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### PITFALLS TO AVOID IN ADVENTURE EDUCATION OUTCOME RESEARCH

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Adventure education programs claim to teach people about themselves, develop awareness, reduce recidivism, enhance self-esteem, develop leaders and produce a hearty variety of other results beneficial to the individual participants and to mankind. The question that naturally follows, "Does research supports these claims?" Actually, there is an abundance of research that does support these and many other effects of adventure education programs. In a recent metaanalysis by Hattie, Marsh, Neil and Richards (1997) 96 studies were found which evaluated the outcomes of adventure programs. Cason and Gillis (1994) located 79 studies that looked specifically at adolescent populations. However, 36 (45%) were eliminated from their metaanalysis because they (a) lacked statistical information, (b) were not empirically based or, (c) did not involve adolescent populations (p. 42). So, plenty of research exists, but one question persists: How good is it?

Adventure education research began in the 1950s and easily progressed through the 1970s primarily focused on descriptive information and surveys to assess effects on adventure education participants. The focus was on enhanced self-esteem, locus-of-control, and selfconcept (Ewert, 1987). In the 1970s many studies began to attract attention due to their lack of scientific method, and this trend carried into the 1980s (Ewert, 1987). Warner (1990) concluded, "too much time and effort has been devoted to conducting poorly controlled outcome studies...Hitand-run outcome studies do not develop a

strong research and evaluation framework" (p. 310).

As this review of adventure education outcome research evolved, several themes emerged: (a) The variety of research goals, treatments, outcomes, durations, and instruments make comparisons difficult, (b) many studies use convenience samples and do not randomly assign participants, (c) many studies do not use a control group or a comparison group, (d) there are often problems or questions regarding the use and reporting of statistical findings.

Despite common limitations of outcome studies, some solid research does exist. There has been much consensus that adventure education needs more theory building and theory testing, yet the methodological problems associated with much of the empirical and quantitative research are making this a daunting task. Future research endeavors should (a) make comparisons that make sense, (b) use random assignment to experimental and control/comparison groups, (c) use and report appropriate statistical procedures, (d) take care to assess validity of research instruments for populations under study, (e) be willing to openly discuss project biases and limitations.

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