

Climate Change Repercussions on Washington State Amphibians: Emerging Patterns

Dr. Marc P. Hayes, Senior Research Scientist, Aquatic Research Section, Habitat Program, Washington Department of Fish and Wildlife

Emerging patterns resulting from the current trajectory of climate change are likely to dwarf non-climate-change-linked impacts in the near future. Two global patterns prominent in the current trajectory, which agree with predictions from climate models, are basic to realizing this condition. These include warming of air temperatures and greater variability in seasonal climates. The former translates to several physical effects; prominent among them are more rain and less snow, earlier seasonal drying, and sea-level rise. Some of these physical effects translate to secondary effects such as increased fire frequency. Greater variability in seasonal climates translates to more extreme events and temporal climate anomalies. As the vertebrate group likely most dependent on freshwater aquatic resources, amphibians are a bell weather for the impacts of these changes. The freshwater resource dependence of amphibians is linked to two basic aspects of their physiology: skin that functions as a lung and a kidney that makes them salt water intolerant. Using a series of examples from current and continuing research, we illustrate the risks that the amphibian fauna of Washington State faces under the current climate change trajectory.