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NWRC Research Areas: Wildlife Genetics

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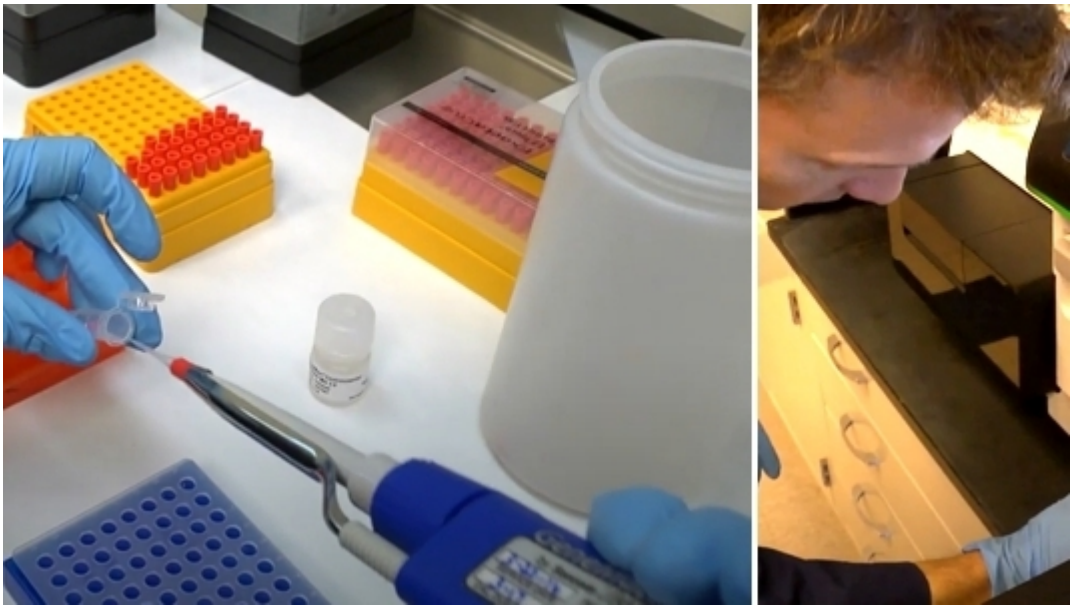

Our scientists apply and develop DNA tools for use in wildlife damage and disease management.

Wildlife geneticists at NWRC collect DNA using direct (i.e., tissue or blood), non-invasive (samples such as blood, hair, feces, saliva, that are available from an animal without having to handle it), or environmental (water, air, or soil) sampling to

uncover valuable information. Our genomic analyses include diet analysis, presence/absence, DNA forensics, species abundance and monitoring, behavior, movements, kinship/relatedness, gender determination, evolutionary relationships, and species or individual animal identification. Our laboratory approaches include next-generation sequencing platforms (Illumina and Nanopore), Sanger sequencing (ABI), single-nucleotide polymorphism (SNPs), droplet digital PCR (Bio-Rad), and microsatellites.

Our goal is to apply DNA technology to wildlife damage management and wildlife disease issues. We strive to apply the most advanced DNA technology possible to these issues and provide methods and information to address human-wildlife conflicts. We work with a diverse group of collaborators including researchers and experts in other NWRC projects, Wildlife Services' Operations and National Programs, APHIS-International Services, universities, state and federal agencies, museums, and foreign governments.

Genetics research encompasses a broad range of animal taxa including wolves, mountain lions, coyotes, bats, raccoons, mongoose, rats, mice, Burmese pythons, mountain beavers, deer, beavers, nutria, vultures, and feral swine. It also includes the study of pathogen vector species (e.g., biting midges, feral swine, bats, and raccoons) and associated pathogens, such as avian influenza viruses, rabies, and avian blood parasites. More recently, NWRC geneticists are investigating the feasibility of genome editing for invasive species management designed for a target population, have less environmental burden than current tools, and be more humane.

Related Links

- Wildlife Genetics (project publications)
- Feral Swine Genetic Archive

Contact Us

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