



# Priority Action Report

## Wildlife Forensics Subcommittee

Biology/DNA

Kimberly Frazier

February 13, 2017





# Subcommittee Leadership

Position	Name	Organization	Term	Email
Chair	Kimberly Frazier, M.S	Wyoming Game and Fish Dept.	4	<a href="mailto:Kim.frazier@wyo.gov">Kim.frazier@wyo.gov</a>
Vice Chair	Jason Byrd, Ph.D	University of Florida / Maples Center for Forensic Medicine	3	<a href="mailto:jhbyrd@ufl.edu">jhbyrd@ufl.edu</a>
Executive Secretary	Mary Burnham-Curtis, Ph.D	National Fish & Wildlife Service	3	<a href="mailto:Mary_curtis@fws.gov">Mary_curtis@fws.gov</a>



# Subcommittee Members



#	Name	Organization	Term	Email
1	Brandt Cassidy, Ph.D	DNA Solutions	3	<a href="mailto:bgcassidy@cox.net">bgcassidy@cox.net</a>
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8	Christina Lindquist, M.S	UC Davis, Veterinary Genetics Laboratory, Forensic Unit	3	<a href="mailto:cdlindquist@ucdavis.edu">cdlindquist@ucdavis.edu</a>
9	R. Christopher O'Brien, Ph.D	University of New Haven	4	<a href="mailto:rcobrien@newhaven.edu">rcobrien@newhaven.edu</a>
10	Michael Stockdale	Tennessee Wildlife Resources Agency	3	<a href="mailto:mike.stockdale2009@gmail.com">mike.stockdale2009@gmail.com</a>



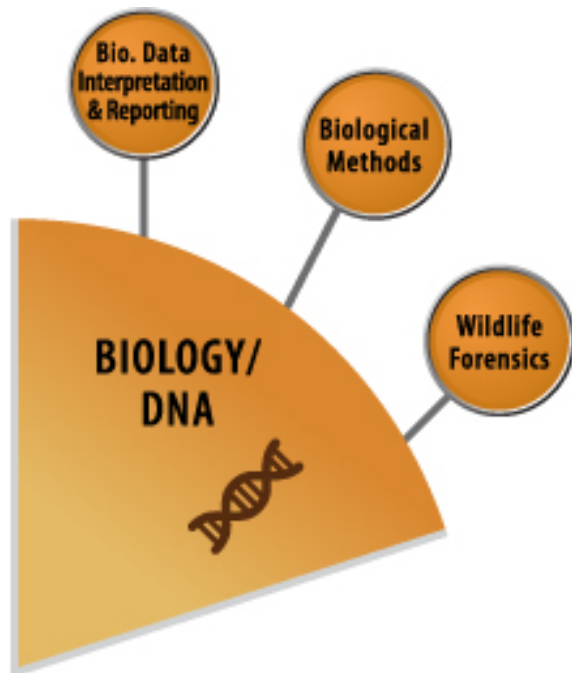
# Affiliates



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14	John Planz, Ph.D	UNT Health Science Center,, UNT Center for Human Identification		<a href="mailto:john.planz@unthsc.edu">john.planz@unthsc.edu</a>



# Discipline Description



The Wildlife Forensics Subcommittee focuses on standards and guidelines related to taxonomic identification, individualization, and geographic origin of non-human biological evidence based on morphological and genetic analyses.

# Summary of Priority Projects

Priority	OSAC Process	Working Title of Document
1	SDO	Wildlife Forensics DNA Standards
2	SDO	Wildlife Forensics Validation Standards- STR Analysis
3	SDO	Wildlife Forensics Validation Standards –Sequencing
4	SDO	Wildlife Forensics Methods- Sampling of Reference Samples

# Standards/Guidelines Development Priority Document #1

Document Title: Wildlife Forensics DNA Standards

Scope: These standards refer to general considerations in the application of genetic techniques in analyzing wildlife forensic evidence. They also cover specific wildlife DNA analyses currently widely employed, such as DNA sequencing for the identification of class characters, and DNA fragment analysis of short tandem repeats (STRs) for establishing individual identity.

Objective/rationale: This document covers good laboratory practices, evidence handling, and training which are central to all forensic laboratories. Furthermore, these standards also address considerations of phylogeny, taxonomy, and reference collections that are specific to wildlife forensic science.

**Task Group Name: DNA Standards**

**Task Group Chair Name: Tasha Bauman**

**Task Group Chair Contact Information:**

**tasha.bauman@wyo.gov**

**Date of Last Task Group Meeting: Jan. 2017**

# Standards/Guidelines Development Priority Document #1

Key Components of Standard:

- Laboratory (cleaning, decontamination, separation of pre and post PCR)
- DNA extraction
- Amplification
- Analysis and interpretation
- Statistics
- Taxonomic identification
- Mitochondrial haplotyping
- Quality controls
- Population assignment







# Priority 1: Wildlife Forensics DNA Standards

## Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Finalize sections 3-General DNA Standard, 4-Sequencing Analysis and 5- STR Analysis	SDO100	Task Group	February 2017
Adjudicate comments from the RCs	SDO200	Tasha Bauman	February 2017
Pull terminology from the bio-terms glossary	SDO100	Mary Burnham-Curtis	March 2017
Finalize DNA Standards & Guidelines with the SC	SDO100	Wildlife Subcommittee	April 2017



# Standards/Guidelines Development Priority Document #2

Document Title: Wildlife Forensics Validation Standards- STR Analysis

Scope: This document provides minimum standards and recommendations for validating new STR (Short tandem repeat, nuclear DNA) markers for use in wildlife forensic DNA laboratories where the STR genotyping method has already been validated.

Objective/rationale: Wildlife forensic labs do not have a specific kit for use in STR analysis. We feel it is imperative to have a standard guiding the implementation of new markers in any panel set.

**Task Group Name: Validation- STR Analysis**

**Task Group Chair Name: Christina Lindquist and Brandt Cassidy**

**Task Group Chair Contact Information:  
cdlindquist@ucdavis.edu**

**Date of Last Task Group Meeting: January 2017**



# Standards/Guidelines Development Priority Document #2

Key Components of Standard:

- Characterization of genetic markers
- Species specificity
- Sensitivity and stochastic studies
- Precision and accuracy
- Population studies
- Mixture studies
- PCR based studies



# Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Finalize document to send to RC and SAC	SDO100	Task Group	March 2017



# Standards/Guidelines Development Priority Document #3

Document Title: Wildlife Forensics Validation Standards-Sequencing

Scope: This document provides minimum standards and recommendations for validating new sequencing primers for taxonomic identification and mitochondrial haplotyping in wildlife forensic DNA laboratories where the sequencing (Sanger) method has already been validated.

Objective/rationale: The field of Wildlife Forensics encompasses numerous species. Proper taxonomic identification and haplotyping may at times require new primers. This standard offers guidance on the implementation of these primers.

**Task Group Name: Validation Standards- Sequencing**  
**Task Group Chair Name: Christina Lindquist\* and Brandt Cassidy**  
**Task Group Chair Contact Information:**  
**cdlindquist@ucdavis.edu**  
**Date of Last Task Group Meeting: January 2017**



# Standards/Guidelines Development Priority Document #3

Key Components of Standard:

- Characterization of genetic regions
- Species specificity
- Sensitivity studies
- Precision and accuracy of the assay
- Population Studies
- PCR based studies



# Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Finalize document to send to RC and SAC	SDO100	Task Group	March 2017



# Standards/Guidelines Development Priority Document #4

Document Title: Wildlife Forensics Methods- Sampling of Reference Samples

Scope: This document will provide a standard method for collecting a case reference sample, database samples and voucher samples from various non-human organisms

Objective/rationale: Collecting samples from species other than human can prove challenging. A standard method will alleviate some of these challenges

Issues/Concerns: Writing a standard method that will encompass all the species wildlife forensic labs encounter and different sampling procedures



# Standards/Guidelines Development Priority Document #4

Key Components of Standard:

- Sampling methods for database samples for statistical use
- Sampling methods to collect individual samples for comparison
- Sampling methods for voucher specimens



# Task Group/Subcommittee Action Plan

Planned Actions	OSAC Process Stage (e.g., SDO 100)	Assignee	Estimated Completion Date
Assign task group	SDO100	Kathy Moore	March 2017



# Summary of Standards/Guidelines Priority Actions

Priority	OSAC Process	Working Title of Document
1	SDO	Wildlife Forensic DNA Standards
2	SDO	Wildlife Forensic Validation Standards- STR Analysis
3	SDO	Wildlife Forensic Validation Standards –Sequencing
4	SDO	Wildlife Forensic Methods- Sampling of Reference Samples





# Standards/Guidelines Reviewed For Technical Merit

Title	Developing Organization	Status*	OSAC Process Stage (e.g., RA 100)
Wildlife Forensic- General Standard	WF Subcommittee	SDO300	RA-0
Wildlife Forensic-Report Writing Standard	WF Subcommittee	SDO300	RA-0
Wildlife Forensic- Morphology Standard	WF Subcommittee	SDO300	RA-0



# Research & Development Needs Identified

- Species specific STR panels and allelic ladders
  - ✓ Currently have several labs working on compiling markers for deer species
  - ✓ Grad student prepared to take on task of developing allelic ladders





***THANK YOU !!***

