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*How Climate Affects the Spread of Invasive Species*

The purpose of this project was to determine the affect of increased precipitation on the invasive cheatgrass compared to the native wheatgrass. We hypothesized that cheatgrass has a higher survival rate than wheatgrass, and has the highest survival rate in low watering conditions because it does well in desert climates. We hypothesized that the wheatgrass would have the highest survival rate in high watering conditions. The experiment involved growing wheatgrass and cheatgrass in a greenhouse under high and low precipitation conditions. The different plants were invaded into each other under these conditions. The data collected supported the original hypotheses. Cheatgrass sprouts invaded into both wheatgrass and cheatgrass pots at low precipitation had the highest survival rate; invaded cheatgrass sprouts averaged 4.75 sprouts per pot in original cheatgrass pots and 6.75 sprouts in original wheatgrass pots at low precipitation. The wheatgrass sprouts didn't do as well, even at high precipitation; they averaged 4.62 sprouts per pot in cheatgrass pots and 5.12 sprouts per pot in wheatgrass pots. This data supports our hypotheses because the cheatgrass had a higher survival rate overall, and did the best at low precipitation. These findings lead us to believe that as our climate changes, affecting the levels of precipitation in Boulder County, cheatgrass will become more of a problem if our climate becomes drier. Wheatgrass will not do as well if our climate dries, thus creating a larger cheatgrass populations which will lead to a less diverse ecosystem around Boulder.