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Feeling Blue – Get Green: The Benefits of Nature on our Mental Health and Well-being

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ABSTRACT

Human bodies and minds evolved together—simultaneously and interdependently. Therefore, if nature provides for our physical health and well-being, it follows that nature also provides for our mental health and well-being. Psychologists have begun to recognize the impact that exposure to nature has on many aspects of our mental health and well-being; and a substantial body of supporting research and empirical data has accumulated. Nature's beneficial effects on individuals' mental health have been shown to extend beyond a mere restoration to baseline after negative periods of stress, anxiety, or depression. Nature's beneficial effects extend to positively increasing true mental health and well-being, to elevating individuals beyond a neutral "just getting by" level and into an additive state of thriving and flourishing.

This paper discusses highlights from the ever-increasing body of research findings and empirical data evidencing the positive and additive effects that nature has on our mental health and well-being. Included in this discussion are findings from a recent series of studies conducted at Grant MacEwan University that this author was involved in. The research summarized in this paper demonstrates that our relationship with nature is vital to our mental health and well-being.

Many psychologists recognize that exposure to green spaces is useful as a means of boosting well-being (Gable & Haidt, 2005). In her recent book, *Positivity*, Barbara Fredrickson (2009) specifically lists "find nearby nature" (p. 177) as one proven strategy to increase one's level of positivity. A substantial amount of research has provided evidence of the importance of nature to many aspects of our mental health and well-being (see review by Joye, 2007).

Much of the initial research in this area focused on the restorative capacity of exposure to nature for people suffering from negative states such as stress, anxiety, or depression. Examples include stress reduction after outdoor excursions involving nature (both urban and wilderness), and reduction in feelings of anger and aggression after viewing colour photographs of scenes containing natural elements such as trees or open water (for a review, see Maller, Townsend, Pryor, Brown, & St. Leger, 2005).

Nature has been incorporated into a diverse array of therapeutic treatment programs. For example, therapeutic gardening (known as *horticulture therapy)* is utilized in a variety of treatment settings, such as the healing garden at the Alnarp University campus in Switzerland (Grahn et al., 2007; Stigsdotter & Grahn, 2003). The healing garden is an integral part of Alnarp's treatment program for individuals who have suffered from "burnout" or depression for an extended period. Private practice psychologists incorporating elements of nature into their therapeutic approach, when working with clients struggling with issues involving relationship difficulties, chronic pain, and depression (Berger & McLeod, 2006; Burns, 1998, 2009) is another example.

However, just as true physical well-being is more than the absence of illness or ailments, true mental well-being is more than the absence of negative states such as stress, anxiety, or depression (Keyes, 2005). It is more than just restoring mental health to a neutral baseline. True mental well-being is an "additive" state of thriving and flourishing beyond, "just getting by". Nature's beneficial effects have shown to extend beyond mere restoration by positively increasing true mental health and well-being. Highlights of some recent research follow.

A recent series of studies at Grant MacEwan University (Howell, Dopko, Passmore, & Buro, 2011) examined the relationship between nature affiliation—how connected one feels to nature—and various indicators of well-being. A total of 727 introductory psychology students participated. This research found that nature connectedness was associated with psychological and social well-being to a significant degree. Nature connectedness was also associated significantly with the trait of mindfulness (the

tendency to be highly aware of one's internal and external experiences), which, itself, is associated with high levels of mental well-being.

These findings were replicated in a second series of studies (Howell, Passmore, & Buro, unpublished manuscript) involving 746 MacEwan introductory psychology students. These studies again found that individuals who felt a high degree of connectedness with nature experienced a high degree of overall mental well-being. Additionally, those high in nature connectedness reported a high sense of meaning in their lives. Meaning in life is highly predictive of overall psychological well-being (Steger, 2009).

These studies contribute to the ever-increasing body of research examining the relationship between nature affiliation or exposure to nature and overall well-being. Correlational studies have found that nature affiliation is associated with positive affect, personal autonomy and personal growth (Herzog & Strevey, 2008; Nisbet, Zelenski, & Murphy, 2011). Outdoor activities involving nature have been demonstrated to result in feelings of greater vitality (Ryan et al., 2010). (Note, in Ryan et al.'s research, simply being outdoors did not predict vitality if the activity did not involve contact with nature.)

Several experiments have explored nature's effect on people's well-being. For example, after watching short nature-oriented video clips, participants' levels of positive emotions, ecstasy, respect, wonder, and spirituality were boosted, compared to participants who viewed video clips of urban scenes, (Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009; Saraglou, Buxant, & Tilquin, 2008). Students resting for a mere five minutes in a plant-laden laboratory endorsed goals such as closeness and community, decreased their level of endorsement of extrinsic goals such as fame and fortune, and exhibited an increase in generous behaviour towards others to a greater degree than did students resting for five minutes in a plant-free laboratory.

Students in particular, may want to note the following findings: in Nisbet et al.'s (2011) study, students taking courses pertaining to the natural environment reported higher levels of vitality than did students in non-environmental courses. These greater feelings of vitality resulted from students maintaining a stronger connection to nature during the school year (compared to other students), when studying afforded less time to be outdoors—particularly during exam weeks. In Ulrich's study (as cited in Chilquist, 2009), the addition of flowers and plants to a workspace was found to increase cognitive functioning and resulted in a reported "15% rise in innovative ideas and more creative, flexible problem-solving than that of the control group without greenery nearby" (Ulrich, as cited in Chilquist, 2009, p. 2). It may be wise for students to keep these

findings in mind when choosing university course options and places in which to study and work on projects.

An Ipsos Reid poll (as cited in Nature Conservancy of Canada, 2011) reported that 90% of respondents agreed that the more connected they felt to nature, the happier they were; yet on average, Canadians spend almost 90% of their time indoors (Environment Canada, 2005). Worldwide, more people are spending more time indoors. Studies conducted in many countries show that the average time spent pursuing nature-based recreation is declining (Charles & Louv, 2009; Pergrams & Zaradic, 2008). Terms such as "nature deficit disorder" (Louv, 2005) and "nature starvation" (Royal Society for the Protection of Birds, 2010) have been coined to describe this lamentable disconnect from the natural world.

While technologically-mediated experiences of nature (e.g. high definition video clips, virtual reality computer-generated nature-games) do have some beneficial effects, consistent evidence is now emerging that synthetic experiences of nature differ in their effect on our health and well-being from direct exposure to, and contact with, the live natural world. For example, heart rate recovery time (while working on a stressful task) was associated with how long and how often participants glanced at a glass window affording a view of nature (Kahn et al., 2008). The longer and the more often they glanced at the window, the quicker their heart rate returned to normal. Yet for participants working on the same stressful task who had a plasma-screen "window" displaying a real-time view of the same nature scene, no relationship was found between heart rate recovery time and duration of viewing the "window". In fact, these participants were no better off than participants doing the same stressful task who had only a blank wall to look at!

We need to recognize the limits of technology, and remember that only relatively recently in our evolutionary history have we separated ourselves from a daily life immersed in nature (Gullone, 2000; Kellert, 1997; Nesse & Williams, 1996). "The time-span in our habitat change from the natural world setting into the technological habitat is too short for the evolutionary processes to permit any major biological adaptations" (Gelter, 2000, p. 86).

Evolutionary processes have left their mark not only on our physical bodies, but on our minds and emotions as well. For as scientists now recognize, our bodies, minds, and emotions are inextricably interwoven and interconnected. Thus, if nature provides sustenance for our bodies, it follows that—as the research in this paper demonstrates—nature also provides sustenance for our minds and emotions as well. Framed within this

context, affiliating with nature is a deeply rooted human need. We neglect our relationship with the natural world at the expense of both our physical and mental health and well-being.

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