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ABSTRACT

A study conducted a nationwide evaluation of 15 residential camp programs designed for children, youth, and young adults with mild to severe disabilities. The study involved 2,184 campers (ages 7-19) with disabilities and was undertaken to further validate evaluation instrumentation, evaluate residential camp programs for children with disabilities in major regions of the country, and implement a dissemination plan to communicate project results nationwide. Results from the study indicate that campers made notable achievements in effective and recreational/living skills as judged by impartial observers, their counselors, and their parents. Nationwide, campers of varying ages, disabilities, and ability levels demonstrated high levels of enjoyment and participation in most program activities, and were affected positively by the camp experience. Campers with more severe disabilities were able to perform recreation skills at relatively high levels of independence. Campers also made positive gains in the camp setting in various areas of personal development that were carried over to the home and community setting, including communication, independence, and self-esteem. Lastly, the combined results of all measures revealed that increased independence was the predominant outcome for the campers. Implications of the findings are discussed, including the benefits of organized residential camping. (Contains 47 references.) (CR)

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# FINAL REPORT

<b>Project Title:</b>	<b>A National Evaluation of Residential Camp Programs Serving Persons with Disabilities</b>
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<b>Office:</b>	<b>Office of Special Education Programs U. S. Department of Education</b>

**Abbreviated Project Title:  
National Camp Evaluation Project (NCEP)**

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## **PARTICIPATING CAMPS in 14 States**

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Camp ASCCA, AL  
Camp C.A.M.P., TX  
Camp Courageous, IA  
Camp Easter Seal-West, WA  
Camp Greentop, MD  
Camp Harmon, CA  
Camp Thunderbird, FL  
Clemson Outdoor Laboratory, SC  
Easter Seal Camp-Lake Bloomington, IL  
Easter Seal Camp, NM  
Enchanted Hills Camp, CA  
Hemlocks Recreation Center, CT  
Mt. Hood Kiwanis Camp, OR  
Wisconsin Lions Camp, WI

## MAJOR CAMP CONTRIBUTORS NATIONWIDE

CAMP	YEAR	CAMP ADMINISTRATOR	CAMP DIRECTOR	RESEARCH ASSISTANT(S)
Bradford Woods, IN	1994	Gary Robb	Margie Solis	Carol Stone Jennifer Cross
Camp ASCCA, AL	1994	Jerry Bynum, Jr.	Tom Collier	Stephanie De Bois
Camp Greentop, MD	1994	Phillip Holmes	Diane Triplett	Connie Tressler
Camp Harmon, CA	1994	Roger Wellman	Jane Carr	Brooke Graff Kerry Ann McCartney
Clemson Outdoor Laboratory, SC	1994	Norman McGee, Jr.	Norman McGee, Jr.	Leslie Conrad
Hemlocks Recreation Center, CT	1994	John Quinn	Sunny Ku	Marnie Dixon Helen Stearns
Mt. Hood Kiwanis Camp, OR	1994	Gene Nudelman	K.C. Reuman	Catherine Theriault
Camp C.A.M.P., TX	1995	Sam Van Neste	Sam Van Neste	Anne Gibson Paula Hermanson
Camp Courageous, IA	1995	Charles Becker	Mike Maher	Sue Gueenkauf
Camp Easter Seal-West, WA	1995	Peggy Smith-Sorenson	Lisa Gorman	Kari Gillette
Camp Thunderbird, FL	1995	Nancy Johnson	Nancy Johnson	Karien Pariser
Easter Seal Camp-Lake Bloomington, IL	1995	Dave Bateman	Gene Canavan	Kim Greer Alison Hudders Darlos Mummert
Easter Seal Camp, NM	1995	Mark Herrell	Mark Herrell	Carolyn Seibert
Enchanted Hills Camp, CA	1995	Anita Baldwin	Theresa Duncan	Megan Jones
Wisconsin Lions Camp, WI	1995	Tony Omernik	Tony Omernik	Alan Bauer Kathy Slater Sue Unmacht

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## **PURPOSE**

The Institute for Career and Leisure Development (ICLD) was awarded a research grant for 1993-96 (PR # H023C30002) by the U.S. Department of Education, Office of Special Education Programs, Research in Education of Individuals with Disabilities Program, to conduct a nationwide evaluation of residential camp programs designed for children, youth, and young adults with mild to severe disabling conditions. The Institute for Career and Leisure Development (ICLD) is a national agency with an established tradition of conducting research and training projects nationwide focusing on the recreation and leisure needs of persons with disabilities. Using a nationwide team of researchers, with Dr. Steve Brannan serving as principal investigator, the investigation, subtitled the National Camp Evaluation Project (NCEP), was undertaken to:

- (a) Further the validation of instrumentation relevant for use with campers mildly to severely disabled (ABSD: Affective Behavior Scales for the Disabled; OSI: Outdoor Skills Inventory),
- (b) Conduct a comprehensive evaluation of 14 residential camp programs serving the target population in major regions of the country,
- (c) Compute national norms for the ABSD and the OSI using camper evaluation data generated from the regional camp programs, and
- (d) Implement a dissemination plan to communicate project results nationwide.

## **IMPORTANCE AND NEED**

### **Importance of Outdoor Programs for Persons with Disabilities**

Participation in outdoor programs (or programs in the out-of-doors) is a traditional and well recognized aspect of recreation and leisure in our society. Outdoor programming has been recognized for a number of years by professionals across areas of human service (i.e., recreation, health, social work, education, and rehabilitation) as an effective medium for meeting the diverse needs of persons in our society. Strong agreement also exists among many advocates in these disciplines regarding the benefits of outdoor programming for youth and adults with varying disabilities. A review of pertinent literature and scholarly reports strongly indicates that outdoor programs have a "special" or "unique" potential to produce positive changes in persons with disabilities (i.e., cognitive, psycho-motor, emotional). A review of the literature across various fields finds professionals reporting that outdoor programming is effective with persons with varying disabling conditions in areas of development such as leisure time skills, social skills, self-esteem, self-confidence, motivation, initiative, independence, and responsibility (Brannan, 1981,1984,1991; Cassidy, 1982; Compton, 1984; Dattilo, 1987; Ewert, 1987; Frant, Roland, & Schempp, 1982; Havens, 1985; Hourcade, 1977; James, 1987; Nesbitt, Hansen, Bates, & Neal, 1972; Rawson & McIntosh, 1991; Robb & Ewert, 1987; Robb, Havens, & Witman, 1983; Shasby, Heuchert, & Gansneder, 1984; Sugarman, 1988).

## Research-Related Benefits of Outdoor Programs

The overwhelming majority of research on evaluating outdoor programs for persons with disabilities has been conducted in specialized camps and related outdoor recreation programs designed for individuals with disabilities. Studies specific to residential wilderness experiences and adventure/risk programs with adolescent delinquents and youth representing mental/emotional difficulties are eliminated from this review. These target populations were not as germane to the NCEP investigation, and a cursory review of these studies indicates they often lacked the same type of sound research methodologies discussed below. The few studies identified which were germane to the NCEP, involving subjects with intellectual, physical, behavioral, and/or multiple disabilities (mild to severe levels of performance), demonstrated significant positive outcomes for the participants (Austin, 1980; Griffin, 1981; Hourcade, 1977; Hung & Thelander, 1978; James (1987; Lefebvre, 1972; Loughniller, 1969; Rawson, 1973; Rawson, 1991; Shasby, Heuchert, & Ganseder, 1984; Giallo, 1984).

Although limited in number and scope, these studies help confirm that residential camping produces positive affective and/or skill changes in populations of youth and adults with certain disabling conditions. Still, a careful review of these and other related investigations reveals that (a) they were often limited by the instrumentation employed, or other design/methodological problems and, consequently, (b) the results accumulated over time within various disciplines have been based on rather "soft" data. First, there have been few efforts to investigate the effects of residential camping (outdoor schools and camps) on the recreation skills and social-emotional behavior of children and youth with mild to severe disabling conditions. Second, with the exception of James (1987), for the measurement of affect (i.e., locus of control, self-concept, self-esteem), investigators employed instruments that generally were inappropriate for use with the disabled (i.e., not designed for or standardized on populations of persons with mild to severe disabilities). Third, the small number and local representation of subjects utilized in most of the studies restricts the generalization of results. Fourth, with the exception of Rawson (1991), the lack of similarities in camp curriculum (i.e., treatment) extremely limits comparisons of camp effects. Fifth, the studies generally excluded subjects with severe disabling conditions (e.g., Autistic, MR/DD, multi-impaired). Sixth, with the exception of Giallo (1984), the studies primarily employed on-site assessments, with limited follow-up measurement to determine the generalization of gains subjects made in camp settings to home and community settings.

## Research Needs and the NCEP

In general, a need has existed to conduct comprehensive and well designed research, to include instrumentation validated on the target population, in order to determine the effects of outdoor programming (i.e., residential camping, outdoor education, outdoor recreation, and adventure education) on persons with disabilities. As a case in point, Robb & Ewert (1987) report that gains in the affective domain or social/emotional area (i.e., self-esteem, valuing, interests, and social skills) represent the most common area of benefit reported for persons with disabilities who participate in outdoor programs that are challenging; they also agree with other researchers that validated instrumentation specifically designed to evaluate and objectively substantiate such growth with persons mildly to severely impaired is virtually nonexistent (Brannan, 1991; Brannan, Miner, & Gordon, 1992; Ewert, 1987; Howe, 1984; Iso-Ahola, 1988; Schleien & Yermakoff, 1983; Witt, 1988).

During the early 1900's, a review of related literature, to include research on outdoor recreation, outdoor education, and camping programs for persons with disabilities was conducted by the principal investigator. This survey substantiated that continued and expanded research was needed to meet the following critical needs: (a) development and validation of instrumentation appropriate for evaluating the effects of outdoor programs on both the affective (i.e., social/emotional) and outdoor skill dimensions of camper behavior, (b) utilization of pluralistic methodology (e.g., quantitative and qualitative) to evaluate program effects on camper growth, (c) evaluation of varying populations of campers with disabilities (different ages, types of disabilities, and levels of functioning) served in outdoor residential programs, (d) increased inclusion of campers with severe disabilities in the population evaluated, (e) evaluation of the impact of outdoor programming on campers (i.e., extent to which positive changes in camper behavior achieved during the program generalize to home and community settings), (f) evaluation of residential camp programs extended nationwide, (g) participation of camps that meet desired site and curricular standards, and (g) inclusion of parents/ caregivers as important participants in program evaluation.

In summary, the NCEP originated in response to recommendations by professionals for improved research. The investigation attempted to overcome some major barriers limiting past research by (a) systematically studying the effects of residential camp programs on camper affect and skill achievement; (b) employing reliable and valid instruments designed for populations of campers with disabilities, (c) including only camps that met desired site and program standards (i.e., American Camping Association (ACA) accreditation); (d) extending the research to major regions of the country; (e) including a sizeable number of subjects (campers), mildly to severely disabled, with a wide range of disabling conditions; (f) collecting both quantitative and qualitative data; and (g) adding parents/care givers as important evaluators in determining program effects on their sons or daughters following camp. The NCEP has tried to address one of the major issues facing the camping profession: namely, the apparent gap that exists between the purported benefits of residential camping for persons with disabilities (and related outdoor programs) and the validated, scientifically-based research results to support such claims.

## METHOD

The NCEP employed a comprehensive approach to measure camper performance in camps nationwide that specialize in serving campers with disabilities. Both quantitative and qualitative measures were included in the research to determine the effects of camp programs on camper achievement. The first phase of the project focused on finalizing the development and validation of the instruments. In the second phase, the instruments were employed by on-site observers, counselors, and parents to evaluate campers selected for the study.

### Camper Population

Camper performance data on the quantitative instruments (rating scales) were collected across 15 camps on a total of 2,184 male and female campers ranging in age from 7- 48 years. Approximately 90% of the campers were between 7 and 19 years of age. Performance data on the qualitative instruments (case studies) were collected on a total of 73 campers nationwide. The campers as a whole represented a wide range of disabling conditions (i.e., 12 major disability categories) and varying levels of functioning (mild to profound). Table 1 shows the complete demographics information.

## Procedure

The NCEP research focused on measuring the affective (socio-emotional) and recreation skill (level of independence) of camper performance through use of both quantitative and qualitative measures. The first phase of the project, conducted in Oregon during 1993-94, refined and further validated the following instruments: Affective Behavior Scale for the Disabled (ABSD), Outdoor Skills Inventory (OSI), and Outdoor Case Study Method (OCSM). The ABSD and the OSI served as the quantitative measures (rating scales) of camper performance, and the OCSM was utilized as the qualitative instrument (case studies) to evaluate campers. In the second phase of the project, during the summers of 1994 and 1995, testing was conducted regionally in 14 states nationwide using the validated instruments to collect data on 2,184 campers attending 15 residential camps. The selection of camps was accomplished with the assistance of a National Advisory Committee of experts in various fields (i.e., camping, outdoor/environmental education, outdoor recreation, psychology, health) related to camping for persons with disabilities. The selection of campers and sessions was coordinated by the project staff and camp directors to ensure that subjects representing a wide range of ages, disabilities, and ability levels were included in the research. Participating campers typically attended a one-week residential camp session during either June, July, or August, and were enrolled in special education programs during the school year in their respective communities. A total of 73 campers (typically 5 campers from each of the 15 camps) were also recruited for case study research as part of phase two.

Camper test (ABSD & OSI) and case study (OCSM) data were collected using several camper sessions at each of the camps located in three major geographic regions of the country (east-mid-west). Parents used the ABSD to complete pre-post evaluations of their child (before and after attending camp); counselors used the OSI to complete pre-post evaluations of their campers (beginning and end of camp session); and on-site research assistants used the OCSM to record observations of campers during camp, and to conduct interviews with counselors (end of session) and with parents (following session).

Data collection on camper performance was managed primarily by project-trained research assistants at each camp site under the direct supervision of the camp director, designated staff, and the project's regional research supervisor assigned to either the eastern, central, or western regions of the country. On-site training of the research assistants and camp staff at each site was provided by a designated regional research supervisor. A comprehensive Camp Research Guide, developed by project staff, was provided each site to direct their data collection and management tasks. The research assistants, with camp staff and secretarial assistance, managed the data collection, to include pre and post ABSD mailings to parents, phone follow-ups to remind parents to submit their completed surveys, and supervision of counselors who administered the OSI to their campers. The research assistants were generally responsible for conducting the case studies and managing the data collected on the case study subjects.

**Table 1  
Camper Population**

<b>Camper Information Summary: All 15 Camps (both 1 and 2 week sessions)</b>					
N			%		
<b>Age (N=2184)</b>			<b>Primary Disability* (N=2184)</b>		
7-12.9 years	925	42.4	autism/emotionally disturbed	140	6.4
13-18.9 years	1036	47.4	sensory impaired: sight/ hearing/DB	455	20.8
19 years & older	223	10.2	mild MR/speech impaired/LD/ADD	448	20.5
			moderate, severe, profound MR	638	29.2
			physical/health impaired; brain injured	503	23.0
<b>Gender (N=2174)</b>			<b>Number of Campers on Medication (N=2156)</b>		
Male	1218	56.0	Yes	1148	53.2
Female	956	44.0	No	1008	46.8
<b>School Setting (N=2142)</b>			<b>Home Setting (N=2172)</b>		
elementary	750	35	lives at home (incl. foster home)	2025	93.2
middle/junior high	597	27.9	lives in a group home	70	3.2
high school	606	28.3	lives in a residential facility	65	3
post secondary	28	1.3	other	12	0.6
other schools ** (no level indicated)	104	4.9			
not in school	57	2.7			

DB=Deaf-Blind; MR=Mental Retardation; LD=Learning Disabled; ADD=Attention Deficit Disordered

\* In order to develop normative tables by age and disability for use by future camp programs, certain disabilities were grouped together to make five major disability categories.

\*\* Includes the following types: special education, for the blind and/or deaf, private, parochial, home-schooled

## RESEARCH QUESTIONS AND RESULTS

### 1. **What types of validity and reliability were established to ensure the project's instruments are adequate for measuring camper performance?**

As part of the NCEP, a comprehensive instrument validation study was conducted from 1993-96 in Oregon and nationwide on the Project's quantitative measures: the **Affective Behavior Scales for the Disabled (ABSD)** and the **Outdoor Skills Inventory (OSI)**. Since only initial validation was accomplished on the Project's qualitative measure, the **Outdoor Case Study Method (OCSM)**, validity and reliability are not reported at this time for this measure. Previously validated in Oregon on persons with disabilities, the **ABSD** is a 50 item rating scale with six subscales designed to measure the camper's affective growth in six areas: social, communication, domestic responsibility; independence, self-esteem, and recreation interest. Parents or caregivers are the respondents who, from their perspective, evaluate the impact or generalization of residential camp experiences on their child. Also validated in Oregon on persons with disabilities, the **OSI** is a 109 item rating scale with 12 subscales designed to measure the camper's recreation and living skill achievement (i.e., levels of independence) in the areas of personal/social, self-help, nature/environmental, overnight camping, fitness/hiking, boating, swimming, fishing, music/drama/crafts, equestrian, ropes/challenge, and sports/games.

**Results:**        **The study confirmed that both the ABSD and OSI have acceptable levels of reliability and validity for measuring the affective and recreation skill domains, respectively.**

Table 2 illustrates the types of reliability and validity that were established for the two instruments by the project staff, with assistance from national experts, parents, camp counselors, special education teachers, and research assistants. Brief explanations regarding each type of validity and reliability testing, plus statistical results are also included in the table.

**Table 2**  
**The Validity and Reliability of the ABSD and OSI**

INSTRUMENTS	VALIDITY ESTABLISHED			RELIABILITY ESTABLISHED		
	Concurrent	Criterion-related	Content	Internal consistency	Test-retest	Inter-rater
<b>ABSD</b>	✓	✓	✓	✓	✓	✓
<b>OSI</b>	NA	✓	✓	✓	✓	✓
<p align="center"><b>Explanation and Establishment of Validity and Reliability for ABSD &amp; OSI</b></p>	<b>Types of Validity Testing</b>			<b>Types of Reliability Testing</b>		
	<p><b>Content validity</b> helps show that the content is appropriate for the type of scale being developed. Content validity was established by a national group of professionals (“panel of experts”) who reviewed the intent and wording of the items on the ABSD. Also, camp directors nationwide were involved in the development of the OSI and recommended changes in items/wording.</p> <p><b>Concurrent validity</b> helps show that the new scale is measuring appropriate content by comparing the scores on the new scale with scores on an already established scale. Concurrent validity was established for the ABSD by comparing the parent scores on the ABSD with selected portions of the AAMR’s Adaptive Behavior Scale.</p> <p><b>Criterion-related validity</b> helps show that the new scales will show results similar to other independent criterion measures. The parents’ responses on the ABSD were compared with teachers’ ratings of students’ (campers’) affective behavior to establish criterion-related validity. Similarly, the counselors’ responses on the OSI were compared with teachers’ ratings of the students’ (campers’) recreation skill abilities.</p>			<p><b>Test-retest</b> looks at consistency over time. Parents rated their child (camper) twice over a two-week period of time with the ABSD to establish its Test-retest reliability. Also, counselors rated their campers twice on the OSI to establish its test-retest reliability.</p> <p><b>Inter-rater</b> looks at consistency between two raters. Mom and dad each rated their child (camper) using the ABSD and a comparison for consistency was conducted. Also, two counselors rated the same camper using the OSI and a comparison for consistency was conducted.</p> <p><b>Internal Consistency</b> looks at the clarity of the wording and consistency of measurement across the entire scale (instrument). Statistical analysis for internal consistency was conducted for both scales (instruments).</p>		

**ABSD**

Reliability (Total Scale): Internal Consistency=.96; Test-Retest=.80; Inter-Rater=.65

Validity: Concurrent Validity=.65 ; Criterion-Related=.60; Content validity=fully established by national “panel of experts” in special education, camp administration, psychology, research, and evaluation.

**OSI**

Reliability(Total Scale): internal consistency=.94; test-retest=.95; Inter-Rater=.80

Validity (Total Scale): Criterion-Related=.50; Content Validity=fully established by national “panel of experts” in camping, therapeutic recreation, special education, outdoor recreation, and outdoor/environmental education.

**2. What were the effects of residential camping on the affective (socio-emotional) growth of campers as judged by their parents on the Affective Behavior Scales for the Disabled (ABSD)?**

Parents rated their son or daughter on the ABSD, an instrument with six subscales focusing on affective behaviors, in the areas of social, communication, domestic responsibility, independence, self-esteem, and recreation interest. Prior to camp, parents completed a pre-ABSD on their child, and following camp, a post-ABSD was completed by parents on their child. The pre and post scores were then statistically compared to determine if camper growth had occurred in any areas (subscales) of the ABSD.

**Results: Significant camper growth (as judged by parents) was found between the pre and post ABSD scores in the areas of social, communication, domestic responsibility, independence, and self-esteem.**

Table 3 shows the 6 subscales of the ABSD, sample items representing each scale, and the number of camper subjects included per scale for all 15 camps tested. The last column indicates that statistically significant levels of camper growth were found (between the pre and post parent ratings) for 5 of the 6 subscales on the ABSD at  $p \leq .05$ . Although not presented in the table, the overall average post-test score was 1.90 for all scales on the ABSD, indicating a relatively high level of camper affect. As indicated directly below Table 3, a score of 2.0 on the ABSD would indicate that parents judge their child as "often" engaged in positive affective behavior.

**3. What were the effects of residential camping on the outdoor recreation/living skills of campers as judged by their counselors on the Outdoor Skills Inventory (OSI)?**

Counselors rated their campers achievement (i.e., level of independence) on the OSI, an instrument with 12 subscales of recreation/living skills, across the areas of personal/social, self-help, nature/environmental, overnight camping, fitness/hiking, boating, swimming, fishing, music/drama/crafts, equestrian, ropes/challenge, and sports/games. A pre-post comparison on the OSI was conducted for only the personal/social & self-help subscales. These two scales were judged to be the only subscales appropriate for obtaining pre-post growth data on campers who generally attended one-week camping sessions. At the beginning of camp, counselors completed a Pre-OSI on their campers, and at the end of the camp session they completed a Post-OSI on their campers. The pre and post scores were statistically compared to determine if camper growth had occurred in either of the two subscales of the OSI. For the other 10 subscales, only posttest scores were obtained.

**Table 3**  
**Parent Evaluation of Camper Growth on the ABSD**  
**All Fifteen Camps Combined**

<b>Affective Behavior Scales for the Disabled (ABSD)</b>			
<b>Scale</b>	<b>Sample Items</b>	<b>Number of Campers</b>	<b>Significant Gain (Pre to Post Camp)</b>
<b>Social (11 items)</b>	<ul style="list-style-type: none"> <li>* Tries to get along with others</li> <li>* Makes new friends</li> <li>* Cooperative</li> </ul>	1438	YES ( $p \leq .05$ )
<b>Communication (9 items)</b>	<ul style="list-style-type: none"> <li>* Communicates own needs</li> <li>* Likes to share own feelings</li> <li>* Initiates conversations</li> </ul>	1398	YES ( $p \leq .001$ )
<b>Domestic Responsibility (7 items)</b>	<ul style="list-style-type: none"> <li>* Helps with chores</li> <li>* Is on time</li> <li>* Completes assigned tasks</li> </ul>	1393	YES ( $p \leq .001$ )
<b>Independence (9 items)</b>	<ul style="list-style-type: none"> <li>* Adapts during separations from family</li> <li>* Enjoys own leisure time</li> <li>* Seems more mature</li> </ul>	1426	YES ( $p \leq .001$ )
<b>Self-Esteem (9 items)</b>	<ul style="list-style-type: none"> <li>* Self-confident</li> <li>* Positive Attitude</li> <li>* Happy</li> </ul>	1409	YES ( $p \leq .001$ )
<b>Recreation Interest (5 items)</b>	<ul style="list-style-type: none"> <li>* Enjoys the outdoors</li> <li>* Enjoys physical activity</li> <li>* Enjoys recreation with family</li> </ul>	1444	Not Significant

All items (i.e., affective behaviors) on each of the ABSD's six subscales are stated in a positive manner and were rated by the parents as either:

0 = never observed,  
 1 = sometimes observed,  
 2 = often observed, or  
 3 = always observed.

**Results 1: Significant camper growth was found between the pre to post OSI scores in both the personal/social and self-help areas as judged by their counselors.**

Table 4 shows the two subscales, sample items for each scale, and the number of camper subjects included per scale for all 15 camps tested. The last column indicates that statistically significant levels of growth were found (between pre and post counselor ratings) for the personal/social and self-help subscales on the OSI. Although not presented in the table, average post-scale scores of 3.15 were achieved for both the personal/social and self-help scales, indicating the overall levels of camper achievement (i.e., level of independence) in these areas were relatively high. As indicated directly below the table, a score of 3.0 on the OSI would indicate that counselors judge their camper(s) at least “partially independent” in achieving certain recreation/living skills.

**Table 4**  
**Measurement of Camper Growth On Two OSI Scales**  
**All Fifteen Camps**

<b>Outdoor Skills Inventory (OSI)</b>			
<b>Scale</b>	<b>Sample Items</b>	<b>Number of campers</b>	<b>Significant Gain (Beginning to End of Camp Session)</b>
<b>Personal/ Social (14 items)</b>	<ul style="list-style-type: none"> <li>* Communicates needs/ideas</li> <li>* Accepts challenges</li> <li>* Socializes w/others</li> </ul>	2020	YES ( $p \leq .001$ )
<b>Self-Help (10 items)</b>	<ul style="list-style-type: none"> <li>* Dresses/undresses Self</li> <li>* Serves own food</li> <li>* Walks/wheels self</li> </ul>	1837	YES ( $p \leq .001$ )

Recreation/living skills on the OSI's personal/social and self-help scales are stated in a positive manner and were rated by counselors as either:

- 1=Not Independent,
- 2=Minimally Independent,
- 3=Partially Independent, or
- 4=Fully Independent.

**Results 2: The overall achievement of the campers (i.e., level of independence) in recreation/living skills was found to be relatively high, as noted by the average post-scores on the majority of the OSI's scales.**

Table 5 further extends the information on counselor ratings for the OSI. The table shows the 12 OSI subscales, sample items, number of camper subjects, and the level of post OSI scores achieved by campers in program areas common to residential camping. The overall average post scores campers achieved in recreation/living skills are indicated for the 12 OSI subscales in Table 5. As previously mentioned, camper pre-assessments were obtained for only the OSI's Personal/Social and Self-Help Scales. Camper post assessments, though, were generally obtained for all 12 OSI subscales at the conclusion of the camp session, but only if such program activities were offered for campers at each of the camp sites. The results indicate that the average post-scale scores in 10 of the 12 subscales were above 3.00, confirming that the overall levels of camper achievement (i.e., level of independence) in these areas were relatively high. As indicated directly below in table 5, a score of 3.0 on the OSI would indicate that counselors judge their camper(s) at least "partially independent" in achieving certain recreation/living skills.

**4. What were the effects of residential camping on the affective and recreation/living skill performance of campers as determined by on-site observers, counselors, and parents with the Outdoor Case Study Method (OCSM)?**

The qualitative aim of the research was accomplished through case study methodology. The Outdoor Case Study Method (OCSM) was used as the primary tool for collecting qualitative data. At each of the 15 camp sites, Research assistants employed the OCSM and completed in-depth case studies that included recording their observations of approximately 5 campers, plus interviews with their counselors and parents. First, research assistants observed the level of affect (enjoyment, participation, motivation, etc.) and the level of skill (independence) performance of the case study campers as they participated in five major recreation activities common to all camps (i.e., overnight camping, nature/environmental, fitness/hiking, music/drama, and active recreation, which included one optional area from activities such as swimming, boating, challenge/ropes course, etc.). Second, they interviewed counselors of the case study campers at the end of their camp session. Third, they interviewed parents of the case study subjects one to three weeks following their camp session.

The interviews addressed eight areas of personal development that paralleled content in the quantitative measures: social interaction, communication, responsibilities, self-reliance, self-esteem, recreation participation, skill achievement, and self-help. During the interviews, counselors and parents indicated whether the case study camper's performance improved, stayed the same, or decreased as a result of the camp experience. The counselor and parent respondents also provided an example(s) for any change in camper performance (decrease or improvement) they observed to have occurred. All OCSM data was analyzed and synthesized by teams of graduate student researchers in Special Education at Portland State University. The training and supervision for such tasks were provided by the NCEP director and senior research associate.

**Table 5**  
**Camper Achievement On OSI At End Of Camp Session**  
**All Fifteen Camps**

<b>Outdoor Skills Inventory (OSI)</b>			
<b>SCALE on OSI</b>	<b>Sample Items</b>	<b>Post Score</b>	
		<b>Number of Campers</b>	<b>Average Score*</b>
<b>Personal/Social (14 items)</b>	* Accepts challenges * Socializes with others	2108	3.15
<b>Self-Help (13 items)</b>	* Serves own food * Walks/wheels self	1989	3.15
<b>Nature/Environmental (10 items)</b>	* Recognizes natural objects * Picks up litter	1745	3.28
<b>Overnight Camping (14 items)</b>	* Rolls sleeping bag * Helps cook meal	598	2.68
<b>Fitness/Hiking (5 items)</b>	* Negotiates main camp area * Hikes 1/4 mile	908	3.35
<b>Boating (8 items)</b>	* Puts on life jacket * Rows/paddles boat	1328	3.13
<b>Swimming (12 items)</b>	* Enters pool/water safely * Face floats	1653	3.22
<b>Fishing (8 items)</b>	* Casts a line * Hooks a fish	560	2.63
<b>Music/Drama/Crafts (8 items)</b>	* Sings songs * Participates in skits	1657	3.21
<b>Equestrian (11 items)</b>	* Pets horse * Mounts horse	696	3.10
<b>Ropes/Challenge (3 items)</b>	* Completes low initiatives * Completes group initiatives	365	3.15
<b>Sports/Games (3 items)</b>	* Plays individual sports/games * Plays dual sports/games	1205	3.06

\*=Counselors rated their camper's level of independence in achieving various skills listed on the OSI's 12 subscales using the code:  
 1=Not Independent  
 2=Minimally Independent  
 3=Partially Independent  
 4=Fully Independent

**Results 1: On-site observations of case-study campers indicated they displayed high levels of enjoyment and participation, and relatively high levels of skill achievement in the majority of outdoor recreation activities observed.**

Table 6 provides a final synthesis of on-site observer comments describing camper affect (i.e., level of enjoyment/participation) and recreation skill achievement (level of independence) across the five major recreation activities at each camp. An extensive number of observer comments (408) indicate the case study campers highly enjoyed and participated in different recreation activities, and were relatively independent in performing outdoor recreation skills across a wide range of activities offered at each site (304). The number of observer comments reflecting lower levels of camper affect (73) and skill (120) were quite low in comparison to the number of higher level comments. Many of the lower level comments probably reflect the number of case study campers with severe disabilities, and indicate their need for added assistance in order to participate in program activities.

**Table 6**  
**Case Study Results: 15 Camps**  
**Summative Comments from OCSM Observations of Camper Performance**

<b>Comments from On-Site Observations of Camper Performance (75 Campers)</b>			
<b>Higher Affective Comments</b>	<b>Lower Affective Comments</b>	<b>Higher Skill Comments</b>	<b>Lower Skill Comments</b>
Enjoyed/ participated in activity; smiled/laughed (357) More social (28) Motivated/initiated activities (23)	Limited enjoyment (34) Assistance needed for participation (29) Unwilling to participate (10)	Independent in a variety of skills (187) Partially independent (87) Showed initiative/helped others (30)	Limited participation (40) Some-to-extensive assistance needed for participation (81)

(N)=The number of observer comments describing higher versus lower levels of camper affective and skill behaviors.

**Results 2: Counselor and parent interviews (ratings and comments) indicated that increased independence (self-reliance), skills, enjoyment, motivation, social interactions, communication, and self-esteem were major outcomes of the camp experience for the case study campers.**

Tables 7 and 8 focus on the results of the counselor and parent interviews that address eight areas of personal development for campers (e.g., social interactions, communication, self-reliance, etc.). This was the major component of the Case Study Method (OCSM). Table 7 provides a summary of counselor and parent interview ratings, indicating the percent of case study campers whose performance either decreased, stayed the same, or improved (determined during camp by counselors and by parents following camp). The results indicate that counselors and parents were in close agreement and that, for the case study subjects as a whole, the overwhelming majority of these campers improved their performance or stayed the same as a result of the camp experience. In addition, counselor and parent ratings revealed that the case study subjects made growth in all eight areas of personal development. In a comparison of the rating results for the two groups of respondents, counselors judged their campers to make the greatest growth in social interactions (69%) and communication (69%), while parents thought their son or daughter made the most improvement in self-reliance (59%) and self-esteem (57%). A negligible percentage of campers were judged by either their counselors or parents as showing a decrease in performance.

For the same case study subjects, Table 8 presents a combined synthesis of interview comments made by counselors and parents for any changes in affect or skill performance (decrease or improvement) they observed in their camper (or child) across the eight areas of personal development. In Table 8, the combined results address five categories of comments and reveal that both counselors and parent groups viewed similarly the positive changes that occurred in their camper (or child) through participation in the camp program. Although not presented in this report, the predominant comments received from both groups reflected very high levels of camper affect and skill for each of the eight areas of personal development. In table 8, the outcomes most frequently mentioned by both groups include increased independence and skills (counselors=111; parents=141) and greater enjoyment and motivation to participate (counselors =114; parents=55). In concert with the camper ratings previously presented, a negligible number of comments received from either counselors or parents indicated a decrease in camper (or child) performance (counselors=13; parents= =13). Overall, increased independence (i.e., self-reliance) was judged by counselors and parents as the predominant growth outcome for the case study campers.

**Table 7**  
**1994 & 1995: 15 CAMPS**  
**Summary of OCSM Counselor and Parent Interview Ratings**  
**of**  
**Changes in Camper Performance**

AREA	Counselor Judgement N=73			Parent Judgement N=65		
	Decrease	Same	Improve	Decrease	Same	Improve
<b>Social Interaction</b>	5%	26%	69%	1%	44%	54%
<b>Communication with others</b>	1%	30%	69%	0%	48%	52%
<b>Responsibilities</b>	1%	63%	36%	3%	56%	41%
<b>Self-Reliance</b>	0%	59%	41%	2%	39%	59%
<b>Self-Esteem</b>	1%	44%	55%	0%	43%	57%
<b>Participation in Recreation</b>	2%	41%	54%	1%	60%	39%
<b>Skill Achievement</b>	1%	64%	35%	0%	61%	39%
<b>Self-Help</b>	0%	80%	20%	0%	61%	39%
<b>Overall Rating</b>	1%	51%	48%	1%	52%	47%

Note: During the interviews, counselors and parents indicated whether camper performance had decreased, stayed the same, or improved as a result of the camp experience.

**Table 8**  
**Case Study Results: 15 Camps**  
**Summative Comments from OCSM Counselor and Parent Interviews**  
**of**  
**Changes in Camper Performance**

<b>Counselor Interview Comments on Changes in Camper Performance (73 Campers)</b>	
<b>Higher Performance</b>	<b>Lower Performance</b>
Increased independence/skills (111) More motivated/enjoys participating (114) More confident/proud of self (37) Improved social interactions (74) Improved communication (5)	Decreased independence (2) Decreased participation (4) Decreased social interactions (6) Decreased communication (1)
<b>Parent Interview Comments on Changes in Camper (child) Performance (65 Campers)</b>	
<b>Higher Performance</b>	<b>Lower Performance</b>
Increased independence/skills (141) More motivated/enjoyed participation (55) More confident/proud of self (39) Improved social interactions (61) Improved communication (46)	Decreased independence (2) Decreased participation (4) Decreased social interactions (6) Decreased communication (1)

((N)=The number of counselor and parent comments regarding changes in camper affective and skill behaviors.

### **Summary of Research Results**

1. Reliable and valid instruments were developed to measure camper performance in both the affective and recreation areas of personal development.
2. On the quantitative measures, campers of varying ages and disabilities made statistically significant gains in the social, communication, self-help/domestic, independence, and self-esteem areas on the quantitative measures (i.e., parents completed the ABSD; counselors completed the OSI).
3. On the qualitative measure, camper's of varying ages and disabilities were judged as making improvements in all eight areas of personal development, with the greatest improvements made in the independence (i.e., self-reliance), social, communication, and self-esteem areas (i.e., counselors and parents were interviewed using the OCSM).

4. On the qualitative measure, research assistants observing the case study campers reported they demonstrated very high levels of participation and enjoyment, and relatively high levels of skill independence in all five recreation areas selected for observation during camp (campers were observed using the OCSM).
5. Parents rated their son or daughter as making the greatest improvements in the areas of self-reliance and self-esteem as a result of the camp experience (from OCSM interview).
6. Counselors rated their campers as making the greatest improvements in the social and communication areas during the camp experience (from OCSM interview).
7. Parents indicated one to three weeks following camp that the program had positively affected their son or daughters' personal development i.e., improvements in social skills, recreation skills, communication, independence or self-reliance, and self-esteem (results from ABSD & OCSM).
8. The combined results of the quantitative (ABSD & OSI) and qualitative measurements (OCSM) reveal that growth in independence was the single most significant outcome of the camping experience for campers.
9. Overall, based on quantitative and qualitative measures, results of the NCEP reveal that campers of varying disabilities, ages, and levels of functioning made noteworthy achievements and gains in the affective and recreation/living skill areas as judged by their counselors, parents, and impartial observers.

## DISCUSSION AND IMPLICATIONS

Widespread agreement exists among various professionals attesting to the value of residential camp and related outdoor experiences for children, youth and adults with disabilities. Until recently, though, there has been a lack of systematic research using instrumentation validated for use with campers mildly to severely disabled to substantiate the effects of these experiences on this group of participants. The NCEP responded to recommendations from the literature and from practitioners to conduct more rigorous research. Over a three year period (1993-96), the NCEP developed valid and reliable instruments to determine program effects on camper performance, implemented comprehensive evaluation procedures (quantitative and qualitative measures), focused on the affective (socio-emotional) and recreation skill achievements of campers, selected camps that met desired site and curricular standards (i.e., ACA accredited camps), conducted testing nationwide (i.e., across 15 camps in 14 states), included a substantial number of subjects (over 2,000) representing different ages, types of disabilities, and levels of functioning (mild, severe, profound), and extended the research to include parents in determining the impact of camp programs on the growth and development of their son or daughter.

Numerous findings emerged from this study regarding how summer residential camp experiences effect campers with disabilities. The use of both quantitative (ABSD & OSI) and qualitative (OCSM) measures revealed that campers made notable achievements in affective and recreational/living skills as judged by impartial observers, and their counselors and parents. Nationwide, campers of varying ages, disabilities, and ability levels demonstrated high levels of enjoyment and participation in most program activities, and were affected positively by the camp experience. The finding that campers with more difficult challenges (i.e., severely disabled) were able to perform recreation skills at relatively high levels of independence is another significant finding. It is also significant that campers made positive gains in the camp setting in various areas of personal development (i.e., communication, independence, self-esteem), and that these gains also carried over to the home and community setting. Lastly, the combined results of all measures revealed that increased independence (or self-reliance) was the predominant outcome for the campers.

As a result of this research, certain implications and recommendations should be considered that are important to the camping profession, to parents with disabled children, and to our communities. As the first nationwide project to study the effects of residential camping on persons of varying disabilities and ages, it is recommended that efforts be made by public and private agencies involved in outdoor programs to disseminate the NCEP findings to their respective constituents.

For the camping profession: (a) the findings should reinforce the positive benefits of organized residential camping in general, and highlight the specific contributions to persons with disabilities; (b) professionals in camping should be encouraged that the study confirmed the relevance of one-week residential camp programs for this population of campers; (c) professionals and parents can be assured that specialized camps have documented value, and even with the expansion of other models of service (i.e., inclusive programs), camps that focus primarily on serving campers with disabilities should receive continued recognition and be valued for the important contributions of service they provide to persons with disabilities; (d) the researchers also recognize the importance of inclusionary services and the need for mainstreamed (i.e., inclusive) camps, and recommend that increased efforts be made to document their effects on campers with and without disabilities (Brannan, Arick, Fullerton, & Harris, 1997).

For parents of a child who is disabled: (a) knowledge of the results should increase their understanding and appreciation of the importance of residential camping in enhancing their child's personal development and quality of life; and (b) the findings should also encourage such parents to pursue and advocate for increased outdoor experiences for their children. For the nation's communities: (a) the study should prompt public and private agencies to further communicate and expand their offerings of residential outdoor experiences to their constituents; and (b) the results should help justify continued and increased community funding efforts for outdoor programs (i.e., camps, outdoor schools), and include them as higher priority areas of service in our communities.

In conclusion, it is envisioned that results of the NCEP will contribute substantially to our understanding of how planned outdoor experiences affect positively the growth and development of persons with disabilities, that the study will help confirm the benefits of residential camping experiences for persons with varying disabilities, ages, and levels of functioning (including persons with more severe impairments), and that the research will provide professionals with validated and comprehensive measures to improve the evaluation of residential camp effects on the personal, social, and skill development of persons with disabilities.

### **Summative Listing of Research Implications**

1. Demonstrates the positive benefits and major contributions of organized residential camping for children, youth, and adults with disabilities
2. Confirms the “power” and “impact” of outdoor residential programming for persons with disabilities.
3. Proves that specialized camp programs are effective in serving campers with disabilities and, most likely, reflects the substantial quality of administrators and staff, and their commitment to ensuring that campers with disabilities have successful experiences.
4. Substantiates the benefits of one-week residential camp programs serving persons varying in age, type, and level of disability.
5. Encourages outdoor agency personnel and related professionals to utilize validated instruments as program evaluation tools, and to incorporate the ongoing monitoring of programs and of camper progress as an integral part of their camp programs.
6. Reinforces current agency commitments and continued planning efforts to serve persons with more disabling conditions, and enhances the credibility of agency-sponsored camp programs in their particular states and communities.
7. Demonstrates that agencies are accomplishing the aim of fostering the personal growth and quality of life of persons with disabilities through their camp programs.
8. Strengthens efforts of camps and their sponsoring agencies to recruit campers, counselors, and staff because of increased knowledge and appreciation of the multiple benefits of camping.
9. Provides a framework for parallel research that addresses inclusive camp programs. Instruments developed by the NCEP can be utilized to determine the effects of inclusive or mainstream camps on their campers (i.e., camps that primarily serve campers without disabilities, but also include campers with disabilities as an integral part of their programs.
10. Argues for camp programs serving persons with disabilities (specialized and inclusive) to be a higher priority area of service in our nation’s communities, and justifies continued and increased community fund raising efforts in support of such camp programs.

## DISSEMINATION

The research team actively participated in dissemination activities over the project period (1993-96), and helped communicate project results and products regionally and nationwide. Additionally, the design and writing of test manuals relative norming of the project's quantitative instruments are still in progress, plus the continued communication of research results through professional publications. Dissemination of activities completed and in progress that are judged to be effective and have the most impact are listed below.

### Summative Listing of Dissemination Activities

1. Project newsletter produced (LINK) and distributed to participating camps nationwide. The newsletter apprised camp staff of both the status and future plans for research, plus communicated camp characteristics (i.e., program, staff) and their unique types of programs provided campers with disabilities.
2. National Advisory Committee of professionals nationwide was formed and provided ongoing direction to and evaluative feedback for the investigation.
3. Camp Research Guide was developed and distributed to participating camp directors and research assistants in 15 regional camps for purposes of educating camp staff, counselors, and parents and guiding various camp personnel in their data collection tasks.
4. The project's validated instruments, the Affective Behavior Scales for the Disabled (ABSD) and Outdoor Skills Inventory (OSI), were completed by parents and counselors representing over 2,000 camper subjects across 14 states.
5. Final evaluation reports summarizing the research results were distributed to each of the 15 participating camp administrators for sharing with their respective Boards, staff, etc..
6. National and regional conference presentations were conducted by the project's research team to communicate project results and to distribute written summaries of pertinent findings and products. Some of the major presentations included:
  - American Camping Association National Conference, Orlando, FL, February 23, 1995
  - American Camping Association National Conference, San Diego, CA, March 2, 1996
  - Regional Therapeutic Recreation's Midwest Symposium, Springfield, IL, April 21, 1995
  - National TASH Conference, New Orleans, LA, November 22, 1996

7. Articles written about the research findings and published in national newsletters, magazines, and journals:
  - Brannan, S. and Robb, G. (1996). National camp evaluation: Research results (1993-96). NTRS Report, 21(4), 5-6.
  - Brannan, S., Arick, J., & Fullerton, A. (1997). The national camp evaluation project: A national study on the effects of specialized camps. Camping Magazine, 70 (1), 28-31.
8. Final project report submitted to:
  - Office of Special Education and Rehabilitative Services (OSERS), Division of Innovation and Development, Office of Special Education Programs.
  - ERIC Clearinghouse on Disabilities and Gifted Education, Council for Exceptional Children (CEC).
9. Research Briefs written by members of the research team describing the project and findings and communicated via the World Wide Web. The research briefs are accessible at Bradford Wood's Home Page and available on the Internet at:  
URL:<http://www.indiana.edu/~bradwood/ncep>
10. National norms developed for both the ABSD and OSI instruments. Percentile conversion tables have been developed for the five major disabilities categories (i.e., sensory impaired, mildly disabled, autism or emotionally disturbed, physical or health impaired, and moderate/severe/profound mental retardation) in three age groups (i.e., 7-11, 13-18, 19+). Development of test manuals to include protocols, norming tables, scoring sheets, etc. are in progress. Plans are to pursue nationwide dissemination of the tests through an appropriate publisher(s) in the near future.
11. Three research articles (in progress) by the researchers are being prepared for submission to scholarly journals in special education and therapeutic recreation. The articles include the following major content:
  - Validity and Reliability of the ABSD and OSI Instruments.
  - Effects of specialized camp programs on the affective and recreation performance of campers with disabilities.
  - Evaluation of camp program effects on campers with disabilities through use of case study methodology (OCSM).

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