

Joshua Linard

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Home Address

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Employment

Position: Hydrologist (August 2002 – Present)

Employer: U.S. Geological Survey

Duties and Accomplishments:

- Developed a multiple linear regression model to estimate in-stream yields of salinity and selenium at any point within a watershed using geospatial data.
- Applied two semi-distributed watershed models, the Soil and Water Assessment Tool and the Water, Energy, and Biogeochemical Model, to assess and compare the hydrologic processes that govern the fluxes of water and chemicals to streams for five agricultural watersheds across the United States as part of the National Water Quality Assessment Agricultural (NAWQA) Chemical topical study.
- Developed Water Erosion Prediction Project and Revised Universal Soil Loss Equation models to estimate hillslope and watershed erosion.
- Used the Precipitation-Runoff Modeling System model to forecast headwater runoff in a small, alpine watershed in central Colorado to estimate maximum potential diversions while maintaining minimum streamflow.
- Estimated 1d and 2d seepage from canals by simulating water and heat flux with the VS2DHI model.
- Used the Diffusion Analogy Flow model to reconstruct daily streamflow records along the Platte River.
- Installed weather stations, soil moisture sensors, an automatic water sampler, and a stream gage.
- Collected surface and ground water-quality samples according to NAWQA protocols.
- Conducted high resolution GPS surveys and imported the resulting data into a GIS for further analysis.
- Tabulated, quality-controlled, and prepared geo-referenced water-quality data using Microsoft Access which was then ported to a SQL Server database and made web-accessible.
- Managed project budgets and personnel to ensure project objectives were achieved and timelines followed.
- Developed and presented proposals related to watershed modeling, identifying hydrological and chemical transport processes, characterizing physical characteristics of the sub-surface, and bathymetric surveys.
- Published and presented scientific reports within the U.S. Geological Survey, in professional publications, and at professional meetings.

Position: Research Assistant (June 1999 – August 2002)

Employer: University of Idaho, Biological and Agricultural Engineering Department

Duties and Accomplishments:

- Installed and maintained field and laboratory equipment including: weather stations, tensiometers, moisture sensors, pressure transducers, lysimeters.
- Wrote sensor specific programs for Campbell Scientific data loggers.
- Measured stream flow, turbidity, conductivity, pH, and snow depth and density.
- Conducted road erosion assessments used in water quality modeling.
- Graded Hydrology assignments.
- Analyzed and prepared data for presentation at professional conferences.

Position: Resource Technician (June – August 1999)

Employer: Idaho Department of Lands

Duties and Accomplishments:

- Conducted Cumulative Watershed Effects assessments, which entailed:
 - Mapping roads and other major land features, using a GPS unit, and evaluated their ability to produce sediment.
 - Using Pathfinder Office software to create and edit data dictionaries.
 - Conducting stream stability assessments.
 - Determining canopy cover using aerial photo interpretation.

Education

Masters of Science in Environmental Science

Earth science/hydrology option

University of Idaho

Graduation date: December 2003

Graduate Thesis: **Determining saturated hydraulic conductivity using a hillslope infiltrometer and inverse modeling.**

Bachelor of Science in Environmental Science

Water and environmental chemistry option

University of Idaho

Graduation date: May 2000

Senior Thesis: **Determining Phosphorous transport through agricultural land using predictive equations.**

Pertinent coursework: Environmental Water Quality, Soil Chemistry, and Pesticides in the Environment

U.S. Geological Survey Courses

Multivariate Analysis of Hydrological, Biological & Chemical Data, Statistical Approach to Surface-Water Hydrologic Analysis, Statistical Methods for Environmental Data Analysis, Basic Data Quality Assessment and Techniques, and Geomorphic Analysis of Fluvial Systems.

Computer Skills

Software: MS-Office, ESRI ArcGIS, GIS-Weasel, BASINS 3.0, BASINS 4.0, uDig, Landserf, MapWindow, Adobe Illustrator CS4, Cygwin, Golden Surfer, TIBCO Spotfire S+, Text Pad, NetBeans, Eclipse, PCFF, Trimble Office, HOBOWare.

Hydrologic Modeling Software: PRMS, WEBMOD, MMS-LUCA, MMS-ESPtool, SWAT, APEX, HSPF, WEPP, WEPP-Road, GeoWEPP, RUSLE, DAFLOW, SRM, VS2DHI.

Programming Languages: Limited experience with Java, R, Python, SQL, C++, Fortran 77, Fortran 90, VB, HTML.

Field Skills

Equipment: Sutron and Campbell Scientific data loggers, Trimble TSC2 and corresponding high resolution GPS equipment, Sokkia SDL30 Digital level, YSI 600LS WQ Monitor, Aqua Troll 100 Conductivity/Temperature Sensor/Logger, Sontek Flow Tracker Current Meter, Pygmy Current Meter, Compass, Densimeter, Clinometer, Secchi disc, Depth and Range Finders.

Duties: GPS surveying, Snow sampling and surveying, Measuring streamflow, Collecting surface water and groundwater samples, Multi-electrode resistivity system data collection, Sampling of algae and benthic invertebrates, Fish shocking, Orienteering, Off-road driving, Skiing, Snowshoeing, Mountaineering.