

Abstract

Recently, there has been much discussion about animal welfare and the impact of visitors on stress levels of zoo animals. Therefore, stress levels of seven Alpine ibexes (*Capra ibex*) in a walk-in wildlife enclosure were investigated. The study took place from 13th of August 2020 to 16th of November 2020 in the Tyrolian ibex centre in Austria. The behavior of animals was observed twice a week, and faecal samples were collected the following day. Stress levels were analyzed by measuring the faecal cortisol metabolite concentration. Conclusions can be drawn about the influence of climate and visitors because maximal faecal cortisol concentration was measured 7,5 to 9 hours after stress load.

There was no significant correlation between sex or age of the animals and cortisol metabolites. In contrast, numbers of visitors, group density and proximity towards the visitors influenced the stress levels significantly. Besides visitors, the climate is also a source of stress. Higher temperatures, solar radiation and squalls correlated positively with concentrations of cortisol metabolites while air pressure and humidity correlated negatively. There was also a positive correlation between stressful behavior and stress levels. Against the presumption days with higher numbers of visitors didn't cause more stress than days with higher temperatures and solar radiation.

The results of this study prove that both visitors and climate conditions can be a problem in terms of animal welfare by alpine ibex.