

Project Information for the ATBI Bear Bacteria Project

Project Details

Principal Investigator: Stephen Kania

Project Description: Study/inventory of Staphilococcus bacteria in bears of the Park. (DLIA2010-07)

Project Dates: **Start Date:** 1/1/2010 **End Date:** 12/31/2010

Protocol: For this study samples were collected by swabbing up to five sites on 14 nuisance bears. Samples were collected by park personnel, transferred to the University of Tennessee College of Veterinary Medicine Bacteriology Laboratory and cultured. They were tentatively identified using standard biochemical techniques and antibiotic susceptibility was determined for staphylococcal species using the Kirby-Bauer disk diffusion method on Mueller-Hinton agar plates.[1, 3-5] DNA was extracted from all samples and their 16S rRNA genes were amplified by PCR and the genes sequences. The sequence information was compared to deposits in a public database (GenBank) to determine the identity of the isolates at the genus or species level.

Project Notes: Park staff collected bacteria from bears for the investigation.

Summary: Thus bacterial flora may serve as an indicator of human influence on wild animals. This study was undertaken to determine which species of staphylococci colonize black bears in the (GSMNP), to search for previously unidentified species of staphylococci, and to determine the extent of antibiotic resistance occurring in staphylococci isolated from bears to gain a better understanding of the influence of human-bear interactions on bacterial flora and to serve as a time point reference for future studies.

Data Summary

Data Collection Year(s):

Number of Sites Sampled:	1
Number of Samplings:	44
Number of Orders Identified:	2
Number of Families Identified:	2
Number of Genera Identified:	2
Number of Species Identified:	12
Number of Specimens Identified to Species:	72
Number of Specimens not Identified to Species:	2
Total Number of Individuals Counted (actual or estimated):	74
Percentage of Major Watersheds Sampled:	2 %