

## Instructions for Form 3 - Purple Loosestrife Biocontrol Monitoring – Vegetation Monitoring

**Materials needed:** 1 meter stick, 1.0 m<sup>2</sup> quadrat frame, data sheets, pencils, clipboard, camera, and GPS unit to relocate quadrats. The site visit should be from late August to early October.

**General:** The purpose of this activity is to estimate the abundance of purple loosestrife and other vegetation in the wetland community, and to record measurements of purple loosestrife plant attributes. Conduct monitoring in late summer to mid autumn. Monitoring is easier with two people, one to make the observations and the other to record data.

**1) Site information:** Fill out the site information at the top of the form.

**2) Position the quadrat:** Carefully position the quadrat on the ground in the purple loosestrife infestation, being sure not to damage the plants, i.e., break stems, etc.

**3) Estimate percent cover:** Slide the quadrat frame into position, as close to the ground as possible; move stems in or out of the frame so that all stems originating in the quadrat are included. Standing near the frame, estimate how much of the quadrat is covered by purple loosestrife and, independently, how much is covered by cattail. Use cover estimates in Chart A to estimate percent cover.

**4) Count stems:** Count the number of loosestrife and cattail stems, beginning at one corner of the quadrat and working systematically across the quadrat. To be counted, a stem must be >20cm tall and originate within the quadrat; if it originates under the frame, or outside the frame and leans over the quadrat, then it is not recorded. Be careful to distinguish between a stem and a branch; only stems are counted. A stem originates from the ground or within 5 cm of the ground, while a branch originates from a stem at least 5 cm above the ground. In dense stands, it is helpful to look beneath the loosestrife canopy, and to move stems with your hands while counting; this is the easiest way to separate stems from branches.

**5) Count inflorescences:** Next, count the total number of purple loosestrife and cattail inflorescences in your quadrat. Make sure to count only those inflorescences that originate on stems rooted in your quadrat. An inflorescence is the portion of stem above and including the lowest flower bud. Even if only one flower bud is present, it is counted as an inflorescence. Be careful to only count flower buds, and not the small bundles of reddish leaves in the inflorescence axils.

**6) Measure plants:** Select the 5 tallest purple loosestrife stems in each quadrat (if there are fewer than 5 stems/quadrat, measure all that are present); four measures will be made on each stem; a) Measure the stem height (to the closest cm); b) Count the number of inflorescences on that stem (including all side branches), c) Measure the length (to the closest cm) of the longest inflorescence on this stem (this will generally be the terminal inflorescence); d) Remove the central 5cm portion of this inflorescence. Count the number of flower buds in this 5 cm length of inflorescence. If the plant did not produce any inflorescences or if they are shorter than 5 cm please record this in the appropriate form. Repeat this process for the remaining 4 loosestrife stems. Repeat with 5 tallest cattail stems.

**7) Other observations:** Record any general observations or useful information, such as disturbances, flooding, fire, bird nests, etc.