



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: Microplastics Quantification of Waterfowl in SE Colorado/SW Kansas

Finalist's Name: Sage Ketels

School and City: Lamar High School, Lamar

Sponsor's Name: Ms. Robin Staker

Category: Earth & Environmental Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

This project is about finding microplastics in waterfowl. The issue of microplastics pollution gets worse as plastic particles break down into smaller particles as a result of various physical, chemical, and environmental factors. The amount of microplastics pollution is growing every day, increasing the risk of ecosystem exposure. My hypothesis stated that I would find more than 10 microplastics in the crops of the waterfowl. I also believed that fibers would be the most dominant microplastics. Forty-five waterfowl (Canadian Geese & Snow Geese) were obtained and the grit from the crops and gizzards were removed. The grit was placed in potassium hydroxide for 24 hours at 55 degrees Celsius. Salt water was added and stirred. The contents were sieved and dried for forty-eight hours. Samples were examined with a magnifying glass and potential microplastics were placed in clear nail polish on a microscope slide. Fifty-one percent of the waterfowl contained plastics. A total of thirty-six microplastics were identified. All the microplastics were fibers. Fifty-three percent of the fibers were small (less than 1 mm) and forty-four percent were white in color. The data supported my hypothesis.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**