

**DRAFT****Nature Imagery in Prisons Project: The Impact on Staff and Inmates in Solitary Confinement****2016 APA Annual Convention****August 5, 2016****Principal Author: Patricia H. Hasbach, Ph.D.****Co-Authors: Nalini Nadkarni, Ph.D.****Tierney Thys, Ph.D.****Emily Gaines, M.S.****Lance Schnacker****Introduction**

A basic tenet of ecopsychology is ‘We need nature for our physical and psychological well-being.’ Numerous studies support that statement and have shown that direct contact with real nature can positively affect psychological well-being by reducing anger and increasing positive affect, by relieving stress, and by enhancing mood. Exposure to nature has also been shown to reduce mental fatigue, improve problem-solving ability, and increase cognitive performance in a wide range of venues including hospitals, schools, assisted living centers, and military sites.

The restorative effects of nature have also been documented using other nature-exposure mediums including photographs, video, and computer generated images. Although *direct contact* with real nature is most effective, studies have shown that even indirect nature exposure can provide temporary relief from psychological stress in daily life.

Our study asked this question: Can exposure to nature imagery serve as an effective tool for reducing stress and violence in severely nature-deprived environments such as solitary confinement cell blocks in maximum security prisons, where access to real nature is impossible due to security issues?

Since the 1980s, the incarcerated population in U.S. prisons has increased, coupled with a rise in incidents of prison violence. To isolate particularly difficult inmates from the general prison population, many corrections systems have created facilities that are called “special housing units,” super-max security,” and intensive management units (IMUs) – all which involve solitary confinement. IMUs exist in 44 states and house up to 100,000 inmates nationwide. These intensive management units are costly to build and operate, and they are typically more dangerous and stressful for officers and staff than those facilities that house the general inmate population. Many inmates who arrive in IMUs with a functional level of behaviors can become withdrawn, have difficulty initiating or regulating their behavior, or become paranoid due to sensory deprivation and other disorienting features of the environment.

The use of *nature imagery* as a means of reducing stress and aggression has only minimally been used in prison environments, and almost always with static images such as murals. To our knowledge, the use of nature imagery has never been applied to solitary confinement cellblocks in high-security prisons.

The Nature Imagery in Prisons Project was a pilot program in which nature videos were shown to adult male IMU inmates at a maximum-security prison in Oregon, with the goal of reducing stress, anger, and violence among inmates and creating a safer and less stressful work environment for staff.

## Study Site

The Snake River Correctional Institution (SRCI) is a 3000 bed state prison that houses inmates at all levels of security. It also houses all of Oregon's IMU inmates in five designated cellblocks.

In 2013, prison administrators and staff consulted with experts in ecopsychology, corrections research, and nature media to generate ideas for implementing the Nature Imagery Project. Later that year, staff assembled a library of 38 nature videos and installed a projector in one of the indoor exercise yards on one IMU unit. Video content included images of diverse biomes (e.g. ocean, forest, rivers, jungle), aquarium scenes, a burning fireplace, Earth viewed from space, and cloud fly-throughs.

The exercise room with the projector was painted a light blue color to improve video resolution, and it became known as the "Blue Room." Inmates were allowed to request a video of their choice during regularly scheduled indoor recreation time.

Approximately one year after the NIP began, our team was assembled to study the impact of the program on IMU inmates and prison staff. Two planning meetings with SRCI staff were held prior to the research visit that occurred over three days in March 2015.

IMU inmates are monitored 24/7 and live in small cells (12'wide, 7'long, and 8'high) for up to 23 hours per day. At SRCI, each cell has a bed, a toilet, a metal door with windows to the inner area of the unit. No windows face the outdoors. Conditions are plain, with poured concrete walls and metal furniture. Inmates are allowed to exercise alone 4-5 times per week for one hour in an enclosed indoor or outdoor area called an exercise or recreation yard- which measures 21'long, 11' wide, and 21' high. An inmate in an outdoor exercise yard may be able to view the sky but has no other access to nature. In the indoor exercise area, there is a dip bar and a pull up bar attached to the walls.

We focused our data collection on one cellblock, the IMU-E cellblock, which houses 48 male inmates.

Cellblock E is split into two sides (E-A and E-B) with virtually identical layouts. Each side includes 24 individual cells, an indoor exercise room, and an outdoor exercise room. The Blue Room exercise yard is available only to IMU-EB side. The IMU-EA side has an identical recreation yard without the projection equipment, providing our control group.

Both sides are staffed by the same officers and share a single control room. Inmates in E-A and E-B have similar age ranges and treatment needs. Both E-A and E-B inmates receive dialectical behavior therapy (DBT), a modified form of cognitive behavioral therapy for the treatment of emotional instability, self-harming behavior, poor impulse control, and anger management. At the time of our study, over 60% of the inmates were in the unit between 7 months – 3 years.

Because of security and safety concerns, no physiological measurements (such as heart rate, blood pressure, saliva samples, or MRIs) could be taken with this population. With those constraints, we chose to employ a mixed methods approach to our data collection including inmate surveys, staff surveys, Pre/post video viewing PANAS tests (Positive and negative affect schedule, Watson et al. 1988) to evaluate inmate mood, direct observation of inmate behavior in the recreation yards of both A and B side, case study semi-structured interviews of 6 inmates and 6 staff members, and analysis of

retrospective data related to inmate disciplinary reports (DRs). The research project was approved by the University of Utah IRB and the Oregon Department of Corrections Research Committee.

## **Findings**

### **Effect of nature imagery on inmate Disciplinary Reports ( DRs)**

We examined the impact of showing nature videos on inmate negative behaviors and violence as measured by DRs, which are issued if a staff member believes that an inmate has broken a rule, ranging from showing disrespect (e.g. shouting at a staff member) to a violent act (e.g. assaulting staff or another inmate.)

Performing both Chi-square goodness of fit and multiple regression analyses, results suggest that showing nature videos is an effective method to reduce DRs among IMU inmates.

We found that inmates who watched nature videos committed 26% fewer violent infractions. This is equivalent to 13 fewer violent incidents over the year, a substantial reduction in real world conditions, since nearly all such events result in injuries to inmates or officers.

### **Effect of nature imagery on inmate mood**

Using the PANAS, we found no significant differences in self-reported emotions of inmates immediately before and after their time in the exercise room. However, written surveys and case study interviews with inmates indicated that exposure to videos had a positive impact on mood.

The majority of E-B inmate *survey* respondents (91%) agreed or strongly agreed that they felt calmer when they watched the nature videos.

80% indicated that this calm was sustained for several hours afterward,

78% agreed or strongly agreed that they remembered the nature videos when they got angry or agitated and felt more calm, and

67% indicated that the nature imagery project contributed to more positive relationship with staff.

Over 80% of survey respondents stated that exposure to nature videos made their time easier, 7% stated that it made it more difficult, and the remainder indicated no effect.

All survey respondents disagreed or strongly disagreed that watching nature videos made them feel more agitated, made them uninterested in learning more about what they saw, or affected their relationships with staff in negative ways.

Case study interviews supported that survey data.

All 6 E-B inmates interviewed reported that the nature videos had a positive influence on their mood (i.e. reduced irritability, felt more relaxed, was soothing).

Four inmates indicated that they thought about the nature imagery after they left the Blue Room.

- One inmate stated, "I thought what I would do if I could. I wonder if there are bears in the mountains. What would I do if I were out of here. I tell my kids, "We're going camping when I get out of here. It makes me think about my stuff."

Five of 6 reported positive physiological changes (e.g. slowed breathing, reduced tension, energized), and four reported health benefits (e.g., improved sleep, less pacing).

Four inmates indicated that watching nature videos has had a positive influence on their communication with others. They indicated that the images gave them something positive to share with family through letter writing or when they were allowed a visit, and one stated that officers offered time in the Blue Room when they noticed he was stressed. The inmate stated, "It showed the officers care."

### **Effect of nature imagery on inmate activities**

Results from our two methods of assessing inmate behavior (researcher observations and self-reporting via inmate surveys) were quite similar.

In the E-B exercise yard (Blue Room), inmates spent about half of their time watching videos (45% from researcher observation and 48% from self-reports).

They spent about two-thirds as much time exercising than those in E-A.

### **Inmate preference for nature imagery**

Results from *the written surveys* indicated that inmates liked videos featuring a wide variety of natural places, including beaches (n=10 inmates), mountains (9), oceans (8), jungle (7), and forest (7).

*Case study interviews* with Inmates indicated that they enjoyed videos with a wide variety of nature scenes, animals, colors, and open spaces. Reports from inmate interviews indicated that they preferred "jungle and mountains" (2), water (1), and rainforest (1), "places like where you'd go hiking and scenes of animals and places to dream about" (1), and "nothing in particular – something other than four walls"(1).

Analysis of video selection from records made over the course of the year revealed that the most frequently viewed video (43% of all views) featured a diversity of landscapes from different countries, high quality video and cinematography, uplifting music, a mix of animal life, no human presence, and scenes of blue skies, abundant light, and wide-open landscapes.

75% of E-B survey respondents indicated that they preferred nature sounds over music (17%) or silence (0%)

### **Prison Staff and Inmate Perception of the nature imagery intervention**

In interviews with prison staff members, most mentioned that they and their peers were initially skeptical about offering nature imagery to inmates. However, after several months of the intervention, they recognized it as a potentially effective tool.

By watching for precursor behaviors such as pacing or rocking, staff could offer an E-B inmate time in the nature imagery room to de-escalate behavior and avoid possible disciplinary action. One staff

member stated, “the response was amazing because sometimes all it took was 15-20 minutes in the nature imagery area to calm them down and get them back on task...”.

All six staff members stated they observed less violent behavior, fewer incidents of forced extractions, and fewer angry outbursts by inmates.

Two staff members stated they observed less self-inflicted injury by inmates, whereas four observed no change or did not know if there were differences in self-inflicted injuries.

Of the staff members who completed the survey, all of them agreed that the inmates became more calm and of those who answered whether these effects lasted for hours after they saw the videos, all answered positively.

The majority (76%) viewed their workload as easier or the same compared to time before the intervention.

Nearly 70% agreed that the intervention affected their relationships with inmates in a positive way.

### **Inmates perception**

Surveys of E-B inmates revealed that the inmates perceived the nature videos as having an overall positive effect. They reported that the intervention had high value for themselves, other inmates, and their families.

Although inmates in E-A (our control group) did not view nature videos in their exercise room, most (86%) were aware of the videos, due to hearing about them from other inmates (69%) or staff members (15%).

When asked if they would like to view the nature videos in the E-A exercise room, 71% said “yes”; 29% said “no” or that it would make no difference.

### **Study Limitations**

Our study is not without limitations. First, because inmates were deprived of social stimulation, the presence of outside researchers (mostly female) could have influenced them to provide biased information.

Second, we observed a reduction (10-20%) in the number of inmates electing to watch videos over the year-long course of the project. One reason for this decline may have been due to the intervention acquiring a possible mental health-related stigma. Alternatively, they may have simply had exhausted the video library and new videos were desired.

Finally, we could not discern whether viewing other types of films (i.e., non-nature) would have similar effects. However, many studies have shown that nature imagery is more effective at reducing stress than urban imagery, daytime television, or abstract art in a variety of healthcare venues (Laumann, Garling & Stomark, 2003; Parsons, Tassinary, Ulrich, Hebl, & Grossman-Alexander, 1998; Ulrich, 1991).

Therefore, further experiments could test the efficacy of other types of visual imagery among prison populations as well as identify which specific elements within the preferred nature videos are most responsible for the inmates' behavioral changes.

### **Conclusion**

This first study indicated that there is evidence that nature imagery in the form of nature videos offers a relief from the harsh environment of IMU for inmates. It also indicated that corrections officers and professional staff associated with the IMU population viewed the nature imagery (Blue Room) as a tool they could implement that was cost saving, time saving and contributed to their safety. It may also be a tool that can improve communication between inmates and staff.

Administration and staff at SRCI are now expanding the Nature Imagery Intervention Project to other units within the prison.

We have been contacted by several other prisons requesting information about the program

*Time Magazine* named the Blue Room as one of the "Top 25 Best Inventions of 2014."

An article with our full findings is currently out for peer review in a Corrections journal.