

Glossary, Appendixes, and Index

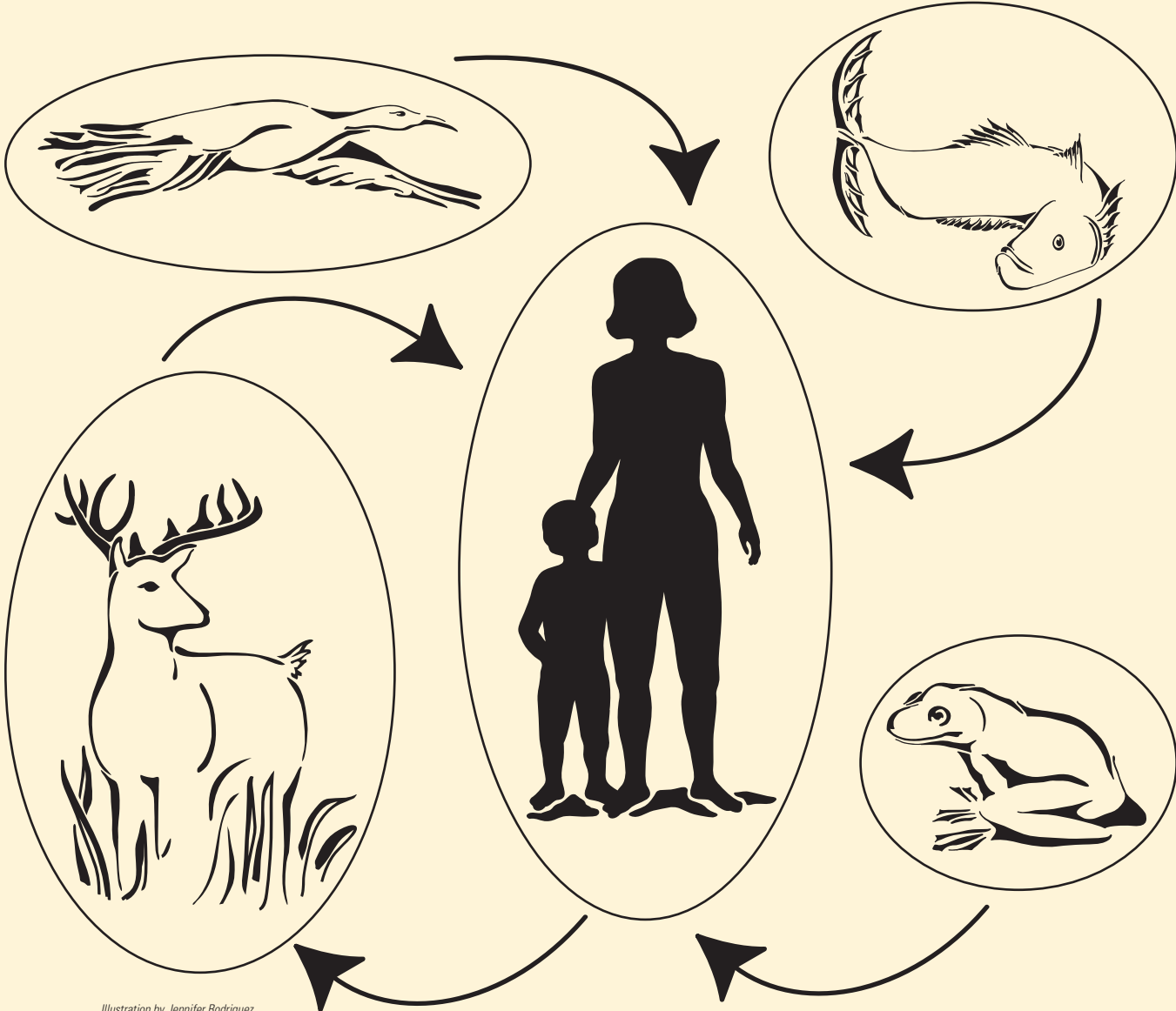


Illustration by Jennifer Rodriguez

Glossary

Abalone — Edible, rock-clinging shellfish with flattened shells that appear cup-shaped and depressed, with a slightly spiral form. The shell is lined with mother-of-pearl (hard, pearly iridescent covering of the inner portion of the shell).

Acroporids — Branching types of corals.

Ad hoc — Spontaneous and/or opportunistic evaluations and investigations (e.g., wildlife disease response) rather than established, coordinated program activities.

Aerosolized — The dispersal of ultramicroscopic solid or liquid particles suspended in air or gas.

AIDS — Acquired Immunodeficiency Syndrome, an infectious disease complex resulting from infection with Human Immunodeficiency Viruses (HIV).

Altricial — Pertaining to birds whose young are hatched or born in an immature and helpless condition requiring parental care (e.g., feeding and protection from the elements) for an extended period of time.

Amphibians — Cold-blooded vertebrates that live both on land and in water, have limbs instead of fins, have no claws on their toes, and have moist skin unprotected by external covering (e.g., scales, feathers, or hair); salamanders, newts, frogs, and toads.

Anemone (sea anemones) — Predatory, nonmobile marine invertebrates that are usually solitary (not attached together in colonies) and capture their prey by tentacles and special stinging cells (nematocysts) of the oral disk protruding from their stalk-like body.

Antelope — Deer-like mammal with true horns rather than antlers; in North America the pronghorn antelope, in the Old World numerous species (e.g., eland, blackbuck, and impala).

Anurans — Frogs and toads.

Apes — Primarily gibbons, orangutans, chimpanzees, and gorilla; tails are generally absent in apes.

Aquaculture — Collectively, the farming of finfish, shellfish (mariculture), crustaceans (e.g., shrimp), and aquatic plants.

Aquatic rodents — Rodents whose primary habitat is aquatic; North American examples are beaver, muskrat, and nutria.

Arthropods — Invertebrates belonging to the Phylum Arthropoda; here referring to members of the Classes Arach-

nida (spiders, ticks, mites, and scorpions) and Insecta (e.g., mosquitoes, flies, lice, fleas) that are disease vectors (e.g., mosquitoes and West Nile fever; ticks and tularemia).

Artiodactyls — Cloven-hoofed mammals with an even number of digits of the feet; includes ruminants (e.g., cattle) and nonruminants (e.g., pig).

Asclepiadae — An order of Greek physicians and priests who claimed to be descendants of Asclepius, the god of healing and medicine in Greek mythology.

Avian — Pertaining to birds.

Bats — Exceeded only by rodents in number of species, bats are the only mammals that fly (some other species of mammals are able to glide because of membranes attached to their body).

Insectivorous bats — Those that primarily feed on insects while in flight.

Fruit-eating bats — Feed almost entirely on fruit and some green vegetation.

True vampire bats — Feed on blood obtained from mammals while the animal is asleep.

Bears — Large carnivorous mammals within the Family *Ursidae*; in North America, the black, brown, grizzly, and polar bears.

Bees — Winged, hairy-bodied, and, often, stinging, insects in the Superfamily Apoidea that use chewing and sucking mouth parts to gather pollen and nectar.

Biological community — The assemblage of living organisms (microscopic to macroscopic) that interact to shape the appearance and function of an area.

Bioterrorism — The use of biological agents, such as pathogenic organisms or agricultural pests, for terrorist purposes.

Biowarfare — Biological warfare; the use of biological weapons by one nation against another.

Bioweapons — Any weapon usable in biological warfare.

Birds — Warm-blooded vertebrates with wings and feathers (although the wings are poorly developed for some species and they are flightless); belonging to the Class Aves.

Birds of prey — Birds that primarily feed on the flesh of animals (from amphibians and reptiles to mammals and birds). Typically hawk-like birds, owls, eagles, condors, and vultures.

Biting flies — Insects of the Order Diptera with mouthparts adapted to biting and piercing vertebrate animals; examples include deer flies and horse flies.

Blackbirds — A general term that collectively refers to species such as blackbirds, cowbirds, and grackles or specifically to a single species.

Blackflies — Small, dark-colored biting flies in the Family Simuliidae whose larvae attach to rocks in flowing water; important vectors of *Leucocytozoan* spp., blood parasites of birds.

Bovidae — The ox family of ruminants, including domestic cattle, sheep and goats in addition to wild buffalos, bison, and many types of antelope.

Budding — Reproduction of some unicellular organisms, such as yeasts, by growth and specialization followed by the separation by constriction of a part of the parent.

Buffalo — African buffalo.

Caddisflies — Insects of the Order Trichoptera with four membranous wings, slender antennae, and aquatic larvae; important food source for fish and birds.

Camels — Primarily domesticated species of one-humped (*Camelus dromedarius*) and most two-humped camels; the only two-humped camel in a wild state (*C. bactrianus*) inhabits the Gobi Desert in Mongolia.

Canids — Mammals within the Family Canidae (e.g., wolves, coyote, jackals, foxes, and other dog-like animals).

Carnivores — Mammals with teeth and other body adaptations for feeding on flesh; primarily species belonging to the Order Carnivora (e.g., wolves, bears, raccoons, weasels, civets, hyenas, and tigers).

Carp — Medium-sized bottom-feeding finfish belonging to the minnow Family Cypriniformes and typically found in warm, relatively shallow water bodies.

Cat — Domestic cat.

Catfish — Bottom-feeding finfish with a scaleless skin, a broad, flat head and a strong single spine associated with both the dorsal and pectoral fins; barbels (fleshy appendages) are present on the face area. North American species include catfish, bullhead, stonecat, and madtoms.

Cervids — Mammals belonging to the deer family (e.g., deer, elk, moose, and caribou).

Cetaceans — Marine mammals that are commonly known as whales, dolphins, and porpoises.

Chlamydial — Pertaining to infections caused by bacteria of the Genus *Chlamydia*.

Chorus frogs — Small, highly vocal, arboreal frogs within the Family Hylidae that during some times of the year are choristers described as “voices in the swamp.”

Civet cats — Any one of the multiple genera of medium-sized carnivores within the Family Viverridae. Utilized as food in some parts of Asia and thought to be the source of the virus causing SARS in humans.

Clams — Typically, largely sedentary filter-feeding marine mollusks with two shells (bivalves) joined at the hinge by ligament and held together by one or two strong muscles.

Companion animals — Animals maintained by humans as pets (e.g., dogs, cats, caged wildlife, horses).

Conjunctiva — The mucous membrane that lines the inner surface of the eyelid and the exposed surface of the eyeball.

Contagion — The direct cause, such as a bacterium or virus, of a communicable disease.

Containment — The concept of arresting the spread of communicable disease.

Coral reef fish — Fish species utilizing coral reef habitat (e.g., grouper, moray eel, parrotfish).

Coral reefs — Assemblages of the calcareous or horny skeletal deposit produced primarily by anthozoans (marine coelenterates having polyps with radial partitions). The reefs formed are the most complex and biologically diverse marine ecosystems that exist.

Cougar — Mountain lion, puma, Florida panther, panther.

Crabs — Pertaining to the true crabs, invertebrates with a short body form that is as wide as or wider than it is long; a sideways gait is usually well developed for locomotion.

Cranes — Long-legged wading birds; within North America, the sandhill and whooping cranes.

Crayfish — A freshwater crustacean that resembles a lobster in appearance except for its small size.

Crows — Primarily the American and fish crows in North America.

Crustaceans — Fauna with a chitinous exoskeleton such as crabs, lobsters, and shrimps and also including barnacles, sow bugs, water fleas, and beach hoppers.

Cyprinids — Fish within the minnow family (e.g., carp, minnows, goldfish, shiners, chubs, and dace).

Cysticercosis — Disease caused by encystment of cysticercus larvae of some tapeworms (e.g., *Taenia solium* or *T. saginata*) in subcutaneous, muscle, or central nervous system tissues; typically developed in swine and cattle, producing measy pork and beef.

Cytoplasm — The aqueous part of the cell that is outside of the nucleus but that is contained within the cell wall. The cytoplasm is the site of most of the chemical activities of the cell.

Deer — Pertaining to the white-tailed deer (including subspecies) and mule deer (black-tailed deer) as native species in North America. The European red deer, axis deer (chital) from Asia, and fallow deer (Europe and Asia minor) are exotic species maintained in captive herds.

Diatoms — Minute planktonic unicellular or colonial algae with silicified (impregnated with silica) skeletons that form diatomaceous earth (used especially as filter material).

Dinoflagellates — Single-celled planktonic organisms that are important food-web components (foundational in marine systems); some forms cause red tide.

Disarmament — The act of laying down arms, especially the reduction or abolition of a nation's military forces and armaments.

Disease carriers — Animals infected with infectious agents and showing no clinical signs of disease but are capable of transmitting the infection.

Dogs — Domestic dog.

Dolphins — Marine mammals of the Family Delphinidae; they are small whales, usually with teeth in both jaws and a blowhole far back from the snout. (Do not confuse with dolphin, which are marine finfish, also called mahi-mahi).

Domestic animals — Livestock (e.g., cattle, sheep), poultry (e.g., chicken, turkey), domestic waterfowl (e.g., Pekin duck, goose), and companion animals of domesticated species (e.g., horse, dog, and cat).

Domestic ducks — Primarily the white Pekin duck.

Domestic pigs — Hogs domesticated from wild members of the same species and bred for specific genetic characteristics that have somewhat altered the appearance of the animals.

Donkeys — Domesticated horse-like animals within the Family Equidae and same genus (*Equus*) as horses, zebras, mules, and several other species. Extremely sure-footed animals with high endurance and capacity to survive on a minimum of food; often used for work under hot, difficult conditions.

Doves — Pigeon-like birds belonging to the Family Columbidae. The domestic pigeon is often referred to as the rock dove. Within North America, the mourning dove and the white-winged dove are the most abundant wild species.

Ducks — Webbed-footed waterbirds with short legs that along with geese and swans form the Order Anseriformes.

Ecotourism — In general, travel to natural areas rich in various forms of biota and natural beauty for the purposes of viewing, cultural enrichment, and other nonconsumptive uses carried out in a manner that is ecologically sound and sustains the well-being of local peoples.

Eel — Snakelike, voracious, and elongated bony fishes with a smooth slimy skin and lacking pelvic fins.

Egret — Wading birds within the heron/bittern family (Ardeidae) including the reddish egret, cattle egret, and other species.

Elephant shrews — Small African mammals of the Family Macroscelididae with long, prehensile noses used for finding insects and other food items.

Endemic — A disease that commonly is present within a human population or a geographical area.

Enzootic — An animal disease that commonly is present within a population or a geographical area.

Epidemic — An outbreak of disease affecting a disproportionately large number of humans within a population, community, or region during a period of time.

Epizootic — A disease affecting a greater number of animals than normal; typically, involving many animals in the same region at the same time.

Equine — Pertaining to horses.

Eradication — The elimination of an exposed population of animals during disease control activities attempting to prevent the establishment of a highly infectious pathogen (e.g., depopulation of poultry to combat highly pathogenic influenza and Newcastle disease viruses).

Estuarine fish — Fish that live in coastal areas where the tide ebbs and flows, often at the wide mouth of a river where the tide meets the current.

Etiologic — Assigning or seeking to assign a cause or discover the origins of disease.

Eutrophication — The process by which a body of water becomes enriched in dissolved nutrients (e.g., nitrates and phosphates) that stimulate the growth of planktonic and other aquatic plant life usually resulting in the depletion of dissolved oxygen.

Fairy shrimp — Transparent freshwater branchiopod crustaceans of the Order Anostraca.

Felidae — A family of carnivora including the domestic cat and wild species, such as lion, tiger, leopard, lynx, cheetah, and many other wild cats. Civet cats are not part of this family; they are in the Family Viverridae along with mongooses and several other species.

Felids — Pertaining to members of the cat family.

Feral — Typically, animals that have descended from tame stock and are now sustaining themselves in nature.

Feral swine — Domestic swine that have reverted to a wild state and are living free in nature.

Fibropapillomas — A papilloma (small wart-like growth) characterized by a conspicuous amount of fibrous connective tissue at the base and forming the cores upon which the neoplastic epithelial cells are massed.

Filter feeders — Animals such as clams that obtain their food by filtering organic matter from the aquatic environment in which they live. Baleen whales filter minute organisms from the current of water around them.

Finfish — Scaled fish with a caudal (tail) fin and multiple other fins along the dorsal (top), ventral (bottom), and other body areas.

Fleas — Small, wingless, bloodsucking insects within the Order Siphonaptera with laterally compressed bodies and legs adapted for jumping; some are important vectors of zoonotic diseases such as plague.

Flies — Two-winged insects belonging to the Order Diptera (flies, gnats, and mosquitoes).

Foxes — In North America pertaining to arctic, red, kit (swift), and gray fox.

Free-ranging wildlife — Wildlife living unconfined in nature.

Freshwater fish — Finfish normally in freshwater environments (e.g., bass, crappie, and trout).

Frogs — Amphibians that, along with toads, are within the Order Anura. Adult specimens of both have short, squat bodies, powerful hind legs, and lack a tail (see Toads).

Gallinaceous birds — Birds belonging to the Order Galliformes; chicken-like birds including grouse, partridge, ptarmigan, pheasants, prairie chickens, quail, and turkeys.

Geese — Medium-sized waterbirds that along with ducks and swans form the Order Anseriformes.

Gnathostomiasis — Disease caused by ingestion and subsequent tissue migration of immature roundworms (*Gnathostoma* spp.).

Gnats — Small, biting flies within the Order Diptera.

Gorgonians — Corals belonging to the Genus *Gorgonia*; usually colonial species with a horny and branching axial (having a trunk and a head) skeleton.

Ground squirrels — Typically, burrowing small rodents of the Family Sciuridae (e.g., in the USA, thirteen-lined ground squirrel, rock squirrel, and antelope ground squirrel) but this term often also includes species in other genera such as chipmunks and prairie dogs.

Gulls — Long-winged aquatic birds with webbed feet and, usually, gray and/or white plumage; primarily scavengers.

Hard clams — Clams with stout, hard shells that close completely (e.g., littleneck, cherrystone, and sweet butter clams).

Hard corals — Corals within the Order Scleractina, including branching corals (e.g., staghorn and elkhorn); encrusting, mound and boulder corals (e.g., star, and starlet); brain corals (e.g., knobby brain) and others.

Hard ticks — Arthropods of the Family Ixodidae that are important for disease transmission; includes ticks of the genera *Dermacentor*, *Amblyomma*, *Ixodes*, and *Haemaphysalis*.

Hatchery fish — Finfish being reared in captivity for food and for release into nature.

Hawaiian honeycreepers — Multiple species of brightly colored singing birds of the Subfamily Drepanidinae found in forested areas of the Hawaiian Islands.

Hedgehogs — Small, nocturnal insectivores of the Subfamily Erinaceinae with spines on their backs, which they present outwards when they roll into balls for protection.

Herbivores — Mammals that feed almost exclusively on plants (e.g., cattle, sheep, manatee).

Hérons — Long-legged wading birds within the Family Ardeidae (e.g., great blue heron, green heron, and black-crowned night-heron).

Hippocrates — Medical practitioner who is regarded as the father of medicine; author of the Hippocratic Oath (circa 460–377 BC).

HIV — Human Immunodeficiency Viruses, the agents resulting in AIDS.

Honeybees — Social, honey-producing insects of the Family Apidae; often kept in hives for the honey and beeswax they produce.

Hosts — Species that harbor or nourish microbes, viruses, and metazoan parasites.

Hounds — Pertaining to domestic dogs used to track and chase (run) foxes, coyotes, and other wildlife as part of a hunt.

Hummingbirds — Brightly colored, small, New World birds within the Family Trochilidae with long, slender bills and rapid wing movements that allow them to hover.

Hyenas — Dog-like but not closely related carnivores within the Family Hyaenidae; found in the general geographic regions of the Old World inhabited by jackals. Primarily scavengers with powerful jaws and teeth for feeding on the bones of large animal carcasses.

Iguanas — Lizards of the reptile Family Iguanidae.

Immunocompromised — A condition in which the immune system is not functioning normally.

Index case — The earliest documented case of disease in an outbreak or the first identified case of a new disease syndrome.

Invertebrates — Animals lacking a spinal column (e.g., insects, crustaceans).

Jackals — Dog-like carnivores within the Family Canidae; primarily feed on carrion but also prey on small mammals and insects and eat plant material. Jackals are found in Africa, the Middle East, and some other countries of that region.

Kangaroos — Herbivorous marsupials of the Family Macropodidae from Australia and adjacent islands with long tapered tails, short forelimbs, and strong hind limbs adapted for leaping.

Lagomorphs — Mammals within the Order Lagomorpha (rabbits, hares, and pikas).

Lampreys — Jawless fishes whose circular mouth appears as rings of teeth, which are actually horny spines adapted for sucking blood; they feed by attaching to live fish such as lake trout and northern pike.

Lions — The African lion.

Livestock — Collectively, mammals raised for agriculture (e.g., cattle, sheep).

Mammals — Warm-blooded vertebrate animals that possess hair during some part of their life and suckle their young.

Manatee — Large, herbivorous, aquatic mammal with a rounded body, a small head, and a squarish snout. Primarily found in warm coastal waters and adjacent sluggish rivers of South America, north to the southeastern USA, and in western Africa.

Mariculture — The cultivation of finfish, shellfish, or aquatic plants in a saltwater environment (i.e., marine aquaculture).

Marine mammals — Aquatic species of mammals living in the oceans and nearshore saltwater environments (e.g., polar bear, walrus, seals, whales).

Marsupials — Mammalian species having an external abdominal pouch (marsupium) for carrying their young until their development is complete; young of these species are born in a very underdeveloped state and must be carried and nourished for a prolonged period of time (e.g., opossums, kangaroos, koala, and wombats).

Mice — Any of numerous small rodents of the Family Muridae having pointed snouts, long nearly hairless tails, and small rounded ears.

Microbes — Microscopic living organisms, especially those capable of causing disease and including bacteria, viruses, protozoa, and fungi.

Migratory birds — Species of birds that undertake seasonal geographic movements to meet their living and

life-cycle requirements (e.g., waterfowl, shorebirds, many passerines).

Mole salamanders — Salamanders within the Family Ambystomatidae; except for a brief period during breeding these species stay underground most of their lives.

Mollusks — In general, shell-bearing invertebrates that have soft, unsegmented bodies (e.g., snails, clams, conchs, shells, scallops, oysters); also highly specialized carnivores often lacking an external shell and having long flexible tentacles, eyes, and a powerful beak (e.g., squid and octopi).

Monkeys — Any of various long-tailed mammals of the Order Primates, including the families Cebidae (New World monkeys) and Cercopithecidae (Old World monkeys).

Morbidity — A diseased condition, or the severity or incidence of a disease.

Mosquitoes — Blood-sucking, small dipteran insects of the Family Culicidae that are important vectors for disease transmission (e.g., West Nile fever, malaria).

Mules — The typically sterile offspring of a male donkey and a female horse.

Mycosis — A fungal infection.

Neotenic salamanders — Salamander species that retain gills throughout their entire life.

Newts — Brightly colored species of salamanders, generally with thick warty skins and an absence of some anatomical features of other salamanders (e.g., grooves in the skin in the vicinity of the nose (nasolabial) and vertically along the body (costal)).

Nonhuman primates — Context in this book: the great apes, monkeys, langurs, and other monkey-like mammals; the Order Primates also includes a variety of other species.

Nosocomial — Disease/infections of humans originating or taking place in a hospital.

Ornamental fish — Finfish traded, reared, and maintained for home aquaria (e.g., goldfish, koi, tropical fishes).

Oysters — Bivalve mollusks having a rough, irregular, and asymmetrical shell closed by a single adduction (to draw toward) muscle.

Parakeets (budgerigars) — Small, brightly colored, slender parrots of the Genus *Melopsittacus* having long, tapered tails.

Parasitic infection — A successful invasion of a host by an organism that uses the host for food and shelter.

Parr — Typically, young anadromous salmon that have reached a stage of development where they feed in fresh-water.

Parrotfish — Brightly colored marine tropical fish of the Family Scaridae with fused teeth resembling a parrot's beak.

Parrots — Brightly colored tropical and semitropical birds of the Family Psittacidae with short hooked bills.

Partridge — Small to medium size gallinaceous birds; the chukar partridge and gray (Hungarian) partridge are established exotics in North America.

Passerines — Perching birds belonging to the Order Passeriformes; primarily includes songbirds requiring extended parental care after hatching (altricial). Examples include flycatcher, swallows, waxwings, warblers, finches, and thrushes.

Pathogens — Typically, microorganisms capable of inducing disease, but broadly includes all disease-inducing agents.

Pelicans — In North America, the American white and the brown pelican.

Penaeid shrimp — Edible shrimp; members of the Genus *Penaeus*.

Pheasant — Long-tailed and often brightly colored Old World gallinaceous birds of the Family Phasianidae.

Pigeon — Common street pigeon, rock pigeon, or rock dove; introduced into North America from Europe, often feral as well as human maintained.

Pinnipeds — Seals, sea lions, and walruses.

Plant community — The assemblage of plant life that constitutes the flora of a specific area, region, or other geographic designation.

Porcine — Relating to swine (pigs, hogs).

Poultry — Domestic species of chicken-like birds (e.g., chicken, turkey).

Primates — Mammals of the Order Primates with shortened snouts and highly developed hands and feet; includes humans, monkeys, apes, and lemurs.

Prion — A protein particle that lacks nucleic acid and is believed to be the cause of various infectious diseases of the nervous system (e.g., bovine spongiform encephalopathy, Creutzfeldt-Jakob disease, and chronic wasting disease).

Propagated — Reared under human-controlled conditions (e.g., captive rearing of pheasants for release into nature).

Psittacines — Relating to parrots; includes New World and Old World species (e.g., parrots, macaws, parakeets, budgerigars, cockatoos, and lovebirds).

Public domain — Land and other natural resources held in stewardship for society by the government (term also ex-

tends to unprotected property rights that belong to society and can be appropriated by all).

Quail — Any of various small, short-tailed gallinaceous birds of the Family Phasianidae.

Rabbits — Small, long-eared mammals within the Family Leporidae (hares and rabbits) of the Order Lagomorpha (pikas, rabbits, and hares). Rabbits are born naked, blind, and helpless in a fur-lined nest; hares are born fully haired, with open eyes, and are able to run within minutes after birth. Some species commonly referred to as rabbits are actually hares (e.g., jack rabbit and snowshoe rabbit) while the Belgian hare is actually a rabbit.

Raptors — Birds of prey; hawk-like birds, eagles, owls, condors, and vultures.

Reptiles — Vertebrates of the Class Reptilia that breathe by means of lungs and have external coverings of scales or bony plates; includes snakes, lizards, crocodiles, turtles, and dinosaurs.

Reservoir host — The host that maintains the disease agent in nature and that provides a source of infection to susceptible hosts.

Retropharyngeal pouches — Pouched areas at the rear of the pharynx, the muscular tubular passage of vertebrates extending from the back of the nasal cavity and mouth to the esophagus.

Rickettsial — Any of various bacteria of the Genus *Rickettsia* carried as parasites by many ticks, fleas, and lice; they cause diseases such as typhus, scrub typhus, and Rocky Mountain spotted fever in humans.

Rodents — A diverse group of mammals characterized by incisor teeth that grow throughout life and must be worn away by cutting and gnawing hard materials. Species within the Order Rodentia include squirrels, mice, rats, voles, chipmunks, gophers, lemmings, beaver, porcupines, and many others.

Ruminants — Even-toed, hooved mammals that chew the cud and have complex four-chambered stomachs; includes cattle, sheep, goats, and deer.

Salamanders — Essentially voiceless amphibians that possess a tail throughout their lives (can regenerate a lost tail or limb), usually have moist, relatively smooth skin, no external ear openings, and not more than four toes on their front feet.

Salmon — Predatory finfish within the Family Salmonidae (whitefish, grayling, salmon, trout, and chars). Saltwater species are anadromous (enter freshwater streams to spawn). Some live exclusively in fresh or saltwater; others spend part of their life in both.

Salmonids — Typically, salmon and trout finfish; the Family Salmonidae also includes other species.

Saltwater fish — Finfish typically found in marine habitat (e.g., tuna, grouper, sharks, halibut, and herring).

Sandflies — Small, biting dipteran flies of the Family Psychodidae—especially in the Genus *Phlebotomus*—that are important vectors for disease transmission (e.g., leishmaniasis).

SARS — Severe Acute Respiratory Syndrome, a recently emerged viral disease often lethal to humans. The causative virus is believed to be harbored by civet cats.

Scallops — Mollusks with two valves (shells), which may or may not be of equal size, radiating ribs along the valves, and scalloped edges; one of the few mollusks that swim.

Scavengers — Animals that feed on dead carcasses, other carrion, and refuse (e.g., vultures, crows, hyenas, and jackals).

Schistosomiasis — Generally tropical diseases caused by parasitic invasion with schistosomes. Widespread in rural areas of Africa, Asia, and Latin America through contact with contaminated water; infections commonly lead to gradual destruction of the tissues of the kidneys, liver, and other organs.

Scleractinian family — The hard corals; the basic building blocks of tropical coral reefs including encrusting, mound, boulder, brain, branching, and numerous other types of corals.

Seabirds — Bird species that utilize ocean environments as primary habitat (e.g., gulls, albatross, brown pelicans, fulmars, petrels, shearwaters, and many other species).

Seagrass — Nearshore marine grasses (e.g., turtle grass and manatee grass) that often form dense beds serving as important habitat for a wide variety of marine life forms.

Seagrass community — The nearshore assemblage of seagrasses and associated plants that comprise the seagrass beds of some warm water marine areas.

Sea turtles (marine turtles) — Turtles of the Family Cheloniidae; unlike other turtles, sea turtles are only on land to lay eggs and have a lighter weight shell and a short, heavy neck that cannot be completely drawn back into the shell.

Sea urchins — Globular-shaped marine invertebrates characterized by their radial symmetry (echinoderms) and including starfish, serpent stars, sea urchins, sand dollars, sea cucumbers, and sea lilies. Sea urchins are covered with tubercles having long and heavy movable spines so dense as to give the appearance of the urchins being “furred.”

Seals — Carnivorous marine mammals that belong to the Families Phocidae and Otariidae and have webbed flippers.

Search engine — A computer program designed to use keywords entered by users to locate Web sites that contain the requested information.

Serotype — A group of closely related microorganisms distinguished by a characteristic set of antigens.

Sharks — Large finfish with cartilaginous rather than bony skeletons.

Shellfish — Aquatic invertebrate animals with a shell; typically edible mollusks (e.g., clams, oysters) and crustaceans (e.g., lobster, crabs, and shrimp).

Shrimp — Pertaining to the edible shrimp of the Genus *Penaeus*; shrimp, along with lobsters and crabs, are the most highly organized (morphologically) crustaceans.

Skunk — Several species of carnivores within the Family Mephitidae; specifically, the striped, hooded, spotted, and hog-nosed skunk.

Smolt — Typically, young salmon and steelhead trout that are about 2 years old and have developed the silvery adult coloration.

Snails — Mollusks of the Class Gastropoda; most have a single enclosing shell or valve (usually spiral). Snails are a mobile, predatory species (often carnivores) that are important developmental hosts for pathogens causing several major parasitic diseases.

Snakes — Scaled, limbless, often venomous reptiles of the Suborder Serpentes having long, cylindrical tapering bodies.

Snapping turtles — Any of numerous large, freshwater turtles within the Family Chelydridae that have rough shells and powerful hooked jaws capable of closing suddenly.

Soft corals — Commonly, the gorgonians (e.g., sea rods, sea whips, feather plumes, and sea fans) because their colonies lack hard, rigid, permanent skeletons; specifically corals belonging to the Family Nephtheidae (corals resembling branched trees with thick trunks).

Soft ticks — Eight-legged arthropods of the Family Argasidae characterized by their soft, membranous external shells.

Soft-shelled clams — Clams with thin, brittle shells and a long rubbery neck (siphon) that extends beyond the edge of the shell preventing closure (e.g., razor, steamer, and geoduck clams).

Songbirds (passerines) — Primarily, altricial perching birds that commonly sing and many have specialized vocal apparatus for song.

Sponges — Marine invertebrates that are the most primitive of all multicellular animals, essentially being a mass of porous tissue organized around a system of water canals; sponges are attached to a substrate, have no front end, no head, no mouth or gut.

Sportfish — Finfish such as marlin, salmon, trout, and bass that are pursued by recreational fisherman.

Squirrels — Small- to medium-sized arboreal rodents of the Family Sciuridae having long bushy tails and strong hind legs.

Stable flies — Biting dipteran flies of the Family Muscidae common around stables.

Sucking lice — Wingless insects of the Suborder Anoplura that are parasites to birds and mammals.

Swans — Large web-footed waterbirds with long, slender necks that along with ducks and geese form the Order Anseriformes.

Swine — The domestic pig or hog.

Ticks — Blood-sucking, parasitic arthropods that have a hard body (ixodid ticks) or a soft body (argasid ticks); ticks are important disease vectors.

Toads — In general, anurans with less smooth skin than that of most frogs; toads are also more terrestrial than frogs and hop rather than jump.

Translocation — Human capture of wildlife at one geographic area and their transportation and release at a different geographic area.

Transmission — The spread of infectious agents from one individual to another by direct and indirect means (e.g., contaminated environment or fomites).

Trout — Salmon-like finfish within the Family Salmonidae; typically found in well-aerated, cool, freshwater habitat and generally of smaller size than salmon.

True frogs — Those within the Family Ranidae; generally long-legged, slim-waisted anurans and the only frogs with teeth in the upper jaw, large distinct eardrums, and broadly webbed hind feet.

Turtles — Reptiles with shells that cover the body; some species are found in freshwater habitats, others in marine environments (sea turtles), and still others are terrestrial (tortoises).

Ungulates — Mammals having hooves. The even-toed hoofed species (Artiodactyla) include deer, antelope, cattle, and sheep; the odd-toed hoofed mammals (Perissodactyla) include horses, tapirs, and rhinoceroses.

Upland game birds — Chicken-like terrestrial birds commonly hunted for sport and food (i.e., chachalacas, grouse, partridges, pheasants, prairie-chicken, ptarmigan, quail, and turkeys).

Vector-borne — Denoting a disease or infection that typically is transmitted by the bite of an arthropod (e.g., mosquitoes and ticks).

Vertebrates — All animals having spinal columns; mammals, birds, reptiles, amphibians, and fishes.

Vibrios — Any of various short, motile, S-shaped or comma-shaped bacteria of the Genus *Vibrio*, especially *V. cholerae*, which causes cholera in humans.

Virulence — The degree or ability of a pathogenic organism to cause disease.

Vole — Small, mouse-like rodent.

Vultures — Carrion-feeding, soaring birds within the raptor/birds of prey group. In North America, the California condor, turkey vulture, and black vulture.

Waterbirds — Bird species that utilize water environments as primary habitat (e.g., waterfowl, wading birds, gulls and terns, cormorants, and many others).

Waterborne pathogens — Disease agents transmitted to susceptible hosts through contaminated surface and drinking water (e.g., giardiasis and cryptosporidiosis).

Waterfowl — Ducks, geese, and swans.

Whales — Large, marine mammals of the Order Cetacea with forelimbs modified to form flippers, tails with horizontal flukes, and blowholes for breathing.

Wild dog — Typically, a general term referring to free-ranging wild canids such as the African hunting dog, the dhole in India, and the dingo in Australia.

Wild hogs — See feral swine, wild swine, and wild pigs.

Wild pigs — Domestic swine that have become feral.

Wild rat — Nonlaboratory species of rats including indigenous species, such as the wood rat (USA) and exotic species, such as Norway and roof rats (USA).

Wild ruminants — Nonlivestock species of animals that chew the cud (e.g., bison, deer, giraffe, antelope).

Wild swine — See feral swine, wild hogs, and wild pigs.

Wild ungulates — Nonlivestock species of hoofed mammals (e.g., deer, antelope, moose, peccary, and rhinoceros).

Wildlife rehabilitation — Restoration of a state of health suitable for the release of sick, injured, and otherwise impaired wildlife brought into captivity for care and treatment.

Wolves — The gray or timber wolf and the red wolf.

Wombats — Medium-sized burrowing animals that carry their young inside a pouch (marsupials) until they are fully furred; found in Australia, Tasmania, and on Flinders Island in Bass Strait.

Zebras — Horse-like striped animals within the Family Equidae; found in Africa.

Zoanthids — Small, marine invertebrates of the Order Zoanthidae.

Zoonoses — Infectious diseases transmissible between animals and humans, and vice versa.

Zoonosis — An animal disease that can be transmitted to humans.

Zoonotic — Pertaining to a zoonosis.

Zooplankton — Minute living animal organisms within the upper portion of water bodies; these organisms drift within the current and are an important component of natural food chains.

