

ICNet Members' New England Research & Project Survey



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| Research/Project Focus | Hydroclimatic Flood Trends in New England. |
| Research/Project Description | This project investigated historical trends in flood magnitude and frequency using long-term stream gauge records in 28 climate-sensitive New England watersheds. The work supports fish passage project designs at stream crossings (roads, bridges) and dams by evaluating the effects of flood trends on design flood estimates. |
| Primary Category* | Hydrology |
| Geographic Location | New England |
| Funding | NOAA, NSF |
| Contact | Matt Collins, NOAA : mathias.collins@noaa.gov |
| Infrastructure sectors effected, subject area | Bridges, culverts, dams. In particular, our work informs design flood estimates for sizing these structures in the context of climate variability/change. |
| For modeled climate or sea level rise projections, AOGCM or other sources used | N/A |
| Other Information, data, | USGS stream gauge data; NCAR NAO indexes; |

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| models, used | |
| Time periods analyzed | Approximately 1900 to2006 |
| Status /Date submitted to ICNet | Completed. Submitted to ICNet Oct 2013 |
| Brief key findings to date | We find evidence for widespread, stepped upward trends in flood magnitude and frequency. Our findings suggest the strongest trends in low magnitude floods and in flood frequency (peaks-over-threshold per water year). |
| Key publications/reports? | <p>Armstrong, W.H., Collins, M.J., and Snyder, N.P., 2012. Increased frequency of low magnitude floods in New England. <i>Journal of the American Water Resources Association (JAWRA)</i> 48(2):306-320, doi:10.1111/j.1752-1688.2011.00613.x</p> <p>National Oceanic and Atmospheric Administration (NOAA), 2011. Flood Frequency Estimates for New England River Restoration Projects: Considering Climate Change in Project Design. NOAA Fact Sheet FS-2011-01, 4pp. www.habitat.noaa.gov/pdf/flood_frequency_estimates.pdf</p> <p>Collins, M.J., 2009. Evidence for changing flood risk in New England since the late 20th century. <i>Journal of the American Water Resources Association (JAWRA)</i> 45(2):279-290, doi:10.1111/j.1752-1688.2008.00277.x</p> |
| Other information (e.g., web links to technical reports). | See Citations Above |

*** Categories: Roads, bridges, and culverts; Pavement and/or soils; Hydrology (study of data/floods); Environmental/water resources (stormwater, drinking water); Transportation assets (network); Climate model output**