

## SAMPLING METHODS FOR DETECTING WHITE-NOSE SYNDROME IN BATS BASED ON AVAILABLE DIAGNOSTIC TESTS (MARCH 2011)

**Please contact the diagnostic laboratory prior to submitting samples from mortality events.  
Please consult with the diagnostic laboratory prior to collecting samples for live-bat surveillance.**

### **Photo documentation:**

Surveyor moves through cave observes and photographs bats. Digital images are later examined by surveyors for visible evidence of fungal growth missed by visual observation alone.

Diagnostic value – poor; this is a good method for detection of suspicious bats but is not definitive for WNS and therefore should be followed by other sampling methods (see below). Other methods will require handling bats, and therefore the consequences of disturbing the bats must be evaluated before further action is taken.

### **Fungal tape lift:**

Surveyor handles individual bats to collect samples from muzzles of animals with visible evidence of fungus. This is a nonlethal sampling method designed to identify the type of fungus present rather than determine if fungus exists on an animal; personnel with basic knowledge of light microscopy and fungal morphology can analyze samples.

Diagnostic value - limited; **this method is only suitable for testing animals with visible fungus.** Sample quality affects analysis, sample method does not detect mild/early WNS infection.

### **Wing punch biopsy:**

Surveyor handles individual bats to collect suspicious area on wing membrane using sterile technique. This is a nonlethal sampling method which provides only a small area of tissue to evaluate.

Diagnostic value - moderate; good quality samples allow for PCR testing. There is good probability of detecting *G. destructans* DNA if sample from wing contains the fungus.

### **Whole carcass:**

Fresh carcasses can be collected outside of hibernaculum without disturbing hibernating bats or sick bats within hibernacula showing suspicious clinical signs (visible fungus, abnormal behaviors, etc.) may be euthanized for thorough examination.

Diagnostic value - high; all available test methods (PCR, fungal culture, histopathology) can be employed on fresh carcasses allowing the highest probability of detecting *G. destructans* and diagnosing WNS based on histopathology. Other tissues can be evaluated and carcasses can be saved for follow-up investigations.

Whole carcass submission is the only method suitable for the early detection (bats with no visible fungus) of WNS. In order to provide the greatest opportunity to detect WNS, visible fungus on bats should be observed in the field. Surveyors will need to evaluate the necessity of handling or collecting bats for the detection of WNS.