

Index

A

Acartia biflosa, 237
Acenaphthene, 305
Aeginopsis laurentii, 241
Aeolian input/transport, 9, 21, 32
Aerosols, 9, 11, 18–38, 144, 298, 307, 315
 fluxes, 32
 insoluble, 316
Aethalometer, 14
Algae, 11, 134–137, 187–219, 251, 273, 280,
 283, 298–308, 319
Algal blooms, 92, 101, 122, 136, 153, 189, 241,
 257
Alkaline phosphatase, 144, 162–166, 208, 212
Alkanes, 23, 302, 306
Aluminum, 10, 29, 36, 69
Ammonium, 56, 58, 119, 122–135, 318
Amphipods, 243, 278
Anthracene, 305
Antimony (Sb), 24, 25, 36, 268, 271, 273, 277,
 282, 287
Arsenic, 36, 37, 268, 268–288
Ash, 33, 302
 fly/flying, 22
Atmospheric transport, 11
Atomic absorption spectrometry (AAS), 17,
 171, 267, 273

B

Bacteria, 56, 308, 314
Bacterioplankton, 89
Barium, 24, 271
Benzofluoranthene, 305

Benzopyrene, 303
Bioaccumulation, 41, 267, 272, 278, 280, 285,
 288, 320
Biological concentration factor (BCF), 286
Bismuth, 35, 37
Bivalvia, 241, 268, 277
Black carbon (soot), 10, 14, 18–25, 29, 31, 35,
 299
Bromine, 268, 288

C

Cadmium, 35–41, 59, 62, 67–77, 97, 108, 171,
 267–288
Calanus
 C. finmarchicus, 223, 230, 235, 245, 268
 C. glacialis, 230, 239–259, 273
Calcium, 24, 63, 85, 288
Carbon
 black, 10, 14, 18–25, 29, 31, 35, 299
 microcrystalline, 14, 25
 organic, 1, 32, 47, 54, 85, 144, 161, 169,
 185, 257, 273, 291, 298, 320
Carbon preference index (CPI), 306
Centropages hamatus, 230, 237, 238, 241
Cesium (Cs), 24, 268–288
Chaetognaths, 227, 229, 234, 239, 242, 246,
 278
Chavan'ga River, 93
Chlorite, 23
Chlorophyll a, 38, 115, 135, 157, 163, 206,
 209–212, 215, 280, 306, 319
Chromium (Cr), 24, 268–288
Chrysene, 303, 305

- Chuna Tundra, 38, 41
 Chupa Bay, 13, 15, 19, 32, 190, 239, 248, 254, 299, 303–305
 Cladocerans, 227, 231, 241, 280
 Cnidaria, 229, 243
 Coal, 10, 37, 38, 41
 Coastal abrasion, 285, 313, 315, 317
 Cobalt, 24, 268–288
 Copepods, 227–258, 273, 283
 Copper, 10, 29–38, 97, 101, 268–288
 Crude oil, 291, 295, 309
 Crustaceans, 229, 268
 Ctenophores, 227, 229, 234, 240
 Cyanobacteria, 212
 Cyclopoida, 229
- D**
- Decapoda, 241
 Diatoms, 21, 34, 70, 90, 135, 182, 188, 193, 196–219, 251, 273, 280, 283, 298
 Dibenzothiophene, 305
 Diesel fuel, 291, 293–296
 Dinophyta, 188, 192, 206, 210, 219
 Discharge, rivers, 47
 sediments, 49, 53, 77, 316
 Dissolved organic carbon (DOC), 5, 54, 55, 85, 88, 148, 161, 184, 185
 Dissolved organic matter (DOM), 54, 59, 124, 144, 200, 319
 Drainage channels, 293, 294
 network, 48
 Dust, 21, 27, 29, 38
 Dvina/Dvinsky Bay, 13, 19, 25, 33, 84, 117, 121, 166, 172, 194–228, 253, 269–286, 295, 307
- E**
- Electron transport system (ETS) enzymes, 144, 163
 Elements
 concentrations, 47
 dissolved, 53, 61, 76, 84, 110, 144, 185
 fluxes, 75, 83
 Enrichment factor (EF), 24, 36, 37, 41, 65, 71, 287, 288
 Enzymes
 hydrolytic, 143
 redox, 143, 144
 Euphotic zone, 116, 122, 133, 140, 319
- F**
- Feldspars, 23, 70
 Flocculation, 93, 101, 107, 110
 colloids, 83, 84
 Fluoranthene, 301, 305
 Fluorene, 305
 Fly ash, 22
 Foraminiferans, 229
 Fossil fuels, incomplete combustion, 10
 Fungi, 11
- G**
- Gallium, 36, 270, 274
 Gastropoda, 241
 Geospheres, 1, 314, 320
 Gold, 24
 Gorlo, 15, 117, 140, 144, 153, 197, 206, 229, 249, 252, 317
 Grain size, 48, 65, 280
 Granulometry, 14, 19, 32, 171
 Gytja, 38
- H**
- Hafnium, 24, 60–62, 67, 69, 97, 271, 273, 287, 288
 Harpacticoida, 229, 231
 Heavy metals, 10, 25, 36–41, 59, 61, 71, 77, 92, 268, 273–288, 313, 320
 dissolved, 171
 Humidity, relative, 21
 Hydrocarbons, 5, 23, 291–309, 320
 aliphatic, 23
 Hydrochemistry, 5, 53, 116, 313
 Hydromedusae, 227, 232, 235, 240–242, 246
 Hyperiididae, 232, 246, 278, 279
- I**
- Ice cover, 1, 5, 89, 94, 117, 157, 193, 218, 235, 255, 291–309, 313, 320
 Illite, 23
 Imandra Lake, 38, 41
 Indera River, 93
 Inductively coupled plasma mass spectrometry (ICP-MS), 17
 Inductively coupled plasma optical emission spectrometry (ICP-OES), 17
 Iron (Fe), 10, 24, 29–31, 267–288
 Isakovskoe Lake, 38, 41

K

- Kandalaksha Bay, 10, 143
- Kaolinite, 23
- Karelia, 4, 10, 17, 19, 35–39, 50
 - coast, 127, 158
- Kartesh Cape, 19, 269, 272, 278
- Kem River, 50, 55, 85, 138, 143, 150, 166, 218
- Kindo Peninsula, 34
- Kislo-Sladkoe Lake, 38
- Knyazhaya River, 229
- Kostomuksha field, 10
- Kostomuksha Reserve, 31
- Kovda
 - River, 50, 229
- Kovdor Lake, 38, 40, 41
- Kovdor Mining and Processing Combine, 38
- Kuropta Lake, 38

L

- Lakes, sediments, 10, 38, 41
- Larvacea, 229
- Leaching, 56, 72, 78
- Lead (Pb), 10, 11, 25, 29–31, 35–41, 59–62, 66–78, 92, 97, 108, 171, 178, 180–184, 267–288
- Letnyaya, 50
- Letny coast, 122, 150
- Lichens, 9, 16, 32, 36–38
- Life cycles, 210, 223, 259, 269
- Lixiviation (leaching), 56

M

- Magnesium, 36, 37, 53, 54, 62, 66, 69, 78, 85, 97, 268, 273, 275, 287, 288
- Malevov Lake, 38, 40
- Manganese, 37, 95, 271–288
- Marginal filter, 5, 83, 94, 252, 278, 316
- Mathematical modeling, 291
- Mercury (Hg), 37, 267, 271–288
- Meroplankton, 227, 241, 242, 246, 260
- Metallurgical facilities, 10
- Metridia longa*, 230, 237, 239, 241–246, 249–259, 273
- Mezen River, 35, 49, 91, 138, 152, 227
 - Bay, 117, 122, 129, 135, 152, 229, 235
- Microcalanus pygmaeus*, 230, 235
- Microplankton, 158, 163–166, 198
- Migrations, seasonal, 223, 245
- Mixing zone (marginal filter), 5, 83, 94, 252, 278, 316
- Modeling, 291

- Molybdenum, 36, 271–288
- Moncheozero Lake, 38, 39
- Monstrilloida, 229
- Mudyug Island, 300, 303

N

- Nephelometer, 12
- Neutron activation analysis (NAA), 14, 267, 273
- Nickel, 10, 29, 37, 274, 276, 277, 281, 283–288
- Niobium (Nb), 36, 68, 271, 273, 274, 288
- Nitrate, 56, 57, 91, 118–135, 189, 200, 269, 318
- Nitrite, 56, 57, 90, 122–128, 131–133, 318
- Niva River, 50, 52, 85, 172, 253
- Nutrients, 11, 47, 56, 89, 115, 251, 267, 283–287, 300, 318, 319
 - depletion/deficiency, 209, 283

O

- Oceanographic consistency, 170
- Oil, 291
- Onega River, 49–59, 85, 89, 143, 274, 296, 315
 - Bay, 13, 117, 122, 240, 252–254, 268–273
 - coast, 128
- Ophiuroidea, 241
- Organic carbon, 1, 47, 144, 161, 169, 185, 285, 291, 295, 320
- Organic matter, 21, 54, 143, 177, 313, 319
- Ostracods, 229
- Oxygen, 56, 117–122, 129–131, 139, 163
 - dissolved, 116, 175
 - saturation, 121, 122, 129, 135–137

P

- Page Lake, 38, 39, 41
- Parasagitta elegans*, 234, 239, 242–246, 250, 273
- Particulate matter, dissolved/suspended, 99, 169
- Particulate organic carbon (POC), 86, 103, 148, 171, 184
- Particulate organic matter (POM), 144, 189, 193, 198, 256, 319
- Peat bogs, 5
- Pennales naviscula*, 301
- Perylene, 23, 301, 305
- Phosphatase, 166
- Phosphates, 57, 77, 91, 116–140, 162, 166, 269, 288, 318, 320
- Photosynthesis, 115, 118

- Phytoplankton, 115, 187
 bloom, 92, 101, 122, 136, 153, 189, 241, 257
 cycle, 189
 production, 140
 vertical distribution, 199
 vertical fluxes, 187, 216
- Picophytoplankton, 187, 188, 208, 209
- Pikalevo Lake, 15, 33, 34, 300, 302, 304
- Pinega River (Ust-Pinega), 49, 58, 61, 77, 307
- Plankton
 communities, 267
 meroplankton, 227, 241, 242, 246, 260
 microplankton, 158, 163–166, 198
 phytoplankton, 92, 101, 115, 122, 136, 140, 153, 187, 189, 216, 241, 257
 picophytoplankton, 187, 188, 208, 209
 picoplankton, 158
 zooplankton, 1, 5, 84, 124, 189, 201, 216, 218, 223–288, 313, 319, 320
- Plant fiber, 21, 22, 34, 35
- Pollen, 21, 22, 34, 35
- Pollution, 10, 25, 30, 59, 61, 101, 150, 166, 278, 299, 316
 atmosphere, house heating, 299
- Polyarenes, 305
- Polycyclic aromatic hydrocarbons (PAHs), 23, 297
- Pomorskiy River, 55
 coast, 122, 128, 135, 138, 204
- Potassium (K), 54, 78, 85, 97, 273, 274, 287
- Precipitation, 14, 18, 27, 31, 48, 51, 77, 135, 176, 298
- Primary production, 115, 134, 139, 143, 153, 166, 189, 218, 229, 267, 318, 319
- Proteases, 144, 163, 164
- Pseudocalanus minutus/acuspes*, 230, 239, 244, 249, 258, 273
- Pteropoda, 227, 229, 234, 240
- Pyrene, 23, 299, 301, 305
- Q**
- Quartz, 23, 34, 70, 105
- R**
- Radiolarians, 229
- Rain/rainfall, 4, 12
- Redox enzymes, 144
- Rotifera, 229, 234
- Rubidium, 24, 36, 37, 288
- Rugozerskaya Bay, 291, 296–302, 305
- Runoff
 coastal, 127
 freshwater, 252
 rivers, 77, 124, 127, 129, 133, 140, 162, 229, 267–280, 288, 315, 316, 319
 Severnaya Dvina, 143
- S**
- Sagitta elegans*, see *Parasagitta*
- Salinity, 84, 89–110, 117, 171, 202, 235, 278, 294
- Sapropel, 38
- Scandium, 24, 283
- Scanning electron microscopy (SEM), 21
- Scyphomedusae, 233, 241
- Sedimentation, 2, 4, 10, 27, 65, 84, 105, 124, 256, 269, 313
- Sediments, 9, 17
 discharge, 49, 53, 77, 316
 lakes, 10, 38, 41
 suspended, 48, 52, 75, 77, 83, 315
- Selenium, 24
- Severnaya Dvina, 5, 15, 33, 48–77, 84–110, 143–166, 268–285, 291, 296, 300–308
 Bay, 13, 19, 25, 33, 84, 117, 121, 166, 194–228, 253, 269–286, 295, 307
 estuary, 33, 83, 88–94, 97, 99, 103, 110
 runoff, 143, 185
- Severonikel smelter plant, 38
- Sewage, 41, 317
- Silver (Ag), 273
- Siphonophores, 229
- Skeletonema costatum*, 136, 192, 202–211, 214, 219
- Snow, 1, 9, 15–20, 26–35, 94, 145, 148, 189, 291–309, 313, 316, 320
 insoluble particles, 15
 melt, 69, 229
- Sodium, 24, 37, 288
- Soot, 10, 18, 23, 25, 32–35, 302, 316
- Sosnovka River, 50, 52
- Spatial distribution, 14, 27, 33, 116, 122, 149, 202, 215, 223, 267, 278, 285, 294
- Species composition, 187, 223
- Spring floods, 49, 54, 56, 61, 70–78, 89, 104, 108, 110
- Strontium (Sr), 37, 60–62, 67, 69, 71, 78, 92, 97, 267, 270–273, 287

Sulfates, 54

Suspended matter, rivers, 65

Suspended particulate matter (SPM), 48–53,
65–78, 99, 169–185, 280, 284, 318

Svetloe lake, 15, 18, 33, 34, 38, 39, 302

T

Taiga, 4

Tantalum, 24, 268–288

Temora longicornis, 230, 237, 238, 241

Temperatures, 5

air, 254, 293, 308

distribution, 119, 130

water, 118, 210, 228, 235, 241, 242, 255

Tersky River, 55

coast, 127, 137, 174, 196, 215, 218, 252

Thorium, 24, 36, 268–288

Tin (Sn), 67, 271, 273, 274, 283, 288

Titanium, 36, 268–288, 296

Trace elements, 11, 47, 59, 92, 169, 267

dissolved, 171

Transport, long-range, 9, 14, 21, 25, 28–41

Tungsten (W), 35

U

Umba River, 50, 52, 55, 229

Uranium, 24, 35, 36, 69

V

Vanadium, 97, 270–288

Velikaya Salma Strait, 190, 210, 212, 216, 228,
238, 239, 248

Verkhnee Ershovskoe Lake, 18, 38, 39

Voronka, 117, 152, 227–235, 253

WWater, discharge, 48–56, 77, 89, 169, 176, 181,
316, 317

Weathering, 5, 316

White Sea, 1–322

Winds, 21, 34, 118, 291, 298

ice movement, 189

mixing, 189, 190

speed/velocity, 18–21, 309

X

X-ray fluorescence, 14, 267, 271, 273

YYtterbium (Yb), 61, 67, 69, 76, 97, 271, 273,
287

Yttrium (Y), 62, 67, 76, 270, 273, 283

Z

Zadnee lake, 15, 302

Zimnegorsky Cape, 122

Zimny coast, 122, 124, 136–138, 145, 153, 163,
174Zinc, 24, 36–41, 59–77, 92, 97, 108, 169–185,
267–288, 320

Zirconium (Zr), 24, 36, 63, 268–288

Zooplankton, 1, 5, 84, 124, 189, 201, 216, 218,
223–288, 313, 319, 320

biomass, 124, 136, 202, 224, 320

herbivorous, 216, 218

migration, 159

seasonal migrations, 245

spatial distribution, 252

winter communities, 248