

Appendix A. Some emerging and resurging pathogens causing disease in fauna and the geographic areas most affected.^a

(Y, yes; N, no; U, unlikely; I, insufficient information for determination.)

Pathogen	Disease	Zoonosis ^b	Primary fauna affected	Primary geographic area affected	References ^c
VIRUSES					
Adenovirus hemorrhagic disease virus	Adenovirus hemorrhagic disease	U	Mule deer	USA (central California)	262, 263
Adenovirus	Adenovirus infection	N	Long-tailed duck (oldsquaw)	Beaufort Sea (northern Alaska, USA)	123
Avian pox virus	Avian pox	N	Bald eagle, Hawaiian honeycreepers, passerines, waterfowl	USA	58, 86, 105
Canine distemper virus	Canine distemper	N	Baikal and Caspian seals	Lake Baikal, Caspian Sea (Russia), Kazakhstan	56, 86, 134, 136, 166, 176, 231
Canine parvovirus	Canine parvovirus infection	N	African lion, African wild dog, black-footed ferret, wide range of carnivores (including foxes, raccoons, skunks)	Tanzania, North America	2, 8, 29, 54, 58, 135, 179, 216
Canine parvovirus	Canine parvovirus infection	N	Coyote, gray wolf, other canids	Worldwide	14, 54, 172, 180
Classical swine fever virus	Classical swine fever (hog cholera)	N	Wild boar	Europe	10
Dolphin morbillivirus	Dolphin morbillivirus infection	U	Atlantic bottlenose, striped, Pacific common, and Black Sea common dolphins	Northwestern Atlantic Ocean (eastern USA coast), Mediterranean Sea, Black Sea, South Pacific Ocean	3, 18, 53, 64, 65, 67, 136, 160, 176, 237
Duck enteritis virus	Duck virus enteritis (duck plague)	N	Waterfowl	USA, Canada	29, 49, 58, 84, 86, 145, 146
Eastern equine encephalitis virus	Eastern equine encephalitis	Y	Various birds	North America	58
Ebola virus	Ebola virus hemorrhagic fever	Y	Nonhuman primates	Sub-Saharan Africa, Indonesia, Philippines	54, 148
Herpesviruses	Elephant herpesvirus infections	N	Asian and African elephants	Globally (captive collections)	212
EHD viruses, or bluetongue viruses	Epizootic hemorrhagic disease (EHD)	N	Deer, bighorn sheep	North America	58
Calicivirus (European brown hare syndrome virus)	European brown hare syndrome	N	European brown hare	Eastern and Western Europe	147
Feline immunodeficiency virus	Feline immunodeficiency virus infection	N	African lion	Tanzania, South Africa, Botswana	135, 180
Feline leukemia virus	Feline leukemia virus infection	N	European wildcat, cougar	UK (Scotland), USA (California)	135
Herpesvirus	Fibropapillomatosis	N	Marine sea turtles	Gulf of Mexico, Caribbean Sea, Pacific Ocean, western Atlantic Ocean, Indian Ocean	13, 86, 115, 116, 201, 247, 248

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Infectious bursal disease virus	Infectious bursal disease (Gumboro disease)	N	Emperor and Adelle penguins, spectacled and common eiders, herring gull	Antarctica, Baltic Sea, USA (western Alaska)	90, 91, 122
Infectious pancreatic necrosis virus	Infectious pancreatic necrosis	N	Trout, Atlantic salmon	UK (Northern Ireland, Scotland)	181, 198
Infectious salmon anemia virus	Infectious salmon anemia	N	Atlantic salmon	USA (Maine), Canada (New Brunswick)	23, 58
Influenza A virus	Influenza A	Y	Harbor seal	USA (Cape Cod, Massachusetts)	34, 242
Influenza B virus	Influenza B	Y	Gray and harbor seals	North Sea (Dutch coast)	136, 176, 193
Koi herpesvirus	Koi herpesvirus infection	N	Common carp, koi	USA (mid-Atlantic states, southern California)	96
Largemouth bass virus	Largemouth bass virus infection	N	Largemouth bass	USA (17 southeastern and southwestern states)	58, 101, 195, 259
Malignant catarrhal fever virus	Malignant catarrhal fever	N	White-tailed deer	Northcentral USA (captive collection)	151
Marburg virus	Marburg hemorrhagic fever	Y	Nonhuman primates	Sub-Saharan Africa, Indonesia, Philippines	54
Measles virus	Measles	Y	Mountain gorilla	Africa	54, 74
Monk seal morbillivirus-G	Monk seal morbillivirus-G infection	U	Mediterranean monk seal	Northeastern Atlantic Ocean (western Saharan coast of Africa)	176
Monk seal morbillivirus-WA	Monk seal morbillivirus-WA infection	U	Mediterranean monk seal	Northeastern Atlantic Ocean (western Saharan coast of Africa)	176
Myxoma virus	Myxomatosis	N	Rabbits	Australia, UK, Europe	54, 180
Newcastle disease virus	Newcastle disease	Y	Double-crested cormorant, pelicans, gulls	USA, Canada	29, 54, 58, 59, 86, 256
Nipah virus	Nipah virus infection	Y	Fruit bats	Malaysia, Singapore	11
Phocine herpesvirus-1 and -2	Phocine herpesvirus-1 and -2 infection	U	Harbor seal	Northeastern Pacific Ocean (California coast), northwestern Atlantic Ocean (eastern USA coast), Wadden Sea (coastal ecosystem of the North Sea)	136, 176
Phocine morbillivirus (phocine distemper virus)	Phocine morbillivirus infection	U	Harbor, harp, hooded, ringed and gray seals, Atlantic walrus	Canadian Arctic Ocean, western Atlantic Ocean, European seas (Danish, Swedish, Dutch, Norwegian, German, UK and Irish waters)	29, 114, 130, 136, 165, 176, 180, 192
Pilchard herpesvirus	Pilchard herpesviral disease	N	Pilchard	Australia and New Zealand coasts	125, 244
Pilot whale morbillivirus	Pilot whale morbillivirus infection	U	Long-finned pilot whale	Northwestern Atlantic Ocean (eastern USA coast)	176
Ophidian paramyxovirus	Ophidian paramyxovirus infection	N	Snakes	USA and Europe (captive collections)	54

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Polio virus	Polio	Y	Nonhuman primates	Africa	54, 240, 258
Porpoise morbillivirus	Porpoise morbillivirus infection	U	Atlantic bottlenose dolphin, harbor porpoise	Northwestern Atlantic Ocean (eastern USA coast), Gulf of Mexico, coast of Northern Ireland, northeastern Atlantic Ocean	136, 159, 176, 237
Rabbit hemorrhagic disease virus	Rabbit hemorrhagic disease	N	European rabbit	Europe, Australia	50, 182
Rabies virus	Rabies	Y	Raccoon, Ethiopian wolf (endangered), wide range of other mammals	USA (eastern states), Ethiopia	38, 42, 58, 78, 86, 204, 219, 250
Ranavirus	Ranavirus infection	N	Green python	Indonesia	126
Other ranaviruses (variants)	Ranavirus infections (variants), other ^d	N	True frogs, chorus frogs, mole salamanders, newts	USA (10 states)	62, 98, 99
Red sea bream iridovirus	Red sea bream iridoviral disease	N	Red sea bream, yellowtail, sea bass, Japanese parrotfish	Japan	184
Redwood Creek ranavirus	Redwood Creek ranavirus infection	N	Northern red-legged frog, stickleback fish	USA (California)	167
Rift Valley fever virus	Rift Valley fever	Y	Ruminants	Egypt/East Africa	29
Rinderpest virus	Rinderpest	N	Ruminants	Africa	180
Salmon sarcoma virus	Salmon sarcoma virus infection	N	Atlantic salmon	North America	58
Soft-shelled turtle iridovirus	Soft-shelled turtle iridovirus infection	N	Soft-shelled turtle	China	44
Spring viremia of carp virus	Spring viremia of carp	N	Carp	USA (North Carolina, Wisconsin, Mississippi River drainage)	191, 253
St. Louis encephalitis virus	St. Louis encephalitis	Y	Various birds	North America	58
Tadpole edema virus	Tadpole edema virus infection	N	Northern leopard frog, bullfrog, wood frog, spotted salamander	USA (upper Midwest and Eastern states)	98, 99, 257
Taura syndrome virus	Taura syndrome	N	Peneaeid shrimp	Virtually all shrimp farming regions of the Americas	109, 152, 153, 155, 156
Tiger salamander virus	Tiger salamander virus infection	N	Tiger salamander	USA (western states), Canada (Saskatchewan)	21, 99, 128
Unknown type of morbillivirus, first in baleen whale	Unknown type of morbillivirus infection	U	Fin whale	North Sea (Belgian coast)	176
Unnamed English ranaviruses	Unnamed English ranavirus infection	U	Common European frog	UK (England)	51

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Usutu virus	Usutu virus infection	U	Eurasian blackbird, barn swallow	Austria	243
Wallal and possibly Warrengo viruses	Viral chorioretinitis (kangaroo blindness)	N	Kangaroos	Australia	54
Papillomavirus	Viral papillomatosis	N	Atlantic and Pacific bottlenose and dusky dolphins, harbor and Burmeister's porpoises	Southeastern Pacific Ocean (Peruvian coast), North Sea	136, 176, 237
Viral hemorrhagic septicemia virus	Viral hemorrhagic septicemia (Egtved disease)	N	Rainbow trout, Pacific cod, Pacific herring	North America	53, 57, 87, 175, 218
West Nile virus	West Nile fever	Y	American crow, numerous other avian spp., bats	USA (national)	58, 86, 171
Western equine encephalitis virus	Western equine encephalitis	Y	Various birds	North America	58
White spot syndrome virus	White spot disease	N	Penaeid shrimp	North, Central and South Americas, East Asia	154
White sturgeon herpesvirus	White sturgeon herpesvirus infection	N	White sturgeon	USA (Oregon, California)	241
White sturgeon iridovirus	White sturgeon iridovirus infection	N	White sturgeon	USA (Oregon, Idaho, California)	113
Woodcock reovirus	Woodcock reovirus infection	N	American woodcock	USA (eastern states)	60, 61
PRIONS					
Chronic wasting disease agent	Chronic wasting disease	I	Mule deer, white-tailed deer, elk	USA, Canada	15, 58, 86, 180, 197, 249
BACTERIA					
<i>Aeromonas caviae</i>	<i>Aeromonas caviae</i> infection	U	Atlantic salmon, rainbow trout	Kenya, Turkey (Black Sea)	12
<i>Aeromonas jandaei</i>	<i>Aeromonas jandaei</i> infection	U	Eel	Spain	12
<i>Pasteurella multocida</i>	Avian cholera	N ^e	Waterfowl	USA, Canada	29, 58, 83, 86
<i>Bacillus cereus</i>	<i>Bacillus cereus</i> infection	U	Common carp, striped bass	USA	12
<i>Bacillus mycoides</i>	<i>Bacillus mycoides</i> infection	U	Channel catfish	USA	12
<i>Bacillus</i> spp.	<i>Bacillus</i> infection	U	Various freshwater fish	Nigeria	12
<i>Renibacterium salmoninarum</i>	Bacterial kidney disease	N	Salmonid fish	Worldwide	53, 163
<i>Brucella</i> spp.	Brucellosis	Y	Striped, common, and Atlantic white-sided dolphins, harbor porpoise, harbor, hooded, and gray seals	North Sea	69, 118, 176

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<i>Brucella</i> spp.	Brucellosis	Y	Elk, mule deer, buffalo	North America	58
<i>Campylobacter</i> -like bacterium	<i>Campylobacter</i> -like infection	U	New Zealand sea lion	Auckland Islands	176
<i>Chlamydia pneumoniae</i>	Chlamydia	Y	Giant barred frog	Australia	17
<i>Chlamydia psittaci</i>	Chlamydia	Y	Gulls, waterfowl, American white pelican, double-crested cormorant	Canada, USA	254, 255
<i>Erysipelothrix rhusiopathiae</i>	Erysipelas	Y	Eared grebe, brown pelican	Western USA	132, 185
<i>Escherichia vulneris</i>	<i>Escherichia vulneris</i> infection	U	Balloon and silver molly, Caucasian carp	Turkey	12
<i>Aeromonas salmonicida</i>	Furunculosis	N	Trout	North America	58
<i>Helicobacter</i> spp.	<i>Helicobacter</i> infection	U	Atlantic white-sided dolphin	Northwestern Atlantic Ocean	69, 176
<i>Mycoplasma conjunctivae</i>	Infectious keratoconjunctivitis	N	Ibex, chamois, mouflon, thar	Europe	93
<i>Leptospira</i> spp.	Leptospirosis	Y	California sea lion, Pacific harbor and northern fur seals	Northeastern Pacific Ocean (Oregon and California coasts), Bering Sea	69, 103, 108, 118
<i>Leptospira</i> spp.	Leptospirosis	Y	Various rodents	North America	58
<i>Listeria ivanovii</i>	Listeriosis	Y	Harbor seal	Northeastern Pacific Ocean (California coast)	176
<i>Borrelia burgdorferi</i>	Lyme disease	Y	White-footed mouse, white-tailed deer	USA	54, 58, 180
<i>Moritella marina</i>	<i>Moritella marina</i> infection	U	Atlantic salmon	Iceland	12
<i>Mycobacterium marinum</i> and other <i>M.</i> spp.	Mycobacteriosis	Y	167 freshwater and saltwater fish spp.	USA (all coastal waters)	207
<i>Mycobacterium abscessus</i>	<i>Mycobacterium abscessus</i> infection	U	Japanese maduka	USA	12
<i>Mycobacterium poriferae</i>	<i>Mycobacterium poriferae</i> infection	U	Snakehead	Italy	12
<i>Mycoplasma gallisepticum</i>	<i>Mycoplasma conjunctivitis</i>	N	House finch, other birds	USA, Canada	29, 58, 77, 106
<i>Clostridium perfringens</i>	Necrotizing enteritis	N	Waterfowl	USA, Canada	86
<i>Salmonella typhimurium</i>	Salmonellosis	Y	Various passerines, egret and heron colonies	USA, Canada, England, New Zealand	6, 58, 85, 86, 137, 138, 236
<i>Streptococcus difficilis</i>	<i>Streptococcus difficilis</i> infection	N	Saint Peter's fish, rainbow trout	Israel	12
<i>Streptococcus iniae</i>	<i>Streptococcus iniae</i> infection	Y	Coral reef fish, tilapia, dusky spinefoot, hybrid striped (sunshine) bass, rainbow trout	Worldwide	12, 29, 37, 75

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<i>Streptococcus parauberis</i>	<i>Streptococcus parauberis</i> infection	N	Turbot	Spain	12
<i>Streptococcus zooepidemicus</i>	Streptococcosis	Y	Eared grebe	Western USA	131
<i>Yersinia pestis</i>	Sylvatic plague	Y	Prairie dog, black-footed ferret, wide range of mammals (especially rodents)	Worldwide	24, 54, 58, 232
<i>Treponema</i> spp.	Treponemal infection	N	European brown hare	The Netherlands	164
<i>Mycobacterium tuberculosis</i> complex	Tuberculosis	Y	Southern and Australian sea lions, South American, Subantarctic, and New Zealand fur seals	Indian Ocean (western Australia), New Zealand waters, Southwestern Atlantic coast (coast of Argentina)	69, 118, 176
<i>Mycobacterium tuberculosis</i> complex	Tuberculosis	Y	Nonhuman primates, big cats, banded mongoose, meerkat	India, Africa	4, 238, 240, 258
<i>Mycobacterium bovis</i>	Bovine tuberculosis	Y	Wild cervidae, canidae, bovidae, felidae, white-tailed deer, African buffalo, Chacma baboon	North America, South Africa	55, 58, 86, 180, 224
<i>Mycobacterium avium</i>	Avian tuberculosis	Y	Cranes, other birds	USA (New Mexico)	86, 180
<i>Francisella tularensis</i>	Tularemia	Y	Rabbits, hares	USA (Wyoming), Europe	185, 206
<i>Mycoplasma agassizii</i>	Upper respiratory tract disease	N	Desert and gopher tortoises	USA (California, Nevada, Utah, Arizona)	30, 31, 58, 86, 127, 170
<i>Vibrio ichthyenteri</i>	<i>Vibrio ichthyenteri</i> infection	N	Japanese flounder	Japan	12
<i>Vibrio logei</i>	<i>Vibrio logei</i> infection	N	Atlantic salmon	Iceland	12
<i>Vibrio parahaemolyticus</i>	<i>Vibrio parahaemolyticus</i> infection	Y	Iberian toothcarp	Spain	12
<i>Vibrio pelagius</i>	<i>Vibrio Pelagius</i> infection	N	Turbot	Spain	12
<i>Vibrio trachuri</i>	<i>Vibrio trachuri</i> infection	N	Japanese horse mackerel	Japan	12
<i>Vibrio viscosus</i>	<i>Vibrio viscosus</i> infection	N	Atlantic salmon	Iceland, Norway, Scotland	12
<i>Yersinia intermedia</i>	<i>Yersinia intermedia</i> infection	U	Atlantic salmon	Tasmania	12
RICKETTSIA					
<i>Coxiella burnetii</i>	Coxiellosis	Y	Pacific harbor seal	Northeastern Pacific Ocean (California coast)	143, 176

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<i>Piscirickettsia salmonis</i>	Piscirickettsiosis	N	Coho salmon, rainbow trout, Chinook, Atlantic, and pink salmon	Waters of southern Chile, western Canada, Norway, Ireland	53, 86, 87, 88
Rickettsia-like organism	Rickettsia-like infection	N	Mozambique, Nile, blue, red-belly, and wami tilapia, Atlantic salmon	Taiwan, Chile	45, 87, 88
FUNGI					
<i>Batrachochytrium dendrobatidis</i>	Chytridiomycosis	N	Various amphibians, including anurans and salamanders	Worldwide	16, 54, 58, 97, 98, 178
<i>Coccidioides immitis</i>	Coccidioidomycosis	Y	Pacific bottlenose dolphin, California sea lion, southern sea otter	Northeastern Pacific Ocean (California coast)	58, 86, 118, 176, 205, 233, 235
<i>Aphanomyces astaci</i>	Crayfish plague	N	Crayfish	Europe	54
<i>Dermosporidium</i>	<i>Dermosporidium</i> infection	N	Toads	USA (California and eastern USA)	97, 99, 129
<i>Aphanomyces invadans</i>	Epizootic ulcerative syndrome	I	Estuarine fish, Atlantic menhaden	USA Atlantic coast	20
<i>Ichthyophonus</i> spp.	<i>Ichthyophonus</i> infection	N	Frogs, newts, salamanders	USA (eastern), Canada	99, 117
<i>Lacazia loboi</i>	Lobomycosis	Y	Atlantic bottlenose dolphin	Gulf of Mexico, Atlantic Ocean	110, 118, 176, 205
<i>Fusarium semitectum</i>	Necrotizing scute disease	N	Texas tortoise	USA	217
<i>Aspergillus sydowii</i>	Sea fan disease	N	Sea fan corals	Caribbean Sea	5, 183, 227, 228
<i>Saprolegnia</i>	Water mold infection (saprolegniasis)	N	Toad eggs	USA (Oregon)	19
PROTOZOAL PARASITES					
<i>Plasmodium relictum</i>	Avian malaria	N	Hawaiian honeycreepers	USA (Hawaiian Islands)	54, 58
<i>Ceratomyxa shasta</i>	<i>Ceratomyxa shasta</i> infection	N	Salmon, trout	USA (California, Pacific northwest), Canada (Pacific northwest)	53, 87
<i>Cryptobia branchialis</i>	<i>Cryptobia branchialis</i> infection	N	Tilapia	USA (California's Salton Sea)	140
<i>Cryptosporidium</i> spp.	Cryptosporidiosis	Y	California sea lion	Northeastern Pacific Ocean (California coast)	176
<i>Perkinsus marinus</i>	Dermo disease	N	Oysters	USA (Gulf coast and east coast)	80, 142
<i>Giardia</i> spp.	Giardiasis	Y	Ringed, harp, harbor, and gray seals, California sea lion	Canada (western arctic region, Gulf of St. Lawrence and St. Lawrence estuary), USA (northern California coast)	52, 176
<i>Labyrinthula</i> spp.	Green sea urchin disease	N	Green sea urchin	Nova Scotia	70
<i>Haplosporidium nelsoni</i>	Haplosporidiosis (multinucleated spore unknown [MSX])	U	Eastern oyster	USA (north- and central eastern coast)	71, 120

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<i>Heterosporis</i> spp.	<i>Heterosporis</i> infection	N	Lake and yellow perch	North America	58, 252
<i>Mikrocystis mackini</i>	Mikrocystosis	N	Pacific oyster	USA (Washington), Canada (British Columbia)	190, 202
<i>Perkinsus</i> -like organism	<i>Perkinsus</i> -like infection	N	Tadpoles of true frogs	USA (Alaska, Virginia, Minnesota, Mississippi, North Carolina, New Hampshire)	99
Quahog parasitic unknown (QPX)	Quahog parasitic unknown (QPX)	U	Quahogs	Canada (New Brunswick, Prince Edward Island), USA (Massachusetts, New Jersey)	139, 246
<i>Sarcocystis neurona</i>	<i>Sarcocystis neurona</i> infection	U	Southern sea otter	Northeastern Pacific Ocean (California coast)	52, 157, 158, 176, 233
<i>Sarcocystis neurona</i> -like organism	<i>Sarcocystis neurona</i> -like infection	U	Pacific harbor seal	Northeastern Pacific Ocean (California coast)	52, 176
<i>Steinhausia</i> sp.	Steinhausiosis	N	<i>Partula</i> snails	UK (captive collection)	54
<i>Toxoplasma gondii</i>	Toxoplasmosis	Y	Southern sea otter	Northeastern Pacific Ocean (California coast)	48, 52, 58, 176, 177, 233
<i>Myxobolus cerebraлис</i>	Whirling disease	N	Various salmon and trout, including Rainbow trout	USA (at least 21 states, including mountainous west)	29, 53, 58, 73, 87, 119, 196, 200
METAZOAL PARASITES					
Acanthocephalan parasites (primarily <i>Polymorphus</i> spp.)	Acanthocephaliasis	N	Southern sea otter	Northeastern Pacific Ocean (California coast)	52, 58, 176, 233
Anchorworms	Anchorworm infection	N	Bullfrog tadpoles	Worldwide?	79
<i>Bothriocephalus acheilognathi</i> (Asian tapeworm)	Bothriocephaliasis	N	Humpback chub, many native cyprinids, carp, and some catfish	USA (continental)	46, 86
<i>Contracaecum corderoi</i>	<i>Contracaecum corderoi</i> infection	N	California sea lion	Northeastern Pacific Ocean (California coast)	52, 176
<i>Dirofilaria immitis</i>	Heartworm disease	N	Wolves	USA	26
<i>Gyrodactylus salaris</i>	Gyrodactylosis	N	Atlantic salmon, other salmonids	Russia, Norway, Sweden	189
<i>Ribeiroia ondatrae</i>	<i>Ribeiroia ondatrae</i> infection	N	Frogs, toads, salamanders	USA, Canada	79, 225
<i>Sarcoptes scabiei</i>	Sarcoptic mange	Y	Foxes, wombats, and other mammals	Australia, UK, Sweden	54
<i>Leyogonimus polyoon</i>	Trematodiasis	N	American coot	USA (Wisconsin)	47, 86
<i>Varroa jacobsoni</i>	Varroasis	N	Honeybees	Worldwide except Australasia and central Africa	54

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BIOTOXINS					
Type C botulinum toxin	Avian botulism, type C (classical)	N	Waterfowl	USA, Canada, Mexico	58, 86, 214
Type C botulinum toxin	Avian botulism, type C in fish-eating birds	N	American white pelican, brown pelican	USA (California's Salton Sea)	86, 215
Type E botulinum toxin	Avian botulism, type E	N	Ring-billed gull, red-breasted merganser, common loon, long-tailed duck	USA (Lake Erie, Lake Michigan)	25, 27, 63, 66, 185
Brevetoxin	Brevetoxicosis	N	Lesser scaup, Florida manatee	Gulf of Mexico (Gulf coast of Florida)	22, 81, 176, 188, 226
Domoic acid	Domoic acid	N	Northern anchovy, brown pelican, Brandt's cormorant	USA (Santa Cruz California)	264
Mycotoxins	Mycotoxycosis	N	Sandhill crane	USA (Texas, New Mexico)	86, 251
<i>Pfiesteria piscicida</i> toxin	<i>Pfiesteria piscicida</i>	N	Estuarine fish	USA (east coast estuaries)	29, 33, 70, 94, 186, 220, 230
Other biotoxins	Other biotoxins	N	California sea lion	Northeastern Pacific Ocean (California coast)	176
MIXED ETIOLOGIES					
Multiple	Malformations	U	Frogs, toads, salamanders	USA, Canada	7, 99, 133, 173, 174, 225
Multiple	Coral diseases	U	Soft and hard corals	Global	9, 28, 32, 35, 39, 40, 41, 92, 95, 102, 107, 111, 112, 141, 161, 162, 168, 187, 208, 209, 210, 211, 213, 221, 229, 260, 261, also see Chapter 2
PHARMACEUTICAL AGENTS					
Non-steroidal anti-inflammatory medication	Diclofenac	N	Indian white-backed and long-billed vultures	India, Pakistan, Nepal	121, 199, 203
UNDETERMINED ETIOLOGIES^d					
Not determined	Angiomatosis	U	Atlantic bottlenose dolphin	Gulf of Mexico (Gulf coast of Texas, USA)	176
Not determined	Avian vacuolar myelinopathy	I	Bald eagle, American coot, waterfowl	USA (Arkansas, North and South Carolina, Georgia)	76, 234

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Not determined	Damselfish neurofibromatosis	U	Bicolor damselfish	Caribbean and Florida (USA) coral reefs	222, 223
Not determined	Disseminated neoplasia	U	Soft-shelled clam	USA (New England, Chesapeake Bay)	68, 72
Not determined	Florida loon mortality	I	Loon	USA (Gulf coast of Florida)	185
Not determined	Galapagos Islands giant tortoise mortality	U	Giant tortoise	Ecuador (Galapagos Islands)	43
Not determined	Immunoblastic malignant lymphoma	U	Atlantic bottlenose, Atlantic spotted, and pantropical spotted dolphins	USA (Florida coastal waters)	176
Not determined	Juvenile oyster disease	U	Eastern oyster	USA (northeastern coast)	144, 150
Not determined	Leporine dysautonomia	U	Hares	UK	100, 245
Not determined	New Jersey Atlantic brant mortality	I	Atlantic brant	USA (New Jersey coast)	185
Not determined	Ophthalmic condition	U	Hawaiian monk seal	Northern Pacific Ocean (northwestern Hawaiian Islands, USA)	176
Not determined	Pulmonary carcinoma	U	Atlantic bottlenose dolphin	Northwestern Atlantic Ocean (northern Puerto Rican coast, USA)	176
Not determined	Renal adenoma	U	Atlantic bottlenose dolphin	Gulf of Mexico	176
Not determined	Salton Sea eared grebe mortality	I	Eared grebe	USA (California's Salton Sea)	185
Not determined	Sea urchin disease	U	Black long-spined sea urchin	Caribbean Sea	36, 95, 124, 149
Not determined	Seabird mortality	I	Seabirds	USA (Alaska, Washington, and Oregon coasts)	185
Not determined	Shell disease	U	Lobster, several crab spp.	USA (northeastern coast)	239
Not determined	Sponge disease	U	Large barrel sponge, other barrel sponges	Caribbean Sea	95, 194
Not determined	Ulcerative stomatitis-obstructive rhinitis-pneumonia complex	U	Green sea and loggerhead turtles	Farmed and oceanarium-reared	89
Not determined	Unspecified neoplasias	U	California sea lion	Northeastern Pacific Ocean (central California coast)	176
Not determined	Wisconsin bald eagle mortality	I	Bald eagle	USA (Wisconsin)	185
Not determined	Withering syndrome	U	Black abalone, red abalone	USA (California's Channel Islands)	82, 104, 169
Not determined	Zoanthid disease	U	Zoanthids	Brazilian coast	1

^a Based on summary papers by selected authors and selected reports focusing on individual diseases.

^b Based on current information relative to human infection.

^c Citations refer to diseases.

^d Amphibian ranaviruses not specified elsewhere in the table.

^e Not all *Pasteurella multocida* serotypes cause zoonotic disease; most human cases result from bite wound infections involving small mammals (domestic and wild).

^f Diseases of unknown etiology.