



# National Contract for Instream Flow Technical Services Related to Hydroelectric Relicensing

## U.S. Forest Service



As prime contractor of an ongoing National Instream Flow Modeling Technical Support Contract to the U.S.D.A. Forest Service, R2 has been providing technical services to assist a number of Forests involved in the relicensing of hydroelectric projects on USFS lands.

Specific projects have included: the Upper American River Project (California) owned and operated by the Sacramento Municipal Utility District and located within the Eldorado National Forest; Big Creek Project and Mill Creek Project (California) owned by Southern California Edison and located within the San Bernardino and Sierra National Forests, respectively; Cooper Lake Project (Alaska), owned by Chugach Electric and located within the Chugach National Forest, Connell Dam/Ward Creek (Alaska) located within the Tongass National Forest, Tapoco Project (N. Carolina) owned by Alcoa and the Nantahala Project (N. Carolina) owned

### Project Elements:

- FERC Hydroelectric Relicensing
- Instream Flow Study Design and Modeling
- Temperature Modeling
- Sediment Transport Modeling
- Habitat Suitability Curve Development
- Fish Survey Study Design
- Entrainment and Impingement

by Duke Power with both projects located within the Nantahala National Forest. The projects have ranged in size from about 20 MW to over 1,000 MW and have included a wide range of resource issues.

R2 has worked closely with state and federal agencies and stakeholders during these projects and as a result, has gained an understanding of agency issues and resource values. To date, R2 has provided technical support regarding all facets of instream flow studies, including modeling and data interpretation, temperature monitoring and modeling and feasibility of coldwater releases, sediment transport modeling and development of mitigation measures, fish

- Upper American River Project, California
- Big Creek Project, California
- Mill Creek Project, California
- Cooper Lake Hydroelectric Project, Alaska
- Ward Creek Instream Flow Studies, Alaska
- Tapoco Hydroelectric Project, North Carolina
- Nantahala Hydroelectric Project, North Carolina

sampling methods and survey designs, project operations modeling, habitat suitability curve review and development, amphibian survey design and oversight, and design of entrainment and impingement surveys.

R2 developed a multi-resource and stream reach matrix that was used by the collaborative for defining reach-specific resource issues. R2 has also participated in field surveys to review sampling protocols, assist with transect selection, and review habitat mapping results. R2 has participated in a number of technical meetings as a consultant to the USFS to provide technical input into settlement discussions and will assist the USFS in considering and formulating alternative operational scenarios that meet Forest management objectives. As well, R2 will be available to provide technical support to the USFS in developing section 4(e) conditions.