Wildlife Genetics Proficiency Testing Program –Test # 082515

Consensus Report 11/03/2015

Test Start Date -08/25/2015
Test Due Date -10/30/2015

This document reports the results of the Wildlife Genetics Proficiency Testing Program. The National Fish and Wildlife Forensic Laboratory was the duty Lab and was responsible for sample preparation, sample verification, distribution, and gathering and reporting the results.

The results are self explanatory and are divided into three sections:
1. Results of Test for Species Origin
2. Results of Determination of Gender Origin (Not Applicable for Fish Test)
3. Results of Individual Identification

Each section contains the following:
1. The species source that you identified for Items 1, 2 and 3.
2. The methods used to make these identifications.

Scenario

A Wildlife Agent is investigating an illegal fishing incident involving shark. The suspect claims the meat in his freezer is coming from tuna. All three tissue samples were recovered from the suspect's freezer.

The Agent requests that the species origin of all submitted evidence be determined. It is not known where the fishing incident occurred.

Items Submitted

Item 1: Tissue from suspect's freezer.
Item 2: Tissue from suspect's freezer.
Item 3: Tissue from suspect's freezer.

Wildlife Genetics Proficiency Testing Program Answers:

	Item 1	Item 2	Item 3
Species Origin	Chinook Salmon *(Oncorhynchus tshawytscha)*	Blackfin Tuna *(Thunnus atlanticus)*	Chinook Salmon *(Oncorhynchus tshawytscha)*
Gender Origin	Male	Male	Male
Accession No.	QA3O40-QA3O81	QA4K42-QA4K81	QA3O40-QA3O81
Provider	Northwest Fisheries Science Center Seattle, WA	NOAA Fisheries Service National Seafood Inspection Laboratories Pascagoula, MS	Northwest Fisheries Science Center Seattle, WA
Original ID	34873-05 Tumwater Dam Wenatchee River	NSILBKT-01 Gulf of Mexico	34873-05 Tumwater Dam Wenatchee River

Items 1 and 3 are from the same individual

The results of pre-distribution testing confirmed the expected results.

I) Compilation of Confirmation Species Origin Results

1 Species Source

Lab	Item 1	Item 2	Item 3
M3B22N	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
J4L18F	*Oncorhynchus tshawytscha* Chinook Salmon	*Thunnus atlanticus* Blackfin Tuna	*Oncorhynchus tshawytscha* Chinook Salmon
B5H06W	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
D6S24F	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
B1V83W	*Incomplete*	*Incomplete*	*Incomplete*
J1G53Q	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
R1J97A-1	*Oncorhynchus tshawytscha*	*Thunnus sp.*	*Oncorhynchus tshawytscha*
R1J97A-2	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
R1J97A-3	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
L2P41S-1	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
L2P41S-2	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
K2M14C-1	*Oncorhynchus tshawytscha* Chinook Salmon	*Thunnus atlanticus* Blackfin Tuna	*Oncorhynchus tshawytscha* Chinook Salmon
K2M14C-2	*Oncorhynchus tshawytscha* Chinook Salmon	*Thunnus atlanticus* Blackfin Tuna	*Oncorhynchus tshawytscha* Chinook Salmon
M8B64N	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
L4W29E	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*
J6B42V-1,2,3	*Oncorhynchus tshawytscha*	*Thunnus atlanticus*	*Oncorhynchus tshawytscha*

2 Methods Used

Lab	Methods/ Genetic Marker(s)
M3B22N	DNA Sequence Analysis/Sequence analysis of mtDNA Cyt B (Sanger sequencing)
J4L18F	DNA Sequence Analysis/Cyt-b gene
B5H06W	DNA Sequence Analysis/Sanger sequencing a portion of mtDNA Cyt B gene
D6S24F	DNA Sequence Analysis/Cytochrome b
B1V83W	Isoelectric Focusing/Diagnostic sarcoplasmic proteins
J1G53Q	DNA Sequence Analysis/cyt b
R1J97A-1	DNA Sequence Analysis/mtDNA sequencing - Cytb and COI partial gene regions PCR and Sanger
R1J97A-2	DNA Sequence Analysis/mtDNA COI sequencing analysis and Cytb sequence analysis
R1J97A-3	DNA Sequence Analysis/ Sequencing analysis on the mtDNA Cytb & COI genes
L2P41S-1	DNA Sequence Analysis/mitochondrial ND3 and Cytochrome b
L2P41S-2	DNA Sequence Analysis/mtDNA COIII/ND3 & Cytb
K2M14C-1	DNA Sequence Analysis/ cyt B for tuna. COIII/NDIII for salmon
K2M14C-2	DNA Sequence Analysis/ cytochrome b for Tuna; COIII/ND3 for Salmon
M8B64N	DNA Sequence Analysis/COI; Hardy et.al 2010, JAOAL (1).
L4W29E	DNA Sequence Analysis/COI for all, plus D-loop for *Thunnus atlanticus*
J6B42V-1,2,3	DNA Sequence Analysis/Sanger NRC

II) Compilation of Gender Origin Results *(Not Applicable for Fish Test)*

1 Gender Origin

Lab	Item 1	Item 2	Item 3
M3B22N			
J4L18F			
B5H06W			
D6S24F			
B1V83W			
J1G53Q			
R1J97A-1,2,3			
L2P41S-1,2			
K2M14C-1,2			
M8B64N			
L4W29E			
J6B42V-1,2,3			

2 Methods Used

Lab	Methods/ Genetic Marker(s)
M3B22N	
J4L18F	
B5H06W	
D6S24F	
B1V83W	
J1G53Q	
R1J97A-1,2,3	
L2P41S-1,2	
K2M14C-1,2	
M8B64N	
L4W29E	
J6B42V-1,2,3	

III) Compilation Test Results *(Not Applicable for Fish Test)*

Lab	*Individual typing is not performed on the following species identified in this proficiency test*	1) What could be the minimum number of animals represented in these 3 samples?	2) Which samples have the same genetic profile?
M3B22N			
J4L18F			
B5H06W			
D6S24F			
B1V83W			
J1G53Q			
R1J97A-1,2,3			
L2P41S-1,2			
K2M14C-1,2			
M8B64N			
L4W29E			
J6B42V-1,2,3			

3 **Methods Used**

Lab	Methods/ Genetic Marker(s)
M3B22N	
J4L18F	
B5H06W	
D6S24F	
B1V83W	
J1G53Q	
R1J97A-1,2,3	
L2P41S-1,2	
K2M14C-1,2	
M8B64N	
L4W29E	
J6B42V-1,2,3	

Response Summary Total Participants: 18

Confirmation	Item 1	Item 2	Item 3
Species Origin	17 (94.4%)	17 (94.4%)	17 (94.4%)
Gender Origin	NA	NA	NA
Individual Identification	NA		

Inconclusive	Item 1	Item 2	Item 3
Species Origin	0 (0%)	0 (0%)	0 (0%)
Gender Origin	NA	NA	NA
Individual Identification	NA		

N/A	Item 1	Item 2	Item 3
Species Origin	0 (0%)	0 (0%)	0 (0%)
Gender Origin	NA	NA	NA
Individual Identification	NA		

Incomplete	Item 1	Item 2	Item 3
Species Origin	1 (5.6%)	1 (5.6%)	1 (5.6%)
Gender Origin	NA	NA	NA
Individual Identification	NA		

END OF REPORT