

SCIENCE SPRINTS TO SUPPORT REGULATION

Key Takeaway – Collaboration among agencies benefits natural resources by identifying and addressing shared scientific uncertainties. Synthesizing the best available, policy-relevant science occurs when decision makers and scientists iteratively communicate regulatory needs and scientific (un)certainty. The Science Sprint process offers a useful approach for digesting scientific information that advances shared regulatory needs for Puget Sound’s ecosystems.

The Problem – Regulators are required to apply best available scientific as defined by their guiding policies. The application of scientific evidence within this legal context is a unique and interdisciplinary technical discipline. Ecologists commonly want their knowledge to be used to inform effective policies. Yet, scientists often struggle to identify the most policy-relevant uncertainties or synthesize the most policy-relevant knowledge from diverse sources. Each regulatory body uses specific practices to evaluate risk and certainty when managing public trust resources. However, the underlying body of scientific evidence available to make these policy determinations is independent of this legal context. Synthesizing the breadth of best available scientific evidence from varied sources in a manner that bolsters regulatory needs is therefore an ongoing science-policy interface challenge.

The Project – We trialed the “Science Sprints” approach to synthesize best available science that is relevant to multiple regulatory agencies’ needs. The goal of the Science Sprints were to develop an iterative conversation between regulators and scientists from multiple agencies. These conversations were intended to identify regulatory uncertainties that were shared between authorities. The scientists were then tasked with synthesizing the available science in a manner that might inform regulation. Cross-agency collaboration was used to enhance the usefulness of the synthesis to multiple regulatory pathways, maximize technical expertise in the scientists, and minimize any perceived constraint on the science-policy relationship. We implemented two Science Sprint efforts over two years to test the effectiveness of the approach. The first Science Sprint was focused on the use of beach nourishment as a mitigation tool. The second Science Sprint addressed non-natal habitat use by juvenile salmon outside of their natal watershed. Sprint topics were chosen when topics had important uncertainty for multiple regulators and when a preliminary assessment suggested there was a sufficient body of information to synthesize. Topics with limited regulatory relevance and/ or which had a sparse knowledge base available were deemed less appropriate for a Science Sprint. For each Sprint, we identified a science advisory team to regularly provide feedback on the Sprint’s progress, to ensure adequate information was incorporated, and to confirm that the final written product was clear and accurate. The final product was iteratively revised in conversation with regulators to ensure that the science was interpreted in an effective way to inform regulatory needs. These science-policy revisions did not shape the scientific conclusion but ensured that scientific messaging was accurate and relevant.



Project Team and Key Collaborators – This work was managed by Paul Cereghino (NOAA). The two lead scientists leading the Sprints were Max Lambert (WDFW) and Josh Chamberlin (NOAA). Regulatory needs and context were provided by NOAA (Stefanie Ehinger), WDFW (Kelly Still, Matt Curtis, Liz Bockstiegel, Hannah Faulkner), Ecology (Misty Blair, Carolyn Chase), and diverse city and county regulators. Science advisory groups consisted of Eric Beamer, Jessica Cote, Kathy Ketteridge, Peter Kiffney, Doris Small, Jason Toft, and Todd Zackey. Various sources of data were provided by diverse regional experts and are detailed in each relevant Science Sprint report.

Findings & Impacts – The key finding from the first Science Sprint was that beach nourishment is largely an ineffective tool when used to mitigate impacts of hard structures in the nearshore, particularly when structures are sufficiently waterward. For the second Science Sprint, the main finding is that non-natal habitat use for juvenile rearing is common across salmon species and regions, suggesting that salmon recovery will likely benefit from further consideration of protections and restoration targeted at embayments and small coastal streams where salmon do not necessarily spawn but where juveniles rear. The impacts from these findings will of course take time to be fully realized but these Science Sprints have already resulted in conversations within the regulatory community about the relevance to current practices.

Next Steps – The Science Sprints approach represents a useful model for producing syntheses of the best available science needed to support regulatory bodies. The outcomes of our two Science Sprints – on beach nourishment and non-natal habitat use by juvenile salmon – have already sparked conversations around regulatory implications. Beyond the direct outcomes of these two sprints, this work offers best practices for cross-agency science-policy engagement. Perhaps the most salient next step for the Puget Sound community is incorporating regular dialog between agencies, scientists and decision makers, and the broader body of practitioners to identify and jointly address the most pressing uncertainties

More Information – The Science Sprints process is detailed on the [Salish Sea Wiki](#). As part of the Science Sprint process, we also worked with the Society for Ecological Restoration to update the Salish Sea Wiki portal, check it out!

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