

## Citing Science to Support Recommendations: Use of References Across 12 Puget Sound Salmon Restoration Plans

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Policy-makers and environmental managers are often urged to make decisions based on science alone. In reality, the presentation of that science and the inclusion of other kinds of information - such as how cost-effective a proposed decision will be - have important roles to play. To understand how scientific information was utilized, this study investigated the application of cited references across twelve salmon restoration plans from Lead Entities in the Puget Sound region. This was accomplished by first compiling a list of information about each reference (peer-reviewed journal or government report, year published, etc.). Then, each reference was assigned to one or more categories based on what kind of argument it was used to support in the plan. For example, a reference could be used as evidence to support the argument that salmon populations have been declining over the past century, and this would be categorized as status and trends. In the final data analysis, it was found that natural science (97% of references) was cited far more than social science (<1% of references). Additionally, most of these references were used to describe limiting factors or the reasons that salmon population growth was reduced. Secondarily, references were used to describe the current status and trends of salmon populations. References were less commonly used to suggest project priorities, and very rarely used to discuss community support and opinion. In essence, most research was used to describe the problem, and very little was used to suggest solutions or motivate policy-makers by describing benefits or challenges for proposed actions. While it is important to describe the nature of a problem in any proposed plan, it is not the only determining factor in what decisions get made. Going forward, planners might consider a more holistic approach that incorporates more social science and solution-oriented arguments.