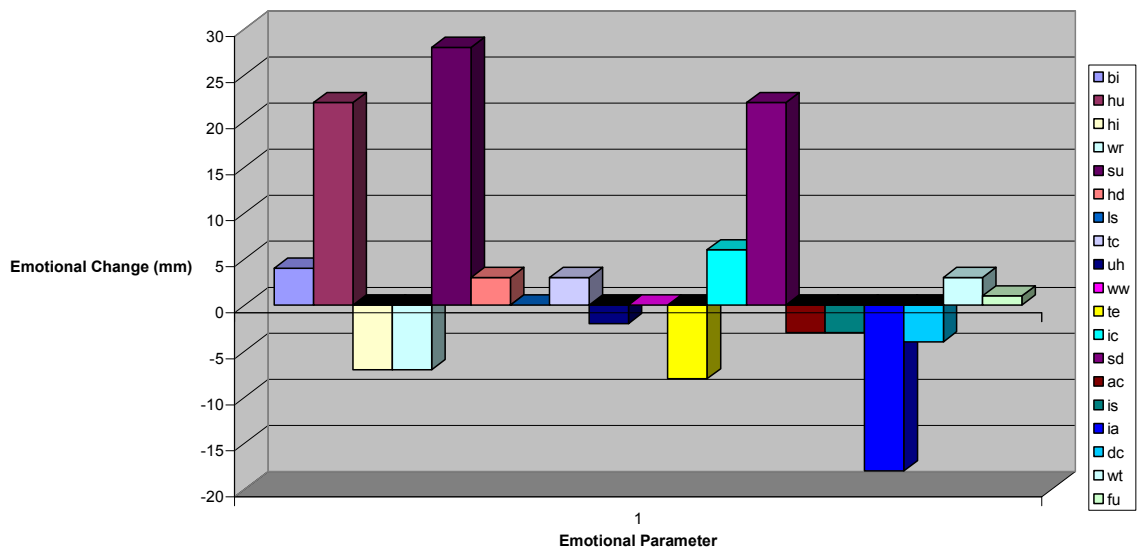
Participant 1 Weeding



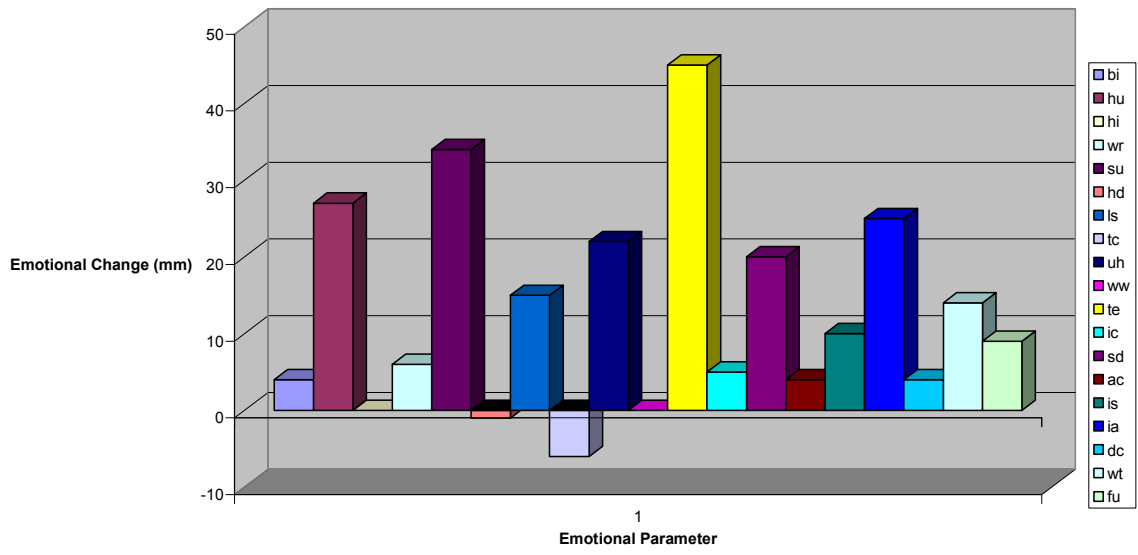
Participant 2 Nature Walk 1



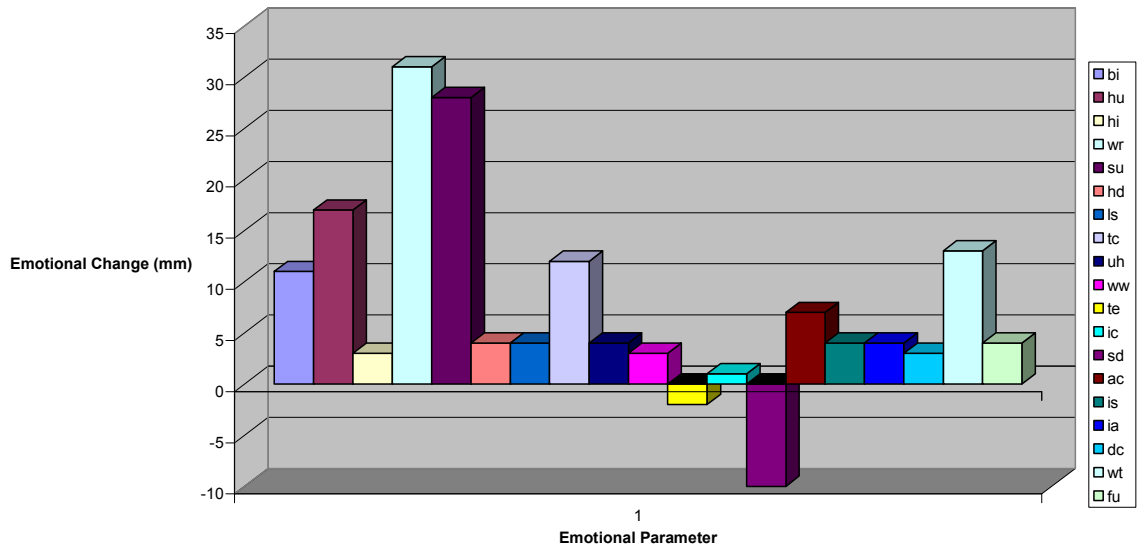
Participant 2 Nature Walk 2



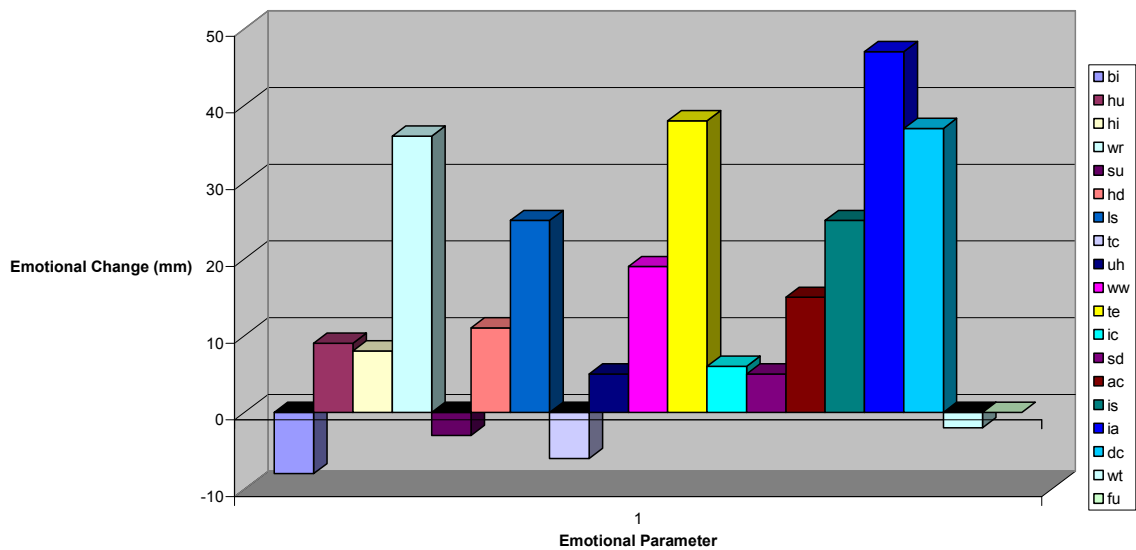
Participant 2 Nature Walk 3



Participant 2 Nature Walk 4



Participant 3 Weeding



In-depth Interviews

Participants 1, 2 and 4 participated in the in-depth interviews at the completion of the project. Participants reported impacts in the following key areas:

- developing skills, taking risks and confronting challenges;
- improving mental health, confidence and self worth;
- positive cognitive changes: stress and anxiety management;
- managing depression and depressed mood;
- improving physical health;
- building social capital;
- building ecological capital; and
- barriers.

Developing skills, taking risks and confronting challenges

A common theme that emerged from all participants was the importance and benefits of getting involved, taking risks and confronting challenges during 'Feel Blue, Touch Green' activities as a means of developing and demonstrating skills. Participants discussed 'Feel Blue, Touch Green' as a medium for learning, in particular, developing an awareness about the management of natural environments, and understanding and appreciating ecological relationships, including species' identification, inter-relationships and species-environment fit.

"I developed new skills and acquired knowledge in [plant] propagation and in [identifying] noxious weeds"

"Another benefit was that I spent a few days in the Grampians just recently and found that I was actually looking where I was walking and could identify some of the vegetation. [My husband] was suitably impressed that I could discuss with him some of the plant life and we took some really lovely photos of the new life that is establishing itself after the devastation of the bushfires in January."

Natural environments provided risks and challenges for participants. Participants also reported to learn about the precautions of being in natural environments, such as

dangers associated with bush-walking. The nature-based environments and activities provided unpredictable and exciting opportunities for participants.

Engaging in 'Feel Blue, Touch Green' activities demonstrated the ability of participants to engage in activities despite feeling depressed or anxious. Participants took on the challenge of getting involved under circumstances they otherwise would remain at home and not actively engaged in outdoor or social activities.

"I have been able to participate even when I'm not well"

Improved mental health, confidence and self-worth

Participants reported to experience improved general mental health, including confidence and self-worth, in part due to the opportunity to develop and demonstrate skills, overcome challenges and experience success in risk taking in 'Feel Blue, Touch Green' activities. The participants reported mental health benefits associated with the social and ecological nature of the activities. All participants reported to experience satisfaction, a sense of achievement, and enjoyment in being involved in activities. The participants reported distinct mental health and healing benefits from the ecological nature of the activities in addition to reporting benefits from meeting environmental challenges with an associated sense of gratification.

"I need natural environments to maintain [my mental] health. I've had it with support groups and counsellors"

In addition to the ecological nature of 'Feel Blue, Touch Green' activities, the social nature of the activities was also reported to benefit participants' mental health. Participants benefited from being able to share knowledge, positive feedback, support and experiences with the volunteers and project partners and expressed associated enjoyment and satisfaction.

"I developed confidence in [this] supportive environment because of [project partner a] and [project partner b]. They [project partners] offered gentle encouragement and were supportive"

Positive cognitive changes: stress and anxiety management

All participants reported to experience nature-based activities as positively influencing their thoughts and ability to manage stress and anxiety. Participants described positive cognitive changes associated with nature-based activities, for example, from a negative self focus to a positive ecological focus. The engagement in nature-based activities also promoted positive topics of conversation and associated cognitive changes, such as talking about nature instead of worries.

"it takes the tension and focus away from myself... [and I] forget reality... This [natural environment] grabs you"

Accompanying the positive cognitive changes from self to ecology are the cognitive changes from anxious to calm. The cognitive changes associated with becoming calm may be associated, in part, with the 'pleasant' stimuli offered in natural environments.

"In the bush there are not a lot of intrusive noises such as electronic sounds and beeping trucks. The natural sounds are pleasant while the mechanical sounds are irritating"

Other positive cognitive changes included a heightened sense of awareness and interest and feeling more confident and safe in natural environments in contrast with urban environments. Positive cognitive changes and anxiety management may also be associated with increased levels of physical activity. Participants recognised nature-based activities as a method of anxiety management. Cognitive changes associated with natural environments and being involved in 'Feel Blue, Touch Green' activities may not only improve participants' ability to manage anxiety and stress, but may also contribute to participants' ability to manage depression and low mood states.

"you don't get criticised in the bush. Self criticism, negative criticism does not occur in the outdoors"

Managing depression and depressed mood

All participants reported that being involved in 'Feel Blue, Touch Green' improved their mood and emotional state. Participants also reported that they viewed the activities as a way of managing depression.

"Being involved in 'Feel Blue, Touch Green' helps [me] manage depression"

"[I] demonstrated that I could do it today [weeding] even though I had doubts that I can do it"

Improving physical health

All participants noted improved physical health through increased physical activity associated with engaging in 'Feel Blue, Touch Green' activities. Participants also recognised the mental health benefits associated with physical activity. One participant who experienced chronic pain identified pain relief associated with the activities.

"The physical exertion leads to feeling calm"

"I feel the whole body is one, using all my muscles (when bush walking)"

Building social capital

Associated with the benefits participants experienced individually, the involvement of participants benefited the community and developed social capital through improved social networks and supports. From the perspective of the participants, 'Feel Blue, Touch Green' provided them with opportunities to meet new people. The new people in their lives, the volunteers and project partners, were viewed as understanding, supportive and encouraging. Participants highlighted the importance of being with volunteers and project partners who were accepting and welcoming. Some participants established relationships with others and enjoyed their involvement in the project and will continue the volunteer role. Sharing knowledge and positive experiences was also an important social benefit of the project

"This ['Feel Blue, Touch Green'] is good for people who may not have the courage to get involved in [social] activities. People were accepting and this broke down the stigma"

"I have been inspired by the volunteers; they have so much experience"

Building ecological capital: improvements in natural and urban environments

In addition to the direct benefits to the local ecology through involvement with the conservation activities, participants reported that being involved in 'Feel Blue, Touch Green' activities and activities in natural environments resulted in pro-environmental attitudes and actions.

"being involved fuels the passion for the environment"

"I have a close affinity, connection and appreciation for other species and nature"

"I have developed an awareness of clean versus polluted waterways, for example, by algae. I have become conscious of what clothes washing powder I purchase and want to keep as much of the natural environment as it is and look after it.... Being in the bush has triggered an appreciation for the environment"

"A benefit that has come out of this program for me is that I am now looking into volunteering at the Geelong Botanic Gardens and I have discovered a love of taking photos with a digital camera – trying to capture some real nature shots."

Barriers

Participants reported no negative consequences of being involved in 'Feel Blue, Touch Green'. They did, however, discuss barriers that may hinder continued participation as an ANGAIR volunteer. Limited financial means, such as affordability to drive; fluctuating mental state, such as when they are acutely unwell; limited time due to competing demands; the time of day ANGAIR activities are offered, usually in the mornings; and travel limitations, such as not having a car or access to public transport, were all reasons provided for not being able to participate in future ANGAIR activities.

4.2 Cohort 2

Health Scales

Participants 6, 7 and 8 completed the health scales at the commencement and completion of the project. A summary of the results of the SF-36 scale are presented in Table 6 and indicates that Participant 6 experienced very good health with few activity limitations at the commencement and completion of the project. Participant 7 experienced good health with some activity limitations at the commencement of the project and very good health with few activity limitations at the completion of the project. Participant 8 experienced excellent health with few or no activity limitations at the commencement of the project and very good health with few activity limitations at the completion of the project.

Table 6: SF-36 Results Summary

Participant	Initial	Final
6	124	116
7	102	111
8	138	123
Key		
36-59	Poor health with inability to do most activities	
60-82	Fair health with many activity limitations	
83-105	Good health with some activity limitations	
105-128	Very good health with few activity limitations	
129-150	Excellent health with few/no activity limitations	

A summary of the results of the ADL scale are presented in Table 7 and indicates that Participants 6, 7 and 8 were able to complete their activities of daily living with little or no assistance both at the commencement and completion of the project, except the final assessment for Participant 6 who did not score this assessment.

Table 7: ADL Results Summary

Participant	Initial	Final
6	24	-
7	22	22
8	24	25
Key		
9-14	Requires extensive to full assistance with ADL	
15-19	Requires moderate assistance with ADL	
20-25	Requires little, if any, assistance with ADL	

A summary of the K-10 results is presented in Table 8 and indicates that Participants 6 and 8 experienced low emotional distress at the commencement and completion of the project. Participant 2 experienced moderate emotional distress at the commencement and completion of the project.

Table 8: K-10 Results Summary

Participant	Initial	Final
6	42	46
7	30	30
8	46	47
Key		
10-23	High emotional distress	
24-37	Moderate emotional distress	
38-50	Low emotional distress	

A summary of the MRC results is presented in Table 9 and indicates that Participants 6, 7 and 8 only became breathless with minimal activity both at the commencement and completion of the project.

Table 9: MRC Results Summary

Participant	Initial	Final
6	5	5
7	5	5
8	5	5
Key		
1	Breathless with minimal activity	
2	Breathless when hurrying or walking	
3	Breathless when walking slow	
4	Breathless after a short walk	
5	Breathless with strenuous exercise.	

Emotional State Scale (ESS)

The ESS was completed by Participants 6, 7, 8, 9 and 10 across six different activities. A summary of the results of the ESS are provided in Table 10 and pictorially represented in the subsequent graphs, illustrating the changes experienced by participants for each of the emotional parameters. Positive values indicate a positive change for each parameter while negative values indicate the converse from the commencement to completion of each activity. The larger the value, the larger the self-reported change in the emotional parameter.

Given the cumulative (total) values of parameters signify overall emotional change, the ESS indicates that each participant experienced increased positive emotional change across all activities with the exception of one occasion for Participant 8 who experienced an overall negative change during the nature walk (week 2). The overall change of -42 (mean -2.2) was relatively small. Across participants, certain parameters signified greater positive change than others, notably bored-interested, indicating that participants in

general felt much more interested at the completion of activities. Moderate positive emotional change was experienced across 28 instances and high positive emotional change was experienced across five instances. In comparison, four instances of high negative emotional change and three instances of moderate negative emotional change were noted across participants. Participant 8 reported little change in emotional response across all parameters and activities.



Table 10: Emotional State Scale Results Summary

Pa	A	bi	hu	hi	wr	su	hd	ls	tc	uh	Ww
6	P	-1	6	2	1	6	7	2	8	2	3
	N	5	35	7	32	10	8	9	8	7	7
	B	4	0	34	4	4	2	3	2	2	4
	R	11	8	8	-29	13	31	-3	3	4	0
	O	48	43	13	-4	39	54	55	24	-3	69
	V	56	-58	65	14	62	63	64	29	-2	-3
	T	123	34	129	18	134	165	130	74	10	80
	M	20.5	5.7	21.5	3.0	22.3	27.5	21.7	12.3	1.7	13.3
7	P	-4	4	-16	3	13	-12	11	6	1	13
	N	11	12	6	0	12	25	18	21	22	9
	B	1	12	13	23	-	13	5	8	5	7
	R	8	-5	13	7	8	10	6	5	3	-3
	O	-6	8	6	11	0	0	8	2	2	0
	V	5	6	10	5	2	-	24	0	5	17
	T	15	37	32	49	35	36	72	42	38	43
	M	2.5	6.2	5.3	8.2	5.8	6.0	12.0	7.0	6.3	7.2
8	P	-	-	-	-	-	-	-	-	-	-
	N	-1	-3	2	-1	-1	-2	-1	0	0	-1
	B	-2	0	-1	-2	0	2	-	1	1	-1
	O	4	0	2	0	3	-3	-2	1	1	-
	V	7	0	6	4	1	0	3	3	-1	-2
	T	8	-3	9	1	3	-3	0	5	1	-4
	M	1.6	-0.6	1.8	0.2	0.6	-0.6	0	1	0.2	-0.8
	9	P	31	-18	13	19	-15	-	4	8	9
T	31	-18	13	19	-15	-	4	8	9	6	
M	31	-18	13	19	-15	-	4	8	9	6	
10	N	27	18	14	14	1	15	34	5	19	6
	T	27	18	14	14	1	15	34	5	19	6
	M	27	18	14	14	1	15	34	5	19	6

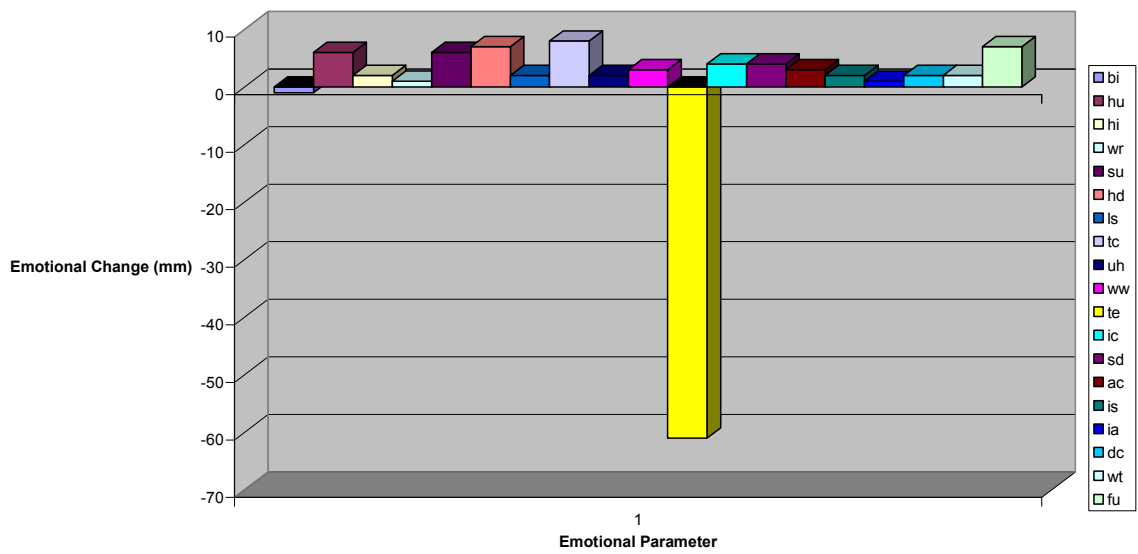
Pa	A	te	ic	sd	ac	is	ia	dc	wt	fu	T	Av
6	P	-61	4	4	3	2	1	2	2	7	0	0.0
	N	-32	8	63	7	-30	-65	4	34	-65	52	2.7
	B	3	2	2	2	2	1	1	-1	2	73	3.8
	R	-5	3	24	27	22	-38	25	-34	3	73	3.8
	O	17	34	58	61	33	39	-10	-15	-2	553	29.1
	V	15	-12	29	67	33	67	-3	15	0	501	26.4
	T	-63	39	180	167	62	5	19	1	-55	1252	65.9
	M	-10.5	6.5	30.0	27.8	10.3	0.8	3.2	0.2	-9.2	208.7	11.0
7	P	-1	16	24	-3	-2	-3	0	-3	-21	26	1.4
	N	15	15	28	14	2	4	-7	10	3	220	11.6
	B	8	9	2	-1	18	-6	12	3	-3	129	6.8
	R	2	10	12	10	3	4	4	0	-1	96	5.1
	O	2	9	-11	-5	8	5	5	2	2	48	2.5
	V	5	13	12	4	6	6	5	11	2	138	7.3
	T	31	72	67	19	35	10	19	23	-18	657	34.6
	M	5.2	12.0	11.2	3.2	5.8	1.7	3.2	3.8	-3.0	109.5	5.8
8	P	-	-	-	-	-	-	-	-	-	-	-
	N	-15	-2	-1	0	-	-8	2	-12	2	-42	-2.2
	B	1	1	3	2	4	3	3	-1	3	17	0.9
	O	-	2	-1	1	4	4	2	2	-1	19	1.0
	V	-4	3	2	0	2	2	3	-8	2	23	1.2
	T	-18	4	3	3	10	1	10	-19	6	17	0.9
	M	-3.6	0.8	0.6	0.6	2	0.2	2	-3.8	1.2	3.4	0.2
9	P	1	21	-29	17	8	29	7	15	-8	118	6.2
	T	1	21	-29	17	8	29	7	15	-8	118	6.2
	M	1	21	-29	17	8	29	7	15	-8	118	6.2
10	N	9	1	21	6	3	31	2	22	6	254	13.4
	T	9	1	21	6	3	31	2	22	6	254	13.4
	M	9	1	21	6	3	31	2	22	6	254	13.4

Key		
Pa	Participant 1, 2 or 3	*Changes in emotional state parametric scores may be positive or negative and are measured in millimetres. This scoring key does not apply to the total scores (indicated in bold) as the total scores are the cumulative effects of the parametric scores
A	Activity	
T	Total	
M	Mean (average)	
P	Plant propagation	
N	Nature walk	
B	Beach	
R	Tree planting	
O	Bird observation walk	
V	Visits, walk, focus group	
0-10*	Little or no change	
11-30*	Low change	
31-50*	Moderate change	
51+*	High change	

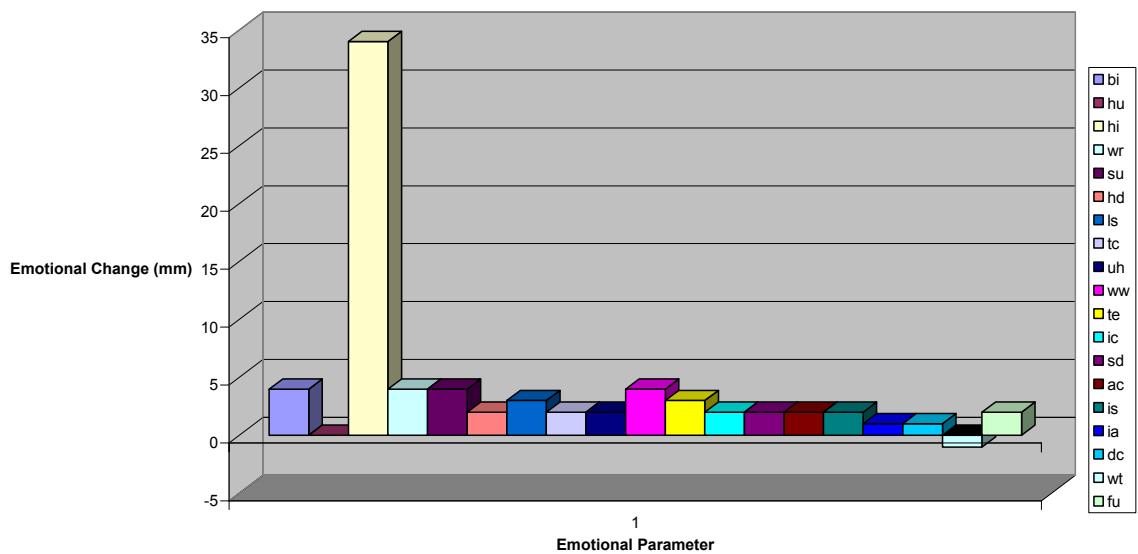
Parameters			
bi	Bored-Interested	te	Tired-Energised
hu	Happy-Unhappy	ic	Irritated-Calm
hi	Helpless-In Control	sd	Sense of belonging-Disconnected
wr	Worried-Relaxed	ac	Apathetic-Caring
su	Satisfied-Unsatisfied	is	Incapable-Skilful
hd	Hopeful-Despondent	ia	Inactive-Active
ls	Lacking confidence-Self confident	dc	Difficult-Cooperative
tc	Trusting-Cautious	wt	Withdrawn-Talkative
uc	Unhealthy-Healthy	fu	Friendly-Unfriendly
ww	Worthless-Worthy		

Emotional State Scale Results (Graphs)

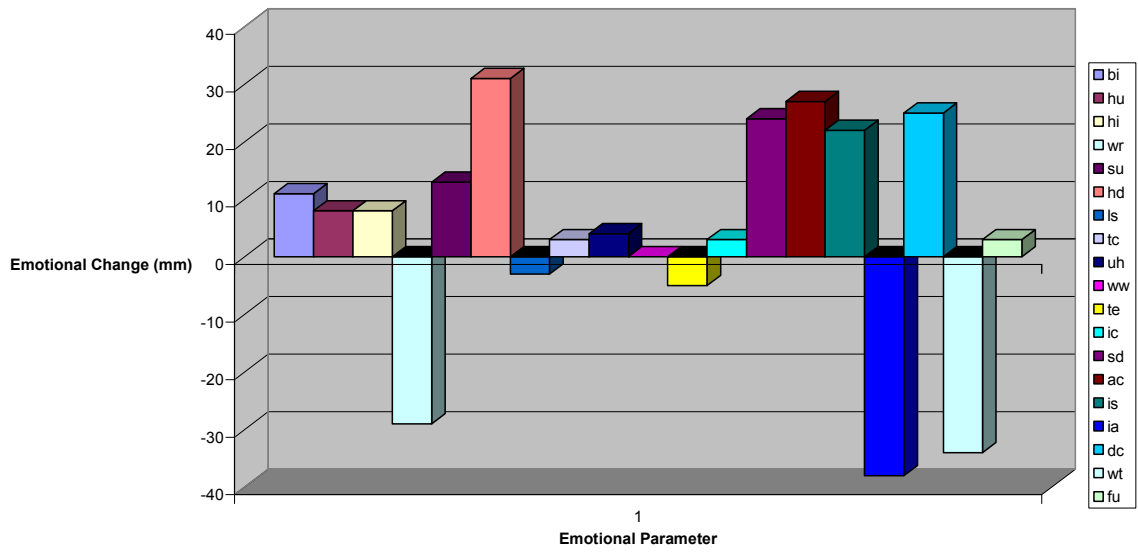
Participant 6 Plant Propagation



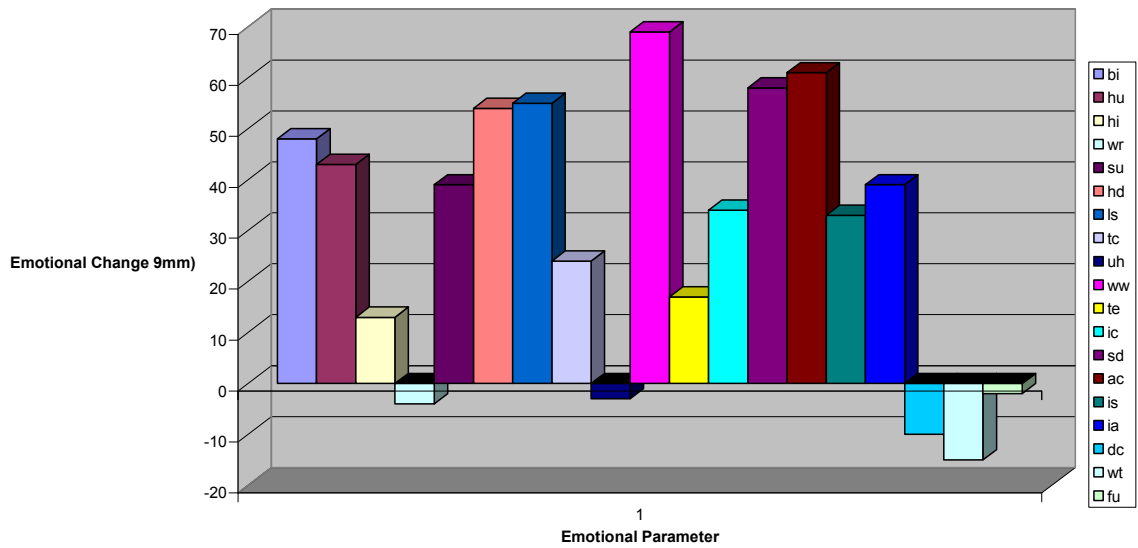
Participant 6 Beach Activity



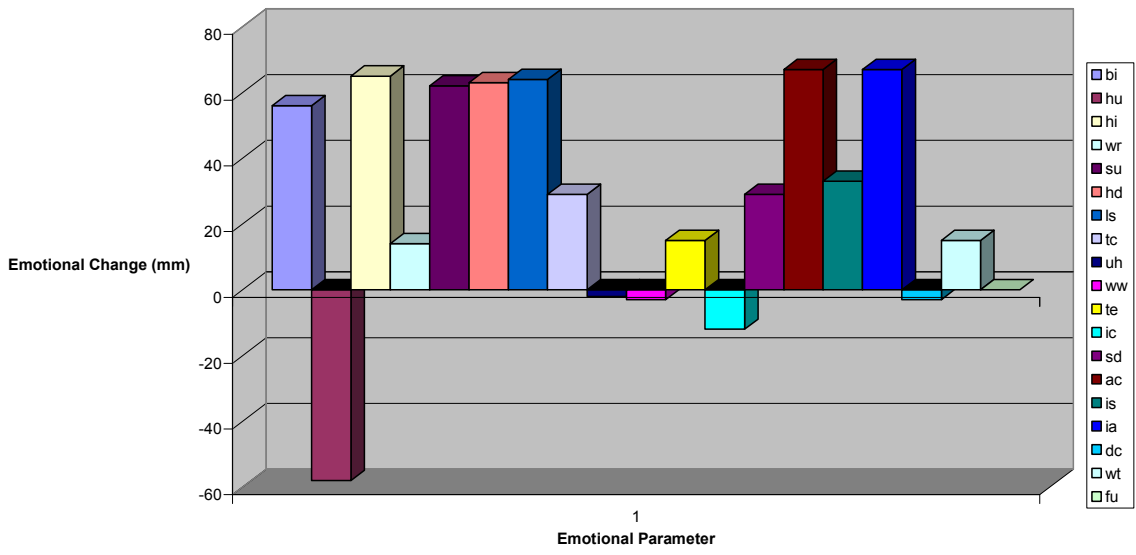
Participant 6 Tree Planting



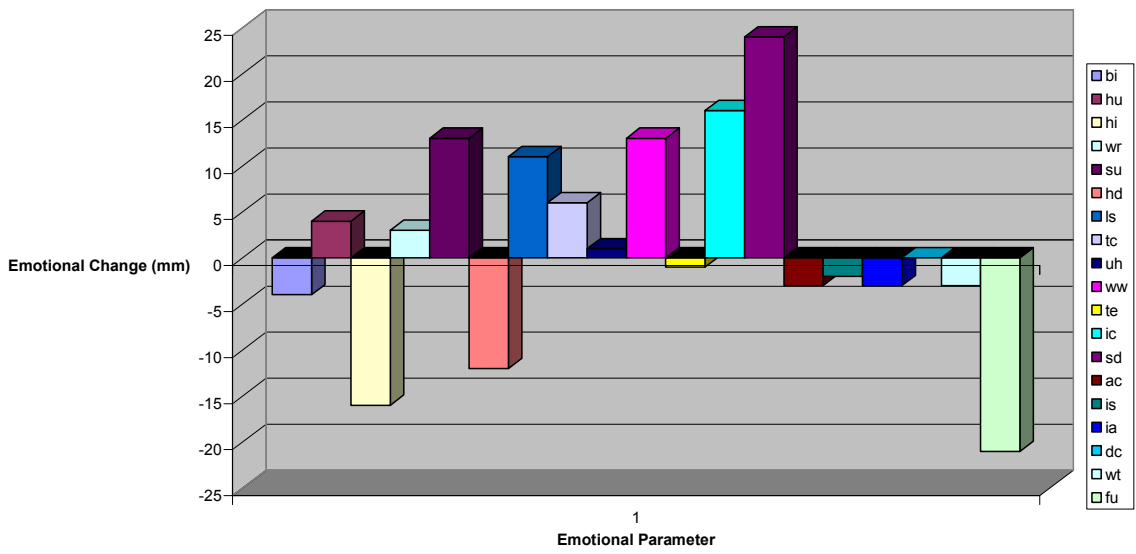
Participant 6 Bird Observation Walk



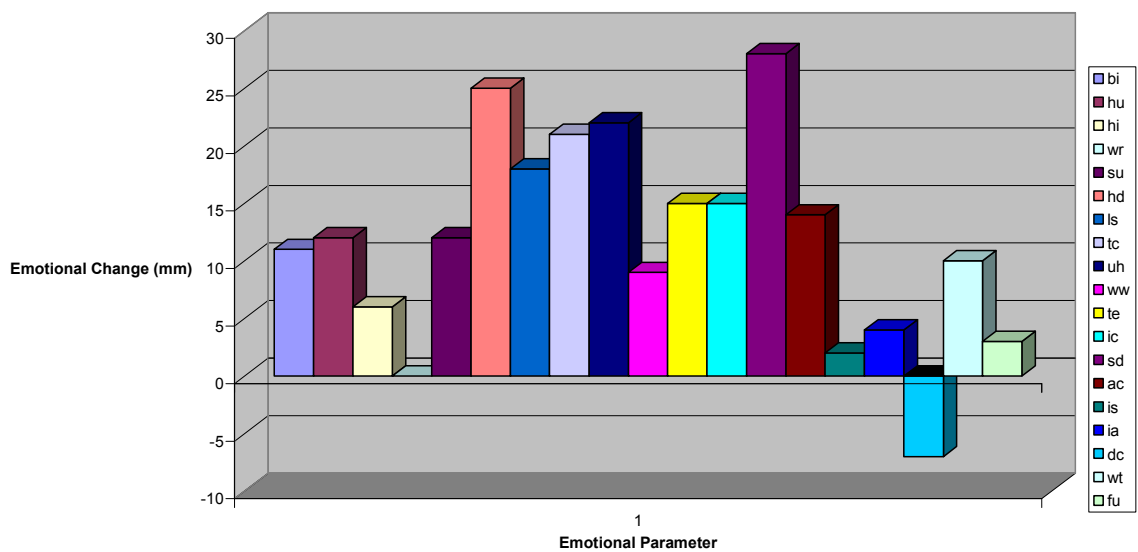
Participant 6 Visits, Walk, Focus Group



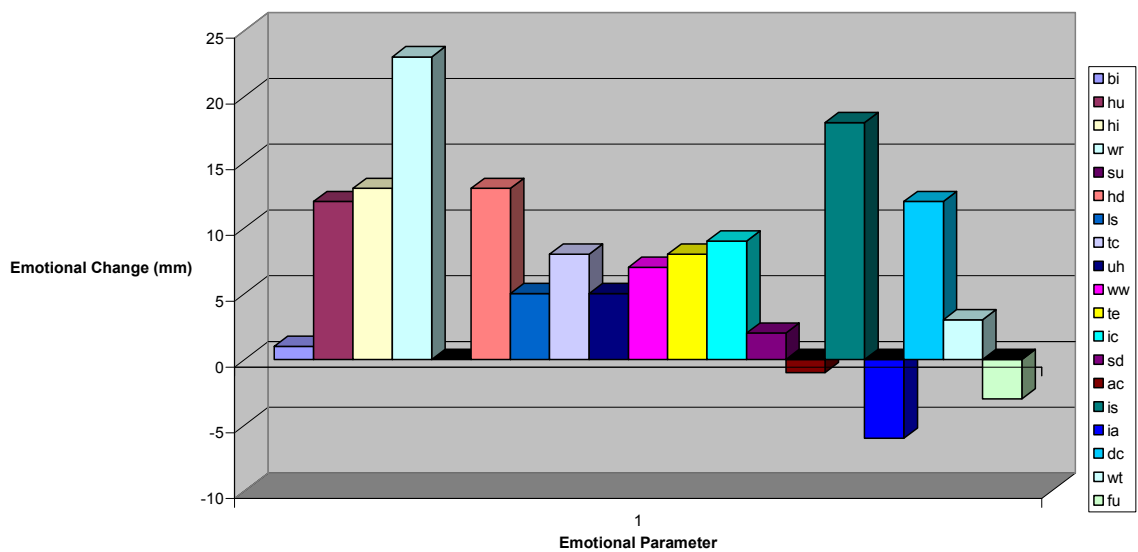
Participant 7 Plant Propagation



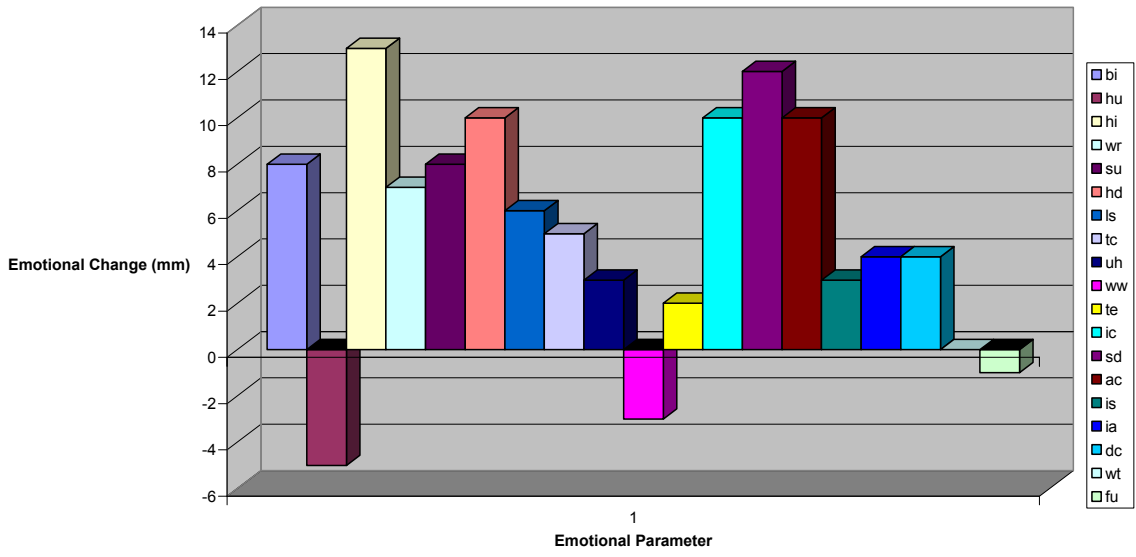
Participant 7 Nature Walk



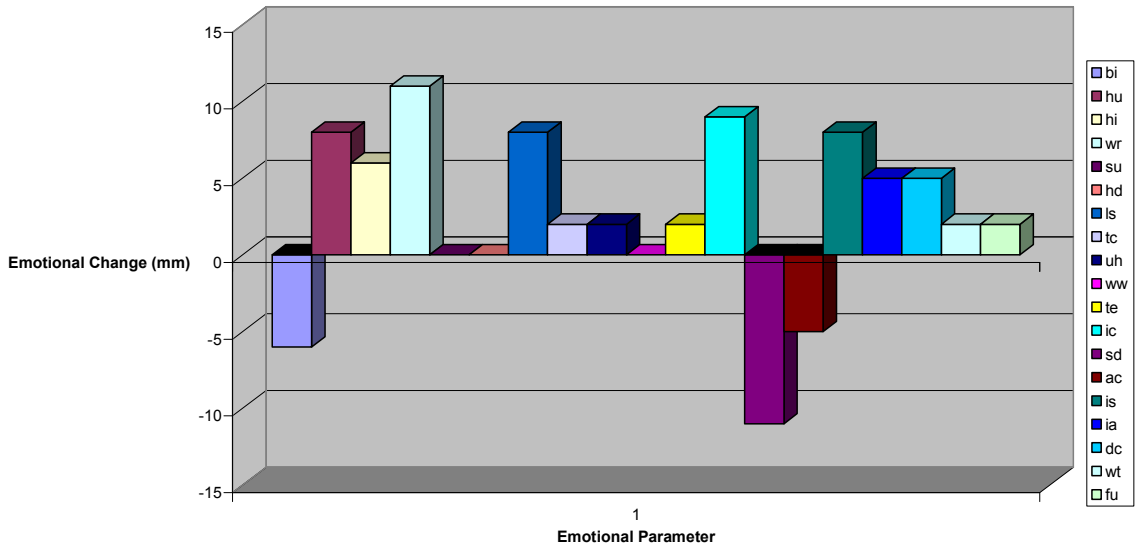
Participant 7 Beach Activity



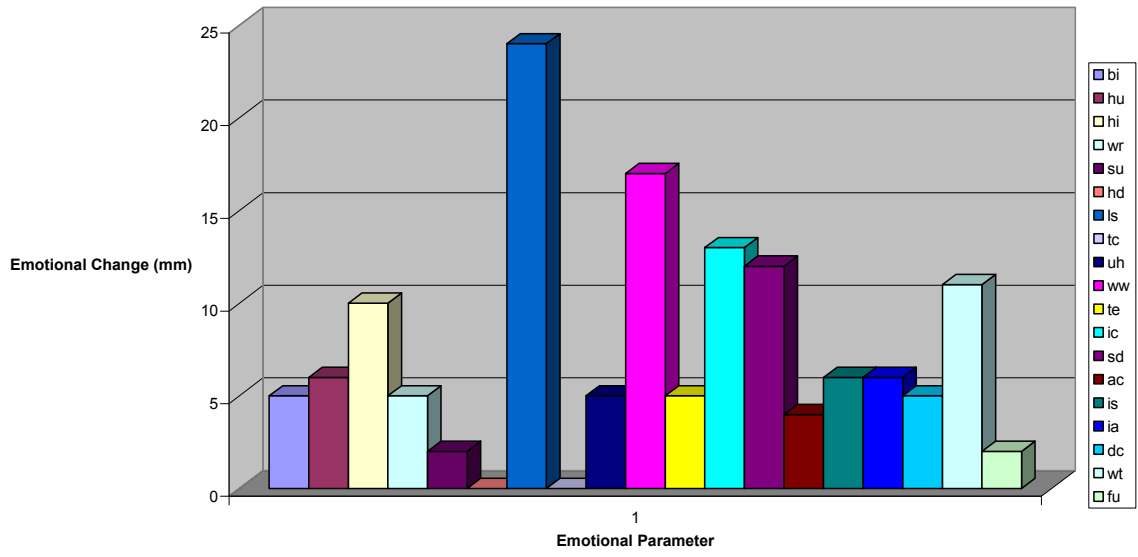
Participant 7 Tree Planting



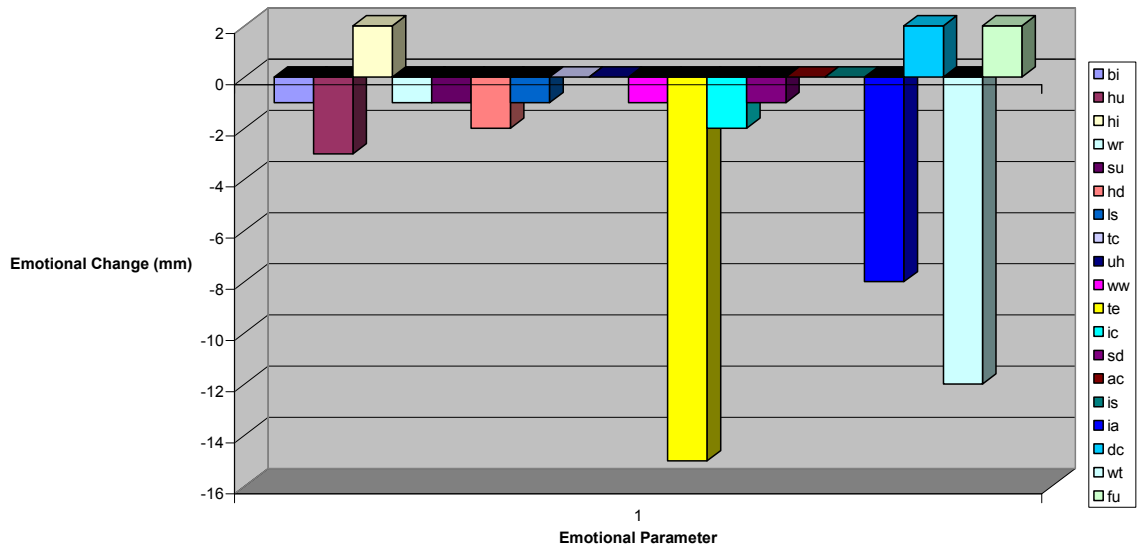
Participant 7 Bird Observation Walk



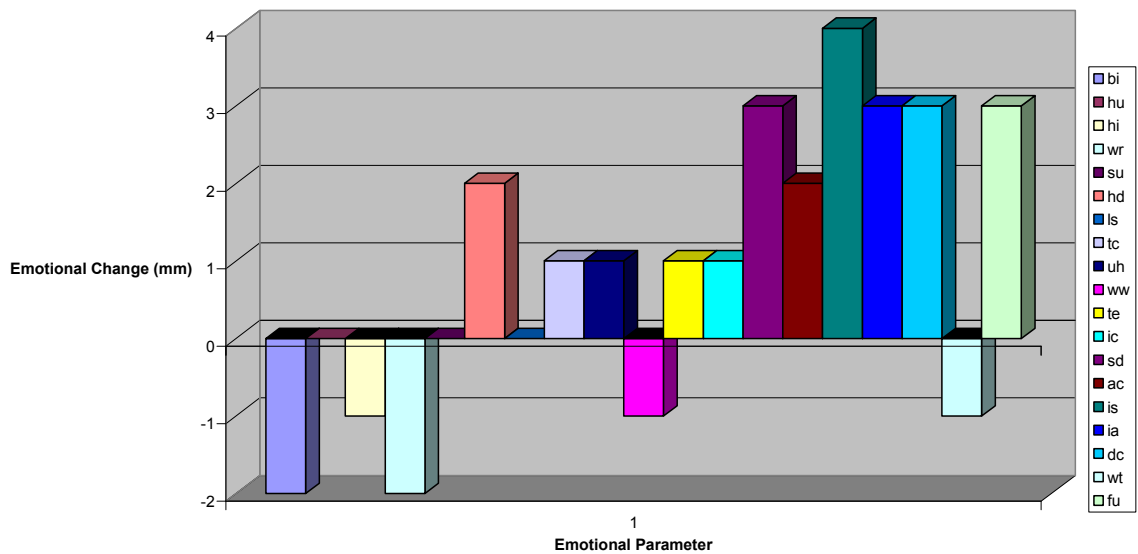
Participant 7 Visits, Walk, Focus Group



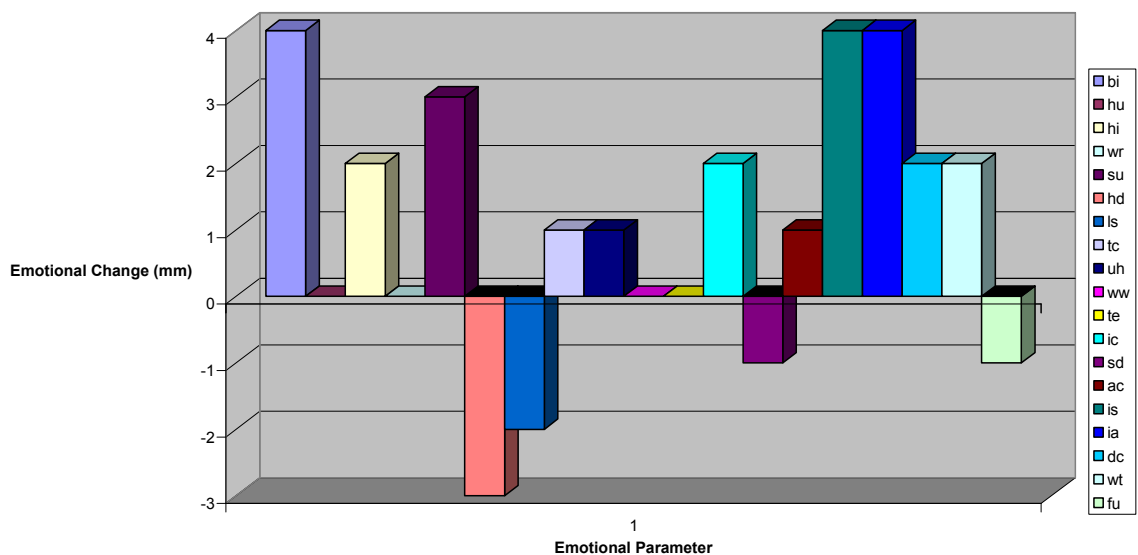
Participant 8 Nature Walk



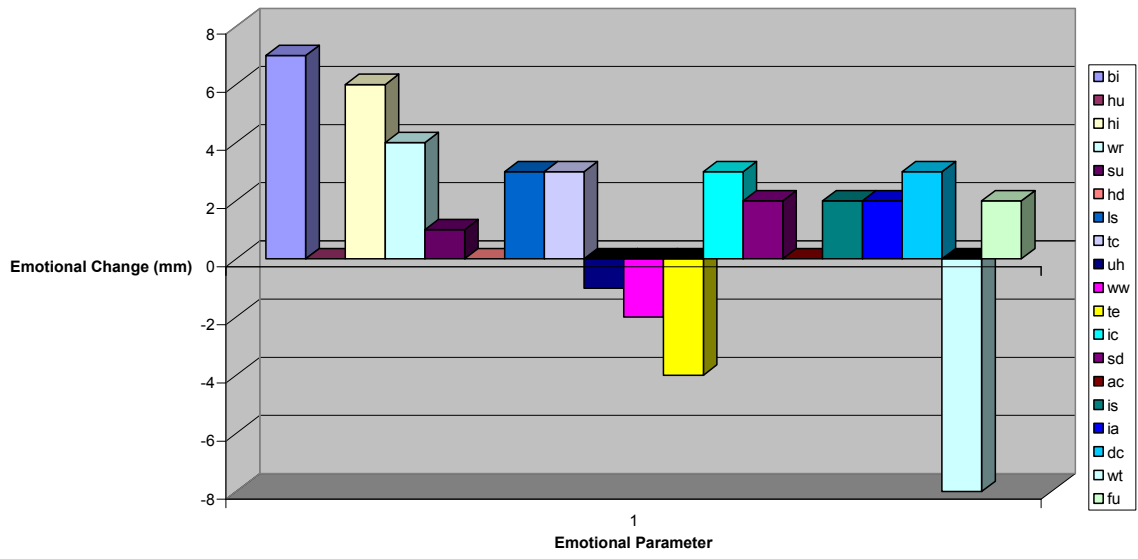
Participant 8 Beach Activity



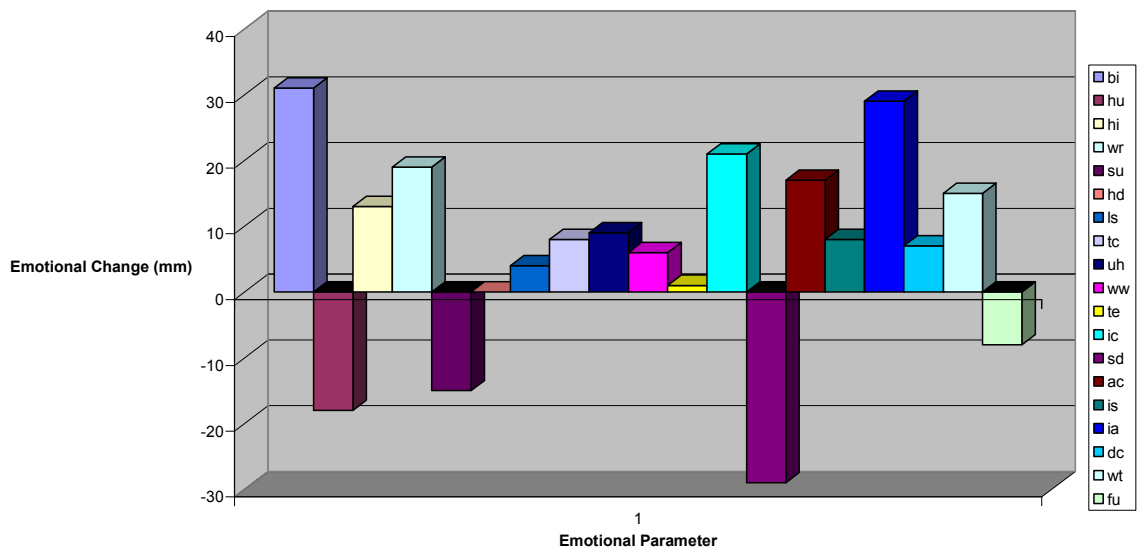
Participant 8 Bird Observation Walk



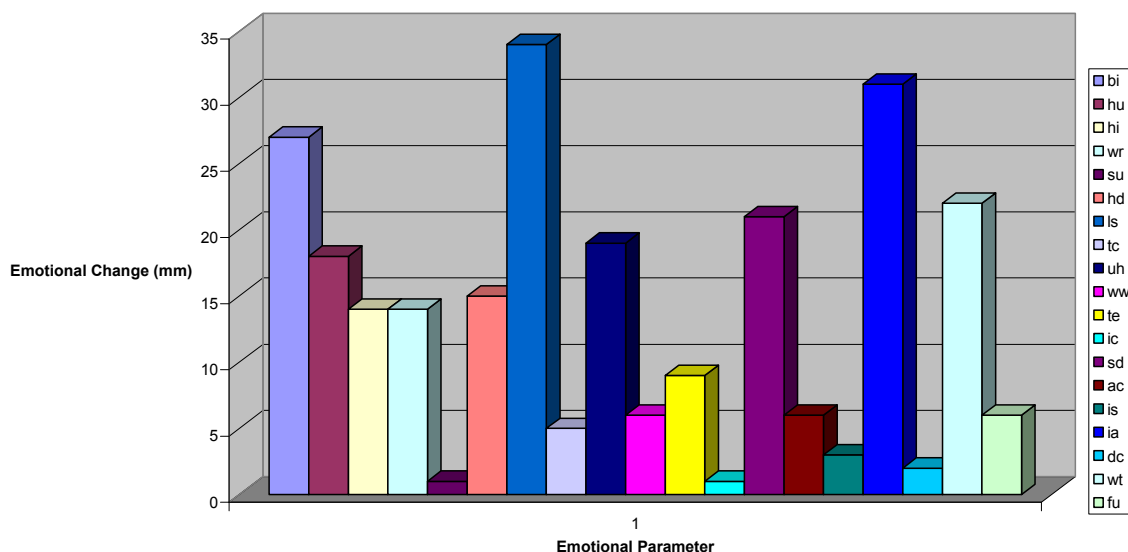
Participant 8 Visits, Walk, Focus Group



Participant 9 Nature Walk



Participant 10



In-depth Interviews

Participants 6, 7 and 8 participated in the in-depth interviews at the completion of the project. Participants reported impacts in the following key areas:

- developing skills, taking risks and confronting challenges;
- improving mental health, confidence and self worth;
- positive cognitive changes: stress and anxiety management;
- managing depression and depressed mood;
- building social capital;
- building ecological capital; and
- barriers.

Developing skills, taking risks and confronting challenges

Participants learned about conservation and ecological matters, such as identifying different plant and animal species and appreciating ecological relationships. For example, “bird watching was a new experience for me; I learned about different species” and “I learned about a variety of wild orchids in the Anglesea heathland” and “I know six or seven bird names now” and “I learned about plants and species on the nature walk. It was good to have knowledgeable people [ANGAIR volunteers]”.

“The bird watching was a new experience for me and something I always wanted to do. I now know that there is a white thrush, and I know what a tree creeper, golden whistler and a rufus whistler look like”.

Improved mental health, confidence and self-worth

Participants reported general mental health and well-being benefits from being involved in ‘Feel Blue, Touch Green’. They experienced enjoyment, happiness, fulfilment and a greater sense of wellbeing when “getting out and about”. “I felt at least nine out of 10”. “It was good to have a change from [the usual program by] getting out of the routine”. Participants reported to enjoy the contrast and variety of activities, “it was good to do something different”. Participants enjoyed being close to nature and different participants reported greater enjoyment and different benefits when engaged in different activities, including tree planting, propagation, the bird observation walk and the nature walk, “I

liked all activities especially bird watching” and “I’ve lived in the city all my life. It was great getting out in nature and the fresh air”. Participants also reported to enjoy their contact (visual, audible and touch) with birds and animals. Participants also reported to enjoy and appreciate travelling in a comfortable vehicle and the refreshments provided. Participants valued being able to contribute to their community and environment through volunteering in the conservation activities. “I want to do things, contribute and give”.

“But most of all I enjoyed that exhilarating swim in the surf. I am quite sure that by taking part in ‘Feel Blue, Touch Green’ I have experienced happiness that I otherwise would have missed out on. Thanks to everyone...”.

Positive cognitive changes: stress and anxiety management

Participants reported to experience positive cognitive changes. “Normally I am in a state of hopelessness, worried about unemployment. I struggle with, try and break through and challenge the thoughts. [During ‘Feel Blue, Touch Green’] my thoughts change. It’s a diversion from depression and boredom...”. Participants also reported that they “have things to focus on, things to look at and see” supporting them to overcome negative thought states.

Managing depression and depressed mood

Participants reported their involvement in ‘Feel Blue, Touch Green’ to be “uplifting” and “it makes me feel more positive”. In addition, participants reported that being involved “dissipates boredom, wasting away, listless and languishing”.

Building social capital

Although participants new each other prior to being involved in ‘Feel Blue, Touch Green’, they reported being involved provided them with the opportunity to “get to know each other better” and “it’s been good to be with each other”. Participants valued the input from the volunteers and researchers. “It was good to learn about Deakin [University] taking interest in people with depression. Depression is not a wound that can be shown’. Participants also viewed their participation in ‘Feel Blue, Touch Green’ as enabling them to overcome loneliness.

Building ecological capital: improvements in natural and urban environments

Participants reported a connection or affinity with the natural environment, “I love the sea, nature, inland, bushwalking, country...”. An affinity with the natural environment may have resulted in increased respect and appreciation for natural environments for participants. When asked about becoming more aware of environmental issues and resultant behaviours, one participant demonstrated improved pro-environmental attitude change and resultant action, “I don’t throw rubbish on the ground, just anywhere, like I use to”.

Barriers

Participants reported the following barriers to participating in nature-based or conservation activities:

- money
- transport
- lack of motivation and depression
- lethargy related to medications
- depression
- avoid social contact

- government benefits cut when doing volunteer work

A participant who lives in a lower socio-economic area of Geelong with little if any access to green space reported that 'Feel Blue, Touch Green' provided him with valued access to natural environments that he would otherwise not have access to due to economic and transportation reasons.

Improvements/suggestions/side effects

In addition to the reported impacts of 'Feel Blue, Touch Green', participants suggested improvements to the program. Participants reported that they would like more involvement in environmental education and recreational activities such as: visiting the Victorian Marine Science Consortium laboratory in Queenscliff (scientific boating trip), sailing, snorkelling, horse riding, archaeological and anthropological learning pursuits, and re-checking propagation and tree planting progress from the previous activities. Some participants reported that they would like to have seen a few more people involved in 'Feel Blue, Touch Green' while others felt that four or five participants would be ideal. They had suggestions for how 'Feel Blue, Touch Green' could be marketed: "We'll tell them [potential participants] how much fun they'll have... word of mouth... people need motivation, need to be informed". Participants reported that there was nothing they did not like about being involved in 'Feel Blue, Touch Green'. Participants reported that they did not experience any adverse effects from being involved and supported continuation of the program, "it makes me want to go again" and "I'd like to see in continue" and "I highly recommend it to others". The participants reported an ongoing interest in the conservation work, one participant stating "I will be going to the power station to check up on all the trees we planted sometime in the near future. I feel a good sense of well being for doing that".

5.0 DISCUSSION

One of the characteristics of depression is the lack of interest or ability to experience pleasure (Commonwealth Department of Health and Aged Care & Australian Institute of Health and Welfare 1999). Given that participants in the study experienced depression and/or anxiety, it is noteworthy that they were all able to experience positive emotional benefits from being engaged. The Emotional State Scale (ESS) and in-depth interviews indicated that participants' emotional state increased substantially during the period of involvement in the activities. They also indicated that participants were able to participate in 'Feel Blue, Touch Green' activities and gain benefits despite how they felt. That is, the level of depression or anxiety did not appear to limit participants' ability to engage in the activities. This suggests that other factors are important in determining the ability for people experiencing depression or anxiety to become engaged. An important factor identified in this study was the availability of social support in enabling activity engagement. The understanding and encouragement fostered a sense of trust and comfort that motivated and enabled participants to engage, even when they may have felt depressed or anxious. Involvement of the participants in the activities despite their mental state fostered important learning in that they could engage in activities when unwell and engagement supported their wellness.

The importance of developing and demonstrating skills, overcoming challenges and experiencing success in risk taking in nature based contexts complemented the opportunity to demonstrate communication and interaction skills with others and are important health-promoting capacities (WHO 1986). By participating in groups, volunteers have the opportunity for ongoing learning and skill development (Curtis 2000; Narushima 2005). These benefits were understood by the participants to also result in improved confidence and self-worth.

The cognitive benefits, which included stress-reduction, were attributed to actively engaging in nature-based contexts but may also be attributed to the social nature of the activities such as being a volunteer. According to Oman, Thoresen and McMahon (1999), at an individual health level, “the altruistic features of volunteerism might reduce destructive levels of self-absorption”. Iwasaki et al. (2006, p 174) cite a female with a disability as saying “Volunteer[ing] is a stress reliever. It’s sort of getting out of myself. Doing something for somebody else.”

The in-depth interviews revealed that participants found the project and their involvement in nature-based activities to be beneficial for their health, development and wellbeing. Where the focus of the scales administered had the potential to indicate the outcomes of ‘Feel Blue, Touch Green’ in predetermined areas such as participants’ perceived health, wellbeing and emotional state, the unstructured interviews captured the participants’ perspectives and revealed unexpected outcomes that involved benefits to the participant as well as to their community and natural environments. The findings from the informal evaluation strategies and the administered scales were consistent with the themes that developed from the in-depth interviews and no discrepancies were noted in the data triangulation process.

The changes in health status determined by the health scales cannot be attributed fully to involvement in ‘Feel Blue, Touch Green’ as other factors influencing health were not controlled for over the period of engagement in the project. Greater participant numbers are needed to demonstrate a significant relationship between health and involvement in the project using these measures. The results of this small pilot study are not able to be generalised but do indicate many important benefits of the ‘Feel Blue, Touch Green’ project. Larger studies are required to demonstrate statistical significance but this exploratory study generated important understandings through in-depth involvement with participants of the impacts of involving people with depression, anxiety and/or social isolation in a conservation group.

The results of this study have implications for people with depression and anxiety, as well the communities and ecosystems of where they live. Volunteering in a conservation group and being involved in nature-based activities appears to improve health and wellbeing, mental, emotional and physical, for people experiencing anxiety and/or depression. These benefits appear to be associated with skill development, improving social networks, and developing an affinity with the natural environment. The results suggest that nature and social-based conservation activities provide a legitimate way to improve mental health. The findings also suggest that people experiencing depression, anxiety and/or social isolation are able to contribute positively to their community and ecological context.

Implications for the wider community include the potential health and wellbeing benefits for all people who engage in conservation groups, and in particular, improved emotional and mental health. The study highlights community benefits in actively engaging people from diverse backgrounds, for example, people experiencing depression, anxiety and/or social isolation, to improve social capital. It would appear that the successful integration of people from diverse backgrounds into community groups depends, in part, on providing education and support to community groups that would foster involvement of people from diverse backgrounds. With many rural communities experiencing a decline in social capital, it is evident that community organisations need to take an active role in recruiting volunteers from diverse backgrounds into volunteer and other roles of community significance.

‘Feel Blue, Touch Green’ and related community initiatives that involve conservation and nature-based activities have direct benefits for the ecosystem targeted but also have subsequent benefits for ecosystems in general through the development of pro-

environmental attitudes and associated actions. With declining ecological health, communities need to strengthen conservation efforts and involve all sectors of the community in this effort. It is evident from this other studies that creating and protecting natural habitats is crucial for human and ecological health and survival.

Through their volunteering, individuals may gain a sense of achievement, reap psychosocial benefits resulting from increased social interaction, and bring to fruition their desires and hopes for a better world (Curtis 2000). The 'Feel Blue, Touch Green' findings support this notion and demonstrates the Ottawa Charter for Health Promotion (WHO 1986) in action with *supportive environments created* that fostered the involvement of people experiencing mental health challenges in ways that enabled them to contribute to social and ecological capital. The participants' engagement *strengthened their community*. Participants *demonstrated and developed a range of personal skills* to better manage themselves their environments (Curtis 2000; Narushima 2005; WHO 1986). 'Feel Blue, Touch Green' demonstrates an example of how *health services* could be *reorientated* and supported through *policies* that connect mental health services, conservation groups and other community organisations to promote individual, community and ecological health (Burls & Caan 2005; WHO 1986).

6.0 CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The outcomes of this project indicate that there are many potential beneficiaries of projects of this kind:

- local ecosystems;
- conservation and land management groups (as a group and as individuals);
- health service providers (and, through them, government funders); and
- participants (in this case, people experiencing depression, anxiety and/or social isolation).

Involving community members (in this case people who experience depression, anxiety and/or social isolation) as volunteers in conservation and land management groups provides benefit for local ecosystems in several ways. In addition to contributing to the work of the groups and therefore to the sustaining of the ecosystem, this study indicates that engagement in such activities heightens the environmental awareness of the individuals, which has spin off effects in pro-environmental attitudes and behaviours.

For existing members of conservation and land management groups, the benefits are two-fold:

- programs such as 'Feel Blue, Touch Green' provide additional personnel (at least in the short term and, potentially, on a long term basis) to tackle the never ending task of conservation and land management (however, this may be a doubled edged sword if the newcomers require an inordinate amount of support and/or supervision);
- new relationships/friendships may be formed, or at the very least existing members may feel that they are doing something worthwhile in engaging in their activities people who have previously had little opportunity for participating in such tasks.

This study has indicated that, for people experiencing depression, anxiety and/or social isolation, the experience of participating in a conservation group is associated with mental and physical health benefits in addition to improved general wellbeing. While more extensive studies are required to explore the nature and extent of this relationship, it seems logical that such improvements in health and wellbeing are likely to be associated with improved capacity to engage with life and the possibility of a reduction in the need for medical services. If this is true, then there may be potential for reduction in

demand for currently over-stretched health care services. At the very least, the results of this study indicate that engagement in activities such as those provided through 'Feel Blue, Touch Green' is a beneficial adjunct to other health care services.

However, there are a number of barriers to the full realisation of the potential benefits of programs such as 'Feel Blue, Touch Green', and other issues relating to its ongoing sustainability.

6.1 Recruitment

Recruitment for the study highlighted a 'Catch 22' situation: a self-selection method of recruitment is inappropriate for people who are experiencing depression, anxiety and/or social isolation. The very nature of their condition means that it is difficult for people experiencing these conditions to take the initiative to volunteer to participate. Those who did join the program showed exceptional courage and motivation, beyond what is reasonable to expect.

Although commitment to the project was obtained via the Primary Care Co-ordinator of Barwon Health, it became clear that for recruitment to be effective individual case managers, who can refer clients to the program, need to be co-opted as 'partners'. Over the course of this pilot project, mounting positive publicity about 'Feel Blue, Touch Green' has resulted in some initial unproductive contacts becoming more positive. The initial reluctance on behalf of organisations may have reflected uncertainty about the benefits of the program, concerns about engaging people in a program which may not be ongoing, the busy-ness of health service providers, or concerns that the form filling required of participants in a research project might discourage participation. Another inhibitor of participation identified mid-way through the project was that all the originally planned activities were scheduled for mornings, whereas for many people within the target group afternoon or evening activities are more appropriate and/or more attractive.

There was a high rate of retention of participants once they joined the project, but the capacity for ANGAIR to retain the active involvement of participants after the end of the pilot project is questionable, since many of them do not have private transport. Consideration needs to be given to the location of ongoing programs of this nature to address barriers associated with transport difficulties.

Another issue raised in the discussions of the Reference Group was the concern expressed by some participants that successful participation in a supported program such as this might be interpreted by the Federal Department of Human Services (Centrelink) as evidence of them no longer requiring Disability Support Pensions. To avoid the risk of potential participants being discouraged from participation because of fear that they may lose their pension, acknowledgment needs to be obtained from Centrelink that the program is therapeutic, and that successful participation is not necessarily indicative of the capacity of participants to undertake paid work.

6.2 Program sustainability

Despite the apparent success of 'Feel Blue, Touch Green', the pilot project concluded in October 2006 and plans for any continuation of the program, either at Anglesea and/or in other areas, are still being discussed. A number of factors have been identified as key issues in the ongoing sustainability of the program:

- the ongoing commitment of a conservation and/or land management group which is friendly, progressive, active and flexible, to organise and co-ordinate activities for participants;

- links between 'Feel Blue, Touch Green' and existing programs provided for the target group (for example, this program could become part of the regular activities of the Geelong Mood Support Group and/or the Geelong Clinic);
- inclusion of the program in strategic planning processes both of local government and of the health sector (for example, within the Municipal Public Health Plans which local governments are required to prepare every three years, and/or within the Health Promotion Program Plans of agencies such as Barwon Health).

By embedding the program in health service planning processes, familiarity with the program will grow within the health sector, which is likely to lead to a flow through of potential participants. Moreover, potential exists for cross-Council co-operation in supporting and promoting programs such as 'Feel Blue, Touch Green' through the G21 agreement involving the City of Greater Geelong, Surf Coast Shire, Golden Plains Shire and Queenscliff Shire.

Ultimately, the sustainability of the program will depend on its effectiveness, and it was agreed by the Reference Group that ongoing evaluation of the impacts of the program on participants would be necessary. However, the view was expressed that any ongoing program of evaluation would need to be done carefully and non-intrusively, to avoid discouraging participation.

The role played by the Deakin University Research Fellow, who supported participants throughout the program, was important in sustaining participants' interest and engagement in this pilot project. Acknowledging this, the Reference Group supported the need to have, in programs such as this, the involvement of a key person with an understanding of mental health issues but whose core business is community development (rather than their core business being the provision of mental health services) to act as a program co-ordinator who liaises between all project partners and participants.

Other critical elements needed for long term success in programs such as this include:

- the availability of long term funding (eg. to address issues such as transport, as well as to fund the project officer);
- appointment of an appropriate project officer (see note above);
- provision of equipment (such as hats, sunscreen, appropriate footwear, water bottles);
- availability and commitment of time to conduct the on ground activities of the project by park rangers (eg. from Parks Victoria or local government).

The findings of this study add to the evidence of the benefits of volunteering, and support the promotion of volunteering, and in particular, volunteering in conservation and land management organisations for improved health and wellbeing of the individuals involved, communities and ecosystems. The research also highlights the relationships between human, social, rural and ecological health and suggests that resources and policies should encourage the collaboration of community organisations such as health and environmental agencies to promote health, wellbeing and sustainability for individuals, communities and the ecosystems in which they live.

7.0 ACKNOWLEDGEMENTS

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9.0 APPENDICES

Appendix A - 'Feel Blue – Touch Green' Key Informant Interview Schedule

NAME:

DATE:

ORGANIZATION:

1. How well advertised are the parks in your local area?
2. To what extent are you aware of the benefits of contact with nature in general terms?
3. What do you think the benefits are of promoting the use of parks to people who experience mental health issues, marginalization or social exclusion?
4. What suggestions do you have for promoting the use of local parks to people with mental health issues?
5. What do you consider to be the main external barriers to people with mental health issues accessing & utilizing local parks?
6. What suggestions do you have for overcoming those barriers?
7. What personal factors/issues (i.e., internal barriers) do you think might discourage people with mental health issues from using local parks?
8. What suggestion do you have for overcoming those barriers?
9. What specific factors need to be considered in designing nature-based activities/programs for people with mental health issues?
10. Additional comments

Feel Blue Touch Green
is a project YOU can be part of.

Feel Blue Touch Green focuses on how people who suffer from stress, anxiety, depression or social isolation in various degrees can link into a nature conservation group and how this involvement may help them to gain improved long-term health and wellbeing.

The project will address some of the barriers that may prevent people from getting out into our beautiful surf-coast bushland.

Project involvement is for 1-2 hours a week for 8 weeks

Tailored to suit your availability

No cost to participate

Transport available

Childcare available

For more information, please contact:
Matt Ebdon
Deakin University, School of Health and Social Development.

Tel: (03) 5227 8367

Project Invitation

You are invited to be part of the Feel Blue Touch Green Project.

This is an innovative project which looks at how people with stress, anxiety, depression or social isolation issues may benefit from being involved with activities in the natural environment.

Research has shown that contact with nature and interaction with other people are beneficial for health and wellbeing.

The People & Parks foundation

Feel Blue Touch Green will gather information from you using survey questions about lifestyle and things that may prevent you from going out into local parks and bushland.

You will then be invited to join a number of planned activities in the Anglesea area with ANGAIR, a nature conservation group. This will occur with the support of the project partners.

You will become a FREE member of ANGAIR, so if you find you really enjoy this activity you can continue your involvement.

At the end of the project we will be interviewing you again to look at how you benefited from being involved with the environment.

To be part of the project please send your expression of interest to:

Attn: Matt Edden
Feel Blue Touch Green
Deakin University
Geelong Waterfront Campus
Gheringhap Street
Geelong, Victoria 3217
or Fax: (03) 5227 8371

Project Partners:

- The People & Parks Foundation
- Deakin University
- Barwon Health
- Parks Victoria
- Alcoa
- Surf Coast Shire
- ANGAIR Inc. (Anglesea & Alveys Inlet Society for the Protection of Flora & Fauna)

Expression of interest to join the *Feel Blue Touch Green* project.

Personal Information

Name: _____

Address: _____

Phone: _____
Date of Birth: _____
Email: _____

Please send this section to the specified postal address or by fax

We look forward to receiving your expression of interest.

Appendix C - Model for Future 'Feel Blue, Touch Green' Interventions

Step 1: Establish partnership

Before any plans can be made to implement a project of this nature, strong partnership arrangements need to be established. Partnerships need to be forged between land management organisations (both paid, such as Parks Victoria and/or local municipalities, and voluntary, such as ANGAIR or other 'friends' groups), health and/or community support service providers, and research institutions. The ongoing commitment of a conservation and/or land management group which is friendly, progressive, active and flexible, to organise and co-ordinate activities for participants, is an essential element of this type of program. The formation of links between any proposed 'Feel Blue, Touch Green' program and existing programs provided for the target group (for example, in the case of the pilot project the programs of the Geelong Mood Support Group and/or the Geelong Clinic) will ensure that organisations likely to refer participants to the project are partners in the project and therefore have a high level of commitment to it. As well, for projects such as this to succeed, formal organisational commitment is needed, as well as commitment by the individuals who will be required to contribute to the project and by their line managers. A project Steering Committee should be formed, comprising representatives of all the partner organisations, to manage the decision-making in relation to the project.

Step 2: Finalise the project plan

A project Reference Group should be established to guide the finalisation of the project plan and the implementation and evaluation of the project. Reference Group members should be drawn from a range of organisations which have an interest in the project and its outcomes, and should not be restricted to the partner organisations. For example, representatives should include people from municipal public health planning, as well as land use planning and open space management. Also, if health and community services planning people are included, the project/program could become embedded within their planning processes, with the effect that familiarity with the program will grow within the health and community services sector, which is likely to lead to a regular flow of potential participants. The Reference Group should meet with the project Steering Committee to discuss the proposed project and to finalise the project plan.

Step 3: Obtain funding support

The availability of long term funding is essential to cover the costs of project establishment, project implementation on a long term basis (for example to address issues such as transport, as well as to fund the project officer) and project evaluation. Any agreement concerning the funding of interventions needs to take account of both cash and in-kind contributions by the various partner organisations and to ensure that those contributions are appropriately recognised. Once funding support has been obtained, a project officer (someone with an understanding of mental health issues but whose core business is community development) should be appointed to act as a program co-ordinator and to liaise with project partners and participants.

Step 4: Obtain ethics approval

Before a “Feel Blue, Touch Green’ type of project can be set up, ethics approval will need to be obtained through the Department of Human Services (or other relevant Department if the project is being undertaken outside Victoria) and/or any research institution involved in the project. The forms for DHS ethics applications can be found at the following web address: <http://www.health.vic.gov.au/ethics/index.htm>. The effort required to overcome any difficulties in obtaining ethics approval for recruitment via referral from practitioners is well worthwhile, as direct recruitment of a target population such as people who experience depression, anxiety and/or social isolation can otherwise be extremely problematic.

Step 5: Undertake recruitment of participants

In addition to recruitment via partner organisations, a simple information brochure outlining the nature of the project and the evidence for efficacy of such projects should be hand delivered to health and community service providers in the area in which the project is to take place. Wherever possible, the project officer should speak directly to the health and community service providers about the project to ensure clear explanation of the project and to answer any questions. At the same time, a publicity campaign including local media articles and local radio discussions should occur to reinforce the other recruitment strategies. Publicity should note that participants who join the program through whichever recruitment strategy will be given a ‘welcome pack’ including items such as a hat, sunscreen, water bottle, book on native plants and/or native fauna, as well as receiving free membership of the relevant land management group.

Step 6: Implementation

Having established partnerships, formed a Steering Committee and a Reference Group, planned the program, obtained funding, appointed a project officer, obtained ethics approval, gained support from service providers and recruited participants, it is now time to implement the program. Care should be taken in the planning and implementation of the program to avoid unrealistic assumptions about participants and their willingness or capacity to initiate and/or sustain engagement in such activities. In the pilot project, activities were initially all planned for mornings, whereas it later became clear that for many people afternoon activities are preferred. Therefore, the program needs to accommodate a range of different needs and capacities. Existing, scheduled activities by ‘friends’ groups should be utilised as much as possible for on ground activities. This will increase the social interaction between participants and friends group volunteers and also assists participants who may wish to continue with volunteering in the longer term when the specific ‘Feel Blue Touch Green’ program is complete.

Step 7: Evaluation

Ultimately, the sustainability of any program will depend on its effectiveness, and it is clear that evaluation of the impacts on participants and on the organisations involved of any program of this nature will be necessary. However, any ongoing program of evaluation will need to be done carefully and non-intrusively, to avoid discouraging participation due to participants’ concerns for their privacy.

29th August 2006

Mr Matt Ebdon
Feel Blue Touch Green
Deakin University
Geelong Waterfront Campus
Gheringhap Street
GEEELONG VIC 3217

Dear Matt,

Re: Feel Blue Touch Green

I thought I would write to thank you for giving me the opportunity to participate in this project. Whilst I realise my time spent in the program was probably not long enough for you to use the data I thought I would give you some feedback on my experience.

The concept was great and whilst I knew very little of my surroundings, and at times I felt really out of place with those around me because they appeared very knowledgeable, I actually found that the time went by very quickly once you were given a task. You didn't seem to have time to worry about anything else that may have been happening in your life and at the end of each session I felt more relaxed, had acquired a little more knowledge (although it is still sadly lacking) and felt positive that things are achievable.

The only reason I didn't continue to participate was because of not being able to drive for six months due to my unexpected seizure in June, and another suspected seizure whilst in Adelaide in July, and the fact that I was also going on holiday with D , my husband, who had some time off for long service leave. I appreciated your offer of trying to arrange transport for me but this only highlighted the fact even more that I was more reliant on other people for something that I have been doing for so long.

D and I actually participated in a walk at Airey's Inlet and it was a really lovely day and I found that the knowledge of the group was outstanding. I would never have noticed half of the things that they showed us had we been on our own. D found it interesting as he is a Lab Technician at school and he is often dealing with plants and their life cycles.

A benefit that has come out of this program for me is that I am now looking into volunteering at The Geelong Botanic Gardens and I have discovered a love of taking photos with a digital camera – trying to capture some real nature shots. I have enclosed

some photos for you to keep that were taken on our walk. I have reluctantly sent the one of me posing just to prove I did have a good time, the others are either macro or scenic shots. These photos I have had enlarged (except the one of me) and framed them and they look great. I hope that I keep this interest up because I am now taking more notice of my surroundings and looking for that special shot.

Another benefit was that I spent a few days in the Grampians just recently and found that I was actually looking where I was walking and could identify some of the vegetation. D was suitably impressed that I could discuss with him some of the plant life and we took some really lovely photos of the new life that is establishing itself after the devastation of the bushfires in January. I hope to enlarge some of these to add to my collection.

While none of this will assist your research program I just felt I should let you know some benefit has been gained and I thank you for opening my eyes to another aspect in my life that I may wish to explore.

I hope the project was successful for you and your group.

Best wishes

A handwritten signature in black ink, appearing to be 'D', written in a cursive style.

Nature nurtures mental health

REBECCA TUCKER

NATURAL therapy is about to take on a new meaning as researchers attempt to improve mental health in the Geelong and Surf Coast communities.

Deakin University researcher Matthew Ebdon is hoping to discover positive changes in the minds of people suffering stress, anxiety disorders, depression or social isolation after long-term stints in the great outdoors.

Participants in the "Feel Blue, Touch Green" project will share in environmental activities from plant propagation, habitat rehabilitation, and bushwalking to watching and counting wildlife, under the guidance of community conservation group ANGAIR in conjunction with Parks Victoria and Alcoa Anglesea.

"There are many people in our community who experience mental health challenges such as depression, stress, anxiety and isolation that anecdotal evidence suggests would benefit from being involved in community activities that bring people into contact with nature," Mr Ebdon said.

"It appears that people need contact with natural environments and other people for stimulation, relaxation, self-esteem, purpose and enjoyment."

Mr Ebdon said the research was an important step to determine the link between mental health, doing things with others and having contact with nature.

Participants are required for eight to 10 hours across a two or three month period, but will also be offered a free 12 month membership to ANGAIR.

The only prerequisites for participants is a desire to improve their mental health and have sturdy footwear, sunscreen, hat and water.

For more information contact Matt Ebdon at Deakin University on 5227 8367.

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