No Child Left Inside Week: Pilot Program

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CACHE VALLEY NO CHILD LEFT INSIDE: PILOT PROGRAM

PROGRAM EVALUATION

By

Jamie Cottrell Clark

A thesis submitted in partial fulfillment of the requirements for the degree

Of

MASTER OF SCIENCE

In

Geography
ACKNOWLEDGEMENTS

I would like to thank the No Child Left Inside Cache Valley Chapter for allowing me the opportunity to create Cache Valley NCLI Week for them. In particular I would like to thank Jack Greene, Sustainability Coordinator at Utah State University, for his wealth of wisdom and assistance in organizing this pilot program. I would also like to thank my committee, especially my advisor Claudia Radel, family, children, and most especially my fiancé, for all their love and support.
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No Child Left Inside Week: Pilot Program
Program Evaluation

ABSTRACT

This program evaluation assessed the feasibility and effectiveness of a free No Child Left Inside (NCLI) week-long outdoor program to coincide with the Utah state-designated No Child Left Inside Week. The pilot program was implemented at the community level in Cache Valley, Utah, in 2012. Families attended eleven activities throughout the week that included hands-on experience and participation. A community BioBlitz was also planned as a conclusion to the week. Survey results demonstrate increased excitement and desire to spend more time outdoors exploring and learning, accomplishing NCLI goals of laying groundwork for an environmental literacy foundation in America’s children.

Key Words: Nature, Outdoor Education, Children, Nature-Based Education, BioBlitz, NCLI

INTRODUCTION

Buckets and Petrie dishes were laid out along the stream’s shoreline with a magnifying glass for each participant. The “Water Bugs” session had ended more than thirty minutes earlier yet forty children continued to wade in and out of the cold canyon stream as it flowed through Mack Memorial Park in Smithfield, Utah. It was the second program of No Child Left Inside (NCLI) Week and the first evening program. The structured program time had ended, but the children

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1 For publication submission to Journal of Environmental Education, as a program evaluation
could not get enough. Questions like, “What’s this?” continued long after parents prompted their children it was time to go home. It seemed unstructured time in nature (Louv, 2005) was occurring naturally, as the children were eager to continue to explore and play. Brian Greene, Program Coordinator in the Watershed Sciences Department at Utah State University, made sure the children looked up each macro-invertebrate on the sheet in front of them, instead of just revealing to the children the name of the specimen. They had to learn for themselves wade into the water, turn over the rocks, catch the specimen with a net or hands, before returning to land and putting it in the Petrie dish for investigation. And the children were more than happy to comply.

During the summer of 2012, a NCLI week-long summer program in affiliation with the local Cache County NCLI chapter was organized. The First Annual Cache County No Child Left Inside Week was an opportunity for children and families to get outside at the beginning of summer and learn about the differing aspects of their local ecosystems as they were introduced to its varied components. The basic philosophy underlying the national NCLI movement is, “ensuring that every student achieves basic environmental literacy” (Chesapeake Bay Foundation, 2007). Through NCLI, children and adults are given the opportunity to learn about nature as they are introduced to the variety within their local ecosystems. Because there are many amazing, positive facets to nature it is hard to believe we have to offer up an argument to encourage children and their parents to go outside and enjoy it. But the truth is, in this day of technological advances and complex lives, our children are seeing and experiencing less nature and more technology. Many children have become disconnected from nature (Louv, 2005). This disconnect is hypothesized to correlate with the occurrence of obesity and attention/mental disorders in society (Clay, 2001; Suzuki, 2013; Center for Disease Control). By encouraging our
children to return to nature we can increase their awareness of their surroundings, develop their understanding of living things, and reconnect them to the earth. Ultimately, the end goal of the national NCLI movement and in particular, this week-long NCLI event, is to foster the future environmental stewards, recreationists, ecologists, foresters, and parents of our planet.

**BACKGROUND**

The No Child Left Inside federal legislation of 2007 was a response to the environmental education gap created by The No Child Left Behind Act of 2001 (Chesapeake Bay Foundation, 2007). The purpose of the 2001 Primary and Secondary Education Act (No Child Left Behind Act) was to refocus education towards the fundamentals of math, science, and reading. Teachers emphasized the information and ideas on which students would be tested, rather than focusing on the way children learn the information. Teachers no longer took students outside on fieldtrips; instead, they stayed inside to focus on math and reading fundamentals (Weilbacher, 2009). Environmental education began to lose momentum and importance throughout the United States’ core curriculum (Chesapeake Bay Foundation, 2007).

On June 3, 2011, Utah Governor Gary R. Herbert declared the second week of June 2011 as “No Child Left Inside Week” (Utah Society for Environmental Education, 2011) in response to other states’ initiatives; however, this Utah declaration was specifically for 2011 and does not extend to any successive years. The Cache Valley No Child Left Inside Coalition was at the forefront of this declaration in 2011 and will continue, along with Utah Society for Environmental Education (USEE), to submit a request that “No Child Left Inside Week” be reintroduced each year.
The research and literature behind the resurgence of environmental education posits that not only does increased time in nature enhance connection to nature and the natural environment, but it can also change attitudes and behavior towards nature (Cheng & Monroe, 2010; D’Amato & Krasny, 2011; Erdogan, 2011; Flett et al, 2010; Lewis et al, 2010; Weilbacher, 2009). Increased time in nature raises test scores, increases self-efficacy, creativity, and cognition, and reduces stress and attention deficit disorder symptoms (Clay 2001; Louv, 2005; Weilbacher, 2009), also, environmental education increases student engagement in science, improves student achievement in core subject areas, and helps address “nature deficit disorder” (Louv, 2005; Chesapeake Bay Foundation, 2007).

Published evaluations of nature-based activities/programs and outdoor education, both international and national (U.S.), overwhelmingly focus on school groups (Cheng & Monroe, 2012; Lewis et al, 2010; Erdogan, 2011), particularly fourth graders, or on outdoor camps, where older youth attend specific programs all week long (D’Amato & Krasny, 2011). Few evaluations have been published on community environmental education activities with differing participants at each event. Flett and colleagues (2011) have argued, “there is a desperate need for more outreach programs to be developed, employed in real population (as opposed to conducting laboratory-based research) and evaluated.” This evaluation responds to that call, by evaluating a NCLI pilot program with a wide age-diversity of participants who attended one or more free public programs at-will.
Program Goals

The 2012 Cache Valley NCLI Week pilot program was designed and implemented to assess the establishment of an annual event which would instill in children and their families a new or renewed excitement to learn about the local and regional environment. Family members considered their personal environmental values and developed nature-based skills, with an opportunity to learn and practice new environmental and conservation behaviors within a positive and supportive environment. Evaluation activities were carried out in parallel with the session activities. The results of this evaluation indicate the program achieved an increase in excitement and an intention to increase time spent outside, with a desire to learn more about nature. This article presents this pilot program and the findings from the evaluation of the program and its effectiveness. Hopefully, this week-long event will become a model for other communities to use throughout the burgeoning national NCLI movement.

Overview of Activities

For the week-long program, presenters were volunteers chosen from among local naturalists, including the local nature center, USDA Forest Service, as well as Utah State University (USU) graduate and undergraduate students. Presenters had the freedom to create their own sessions; however, the most successful programs followed an outline similar to lesson plans produced by Tiffany Kinder (2012), USU Department of Watershed Sciences, for Utah State University’s Natural Resources Field Days. Lesson Plans began with presenting the group with a basic introduction or background to the topic, including definitions, i.e. aquatic macro-invertebrates, adaptation, and wetland. Natural Resource Field Days lesson plans then had the children break into two substations. Substations allowed children to have hands-on experiences while learning
to identify and classify different species of insects and other creatures. In comparison, NCLI Week sessions did not break into substations. Children participants also gained a better understanding of habitat and adaptations by dressing up or seeing wildlife in their natural habitat (Kinder, 2012). These lesson plans connect to the Utah Core Curriculum (Standard 5, Objective 2, 3, and 4) (Kinder, 2012).

Program sessions were located at two city parks (Logan and Smithfield), one campground (USDA Forest Service), and one natural area (owned by Stokes Nature Center), throughout Cache Valley. Parks were chosen for their natural amenities and location in the valley – with one city park towards the north of the larger urban Smithfield-Logan-Providence corridor, one city park towards the center, and one natural area towards the south end of the valley. The pilot program was designed to be located at specific city parks, those without a manufactured playground and with tree stands, natural grass areas, and streams running through them.

Touching live animals, inspecting bug collections, and getting in a river to catch water macro-invertebrates with nets were just a few of the activities within the sessions. There were two sessions each day, Monday through Friday. One session was held in the morning and one session held in the evening. Each topic was offered only once during the week. Topics were chosen based on available naturalist volunteers, as well as the need for a broad range of subjects. Activity topics included: bugs, water bugs, Smokey Bear and campfire safety, nature journaling, birds and birding, bats, edible plants, nature crafts, fishing, rocks and basic geology, and snakes and reptiles.

The six day No Child Left Inside Week started on a Monday morning with “Hug a Bug” and ended Friday evening with “Snakes Alive,” with Saturday set aside for a BioBlitz. Four-
hundred-eighty-one participants (this figure does not include children under the age of one year old) attended 11 programs aimed at reconnecting local children to their natural environment (Louv, 2005). Children participants learned about campfire safety from Smokey Bear and the Wasatch-Cache Forest Service, regional bats, making a sun visor from cattails, and edible plants (adults were more readily open to tasting the edible plants than the children, but after much coaxing most of the children eventually tried).

**BioBlitz**

Our first ever Cache Valley BioBlitz was planned as the grand finale of NCLI Week, designed as the concluding event on the last day of a highly successful 2012 “No Child Left Inside” week. The Cache Valley NCLI Week BioBlitz was based on the National Park Service and National Geographic format (National Park Service, 2013). However, our BioBlitz did not follow the traditional 24-hour intensive search format, but was altered for families. Our format allowed for families to search and document as many species of plants, birds, mammals, fish, etc. as they could within a two hour time frame at the three designated parks. Plant and bird species were previously documented and listed by Jack Greene, local naturalist and NCLI presenter, and were listed on a handout for families to use along with a list of the NCLI BioBlitz Rules.

Unfortunately, by the end of the week no families returned to attend the Saturday BioBlitz event. We have many hypotheses as to why the BioBlitz was not attended: The event title of “BioBlitz” may have been too vague for many people to clearly understand the nature of the event, perhaps it should be replaced with something like “All Species Day”, or “Critter Hunt”, or “How many Animals Can You Find”; Saturdays tend to be a busy time for many families, and

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2 Thank you to Jack Greene, Sustainability Coordinator, Utah State University, for his leadership on the BioBlitz program.
there were several competing events throughout the local community that Saturday. We recommend holding the finale as the last session on the final weekday of the event. The final hypothesis is that the BioBlitz was offered at three different sites, and this may have confused the public. We recommend the finale be held at a single location.

**Planning the Pilot Program**

Planning and publicity for the pilot program began in late winter of 2011 and increased in intensity into late spring of 2012. The planning consisted of reserving covered areas or amphitheaters at the chosen parks, coordinating and finalizing locations and times with volunteers, and determining the event curriculum. Publicity consisted of fliers, social media, websites, emails, and public radio. The fliers contained program information, date, time, and location and were displayed on community boards in grocery stores, as well as at the library within Cache Valley. Social media and email were the main channels through which participants were contacted or received information about the event. Cache Valley NCLI Week was also featured on several websites, including Logan City (http://www.loganutah.org) and Cache Valley No Child Left Inside (http://www.cachevalleyncli.org). Information about the event was submitted to local public radio. A newspaper article and web link from the Logan newspaper appeared the day after the event launched (http://news.hjnews.com/news/article_a2e81d10-b42d-11e1-a3c6-001a4bcf887a.html).

**EVALUATION METHODS**

**Surveys**

The children’s survey is based on a “Post-Then-Pre Evaluation” method by Rockwell and Kohn (1989). This approach allows children to take less time completing the survey and to evaluate
their pre and post excitement more accurately after experiencing a NCLI activity. Following each activity, surveys were distributed to all participating families for completion. Each child, with the assistance of an adult (usually a parent), was given a survey consisting of ten questions on behaviors within and towards nature. Answers were based on a 5-point Likert Scale ranging from 1 (not at all excited) to 5 (extremely excited) for engagement in each behavior, with the scale applied to each participant’s personal assessment both “before” and “after” they attended the session, as reported after the conclusion of the activity session. The first eight questions referred to the child’s behavior towards and within nature. The last two questions referred to recycling efforts at home and in the community (see Table 1 for details and response frequencies for the ten questions). Recycling questions were asked in order to attempt to link participation in wildlife and nature programs to more “distant” environmental behaviors.

Likely due to the young age of many participants, several surveys (See Table 1) were missing answers on many questions, especially in the “before” columns. It is inferred that these children were not quite sure how to answer, or what their feelings had been before the program. Non-answered questions were assigned a 0 value, considered missing data, and were not included in the subsequent analysis.

An additional survey was given to adults in order to collect demographic data on participants. The objective of this survey was to better understand the demographic makeup of program attendees and compare this makeup to the regional population. Parents were asked for their age, household salary, number of children attending with them, highest level of education completed, current marital status, religious affiliation, race or ethnicity, whether or not they were a member of any local/state/national conservation groups, and how often they actively participated in conservation programs.
At the beginning of every session volunteers issued a request for adults to complete this “demographic survey” and children to complete a “children’s survey” after the session had ended. Surveys were then handed out at the conclusion of each session. Due to the younger ages of the children, volunteers encouraged parents to help their children answer the “children’s survey” questions by reading aloud each question and response options, which could have been a source of bias. Other sources of bias might include; listening to the answers of other children, possibly not understanding the meaning of “neutral” and therefore not wanting to circle that answer, and acknowledging the answers of other children.

Survey Participants

Program attendance numbers were obtained at the beginning of every session by either one of the two program coordinators in attendance. Counts were taken of individual participants for each event, which included some attendance to multiple events and thus resulted in some double-counting. The “children’s survey” had 54 (17%) respondents\(^3\) from the 324 child participants. Of those 54 respondents, 34 (63%) were male and 19 (35%) female and one unknown. Ages ranged from two years old to thirteen years old, with a mean age of 7.7 (SD=4.9).

The total of 157 attending adults also includes some duplicated individuals who attended more than one event. For the adults, 31 (20%) out of 157 attending adults completed the demographic survey. Twenty-five of these thirty-one adults were female and 6 were male. From observation, we know many families attended multiple programs, but only completed the adult survey once. In comparison, some children filled out more than one children’s survey.

\(^3\) Some child respondents completed more than one survey as they attended multiple sessions. We did not remove these duplicates, as we were measuring change after each session.
EVALUATION RESULTS

Effectiveness of Reaching Target Population

The demographic survey indicated that attendees were somewhat reflective of the local population, as reported by the regional 2010 census (U.S. Census Bureau), but more particularly reflective of the target audience of families. All but one adult participant practiced religion and everyone who filled out a survey was married. However, despite the close proximity to a state university with high rates of marriage and parenthood among students, there were few current student families that participated. Nonetheless, many of the families that attended did have ties to the university. Of the 31 surveyed adults, 28 were Caucasian (90%), compared to 85% within Cache Valley, according to the 2010 census (U.S. Census Bureau). The other three respondents indicated nationalities or ethnicities of “Iranian”, “Japanese” and “Asian.” There were a few people of other ethnicities at the parks during the activities, but they did not join the programs despite invitation to do so, instead choosing to watch from afar. Hispanics represent 10% of the Cache Valley region (U.S. Census Bureau), but had no representation throughout the week of programs.

Interesting results came from the question of how often these participating families partook in conservation or nature-related programs (See Figure 1). A majority 58% (18 out of 31) had never participated in any known program. The next highest response was “once a year”, with 7 out of 31 or 23%. The phrase, “conservation program” was not defined on the survey, and this fact may have contributed to the high “never” results. It is possible that changing the phrase to “nature-based program” could have altered the response rates.
Effectiveness in Increasing Children’s Enthusiasm in Nature

Lewis and colleagues (2010), state the importance for environmental education in early childhood. During this critical time in life, children begin to establish behaviors and understandings of their local environment. Table 1 illustrates prior to participating in the NCLI Week activities the children expressed only moderate enthusiasm for nature, expressed in the survey as “excitement” to engage in particular actions; however, after they attended a session their excitement to learn about and explore nature was expressed with increased intensity. One participant was even so excited about a session he attended that on the survey he wrote in and circled a 6 off to the side for several “after” questions pertaining to exploring more of Utah; visiting a national forest, national park or state park; and learning more about wildlife and nature.
### Table 1. Children’s Survey Response Frequencies (N=54)

<table>
<thead>
<tr>
<th>How excited are you…</th>
<th>1=Not at all excited</th>
<th>2=a little excited</th>
<th>3=Neutral</th>
<th>4=very excited</th>
<th>5=Extremely excited</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>To go exploring in your backyard</td>
<td>Before</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>39</td>
</tr>
<tr>
<td>To go exploring in your neighborhood</td>
<td>Before</td>
<td>1</td>
<td>5</td>
<td>13</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>To go exploring in your part of the state (northern Utah)</td>
<td>Before</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td>36</td>
</tr>
<tr>
<td>To visit a national forest, national park or state park</td>
<td>Before</td>
<td>0</td>
<td>2</td>
<td>11</td>
<td>13</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>To learn more about wildlife, nature, or forests</td>
<td>Before</td>
<td>0</td>
<td>3</td>
<td>9</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>To participate in a nature program in your town</td>
<td>Before</td>
<td>0</td>
<td>5</td>
<td>12</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>41</td>
</tr>
<tr>
<td>To take a friend or sibling outside to explore</td>
<td>Before</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>37</td>
</tr>
<tr>
<td>To teach a friend or sibling what you learned this week at one of our programs</td>
<td>Before</td>
<td>1</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>To recycle at your house</td>
<td>Before</td>
<td>0</td>
<td>6</td>
<td>12</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>32</td>
</tr>
<tr>
<td>To help educate your neighbors about recycling</td>
<td>Before</td>
<td>6</td>
<td>8</td>
<td>15</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>14 (4.5-1)</td>
<td>22</td>
</tr>
</tbody>
</table>

For every question reported, excitement to engage in the behavior increased and these results are statistically significant \((p=0.00)\) (See Table 2 and Figure 2). Although the results are encouraging, we should remain cautious regarding the significance of the statistical outcomes, as they pertain to immediate excitement and not long-term excitement and actual behavior change. A majority of the participants were extremely excited after the opportunity to touch snakes, break-up rocks, or catch insects. Consequently, at the time of the survey participants were very enthusiastic and reported an extreme willingness to explore and experience nature. However, with no follow up research possible within this pilot program evaluation, we do not know what the actual behavior of the children was by the end of the summer, whether excitement was
sustained over the summer, whether or not the NCLI Week increased actual time spent outdoors and in nature, or if participants simply demonstrated excitement to do so without follow through. Similar research within Cache Valley (Kinder, 2010) indicates fourth grade students who attended Utah State University’s Field Days in 2009 showed significant increase in knowledge two weeks after the event and were able to retain most information eight months after participation. This finding suggests children who attended sessions at NCLI Week should retain information learned throughout the summer months following NCLI Week, and might therefore also retain excitement.

**Table 2. Statistical Results of Paired T-Test for Children’s Survey (N=54)**

<table>
<thead>
<tr>
<th>How excited are you…</th>
<th>Test</th>
<th>Mean</th>
<th>SD</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>To go exploring in your backyard</td>
<td>Before</td>
<td>3.62</td>
<td>1.16</td>
<td>t=6.636, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.63</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>To go exploring in your neighborhood</td>
<td>Before</td>
<td>3.79</td>
<td>1.10</td>
<td>t=6.539, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.62</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>To go exploring in your part of the state (Northern Utah)</td>
<td>Before</td>
<td>3.96</td>
<td>1.12</td>
<td>t=4.959, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.63</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>To visit a national forest, national park, or state park</td>
<td>Before</td>
<td>4.16</td>
<td>0.92</td>
<td>t=4.436, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.65</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>To learn more about wildlife, nature, or forests</td>
<td>Before</td>
<td>3.98</td>
<td>0.85</td>
<td>t=6.155, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.60</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>To participate in a nature program in your town</td>
<td>Before</td>
<td>3.94</td>
<td>1.03</td>
<td>t=6.289, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.67</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>To take a friend or sibling outside to explore</td>
<td>Before</td>
<td>3.89</td>
<td>1.03</td>
<td>t=5.836, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.59</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>To teach a friend or sibling what you learned this week at one of our programs</td>
<td>Before</td>
<td>3.57</td>
<td>1.11</td>
<td>t=7.508, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.50</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>To recycle at your home</td>
<td>Before</td>
<td>3.92</td>
<td>1.09</td>
<td>t=4.485, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>4.38</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>To help educate your neighbors about recycling</td>
<td>Before</td>
<td>3.23</td>
<td>1.34</td>
<td>t=5.329, p=0.00</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>3.97</td>
<td>1.17</td>
<td></td>
</tr>
</tbody>
</table>
Cheng & Monroe (2012) suggest that although excitement may be high after a program, behavior tends to change slowly and therefore we should not expect a significant difference in possible long-term results of student attitudes and behavior changes after just a few nature-based sessions. We hypothesize that high excitement matters when it comes to short-term behavior change. High excitement should be further contemplated when considering long-term behavior support.

Results of the NCLI Week evaluation show when looking at the change in means from “before” to “after” the activity, the average response in the 5-point scale increased over 0.7 points (see Figure 2). That is an average increase from “very excited to “extremely excited,” which for children may not be a large expressed change, but may be enough to increase curiosity and willingness to explore outdoors, if only temporarily. Average changes were not as high for the two questions pertaining to recycling. Contributing to these lower scores may have been the young age of participants, or not understanding the value of recycling. Recycling was not mentioned during the presentation of any of the programs or activities, but helping the Earth was highlighted by most presenters.

**Figure 2. Children’s Reported Before and After Enthusiasm**
DISCUSSION

The Cache Valley NCLI Week Pilot Program was successful in its effectiveness in increasing enthusiasm in children towards nature. This conclusion is re-enforced by parent comments, “my kids are so excited about this program,” “This has been SO fun & definitely got us outside and into places & topics we would not have otherwise gotten into,” “This was a great week. Very educational. Great adventure for the kids to learn about their environment.”

Results from the children’s survey demonstrate participants’ increased excitement to explore nature and the environment. Excitement could then translate into enjoyment of nature, where children learn to empathize with living creatures, develop interest in spending more time in nature, and increase mental and physical well-being within themselves (Cheng & Monroe, 2012). Participating children were able to spend time in nature and attend educational sessions they might not otherwise attend. Topics were varied and focused on basic information as well as hands-on experience.

The goal of serving a cross-section of families in the community was less effectively met. We particularly note the absence of participation by Hispanics in the Cache Valley NCLI Week Pilot Program activities. Latinos, the fastest growing ethnic group in America, are largely absent from outdoor recreation and nature programs (Madsen, 2012; Strife & Downey, 2009; Van Velsor & Nilton, 2007) and were completely absent during the NCLI Week events, even though Latinos embody 10% of the total Cache Valley population (U.S. Census Bureau). Jodie Madsen (2011), former Utah State University graduate student, conducted thesis research which focused on the recreational decisions of Latinos in Cache Valley. Madsen determined that although Latinos use the valley’s city and state parks and recreated frequently with their families, they less
often frequented national parks and less developed federal lands. A number of barriers prevent Latinos and other minority groups from experiencing wildlife and nature, including unfamiliarity with nature, cost, and language barriers (Madsen, 2011; Strife & Downey, 2009; Van Velsor & Nilon, 2007). Our recommendation is that fliers and schedules for NCLI Week be bi-lingual, in an effort to address, at the very least, any language barriers. Additional strategies to explicitly welcome participation by the Hispanic community should also be developed. The lack of cost for participants during NCLI Week overcomes the financial barrier, while siting activities at local parks helps to address access and proximity issues (Strife & Downey, 2009).

**FOR PRACTICE / IMPLEMENTATION**

There were a numerous additional lessons learned based on the pilot program experience that constitute suggestions for future programs in Cache Valley and elsewhere. Because many of the participants attended multiple programs, the idea of a nature journal was discussed as a need for future NCLI Weeks. A nature journal would allow children to take notes or draw pictures of what they have learned within each of the sessions in a fun and interactive way. It would also be a great place for participants to keep any fliers, handouts, activities or pictures mom and dad took to remember their experience and take on future explorations outside. There is also a possibility of participants earning a “naturalist badge,” similar to the National Park Service’s Junior Ranger Program, for attending activities.

We found that children need to have something to take home to complete, apart from the craft or activity carried out during the NCLI Week session, whether it is an activity page to fill out or color, a bat house they could build after learning about regional bats, or a list of regional
birds to look for when they are out exploring. A take-home activity is a tangible reminder of the
sessions attended and an extension of learning. Volunteer presenters should have these hands-on
activities for distribution at their activity as an extension of the structured time in nature (Louv,
2005). Participation and hands-on activities are vital to the learning experience for children
(Lewis et al, 2010).

We also learned that a crate filled with binoculars, Petrie trays, magnifying glasses, bug
nets, and other tools kept at each session for participants to use as needed, was not only helpful
but necessary. These tools were a great way for children to experience nature. Without them the
sessions would have been more of a watch and listen class rather than an interactive learning
experience. After learning about bugs or macro-invertebrates, children were able to take nets and
catch specimens for the opportunity to look at and study them.

CONCLUSION

The first annual Cache County No Child Left Inside Week gave families the opportunity to learn
through hands-on and interactive nature-based experiences in ways they might not otherwise
have had to participate. In today’s world most families want to be active and spend time “in
nature together—as a family” (Flett et al, 2010) when the opportunity presents itself. Flett and
colleagues continue, “Promoting activities that are not only healthy, but that support family
togetherness, reveals the holistic benefits of nature-based physical activity. Such benefits include
the social, ecological, emotional, psychological, spiritual and physical dimensions of wellness”
(p. 300).
Now is the time to send our children back outside to experience nature and life. Through these experiences children develop a deepened respect for the earth and for themselves, and they learn to care about living things (Wilson, 1997). The No Child Left Inside national movement is beginning to get our children back into nature to further their understanding of ecosystems and give them a sense of identity and place (Benbow & Camphire, 2008; Chesapeake Bay Foundation; Lewis, et al., 2010). The Cache Valley NCLI Week pilot program activities went beyond just exposing children to nature, it involved them in discovery and exploration, further encouraging and enhancing the participants’ excitement for and experience in the outside world around them. This excitement can serve as a foundation for environmental literacy and has sprouted within the children, through their NCLI activities at the community level (Benbow & Camphire, 2008; Chesapeake Bay Foundation; Lewis et al, 2010; Weilbacher, 2009). This foundation then can become a stepping stone for future learning and exploration. The first annual Cache County No Child Left Inside Week increased children’s excitement for engaging in a variety of behaviors in and towards nature, and hopefully established a foundation of environmental knowledge to translate that excitement into summer outdoor exploration and beyond.

**SUMMARY OF RECOMMENDATIONS FOR PRACTICE**

- Monday through Friday sessions
- Morning and evening programs
- Bilingual advertising flyers
- Local naturalist presenters
- Latino presenter
- Varied topics
- Sessions appealing to both parents and children
- Nature journal
- Available materials (crate)
- Take-home activity
References


APPENDIX
Whereas, June is traditionally a month where many children complete their school year and have significantly more time to spend outdoors;

Whereas, research has shown that outdoor play provides significant physical and mental health benefits and students learning in an outdoor setting have increased retention of knowledge and enhanced academic performance;

Whereas, the Utah Recreation and Parks Association strongly advocates the continued development of community programs and outdoor opportunities that are vital to the health and wellness of Utah's children;

Whereas, Utah's abundance of natural resources such as mountains, rivers, lakes, deserts, parks, and forests provide a wealth of outdoor recreational opportunities;

Whereas, children growing up in Utah are encouraged to spend time in the outdoors;

Whereas, early childhood experience with nature can be an influencing factor in nurturing a lifestyle of outdoor participation and stewardship of natural resources;

Whereas, many local, community, state and national park lands provide programming to engage children in outdoor recreation, including Scouting, the DWR sponsored Youth Fishing Clubs, nature centers, Audubon, and the United States Forest Service More Kids In The Woods program; and

Whereas, Utah State Parks "Rockin' Utah" helps identify and support programs and initiatives to help motivate children, teenagers and their families enjoy being outdoors;

Now, Therefore, I, Gary R. Herbert, Governor of the State of Utah, declare the second week in June 2011 as

No Child Left Inside Week

[Signature]
Governor
PLANNING
**No Child Left Inside**
Monday June 11th – Saturday June 16th

**Goal:** To bring together community entities and agency field experts during a week-long event that has families consider their values and build skills, and offer opportunities to learn and practice new environmental and conservation behaviors in a supportive environment (Jacobsen et al, 2006).

**Location:**
Stewart Nature Park (100 South 700 East, Logan)
James Mack Memorial Park (Center Street Canyon Rd, Smithfield)

**Behavior to be promoted (objective):** increase time spent in nature, by cache valley children and families.

**Barriers:** gas prices, stranger danger, location of trails and outdoor activities, winter climate, knowledge of local nature

**Benefits:** mental and physical health, stewardship

**Strategy to utilize behavior change tools to address barriers and benefits:** ???

**Planning Resources**

- Bridgerland Audubon Society
- NCLI Cache Valley Chapter
- Stokes Nature Center
- Forest Service (Leave No Trace, Smokey Bear)
- DNR (tracks and scat)
- American West Heritage Center
- Hardware Ranch (DWR)
- State Parks
- Utah Geological Survey
- Forestry, Fire, and State Lands
- USU Extension (Gardening)

**ACTIVITIES**

- Bird Houses
- Activity Book
- Birding Field Trip
- Planting flowers
- Bat Field Trip
- Hiking Field Trip

**SCHEDULE (Speakers and Locations)**

**SPONSORS**

- Lowes (birdhouses)
- Logan City Parks and Rec
- Public Library
- Home Depot
- Cache County

**VOLUNTEERS**
MARKETING

Fliers
NCLI Brochures
News Release
Herald Journal (Logan)
Preston Citizen
KSL (Community page)
Brochures of Cache Valley Rec Locations
Ogden Standard Examiner
Fliers-Aggie Village, Scouts
Websites (NCLI, Logan Parks and Rec)

ACTIVITY BOOK

Northern Utah Trees
Tracks and Scat
Leave No Trace
Cache Valley Trails
Cache Valley Geology
Northern Utah Birds
Northern Utah Fish/Wildlife
Wilderness Etiquette
Cache Valley History
Cache Valley Agriculture

Map/check list of places to go (NPS, State Parks, etc.)
Weekly activity log

SURVEY

What are current patterns / activities?
NCLI Week activities make impact?
Do I use a survey at local school to find patterns before NCLI Week?

Focus Group: Cache Valley Families (?)

DEMOGRAPHICS

# of family attending  # adults  # kids
Income bracket
Religious Affiliation
Parents’ education level

DETERMINE IMPACT

Scheduled vs. free time activities
How far traveled and willing to travel for activity
How often does your family visit NPS, Forest Service, State Parks (in the last year)
How often does your family visit local trails, city parks, Beaver Ski Resort (in the last year)

**PROBABILITY**
Using scale...how likely is your family to go visit....

**FOLLOW UP INTERVIEWS**
Did attending NCLI Week increase outdoor time?
Did attending NCLI Week change the way you view nature?
Did Week excite you to learn more about...birds, forests, etc.?
Would you attend next year if scheduled?
What would you like to see changed?
Favorite part of NCLI week?
Activity Descriptions

Explore bugs, birds, bats, edible plants, and other wild things through fun “hands-on” activities led by local natural naturalists!

IT’S FREE!

Don’t forget to bring a blanket or your chairs to the three beautiful parks for our wonderful fun-filled programs and activities.

MONDAY JUNE 11TH
10 AM – Stewart Nature Park
   Give a Bug a Hug!
   There are thousands of bugs and other creepy crawlers here in Cache Valley. Local entomologist, Virginia LJ Bolshakova is going to teach us about all those bugs.

7 PM – Mack Memorial Park Brian Greene
   Water Bugs!
   Brian Greene will take us on a trip along the stream and show us all the water bugs at the park.

TUESDAY JUNE 12TH
10 AM – Stokes Nature Center Nibley Property –
   Nature Journaling
   Come to a workshop and learn how to create a naturalist journal, illustrations, notes, observations, pressed leaves or flowers, from Ru Mahoney.

7 PM – Stewart Nature Park
   Tweeting & Twittering!
   We’re going to look and listen, with local naturalist Sadie Enright, for all the beautiful birds in Cache Valley. How many can you name?

WEDNESDAY JUNE 13TH
10 AM – Stewart Nature Park
   Bat Man!
   Come learn all about haunting but cool bats that live here in Northern Utah from local “Batman” Val Grant.

7 PM – Mack Memorial Park
   Edible & Useful Plants
   Do you know which wild plants you can eat and which ones are poisonous? Local naturalist, Jack Greene will show you the edible and useful plants that you can find here in Cache Valley.
THURSDAY JUNE 14TH
10 AM – Mack Memorial Park
   Nature Arts & Crafts
   Come have fun making nature crafts and learn to put more nature in your art. By Kayo Robertson.

7 PM – Stokes Nature Center Nibley Property
   Gone Fishin’
   Not only do you learn about and identify the fish in the Bear and Logan Rivers, you might learn a few fishing tips from Tim King.

FRIDAY JUNE 15TH
10 AM – Mack Memorial Park
   Rock On!
   Robin Butz is going to teach us about the rocks, fossils, and minerals that are from Northern Utah.

7 PM – Stewart Nature Park
   Snakes Alive!
   Are you ready to see and learn about snakes? Andrew Durso is going to bring some snakes and teach us all we need to know about them. How many do you think live here in Cache Valley?

SATURDAY JUNE 16TH
10 AM – Noon – All three locations

SPECIAL EVENT
BIOBLITZ
The No Child Left Inside Week BioBlitz is going to be the first of its kind here in Cache Valley. Bring your digital camera or cell phone to take pictures and compete with other families to see who can discover and record the most critters.

LOCATIONS
Come explore with us at one of our three locations!

Stewart Nature Park (100 South 800 East, Logan)
Mack Memorial Park (125 Canyon Road, Smithville)
Stokes Nature Center Nibley Property (2600 North just west of Highway 165, Nibley)
**Bioblitz!** June 16, from 10 am to noon, a competition for who can discover and record the most different critters! (species diversity!)

*Given the very limited time for families with young children, (A Bioblitz generally occurs in a 24 hour time span), I suggest the following procedure: (please add your own and challenge mine, this is a trial run!)*

Plants: Jack will make a list at each site, unless we have another botanist in the group. He will collect those he doesn’t know for future I.D. at the Intermountain Herbarium.

Birds: Jack will do a species count earlier in the day for each site; he is an excellent birder, including I.D. by song.

The following are open to all participants:

Mammals: We will allow fresh sign to be counted- tracks, scat, dens, and direct sightings of course! *Does anyone have access to snap traps that could be placed the night before in shaded areas?* I’ll check with CNR.

Herps: We will have several excellent herpetologists with us- Dave, Lori, Nick. *Please capture for show and tell as they add considerable excitement!* 

Insects, arachnids, and crustaceans: We will have field guides and nets- to be used with adult supervision. Also, Virginia may have some insect traps to be placed the day before.

Water fauna: *Does anyone have a rubber raft for the Nibley pond?* I’ll check with some possible sources in Nibley. We’ll have collecting nets, trays, hand lens, etc.

Safety for us and the critters!

- Small children near water must have adult supervision!!
- Pay strict attention to described boundaries, nothing counts beyond the established limits!
- Certain inbound areas may be off limits where young animals or nests are present
- One insect net per group to be used by a responsible individual.
- Avoid bee/hornet/wasp encounters!
- Don’t attempt to capture snakes, mammals, spiders, or insects unless done safely- with gloves preferably. **Better to use cameras!!**
- Keep running to minimum- scares wildlife and you may sprain/break ankles, step on a snake, or worse!
- If you turn over a rock, log, board, please replace as this was someone’s home!
- Keep noise to minimum or you may miss a bird call or a snake’s rattle!

Supplies and Materials: most will be available through the USU Quinney Library, but if you have access to any, the more the merrier!
• Clip boards
• Recording sheet (Jack has, but please bring if you have your own version for consideration)
• Nets, aquatic and field
• Binoculars
• Aquatics- nets, trays, hand lens, kick nets
• Field guides
• Mammal snap traps
• Insect traps
• Digital cameras
• Plastic jars for collecting, which will generally be discouraged, cameras encouraged
• First aid kits
• Flashlights for looking in holes
• Other things?

**Bioblitz activity Instructions**

1. Your team will have one hour to document as many different critters seen/heard/smelled within the boundaries described. Fresh sign- scat, tracks, dens O.K. if documented with camera or verified by naturalist.
2. **Your team may be disqualified if you are not following the safety rules**
3. Use your camera to keep collecting to a minimum
4. If you capture something with a net, take picture, then release
5. Each team will have field guides, or a naturalist to help I.D.
6. Don’t forget to look under things lying on the ground, but carefully replace whatever you disturb
SURVEYS
CACHE VALLEY NO CHILD LEFT INSIDE WEEK

My name is Jamie Clark. I am a Master’s Degree Candidate at Utah State University. This survey will take less than 5 minutes and is completely anonymous. Results will be used to see who is attending this week’s scheduled nature/conservation programs here in Cache Valley, Utah. Please circle the appropriate answer.

1) Are you male or female?
   ○ Male
   ○ Female

2) What year were you born?  19_____ 

3) Approximately what is your total household income?
   - Less than $20,000
   - $20,000-$39,999
   - $40,000-$59,999
   - $60,000-$79,999
   - $80,000-$99,999
   - more than $100,000

4) What is the highest level of education you have completed?
   - Less than high school
   - High school / GED
   - Some college
   - 2 year college Degree (associates)
   - 4 year college Degree (BA/BS)
   - Master’s Degree
   - Doctoral Degree
   - Professional Degree (MD, JD)

5) What is your current marital status?
   - Single, never married
   - Married
   - Divorced
   - Separated
   - Widowed
   - Widowed

6) What is your religious affiliation?
   - Protestant Christian
   - Roman Catholic
   - Evangelical Christian
   - Muslim
   - Hindu
   - Buddhist
   - Jewish
   - Latter-Day Saint
   - Other______________
   - None

7) What is your race or ethnicity?
   - Caucasian, non-Hispanic
   - Hispanic
   - African American
   - Asian-Pacific Islander
   - Native American
   - Other________________________

8) How many other adults are with you today? _____

9) How many children are with you today? ____

10) How old are your children? Boy(s)_______________ years old. Girl(s)_______________ years old.

11) Are you a member of any local/state/national conservation groups (i.e. Bridgerland Audubon Society, Sierra Club, etc.)? if so, please list:

12) Approximately how often do you actively participate in conservation programs?
   - Never
   - Once a year
   - A few times a year
   - At least once a month
   - At least once a week

Thank you for taking the time to fill out the survey. Your participation is greatly appreciated. For results please go to the No Child Left Inside website http://www.cachevalleyncli.org
**Attendance / Surveys NCLI 2012**

**DO LEFT INSIDE WEEK: CHILDRENS’ SURVEY**

Please feel free to read to or assist your children, if needed.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning</td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tell me how excited you are about nature before this class and after taking this class by circling one answer in each row.

*Also enclosed on this page.*

excited

<table>
<thead>
<tr>
<th>Activity</th>
<th>Presenter</th>
<th>Adults</th>
<th>Children Under 7</th>
<th>Total</th>
<th>A</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hug a bug</td>
<td>Virginia</td>
<td>11</td>
<td>30</td>
<td>41</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Water bugs</td>
<td>Brian Greene</td>
<td>23</td>
<td>38</td>
<td>61</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How excited are you...</th>
<th>Before</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bring in your backyard</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Bring in your neighborhood</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Bring in your part of the state (Northern Utah)</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>National forest, national park or state park</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Are about wildlife, nature, or forests</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Take a nature program in your town</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Friend or sibling outside to explore</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Friend or sibling what you learned this week at one of our programs</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>At your house</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
<tr>
<td>Educate your neighbors about recycling</td>
<td>1 2 3 4 5</td>
<td>1 2</td>
</tr>
</tbody>
</table>

Circle one: Boy Girl  How old are you?  Did you go to any other programs this week?
<table>
<thead>
<tr>
<th>Activity</th>
<th>Participant</th>
<th>14</th>
<th>28</th>
<th>25</th>
<th>42</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smokey Bear</td>
<td>Dan</td>
<td>14</td>
<td>28</td>
<td>25</td>
<td>42</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Nature journaling</td>
<td>Ru</td>
<td>8</td>
<td>16</td>
<td>12</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twittering</td>
<td>Sadie</td>
<td>15</td>
<td>29</td>
<td>23</td>
<td>44</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Bat man</td>
<td>Val Grant</td>
<td>26</td>
<td>69</td>
<td>60</td>
<td>95</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Edible plants</td>
<td>Jack Greene</td>
<td>11</td>
<td>20</td>
<td>8</td>
<td>31</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Nature crafts</td>
<td>Kayo</td>
<td>14</td>
<td>37</td>
<td>18</td>
<td>51</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Robertson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gone Fishin’</td>
<td>Tim King</td>
<td>11</td>
<td>15</td>
<td>12</td>
<td>26</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Rock on!</td>
<td>Robin Butz</td>
<td>9</td>
<td>15</td>
<td>9</td>
<td>24</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Snakes Alive!</td>
<td>Andrew Durso</td>
<td>15</td>
<td>27</td>
<td>22</td>
<td>42</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>BIOBLITZ</td>
<td>Mack</td>
<td></td>
<td></td>
<td></td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stewart</td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
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</tr>
<tr>
<td></td>
<td>Nibley</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>157</td>
<td>324</td>
<td>232</td>
<td>481</td>
<td>31</td>
<td>54</td>
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</tbody>
</table>

**HANDOUTS**
Cache County Bird List

All 3 sites have surface water, mixed riparian and upland. Two have fields of consequence. All are breeding birds, census is partial, taken mid June 2012. All are contiguous with wildlife corridors and considered urban.

SNC Nibley (11 acres)
1. Starling
2. robin
3. Mourning dove
4. Eurasian collared dove
5. Bullock’s oriole
6. Black headed grosbeak
7. Yellow warbler
8. Black capped chickadee
9. House wren
10. Pheasant
11. Mallard ducks
12. King fisher
13. Western kingbird
14. Barn swallow
15. Redtail hawk
16. House finch
17. Lazuli bunting
18. Red winged black bird
19. Magpie
20. Western wood peewee
21. American goldfinch
22. Brown headed cowbird
23. Killdeer
24. Flicker woodpecker

Stewart N.P. (5 acres)

1. Starling
2. robin
3. Mourning dove
4. Eurasian collared dove
5. Black headed grosbeak
6. Yellow warbler
7. Black capped chickadee
8. Pheasant
9. King fisher
10. Barn swallow
11. Redtail hawk
12. House finch
13. Lazuli bunting
14. Magpie
15. American goldfinch
16. Brown headed cowbird
17. Song sparrow
18. Lesser goldfinch
19. Western tanager

Mack N.P. (2 acres)

1. Starling
2. robin
3. Eurasian collered dove
4. Black headed grosbeak
5. Yellow warbler
6. Black capped chickadee
7. Pheasant
8. King fisher
9. Redtail hawk
10. House finch
11. Lazuli bunting
12. Brown headed cowbird
13. Pine siskin
14. Flicker woodpecker