

CMP Direct Threats Classification v 2.0, with amendments for Washington ir SWAP will use TIER TWO for SGCN and Important Habitats				
Level 1	Use this Level			
	Level 2	Definition	Examples (not comprehensive)	Exposition details from CMP and WDFW reviewers
1. Residential & Commercial Development		Human settlements or other non-agricultural land uses with a substantial footprint		These are threats tied to a defined and relatively compact area, which distinguishes them from those in 4. <i>Transportation & Service Corridors</i> which have a long narrow footprint, and 6. <i>Human Intrusions & Disturbance</i> which do not have an explicit footprint. Note that we can use standard land-cover classifications to assess the stresses delivered by these direct threats.
	1.1 Housing & Urban Areas	Human cities, towns, and settlements including non-housing development typically integrated with housing	<i>urban areas, suburbs, villages, vacation homes, shopping areas, offices, schools, hospitals</i>	This category dovetails somewhat arbitrarily with 1.2 <i>Commercial and Industrial Areas</i> . As a general rule, however, if people live in the development, it should fall into this category.
	1.2 Commercial & Industrial Areas	Factories and other commercial centers	<i>manufacturing plants, shopping centers, office parks, military bases, power plants, train & ship yards, airports</i>	<i>Non-military</i> shipyards and airports fall into this category. Shipping lanes and flight paths fall under 4. <i>Transportation & Service Corridors</i> . Dams are NOT included here - they are in 7.2 <i>Dams & Water Management / Use</i> . <i>And, industrial renewable energy like wind or solar is under 3.3 Renewable Energy.</i>
	1.3 Tourism & Recreation Areas	Tourism and recreation sites with a substantial footprint	<i>ski areas, golf courses, beach resorts, cricket fields, county parks, campgrounds, trails, boat launches</i>	There is a fine line between housing and vacation housing/resorts. Be careful not to confuse this category, which focuses on the habitat effects of recreation areas, with those in 6.1 <i>Recreational Activities</i> , which focuses on the disturbance effects posed by recreation. <i>Consider what actually impacts the resource - for example, is it the trail itself (1.3) or the people and activities supported by the trail (6.1)</i>
	1.4. Military Installations	military sites and training within a permanent footprint	<i>WA footprint of military installations: Joint Base Lewis-McChord (JBLM), Yakima Training Center (YTC), Fairchild Air Force Base, Naval Air Station Whidbey Island, Naval Base Kitsap, Naval Station Everett</i>	WDFW, other state and federal natural resources agencies, Tribes, and other conservation partners have unique workflows and levers (e.g., Sikes Act and Integrated Natural Resources Management Plans, Sentinel Landscapes, Conservation Pilot, and contributions to USFWS consultations) to influence conservation actions on military installations in Washington state, so we have parsed this category out from 1.2. Issues that are <i>not</i> within the permanent footprint of an installation (e.g. submarine or marine testing, munitions testing offbase, war, responding to civil unrest) would be in Category 6.2.
2. Agriculture & Aquaculture		Threats from farming and ranching as a result of agricultural expansion, intensification or practices; includes silviculture, mariculture and aquaculture		Threats primarily resulting from the use of agrochemicals, rather than the direct conversion of land to agricultural use, should be included under 9.3 <i>Agricultural & Forestrv Effluents</i> .
	2.1 Annual & Perennial Non-Timber Crops	Crops planted for food, fodder, fiber, fuel, or other uses	<i>farms, household swidden plots, plantations, orchards, vineyards, mixed agroforestry systems , non-woody bio-fuels</i>	
	2.2 Wood & Pulp Plantations	Stands of trees planted for timber, fiber, <i>or fuel outside of natural forest lands</i> , often with non-native species	<i>teak or eucalyptus plantations, silviculture, christmas tree farms , woody bio-fuel plantations</i>	If it is one or a couple timber species that are planted on a rotation cycle, it belongs here. If it is multiple species or enrichment plantings in a quasi-natural system. it belongs in 5.3 <i>Logging & Wood Harvesting</i> .
	2.3 Livestock Farming & Ranching	Domestic terrestrial animals raised in one location on farmed or non-local resources (farming); also domestic or semidomesticated animals allowed to roam in the wild and supported by natural habitats (ranching)	<i>cattle feed lots, dairy farms, cattle ranching, chicken farms, sheep and goat herding</i>	In farming, animals are kept in captivity; in ranching they are allowed to roam in wild habitats. If a few animals are mixed in a subsistence cropping system, it belongs in 2.1 <i>Annual & Perennial Non-Timber Crops</i> . Forage of wild resources for stall-fed animals falls under 5.2 <i>Gathering Terrestrial Plants</i> .
	2.4 Marine & Freshwater Aquaculture	Aquatic animals raised in one location on farmed or non-local resources; also hatchery fish allowed to roam in the wild	<i>shrimp or fin fish aquaculture, fish ponds on farms, hatchery salmon, seeded shellfish beds, artificial algal beds</i>	Farmed animals are kept in captivity; hatchery fish are put into wild habitats and are the aquatic equivalent of terrestrial ranching.
3. Energy Production & Mining		Threats from production of non-biological resources		Various forms of water use (for example, dams for hydro power) could also be put in this class, but these threats seemed more related to other threats that involve alterations to hydrologic regimes. As a result, they should go in 7.2 <i>Dams & Water Management / Use</i>
	3.1 Oil & Gas Drilling	Exploring for, developing and producing petroleum and other liquid hydrocarbons	<i>oil wells, deep sea natural gas drilling</i>	Oil and gas pipelines go into 4.2 <i>Utility & Service Lines</i> . Oil spills that occur at the drill site should be placed here; those that come from oil tankers or pipelines should go in 4. <i>Transportation & Service Corridors</i> or in 9.2 <i>Industrial & Military Effluents</i> . depending on your perspective.
	3.2 Mining & Quarrying	Exploring for, developing and producing minerals and rocks	<i>coal mines, alluvial gold panning, gold mines, rock quarries, coral mining, deep sea nodules, guano harvesting</i>	It is a judgement call whether deforestation caused by strip mining should be in this category or in 5.3 <i>Logging & Wood Harvesting</i> - it depends on whether the primary motivation for the deforestation is access to the trees or to the minerals. Sediment or toxic chemical runoff from mining should be placed in 9.2 <i>Industrial & Military Effluents</i> if it is the major threat from a mining operation.
	3.3 Renewable Energy	Exploring, developing and producing renewable energy	<i>geothermal power production, solar farms, wind farms (including birds or bats flying into windmills), tidal farms</i>	Hydropower should be put in 7.2 <i>Dams & Water Management / Use</i> .

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4. Transportation & Service Corridors		Threats from long, narrow transport corridors and the vehicles that use them including associated wildlife mortality		This class includes transportation corridors outside of human settlements and industrial developments. These corridors create specific stresses to biodiversity including especially fragmentation of habitats and lead to other threats including farms, invasive species, and poachers.
	4.1 Roads & Railroads	Surface transport on roadways and dedicated tracks	<i>highways, secondary roads, logging roads, bridges & causeways, road kill, fencing associated with roads, railroads</i>	If the main threat is <i>pollution</i> from roads, that belongs in 9.1 <i>Household Sewage & Urban Waste Water</i> . Off-road vehicles are treated in the appropriate category in 6. <i>Human Intrusions & Disturbance</i> . If there are small roads associated with a major utility line, they belong in 4.2. <i>Utility & Service Lines</i> .
	4.2 Utility & Service Lines	Transport of energy & resources	<i>electrical & phone wires, aqueducts, oil & gas pipelines, electrocution of wildlife</i>	Cell phone and other communication towers connected by small access roads belong here. If there are small utility lines using a road right of way, they belong in 4.1 <i>Roads & Railroads</i> . Oil spills from pipelines should go in 9.2 <i>Industrial & Military Effluents</i> .
	4.3 Shipping Lanes	Transport on and in freshwater and ocean waterways	<i>dredging, canals, shipping lanes, ships running into whales, wakes from cargo ships</i>	This category includes dredging and other activities that maintain shipping lanes. Anchor damage from dive boats belongs in 6.1 <i>Recreational Activities</i> .
	4.4 Flight Paths	Air and space transport	<i>flight paths, jets impacting birds</i>	Airports fall into 1.2 <i>Commercial & Industrial Areas</i> .
5. Biological Resource Use		Threats from consumptive use of "wild" biological resources including deliberate and unintentional harvesting effects; also persecution or control of specific species		Consumptive use means that the resource is removed from the system or destroyed - multiple people cannot use the same resource, as they could fit under 6. <i>Human Intrusions & Disturbance</i> . Threats in the class can affect both target species (harvest of desired trees or fish species) as well as "collateral damage" to non-target species (trees damaged by felling or fisheries bycatch) and habitats (coral reefs destroyed by trawling). Persecution/control involves harming or killing species because they are considered undesirable.
	5.1 Hunting & Collecting Terrestrial Animals	Killing or trapping terrestrial wild animals or animal products for commercial, recreation, subsistence, research or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch	<i>bushmeat hunting, trophy hunting, fur trapping, insect collecting, honey or bird nest hunting, predator control, pest control, persecution</i>	This category focuses on animals that primarily live in a terrestrial environment. There are obviously some species that live on the terrestrial/aquatic boundary. Hunting otters, beavers, amphibians, polar bears, penguins, waterfowl, and sea birds should (somewhat arbitrarily) go here. Hunting seals, whales and other marine mammals, and freshwater and marine turtles go in 5.4 <i>Fishing & Harvesting Aquatic Resources</i> . Yes, most people "gather" honey, eggs, insects or other slow moving targets, rather than "hunt" them. But it seems cleaner to keep all animal products as being hunted.
	5.2 Gathering Terrestrial Plants	Harvesting plants, fungi, and other non-timber/non-animal products for commercial, recreation, subsistence, research or cultural purposes. or for control reasons	<i>wild mushrooms, forage for stall fed animals, orchids, rattan, control of host plants to combat timber diseases</i>	This category focuses on plants, mushrooms, and other non-animal terrestrial species except trees which are treated in 5.3 <i>Logging & Wood Harvesting</i> .
	5.3 Logging & Wood Harvesting	Harvesting trees and other woody vegetation for timber, fiber, or fuel, including site preparation and other forestry management practices, typically in currently or previously forested environments (i.e. natural forest converted to managed forest)	<i>clear cutting of hardwoods, selective commercial logging of ironwood, pulp operations, fuel wood collection, charcoal production</i>	Felling trees to clear agricultural land goes in the appropriate category in 2. <i>Agriculture & Aquaculture</i> . If it is a few timber species that are planted on a rotation cycle, it belongs in 2.2 <i>Wood & Pulp Plantations</i> . If it is multiple species or enrichment plantings in a quasi-natural system, it belongs here.
	5.4 Fishing & Harvesting Aquatic Resources	Harvesting aquatic wild animals or plants for commercial, recreation, subsistence, research or cultural purposes, or for control/persecution reasons; includes accidental mortality/bycatch	<i>trawling, blast fishing, spear fishing, shellfish harvesting, whaling, seal hunting, turtle egg collection, live coral collection, seaweed collection</i>	This category focuses on all kinds of species that are primarily found in an aquatic environment. There are obviously some species that live on the terrestrial/aquatic boundary. Hunting otters, beavers, amphibians, polar bears, penguins, waterfowl, and sea birds should (somewhat arbitrarily) go in 5.1 <i>Hunting & Collecting Terrestrial Animals</i> . Hunting seals, whales and other marine mammals, and freshwater and marine turtles go here.

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6. Human Intrusions & Disturbance		Threats from human activities that alter, destroy and disturb habitats and species associated with non-consumptive uses of biological resources		Non-consumptive use means that the resource is not removed - multiple people can use the same resource (for example, birdwatching). These threats typically do not permanently destroy habitat except perhaps in extremely severe manifestations.
	6.1 Recreational Activities	People spending time in nature or traveling in vehicles outside of established transport corridors, usually for recreational reasons	<i>off-road vehicles, motorboats, jet-skis, snowmobiles, ultralight planes, dive boats, whale watching, mountain bikes, hikers, birdwatchers, skiers, pets in recreational areas, temporary campsites, caving, rock-climbing</i>	This category does not include work involving consumptive use of biodiversity - for example disturbance impacts from loggers or hunters would be in the appropriate category in 5. <i>Biological Resource Use</i> . Vehicles and boats in established transport corridors go in 4. <i>Transportation & Service Corridors</i> . The development of permanent recreational or tourist facilities (such as hotels and resorts) should be included under 1.3 <i>Tourism & Recreation Areas</i> rather than here.
	6.2 War, Civil Unrest & Military Activities	Actions by formal or paramilitary forces without a permanent / expected site footprint	<i>armed conflict, mine fields, tanks & other military vehicles, training exercises & ranges off-base , defoliation, munitions testing</i>	Consider what actually impacts the resource - is it the trail itself (1.3) or the the resource
	6.3 Work & Other Activities	People spending time in or traveling in natural environments for reasons other than recreation or military activities	<i>law enforcement, drug smugglers, illegal immigrants, species research, vandalism</i>	This category focuses on military activities that have a large impact on natural habitats, but are not permanently restricted to a single area. Permanent military bases should go under 1.2 Commercial & Industrial Areas 1.4 <i>Military Bases</i> . Other military activities might best be assigned to other categories - consider the direct impact. For example, hunting of specific animals by soldiers living off the land may fit better under 5.1 <i>Hunting & Collecting Terrestrial Animals</i>
7. Natural System Modifications		Threats from actions that convert or degrade habitat in service of “managing” natural or semi-natural systems, often to improve human welfare		This will probably not be a commonly used category, although 'research' is a common activity. Most research activities are conducted under consultation and/or permitting processes with state and/or federal agencies to ensure that the benefits outweigh the risks. In MOST cases, research is seen as a conservation action, not a threat. Unpermitted or unmitigated research, lethal specimen research with rare species may be considered threats.
	7.1 Fire & Fire Suppression	Suppression or increase in fire frequency and/or intensity outside of its natural range of variation	<i>fire suppression to protect homes, inappropriate fire management, escaped agricultural fires, arson, campfires, fires for hunting</i>	This category deals primarily with changes to natural processes such as fire, hydrology, and sedimentation, rather than land use. Thus it does not include threats relating to agriculture (which should be under 2. <i>Agriculture & Aquaculture</i>), or infrastructure (1. <i>Residential & Commercial Development</i> and 4. <i>Transportation & Service Corridors</i>).
	7.2 Dams & Water Management / Use	Changing water flow patterns from their natural range of variation either deliberately or as a result of other activities	<i>dam construction, dam operations, sediment control, change in salt regime, wetland filling for mosquito control, levees and dikes, surface water diversion, groundwater pumping, channelization, artificial lakes</i>	This category focuses on the human activities that lead to either not enough fire or too much fire in the ecosystem in question. If fire escapes from established agricultural lands, it belongs here, if fire is used to clear new agricultural lands, it belongs in the appropriate category in 2. <i>Agriculture & Aquaculture</i> . It also includes damaging "natural" fires in systems that have lost their natural resilience
	7.3 Other Ecosystem Modifications	Other actions that convert or degrade habitat in service of “managing” natural systems to improve human welfare	<i>land reclamation projects, rip-rap along shoreline, mowing grass, tree thinning in parks, beach construction, removal of snags from streams</i>	This category focuses on the human activities that lead to either not enough water or too much water in the ecosystem in question. Note that homogenizing flows to a constant level may be outside the "natural range of variation." Dredging belongs in 4.3 <i>Shipping Lanes</i> .
	7.4 Removing / Reducing Human Maintenance	Absence or reduction of current or historical maintenance regimes important for key ecological attributes. Includes regimes historically maintained by protected area staff, farmers and ranchers, indigenous peoples, private landowners, or any other resource manager. Lack of active treatments of invasive weeds, exclusion of natural disturbance regimes	<i>lack of mowing of meadows, reduction in controlled burns, lack of indigenous management of key ecosystems, ceasing supplemental feeding of condors</i>	Many ecosystems and species depend on human maintenance to mimic natural conditions and maintain key attributes. This threat captures the loss of these direct maintenance regimes. Caution should be used in applying this category – it is not meant as a catch-all for a lack of conservation action at a site, but rather refers to instances where a beneficial historical action is no longer possible due to, for example, funding, institutional constraints, or actors being disempowered. This category does not include less direct maintenance actions, such as lack of outreach or lack of adequate policy.

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8. Invasive & Problematic Species, Pathogens & Genes		Threats from non-native and native plants, animals, pathogens/microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread and/or increase in abundance or virulence		We spent a lot of time talking to experts about the subdivisions and phrasing of this class. They would like to restrict the use of "invasive species" to refer to non-native species to keep things simple for policy makers. They recommended using the term "problematic native species" to refer to native species that have become superabundant or otherwise cause problems. If possible, also record the source of the invasive species and/or conditions that overabundate their effort.
	8.1 Invasive Non-Native / Alien Plants & Animals	Harmful plants and animals not originally found within the ecosystem(s) in question and directly or indirectly introduced and spread into it by human activities	feral horses, feral household pets, zebra mussels, Miconia tree, introduction of species for biocontrol	We are defining non-native/alien/exotic species as those brought either intentionally or accidentally by humans in the last 10,000 years.
	8.2 Problematic Native Plants & Animals	Harmful plants and animals that are originally found within the ecosystem(s) in question, but have become “out-of-balance” or “released” directlv or indirectlv due to human activities	overabundant native deer, overabundant algae due to loss of native grazing fish, plague affecting rodents, invasive grasses	It is a bit of a judgement call as to when a species becomes "problematic" (aka outside its natural range of variation). This category could probably be refined over time.
	8.3 Introduced Genetic Material	Human altered or transported organisms or genes	pesticide resistant crops, hatchery salmon, restoration projects using non-local seed stock, genetically modified insects for biocontrol, genetically modified trees, genetically modified salmon	Hatchery fish are not necessarily invasive species, but they can upset the gene pool of native fish.
	8.4 Pathogens & Microbes	Harmful native and non-native agents that cause disease or illness to a host, including bacteria, viruses, prions, fungi, and other microorganisms	plague affecting rodents, Dutch elm disease or chestnut blight, Chytrid fungus affecting amphibians outside of Africa	Disease that is within the "natural or acceptable range of variation" for a species population or ecosystem is not a threat.
9. Pollution		Threats from introduction of exotic and/or excess materials or energy from point and nonpoint sources		This class deals with exotic or excess materials introduced to the environment. There is obviously a fine distinction when the pollution comes from another threat - for example, should an oil spill from a pipeline be classified as 4.2 Utility & Service Lines or 9.2 Industrial & Military Effluents ? You will have to exercise some judgement here as to which represents the direct threat in your situation. In some cases, the source of the pollution may be either unknown or from a historical source (e.g., heavy metals buried in sediments). In these cases, you may have to make an educated guess as to which category to assign the pollutant.
	9.1 Household Sewage & Urban Waste Water	Water-borne sewage and non-point runoff from housing and urban areas that include nutrients, toxic chemicals and/or sediments	discharge from municipal waste treatment plants, leaking septic systems, untreated sewage, outhouses, oil or sediment from roads, fertilizers and pesticides from lawns and golf-courses, road salt	This category does not include major industrial discharge, which falls under 9.2 Industrial & Military Effluents. It does include chemicals and next generation pollutants (caffeine or pharmaceuticals) in household waste streams. Technically, sewage from a pipe is "point-source" whereas a leaking septic system is "nonpoint-source." This category does not include agricultural runoff, which falls under 9.3 Agricultural & Forestry Effluents.
	9.2 Industrial & Military Effluents	Water-borne pollutants from industrial and military sources including mining, energy production and other resource extraction industries that include nutrients, toxic chemicals and/or sediments	toxic chemicals from factories, illegal dumping of chemicals, mine tailings, arsenic from gold mining, leakage from fuel tanks, PCBs in river sediments	The source of the pollution is often far from the system – an extreme example are the heavy metals that migrating eels bring to the Sargasso Sea. Often, the pollutants only become a problem when they bioconcentrate through the food chain. Oil spills from pipelines should generally go here.
	9.3 Agricultural & Forestry Effluents	Water-borne pollutants from agricultural, silivicultural, and aquaculture systems that include nutrients, toxic chemicals and/or sediments including the effects of these pollutants on the site where they are applied	nutrient loading from fertilizer run-off, herbicide run-off, manure from feedlots, nutrients from aquaculture, soil erosion	Wind erosion of agricultural sediments or smoke from forest fires goes in 9.5 Air-Borne Pollutants.
	9.4 Garbage & Solid Waste	Rubbish and other solid materials including those that entangle wildlife	municipal waste, litter from cars, flotsam & jetsam from recreational boats, waste that entangles wildlife, construction debris	This category generally is for solid waste outside of designated landfills - landfills themselves should go in 1.2 Commercial & Industrial Areas. Likewise, toxins leaching from solid waste - for example, mercury leaking out of a landfill into groundwater - should go in 9.2 Industrial & Military Effluents.
	9.5 Air-Borne Pollutants	Atmospheric pollutants from point and nonpoint sources	acid rain, smog from vehicle emissions, excess nitrogen deposition, radioactive fallout, wind dispersion of pollutants or sediments from farm fields, smoke from forest fires or wood stoves	It may be difficult to determine the sources of many atmospheric pollutants – and thus hard to take action to counter them.
	9.6 Light, Noise, Thermal Pollution	Inputs of heat, sound or light that disturb/disrupt wildlife, habitats, or ecosystems	noise from highways or airplanes, sonar from submarines that disturbs whales, heated water from power plants, lamps attracting insects, beach lights disorienting turtles, atmospheric radiation from ozone holes , lights disrupting migratory birds	These inputs of energy can have strong effects on some species or ecosystems.
10. Geological Events		Threats from catastrophic geological events		Strictly speaking, geological events may be part of natural disturbance regimes in many ecosystems. But where they may be mapped or known, they may need to be considered a threat if a species or habitat is damaged from other threats and has lost its resilience and is thus vulnerable to the disturbance.
	10.1 Volcanoes	Volcanic events	eruptions, emissions of volcanic gasses	
	10.2 Earthquakes / Tsunamis	Earthquakes and associated events	earthquakes, tsunamis	
	10.3 Avalanches / Landslides	Avalanches or landslides	avalanches, landslides, mudslides	

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11. Climate Change	Level 2	Change in climate patterns (eg those resulting from increased atmospheric greenhouse gases like CO2) and/or events outside the natural range of variation that could wipe out a vulnerable species or ecosystem		Climatic events may be part of natural disturbance regimes in many ecosystems and are technically "stresses" and not "direct threats;" however, they act as a threat if a species or ecosystem is damaged from other threats, has lost its resilience, and is then vulnerable to the climate-influenced disturbance. Climatic events are increasing in frequency or intensity outside their natural range of variation due to human influences. Most projects will not be able to address the root causes of climate change threats, but will need to consider action to counter the effects of these threats. Conservation practitioners may also describe a threat as 'climate amplified' to highlight the connection or overlay of climate change on other direct threats. Example - existing direct threats with adverse effects (e.g., invasive species, disease, system modifications, pollution) could be more intense or frequent due to the effects of climate change, so species and/or habitat actions are needed to support adaptation/resiliency.
	11.1 Ecosystem Encroachment	Large-scale effects of ecosystems shifting and impinging on other species and ecosystems.	<i>sea level rise (inundation of shoreline ecosystems, drowning of coral reefs), desertification (sand dune encroachment)</i>	Changes in the location of any given ecosystem is technically a "stress" to both that ecosystem and its component species. But as ecosystems "migrate" they put pressure on adjacent ecosystems and species that can be considered a threat to those adjacent systems that needs to be mitigated.
	11.2 Changes in Geochemical Regimes	Broad-scale changes in the geochemical conditions of ecosystems	<i>ocean acidification, changes in atmospheric CO2 affecting plant growth, loss of sediment leading to broad-scale subsidence , increased levels of CO2 increase freshwater acidity and may favor harmful algal blooms</i>	
	11.3 Changes in Temperature Regimes	Broad-scale changes in temperature mean, variability, seasonality and extremes, including changes in temperature extremes, increased average summer temperature, and decreased minimum winter/spring temperature	<i>heat waves, cold spells, oceanic temperature changes, melting of glaciers/sea ice</i>	Loss of snowpack is often a combination of change in temperature and precipitation regimes, but is for now assigned to <i>11.4 Changes in Precipitation & Hydrological Regimes</i> . Consider also phenological shifts caused by temperature regime change that may affect prey base, forage, host plants.
	11.4 Changes in Precipitation & Hydrological Regimes	Broad-scale changes in precipitation mean, variability, seasonality, and extremes, including decreased or increased precipitation, changes in timing of precipitation, changes in form of precipitation (eg snow vs rain; snowcover and snowpack where applicable), changes in evapotranspiration rates and hydrological cycles, and droughts and floods	<i>droughts, changes in timing of rains, loss of snowcover, increased severity of floods</i>	Flood impacts of specific storm events belong in <i>11.5 Severe / Extreme Weather Events</i> .
	11.5 Severe / Extreme Weather Events	Changes in frequency, timing and/or intensity of storms as well as severe weather events that threaten targets that have lost resilience	<i>thunderstorms, tropical storms, hurricanes, cyclones, tornadoes, hailstorms, ice storms or blizzards, dust storms, erosion of beaches during storms</i>	
12. Small Ecologically Limited Population Size	(this threat does not have a second tier - it is stand-alone)	Ideally, the root threat is identified (e.g. disease, invasive species, climate-amplified heat, ...); however, in some cases, the threat is critically low numbers of individuals where populations may be close to extinction or local extirpation. Small populations may be especially susceptible to genetic drift, inbreeding depression, and have a reduced ability to adapt to environmental changes or rebound from stochastic events. This 'threat' should be used only in cases where we have evidence that supports such a critical state.	e.g., southern resident killer whales down to 74 individuals and suffering from inbreeding depression. e.g., stochastic events like wildland fire events that wipe out large proportions of a population or elimitate entire populations or subpopulations - such as what pygmy rabbits, sage grouse and sharp-tailed grouse experienced in 2020, or mardon skipper population experienced at Scatter Creek. e.g., rabbit hemorrhagic disease is an introduced/non-native occurring and has a high mortality rate. Current pygmy rabbit population is not large enough to withstand an outbreak, thus our efforts to vaccinate as many as we can. If the population was bigger, that aciton would be untenable and may not be needed. e.g., inability to withstand naturally occurring processes such as predation, thus spurring management actions such as western snowy plover predator control.	Sufficiently' large populations are needed to prevent eventual extinction (Halley et al. 2016). Small populations—which include species that have always had small populations and previously large populations that have been reduced to a few individuals—face additional inherent and unavoidable pressures beyond the direct threat options above: (1) loss of genetic diversity (bottlenecks, inbreeding); (2) demographic stochasticity; and (3) environmental stochasticity and natural catastrophes. In these cases, extinction is a real and present threat due to the population size. This threat should not be used unless this is truly the direct threat to species persistence because the conservation actions (e.g., captive rearing, population augmentation)to address this threat are different. See also https://bio.libretexts.org/Bookshelves/Ecology/Conservation_Biology_in_Sub-Saharan_Africa_(Wilson_and_Primack)/08%3A_Extinction_is_Forever/8.07%3A_Problems_of_Small_Populations

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A. TARGET RESTORATION / STRESS REDUCTION ACTIONS		Actions to directly restore a target or mitigate a stress		These actions lead directly to changes in conservation targets without first reducing threats or creating enabling conditions.	
1. Land / Water Management		Actions directly managing or restoring sites, ecosystems and the wider environment		This class contains "on-the-ground" conservation actions at specific sites or for broader ecosystems and areas. The term "ecosystem" here is roughly equivalent to the term "habitat" as used by species managers. Identification of where to work and how to work (planning) are other Action categories. see 6.0)	
	1.1 Site/Area Stewardship	Enhancing viability / mitigating stresses for sites and/or ecosystem targets, especially on a smaller scale	<i>cutting invasive vines off trees, liming acid ponds, using microbes to clean up oil spills, use of noise makers to scare off birds, gating caves to protect hibernating bats, routine maintenance in a protected area, use of traditional fire management practices by indigenous peoples, releasing daughterless male mosquitoes, managing park public lands visitors to reduce disturbance</i>	Includes many different types of "site management" actions. Existing invasive species, pollution, and geological/climate events are treated as stresses here, even though these factors are often categorized as direct threats. This category is meant for actions undertaken by the project team itself (eg conducting controlled burns); actions designed to get other managers to undertake conservation actions (eg training or incenting a rancher to conduct controlled burns) belong in various other categories below.	Restoring targets or mitigating stresses via... 1 Mechanical actions (eg removing invasives, mowing) 2 Chemical actions (eg herbicides, liming ponds) 3 Biological control (eg oil eating microbes) 4 Sensory control (eg predator urine, noise deterrents) 5 Separation / border actions (eg fencing, gating caves) 6 Ecological management (eg prescribed fire) 7 Genetic manipulation (eg sterile males of an invasive species) 8 Visitor management (eg routing trails around wetlands)
	1.2 Ecosystem & Natural Process (Re)Creation	Restoring missing or severely degraded ecosystems and ecosystem functions and processes, especially on a large scale	improving or restoring connectivity , creating habitat corridors , grasslands or mangroves on degraded lands , creating artificial oyster reefs, breaching levees to restore wetlands, managing dams to simulate natural hydrological regimes, using livestock to simulate herbivore grazing	To some degree, the difference between <i>1.1 Site / Area Stewardship</i> and <i>1.2 Ecosystem & Natural Process (Re)Creation</i> is a question of scale; 1.1 describes site management whereas 1.2 describes large-scale management efforts. For example, although maintaining a few water control structures could be a site management task, in general we propose that large actions to restore degraded hydrological regimes go here.	Building or restoring key ecosystem... 1 Structural components 2 Abiotic functions & processes 3 Biotic functions & processes
2. Species Management		Actions directly managing or restoring specific species or taxonomic groups		This class contains direct conservation actions targeting specific target species or taxonomic groups. Thus, dam breaches aimed at one or more salmon species fit here in <i>2. Species Management</i> , whereas dam breaches aimed at restoring general stream connectivity fit in <i>1. Land / Water Management</i> .	
	2.1 Species Stewardship	Enhancing viability of / mitigating stresses to specific taxa within their current range	<i>culling ungulates, heating bat roosts to reduce white-nose syndrome effects, artificial bird nesting boxes/platforms, supplementary feeding, planting food trees, manual pollination of orchids, vaccinating wild dogs, guiding elephants on migrations, shooting or trapping invasive competitors, using false brood parasite eggs to reduce brood parasitism</i>	Direct work to manage specific species or taxonomic groupings <i>in-situ</i> . This category is meant for actions undertaken by the project team itself (eg mowing grassy areas at times to avoid disturbing breeding birds); actions designed to get other managers to undertake conservation actions (eg training or incenting a rancher to use these better mowing practices) belong in various other categories below. Actions focused on managing invasive species that affect a habitat belong in <i>1.1 Site/Area Stewardship</i> .	Assisting specific taxa <i>in-situ</i> via... 1 Population management 2 Shelter management 3 Nutrient / water management 4 Reproduction management 5 Disease / injury management 6 Movement / migration management 7 Interspecific interaction management
	2.2 Species Re-Introduction & Translocation	Transferring species or genetic material to places where they formerly occurred or to suitable future habitat or benign introductions of species to an ecosystem	<i>re-introduction of wolves, translocation of species imperiled by climate change to new suitable locations, benign introductions of top predator fish to an ecosystem, transferring monkeys to improve genetic diversity</i>	Transferring a species in service of conservation of the species itself. Introducing a species in service of ecosystem restoration could arguably go in <i>1.2 Ecosystem & Natural Process (Re)Creation</i> .	Facilitation of... 1 Reintroduction of species where they previously existed 2 Translocation of species to new places (benign introduction) 3 Transfer of individuals or genes to increase genetic diversity
	2.3 Ex-Situ Conservation	Protecting specific taxa in artificial settings with the aim of ultimately restoring them to their natural settings	<i>off-site rehabilitation of injured raptors, captive rearing of mussels for reintroduction, captive breeding of an endangered frog to avoid disease, seed banking, genetic restoration of mammoths from DNA, restoration of tortoises from back-crosses, synthetic species creation</i>	To be a true restoration strategy, this approach requires not just doing <i>ex-situ</i> conservation, but also ensuring that the taxa are ultimately put back into the wild in the appropriate habitats. To this end, the educational function of zoos & aquaria belongs in <i>3.1 Outreach & Communications</i> .	Providing <i>ex-situ</i> protection to species via... 1 Support within the life of an individual 2 Support / captive breeding over generations 3 Gene banking (eg seeds, sperm, DNA) 4 Genetic reconstruction (eg restoring extinct species) 5 Synthetic species creation

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B. BEHAVIORAL CHANGE / THREAT REDUCTION ACTIONS		Actions to reduce direct threats or increase positive behaviors		These actions either change human behaviors that threaten conservation targets or enhance human behaviors that contribute to conservation.	
3. Awareness Raising		Actions making people aware of key issues and/or feeling desired emotions, leading to behavior change		This class contains actions designed to make people aware of the impact of human activities on conservation targets and/or feel emotions that will lead to the desired behavioral change.	
	3.1 Outreach & Communications	Promoting desired awareness and/or emotions and subsequent effective behavior change by providing information to target audiences through appropriate channels and tools (Human Dimensions, social sciences to build emotional, foundational, and durable connections)	<i>briefing newspaper reporters on conservation issues, Facebook campaigns, public service radio ads, zoo exhibits about threats to animal habitat, recording conservation songs, producing puppet shows with conservation message, door-to-door engagement, taking children on nature walks</i>	Includes "training" or "education" that is primarily designed to get folks to change a behavior (eg educating homeowners to plant native rather than non-native species), but trainings that teach specific skills (eg how to do controlled burns) fit in 9.2 <i>Training & Capacity Development</i> . Confrontational outreach actions go in 3.2 <i>Protests & Civil Disobedience</i> .	Raising awareness via... 1 Reported media (eg newspapers, TV, radio, curated blogs) 2 Social media (eg Facebook, personal blogs) 3 Ads & marketing (eg mail campaign, celebrity media ads) 4 Displays (eg museum or zoo exhibits, park signs) 5 Art (eg paintings, recorded music) 6 Performances (eg puppet shows, theater) 7 Person-to-person engagement (eg info booth, peer mentor) 8 Experiential learning (eg nature walks, outdoor education)
	3.2 Protests & Civil Disobedience	Promoting desired awareness and subsequent desired behavior change by conducting protests, naming and shaming, civil disobedience, or sabotage activities	<i>organizing protest marches against oil drilling, investigative journalism naming & shaming polluting companies, impeding whaling vessels, sitting in trees to prevent logging, sabotaging wildlife traps</i>	Activities that seek to draw attention to and/or impede various conservation threats or drivers of threats. In general, these activities seek to put pressure on the actors responsible for the threats and/or make it too expensive to continue with the threat behaviors. Note that inclusion of illegal actions in this classification explicitly does NOT constitute an endorsement of these tactics. Whereas 7. <i>Legal & Policy Frameworks</i> is about creating laws and policies to support conservation, this class contains actions implementing and enforcing these laws and policies at all levels ranging from global treaties to local community or tribal customarv rules.	Organizing or engaging in... 1 Protests (confrontations or refusing to engage) 2 Public identification of wrong-doers 3 Impeding activities (legal / illegal passive civil disobedience) 4 Sabotage (illegal active monkeywrenching)
4. Law Enforcement & Prosecution		Actions monitoring and enforcing compliance with existing laws and policies at all levels to deter threats or compel conservation action			
	4.1 Detection & Arrest	Detecting, directly stopping, and/or deterring violations of existing laws and policies	<i>monitoring wildlife trafficking across borders, investigating reports of illegal grazing, setting up informer network against tiger poaching, interdicting intercept and prevent the movement of an illegal fishing vessel</i>	Interdiction activities are designed to both stop existing law breakers as well as deter future law breakers from illegal and generally criminal activities. Interdiction activities can take place at any point along the transactional chain that links resource harvesters or poachers, traders, financiers or other middlemen, and end consumers.	Reducing or deterring illegal behaviors through... 1 Surveillance 2 Patrolling 3 Guarding checkpoints / borders 4 Carrying out investigations 5 Establishing/maintaining informer networks 6 Arrest & interdiction
	4.2 Criminal Prosecution & Conviction	Ensuring appropriate application of sanctions for violations of existing laws and policies	<i>collecting evidence to prosecute a wildlife trader, holding trials for alleged law breakers, monitoring to ensure criminals serve time and pay fines</i>	Activities designed to ensure that appropriate sanctions are meted out and that laws will thus have the desired deterrence effect. However, actions that are primarily designed to teach prosecutors how to do their jobs could go in 9.2 <i>Training & Capacity Development</i> and actions that are primarily designed to create or improve courts or prisons could go in 10.2 <i>Institutional & Civil Society Development</i> since these are more enabling condition actions.	Deterring threat behaviors through... 1 Prosecuting alleged crimes 2 Trying alleged crimes 3 Punishing proven crimes (prisons, fine collection, rehabilitation)
	4.3 Non-Criminal Legal Action	Threatening or bringing non-criminal legal action to get individuals, organizations, agencies or firms to change or deter undesired behaviors or compel conservation action	<i>suing an agency to take action to protect an endangered species, suing a company to stop illegal logging, citing homeowners for sewage violations, agency review of policies or projects</i>	Non-criminal legal activities designed to change or deter undesired behaviors or compel desired conservation action. Activities can be initiated by relevant government agencies using their statutory authority, or by various actors through civil legal proceedings. Includes processes in which government environmental agencies are authorized to officially review or comment on policies or projects (eg highway construction or new housing developments) implemented by other agencies or private sector actors.	Changing behavior through... 1 Civil law suits 2 Agency enforcement 3 Agency or judicial review

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5. Livelihood, Economic & Moral Incentives		Actions using livelihood, other economic and moral incentives to directly influence attitudes and behaviors and remove barriers to changed behavior		This class contains actions that use positive or negative incentives to promote desired behavior change.	
	5.1 Linked Enterprises & Alternative Livelihoods	Developing enterprises that directly depend on the maintenance of natural resources or provide substitute livelihoods as a means of changing attitudes and behaviors	<i>non-timber forest product harvesting business, wild salmon fishery, subsistence hunting & gathering, training loggers to be ecotourism guides, training loggers for factory jobs</i>	Both linked enterprises and alternative livelihoods involve providing income and/or subsistence resources to natural resource users. Linked enterprises depend on the natural resource base and thus provide an incentive to local stakeholders to use these resource sustainably over the long-term. Alternative livelihoods attempt to find a substitute for a damaging resource-based livelihood (eg unsustainable fishing or logging).	Creating incentives to change behaviors through... 1 Linked product-producing enterprises (consumptive) 2 Linked ecological service-using enterprises (non-consumptive) 3 Non-linked enterprises & livelihoods
	5.2 Better Products & Management Practices	Developing, promoting and/or providing more environmentally-friendly products or practices that substitute for environmentally damaging ones	<i>competition to develop sea turtle friendly fishhooks, research to develop low water-use crops, providing access to weed-free hay, setting up recycling services, training in chicken production as a substitute protein source for bushmeat, setting up grass & forest banking systems to mitigate farmer risk, engagement with corporations to "green" their supply chains</i>	In Version 1.0, this category primarily focused on finding substitutes for environmentally damaging products and behaviors. This category has now been expanded to encompass environmentally better products and management practices. Although many people refer to "best" management practices, we use the term "better" to show that practices can always be further improved. There is some overlap with 5.3 <i>Market-Based Incentives</i> since certification systems are often designed to incent or promote better management practices among service providers or commodity producers. This category, however, is more about developing, promoting, providing, and/or removing barriers (eg risk minimization) to adoption of better products and practices.	Changing behaviors by... 1 Developing better products & practices 2 Promoting better products & practices 3 Providing better products 4 Providing training or technical assistance for better practices 5 Removing barriers to adoption of better products or practices
	5.3 Market-Based Incentives	Using market mechanisms to change behaviors and attitudes	<i>promoting responsible palm oil production, educating consumers about seafood sustainability, boycotts of non-dolphin safe tuna, creating carbon market for forest conservation, providing loan guarantees to green businesses, campaign to get universities to divest from fossil fuel companies</i>	Activities using market forces to change attitudes and behaviors. It is closely aligned with 5.4 <i>Direct Financial or Economic Incentives</i> , with the difference being that in this case, the implementer does not have to raise the funds to make the conservation payments, but is instead relying on market forces to drive the system.	Creating incentives to change behaviors through... 1 "Green" certification of products or services 2 Boycotts of "non-green" products or services 3 Environmental markets (eg CO2 emissions, water) 4 "Green" financing (eg bank loans, divestiture)
	5.4 Direct Economic Incentives	Using direct or indirect payments or ascribing economic value to change behaviors and attitudes	<i>compensation payments for elephant crop-damage, giving or raising money for "green" political candidates, providing medical clinic in return for conservation, tax incentives to promote conservation, punitive taxes on high fuel consuming cars, using economic valuation of wetland flood protection services to promote wetland conservation, prizes for environmental work</i>	Activities using non-market based financial and economic incentives to change behavior. In this case, the implementer has to raise ongoing funds needed to make conservation payments or provide subsidies and also needs to ensure that the subsidies go to the right people. It is also possible to have financial dis-incentives in the form of taxes. There may be a research component to Valuation of Ecological Services. Awards & prizes could also be seen as an outreach strategy, since they often seek to draw attention to conservation work and issues as much or more than they directly incent conservation behavior.	Creating incentive to change behaviors through... 1 Direct payments or subsidies for desired behaviors 2 Taxes on undesired behaviors 3 Valuation of ecological services 4 Monetary awards & prizes
	5.5 Non-Monetary Values	Using intangible and moral values to change behaviors and attitudes	linking conservation to human health, well-rounded education, food security; developing spiritual, religious, mental, physical benefits/reasons for conservation	There is some overlap between this category and 3.1 <i>Outreach & Communications</i> since it seems likely that actively promoting these intangible incentives would require some sort of outreach strategy or 'lifestyle marketing'. Research to determine values could go here or in 8.1 <i>Basic Research & Status Monitoring</i> .	Creating incentives to change behaviors by appealing to... 1 Health & social service benefits 2 Security benefits 3 Spiritual / moral / cultural benefits
C. ENABLING CONDITION ACTIONS		Actions to create the conditions necessary for other conservation efforts to succeed		These actions generally require other actions to be completed in order to ultimately conserve the target(s).	
6. Conservation Designation & Planning		Actions directly protecting sites and/or species		This class contains all actions related to establishing direct protection of sites and species. It technically could be a subset of 7. <i>Legal & Policy Frameworks</i> , but is so central to conservation that it gets its own entry. Direct management actions for sites and species go in Classes 1 and 2.	
	6.1 Protected Area Designation &/or Acquisition	Legally or formally establishing or expanding public or private parks, reserves, and other protected areas roughly equivalent to IUCN Categories I-IV	<i>gazetting a national park, demarcating a town wildlife sanctuary, purchasing a land trust property, establishing tribally owned hunting grounds</i>	This category covers the establishment of protected areas; ongoing management of the protected areas involves using other actions listed in this classification.	Establishing or demarcating... 1 Government protected area 2 Private protected area 3 Community or tribal natural resource use area
	6.2 Easements & Resource Rights	Legally or formally establishing protection of some specific aspect of the natural resources on public or private lands	<i>convincing landowners to establish easement restricting development rights, purchasing water/instream flow rights, securing resource tenure rights for local communities</i>	This category focuses on establishing protection over one or more resources on site, rather than the overall site itself. Easements that provide tax breaks other financial incentives to landowners could be classified as 5.4 <i>Direct Economic Incentives</i> , but are here to show their link to land and resource protection.	Purchasing or promoting... 1 Conservation easements 2 Specific resource rights
	6.3 Land/Water Use Zoning & Designation	Designating land/water uses or designating conservation areas outside of IUCN Categories I-IV	<i>zoning development vs conservation areas, designating a wild & scenic river or an important bat conservation area (without formal protection)</i>	This category includes both land/use planning and zoning (which may or may not have legal standing) as well as designating conservation areas that have limited or even no legal protection, and thus are aimed at attracting conservation attention to the area.	Conducting or doing... 1 Land-use zoning (where to put plantations, housing) 2 Conservation area designation (beyond protected areas)

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	6.4 Conservation Planning	Planning for management of sites, species, or thematic conservation projects	<i>developing a management plan for a national park, revision of an existing plan for a migratory bird species across its range, spatial planning and prioritization effort to identify important bat areas, planning a livelihood project</i>	This category involves actions needed to iteratively design and plan for the management of sites, species and other taxa, and thematic projects and programs. Thematic projects are non-site-based or species-based (eg stopping illegal wildlife trade). This category includes planning and oversight of conservation activities, but not implementation of these activities (which are all the other actions in this classification). There is a fuzzy line between planning (this category) and the iterative adaptive management that results from the work in <i>8.2 Evaluation, Effectiveness Monitoring & Learning</i> .	Planning for managing... 1 Ecoregions or large land/seascapes 2 Sites/protected areas 3 Species/taxonomic groups 4 Thematic projects and programs
	6.5 Site Infrastructure	Building or maintaining the physical infrastructure for protected areas and other conservation sites	<i>creating guard posts, border fences, roads, recreational areas</i>	This category is primarily about building and maintaining capital investments; expenditures on routine maintenance belong in 1.1.	Building or maintaining infrastructure to support site... 1 Protection (eg border fences, patrol huts) 2 Direct management (eg greenhouses, supply sheds) 3 Resource extraction (eg sawmill, fish processing building) 4 Transport (eg roads, airstrips) 5 Tourism & recreation (eg visitor centers, boat ramps) 6 Learning & research (eg student dorms, labs) 7 Administration (eg headquarters, power plants)
7. Legal & Policy Frameworks		Actions developing and influencing legislation, policies and voluntary standards affecting conservation		This class contains all actions related to the development of conservation laws and policies except those in 6. <i>Conservation Designation</i> . Note that different societies and legal systems use words like "regulations" and "policies" in different ways.	
	7.1 Laws, Regulations & Codes	Creating, amending, or influencing laws, regulations and codes at all levels	<i>advocating for strengthening international wildlife trade laws, writing national legislation for endangered species conservation, proposing state or provincial ballot initiatives to fund conservation, making the case for town sewage regulations, enacting tribal laws governing hunting seasons, creating a roundtable of key soy producers to create standards for responsible soy production</i>	Laws and regulations refers to the official legal code governing society – what some people refer to as "hard law." Private sector/civil society codes are formal agreements among various organizations. Different actors play different roles in the overall legislative process. For example, only government agencies enact public legislation, but NGOs and other actors can write draft legislation, educate or lobby lawmakers, and otherwise try to influence the legislative process.	Creating, amending or influencing environment-related... 1 International law, conventions & treaties 2 National law or regulations 3 State/provincial law or regulations 4 Municipal law or regulations 5 Tribal law & formal customs 6 Private sector/civil society codes 7 Cross-sectoral
	7.2 Policies & Guidelines	Creating, amending, or influencing policies and guidelines at all levels	<i>advocating for agency implementation of international wildlife trade laws, writing national policies for endangered species conservation, serving on agency-NGO committee to determine hunting permitting processes, providing support to tribal leaders on environmental matters</i>	Policies and guidelines govern how legislation, regulations or codes are implemented – what some people refer to as "soft law."	Creating, amending or influencing environment-related... 1 International policies 2 National policies 3 State/provincial policies 4 Municipal policies 5 Tribal policies 6 Private sector/civil society policies 7 Cross-sectoral
8. Research & Monitoring		Actions collecting data and transforming it into information to support conservation work		This class contains conservation actions that primarily involve research and monitoring that build the knowledge base needed to support conservation.	
	8.1 Basic Research & Status Monitoring	Collecting, managing and analyzing data and creating information about any conservation-related factors	<i>biological research on the distribution of an endangered bird, setting up a database/scorecard on the status of wetlands in a region, modelling climate change effects, surveying income and attitudes of local community members</i>	Research that contributes to basic understanding of the situations in which conservation takes place, independent of any specific conservation actions. It also includes to data collection to assess the status of key factors in these situations. This category includes all aspects of the research process including writing or reviewing proposals, developing protocols and methods, collecting data, analyzing data, creating or maintaining data storage and aggregation tools, peer reviewing results, and sharing and disseminating findings.	Conducting research or analysis in different disciplines on... 1 Biological targets 2 Human wellbeing targets 3 Threats / biophysical factors 4 Socioeconomic drivers
	8.2 Evaluation, Effectiveness Measures & Learning	Assessing and learning about the effectiveness of conservation work	<i>formative evaluation of a conservation project, conducting a systematic review of the effectiveness of an action, creating a database of conservation projects, developing standard classifications</i>	Collecting data and creating information related to the effectiveness of specific conservation actions at all scales. This category includes all aspects of the research process including writing or reviewing proposals, developing protocols and methods, collecting data, analyzing data, creating or maintaining data storage and aggregation tools, peer reviewing results, and sharing and disseminating findings.	Collecting information about conservation work... 1 Specific projects 2 Cross-project or program comparisons 3 Discipline-level frameworks (double loop learning)

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9. Education & Training		Actions enhancing the knowledge and skills of specific individuals		This class contains actions that build individual capacity to do good conservation. Traditional "environmental education" is an awareness / behavior change strategy and is thus in 3.1 <i>Outreach & Communications</i> . Formal education seeks to build the long-term conservation capacity of students. A specific strategy of providing general education to resource users so that they have non-resource using livelihood alternatives should be included in 5.1 <i>Linked Enterprises & Alternative Livelihoods</i> . Providing practitioners with specific knowledge and skills. Coaching involves more hands-on work with practitioners as they actually implement conservation activities whereas training is more about providing basic knowledge and skills that will be applied at a later date. There is a fine line between providing technical assistance as primary strategy vs providing technical assistance as one activity within another action such as 5.2 <i>Better Products & Management Practices</i> . See also 4.2 <i>related to Law Enforcement</i> . This class contains actions that build institutional capacity to do good conservation. The term "organization" is used to encompass all types of institutions including government agencies, not-for-profits, firms and communities of practice.	
	9.1 Formal Education	Enhancing knowledge and skills of students in a formal degree program	<i>creating a high school environmental course, teaching a conservation module in a university course, writing a conservation text book</i>		Providing conservation courses, modules or materials for... 1 Primary education 2 Secondary education 3 College or university education 4 Adult / continuing education
	9.2 Training & Individual Capacity Development	Enhancing knowledge, skills and information exchange for practitioners, stakeholders, and other relevant individuals in structured settings outside of degree programs	<i>coaching a team developing a strategic plan, providing technical assistance to landowners to use better practices, training course in proscribed fire, writing how-to manuals for project managers, elders sharing traditional ecological knowledge</i>		Providing conservation capacity development through... 1 Hands-on coaching & technical assistance 2 Workshops & professional development training courses 3 Developing training materials (manuals, software, videos)
10. Institutional Development		Actions creating the institutions needed to support conservation work			
	10.1 Internal Organizational Management & Administration	The basic work needed to establish and operate conservation organizations	<i>hiring and managing staff for protected areas or conservation agencies, serving on the board of a conservation organization, managing a conservation program, providing basic support functions for a reserve</i>	This category covers all the basic functions needed to support one's own organization.	Establishing & managing conservation organizations 1 Governance 2 Executive management 3 Human resources 4 Financial & legal management 5 Fundraising 6 Communications 7 Program / project management 8 Provision of org facilities & technology 9 Support functions (administrative professionals, guards, etc.)
	10.2 External Organizational Development & Support	Creating or providing non-financial support & capacity building for conservation organizations	<i>providing consulting services to a conservation organization, international volunteers or circuit riders helping to develop organizational capacity, work to create and strengthen courts that can prosecute wildlife crimes, helping catalyze and incubate formation of a new land trust, developing work planning software for conservation organizations</i>	This category covers most non-financial work involved in supporting other organizations to do conservation work. There is a fine line between providing technical assistance (9.2 <i>Training & Capacity Development</i>) which focuses primarily on individuals and project teams versus this category which focuses primarily on entire programs and organizations.	Establishing & supporting organizations through... 1 Direct organizational support (consulting / volunteering) 2 Organizational establishment & incubation 3 Providing association / membership services (LTA, AZA) 4 Developing / providing organizational management tools
	10.3 Alliance & Partnership Development	Forming and facilitating partnerships, alliances, and networks of organizations	<i>convening meetings of local stakeholders in a community reserve, an international forum to share information about wildlife crimes, a membership services association of land trusts, a regional learning network, an international academic society</i>	This category encompasses work to create cross-organizational conservation institutions. Many of these partnerships provide support to their members so there is a fine line between 10.2 <i>External Organizational Development & Support</i> and this category; the former has supporting individual organizations as its primary focus whereas the latter is more about maintaining the network.	Creating or maintaining partnerships focused on... 1 Coordinating conservation implementation 2 Knowledge generation & sharing
	10.4 Financing Conservation	Raising and providing funds for conservation work	<i>door-to-door fundraising efforts, private foundation or government grants, foundation investments in green businesses, corporate philanthropy, national debt-for-nature swaps</i>	This category includes work aimed primarily at providing funding for conservation work. Obviously, almost every other action has some component of financing. There is some potential overlap with 5.4 <i>Direct Economic Incentives</i> and this category; with the difference being that the former is targeted to incenting specific behaviors, whereas the latter is about generally providing the funds required to take on other conservation actions.	Providing funds for conservation including... 1 Member / small contributions 2 Unrestricted grants 3 Restricted grants (eg scholarships, for a specific project) 4 Program related investments / soft loans 5 Commercial loans 6 In-kind services 7 Financing mechanisms (eg debt-for-nature swaps)