

Table of Contents

CHAPTER 1. OVERVIEW

- § 1:1 Introduction
- § 1:2 Organization and scope

CHAPTER 2. HYDROLOGIC CYCLE

- § 2:1 Scope
- § 2:2 Relationship to water law
- § 2:3 —Hydrologic cycle
- § 2:4 —Hydrologic cycle and water law
- § 2:5 Water distribution
- § 2:6 —Regional variation
- § 2:7 —Water quality
- § 2:8 Water use
- § 2:9 —Use categories
- § 2:10 —Demand trends
- § 2:11 Climate change
- § 2:12 —Nature of the problem
- § 2:13 —Impacts on water resources
- § 2:14 —Adaptation policy

CHAPTER 3. RIPARIANISM

- § 3:1 Scope
- § 3:2 Historical foundations
- § 3:3 —Roman origins
- § 3:4 —American origins
- § 3:5 — —*Tyler v. Wilkinson*
- § 3:6 — —Common law: Riparian rights or prior appropriation
- § 3:7 — —Classic law of riparian rights
- § 3:8 Justifications for riparian rights
- § 3:9 Nature of riparian rights
- § 3:10 —Usufruct
- § 3:11 Waters subject to riparian rights
- § 3:12 —Surface waters
- § 3:13 —Diffused surface waters
- § 3:14 — —Ownership of diffused surface waters
- § 3:15 —Flood waters
- § 3:16 — —Common law rules
- § 3:17 — —Municipal liability for subdivision plat approval
- § 3:18 —Springs
- § 3:19 —Navigable waters
- § 3:20 Natural watercourses
- § 3:21 —Consequences of existence or non-existence of watercourse
- § 3:22 —Channel, bed and banks, and flow
- § 3:23 Subsurface streams
- § 3:24 Artificial watercourses
- § 3:25 —Conversion of natural to artificial watercourse
- § 3:26 —Prescriptive rights

- § 3:27 —Lake level maintenance statutes
- § 3:28 —Facility abandonment
- § 3:29 Riparian land
- § 3:30 —Necessity of contact with a stream
- § 3:31 —Who may be a riparian
- § 3:32 —Location of water boundaries
- § 3:33 — —Boundaries of non-navigable waters
- § 3:34 — —Boundaries of tidal navigable waters
- § 3:35 — —Boundaries of non-tidal navigable waters
- § 3:36 — —Extension of public ownership landward of mean high tide
- § 3:37 — —Boundaries between states
- § 3:38 —Loss or gain of riparian land
- § 3:39 — —Accretion, avulsion, and reliction distinguished
- § 3:40 — —Accretion
- § 3:41 — —Avulsion
- § 3:42 — —Artificial accretion and erosion
- § 3:43 — —Reliction
- § 3:44 — —State or federal common law
- § 3:45 —Extent of riparian land
- § 3:46 — —Source of title and unity of title rules
- § 3:47 — —Lake subdivision
- § 3:48 —Riparian rights in platted streets
- § 3:49 Non-riparian use
- § 3:50 —Watershed limitation
- § 3:51 Time of exercise
- § 3:52 —Unexercised rights in dual states
- § 3:53 Allocation
- § 3:54 —Nineteenth-century natural flow theory
- § 3:55 —Current theories of natural flow
- § 3:56 —Domestic use preference
- § 3:57 — —Uses entitled to preference
- § 3:58 — —Municipal water supply
- § 3:59 —Reasonable use rule
- § 3:60 —Apportionment
- § 3:61 Impoundment
- § 3:62 —Liability of dam operator for flooding
- § 3:63 —Liability of United States
- § 3:64 Pollution as an unreasonable use
- § 3:65 —Relationship between common law and regulatory standards
- § 3:66 —Federal common law rights
- § 3:67 —Discharges of sewage
- § 3:68 Riparian rights and the Restatement of Torts (Second) § 850
- § 3:69 California reasonable beneficial use rule
- § 3:70 Natural flow revival in Hawaii
- § 3:71 Non-consumptive uses
- § 3:72 —Right to wharf out
- § 3:73 —Wharves—Location of wharves
- § 3:74 —Right to fill
- § 3:75 —Limitations on right to fill
- § 3:76 —Exercise of state navigation servitude
- § 3:77 —Use of the water surface

TABLE OF CONTENTS

§ 3:78	— —Common law and civil law rules
§ 3:79	— —Control of over-use of surface
§ 3:80	Transfers
§ 3:81	—Transfer of riparian rights
§ 3:82	— —Non-consumptive rights
§ 3:83	— —Consumptive rights
§ 3:84	Prescriptive rights
§ 3:85	Statutory modification of the common law of riparianism
§ 3:86	—Reasons for modification or replacement of the common law
§ 3:87	—Modification of the common law: Sources of and limitations on authority
§ 3:88	—Constitutionality of modification of the common law
§ 3:89	—State water resources planning
§ 3:90	—Jurisdiction of permit agency
§ 3:91	— —Uses covered
§ 3:92	— —Exemptions
§ 3:93	—Allocation criteria
§ 3:94	— —Priority versus public interest
§ 3:95	— —Modification of the watershed limitation
§ 3:96	— —Out-of-state diversions
§ 3:97	— —State environmental protection acts
§ 3:98	— —State constitutional provisions

CHAPTER 4. PRIOR APPROPRIATION

§ 4:1	Scope
§ 4:2	Development of prior appropriation
§ 4:3	—Common law: Miner's customs
§ 4:4	—From trespass to title—Priority prevails
§ 4:5	State theories of prior appropriation
§ 4:6	—California
§ 4:7	—Oregon
§ 4:8	—Colorado
§ 4:9	— <i>California Oregon Power</i>
§ 4:10	—Texas
§ 4:11	Dual system states
§ 4:12	—Constitutionality
§ 4:13	—Unexercised riparian rights
§ 4:14	Usufructuary nature of appropriative rights
§ 4:15	Waters subject to appropriation
§ 4:16	—When unappropriated water is available for appropriation
§ 4:17	—Reused water
§ 4:18	— —Seepage waters
§ 4:19	—Developed water
§ 4:20	—Saved water
§ 4:21	—Springs
§ 4:22	—Water unavailable for appropriation
§ 4:23	— —Environmental reservation
§ 4:24	— —Reservation through water marketing
§ 4:25	—Non-consumptive use of consumptive rights
§ 4:26	Access to water
§ 4:27	Who may appropriate
§ 4:28	—Necessity of land ownership

- § 4:29 —Appurtenancy requirement
- § 4:30 —Instream flow rights
- § 4:31 Priority
- § 4:32 —Attributes and justification
- § 4:33 —Modification of priority
- § 4:34 — —Administration of water rights
- § 4:35 — —Futile call
- § 4:36 — —Rotation
- § 4:37 — —Administrative suspension and subordination
- § 4:38 —Preferences
- § 4:39 Storage rights
- § 4:40 —Water banking
- § 4:41 —One-fill rule
- § 4:42 —Operation of federal reservoirs
- § 4:43 —Liability for flooding
- § 4:44 Elements of prior appropriation
- § 4:45 Restrictions on the location of use
- § 4:46 Administrative permits
- § 4:47 —History and function
- § 4:48 —Constitutionality
- § 4:49 —Procedure
- § 4:50 —Notice
- § 4:51 —Nature of permit
- § 4:52 —Judicial review
- § 4:53 Public interest limitations
- § 4:54 —Public interest denials
- § 4:55 — —Local authority to determine public interest
- § 4:56 — —Relationship between urban development and water supply
- § 4:57 —Consistency with a state water plan
- § 4:58 Public trust doctrine
- § 4:59 —New appropriative rights
- § 4:60 —Existing appropriative rights
- § 4:61 —Abrogation
- § 4:62 Intent to appropriate
- § 4:63 —Manifestation of intent
- § 4:64 —Relation back
- § 4:65 —Colorado conditional decree
- § 4:66 —Administrative determination
- § 4:67 Diversion
- § 4:68 Beneficial use
- § 4:69 —Means of diversion
- § 4:70 —Prevention of waste
- § 4:71 — —Community custom
- § 4:72 — —Requirement of efficient use
- § 4:73 —Relaxed standards for municipalities
- § 4:74 Transfers and changes
- § 4:75 —Appurtenancy
- § 4:76 —Protection of junior appropriators
- § 4:77 — —Burden of proof
- § 4:78 — —No injury rule
- § 4:79 — —District members

TABLE OF CONTENTS

§ 4:80	Transfers and Changes—Protection of junior appropriators—Supply augmentation
§ 4:81	—Wheeling
§ 4:82	—Historical beneficial use
§ 4:83	Transfers and changes—Transfers of reclamation water rights
§ 4:84	— —Nature of problem
§ 4:85	— —Federal and state interests
§ 4:86	— —Federal interests: Repayment of project costs, excess lands, and subsidy recapture
§ 4:87	— —California Central Valley Project
§ 4:88	— —Bureau policy
§ 4:89	—Temporary transfers
§ 4:90	Loss of appropriative rights
§ 4:91	—Non-use and abandonment
§ 4:92	—Forfeiture
§ 4:93	—Defenses
§ 4:94	—Prescription
§ 4:95	Water quality limitations on exercising appropriative rights
§ 4:96	—Right to quality
§ 4:97	—Irrigation drainage and sediment loading
§ 4:98	—Point versus non-point sources of pollution
§ 4:99	—Non-point regulation
§ 4:100	—Pesticide pollution
§ 4:101	—Salinity control
§ 4:102	—Stream flow maintenance
§ 4:103	—Source reduction and technological solutions

CHAPTER 5. GROUNDWATER LAW

§ 5:1	Scope
§ 5:2	Hydrology and groundwater use
§ 5:3	—Basic groundwater hydrology
§ 5:4	—Groundwater use
§ 5:5	Hydrology and groundwater law and administration
§ 5:6	“English” or Absolute Ownership Rule
§ 5:7	“American” or Reasonable Use Rule
§ 5:8	—Distinguished from absolute ownership
§ 5:9	—Overlying land
§ 5:10	—Right to lift
§ 5:11	—Right to saturate soil
§ 5:12	—Transfer of groundwater rights
§ 5:13	Correlative Rights Doctrine
§ 5:14	—Development in California
§ 5:15	—Adoption in other states
§ 5:16	—Mutual prescription modification in California
§ 5:17	—Equitable sharing revised
§ 5:18	—California’s Sustainable Groundwater Management Act
§ 5:19	Restatement of Torts (Second) § 858
§ 5:20	Prior appropriation
§ 5:21	—Adoption
§ 5:22	—Constitutionality
§ 5:23	—Exemptions

- § 5:24 —Withdrawal of groundwater from appropriation
- § 5:25 —Enforcement of priorities
- § 5:26 — —Groundwater versus surface water rights
- § 5:27 — —Critical areas
- § 5:28 — —Right to lift
- § 5:29 — —Impairment of water quality
- § 5:30 —Groundwater conservation
- § 5:31 Groundwater permit systems
- § 5:32 —Constitutional issues
- § 5:33 —Integrated permit systems
- § 5:34 —Separate permit systems
- § 5:35 —Emergency allocation
- § 5:36 —Pumping charges
- § 5:37 Groundwater mining
- § 5:38 —Tax benefits
- § 5:39 —Regulation
- § 5:40 —Elimination in Arizona
- § 5:41 — —History
- § 5:42 — —Strategy
- § 5:43 — —Management planning
- § 5:44 — —Municipal use
- § 5:45 — —Industrial use
- § 5:46 — —Agricultural use
- § 5:47 — —Transportation of groundwater
- § 5:48 — —New uses
- § 5:49 — —Storage
- § 5:50 Integration of groundwater and surface water rights
- § 5:51 —Prior appropriation jurisdictions
- § 5:52 — —Colorado
- § 5:53 — —Idaho
- § 5:54 — —Nevada
- § 5:55 — —New Mexico
- § 5:56 —Additional jurisdictions
- § 5:57 — —Arizona
- § 5:58 — —California
- § 5:59 — —Nebraska
- § 5:60 — —Texas
- § 5:61 Groundwater pollution
- § 5:62 —Common law generally
- § 5:63 —Nuisance
- § 5:64 —Strict liability
- § 5:65 —Defenses
- § 5:66 — —Nuisance
- § 5:67 — —Compliance with a discharge permit
- § 5:68 —Federal statutory law
- § 5:69 Protection of recharge areas
- § 5:70 Extraction of bottled water
- § 5:71 Liability for subsidence

CHAPTER 6. RESERVED RIGHTS

- § 6:1 Scope

TABLE OF CONTENTS

§ 6:2	Indian reserved rights
§ 6:3	—Recognition in <i>Winters</i>
§ 6:4	—Source
§ 6:5	—Quantification
§ 6:6	—Groundwater
§ 6:7	—Transfer
§ 6:8	—Administration
§ 6:9	—Settlements
§ 6:10	— —Sources of water
§ 6:11	— —Groundwater
§ 6:12	— —Instream flows and off-reservation leasing
§ 6:13	—Trust relationship & breach of trust
§ 6:14	—Pollution prevention on reservations
§ 6:15	—Relation to Endangered Species Act
§ 6:16	Federal reserved rights
§ 6:17	—Constitutional basis
§ 6:18	—Implied intent
§ 6:19	—Duty to claim
§ 6:20	—Non-quantified reserved rights
§ 6:21	Federal non-reserved rights

CHAPTER 7. ADJUDICATION OF WATER RIGHTS

§ 7:1	Scope
§ 7:2	Nature and function of adjudication
§ 7:3	McCarran Amendment and sovereign immunity
§ 7:4	General adjudication
§ 7:5	—Nature of proceeding: administrative or judicial
§ 7:6	—Constitutionality of administrative adjudication
§ 7:7	Jurisdiction
§ 7:8	—Joinder
§ 7:9	—Notice
§ 7:10	—Due process standards and procedures
§ 7:11	— —Federal
§ 7:12	— —State
§ 7:13	— —Geographical scope of notice
§ 7:14	— —Late claims
§ 7:15	Evidence of water use
§ 7:16	—Hydrologic surveys
§ 7:17	—Disclosure of water use information
§ 7:18	— —Evidentiary significance
§ 7:19	— —Reserved rights claims
§ 7:20	Entry of decree
§ 7:21	—Stages of adjudication
§ 7:22	—Preclusion generally
§ 7:23	—Preclusion of reserved rights claims
§ 7:24	—Settlement
§ 7:25	—Post-adjudication transfers

CHAPTER 8. PUBLIC RIGHTS

§ 8:1	Scope
§ 8:2	Bed ownership, navigability, and public rights

- § 8:3 —Navigability: For title or in fact
- § 8:4 —Historical basis of public rights
- § 8:5 — —State sovereignty
- § 8:6 — —“Waste” lands underlying tidal waters
- § 8:7 —State bed ownership
- § 8:8 —Equal footing doctrine
- § 8:9 —Federal bed ownership
- § 8:10 —Tribal bed ownership
- § 8:11 Navigability for title
- § 8:12 —Federal test
- § 8:13 —State definitions of navigability for post-patent disputes
- § 8:14 — —Adoption of federal test
- § 8:15 — —More restrictive tests
- § 8:16 — —Less restrictive tests
- § 8:17 —Meandered lakes and islands
- § 8:18 Public trust doctrine
- § 8:19 —*Illinois Central Railroad v. Illinois*
- § 8:20 —Trust purposes
- § 8:21 —Severance of trust lands
- § 8:22 — —Total severance
- § 8:23 — —Partial severance, balancing
- § 8:24 —Shared governmental control over trust lands
- § 8:25 —Restrictions on filling and exchanges
- § 8:26 Public recreational rights
- § 8:27 —Federal/state powers
- § 8:28 —Susceptibility of waters for public use
- § 8:29 —Navigation servitude & constitutionality
- § 8:30 —Common law theories of public use
- § 8:31 Access to public waters
- § 8:32 —Beach access
- § 8:33 — —Customary use of dry sand area
- § 8:34 — —Prescription and dedication
- § 8:35 — —Denial of access by fee
- § 8:36 —Public recreational inland waters

CHAPTER 9. FEDERAL WATER ALLOCATION & REGULATION

- § 9:1 Scope
- § 9:2 Federal role in water development and management
- § 9:3 —Reclamation and multiple-purpose development
- § 9:4 —Environmental protection and conservation
- § 9:5 Federal jurisdiction over water resources
- § 9:6 —Navigation as a limit on federal authority
- § 9:7 — —Tidal navigability
- § 9:8 — —Navigation in fact reduced to a fiction
- § 9:9 —Full Commerce Clause power as a basis of federal jurisdiction
- § 9:10 —Non-Commerce Clause sources of federal power
- § 9:11 Navigation servitude
- § 9:12 —Protection of navigation
- § 9:13 —Rule of no compensation
- § 9:14 — —Interferences with public right of navigation

TABLE OF CONTENTS

§ 9:15	— —Scope of the navigation servitude
§ 9:16	—No compensation for fast lands
§ 9:17	Federal preemption of state law
§ 9:18	—Federal deference to state law
§ 9:19	—Congressional deference to state law
§ 9:20	— —Reclamation Act of 1902
§ 9:21	— —FERC preemption
§ 9:22	Federal regulatory water rights
§ 9:23	Clean Water Act
§ 9:24	—WOTUS
§ 9:25	—Section 401 Certification
§ 9:26	—Section 402 Permitting
§ 9:27	—Section 404 Permitting
§ 9:28	—Citizen Suits
§ 9:29	Endangered Species Act
§ 9:30	—Protection mechanisms
§ 9:31	—Protection duties
§ 9:32	—ESA implementation & state and federal water rights
§ 9:33	Federal Power Act
§ 9:34	Northwest Power Planning and Conservation Act
§ 9:35	—Goals and standards
§ 9:36	—Constitutional issues
§ 9:37	—Relationship to FERC jurisdiction
§ 9:38	Forest Service bypass flows

CHAPTER 10. INTERSTATE RELATIONS

§ 10:1	Scope
§ 10:2	Equitable apportionment
§ 10:3	—Original jurisdiction
§ 10:4	—Equitable state interests
§ 10:5	—Parties
§ 10:6	—Waters subject to apportionment
§ 10:7	—Barriers to relief
§ 10:8	— —Political question
§ 10:9	— —Discretionary exercise of jurisdiction
§ 10:10	— —Parens patriae suits
§ 10:11	— — —Basis of state standing
§ 10:12	— — —Class action suits distinguished
§ 10:13	— — —Tribal representation
§ 10:14	— —Ripeness and standard of proof of injury
§ 10:15	—State law as source of equity
§ 10:16	— —Priority among appropriation states
§ 10:17	— — —Based on estoppel theory
§ 10:18	— — —Modification of prior appropriation
§ 10:19	— — —Conservation of water
§ 10:20	— —Riparian rights among common law states
§ 10:21	— — —Adoption
§ 10:22	— — —Modification of common law
§ 10:23	—Groundwater
§ 10:24	Interstate compacts
§ 10:25	—Formation and composition

- § 10:26 —Effect of ratification
- § 10:27 —Transfers & water marketing
- § 10:28 —Litigation
- § 10:29 —Colorado River Basin
- § 10:30 Congressional apportionment
- § 10:31 —Lake Tahoe & Truckee-Carson River Basins
- § 10:32 —Lower Colorado River & *Arizona v. California*
- § 10:33 Dormant commerce clause
- § 10:34 —Immunity
- § 10:35 —*Sporhase* & water as an article of commerce
- § 10:36 —Post-*Sporhase* & in-state preferences
- § 10:37 —Water marketing & market participation doctrine
- § 10:38 Interstate water quality
- § 10:39 —Host state power to compel source state to honor standards
- § 10:40 —EPA enforcement of host state anti-degradation standards

CHAPTER 11. INTERNATIONAL WATER LAW

- § 11:1 Scope
- § 11:2 Sources of international water law
- § 11:3 Allocation rules
- § 11:4 —Normative theories
- § 11:5 —Equitable apportionment
- § 11:6 —Non-navigational use rules
- § 11:7 — —Helsinki and Berlin rules
- § 11:8 — —International Law Commission non-navigation use rules
- § 11:9 — —*Gabcikovo-Nagymaros* decision
- § 11:10 —Groundwater
- § 11:11 —Flood control
- § 11:12 Pollution prevention
- § 11:13 Allocation of international rivers and lakes
- § 11:14 —U.S.-Canada relations
- § 11:15 —U.S.-Mexico relations
- § 11:16 Human right to water
- § 11:17 Recognition of environmental flows

Table of Cases

Index