

## Appendix B. Model Calibration and Prediction Results

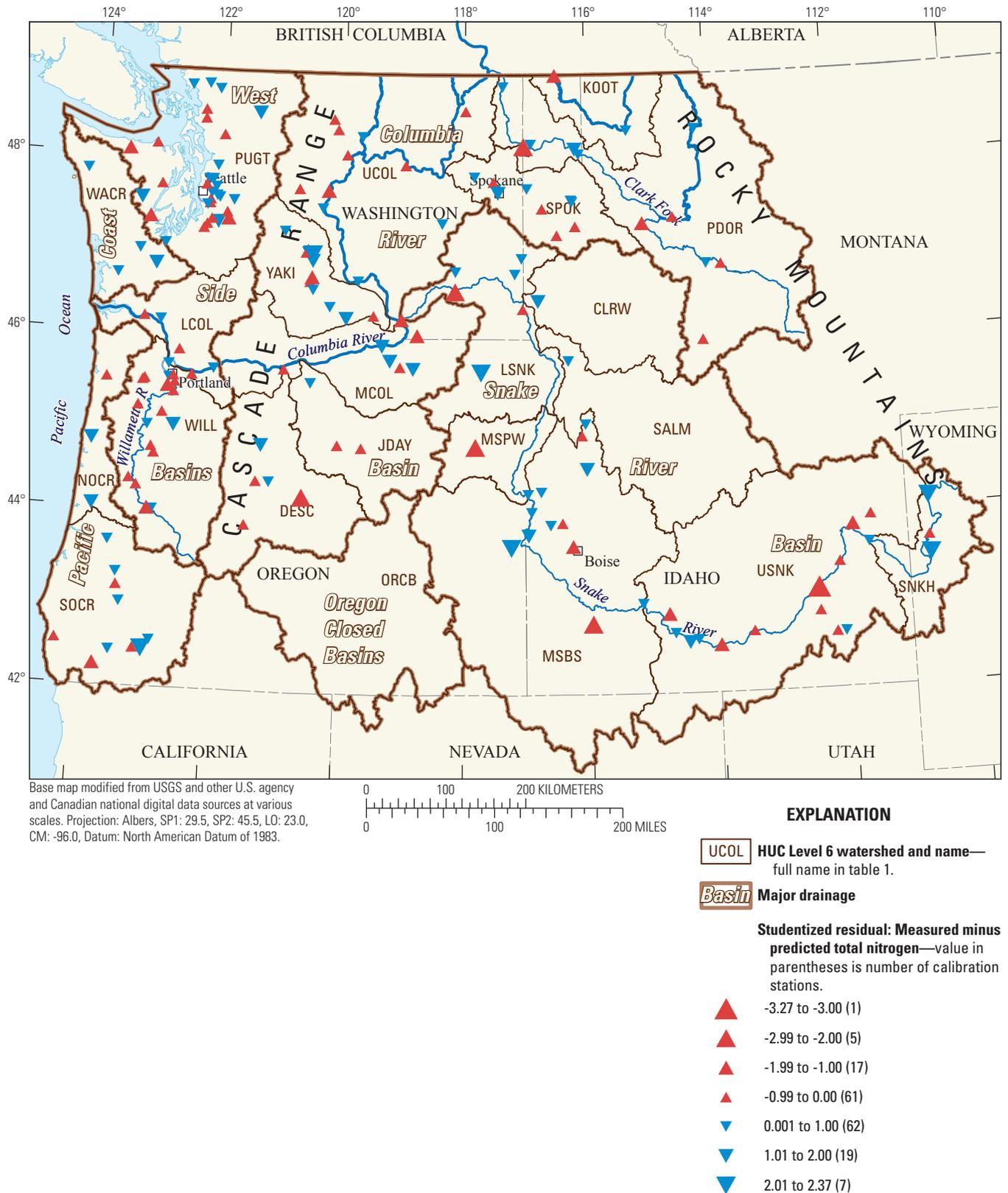
The studentized residuals for the PNW NHD SPARROW models for TN and TP are shown in [figures B1](#) and [B2](#), respectively. The studentized residual is equal to the model residual (the difference between the natural logarithm of measured load and predicted load) divided by an estimate of its standard deviation. The negative values indicate over prediction and the positive values indicate under prediction.

The incremental yields for total nitrogen and total phosphorus in kilograms per hectare per year are shown in [figures B3](#) and [B4](#), respectively. The mean annual total nitrogen and phosphorus loads and yields predicted by the PNW NHD SPARROW models are available online in a tab-delimited ASCII file at <http://pubs.usgs.gov/sir/2013/5103/>. The file includes predictions for individual stream reaches in the Pacific Northwest as defined by the National Hydrography Dataset Plus (NHDPlus, Pacific Northwest region [17]) medium resolution [1:100,000-scale] geospatial data set (Horizon Systems, 2013). SPARROW prediction variables in

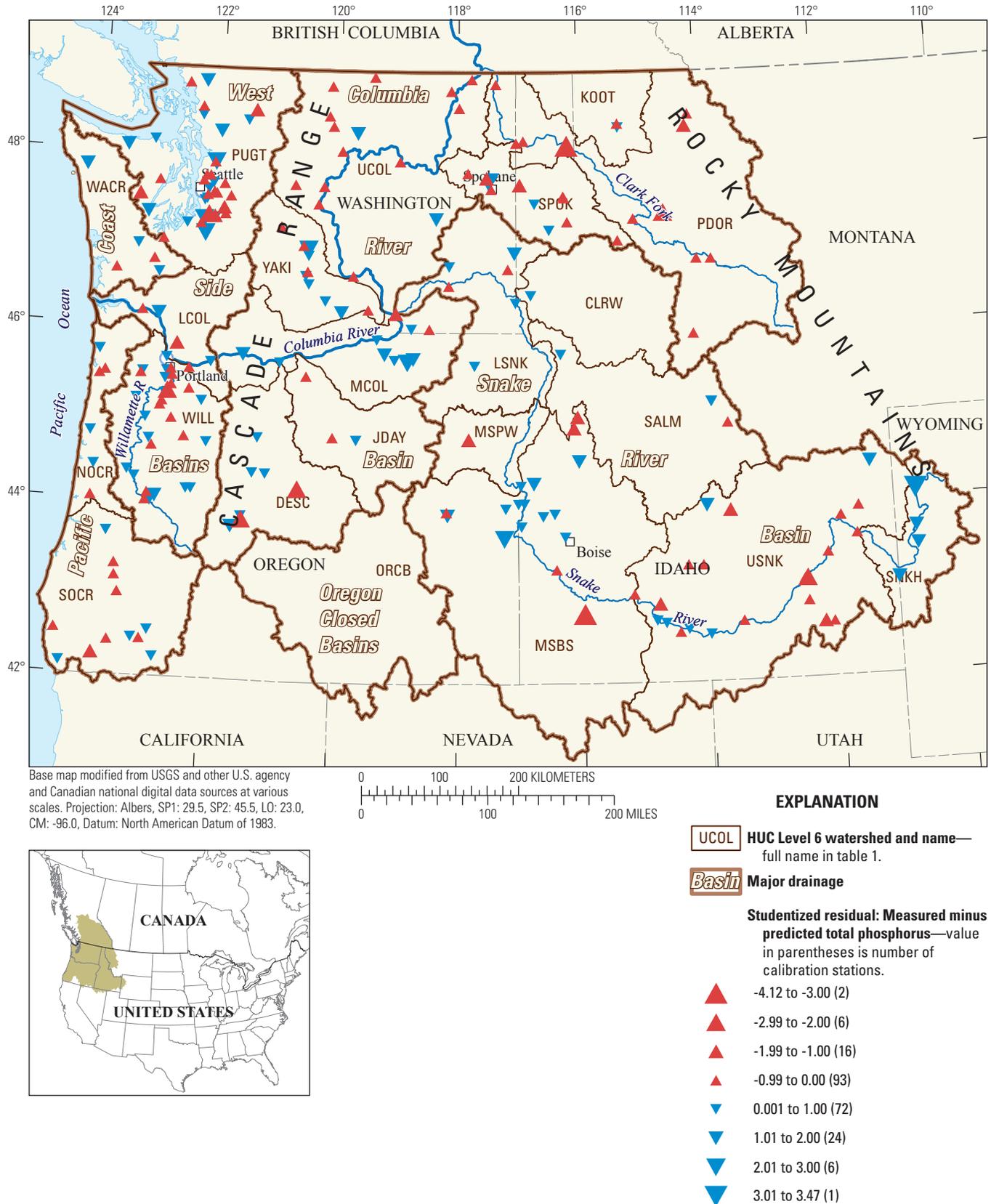
the ASCII file are described in the header (denoted by lines starting with “#”), and include COMID (common identifier of an NHD reach), AreaSqKM (area of the incremental NHD catchment, in square kilometers), TotDASqKM (total area draining to a reach, in square kilometers), predictions of the local mean annual load for each reach (in kilograms per year), predictions of the total mean annual load for each reach that is attributable to all upstream nutrient sources (in kilograms per year), and predictions of the total mean annual load for each reach that is attributable to individual upstream nutrient sources (in kilograms per year).

### Reference Cited

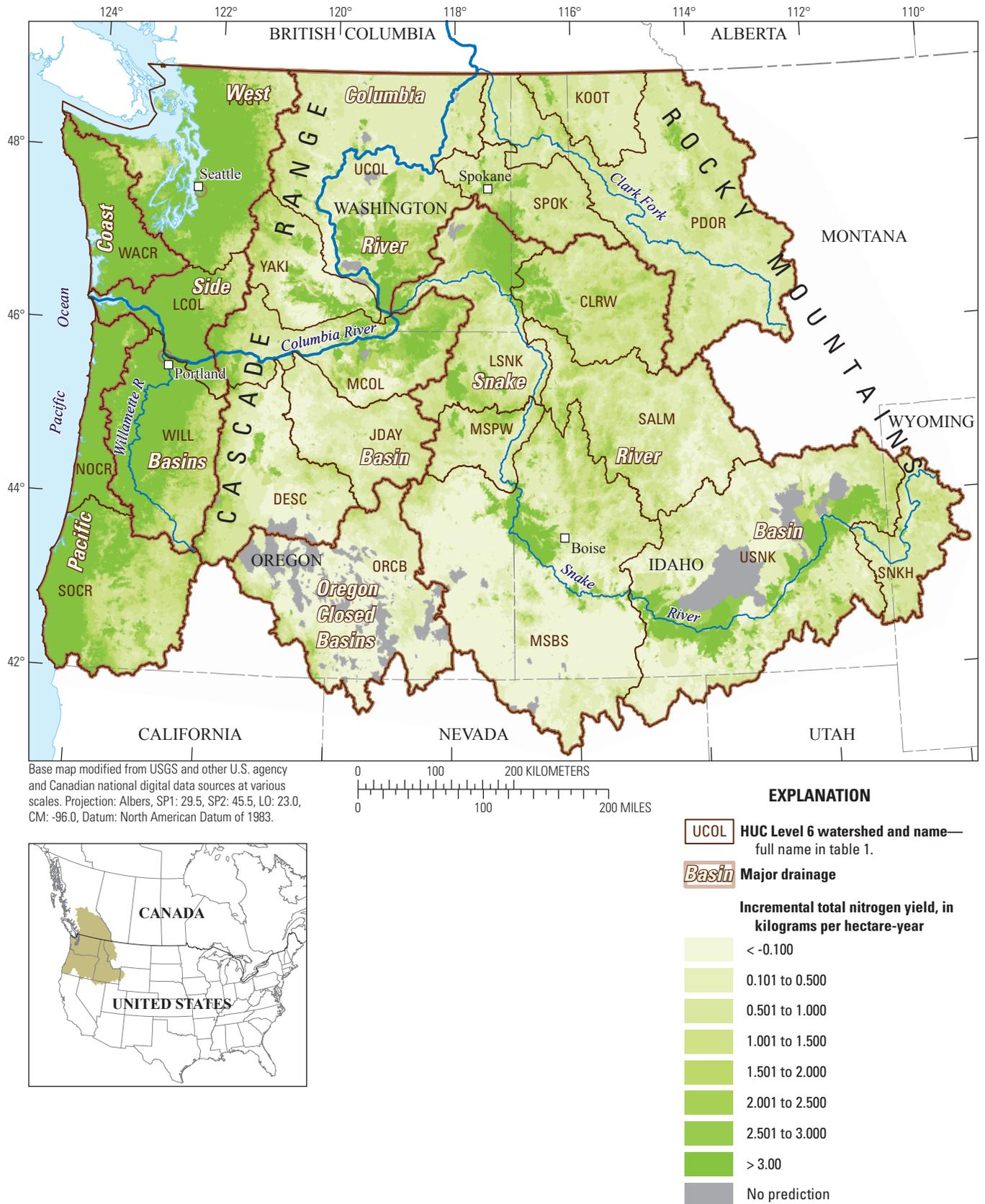
Horizon Systems, 2013, NHDPlusV2Data: Horizon Systems database, accessed March 18, 2013, at <http://www.horizon-systems.com/nhdplus/>.



**Figure B1.** Spatial distribution of residual stream load for the total nitrogen National Hydrography Dataset SPARROW model developed for the United States Pacific Northwest.



**Figure B2.** Spatial distribution of residual stream load for the total phosphorus National Hydrography Dataset SPARROW model developed for the United States Pacific Northwest.



**Figure B3.** Incremental total nitrogen yields for National Hydrography Dataset catchments in the United States Pacific Northwest (2002 conditions).



**Figure B4.** Incremental total phosphorus yields for National Hydrography Dataset catchments in the United States Pacific Northwest (2002 conditions).