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Mudpuppy Survey Methods

Illinois Department of Natural Resources (IDNR) has developed Mudpuppy survey guidance for those conducting such activities in coordination with IDNR. The goals for these surveys are to detect Mudpuppy presence and estimate abundance within a focal area. Methods may be adjusted to suit alternative goals, project characteristics, and focal area characteristics. IDNR strongly recommends coordination prior to initiating Mudpuppy surveys. IDNR developed these guidelines using best available science and may revise them as necessary.

Surveys shall occur when water temperatures are less than 10° Celsius (50° Fahrenheit). Mudpuppy shall be collected using baited modified minnow or panfish traps. The focal area shall be divided into 100 square meter cells and one trap shall be placed within each cell in which habitat suitable for Mudpuppy (e.g., boulders, logs, cut banks) is present, with a minimum of three traps deployed in the focal area. Traps shall be deployed for a minimum of 4 nights per trap and traps shall be checked daily. Length of all captured Mudpuppy shall be measured and each individual shall be uniquely marked using Passive Integrated Transponders (PIT tags), Visible Implant Elastomer (VIE tags), or other approved tags so that recaptures of tagged individuals may be recorded. Gills, toe webbing, and tail margins shall be examined for presence of Salamander Mussel glochidia. Captured Mudpuppy shall be returned to their locale of origin.

Survey Extent

When applicable, survey area includes both the focal area (for many surveys, the area of direct impact, or ADI) and a relevant buffer. The ADI typically is delineated by impact footprint (including equipment staging/access). Extent of lateral and longitudinal buffers around the focal area is determined by the type and intensity of impact. IDNR typically uses 5m, 10m, 30m, or 50m buffers, often with the downstream buffer greater than lateral or upstream buffers.

Minimum Data Standards and Reporting

A report shall be submitted to IDNR following survey efforts and include a description of survey methodology, map with trap locations (including GPS coordinates), habitat characteristics within each trapping cell, and trap and date of capture, length, and tag ID of each Mudpuppy captured. Results of inspections for Salamander Mussel glochidia shall be reported, and observed glochidia photographed. Abundance within the focal area shall be estimated using capture-mark-recapture analytical methods if survey results are suitable for such an analysis.

Monitoring Frequency and Extent

Post-impact monitoring may be recommended to evaluate efficacy of avoidance and minimization measures or recovery of local Mudpuppy populations. IDNR recommends monitoring events one- and three-years post-impact to evaluate short and long-term survival or recovery. Both the focal area and relevant buffer are included in the monitoring extent.

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Permitting Mudpuppy Surveys and Relocation

Mudpuppy is protected under the Illinois Herptiles-Herp Act and Illinois Endangered Species Act. Capturing and handling Mudpuppy requires a Herptile Collection permit and Endangered Species permit.