

Psychology and the Natural Environment

A Position Statement prepared for The Australian Psychological Society

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Preface

This statement addresses the ongoing commitment of Australian psychologists to achieve a more adequate and useful understanding of the reciprocal impacts of people and the natural environment, and strongly advocates for a more substantive involvement by psychologists in addressing current and envisioned threats to the sustainability of the natural environment and its ecosystems, in Australia, and globally. Environmental degradation is in large part caused by human behaviours and directly affects human health and well being. Because of this psychologists have an integral and indispensable role to play in analysing and addressing linkages between people and environmental problems and finding achievable and effective solutions (e.g., Oskamp, 2000a,b; Stern, 2000a,b; Winter, 2000).

Australia is faced with many environmental conservation, restoration, and management issues. *National* environmental threats which are particularly consequential and daunting include water scarcity and quality, salination, soil loss, the impacts of extractive industries such as logging and mining, land clearing, habitat loss, biodiversity loss, and natural disasters. *Global* environmental changes, shortages, and threats which are directly impacting on the Australian natural environment include climate change and its consequences; population growth and pressures; industrial and agricultural development; consumption patterns and processes; air, land, and water pollution; imminent exhaustion of fisheries stocks; deforestation; dramatically increasing global 'development' needs; diminishing fossil fuel reserves; and ecosystem disturbance and damage generally.

There is no doubt that these national environmental threats are very real and a cause of considerable scientific and public concern, and that they in turn reflect global environmental pressures and impacts (e.g., Kennedy, 2006; Millennium Ecosystem Assessment, 2003; Union of Concerned Scientists, 1992, 1997; World Resources Institute, 2002; World Wildlife Fund, 2006; World Commission on Environment and Development, 1987). Psychologists working in the environmental sustainability domain provide a sobering catalogue of these threats and links to psychological factors. Environmental problems, degradation, and global warming have also been viewed as very pressing social issues and societal concerns, as well as *environmental issues* (e.g., McKenzie-Mohr & Oskamp, 1995; Oskamp, 2000a, b; Oskamp & Schultz, 2006; Schmuck & Vlek, 2003; Zelezny & Schultz, 2000; Vlek, 2000; Vlek & Steg, 2007; Winter & Koger, 2004). They constitute important and indeed urgent areas of needed multidisciplinary collaborative work across the natural and social sciences.

The natural environment is a defining and formative part of the Australian character and lifestyle; it is integral to the construction, representation, and experience of 'place', and to perceived environmental quality and quality of life. Notwithstanding the urban and suburban character and context of most Australian residential communities, these environments encompass and/or are adjacent to a large spectrum of natural environments which are an important part of people's everyday lives and connection with the natural world. Australia is blessed with 15 World Heritage Areas listed for their outstanding natural attributes and beauty, and myriad national and state parks and other protected areas and natural environment-based amenities. These natural areas provide many benefits for adjacent human communities, and are integral to the well-being and sustainability of the larger Australian natural environment and its human communities (e.g., Maller et al., 2002). The effective management and conservation of natural environments and ecosystems in Australia requires an appropriate knowledge base and applied expertise for conserving natural environments, for fostering environmentally sustainable lifestyles and behaviours, and for managing and mitigating adverse human impacts *on* and *of* the natural environment (Reser & Bentrupperbäumer, 2001).

Psychology has made a substantial investment in documenting the multiple benefits of natural environments and settings to individual and community well being and environmental quality (e.g., Hartig & Staats, 2003; Kaplan, 1995; Ulrich, 1993; Uzzell & Moser, 2006). Psychology has also been a lead discipline in addressing the nature, quality, and importance of human-natural environment transactions, and those mediating individual and system level factors which contribute to natural environment degradation and destruction (e.g., Clayton & Brook, 2005; Gifford, 2000; Oskamp, 2000a,b). Individual level psychological factors include behaviours, values, knowledge levels, attitudes,

motivations, and decision-making. System level psychological and social factors include behaviour contexts, incentives, norms, barriers, socio-economic processes, consumption patterns, environmental problem and risk constructions and media representations, corporate decision making, and environmental monitoring and reporting measures, compliance mechanisms, and legislation.

Important strategic applications of psychological theory and research to environmental problems tend to be in areas of problem diagnosis, policy decision making, practical intervention, and effective evaluation (e.g., Schmuck & Vlek, 2003). Many psychologists work for or act as consultants to environmental management agencies, planning authorities, and government bodies, and advise on psychological and social considerations and issues. These would typically include the measurement and assessment of community attitudes, values and concerns, the relative effectiveness of differing communication and behaviour change strategies, 'the people side' of natural resource management, and the planning and design of sustainable human settings and natural environment based amenities and 'services'. (e.g., Dinsdale & Fenton, 2006; Gobster & Hull, 2000; Reser & Bentrupperbäumer, 2001, 2005; Saunders, 2003; Syme et al., 2002; Vining & Ebreo, 2002).

Psychology has a special responsibility to be proactively involved in fostering more ecologically sensitive and sustainable behaviours and lifestyles, as psychology is the principal discipline which addresses the more immediate determinants and social contexts of environmentally relevant decisions, involvements, and behaviours, and the nature of human appraisals of and responses to risk, threatened resources, environmental degradation, and related psychosocial impacts. Indeed most public statements about the nature and magnitude of environmental problems implicate human behaviour as the principal causal factor, "Since people are causing global warming, they also have it in their power to prevent it from getting worse" (Union of Concerned Scientists, 2006). There is also a broad consensus among psychologists that human motivations and behaviours constitute core causal factors with respect to environmental problems (e.g., Gardner & Stern, 2002; Geller, 2002; Oskamp & Schultz, 2006; Schmuck & Schultz, 2002; Winter & Koger, 2004; Uzzell 2000; Vlek, 2000).

There are many areas of application for psychology's expertise with respect to people-natural environment interconnections, with these extending beyond more effective conservation communications and interventions, green corporate practice, or being more ecologically minded as private individuals. Research on the restorative benefits of natural environments and settings, for example, has led to a transformation in how public spaces, institutional settings, and residential and work environments are planned and designed (e.g., Carr et al., 1992; Hartig & Staats, 2003; Kaplan, Kaplan & Ryan, 1998; Maller et al., 2006). Related research has focused on how environmental quality, quality of life, and 'healthy environments' are best conceptualised, achieved, and monitored, e.g., Demick & Wapner, 1990; Uzzell & Moser, 2006). These areas of psychological research are linked, in turn, to architectural design and planning approaches, and counselling and therapeutic practices premised on a more enlightened involvement and relationship with the natural world. This has led to a substantial and diverse area of 'clinical environmental psychology' (e.g., Anthony & Watkins, 2000; Roszak, Gomes & Kanner, 1995; Lundberg, 1998).

This statement would be very incomplete without reference to indigenous Australian environmental assumptions, understandings, and profound connections to 'country', as well as a cultural history and heritage encompassing, conservatively, 60,000 years. This cultural history and connection embodies a traditional worldview which was and is premised on an understanding of the 'natural' environment as a living, breathing, sentient system of which humans are an integral part. 'Looking after country' and being an environmentally sensitive and responsible 'manager' of one's clan estate, and being continually attentive to the ongoing and life-conferring relationship between people and environment is an integral part of this traditional indigenous world view, which remains a very strong aspect of contemporary Aboriginal values, philosophy, and spirituality (e.g., Rose, 1996; Tamisari, 1998; Taylor, 1989; Young et al., 1991). This indigenous cultural perspective reminds us that diverse cultural understandings of our natural environment and its challenges for the future will be essential for sustainable solutions to environmental degradation and climate change.

Several particularly salient issues and concerns

Climate change

Climate change has become a particularly salient focus and encapsulation of local and global natural environment concerns. These concerns relate to psychosocial and socioeconomic impacts on people as well as to multiple and synergistic human impacts on the natural environment which are dramatically contributing to global warming. These environmental changes and impacts to and of the natural environment, and how they are appraised, understood, and addressed by individuals, agencies, societies, and 'science' constitute challenging and diverse theoretical, research, and policy domains in the social sciences, with psychologists playing key roles, particularly with respect to problem analysis and effective risk communication and behaviour change strategies (e.g., Lorenzoni, Pidgeon & O'Connor, 2005; Slovic, 2000; Stern, Young & Druckman, 1998). Current films such as 'The Day after Tomorrow', Al Gore's 'An Inconvenient Truth', and countless media images, newspaper headlines, and television documentaries have made climate change, its causes, and its potentially devastating impacts a matter of particular urgency and concern. In Australia we see its emerging consequences in drought, natural disaster incidence and intensity, and other climate-related changes in the natural environments around us (e.g., Intergovernmental Panel on Climate Change, 2001, 2007; Lowe, 2005; Pittock, 2005).

The natural environment and human health and well being

It is clear that the well being and integrity of natural ecosystems and the biophysical environment are integral to human health and well being. The implications for humans are not limited to physical health and well being, and available and uncontaminated air, water, food, but include psychological need and benefit considerations relating to a spectrum of developmental, competence fostering and care-eliciting experiences in natural environments, such as identity formation, restoration, recreation, connection, and inspiration. Equally, the perception and/or direct experience of environmental degradation and loss can lead to concern, anxiety, guilt, anger, helplessness, dread, and pessimism (e.g., Bohm, 2003; Edelstein, 2002). One of the most researched yet often overlooked benefits of the availability of natural environments for humans is stress reduction, restoration, and experienced personal connection with a coherent and meaningful world (e.g., Hartig & Staats, 2003; Uzzell & Moser, 2006).

Water

Water is, of course, crucial to all living systems. Water is a particularly salient resource and feature of the natural environment in Australia, a very dry continent with frequent and often sustained droughts lasting many years in particular regions. Water is also a resource which, while precious and life-sustaining, and of particular symbolic importance to all human cultures, has been too often taken for granted, with ground water and artesian systems in Australia having been dramatically exploited and impacted by agricultural, pastoral, mining, and other industries as well as urban development. Water also constitutes a classic 'commons dilemma' issue and problem (e.g., Hardin, 1968; Ostrom et al. 2002), with the availability of, access to, rights to, and water conservation having been a vexed, and universal people and natural environment issue for many thousands of years (e.g., Sneddon et al., 2002). The current water crisis in Australia, in major cities and towns as well as much of rural Australia, throws out myriad social justice, procedural justice, environmental justice issues in which the input of psychologists has been instrumental in achieving conflict resolution, social justice, environmental justice, and sustainable mechanisms with respect to participatory procedures and allocation decision making (Clayton & Opatow, 1994; Gifford, 2007; Nancarrow & Syme, 2001). Human perceptions and judgements regarding water quality, and recent controversies with respect to the acceptability of drinking recycled and purified water underscore the spectrum of psychological considerations of particular importance to community perceptions, beliefs, and acceptance of changing water use, policies, and practices.

Position statement

1. The state of the world's natural environment is one of unprecedented fragility, escalating threats and human impacts, and massive and in many cases irreversible natural environment degradation and habitat and species loss.
2. Australian psychologists, along with other members of the scientific and professional community, are gravely concerned about :
 - a. the current state of the natural environment in Australia, and globally;
 - b. continuing and escalating environmental threats and impacts;
 - c. the overall adequacy and effectiveness of current initiatives to address environmental problems at regional, national, and international levels.
3. Convergent and interlinked threats to environmental well being and integrity include unsustainable lifestyles and consumption patterns in 'developed' nations, exponentially increasing and profligate non-renewable energy use, industrial pollution, human population pressures, habitat destruction and biodiversity loss, decreasing agricultural productivity, overharvesting in natural environments, conflict and war, and other cumulative and convergent human contributions to climate change. The impacts and long term consequences of these environmental impacts are far reaching, ultimately catastrophic, and wholly unsustainable.
4. It is clear that a central set of interlinked causes with respect to these adverse human impacts *on the natural environment* and its ecosystems relate to human factors, including individual and social motivations, cognitions, decision-making, behaviours and lifestyles, and organisational, institutional, political, and economic contexts, processes and policies.
5. It is equally clear that the impacts of environmental degradation and climate change on *human communities*, quality of life, and psychological and physical well being are profound, dramatic in rate and extent, and alarming with respect to sustainable human communities and human well being.
6. Psychology as a discipline and practice is concerned with all aspects of how people come to experience, understand, and behave in their physical and social environments, and the nature of their relationships and interactions with other individuals, groups, and species, as well as with their natural and human made environments. Psychology as a natural and behavioural science, as well as a social science, brings a particularly helpful and bridging perspective to environmental problems, which can often fall between the natural and social sciences.
7. Psychologists have been substantially involved in collaborative work internationally and nationally on many fronts relating to human transactions with the natural environment, and psychology has much to offer:
 - a. theoretically, by way of conceptual models and behaviour analytic approaches with which to consider the nature of environmental problems and issues;
 - b. methodologically, with respect to relevant research instruments, measures, and findings;
 - c. and practically, with respect to evidence-based applications, strategies, and expertise.
8. Given the urgency and magnitude of the environmental issues and problems which exist, and the essential role of psychological factors and considerations to both the problems and solutions, this involvement by psychologists requires much greater attention, visibility, strategic cross-disciplinary collaborations, and concerted effort.

9. Psychology has particular insight and expertise with respect to many aspects of behaviour-environment linkages relevant to addressing environmental problems. These include:
 - a. Better understanding those factors which influence those individual, community, and organisational appraisals, motivations, decision making, and behaviours both adversely impacting on or directed toward protecting and conserving the natural environment;
 - b. Effectively changing awareness, perceptions, attitudes, understandings and behaviours relating to the natural environment, adverse natural environmental impacts, and attributions of cause and responsibility;
 - c. Sensitively measuring and monitoring changes in perceptions, motivations, attitudes, and concerns relating to the natural environment;
 - d. The nature and role of media coverage and representations of environmental issues and problems, and the nature and implications of social construction and social representation processes with respect to environmental 'problems' and 'solutions';
 - e. The design and implementation of effective, persuasive communications, media coverage, and educational materials concerning the nature, magnitude and causes of local and global risks and threats, and what can be done, individually and collectively, to address such risks;
 - f. Better understanding, measuring, and monitoring individual and community perceptions and appraisals of impacts on and changes to natural environments;
 - g. Delineating the neuro-mechanisms by which environmental toxins disrupt normal psychological development and functioning;
 - h. Better understanding, identifying, and utilising the multiple psychological and health benefits of proximate natural environments and natural ecosystem functioning and sustainability;
 - i. Better understanding, exploring, and fostering human connections and involvements with natural environments and settings.
10. A priority matter for psychologists is to more effectively communicate those evidence-based psychological research findings and models of particular relevance to fostering effective behaviour change in the environmental context, and which are most effective in reducing adverse environmental impacts, such as major consumer purchases, residential location, house purchase or renovation, travel mode and patterns, or influencing more sustainable corporate and institutional decision making and policies.
11. Changes in the social environment and human landscape relating to how changes in the natural environment are perceived, understood, and responded to are as important to measure, monitor, and address as are objective changes in the biophysical environment and natural ecosystems. These perceptions, experience of, judgements about, and responses to perceived changes and impacts in the natural environment constitute critically important *psychosocial* indicators and impacts of environmental change and a critical but neglected area for identifying and developing meaningful environmental indicators relating to impacts on and of the natural environment.
12. Environmental problems and challenges are complex and require collaborative, multidisciplinary, 'ecological', analyses and 'solutions'. Psychology provides a particular and essential disciplinary perspective to the effective addressing of environmental problems and sustainability issues, with this contribution being most effective in the context of multidisciplinary teams working in applied, policy relevant, programmatic contexts.
13. An important and specific contribution of psychology is with respect to clarifying public understandings of 'environmental' problems and issues, the nature of their media coverage and representation, and the science underlying what is, for many, a confusing arena of public concerns, claims and counterclaims, uncertainty in the context of serious environmental threats, loss of public confidence and trust, and clear political agendas. This situation requires the fostering of better understandings of both psychological science and social science generally, for both the lay and professional 'public', and the important and essential contribution these disciplines make in ensuring informed and effective interventions and policy when addressing the human side of environmental problems.

- 14.** It is increasingly important that psychology programs and subjects incorporate environmental considerations and sustainability issues and problems, both as a natural part of the subject matter, and as a social and ethical responsibility consideration. It is important that, where possible, psychology departments offer or contribute to environmental subjects in which human behaviour is an important consideration, and that psychology students be encouraged to develop environmentally relevant cross-disciplinary competencies and/or combined majors in their undergraduate and postgraduate studies, with this ideally contributing to an enhanced social science, natural science, and management/planning literacy and a more adequate grounding in other disciplinary perspectives.
- 15.** Effective cross-disciplinary collaboration in turn requires that the nature and ongoing contribution of psychological theory, research and expertise with respect to environmental issues and problems be more effectively profiled, communicated, and utilised in government sectors and environmental policy and management forums and bodies.
- 16.** It is imperative that the Australian government and national funding bodies appreciate the urgency of these multiple environmental threats, the need for immediate and effective actions, the central importance of human behaviour with respect to the nature and cause of the problems and potential solutions, the importance and role of psychologists on multidisciplinary research and policy teams addressing specific challenges, and the critical need for more adequate funding and support for psychological and social science involvement in multidisciplinary research initiatives relating to sustainable natural environments and ecosystems.
- 17.** Notwithstanding the seriousness and urgency of current environmental problems, it is very important that risk communications, media coverage, and scientific statements be carefully framed and worded with respect to what can be done and what have been very substantial achievements in fostering more sustainable behaviours and practices. It is equally important that such communications and coverage are validating and empowering with respect to how local individual and community initiatives and efforts can contribute in a major way to addressing national and global problems and threats.

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