

STATE OF MICHIGAN  
DEPARTMENT OF NATURAL RESOURCES  
WILDLIFE DIVISION  
LANSING, MICHIGAN 48909

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FORENSIC SCIENCE FOR BETTER FISH AND WILDLIFE LAW ENFORCEMENT

by  
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Introduction

Forensic science is proving to be a useful tool to modern fish and wildlife law enforcement. This is most apparent from the number of states that have recently began training their people to use scientific tests in their investigative work.

Legal or forensic science can be defined as any area of scientific study that deals with legal questions and produces data suitable for use in courts of law. Cause of death determination and the identification of deer meat, deer blood, and deer hair are the only forensic tests being done routinely by the Department of Natural Resources. The purpose of this poll was to determine which new ones might be of use to us in the future.

Materials and Methods

All conservation officers and law supervisors were asked which one specific type of scientific test would help them most enforce natural resources laws more efficiently and effectively. Over several months two more letters were sent to encourage a response. The ability to determine sex of an animal from a hair was used as an example.

Results and Discussion

Fifty-one, or 25 percent, of the people contacted responded. All of their suggestions and the frequency they were mentioned are listed in Table 1.

Responses were mostly unranked lists. This made it impossible to tell which one test might be the most useful. Judging from the number of different suggestions, there is a desire for a variety of them, particularly for ones directed at things involving deer. Although it is not shown in the table, there is also a desire for tests that can be done by the officer in the field.

Management Application

Game laws protect wildlife from exploitation. Any forensic test that would help improve compliance would be beneficial.

Acknowledgements

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Author's Note

Meat, blood and hair identification was discontinued after the poll was taken because of a change in duties of the analyst. It is presently being done by the Departments of State Police and Agriculture.

Table 1. Suggestions for New Fish and Wildlife Law Enforcement Forensic TestsDeer

Determine the length of time a deer has been dead - 18 \*  
 Determine the sex of deer from blood - 12  
 Determine the sex of deer from meat - 7  
 Determine the age of deer blood - 4  
 Determine the sex of deer from hair - 5  
 Ability to identify blood from different deer (blood type) - 2  
 Determine where in the state a deer was killed from hair - 2  
 Determine how long deer meat has been frozen - 2  
 Determine the age of deer from meat - 1  
 Determine the time of year deer was killed from hair - 1  
 Determine length of time hair has been off a deer - 1  
 Ability to identify cooked deer meat - 1  
 Ability to separate elk meat and blood from deer meat and blood - 1  
 Ability to identify meat from different deer - 1  
 Ability to identify deer meat mixed in other ground meat - 1  
 Ability to separate white-tailed deer meat from mule deer meat - 1

Fish

Determine if smelt are from Great Lakes or Crystal Lake - 1  
 Determine which of the Great Lakes a lake trout came from - 1  
 Ability to separate walleye fillets from perch fillets - 1  
 Ability to separate walleye fillets from carp fillets - 1  
 Ability to identify fish species from scales - 1

Furbearers

Determine how a beaver or an otter was killed by examining the hide - 2  
 Determine the age of beaver and otter hides - 3  
 Determine the length of time a furbearer has been dead - 1

Birds

Determine the sex of pheasants from blood - 1  
 Ability to identify nongame birds from feather fragments - 1  
 Determine how long a hawk or owl has been mounted - 2

General

Determine cause of death - 2  
 Ability to identify cooked meat - 2  
 Determine the sex of animals from hair - 1  
 Ability to identify the cause of a wound - 1  
 Ability to identify parts as coming from a specific animal - 6  
 Determine species from blood - 4

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\*Number of times mentioned