

## **Regional Limiting Factors Affecting Salmon Strongholds and Programmatic Approaches to Remediation**

The purpose of this document is to briefly describe “multi-state and programmatic initiatives”, which can be supported through funds appropriated under the Pacific Salmon Stronghold Conservation Act. The objective is to ensure a shared understanding of the term “programmatic” among Steering Committee members, who will be responsible for evaluating proposals seeking support for programmatic initiatives.

### ***Introduction***

The purpose of the Salmon Stronghold Partnership is to identify and protect a network of the healthiest remaining wild Pacific salmon ecosystems in North America to ensure the long-term survival of salmon, steelhead and the many species that depend on them. The Stronghold Partnership is a voluntary, incentive-based effort intended to supplement ongoing ecosystem protection and restoration efforts by providing leadership, enhanced coordination and public and private resources to support priority actions in and across salmon strongholds. The Partnership includes local communities, state and federal agencies, tribes, nonprofit organizations, and private landowners who are working collaboratively on salmon conservation and restoration activities across Washington, Oregon, Idaho, California, and Alaska.

### ***Limiting Factors and Threats to Salmon Strongholds***

Salmon strongholds are broadly distributed across Pacific Rim ecoregions from southern California to Japan. The physical and management conditions that influence the productivity of these salmon strongholds vary greatly across the range of Pacific salmon. However common categories of limiting factors affect many salmon strongholds. *Limiting factors* are the physical, biological, or chemical conditions, and associated ecological processes and interactions (e.g., population size, habitat connectivity, water quality, water quantity) that may influence salmon population abundance, productivity, spatial structure and/or diversity. Although limiting factors include examples like predation, competition, and disease they are most often viewed in terms of physical habitat impairments, such as diminished water quality, reduced instream complexity, reduced water quantity, and impaired flow.

Numerous state and federal programs exist to fund activities seeking to reduce these and other limiting factors. These activities, which often involve physical restoration or manipulation of the watershed, are appropriate and effective at a watershed scale. However, many threats exist that transcend watershed boundaries, exacerbating the impacts of existing limiting factors and/or creating new ones across multiple basins. Examples of such threats may include:

- Climate change;
- Land use policies, practices, or ownership patterns;
- Non-native species proliferation;
- Government subsidies and antiquated laws; and
- Hatchery and harvest practices.

### ***Programmatic Actions***

Unlike basin-specific limiting factors, which often require “on-the-ground” solutions implemented at the watershed or reach scale, threats like those listed above can be more effectively addressed through “programmatic” remedies that can reach across multiple strongholds. Because most federal and state salmon conservation programs focus financial and technical support on specific watershed level restoration strategies, programmatic solutions are often difficult to design and finance. This is especially true for new and innovative approaches or policies that are untested, but may be applicable and effective across multiple basins.

While the Stronghold Partnership does invest in the development and implementation of high value, on-the-ground protection and restoration actions at the watershed level, its Charter also authorizes it to support programmatic remedies. As stated in the Charter, these remedies may “address government policies and programs across multiple stronghold basins to remove obstacles to and increase the effectiveness of existing salmon conservation and recovery efforts”. Examples may include:

- Strategies integrating harvest and hatchery reform with habitat conservation (the “all-H” approach);
- Activities to evaluate and promote ecosystem resilience to climate change;
- Comprehensive land exchanges to better facilitate the implementation of conservation plans;
- Voluntary, incentive-based, market approaches to conservation; and
- Streamlining of permitting and other regulatory requirements.