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Reconnecting with Nature: Health & Well-Being for Military Communities

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Reconnecting with Nature: Health & Well-Being for Military Communities



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OneOp

Readiness. Knowledge. Network.

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, and the Office of Military Family Readiness Policy, U.S. Department of Defense under Award Number 2019-48770-30366.

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Today's Presenter



Dr. Keith G. Tidball

Assistant Director, Environment & Natural Resources
Cornell Cooperative Extension

Principle Investigator
OneOp Community Capacity Building

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Please respond in the chat pod.



**In your work with military families,
have you ever recommended they
participate in MWR programming?**

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Roadmap for Today

Community Capacity Cornerstones – Green Spaces and Fun Places

Antidote for Stress and Trauma among Military Families?

What's the Science Say?

- Value of green/blue spaces and recreation
- Findings from the Tidball Lab

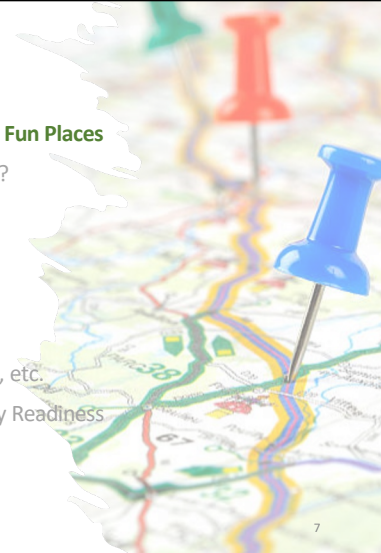
What about Rx?

- General health & well-being vs Acute stress, trauma, etc.

Bringing it all together - The EcoRx in the Military Family Readiness System

Final Thoughts

Conversation



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Getting Beyond 'Nice to Do'

- Overlapping audiences: MWR practitioners and the traditional OneOp audience
- Changing the narrative on the value of Outdoor Recreation to health and well-being as well as enabling readiness and resilience.



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Fitter, faster,
stronger



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Pushing
Boundaries



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Togetherness



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New Friends



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NATURE



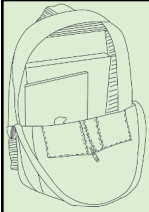

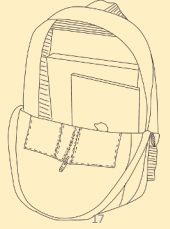
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What is Outdoor Recreation

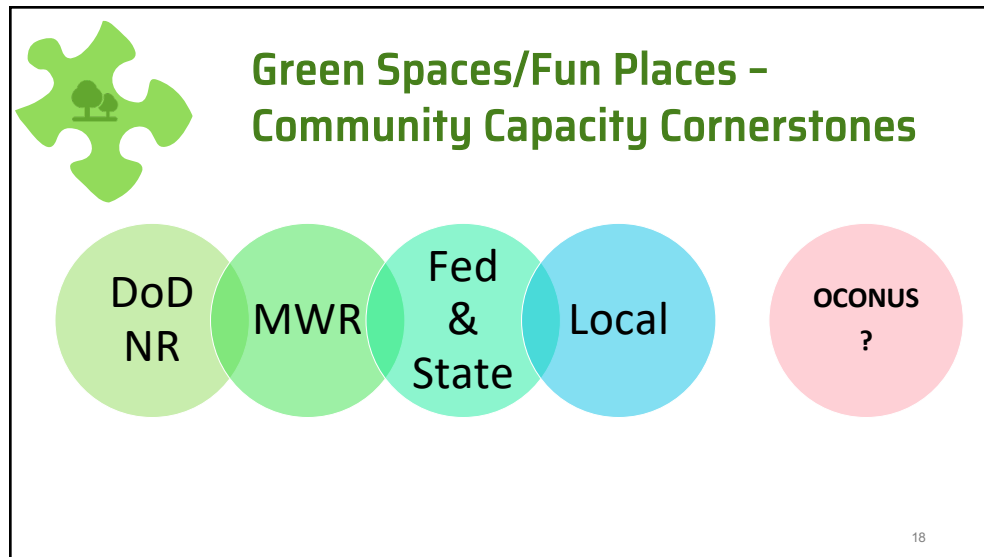
- Outdoor recreation refers to leisure activities that take place in a **natural setting** and benefit the body, mind and/or spirit. Examples are hiking, fishing, skiing, snowmobiling and wildlife viewing.
- Outdoor recreation can overlap with competitive outdoor activities such as orienteering or ski races. It can also be done with other activities such as environmental education for example hiking to study an old growth forest. Outdoor recreation can also simply be enjoying the peace and quiet in a non-physical way

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 <p>AIR/UNDERGROUND Caving (Spelunking) Kite Flying Astronomy Hang Gliding</p>	<p>LAND BASED Camping - Family Camping - Group Camping - Backcountry Trails - Nature Trails - Hiking Trails - Cross Country Adventure Rope Courses Rock Climbing Nature Study-Bird Watching Nature Study-Mushrooms Nature Study-General Nature Photography Landscape & Nature Painting Archery Paintball Games Wide Games Adopt-a-Forest Biodiversity Plots Cross Country Skiing Running Orienteering</p>	<p>WATER BASED Ice Skating - Lakes Ice Skating - Ponds Ice Skating - Wetlands Wind Surfing Adopt-a-Stream River Rafting Swimming Holes Catch & Release Fishing Canoeing Kayaking</p> <p>Non-Consumptive</p>	<p>LAND BASED Horseback Trail Riding Sleigh Rides Hay Rides Motor Cycling Snowmobiling Four Wheel Drive Club Motor Cross Dog Trials Fox Scent Hunts ATV Trails Mountain Biking</p> <p>Motor/Mechanical or Animal Propelled</p>	 <p>WATER BASED Water-Skiing Motor Boating Jet-skiing</p>
	<p>LAND BASED Butterfly Collecting Berry Picking Black-powder Hunting Lapidary Guiding - Hunting Shooting Range Clay Disk Shooting U-Pick Christmas Trees Maple Sugar Production Edible Wilds Forest Pharmacy Archery Hunting Trapping</p>	<p>Consumptive</p> <p>WATER BASED Fishing Clam Digging Gold Panning Guiding - Fishing Ice Fishing Trapping</p>	<p>Indoor/Outdoor</p>	 <p>LAND OR WATER BASED Cabin Rentals Campfire Programs Woodlot Management Workshops Barbecues Bed & Breakfast Outdoor Cooking Day Camping Hunter Safety Fly Tying Workshops Environmental Education</p>

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Please respond in the chat pod. 

**If you are outside the continental US,
do you find any challenges/barriers
to connecting families with outdoor
recreation opportunities?
If yes, then what?**



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DoD Natural Resources Management

- The Department of Defense (DOD) invests significant resources in its conservation programs to help sustain our nation's priceless natural ecosystems, species, and habitats.
- DOD's Natural Resources Program (NR Program) supports this endeavor and the military's mission by ensuring access to the nearly **27 million acres of military lands**, airspace, and waters needed for testing, training, and operations.

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DoD Natural Resources Management

Prevent losses to at-risk species and their habitats; reducing bird/wildlife aircraft strike hazard incidents; managing wildland fire; reducing and eradicating invasive species; and making landscapes more resilient to the effects of climate change, including extreme weather, flooding, and rising sea levels.

Training in realistic combat environments while protecting native ecosystems and species.

High quality recreational possibilities for service members and families.



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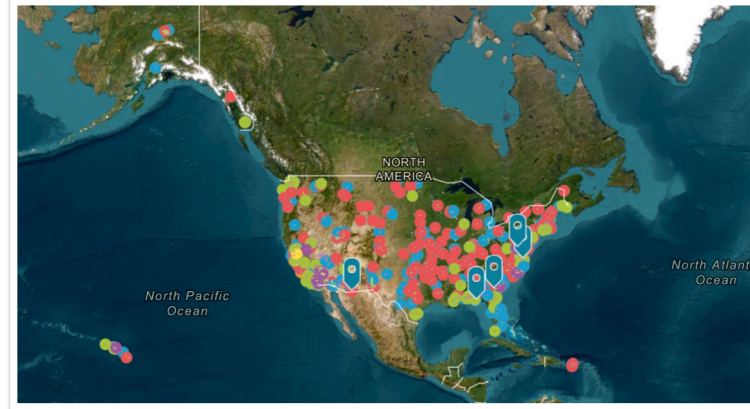
DOD Natural Resources Management

- DOD experts conduct new and innovative research on DOD lands and in waters.
- In addition to conducting groundbreaking research, DOD has multiple networks of natural resources experts, which allows them to directly support the various ecosystems found on DOD landscapes along with performing on-the-ground conservation efforts.
- DOD Natural resource managers work with more than species and their habitats; they address all aspects of natural resources on an installation including climate adaptation and installation resilience, wildland fire, invasive species, alien species, noxious weeds, feral animals and nuisance wildlife, bird/wildlife aircraft strike hazards, **public access and fish and wildlife-oriented recreation**, resources of importance to Federally recognized Tribes and Native Hawaiian Organizations, commercial forestry, and agricultural out-leasing.

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For more information on DOD Natural Resources Management, and to learn about DOD NR's Story Map case studies highlighting various components of the DOD Natural Resources Program, see:

<https://storymaps.arcgis.com/stories/e477549826a040e1862924d795a773c8>

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MWR Offerings

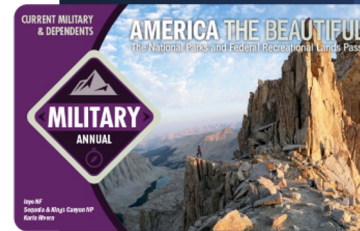
- Branch-Specific Quality of Life Programming
- In the late 1800s, installations housed retail and social outlets known as Canteen Associations.
- Has grown to include restaurants, libraries and gymnasiums.
- Today, MWR offers nearly 5,000 leisure and support programs for service members, their families and other eligible personnel
- Free or low-cost recreational opportunities include recreation programs, youth activities, and outdoor opportunities.



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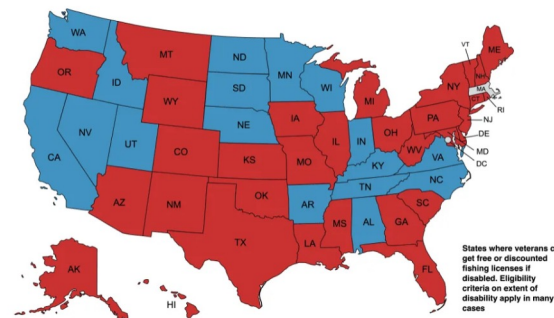
Federal & State Opportunities

- Current U.S. military members and their dependents in the Army, Navy, Air Force, Marines, Coast Guard, and Space Force, as well as Reserve and National Guard members, are eligible for the America the Beautiful interagency pass, granting free access to lands managed by the National Park Service and U.S. Fish & Wildlife Service and also standard amenity fees (day use fees) at lands managed by the U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Army Corps of Engineers.
- A pass covers the pass owner and all occupants in a personal vehicle at sites that charge per vehicle or, the pass owner and up to three additional adults (16 and over) at sites that charge per person.
- Children ages 15 or under are admitted free. And speaking of children, the Every Kid Outdoors initiative provides another avenue to access green spaces and fun places, for Fourth Graders!



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Federal & State Opportunities

- Many states have reduced price or free hunting and fishing licenses available for active-duty service members and veterans. (Red equals exempt or free, Blue equals discounted).
- 34 states offer discounted hunting or fishing licenses fees to active-duty military and/or veteran residents, while 23 states offer free licenses to at least one of these populations.

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Local Amenities

Parks and Recreation: A TRUE HEALTH SOLUTION

Local park and recreation agencies provide health and wellness opportunities for all populations in communities across the country. As America continues to face serious health issues parks and recreation offer an affordable and accessible solution. Share with your communities the impact you are having on their health!

Organized activities in parks in low-income neighborhoods can **increase park use by as much as 25%**¹

People who use parks and open spaces are **3 times more likely** to achieve the recommended levels of physical activity than nonusers!²

Older adults engage in over **3.5 times more physical activity** in parks with walking loops.³

Children in summer camps at park and recreation sites report a **20% increase** in fruit and vegetable knowledge⁴

73% of adults believe parks, trails, and open space are an essential part of the healthcare system⁵

www.nrpa.org/Health

1. Olson-Clark, K., Park, B., Boush, M., Kuchman, C., Galvin, K., Douglas, A., Ng, A., Long, and K. (2018). Increasing Walking Time Reported to Residents in Metropolitan and Suburban Areas: A Case Study of a Community-based Program. *Journal of Park and Recreation Management*, 16(1), 1-10. <https://doi.org/10.1080/10804029.2018.1488888>
 2. Cohen, D.A., Sallis, J.F., McKenzie, T., Heath, T., Bauman, S., and McKenzie, T. (2006). The impact of parks in low-income areas: Park use and perceived physical activity. *Journal of Park and Recreation Management*, 4(2), 1-10.
 3. Cohen, D.A., Sallis, J.F., McKenzie, T., Heath, T., Bauman, S., and McKenzie, T. (2006). The impact of parks in low-income areas: Park use and perceived physical activity. *Journal of Park and Recreation Management*, 4(2), 1-10.
 4. Cohen, D.A., Sallis, J.F., McKenzie, T., Heath, T., Bauman, S., and McKenzie, T. (2006). The impact of parks in low-income areas: Park use and perceived physical activity. *Journal of Park and Recreation Management*, 4(2), 1-10.
 5. Pridgen, S.L., Burch, J.L., Frank, R.L., & Rosenbloom, T.L. (2015). "Take it to the park and call it the morning": Perceptions of parks as an essential component of the healthcare system. *Prevention Reports*, 1(1), 1-10.

PAPRN+ PHYSICAL ACTIVITY
ACTIVE LIVING RESEARCH
NRPA National Recreation and Park Association
Because everyone deserves a park


<https://www.nrpa.org/our-work/building-a-movement/parks-and-recreation-is-essential/>

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Roadmap for Today

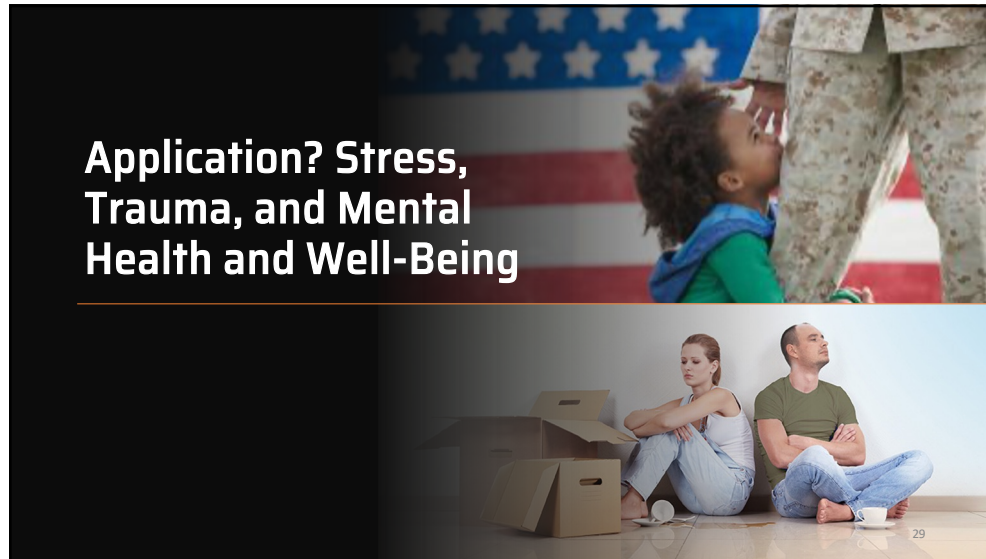
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Application? Stress, Trauma, and Mental Health and Well-Being

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NCCP National Center for Children in Poverty
Bank Street Graduate School of Education

[About](#) [Data & Policy Tools](#)
[Publications](#) [Focus Areas](#)

Trauma Faced by Children of Military Families: What Every Policymaker Should Know

👤 Fianna Sogomonyan, Janice L. Cooper
📁 Early Childhood Two-Generation State Policy Profiles;
📄 Report

📅 May, 2010

84%

of active duty family respondents had moved within the past two years.

Recent Active Duty Moves

Less than 1 year	36.7%	3 years	7.5%
1 to 2 years	31%	4 years	3%
2 years	16.3%	5 or more years	5.5%

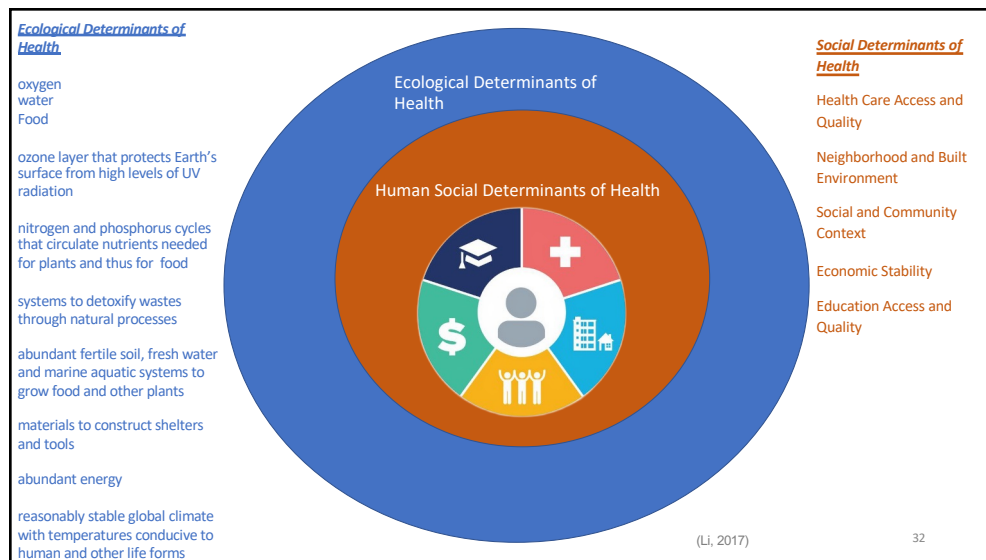
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Baselines?

How we respond to stress and trauma is influenced by “what we show up with...”

- Ecological Determinants of Health
- Social Determinants of Health
- Protective Factors

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PROTECTIVE FACTORS

- Overall resilience
- Problem solving skills
- Awareness and Access to Physical and Mental Health Care
- Cultural or Religious Beliefs that Discourage Suicide
- Positive Peer Relationships
- Interpersonal and Community Connectedness
- Safe Environment
- Positive Adult Relationships

Protective factors are personal or environmental characteristics that help protect people from reactions to trauma to include exhaustion, confusion, sadness, anxiety, agitation, numbness, dissociation, physical arousal, and blunted affect.

Connecticut Suicide Advisory Board

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Four Pillars of Trauma Recovery

PRACTICING MINDFULNESS

The daily, consistent practice of mindfulness can help rewire your brain in powerful ways. Not only does it help quiet the internal noise, it helps develop an internal locus of control. Mindfulness reduces chronic pain, one of the symptoms of PTSD.

GET MOVING

Physical exercise forces the body to release endorphins, which increase happiness and reduce pain. When you're down or in pain, there might be a temptation to curl up and sleep, but there's no better natural way to raise your emotional state than to get the blood pumping.

WILLINGNESS TO HEAL

Trauma makes it difficult to trust others. It's much easier to isolate oneself and try to go through the healing process alone. Encourage a willingness to connect with others, or join a support group. Encourage pursuit of therapy. Engage in learning to educate yourself along with a group of people who love, value, and encourage you. Healthy relationships can help one heal more quickly.

ACCEPTING SUPPORT FROM OTHERS

Getting past trauma is to want to heal and to be willing to accept help and support. One might receive support from loved ones, a support group, a therapist, or from friends or colleagues. The important part here is to get into a mindset of acknowledgement that others may likely be able to help, and there's a willingness to take that help.

RAFT, 2019

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The Great Outdoors and Community Capacity Cornerstones...

Fitter, faster,
stronger

Pushing
Boundaries

Togetherness

New Friends

NATURE

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Why Does the Science Matter?

"[Science] is important because it places a strong emphasis on the need to back up claims or assumptions with clear evidence."



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SCIENCE ADVANCES | REVIEW

SOCIAL SCIENCES

Linking the nonmaterial dimensions of human-nature relations and human well-being through cultural ecosystem services

Lam Thi Mai Nguyen^{1,2}, Alexandros Goussardos^{1,3,4}, Jie Su¹, Rodolphe Dam Lam¹, Ezekiel S. Graneli¹, Kousuke Fukuda^{1,5}

Nature contributes substantially to human well-being through its diverse material and nonmaterial contributions. However, despite the growing literature on the nonmaterial dimensions of human nature relations, we lack a systematic understanding of how these are linked with human well-being. Here, we use the concept of cultural ecosystem services (CES) as a lens to explore this interface. Through a systematic review of the peer-reviewed literature, we identify and synthesize the empirical evidence on the linkages between CES and human well-being, as well as their relative effects. Subsequently, we identify four complex interactions through latent class analysis and multiple correspondence analysis, which delineate the major assemblages that reflect synergistic and trade-offs in the interaction of CES and human well-being. We critically discuss key research trends and gaps and propose directions for future research and practice to leverage the potential of the nonmaterial contributions of nature for human well-being and sustainability more broadly.

INTRODUCTION

Nature contributes manifold benefits to humans, at the individual, group, and societal levels. Beyond material and tangible contributions such as food, raw materials, clean water, and hazard regulation, among others, nature also provides a large diversity of nonmaterial contributions through opportunities for recreation and leisure, spiritual well-being, personal development, social relations, and aesthetic experiences (1, 2). These nonmaterial contributions can have substantial effects on the well-being of humans at different scales (3), manifesting in very different manners (4, 5).

The academic community has repeatedly emphasized the necessity to understand the complex, nonmaterial dimensions of human-nature relationships and unravel how they intersect with human well-being (1, 4, 7). Understanding the underlying processes behind how the nonmaterial contributions of nature are linked to human well-being, designing appropriate interventions to leverage their contributions to human well-being, and mitigating the negative impacts of human activities on them are all essential for sustainable ecosystem management (4, 8).

Up to now, a large body of literature has attempted to unravel in a coherent manner the nonmaterial dimensions of human nature relations, using very diverse lenses and methodologies. For example, studies have come from fields as diverse as connectivity with nature, cultural ecosystem services (CES), environmental psychology, environmental education, environmental sociology, geography, outdoor recreation studies, and even political ecology (9, 10). However, despite this ever-expanding body of literature, the current evidence regarding the nonmaterial dimensions of human nature

relations is highly fragmented, particularly in terms of their actual linkages to human well-being and how they manifest. This is due to a variety of reasons. First, the relevant literature tends to adopt different theoretical frameworks and terminologies (1, 11, 12), resulting in fragmented bodies of knowledge and inconsistent assessments. This is true both for the nonmaterial contributions side and for the human well-being side and is reinforced by the limited extent to which other scholarly disciplines have drawn from these diverse academic fields (4). Second, both the provision of nonmaterial contributions and the linkages to human well-being are highly context dependent, which complicates their generalization and systematic understanding across different localities and scales (4, 10).

The concept of ecosystem services, broadly defined as the benefits that humans derive directly and indirectly from nature (1), has emerged in the past few decades as one of the focal terms for exploring human nature relationships (13). Despite certain criticisms (14) and the transdisciplinary evolution of the term as "nature contributions to people" (NCP) (16, 17), the concept of ecosystem services has shaped one of the most popular lenses for exploring human nature relations when considering its huge proliferation in the academic literature (18).

In this respect, the concept of CESs has been a major lens for exploring the nonmaterial dimensions of human nature relations (10). CESs encompass, among others, recreation, spiritual well-being, cognitive development, social relations, and aesthetic values (1, 1, 12). Although CESs have been used extensively in the literature (1, 12), it has been repeatedly challenging to systematically and comprehensively their linkages with human well-being (11, 12). This is in no small part due to the fact that, as "provisioners" of nonmaterial human nature relations, CESs are often intangible, subjective, socially constructed, and dependent on human perceptions, thus requiring very different sets of tools, metrics, and approaches for their understanding and assessment (4, 19, 20).

Here, we argue that by using CESs as a lens, it is possible to generate valuable insights on the actual interface between the nonmaterial dimensions of human nature relations and human well-being. This

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After reviewing hundreds of scientific papers on “cultural ecosystem services,” or the nonmaterial benefits of nature, researchers have identified 227 unique pathways through which people’s interactions with nature can positively or negatively affect well-being.

The paper:

<https://www.science.org/doi/epdf/10.1126/sciadv.abn8042>

A Review:

<https://www.washingtonpost.com/climate-solutions/2022/08/05/nature-study-impact-hiking-outdoors/>

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16 Mechanisms

1. Cognitive
2. Cohesive
3. Communicative
4. Creative
5. Evolutive
6. Formative
7. Intuitive
8. Regenerative
9. Remunerative
10. Retrospective
11. Satisfactive
12. Transactive
13. Transcendentive
14. Apprehensive
15. Destructive
16. Irritative

Table 1. Mechanisms linking CEIs and human well-being. The 6 mechanisms indicated with an asterisk (*) are adapted from a previous study (5), while the other 10 mechanisms are defined by the authors. For each of the mechanisms, we provide as an example a unique pathway of CEI mechanism-constituent of human well-being. Note that some mechanisms mediate more connections of individual CEIs and human well-being constituents. A comprehensive explanation of the different pathways for each mechanism can be found in tables S12 to S14. The table presents in alphabetical order the positive (nos. 1 to 13) and negative (nos. 14 to 16) mechanisms.

No.	Type of mechanism	Definition	Sample CEI	Channel of interaction	Sample constituent of human well-being	Example
1	Cognitive*	The development of knowledge and understanding via interaction with nature	Education	Intellectual practice	Learning and capability	Ecosystems are a source of learning and knowledge about the environment, history, culture, and human relationship. Ecosystems provide opportunities for scientific research, environmental education, and learning from older generations. The education of children with through the natural environment can assist in the development of knowledge, skillsets, and a sense of wonder for the world (24, 47).
2	Cohesive	The development of meaningful relationships between people via interaction with nature	Social relation	Cultural practice	Connectedness and belonging	People can develop bonds with family members, friends, and other individuals through the interactions with nature. Social interactions and activities in natural settings such as camping trips and social events in natural settings can strengthen ties, reinforce fundamental values, and inspire respect, responsibility, solidarity, and caring for others, broader communities, and the environment (59).
3	Communicative*	The development of social communication and conversation via interaction with nature	Knowledge system	Intellectual practice	Learning and capability	In some cultural contexts, the knowledge of the culture and the practices needed for survival are part of the people's capacity for self-determination and personal development. These are often transmitted via communication between elderly people and young people at cultural events. In natural settings, which are essential in this process. For example, indigenous communities transmit via communication in natural settings knowledge systems that are important for their personal development and livelihoods (176).
4	Creative*	The experience of new and original situations that inspire artistic work, aesthetic appreciation, creativity, and freedom (among others) via interaction with nature	Inspiration value	Cultural practice	Inspiration and fulfillment of imagination	Nature has inspired people throughout the history of humanity for artistic expression. These examples can be inspiration to paint, draw, take photos, be active/out, conserve, manage, protect, discover, explore, and generally think about things (5).
5	Evolutive	The gradual change of individuals' personality, mood, feelings, attitude, perception, behavior, values, and belief systems over time (more often internal change) via interaction with nature	Recreation and tourism	Cultural practice	Learning and capability	On many occasions, the natural environment tends to make people more friendly, playful, relaxed, and affectionate over time (24). In some cases, nature-based recreation activities are gratifying and positively increase courage or self-esteem (47).
6	Formative	The change of individuals' mood, feelings, attitudes, perception, behavior, and values that is relatively instant or over short periods of time (more often internal change) via interaction with nature	Aesthetic value	Form	Identity and autonomy	Ecosystems offer spaces for individuals to instantly express their personal distinctiveness and identity without feeling constrained by external factors such as the norms and values imposed by society. In some cases, being in nature immediately enables achieving a personal sense of freedom and escapism from the social boundaries created by extrinsic factors of society. The sense of freedom and autonomy inspired by wild nature in that moment can allow individuals to strengthen their own intrinsic values and beliefs and to feel they can be free and make their own choices in lives (126).

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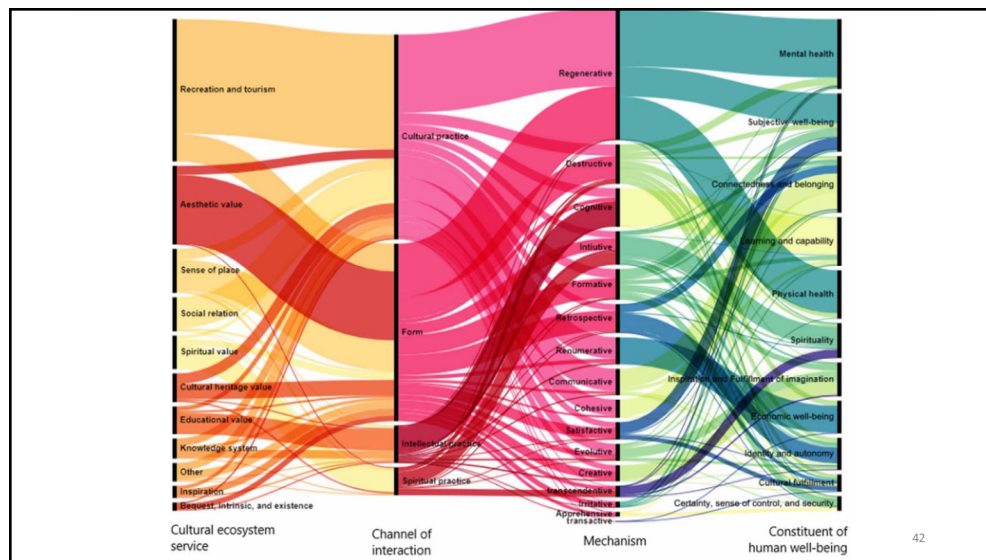
16 Mechanisms

No.	Type of mechanism	Definition	Sample CEI	Channel of interaction	Sample constituent of human well-being	Example
7	Intuitive*	The sensual experiences, human instincts, and feelings (often of a spiritual and religious nature) via interaction with nature	Spiritual value	Spiritual practice	Spirituality	Many people experience something deeply spiritual when they interact with nature. In some geographical contexts, people find meaning in nature from the time they are born to the time they die, while the sense of spirituality attached to nature can bring hope, faith, personal beliefs/values, and empowerment (49).
8	Regenerative*	The generation of restorative outcomes (e.g., alleviation of fatigue and emotional stress) through recreation, leisure, tourism, escapism, and therapy via interaction with nature	Recreation and tourism	Cultural practice	Mental health Physical health Subjective well-being	Interaction with nature can improve mental health by helping to (i) reduce stress, anxiety, and depression; (ii) reduce visits to psychologists; (iii) improve sleeping quality; (iv) reduce the use of antidepressants, sleeping medicine, and sedatives; (v) increase vitality; (vi) decrease cognitive decline; (vii) increase ability of recovery and healing from risks; and (viii) reduce mental fatigue and illness (4, 34). Benefits to physical health through interaction with nature include: (i) lower body mass index; (ii) reduced prevalence of diseases; (iii) reduced obesity; (iv) lower hypertension levels; (v) decreased cognitive decline; (vi) reduced blood pressure, heart rate, and muscle tensions; (vii) improved immune system; (viii) increased restoration and healing; and (viii) lower mortality risk (4).
9	Remunerative	The economic benefits people obtain from ecosystems through non-material benefits in cash or other monetary forms	Recreation and tourism	Cultural practice	Economic well-being	Nature-based tourism can directly or indirectly contribute to the livelihoods of local communities and broader economic growth. Examples include the direct generation of revenue from accommodation, transportation, guided tours, and food and beverage sales. Broader indirect contributions include poverty alleviation and employment generation (21, 122).
10	Retrospective*	The personal memories and reflections of the past via prior interaction with nature	Sense of place	Form	Identity and autonomy	Natural landscapes are important to some people as they have evolved an emotional and cognitive bond, becoming parts of their personal and collective memory and life stories (123).
11	Satisfactive	The feeling of satisfaction and fulfillment of expectations and needs associated with interaction with nature	Cultural heritage value	Cultural practice	Subjective well-being	Engaging in ecosystem-related livelihood activities can instill pride and sense of satisfaction. In many cases, farmers through their livelihood engagement with nature feel fulfilled and proud of their lives and a sense of purpose in life when putting a good day at work (120).
12	Transactive	The social benefits people obtain by bartering or trading the products of ecosystems	Cultural heritage value	Cultural practice	Economic well-being Connectedness and belonging	For many indigenous communities, particular species carry a special cultural heritage value that can be used for exchange and trades among lines to sustain the ecological relationship essential to their functioning (124).
13	Transcendentive	The benefits that lie beyond the ordinary experiences and the regular physical realm, more often associated with religious or spiritual values via interaction with nature	Spiritual value	Spiritual practice	Spirituality	Many people and communities experience ecosystem-inspired feelings related to "entities larger than the selves" (125). For some people, being in natural settings makes them appreciate people's connection to all things in the universe (24).
14	Apprehensive	The anxious and fearful feeling generated via interaction with nature	Aesthetic	Form	Certainty, sense of control, and security	Some people are afraid of their safety when encountering certain natural features via visual or auditory interactions, such as scary animals, dangerous predators in animal blood and areas that are dark with high tree covers among others (4, 22, 46).
15	Destructive	The direct damages caused to health, attractiveness, finance, and capability (among other constituents of human well-being) via the loss/degradation of CEIs	Aesthetic	Form	Economic well-being	Some ecosystem diseases associated with CEIs can increase the direct cost for repair and maintenance, control, or removal of unwanted species. For example, damage to physical structures can be caused by accelerating corrosion due to bioelectromagnetic destructives of pavements due to tree roots or animals digging nesting holes (50).
16	Irritative	The unpleasant and annoying feelings people obtain via their interaction with nature	Aesthetic	Form	Mental health	Some ecosystem diseases associated with CEIs cause negative feelings such as annoyance and discomfort, e.g., annoyance or disgust with wildlife noise, animal excrement, or plant litter (46, 50).

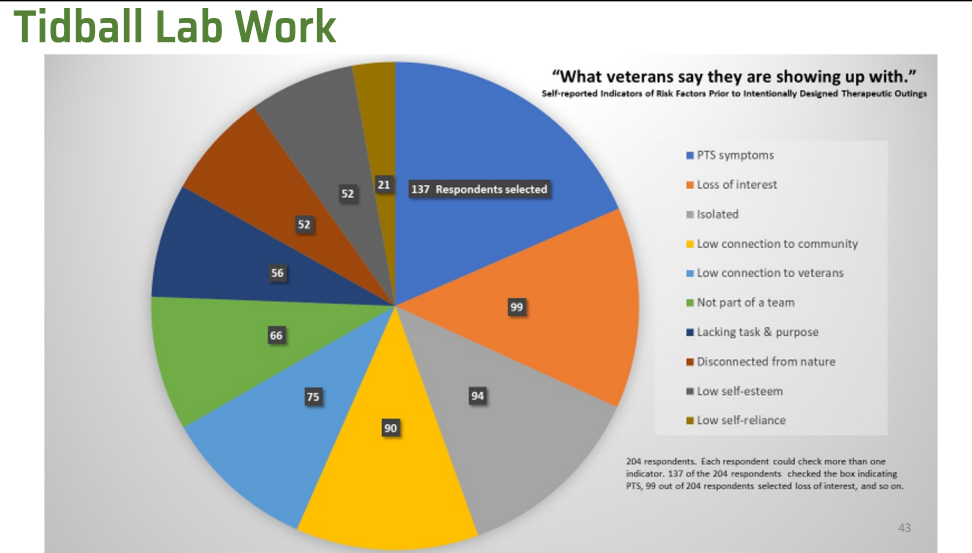
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No	Type of Mechanism	Definition	Sample CES	Channel of Interaction	Constituent of Human Well-being	Description
8	Regenerative*	The generation of restorative outcomes (e.g., alleviation of fatigue and emotional stress) through recreation, leisure, tourism, escapism, and therapy via interaction with nature	Recreation and tourism	Cultural practice	Mental health Physical health Subjective well-being	Interaction with nature can improve mental health by helping to (i) reduce stress, anxiety, and depression; (ii) reduce visits to psychologists; (iii) improve sleeping quality; (iv) reduce the use of antidepressants, sleeping medicine, and sedatives; (v) increase vitality; (vi) decrease cognitive decline; (vii) increase ability of recovery and healing from crisis; and (viii) reduce mental fatigue and illness (4, 34). Benefits to physical health through interaction with nature include (i) lower body mass index; (ii) reduced prevalence of disease; (iii) reduced obesity; (iv) lower somatization level; (v) decreased cognitive decline; (vi) reduced blood pressure, heart rate, and muscle tensions; (vii) improved immune system; (viii) increased restoration and healing; and (viii) lower mortality risk (4).

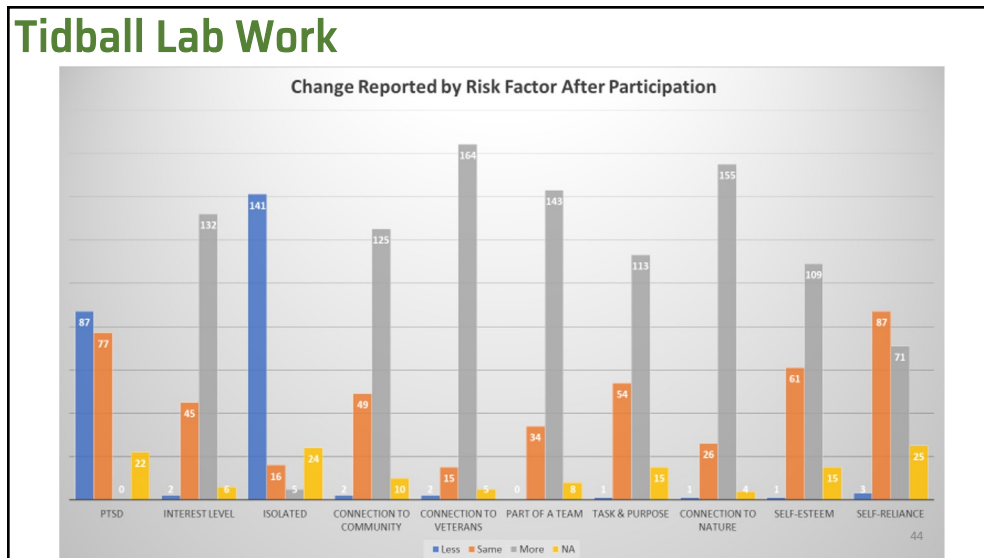
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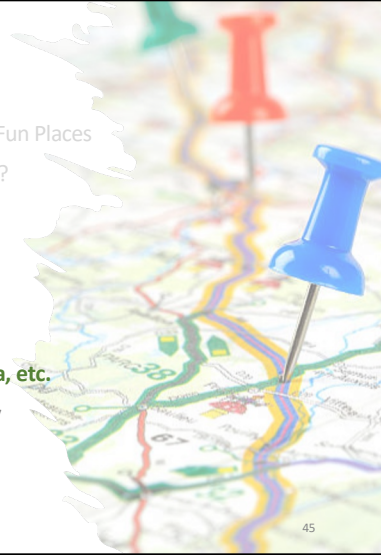
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Roadmap for Today

- Community Capacity Cornerstones – Green Spaces and Fun Places
- Antidote for Stress and Trauma among Military Families?
- What’s the Science Say?
 - Value of green/blue spaces and recreation
 - Findings from the Tidball Lab
- What about Rx?
 - **General health & well-being vs Acute stress, trauma, etc.**
- Bringing it all together - The EcoRx in the Military Family Readiness System
- Final Thoughts
- Conversation



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What’s with the “Rx”?

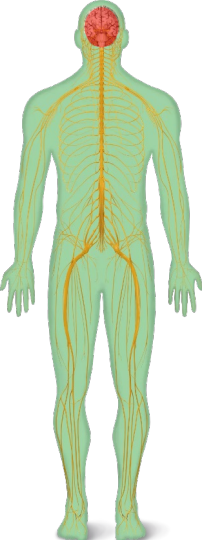
Rx: A medical prescription. The symbol "Rx" is usually said to stand for the Latin word "recipe" meaning "to take." It is customarily part of the superscription (heading) of a prescription.

NAME Military Families
 DATE Today

R Go outside!


REFILL 0 1 2 3 NR PRN
 SIGNATURE _____

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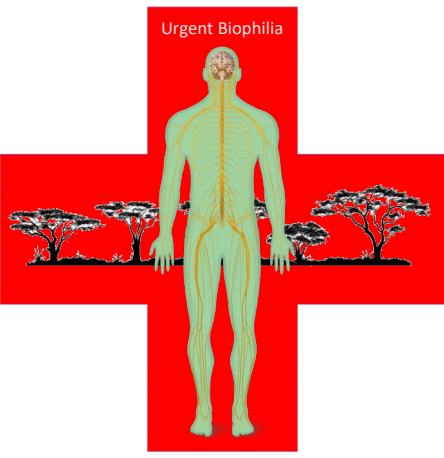
What's the symptom or demand signal?

Individuals, families, and sometimes whole communities experiencing pressing, even urgent stress or trauma seek out doses of contact and engagement with nature to further their efforts to summon and demonstrate resilience in the face of crisis... this is Urgent Biophilia.



Tidball, Keith G. "Urgent Biophilia: Human-Nature Interactions and Biological Attractions in Disaster Resilience." *Ecology and Society*, vol. 17, no. 2, 2012. JSTOR. <http://www.jstor.org/stable/26289048>.

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“Urgent Biophilia is the affinity we humans have for the rest of nature, the process of remembering that affinity and the urge to express it through recreation and creation of restorative environments, which may also restore or increase ecological function and confer resilience across multiple scales.” ~ Keith G. Tidball, PhD

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Tidball, K.G. 2012. Urgent biophilia, human-nature interactions and biological attractions in disaster resilience. *Ecology and Society* 17(2): 5.
<http://dx.doi.org/10.2307/3546109>


Synthesis

Urgent Biophilia: Human-Nature Interactions and Biological Attractions in Disaster Resilience

Keith G. Tidball¹

ABSTRACT. This contribution builds upon contemporary work on principles of biological attraction as well as earlier work on biophilia while synthesizing literatures on restorative environments, community-based ecological restoration, and both community and social-ecological disaster resilience. It suggests that when humans, faced with a disaster, as individuals and as communities and populations, seek engagement with nature to further their efforts to summon and demonstrate resilience in the face of a crisis, they exemplify an urgent biophilia. This urgent biophilia represents an important set of human-nature interactions in SES characterized by hazard, disaster, or vulnerability, often appearing in the ‘backloop’ of the adaptive cycle. The relationships that human-nature interactions have to other components within interdependent systems at many different scales may be one critical source of resilience in disaster and related contexts. In other words, the affinity we humans have for the rest of nature, the process of remembering that attraction, and the urge to express it through creation of restorative environments, which may also restore or increase ecological function, may confer resilience across multiple scales. In making this argument, the paper also presents a novel contribution to further theorizing alternatives to anthropocentric understandings of human-nature relations, and strongly makes the case for humans as part of, not separate from, ecosystems.

Key Words: biophilia, disaster, human-nature interaction, resilience, urgent biophilia



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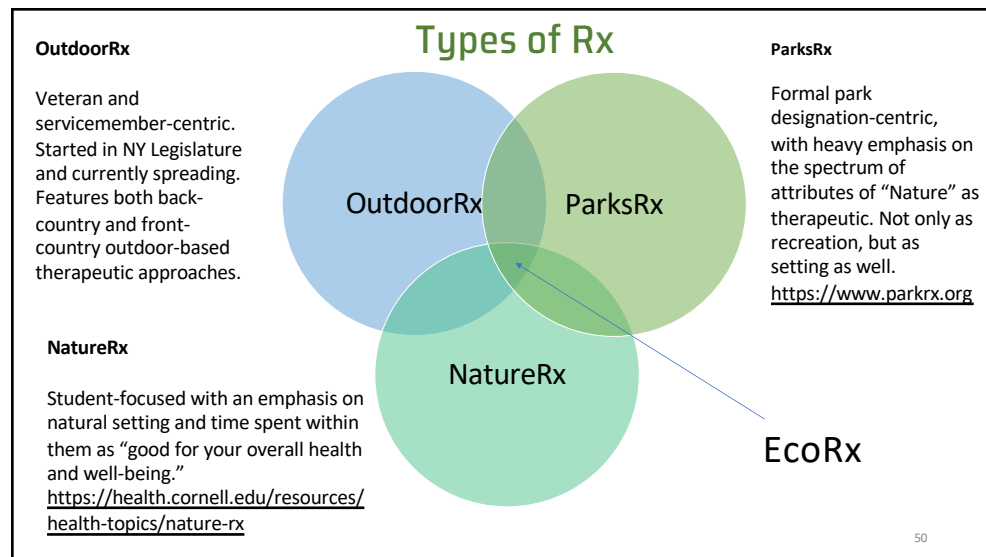
Responding to Urgent Biophilia - the “Rx”

- Therapeutic recreation (TR) practitioners have used nature-based interventions and activities to address functional outcomes and provide recreation opportunities for military and veteran populations with Post-Traumatic Stress (Hawkins et al., 2016, Craig et al., 2020).
- Multiple types of nature-based approaches utilize the natural environment for specific therapeutic outcomes (Poulsen et al., 2015).
- Evidence suggests that nature-based recreation approaches merit continued investigation to evaluate efficacy and implementation (Townsend et al., 2018).
- There are efforts to move the clinical community to consider prescribing times spent outdoors to address health and wellbeing concerns beyond PTS.

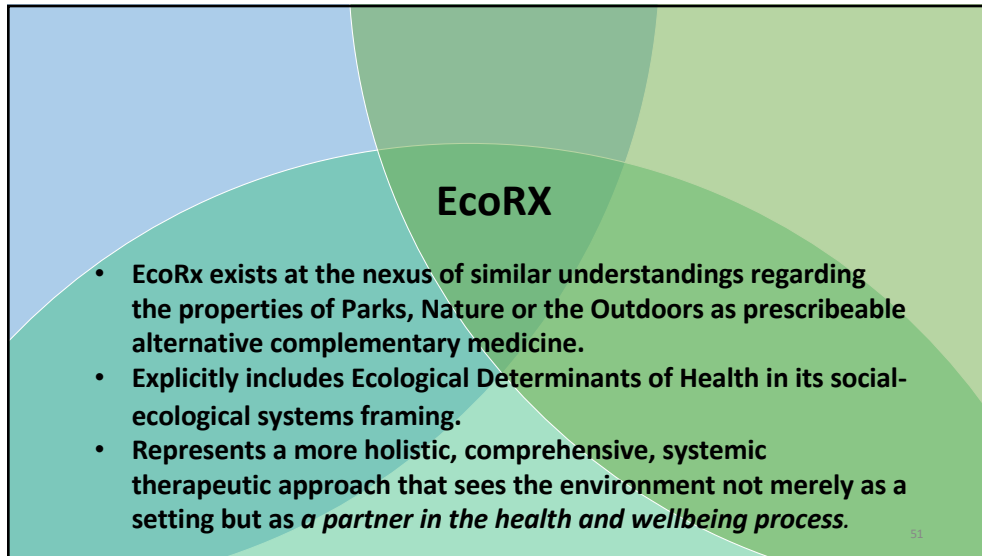


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EcoRX

- EcoRx exists at the nexus of similar understandings regarding the properties of Parks, Nature or the Outdoors as prescribeable alternative complementary medicine.
- Explicitly includes Ecological Determinants of Health in its social-ecological systems framing.
- Represents a more holistic, comprehensive, systemic therapeutic approach that sees the environment not merely as a setting but as *a partner in the health and wellbeing process.*

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All OK?



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Roadmap for Today

Community Capacity Cornerstones – Green Spaces and Fun Places

Antidote for Stress and Trauma among Military Families?

What's the Science Say?

Value of green/blue spaces and recreation

Findings from the Tidball Lab

What about Rx?

General health & well-being vs Acute stress, trauma, etc

Bringing it all together - The EcoRx in the Military Family Readiness System

Final Thoughts

Conversation



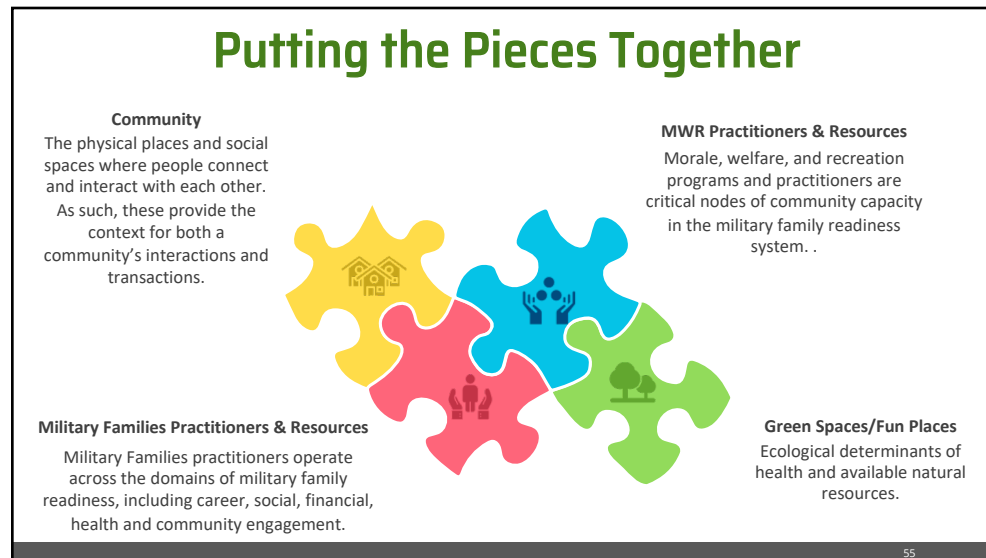
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Military Family Readiness System and the Outdoors?

- The MFRS is comprised of MFR services operated by the DoD and other Federal, State, and community-based agencies and organizations. These programs and services may be delivered through face-to-face, telephonic, virtual, or electronic messaging services. The MFRS must emphasize MFR and resilience, including career, social, financial, **health, and community wellbeing**.
- MFRS services may include, **but are not limited to**, MFSCs, RC family programs, **MWR programs**, medical treatment facilities, faith-based programs, child, youth and school programs, sexual violence prevention and response services, suicide prevention services, exceptional family member programs (EFMPs), and family advocacy programs (FAPs).

DOD INSTRUCTION 1342.22 MILITARY FAMILY READINESS

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Green Spaces/Fun Places

To see or actively experience plants and green spaces can:

- Reduce domestic violence
- Quicken healing times
- Reduce stress
- Improve physical health
- Bring about cognitive and psychological benefits in individuals and populations as a whole

(Ulrich 1984; Kaplan and Kaplan 1989; Hartig, Mang et al. 1991; Sullivan and Kuo 1996; Taylor, Wiley et al. 1998; Wells 2000; Hartig, Mang et al. 1991).

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Military Families Practitioners and Resources

Practitioners provide support across:


- Family well-being
- Finances
- Education and employment
- Health and wellness
- Caregiving
- Transitions
- And much, much more ...

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MWR Practitioners and Resources: Branch-Specific Quality of Life Programming.



ARMY MWR
OUTDOOR RECREATION



VIRTUAL
GREAT NAVY CAMPOUT
Discover Your Adventure
Sponsored by
T-Mobile




Quantico
MARINE CORPS COMMUNITY SERVICES

Home Events Careers Stories

Connectedness Through Nature

Quantico / Connectedness Through Nature



AIR FORCE
OUTDOOR RECREATION

Outdoor Recreation Cen

- Camping
- Hiking
- Biking
- Horseback Riding
- Skiing
- Surfing
- Whitewater Rafting
- Rock Climbing
- Boating and more

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The Community Piece

- “Community” = a group of people who share common factors.
- Can be described and understood in many ways, and each way has its merits. Broadly, communities can be defined by the pre-existing infrastructures within a community.
- A community is made up of **physical infrastructures** and **social infrastructures**.
- These are the physical places and social spaces where people connect and interact with each other. As such, these provide the context for both a community’s interactions and transactions.

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Physical Community Infrastructure

- The physical infrastructure of a community is primarily the built, geographic areas where families reside.
- Examples of elements that make up the physical infrastructure include states, districts, counties, cities, and regions. It also includes the environments, such as forests, lakes and rivers, parks, and neighborhoods that encourage members of the community to come together, spend time together, and build relationships.

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Social Community Infrastructure

- The social infrastructure of a community is primarily composed of people and the interactions that transpire between them.
- It refers to the shared contact patterns that community members have that enable them to come together and build relationships.

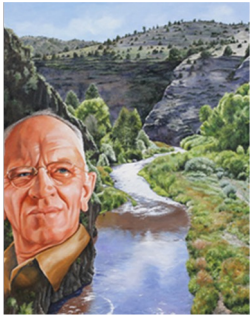
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What does outdoor recreation have to do with Community Capacity Building?

- Aldo Leopold developed a philosophical perspective on the way humans interact with the rest of the natural world called “the land ethic,” and argued that we should enlarge the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land (Leopold, 1949).
- If we enlarged the boundaries of the community to include the land, then we could envision that one measure of a community’s capacity to help military service members and their families navigate transitions is its ability to provide recreation, restoration, and conservation venues and activities



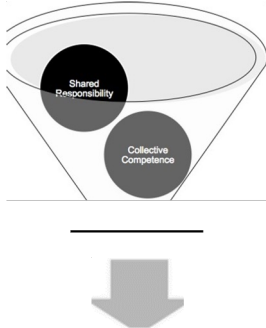
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What does outdoor recreation have to do with Community Capacity Building?

- Community capacity for military service members and their families is composed of two essential elements.
- Shared responsibility for the general welfare of the community and its members
- Collective competence, demonstrating an ability to take advantage of opportunities for addressing community needs and for confronting situations that threaten the safety and well-being of community members (Bowen et al., 2000).




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Shared Responsibility?

- Shared responsibility for the general welfare of the community a natural fit with Aldo Leopold's land ethic.
- Extending that shared responsibility to include stewardship of landscapes and creatures is a fundamental tenant of many conservation and recreation organizations.
- Evidence mentioned previously that recreation opportunities are important to community well-being and public health.



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Collective Competence?

- Demonstrating ability to take advantage of opportunities for addressing community needs and for confronting situations that threaten the safety and well-being of community members linked to the land ethic and its expanded community, and to recreation and conservation activities focused on improving or protecting the community.
- Examples like programs that move military family members and veterans from an interest in fishing for trout to involvement in cold water fisheries habitat restoration, or interest in scuba diving to becoming engaged in replanting coral fragments.

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Expanded Notion of Communities Part of the Military Family Readiness System

- Expanding the community to include landscapes and other living things helps communities strengthen their capacity to demonstrate “readiness and performance in the face of opportunity, adversity, and positive challenges” (Huebner et al., 2009).
- **This expansion ushers in new collaborative opportunities between MWR practitioners and family service providers, which in turn expands the capacity of the Military Family Readiness System.**

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Putting the Pieces Together- a Version of the MFRS

Community

The physical places and social spaces where people connect and interact with each other.

As such, these provide the context for both a community's interactions and transactions.



MWR Practitioners & Resources

Morale, welfare, and recreation programs and practitioners are critical nodes of community capacity in the military family readiness system. .

Military Families Practitioners & Resources

Military Families practitioners operate across the domains of military family readiness, including career, social, financial, health and community engagement.

Green Spaces/Fun Places

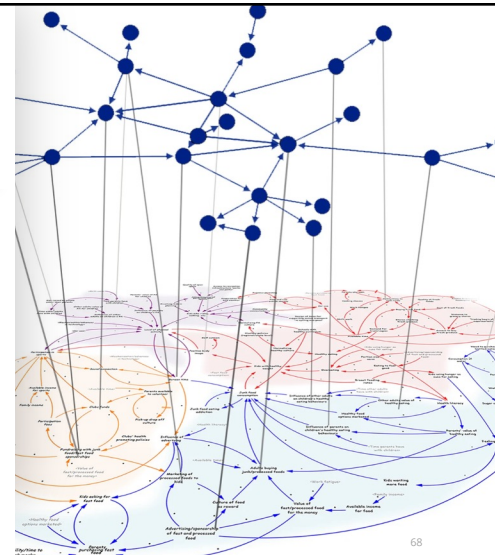
Ecological determinants of health and available natural resources.

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What is the Military Family Readiness System?

- The Military Family Readiness System is a network of programs and services operated by the Defense Department and other federal, state, and community-based agencies and organizations.
- The Military Family Readiness System promotes military family well-being by offering programs and services that enhance family readiness, resilience and quality of life.
- Collaboration and integration across the system promotes positive outcomes for service members and their families across the domains of military family readiness, including career, social, financial, health and community engagement.

Image from McGlashan, J., de la Haye, K., Wang, P. et al. Collaboration in Complex Systems: Multilevel Network Analysis for Community-Based Alcohol Prevention Interventions. *Soc Rep* 9, 12205 (2019). <https://doi.org/10.1038/s41598-019-47759-4>



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Wrap Up...

- Understand the different layers and modalities of nature-based interventions and applications toward health and well-being.
- Now familiar with and aware of opportunities within existing DoD installations and surrounding communities for military family resilience-enhancing EcoRx.
- Comprehension of the relationship between EcoRx, military family health and well-being, community capacity, and the Military Family Readiness System.
- Convinced and compelled by the science

How are you able to support families in your community in accessing the benefits of nature?



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THANK YOU TO:

Collaborative team of big thinkers:

Kristen McManus

Patti Dybdahl

Coral Owen

... and all of YOU!



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Thank You!

Keith G. Tidball, PhD
kgtidball@cornell.edu

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Additional Resources

Morale, Welfare, & Recreation:

<https://www.militaryonesource.mil/leaders-service-providers/morale-welfare-and-recreation/>

National Recreation and Parks Association: <https://www.nrpa.org/>

DODI 1342.22 Military Family Readiness:

<https://www.esd.whs.mil/Portals/54/documents/DD/issuances/dodi/134222p.pdf>

DoD Natural Resources Management: <https://storymaps.arcgis.com/stories/e477549826a040e1862924d795a773c8>

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Upcoming Event



Navigating Early Parenthood and Military Life

Thursday, September 7, 2023

11:00 am - 12:30 pm Eastern

This webinar discusses developing effective communication strategies, self-care techniques, and community resources to identify challenges and support military families.


Continuing education credit will be available for this session!

OneOp.org/learn/147565

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Continuing Education



This webinar has been approved for the following continuing education (CE) credits:

- 1.5 CEs from the UT Steve Hicks School of Social Work
- Certificate of attendance

Evaluation Link
Go to the event page for the evaluation and post-test link.

[Continuing Education](#)

Questions?
Email Coral Owen at oneopcommunitycapacity@gmail.com.

[OneOp.org/learn/22222](https://oneop.org/learn/22222) 75


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