Increasing public interest in and expanding use of kelp aquaculture has recently led to a glut of kelp in an underdeveloped market. There exist high levels of interest in using kelp aquaculture as a method of carbon sequestration, both as the primary purpose and as a secondary use after kelps are used for other purposes first. The extent to which kelps will be effective at sequestering carbon, and the best methods of doing so, are not yet fully understood and merit extensive research. The purpose of this project was to investigate soil sequestration as a means of sequestering carbon from kelp by monitoring the impacts application of kelp compost has on a terrestrial grassland environment. This project involved an experiment located on grasslands at the UW Farm in which 1m² plots were subjected to treatment with kelp compost. Additionally, some plots were covered with either a black tarp or Reemay cloth in order to better understand if changes in uncovered treated plots were a result of the kelp’s interaction with the soil versus plants. Kelp researchers were interviewed for feedback on experimental design and ideas for further research. The experiment is ongoing but initial plant growth and pasture health data indicate improved growth in treated plots indicating increased carbon storage. This may be corroborated with soil samples to be taken at the end of the experiment. If true, soil carbon sequestration could be promising, allowing for increased demand of kelp products and making kelp farming more economically viable.