Colorado Flood Assessment

Location:
Northern Central Colorado

Contracting Party:
Natural Hazard Center

Project Dates:
October 2013 – March 2014

Services Provided:
- Environmental Consulting
- Flood Risk Management
- Planning Policy Advice
- Storm Surge Risk
- Natural Resources Assessment
- Hydrogeology
- Risk Analysis

Key Outcome:
This project provided an early ecological and natural resources impact assessment of the September 2013 Colorado Floods in order to build cross-cutting resilience and a framework for eco-disaster risk reduction.

Project Summary:
The Colorado Floods are a natural event that now take place on a much-altered landscape: the diversion of rivers, scouring of riverbanks and deposition of sediment and boulders have large consequences for both human communities and resource use. Following the devastating Colorado floods in September 2013 we were asked to evaluate the ecological and environmental impacts and address the environmental-human interactions. We conducted intensive site visits immediately after the floods.

Our assessment examined the conservation consequences of flooding and found that threatened and endangered species are disproportionately at risk from flooding events, due to already low population numbers and limited habitat. Additionally, we found habitat restoration areas are vulnerable due to their already-fragile state, and recommended that flooding risks should be considered when developing restoration plans. Our assessment also examined the interaction of human activities and natural hazard dynamics, particularly the mobilization of contaminants (from mining, agriculture, industry, waste water, etc.) and debris (both natural and manmade debris) during the flood. We recommended an evaluation of the severity of the environmental impacts of contamination be conducted, and that contamination should be considered in land-use planning and disaster management. We also highlighted the need for an ecological recovery plan that dovetails with human community response and covers instances where multiple hazards are present (such as fire and flood). Finally, we recommended a social science study to assesses the resilience of different communities, incorporating the natural resource and environment relationships for each one (e.g. rural mountain top communities, riparian zone communities, low-income communities, and urban communities).