Stress Taxonomy

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| **Code** | **Stress** | **Description** |
| **S1** | **Changes in habitat extent and quality** |  |
| S1.1 | Changes in habitat size | Changes in geographical extent of habitat, including loss from sea level rise and latitudinal shifting of climatic space |
| S1.2 | Habitat fragmentation | Discontinuity within habitats, communities and ecosystems; including barriers to movement among or within habitats. |
| S1.3 | Habitat degradation | Changes to habitat quality or structure that diminish its ability to support associated species and communities; includes loss of ecosystem function. |
| **S2** | **Altered landscape mosaic** |  |
| S2.1 | Altered landscape permeability | Insufficient connectivity to allow species access to all habitat and resources needed to complete lifecycle; also includes insufficient connectivity to allow species/communites to move in response to environmental change |
| S2.2 | Altered spatial distribution of habitat types | Changes in extent or distribution of habitat types across landscape, including loss or gain of habitat types within a landscape |
| **S3** | **Altered disturbance regime** |  |
| S3.1 | Altered fire regime | Local changes in timing frequency or intensity of fire |
| S3.2 | Changes in severe weather events | Local changes in timing, frequency or intensity of severe weather events such as hurricanes, tornadoes, wind storms, floods, etc. |
| S3.3 | Altered pest and disease outbreaks | Changes in the timing, frequency or intensity or geographic extent of pest or disease outbreaks. |
| S3.4 | Altered patterns of erosion |  |
| **S4** | **Altered hydrologic regime** |  |
| S4.1 | Changes to groundwater tables |  |
| S4.2 | Changes in surface runoff |  |
| S4.3 | Changes in stream flow |  |
| S4.4 | Changes in water levels and hydroperiod | Changes in water levels or hydroperiod, including variability (lakes, ponds, wetlands, floodplains), includes timing of seasonal low and high flows |
| S4.5 | Changes in flood frequency or extent |  |
| S4.6 | Altered sediment transport processes |  |
| **S5** | **Altered coastal and ocean dynamics** |  |
| S5.1 | Changes in coastal accretion and sedimentation rates |  |
| S5.2 | Changes in coastal flooding and inundation |  |
| S5.3 | Altered current and upwelling processes |  |
| **S6** | **Altered water characteristics** |  |
| S6.1 | Altered water chemistry | Including changes in pH, dissolved oxygen, salinity, etc. |
| S6.2 | Changes in concentrations or toxicity of water pollutants |  |
| S6.3 | Altered water temperature |  |
| S6.4 | Changes in turbidity and sediment load |  |
| **S7** | **Altered soil characteristics** |  |
| S7.1 | Changes in soil chemistry | Change in accumulation or toxicity of pollutants or other non-nutrient elements |
| S7.2 | Changes in soil moisture |  |
| S7.3 | Changes in soil temperature |  |
| S7.4 | Increased soil disturbance | Including compaction, erosion or landslides |
| **S8** | **Changes in snow and ice** |  |
| S8.1 | Changes in snowpack/ice duration and thickness |  |
| S8.2 | Changes in length of snow cover period |  |
| S8.3 | Changes in permafrost depth or attributes |  |
| **S9** | **Altered community structure or composition** | Changes in community structure or composition resulting from loss of biotic structural elements or other species, gain of new species, or changes in abundance. |
| S9.1 | Key species or groups missing or lacking in abundance |  |
| S9.2 | Appearance of new species |  |
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| S9.3 | Changes in relative abundance or dominance of species |  |
| **S10** | **Altered community dynamics** |  |
| S10.1 | Loss or change in biotic interactions | Including depredation, herbivory, parasitism, multualisms, competition |
| S10.2 | Changes in abiotic resource availability | Changes abiotic resource availability resulting from changes in nutrient cycles |
| S10.3 | Changes in functional processes of ecosystem | Changes in functional processes regulating resource availability, such as decomposition and primary productivity |
| **S11** | **Changes in species-level processes affecting fitness** |  |
| S11.1 | Changes in mortality events | Direct mortality resulting from habitat loss, altered environmental conditions, or altered biotic interactions |
| S11.2 | Changes in metabolic or physiological processes | Changes in metabolic or physiological processes, may result in physiological stress to organism |
| S11.3 | Changes in growth and reproduction | Changes in growth or reproduction that affect reproductive success, including changes in fecundity and sex ratios of offspring |
| S11.4 | Phenological mismatches | De-synchronization in timing of life cycle events with environmental or biotic controls, for example mismatches in the timing of migration or reproduction with food availability. |
| S11.5 | Changes in species range or extent of occurrence | Changes in size or location of species range due to changes in dispersal, recruitment, or migration patterns. |
| S11.6 | Evolutionary and genetic changes | Changes in genetic diversity or gene frequencies. |