

The Value of Spiders: Why Should We Care?

Antelope Island Spider Festival

Spiders are a diverse group of arthropods with about 40,000 species worldwide. They are important as predators and as prey in ecosystems on all continents, except Antarctica. Their value to humanity is outlined in the list below.

- In societies throughout the world, spiders have served as important cultural and religious symbols. For example, in the American Southwest, spiders figure prominently in the creation stories of some native cultures.
- In Western culture, spiders have served as inspiration for literature (E.B. White's *Charlotte's Web*), poetry (Emily Dickinson's *The Spider Holds a Silver Ball*), film (*Arachnophobia*), comics (Spiderman), and practices associated with an important secular holiday, Halloween.
- Spiders have influenced language (e.g., world wide web and "tangled web") and place names (e.g., Poison Spider, WY and Spider Lake in the Uinta's).
- As diverse and abundant animals in most ecosystems, spiders are key predators of other invertebrates, especially insects. They also serve as important prey for many birds, lizards, and other animals. For example, the loss of several native birds species on Guam has led to a measurable increase in spider abundance.
- Spiders have also been employed as bioindicators of human activity. For example, some spiders collected from Antelope Island have been found to have high concentrations of mercury. This indicates that mercury rained and washed into the lake has made its way into terrestrial food webs through the brine flies consumed by spiders.
- Research applications based on an understanding of the chemistry and physical properties of silk are a rapidly developing area of science. The production of large quantities of spider silk through genetic engineering or synthetic chemistry holds promise for the making of fabrics, artificial tendons and ligaments, biodegradable fishing line and sutures, and other products. One lab involved in such research is located at Utah State University: <http://www.sbi.usu.edu/single-blog-spider.cfm>.
- Finally, research applications based on understanding the structure and function of components found in spider venom hold promise for developing new control methods for pest insects, as well as treatments for cardiac arrhythmia, Alzheimer's, and muscular dystrophy.