

COHSTREX 2010

Narrator: The Snohomish River near Everett, WA, for five years the scene of COHSTREX: COHerent Structures in Rivers and Estuaries EXperiment.

Principal Investigator Andy Jessup's goal: "Increase our understanding of how to use remote sensing techniques to measure the properties of river flow."

Sensitive video, microwave radar, and infrared sensors capture small differences in surface water temperature and surface ripple patterns — important clues to what is happening below, out of sight.

Chris Chickadel: "We're investigating the fundamental physics of the river. One of the big unknowns in rivers is turbulence physics — how the river is mixing and what causes that mixing. The river we are on now, the Snohomish, we're on a portion that is tidal. So it's actually influenced by the tide every day. Sometimes when the tide is flooding, or rising, the flow of the river will reverse.

Say you want to control the banks with levees or you want to build bridges with footings in the river, that's what we are investigating — how structures at the bottom affect the flow."

Andy Jessup: "Anybody who wants to navigate a river would like to know where there are hazards to navigation, simply whether it's deep or shallow so you can get a vessel in. It's important for the Navy if they need to go into an area where they don't have measurements."

Chris C.: "For operations they need to know how fast the river is flowing, how deep it is.... So we are investigating the utility of remote sensing techniques to help inform them."

Andy J.: "We live on the river for several weeks at a time. In the early morning when you wake up and the sun is rising and nobody else is around it is beautiful and you certainly do appreciate those moments."

