

**Title:**

Summary of Northern Pike Minnow Predation Study in the Yakima River.

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One of the major endemic fish predator species in the Yakima river is the Northern Pike Minnow. The purpose of the study is to estimate the number and spatial patterns of this predator and, to further the understanding of how many out migrating salmon smolts that this species consumes over time. Thus far, no estimate has been developed for the actual consumption of smolts in this river basin by NPM.

This study is conducted in winter, fall, spring and summer, with the bulk of the work in spring, due to high smolt out migration. NPM are shocked and tagged with pit tags, and every fifth fish is sacrificed to obtain stomach samples for diet analysis. Sample areas are in one mile sections separated by two mile sections. Within each sample section, pools have been located and GPS coordinates taken. These pools are where fish are tagged and stomachs obtained. Catch Per Unit Effort is recorded for each pool and this is used to indicate relative abundance of NPM until an accurate population estimate can be obtained.

The main problem in past trials has been to get a valid estimate of NPM population. In order to get this, mark/recapture numbers have to be sufficiently high to allow valid estimates via Peterson Mark/Recapture methods. To date, valid estimates are not possible do to the low number of tags being recovered. To increase our understanding of where these fish disperse, radio tagging has been undertaken to track movement patterns and allow us to better understand how to gain valid estimates of population based on fish concentration patterns. So far, it is apparent that fish are site tenacious as long as water levels are stable, but fish disperse to unknown locations when water levels drop. In order to locate the radio tags it may be necessary to do flight surveys of Yakima tributaries in the area.