

National River and Stream Assessment Monitoring Design

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Abstract

The USEPA designed the National River and Stream Assessment (NRSA) in 2007 and field sampling was completed in 2008-9. The objective of the assessment is to estimate the ecological condition of river and streams nationally. This paper describes the national survey design and reports on the site evaluation portion of the study, including national and regional estimates of wadeable and boatable rivers and streams in the target population. For purposes of this survey, the target population includes all rivers and streams in the conterminous U.S that have flowing water during the summer. A national stratified and unequal probability survey design was used to select sites for sampling. The sample size was set to include 450 sites on Strahler order 1st through 4th and 900 sites on Strahler order 5th and higher with 100 sites in each case being resampled. In addition, 450 sites from the 2004 Wadeable Stream Assessment were selected to be sampled again in 2008-9 to estimate change in condition in wadeable streams. An ‘oversample’ of additional sites was also done so that any state wishing to conduct a state scale survey could be accommodated. The survey ensured that approximately 200 sites occurred in each of nine aggregated Omernik Level 3 ecoregions and a minimum number of sites per state. All sites were evaluated to determine whether they were in the target population and also accessible to be sampled. Based on this evaluation, 62% (3% margin of error) of the river and stream length is estimated to be in the target population, 15% is presumed to be target but could not be confirmed due to inaccessibility, and 23% is estimated to not be in the target population.