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Term
Acute Exposure
Definition: Exposure to a chemical or situation for a short period of time.
Adverse Effect
Definition: Any effect that causes harm to the normal functioning of plants or animals due due to exposure to a substance (i.e., a chemical contaminant).
Assessment Endpoint
Definition: "An explicit expression of the environmental value that is to be protected" (U.S. EPA 1997 http://www.epa.gov/oswer/riskassessment/ecorisk/ecorisk.htm). In other words, what part(s) of an ecosystem should be protected at a particular Superfund site; this is generally some characteristic(s) of a species of plant or animal, such as reproduction, that can be described numerically. (See Ecological Risk Assessment Guidance Step 3 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep3.html#endpoints for additional information.)
Assessment Endpoints
Definition: See Assessment Endpoint
Benthic Community
Definition: The group of plants and animals that live at the bottom of a pond, river, lake, or ocean.
Benthic Invertebrates

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<p>Definition: Those animals without backbones that live on or in the sediments of a lake, pond, river, etc.</p>
<p>Bioaccumulation</p> <p>Definition: Bioaccumulation is the general term describing a process by which chemicals are taken up by a plant or animal either directly from exposure to a contaminated medium (soil, sediment, water) or by eating food containing the chemical. Related terms are bioconcentration in which chemicals are absorbed by an animal or plant to levels higher than the surrounding environment; and biomagnification, in which chemical levels in plants or animals increase from transfer through the food web (e.g., predators have greater concentrations of a particular chemical than their prey).</p>
<p>Bioassay</p> <p>Definition: A laboratory test which determines the strength or biological effects of a unknown or experimental substance, such as a drug, hormone or chemical; the test is done by comparing the experimental substance's effects with those of a known substance on a culture of living cells or a test organism.</p>
<p>Bioavailability</p> <p>Definition: How easily a plant or animal can take up a particular contaminant from the environment.</p>
<p>Bioconcentration</p> <p>Definition: Bioaccumulation is the general term describing a process by which chemicals are taken up by a plant or animal either directly from exposure to a contaminated medium (soil, sediment, water) or by eating food containing the chemical. Related terms are bioconcentration in which chemicals are absorbed by an animal or plant to levels higher than the surrounding environment; and biomagnification, in which chemical levels in plants or animals increase from transfer through the food web (e.g., predators have</p>

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greater concentrations of a particular chemical than their prey).
Biomagnification Definition: Bioaccumulation is the general term describing a process by which chemicals are taken up by a plant or animal either directly from exposure to a contaminated medium (soil, sediment, water) or by eating food containing the chemical. Related terms are bioconcentration in which chemicals are absorbed by an animal or plant to levels higher than the surrounding environment; and biomagnification, in which chemical levels in plants or animals increase from transfer through the food web (e.g., predators have greater concentrations of a particular chemical than their prey).
Biomass Definition: The total mass (or weight) of plants and animals in a particular area; can be a particular group of plants or animals or a single species. This measurement can be used instead of counting individuals to help determine abundances in an area.
Biomonitor Definition: A species that is sensitive to, and shows measurable responses to, changes in the environment, such as changes in pollution levels.
Carnivore Definition: Animals that eat other animals.
Complete Exposure Pathway Definition: A complete exposure pathway is how a chemical can be traced, or expected to travel, from a source to a plant or animal

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<p>that can be affected by that chemical. (See Ecological Risk Assessment Guidance Step 3 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep3.html#pathways for additional information.)</p>
<p>Conceptual Site Model</p> <p>Definition: The set of descriptions about the following topics: 1) how the different chemicals at the site in question might affect ecological components (primarily the plants and animals, but also the interactions among plants and animals); 2) ecosystems or ecosystem components potentially at risk; 3) the relationships between measurement and assessment endpoints http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep3.html#endpoints; and 4) how plants and animals might become exposed to harmful chemicals. (See Ecological Risk Assessment Guidance Step 3 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep3.html#csn for additional information.)</p>
<p>Conservative</p> <p>Definition: A conservative risk assessment estimates high-end risk rather than low-end risk. A conservative risk assessment should not underestimate risk and, therefore, will indicate risk to most species of plants and animals.</p>
<p>Contaminant</p> <p>Definition: Any physical, chemical, biological, or radiological substance found in air, water, soil or biological matter that has a harmful effect on plants or animals; harmful or hazardous matter introduced into the environment.</p>
<p>Contaminant of Potential Concern</p> <p>Acronym: COPC</p>

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<p>Contaminant of Potential Ecological Concern</p> <p>Definition: Any contaminant that is shown to pose possible ecological risk to a site. A Contaminant of Potential Ecological Concern (COPEC) or Contaminant of Potential Concern (COPC) is generally a contaminant which may or may not be causing risk or adverse effects to the plants and animals at a site. A Contaminant of Potential Ecological Concern (COPEC) or Contaminant of Potential Concern (COPC) is generally a contaminant which may or may not be causing risk or adverse effects to the plants and animals at a site. (See Ecological Risk Assessment Guidance Step 2 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep2.html#copec.)</p> <p>Acronym: COPEC</p>
<p>Contaminants of Concern</p> <p>Definition: Contaminants of Concern (COCs) are those contaminants which have been shown through analysis to be those that are likely to be causing risk to the plants and animals at a site. (See Ecological Risk Assessment Guidance Step 2 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep2.html#copec)</p> <p>Acronym: COC</p>
<p>Ecological Risk Assessment Guidance for Superfund</p> <p>Definition: Guidance describing the process for conducting Ecological Risk Assessments in the Superfund program.</p> <p>Acronym: ERAGS</p>
<p>Ecology</p> <p>Definition: The scientific study of the relationship of organisms to each other and to their environment.</p>

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Ecosystem
Definition: The sum of all the living plants and animals, their interactions, and the physical components in a particular area.
Ecotoxicity
Definition: Toxic (harm from chemicals) effects on plants and animals, populations, or communities.
Effects Range - Low
Definition: The concentration of a contaminant above which harmful effects may be expected to occur.
Effects Range - Median
Definition: The concentration of a contaminant above which harmful effects always or almost always occur.
Exotic Species
Exotoxicological Benchmarks
Definition: Numerical values that represent concentrations of contaminants in abiotic media (sediments, water, soil) or tissues of plants and animals above which concentrations those contaminants are expected to cause harm. (See Screening Benchmarks http://www.epa.gov/region5superfund/ecology/html/screeningbench.html for examples.)
Exposure

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<p>Definition: How a biological system (i.e., ecosystem), plant, or animal comes in contact with a chemical.</p>
<p>Habitat</p> <p>Definition: The place where a population of plants or animals and its surroundings are located, including both living and non-living components.</p>
<p>Hazard Quotient</p> <p>Definition: The ratio of an exposure level by a contaminant (e.g., maximum concentration) to a screening value selected for the risk assessment for that substance (e.g. LOAEL or NOAEL). If the exposure level is higher than the toxicity value, then there is the potential for risk to the receptor. (See Ecological Risk Assessment Guidance Step 2 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep2.html#hazquot for more details.)</p>
<p>Herbivore</p> <p>Definition: Plant-eating animal.</p>
<p>Home Range</p> <p>Definition: The undefended area in which an animal performs its daily activities: primarily foraging, but also finding shelter, mating, etc.; this is opposed to a territory which is defended and is generally smaller than a home range.</p>
<p>In-situ tests</p> <p>Definition: Toxicity tests that involve placing plants or animals in locations that might be affected by site contaminants and in reference locations, rather than laboratory tests done using generic materials and organisms. In-situ tests can provide more realistic</p>

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evidence of adverse effects than laboratory tests; however, there is little control over many environmental factors and experimental organisms can be lost to adverse weather or other events. Non-native species should not be used, because of the risk of their release into the environment.
Insectivore
Definition: Insect-eating animal.
Invasive Species
Definition: These are species that are imported from their original ecosystem. They can out-compete native species as the invaders often do not have predators or other factors to keep them in check. The zebra mussel is an example of an invasive species in the Great Lakes.
Invertebrates
Definition: Animals without backbones: e.g. insects, spiders, crayfish, worms, snails, mussels, clams, etc.
Life-history
Definition: The stages of life/development through which a plant or animal progresses over the course of its life, such as larval, juvenile, adult.
Lowest Observable Adverse Effect Concentration
Definition: The lowest level of a chemical stressor evaluated in a toxicity test that shows harmful effects on a plant or animal. While LOAELs and LOAECs are similar, they are not interchangeable. A LOAEL refers to a dose of chemical that is ingested, while a

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<p>LOAEC refers to direct exposure to a chemical (e.g., through gills or the skin).</p> <p>Acronym: LOAEC</p>
<p>Lowest Observable Adverse Effect Level</p> <p>Definition: The lowest level of a chemical stressor evaluated in a toxicity test that shows harmful effects on a plant or animal. While LOAELs and LOAECs are similar, they are not interchangeable. A LOAEL refers to a dose of chemical that is ingested, while a LOAEC refers to direct exposure to a chemical (e.g., through gills or the skin).</p> <p>Acronym: LOAEL</p>
<p>Measurement Endpoints</p> <p>Definition: A measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint and is a measure of biological effects (e.g., death, reproduction, growth) of particular species, and they can include measures of exposure as well as measures of effects. Measures of effect often are expressed as the statistical or numerical assessment endpoint summaries of the observations that make up the measurement. (See Ecological Risk Assessment Guidance Step 4 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep4.html#mendpoints for additional information)</p>
<p>Measures of Effect</p> <p>Definition: A measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint and is a measure of biological effects (e.g., death, reproduction, growth) of particular species, and they can include measures of exposure as well as measures of effects. Measures of effect often are expressed as the statistical or numerical assessment endpoint summaries of the observations that make up the measurement. (See Ecological Risk Assessment Guidance Step 4 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep4.html#mendpoints for additional information)</p>

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<p>No Observed Adverse Effects Concentration</p> <p>Definition: The highest level of a chemical stressor in a toxicity test that did not cause harmful effect in a plant or animal. While NOAELs and NOAECs are similar, they are not interchangeable. A NOAEL refers to a dose of chemical that is ingested, while a NOAEC refers to direct exposure to a chemical (e.g., through gills or the skin).</p> <p>Acronym: NOAEC</p>
<p>No Observed Adverse Effects Level</p> <p>Definition: The highest level of a chemical stressor in a toxicity test that did not cause harmful effect in a plant or animal. While NOAELs and NOAECs are similar, they are not interchangeable. A NOAEL refers to a dose of chemical that is ingested, while a NOAEC refers to direct exposure to a chemical (e.g., through gills or the skin).</p> <p>Acronym: NOAEL</p>
<p>Omnivorous</p> <p>Definition: An omnivorous animal is one that eats both plants and other animals.</p>
<p>Palustrine Wetlands</p> <p>Definition: Palustrine wetlands include nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens.</p>
<p>Physiological</p> <p>Definition: The biological processes of a plant or animal; how things work and interact within a body, rather than just the organs and</p>

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tissues themselves.
Physiology
Definition: (The study of) the biological processes of a plant or animal; how things work and interact within a body, rather than just the organs and tissues themselves.
Piscivore
Definition: A fish-eating animal (bird, mammal, reptile, amphibian, or other fish).
Plankton
Definition: Free-swimming (as opposed to rooted/stationary) microscopic plants (phytoplankton) or animals (zooplankton) that live in water; they can be larval forms of other animals such as fish or crustaceans, or adult forms of plants and animals.
Polychlorinated Biphenyls
Definition: A type of organic chemical with chlorine atoms that was extensively used in industry for a variety of purposes, but is now banned. Studies have shown that PCBs can cause cancer in rats and possibly in humans.
Acronym: PCBs
Polycyclic Aromatic Hydrocarbons
Definition: Group of organic chemicals. (See Toxicity Profiles http://www.epa.gov/region5superfund/ecology/html/toxprofiles.htm#pahs for additional information.)
Acronym: PAHs

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<p>Probable Effects Concentration</p> <p>Definition: The level of a concentration in the media (surface water, sediment, soil) to which a plant or animal is directly exposed that is likely to cause an adverse effect.</p> <p>Acronym: PEC</p>
<p>Probable Effects Level</p> <p>Definition: A chemical concentration in some item (dose) prey that is ingested by an organism, which is likely to cause an adverse effect. The ingested item is usually food, but can be soil, sediment, or surface water that is incidentally (accidentally) ingested.</p> <p>Acronym: PEL</p>
<p>Receptor</p> <p>Definition: The species, population, community, habitat, etc. that may be exposed to contaminants.</p>
<p>Reference Areas</p> <p>Definition: Often incorrectly referred to as a control, this is a comparatively uncontaminated site used for comparison to contaminated sites in environmental monitoring studies. It can be the least impacted (or unimpacted) area of the site or a nearby site that is ecologically similar, but not affected by the contaminants at the site under investigation.</p>
<p>Remediation</p> <p>Definition: Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a Superfund site.</p>
<p>Risk Assessor</p>

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<p>Definition: The person who analyzes information from a cleanup/Superfund site to determine if there is the possibility of harm to the local ecosystem.</p>
<p>Risk Calculation</p> <p>Definition: A way of numerically estimating the possibility of risk to the environment using ecotoxicological benchmarks. (See Hazard Quotient and Ecological Risk Assessment Guidance Step 2 http://www.epa.gov/region5superfund/ecology/html/erasteps/erastep2.html#hazquot of the risk assessment process.)</p>
<p>Risk Manager</p> <p>Definition: The person who makes decisions concerning how to proceed with the cleanup process in response, in part, to ecological risk studies.</p>
<p>Riverine Wetlands</p> <p>Definition: Riverine wetlands include wetlands and deepwater habitats contained within a channel, except those areas dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens.</p>
<p>Scientific Management Decision Point</p> <p>Definition: A point during the Ecological Risk Assessment (ERA) process when the risk assessor communicates results of the assessment at that stage to a risk manager. Decisions on the next action(s) are made by the risk assessor and risk manager. Acronym: SMDP</p>
<p>Screening Benchmarks</p>

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<p>Definition: See Screening Numbers</p> <p>Screening Numbers</p> <p>Definition: Levels of contaminants in particular substances (soil, sediment, water) that are known to cause harmful effects in plants or animals. By comparing known, maximum concentrations of contaminants at a site to screening numbers, the possibility of ecological risk can be estimated (see Hazard Quotients).</p>
<p>Sediment</p> <p>Definition: The material of the bottom of a body of water (i.e., pond, river, stream, etc.)</p>
<p>Stressors</p> <p>Definition: Any factor that may harm plants or animals; includes chemical (e.g. metals or organic compounds), physical (e.g. extreme temperatures, fire, storms, flooding, and construction/development) and biological (e.g. disease, parasites, depredation, and competition).</p>
<p>Threshold Effects Concentration</p> <p>Definition: A concentration in media (surface water, sediment, soil) to which a plant or animal is exposed, above which some effect (or response) will be produced and below which it will not.</p> <p>Acronym: TEC</p>
<p>Threshold Effects Level</p>

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<p>Definition: A chemical concentration in some item (dose) that is ingested by an organism, above which some effect (or response) will be produced and below which it will not. This item is usually food, but can also be soil, sediment, or surface water that is incidentally (accidentally) ingested as well.</p> <p>Acronym: TEL</p>
<p>Toxicity Testing</p> <p>Definition: A type of test that studies the harmful effects of chemicals on particular plants or animals.</p>
<p>Trophic Level</p> <p>Definition: This term refers to the position of a species (or in some cases, types of species with similar feeding habitats) within a food chain or food web. For example, in a simplified terrestrial (land-based) ecosystem, plants, which produce their own food, are at the lowest trophic level. Above them in the second trophic level, are herbivores such as small rodents, deer, etc. In the third trophic level are carnivores: animals that eat other animals. In scientific terms, an omnivore is an animal that feeds on organisms from different trophic levels, such as a bear which eats fish and berries. In some cases, either due to a lack of complete information or for the sake of simplicity and clarity, instead of specific species, a food web or food chain will have "generic" groups, such as "small insectivorous mammals" or "piscivorous (fish-eating) birds", reported in the different trophic levels.</p>
<p>Uncertainty</p> <p>Definition: A lack of knowledge about certain factors in a study which can reduce the confidence in conclusions drawn from data in that study; it is opposed to variability which is a result of true variation in characteristics of the environment.</p>
<p>Vertebrates</p>

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Definition: Animals with a backbone, such as fish, birds, and mammals.