

1. Record Nr.	UNINA9910130897603321
Autore	Wohl Ellen E. <1962->
Titolo	Mountain rivers revisited / / Ellen Wohl
Pubbl/distr/stampa	Washington, DC, : American Geophysical Union/Geopress, c2010
ISBN	1-118-66557-0 1-118-67168-6 1-118-67156-2
Edizione	[1st ed.]
Descrizione fisica	1 online resource (583 p.)
Collana	Water resources monograph, , 0170-9600 ; ; 19
Altri autori (Persone)	WohlEllen E. <1962->
Disciplina	551.48/309143
Soggetti	Mountains Rivers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title Page; Contents; Preface; 1. Introduction; 1.1. Characteristics of Mountain Rivers; 1.2. Advances Since the First Edition; 1.3. Purpose and Organization of This Volume; 1.4. A Mountain River Described and Enumerated; 1.4.1. North St. Vrain Creek, Colorado, USA; 2. Mountain Drainage Basins; 2.1. Mountain Rivers and Tectonics; 2.2. Hillslopes; 2.2.1. Controls on Slope Morphology; 2.2.2. Steady-State Hillslopes; 2.2.3. Bedrock Weathering and Soils; 2.2.4. Mass Movements; 2.2.4.1. Landslides; 2.2.4.2. Debris flows; 2.2.5. Diffusive Sediment Transport on Hillslopes; 2.2.5.1. Creep 2.2.5.2. Rainsplash and overland flow 2.2.5.3. Modeling diffusive transport; 2.2.6. Modeling Slope Morphology and Sediment Movement; 2.3. Climate and Hydrology; 2.3.1. Generation of Precipitation; 2.3.2. Glacier and Snow Melt; 2.3.3. Down Slope Pathways of Water; 2.3.4. Modeling Hillslope Hydrology; 2.3.5. Pressing Hydrologic Needs for Mountain Regions; 2.4. Channel Initiation and Development; 2.4.1. Channel Initiation; 2.4.2. Channel Network Development; 2.5. Basin Morphometry and Basin-Scale Patterns; 2.5.1. Basin Morphometry and Hydrology; 2.5.2. Hydraulic Geometry; 2.5.3. Downstream Fining 2.6. Valley Morphology 2.7. Longitudinal Profiles and Bedrock Channel Incision; 2.7.1. Processes of Bedrock Channel Erosion; 2.7.2. Models of Bedrock Channel Incision; 2.8. Knickpoints and Gorges; 2.9. Terraces;

2.10. Alluvial Fans; 2.11. Summary; 3. Channel Processes; 3.1. Hydrology; 3.1.1. Discharge Estimation and Flow State; 3.1.2. Paleoflood Indicators; 3.1.3. Modeling Stream Discharge; 3.1.4. Bankfull Discharge; 3.1.5. Floods; 3.1.5.1. Outburst floods; 3.1.5.2. Geomorphic effects of floods; 3.2. The Hyporheic Zone; 3.3. River Chemistry; 3.3.1. Dissolved Nutrients
3.3.2. Organic Matter and Gases
3.3.3. Trace Metals and Pollutants; 3.4. Hydraulics; 3.4.1. Resistance Coefficient; 3.4.2. Resistance Partitioning; 3.4.3. Velocity and Turbulence; 3.4.4. Bed Shear Stress; 3.4.5. Stream Power; 3.5. Sediment Processes; 3.5.1. Bed Sediment Characterization; 3.5.1.1. Sampling and measurement; 3.5.1.2. Coarse surface layers; 3.5.2. Particle Clusters; 3.5.3. Sediment Entrainment; 3.5.4. Measurement of Bedload Transport; 3.5.5. Mechanics of Bedload Transport; 3.5.6. Downstream Bedload Transport Patterns, Rates, and Frequency; 3.5.7. Bedload Transport Equations
3.5.8. Bedload Yield and Sediment Budgets
3.5.9. Processes of Deposition; 3.5.10. Suspended Sediment; 3.6. Bank Stability; 3.7. Instream Wood; 3.8. Channel Stability and Downstream Trends; 3.9. Summary; 4. Channel Morphology; 4.1. Spatial and Temporal Variability in Channel Morphology; 4.2. Channel Classification Systems; 4.3. Channel Morphologic Types; 4.3.1. Step-Pool Channels; 4.3.2. Plane-Bed Channels; 4.3.3. Pool-Riffle Channels; 4.4. Incised Alluvial Channels; 4.5. Braided Channels; 4.6. Anabranching Channels; 4.7. Spatial Distribution of Morphologic Types and Network Heterogeneity
4.8. Summary

Sommario/riassunto

Published by the American Geophysical Union as part of the Water Resources Monograph Series, Volume 19. What are the forms and processes characteristic of mountain rivers and how do we know them? Mountain Rivers Revisited, an expanded and updated version of the earlier volume Mountain Rivers, answers these questions and more. Here is the only comprehensive synthesis of current knowledge about mountain rivers available. While continuing to focus on physical process and form in mountain rivers, the text also addresses the influences of tectonics, climate, and land use on r
