

# Index

## A

Acetaminophen (paracetamol), 155, 280, 281, 334  
Algae, 93, 95, 110, 158, 182, 269, 282, 286, 340  
Alkylphenol ethoxylates (APEOs), 154  
Alkylphenols, estrogenic activity, 154  
Aminopeptidase (AMA), 111  
Ammonia, 42, 57, 64, 75, 281, 303, 320  
Ammonia-nitrogen, 75  
Ammonium ion, 75  
Amphetamines, 246, 252, 335  
Analytical measurement vs. modeling, 267  
Anoia River, 2ff  
Antibiotic resistance genes (ARGs), 184  
Antibiotics, 156, 158, 169, 279, 282, 334  
Antihypertensives, 156  
Anti-inflammatories, 107  
Antioxidant enzymes, 317  
Aquatic insects, 313  
Aquifer, recharge, 58  
Artificial recharge, 51, 54, 58  
Atenolol, 334, 340  
Azithromycin, 334

## B

Bacterial resistance, sulfonamides, 183  
Barbel (*Barbus haasi*), 102  
Barcelona, 2, 27  
Basin discharge, 77  
Basin scale, 69  
Benzoylgonine, 246, 335  
Bezafibrate, 156  
Bicarbonate, 42  
Bioaccumulation, 135  
Bioavailability, 135

Biodiversity, 95  
    Shannon–Wiener index, 283  
Biological communities, quality assessment, 305  
Biological indices, 297, 305  
Biological quality element (BQE), 308  
Biomarkers, 297, 342  
Biomonitoring, 305  
Bivalves, 99  
Black flies, 102  
 $\beta$ -Blockers, 107, 158  
Boron, 44  
Bridging, 16  
Brine shrimp, SDM, 182  
Bromide, 301  
Brominated flame retardants (BFRs), 135  
Brown trout (*Salmo trutta*), 102

## C

Caddisflies, 99, 281, 286, 316, 319, 331  
Cadmium, 285, 315  
Cannabinoids, 244, 251  
Cardener River, 2, 297  
Carp (*Cyprinus carpio*), 95, 146, 151, 163  
Chemical status, 297, 308  
Chironomidae (midges), 101  
Chlordane, 119  
Chlorfenvinfos, 315  
Chlorides, 35, 57, 65, 95, 301, 366  
Chloroacetanilides, 284  
Chlorpyrifos, 315  
Chub, 96  
Clarithromycin, 334  
Climate, 7  
    change, 1, 12  
Climatic extremes, 359

- Cocaethylene, 246  
 Cocaine, 246, 251  
 Codeine, 243, 246, 334, 340  
 Cold condensation, 220  
 COMMPS, 277  
 Community-based monitoring, 316  
 Concentration addition (CA), 268, 270, 338  
 Confined animal-feeding operations (CAFOs), 170  
 Contamination, 27  
 Copper, 277, 285, 286, 317  
 Cotton, 17  
 Cr(VI), 43  
*Cryptosporidium*, 332, 341  
 Cyanobacteria, 96, 98, 108, 185
- D**  
 Dams, 18  
*Daphnia magna*, 316  
   organophosphorus pesticides, 277, 281  
   sulfonamides, 183  
 Decabromodiphenylethane (DBDPE), 135, 138  
 Deep injection, 57  
 Development, 27  
 Diaminopyrimidines, 169, 183  
 Diatoms, 97, 314  
 Dichlorodiphenyldichloroethane (DDD), 125  
 Dichlorodiphenyldichloroethylene (DDE), 125  
 Dichlorodiphenyltrichloroethane (DDT), 119, 125, 154  
 Diclofenac, 153, 155, 274, 281, 283, 334, 340  
 Diethylstilbestrol, 335, 340  
 Dioxin-like compounds (DLCs), 129  
 Diptera, 101  
 Diversity, 93  
 Drinking water, 193  
   deep injection, 57  
   PFCs, 198, 230  
 Drinking water treatment, illicit drugs, removal, 255  
 Drug use indicator (DUI), 251
- E**  
 Ecological status (ES), 278, 297  
 Ecology, 327  
 Ecosystem services, 347  
   classification, 349  
 Ecotoxicology, 157  
 Ecstasy (MDMA), 246, 252, 335  
 Emerging pollutants/contaminants, 106, 263, 275, 327  
   ERA, 338  
   loads, 334  
 Endocrine disrupting compounds (EDCs), 151, 315  
 Environmental quality standards (EQS), 277, 315  
 Environmental risk assessment, 167  
 Ephedrine, 246, 335  
 Equilibrium criterion (EQC) model, 120  
 Erosion control, 355, 357  
 Erythromycin, 158, 334  
*Escherichia coli*, 332, 341  
 Estradiol/estrone/estriol, 153, 158, 333, 335  
 Ethinyl estradiol, 154, 158  
 Ethoxyresorufin-*O*-deethylase (EROD), 129, 138  
 2-Ethylene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP), 246  
 Exposure, 266
- F**  
 Fe(II), 43  
 Fecal indicators, 341  
 Fenitrothion, 289  
 Fentanyl, 246  
 Fish, 93, 102, 297, 312, 314  
 Flumen terrible et periculosum, 15  
 Fluorotelomer alcohols (PFTOHs), 196  
 Furosemide, 334
- G**  
 Gasoline, 44  
 Gastropods, 99  
 Gemfibrozil, 156  
 Geology, 1  
 Geosmin, 108  
 Giant reed (*Arundo donax*), 319  
 Glyphosate, 319, 321  
 Green algae, 98  
 Groundwater, 27  
   contamination, 42  
   development, 31
- H**  
 Hazard effects, 266  
 Hazard quotients (HQ), 270, 279, 282, 338  
 Heavy metals, 104, 289, 315, 366  
 Heptachlor, 119  
 Herbolex, 319  
 Heroin, 246, 251

- Heteroptera, 101  
 Hexabromobenzene (HBB), 135, 137  
 Hexachlorobenzene (HCB), 119  
 Hexachlorocyclohexane (HCHs)  
 (lindane), 119, 315  
 History, 1  
 Hormones, 153, 158, 333  
 Human pressure, 297  
 Hydric deficit, 9  
 Hydrocarbons, polyaromatic (PAHs), 117  
 Hydrological ecosystem services, 347  
 Hydropower, 17, 20, 301, 352
- I**  
 IBMWP index, 306, 313  
 Ibuprofen, 107, 153, 155, 274, 283, 334, 340  
 Illicit drugs, 239, 333  
 Independent action (IA), 268, 270  
 Indomethacin, 107  
 Infiltration, 51, 56  
 Insects, 99  
 In-stream decay specification, 73  
 In-stream nutrient loss, 85  
 In-stream removal, 69, 88  
 In-stream retention, 79  
 Invasive species, 104, 311  
 Invertebrates, 93, 98  
 Irrigation, 16, 19, 32, 96, 106, 174
- K**  
 Ketamine, 243, 246  
 Ketoprofen, 155
- L**  
 Land-to-water delivery, 84  
 Land use change, 1  
 Land use distribution, 76  
 Leachates, 21  
 Lipid peroxidation, 317  
 Liquid chromatography, 193  
 Llobregat River, delta, 30  
 global change impacts, 1ff  
 Long-range environmental transport, 220  
 Lorazepam, 334  
 Low Llobregat aquifer system, 27, 30  
 LSD, 246
- M**  
 Macroinvertebrates, 307, 313, 342  
 Macrophytes, 23, 96, 300, 311  
 Managed artificial recharge (MAR), 51, 55  
 Management, 27  
 Mass spectrometry (MS), 141, 193, 314, 333  
 Mass transport, 36  
 Measured environmental concentrations  
 (MECs), 266, 338  
 Mediterranean basin, 167, 347  
 Mercury, 285, 289, 314  
 Metabolites, 239  
 Metals, 285, 317  
 Methadone, 246  
 Methamphetamine, 246  
 3,4-Methylenedioxyamphetamine (MDA), 246  
 3,4-Methylenedioxyethamphetamine, 246  
 Methyl mercury, 288  
 Metoprolol, 156, 334  
 Mills, 16  
 Mine salt, 301  
 Mixture toxicity, 263, 268  
 Mn(II), 43  
 Modeling, 69  
 Monitoring program, 297  
 Morphine, 246, 335  
 Mosquitofish (*Gambusia holbrooki*), 102  
 Multispecies potentially affected fraction  
 (msPAF), 270, 277
- N**  
 Nematodes, 102, 111  
 Neolithic peoples, settlements, 14  
 Nitrates, 42, 74, 79, 111, 302, 361  
*N*-Nitrosodimethylamine-related  
 compounds, 257  
 Nonsteroidal antiinflammatory drugs  
 (NSAIDs), 155  
 Nonylphenol, 151, 154  
 Nonylphenol carboxylates (NPECs), 159  
 Nonylphenol di-ether carboxylate  
 (NP2EC), 108  
 Nutrients, 69  
 apportionment, 81  
 export, 80  
 loads, 79
- O**  
 Oak forest, 7  
 Occurrence, 266  
 Ofloxacin, 156, 158  
 Oil spill, 44  
 Oligochaetes, 99, 111  
 Opiates, 335

- Opioids, 246  
 Organochlorinated pesticides (OCPs), 117, 119  
 Organophosphates, 284  
 Organotins, 154, 288  
*Oscillatoria* spp., 109
- P**  
 Pathogens, 327, 332, 339  
 Pentabromoethylbenzene (PBEB), 135, 138  
 Pentachlorophenol, 314  
 Perfluorinated compounds, 193  
 Perfluorinated sulfonamide ethanols (PFASEs), 196  
 Perfluorinated sulfonamides (PFASAs), 196  
 Perfluoro alkyl sulfonates (PFASs), environmental fate, 220  
 Perfluorocarboxylic acids, 197  
 Perfluorooctane acid (PFOA), 196  
 Perfluorooctane sulfonate (PFOS), 196  
 Perfluorooctane sulfonyl fluoride (POSF), 221  
 Perfluorosulfonic acids, 197  
 Persistence bioaccumulation and toxicity (PBT), 267  
 Persistent organic pollutants (POPs), 117, 136  
 Pesticides, 275, 284, 315  
   organochlorinated, 117  
 Pharmaceutically active compounds (PhACs), 151  
 Pharmaceuticals, 151, 282  
 Phenylureas, 284  
 Phosphates, 75, 302, 361  
 Phthalates, 154, 161  
 Phytoestrogens, 154  
 Phytoplankton, 93, 95  
 Pines, 7  
 Plankton, 95  
 Pollutants, risk assessment, 263  
 Polyaromatic hydrocarbons (PAHs), 117, 119, 289  
 Polybrominated diphenyl ether (PBDE), 135, 137  
 Polychlorinated biphenyls (PCBs), 117, 122, 137  
 Polychlorinated dibenzofurans (PCDFs), 122, 137  
 Polychlorinated dibenzo-*p*-dioxines (PCDDs), 122, 137  
 Polychlorinated naphthalenes (PCNs), 129  
 Polyfluoroalkyl phosphates (PAPs), 222  
 Polytetrafluoroethylene (PTFE), 196  
 Poplars, 7  
 Prat de Llobregat, 327, 331
- Precipitation, 9  
 Predicted environmental concentrations (PECs), 266, 338  
 Predicted no-effect concentration (PNEC), 338  
 Probable effect concentration (PEC), 126  
 Projections to latent structures (PLS), regression analyses, 316  
 Propranolol, 107, 158  
 Psychoactive substances, 239  
 Pumping wells, 51
- Q**  
 Quantity and quality management, 27
- R**  
 Rainbow trout (*Oncorhynchus mykiss*), SMX, 182  
 Reactive oxygen species (ROS), 317  
 Recharge, aquifer, 58  
   ponds, 60  
 Removal efficiency, 167  
 Reservoirs, 20  
 Retention, nutrients, 69  
 Risk assessment, 263, 266  
 River industries, 17  
 River scarification, 51  
 Runoff, 1, 9, 55, 78, 170, 351, 361
- S**  
 Saline rubbles, 301  
 Salinization, 19, 27, 366  
 Sampling, 266  
 Scarification, riverbed, 56  
 Seawater intrusion, 63  
 Seawater positive barrier, 63  
 Sediment quality, 117, 126  
   guidelines (SQGs), 117, 126  
 Sediments, 193  
   biotests, 288  
   coastal, 145  
   PFCs, 230  
   POPs, 122, 141  
 Sewage treatment plants, 301  
 Shannon–Wiener diversity indexes, 283  
 Snails, 99  
 Sotalol, 156  
 SPARROW model, 71  
 Species sensitivity distribution (SSD), 277  
*Squalius laietanus*, 96  
 Steroid hormones, 151

- Stoneflies (Plecoptera), 99  
Storage of water, 55  
Stressors, physical/chemical, 93  
Sturgeon (*Acipenser schrenkii*), SMZ, 182  
Sulfadiazine, 171  
Sulfadimethoxine (SDM), 174  
Sulfamerazine (SMR), 174  
Sulfamethazine, 156, 174, 334  
Sulfamethizole, 156  
Sulfamethoxazole, 156, 158, 171  
Sulfapyridine, 156, 171  
Sulfates, 40, 42, 107, 217  
Sulfathiazole (STZ), 183  
Sulfonamides, 156, 167, 169, 197, 217, 219  
    aquatic ecotoxicology, 182  
    bacterial resistance, 183  
    hazard quotients, 185  
Superoxides, 317  
Surface ponds, 59  
Surface spreading, 56  
Surface waters, 46, 52, 167, 193, 202, 334  
    illicit drugs, 253  
    PFCs, 229  
    POPs, 122  
    sulfonamides, 167, 174
- T**  
TCDD, 129  
TDIC, 40  
Terbutryn, 333  
Terbutylazine, 333  
Tetrahydrocannabinol (THC), 246  
Textile industry, 2, 17, 136, 139, 143, 155, 159, 301  
Thiobarbituric reactive species (TBARs), 317  
Thiocarbamates, 284  
Threshold effect concentration (TEC), 126  
Total organic carbon (TOC), 125, 303, 333  
Toxaphene, 119  
Toxic equivalent quantity (TEQ), 129  
Toxicity, 129, 267, 338  
Toxicity contact test, 289  
Toxicity equivalent factors (TEFs), 129  
Triazines, 107, 272, 284, 315  
Tributyltin, 154  
Trichoptera (caddisflies), 99
- Trifluralin, 315  
Trimethoprim, 169, 183
- U**  
Universal soil loss equation (USLE), 357  
Urban loop, 24
- V**  
Vegetation, 6  
Veterinary antibiotics, 170  
Vitellogenin, 162  
Vulnerability, 167, 347
- W**  
Wastewater, 193  
    illicit drugs, 239  
    reuse, 55, 328  
Wastewater treatment plants (WWTPs), 23, 139, 151, 167, 330  
    antibiotics, 170  
    illicit drugs, 241  
    PFCs, 198, 227  
    sulfonamides, 171  
Water  
    diversions, 1, 297, 303  
    flow trend, 1  
    management, 300  
    pollution, 19, 70, 98, 311  
    provisioning, 353  
    purification, 347, 356  
    quality, 27, 51, 55, 297, 306, 327  
    reuse, 287, 327  
    scarcity, 328, 347  
    treatment, 1, 20, 356, 366  
Water Framework Directive (WFD), 45, 107, 155, 174, 297, 300, 305, 338, 357  
Watershed, 5, 72, 75  
Weirs, 20, 21, 71, 96, 106, 297, 301  
Wells, 22, 31, 51, 66
- Z**  
Zinc, 272, 285