

1. Record Nr.	UNINA9910826632703321
Autore	Brooks Kenneth N
Titolo	Hydrology and the management of watersheds / / Kenneth N. Brooks, Peter F. Ffolliott, Joseph A. Magner
Pubbl/distr/stampa	Ames, Ia., : Wiley-Blackwell, 2012
ISBN	1-118-45975-X 1-283-65625-6 1-118-45976-8
Edizione	[4th ed.]
Descrizione fisica	1 online resource (564 p.)
Classificazione	TEC010030
Altri autori (Persone)	FfolliottPeter F MagnerJoseph A
Disciplina	627
Soggetti	Watershed management Watersheds Hydrology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Rev. ed. of: Hydrology and the management of watersheds / Kenneth N. Brooks, et al. Iowa State University Press, 2003.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	HYDROLOGY AND THE MANAGEMENT OF WATERSHEDS; CONTENTS; PREFACE; DEFINITION OF TERMS; PART 1 Watersheds, Hydrologic Processes, and Pathways; CHAPTER 1 Introduction; OVERVIEW; WATERSHEDS; Watersheds and Stream Orders; A Geomorphologic Perspective; Watershed Assessments; INTEGRATED WATERSHED MANAGEMENT; SUSTAINABLE USE AND DEVELOPMENT OF NATURAL RESOURCES; Land and Water Scarcity; Coping with Hydrometeorological Extremes; WATERSHEDS, ECOSYSTEM MANAGEMENT, AND CUMULATIVE EFFECTS; RECONCILING WATERSHED AND POLITICAL BOUNDARIES; SUMMARY AND LEARNING POINTS; REFERENCES; WEBLIOGRAPHY CHAPTER 2 Hydrologic Cycle and the Water BudgetINTRODUCTION; PROPERTIES OF WATER; Importance of Polarity; State of Water; THE HYDROLOGIC CYCLE; Hydrologic Processes; Water Budget; ENERGY AND THE HYDROLOGIC CYCLE; Radiation; Energy Budget; Energy and the Flow of Liquid Water; WATER FLOW IN SOIL; WATER FLOW ON LAND AND IN STREAM CHANNELS; SUMMARY AND LEARNING POINTS; REFERENCES; CHAPTER 3 Precipitation; INTRODUCTION; PRECIPITATION

PROCESS; RAINFALL; Methods of Rainfall Measurement; Number of Gauges Required; Calculating Mean Rainfall on a Watershed; Errors Associated with Rainfall Measurement
Analysis of Rainfall Measurements
SNOWFALL; Methods of Snowfall Measurement; Analysis of Snowfall Measurements; Snowmelt;
SUMMARY AND LEARNING POINTS; REFERENCES; WEBLIOGRAPHY;
CHAPTER 4 Evaporation, Interception, and Transpiration;
INTRODUCTION; THE EVAPORATION PROCESS; EVAPORATION FROM WATER BODIES; EVAPORATION FROM SOIL SURFACES; INTERCEPTION; Components of Interception; Interception Process; Hydrologic Importance of Interception; TRANSPIRATION; Measurement of Transpiration; Transpiration and Interception Relationships; Effects of Vegetative Cover; POTENTIAL EVAPOTRANSPIRATION
ESTIMATING ACTUAL
EVAPOTRANSPIRATION
Evapotranspiration/Potential Evapotranspiration Approach; Water Budget Approach; SUMMARY AND LEARNING POINTS; REFERENCES; CHAPTER 5 Infiltration, Pathways of Water Flow, and Recharge; INTRODUCTION; INFILTRATION; Infiltration Capacity; Measurement of Infiltration; Infiltration Equations; Land-use Impacts on Infiltration; Water-Repellent Soils; Soil Frost; PATHWAYS OF WATER FLOW; Groundwater Recharge; Water Flow into Stream Channels; Streamflow Regimes; Streamflow Hydrograph; Hillslope Hydrology; Variable Source Area Concept
Factors Affecting Stormflow Response
SUMMARY AND LEARNING POINTS; REFERENCES; CHAPTER 6 Streamflow Measurement and Analysis; INTRODUCTION; MEASUREMENT OF STREAMFLOW; Measuring Discharge; Precalibrated Structures for Streamflow Measurement; Monitoring Streamflow in the United States; Obtaining Discharge Information on Ungauged Streams; METHODS FOR ESTIMATING STREAMFLOW CHARACTERISTICS; Direct Transfer of Streamflow Information; Estimating Peak Discharge; Stormflow Response; Analysis of Recession Flows; Computer Simulation Models; Streamflow Routing; Streamflow-Frequency Analysis
SUMMARY AND LEARNING POINTS

Sommario/riassunto

This new edition is a major revision of the popular introductory reference on hydrology and watershed management principles, methods, and applications. The book's content and scope have been improved and condensed, with updated chapters on the management of forest, woodland, rangeland, agricultural urban, and mixed land use watersheds. Case studies and examples throughout the book show practical ways to use web sites and the Internet to acquire data, update methods and models, and apply the latest technologies to issues of land and water use and climate variability and change.
