

The 'Broader Impacts' of Rope Rescue: Rescuing Fossils and Geologists

All grants submitted to the National Science Foundation (NSF) are required to include information regarding the 'broader impacts' of the research proposed. The content of this section includes how the proposed work will improve education, the dissemination of what will be learned to the public, and improvement of the groups represented in the sciences, or helped by them. Generally, how the research will benefit society. At first glance it is obvious how technical rescue benefits society in tangible ways, however, we can improve our outreach, training, and practice by further engaging new portions of society. Described here will be the applications of single rope technique (SRT) and rope rescue techniques as an aid to scientific research with examples from the geologic sciences and paleontology, followed by a discussion of the benefits to rope rescue technicians, rescue organizations, and the technical rescue community from outreach, teaching, and practice in the aid of scientific research.

Many geologic research programs take place in areas without much vegetation since this improves exposure of the rocks of interest. Consequently many research projects take place near or on cliffs or rough terrain. This poses problems of both personal safety and outcrop access for those performing the research and both problems can be solved using SRT skills. Of greater interest is the plight of paleontologists who are tasked with moving heavy and fragile fossils in plaster jackets across uneven or rough terrain, and doing so safely and efficiently. This scenario is strikingly similar to the transport problems faced by search and rescue agencies of moving an injured person over rough terrain safely and efficiently. Historically paleontologists have enlisted the help of tractors or other heavy machinery to lift fossils, and when such machinery cannot access the localities, helicopters are used to sling load fossils to a destination. All these solutions are time and money intensive, when a simpler and safer (for the fossils) solution would be the application of rope rescue techniques to fossil transport. Described here will be a series of examples where rope rescue techniques would have improved the movement of fossils in terms of fossil and personal safety. Examples are taken entirely from the recent past of the author and are confined to only those encountered in the past year by fellow graduate students at Montana State University. It is suggested that the science of paleontology would be greatly aided by rope rescue techniques and agencies will be encouraged to volunteer to help paleontologists transport fossils when needed.

Most of the applications of ropes to research involve individual skills of rope access and rope safety. These skills are all too often ignored or minimized during rescue trainings which reduces individual competence and safety. Teaching these basic skills to those outside the rescue community will cement the material in the teachers mind and provide often needed personal practice, improving personal safety during real rescues.

Many rescue organizations infrequently practice rigging, and when they do it is entirely simulated and somewhat formulaic. Rescue rigging in the aid of paleontology will give rescue agencies practice rigging together and practice solving novel rigging problems with real life constraints. The rigging and transport problems faced by paleontologists are often unusual, which would provide excellent practice for a rigger in thinking critically and creatively to solve a rigging problem, a skill rarely practiced. In addition the practice would take place in a relaxed atmosphere without the stress of a 'real' rescue and a human load.

Interaction between scientists and rope rescue technicians could bring more bright motivated people into the practice of rope rescue as well as help form partnerships between the rescue community and academia. Such partnerships could improve testing programs which would ultimately improve safety for all involved.

Generally outreach to the scientific community would help more people, show members of the greater community what 'we do', and will broaden the group of people aided. This outreach would disseminate rope skills within the public thus increasing awareness. Finally outreach will increase technical rescue benefits to society, which is both personally fulfilling and a civic responsibility of those with technical skills.

Lastly outreach and volunteering in the aid of science, particularly paleontology, would be fun. It is a childhood dream of many to become a paleontologist, and for just a few hours or days rope rescuers can live that dream, meet fun people, all while providing a needed service and strengthening their personal and unit skills.