| **Environmental aspect** | **Potential impact** |
| --- | --- |
| **1. Presence**   * The presence of people and human-made objects in the Antarctic. | * Modification of, or risk to aesthetic, or wilderness significance and intrinsic values. |
| **2. Atmospheric emissions**   * Discharge of emissions to the atmosphere (including greenhouse gases and particulates) from engines, generators and incinerators, signalling or marking devices. | * Pollution of marine, terrestrial, freshwater and atmospheric environments. |
| **3. Anchoring**   * Interaction with the seafloor or coastal mooring sites from deploying and retrieving anchors and anchor chains. | * Disturbance and damage of benthic marine species, communities and habitats. |
| **4. Light emission**   * Discharge / escape of light from windows and other sources during dark hours. | * Injury or death of seabirds striking vessels (see interaction with wildlife). |
| **5. Generation of noise**   * Sound arising from activities in water, on land or in the air from the operation of vessels, small boats, aircraft, equipment or from individuals or groups of people. | * Disturbance to wildlife. |
| **6. Release of waste**   * Release or loss of any garbage, sewage, chemicals, noxious substances, pollutants, equipment or presence of toxic coatings (e.g. antifouling on hulls). | * Pollution of marine, terrestrial and freshwater environments. * Introduction of pathogens. * Toxicity and other chronic impacts at the species, habitat and ecosystem level. |
| **7. Release of fuel, oil or oily mixtures**   * Leak or spill of oil or oily wastes to the environment, including the subsequent movement of such substances. | * Pollution of marine, terrestrial and freshwater environments. * Toxicity and other chronic impacts at the species, habitat and ecosystem level. |
| **8. Interaction with water and ice**   * Disturbance to the water column, by vessel movement or propulsion. * Altered wave action. * Direct breaking of sea ice with a vessel. | * Mixing of the water column resulting in sediment disturbance or ecosystem disruptions. * Coastal erosion from wave action. * Enhanced breakout of sea ice. |
| **9. Interaction with ice-free ground**   * Direct or indirect contact with land by foot traffic, vehicles, camp equipment, etc. | * Physical changes to the landscape (e.g. erosion, tracks) * Physical changes to watercourses. * Alien species introductions. * Modification in the distribution, abundance or biodiverity of species or populations of species of fauna and flora. * Altered ecosystem performance. |
| **10. Interaction with wildlife**   * Direct or indirect contact with, or approach to, wildlife. | * Changes to wildlife behaviour, physiology and breeding success. * Increased risk to endangered or threatened species or populations of such species. |
| **11. Interaction with vegetation**   * Direct or indirect contact with vegetation or controls on vegetation abundance (e.g. altered water availability). | * Physical damage to flora. * Modification in the distribution, abundance or productivity of species or populations of species of flora. * Increased risk to endangered or threatened species or populations of such species. |
| **12. Interaction with historic sites**   * Direct or indirect contact with historic sites, monuments or artefacts and taking of artefacts. | * Detrimental changes to the historic values of the areas or items of historic significance. * Enhanced deterioration of or damage to historic sites and monuments through physical contact. |
| **13. Interaction with scientific stations or scientific research**   * Direct or indirect contact with science equipment, monitoring or research sites and with station activities. | * Degradation of scientific values. * Interruption of station activity. * Interruption of, or interference with experimentation. |
| **14. Transfer of non native species or propagules**  **(via**  **ballast water, vessel hulls, anchors, clothing, footwear, non-sterile soil)**   * Unintended introduction to the Antarctic region of species not native to that region, and the movement of species within Antarctica from one biogeographic zone to any other. | * Alien species introduced. * Modification in the distribution, abundance or biodiverity of species or populations of species of fauna and flora. * Altered ecosystem performance. * Increased risk to endangered or threatened species or populations of such species. |

<http://www.ats.aq/documents/ATCM35/att/ATCM35_att067_e.doc>