
CHAD E. MORRIS
Hydraulic Engineer

EDUCATION:

M.S.	Civil Engineering (Hydraulics), Colorado State University	1998
B.S.	Civil Engineering, Colorado State University	1996

PROFESSIONAL REGISTRATION: Professional Engineer – Colorado

PROFESSIONAL SOCIETIES: American Society of Civil Engineers

EXPERIENCE:

Mr. Morris has over 10 years experience in hydraulic and water resources engineering while employed by Mussetter Engineering, Inc. and as a research assistant at Colorado State University. This experience includes field data collection, data reduction, analysis and interpretation, and report preparation. Mr. Morris' field experience includes topographic and hydrographic surveying, sediment sampling, field mapping, monitoring of physical water properties, and stream gaging in Colorado, California, Idaho, New Mexico, Utah, South Dakota, Texas, and Washington. His analytical experience includes:

- Management and reduction of field data from topographic, bathymetric, and sediment surveys.
- Development, execution and interpretation of one and two-dimensional hydraulic models (specifically with U.S. Army Corps of Engineers program HEC-2 and HEC-RAS, and RMA2).
- Development, execution, and interpretation of one- and two-dimensional hydrologic models (including HEC-1, HEC-HMS, HEC-Geo HMS).
- Scour analysis (channel and structure) and design of erosion control measures.
- Mapping and management of data in conjunction with Geographical Information Systems (GIS) and computer-aided drafting (CAD; specifically Bentley Microstation, InRoads Site, and AutoCad).
- Sediment transport analysis (including incipient motion, sediment-continuity, and mobile boundary hydraulics [HEC-6T]).
- Hydrologic analysis and interpretation of stream runoff characteristics.
- Development of programs to expedite data reduction as well as facilitate hydrologic and hydraulic analyses (DOS Fortran and Microsoft Visual Basic).

While pursuing his undergraduate and graduate education, Mr. Morris completed a wide variety of hydraulic engineering and hydrology courses. In addition, he was involved in hydraulic research studies pertaining to main channel and floodplain interaction, bed and bank stabilization, erosion control, dam toe and bridge pier scour protection, flow diversion design, grade control, and fish habitat restoration. Recent project experience includes:

- Data collection and reduction, sediment sampling, and hydraulic analysis for the evaluation of channel maintenance claims on streams in Colorado Water Division 2.
- Hydraulic analysis of the 150-mile reach of the San Joaquin River between Friant Dam and the confluence with the Merced River as part of a multi-year study to determine the potential for restoration of riparian and salmonid fishery habitat, California.
- Water rights investigation and analysis of water accounting models for Hidden Dam on the Fresno River, California.
- Hydraulic capacity evaluation (HEC-RAS), sediment-transport analysis, bridge scour analysis, design of channel stabilization measures, and culvert design for adequate fish passage along the Deschutes River and various streams in Thurston County, Washington.
- Data collection and reduction for the evaluation of the geomorphic and hydraulic impacts of flow regulation on nursery habitat for endangered native fish species of the Colorado River near Moab, Utah.
- Hydraulic (HEC-RAS) and sediment transport analyses, channel stabilization design, and floodplain impact evaluation for the development of erosion protection measures designed to prevent nonpoint source pollution (NPS), protect threatened property, and preserve or enhance instream habitat and recreational opportunities along a 2-mile reach of Skunk Creek, South Dakota.
- Bathymetric data collection and analysis for the estimation of the rate of siltation at Lake Powell near Hite Marina, Utah.
- Hydraulic (HEC-2) and sediment transport analyses, design of in-channel aquatic habitat improvement structures, and revised floodplain delineation (as part of FEMA CLOMR/LOMR development) for the San Miguel River Corridor Restoration project, Telluride, Colorado.
- Geomorphic, hydraulic, sediment-transport, and scour analyses of the Tijeras Arroyo and proposed University Blvd. Bridge crossing, including design of recommended scour protection and bank stabilization measures, Albuquerque, New Mexico.
- Geomorphic and hydraulic analysis for the channel remediation design of Silver Bow Creek, Montana.
- Geomorphic analysis and river and reservoir sediment-transport modeling (HEC-2 and HEC-6T) to evaluate the impacts of partial or total removal of San Clemente Dam on flooding, river stability, and instream habitat in the 18-mile reach of the Carmel River between the dam and the mouth of the river, Monterey County, California.

PUBLICATIONS:

- Harvey, M.D. and Morris, C.E., 2004. Downstream Effects of Urbanization in Fountain Creek, Colorado. Proceedings of the EWRI Environmental Resources Congress 2004, Salt Lake City, Utah, June.
- Harvey, M.D., Mussetter, R.A., Morris, C.E., 2003. Fine Sediment in the Upper Colorado River During Spring Runoff and Summer Baseflows: Implications for Flow Recommendations and Biological Productivity. Abstract: Proceedings of Hydrology Days 2003, American Geophysical Union, Fort Collins, Colorado.
- Harvey, M.D., Mussetter, R.A., Morris, C.E., 2003. Fine Sediment Dynamics in the Upper Colorado River During Spring and Summer Baseflows. Presented to the Upper Colorado River Basin Researcher's Annual Meeting, Grand Junction, Colorado, January 16.
- Miller, W.J., Rees, D.E., Ptacek, J.A., Harvey, M.D., Mussetter, R.A., and Morris, C.E., 2002. Ecological and Physical Processes during Spring Peak Flow and Summer Base Flows in the Colorado River above the Gunnison River, Volume I, Draft Report. Prepared for the Colorado River Water Conservation District, Glenwood Springs, Colorado.
- Morris, C.E. 1998. Apparent Shear Stress in Compound Channels. M. S. Thesis, Department of Civil (Hydraulics) Engineering, Colorado State University, Fort Collins, Colorado.
- Morris, C.E., Abt, S. R. 1998. Resistance to Flow in Vegetated Channel Overbanks. Presentation, Wetlands Engineering & River Restoration Conference, Denver, Colorado, Session A-2.
- Morris, C.E., Abt, Steven R., Thornton, C. I., and Fischenich, J. C. 1998. Resistance to Flow in Channel Overbanks. Proceedings of the ASCE International Water Resources Engineering Conference, Memphis, Tennessee, pp. 748-753, August 3-7.
- Thornton, C.I., Abt, S.R., Morris, C.E., and Fischenich, J.C. 2000. Calculating Shear Stress at Channel-Overbank Interfaces in Straight Channels with Vegetated Floodplains. American Society of Civil Engineers, Journal of Hydraulic Engineering, v. 126, no. 12, p. 929-936.