

**Visual Observations and Demographic Monitoring Results for  
Northern Wormwood (*Artemisia borealis* var. *wormskioldii*)  
Summary Report - 2012**

Developed By:

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## Summary

Visual observations and demographic monitoring results of the northern wormwood population near Beverly, WA indicate a declining population over the past few years with a recent incline in 2012. A decrease in the number of flowering adults within the monitoring plots has been documented, while conversely, the juvenile (seedling and ambiguous) counts have shown a significant increase. As a result of the annual census of the main population in 2012, Grant PUD biological staff observed an estimated 457 flowering northern wormwood adults which is a small increase from 2011 census results. For the years 2007-2012, the population estimates were 1,620, 1,053, 763, 401, 352 and 441, respectively.

In 2012, Grant PUD biologists were able to monitor 30 of the 31 plots. One plot could not be located following 2011 high flows. Within those 30 plots, Grant PUD staff found 28 flowering adults of Wormskioldii's northern wormwood and 6,393 seedlings of *Artemisia campestris*. Currently, Grant PUD is tracking 11,394 individual *Artemisia campestris* species within the 30 remaining plots.

Noxious weed control efforts continued in 2012 with hand removal of approximately 1,000 diffuse knapweed plants from the population. Grant PUD staff treated approximately 300 Dalmatian toadflax plants individually with glyphosate via a chemical injection gun. Grant PUD believes that Dalmatian toadflax will be eradicated and diffuse knapweed to be significantly reduced from the site over the next 5 years due to significant and aggressive weed control efforts.

The following table shows the past 13 years of data from the Beverly population.

|      | Seedlings* | Population via census* | NWW Adults flowering in plots* | Hawk pole population | Northern Peninsula population |
|------|------------|------------------------|--------------------------------|----------------------|-------------------------------|
| 2000 | NA         | 1,260                  | NA                             | NA                   | NA                            |
| 2001 | 6          | NA                     | 225                            | NA                   | NA                            |
| 2002 | 563        | NA                     | 200                            | NA                   | NA                            |
| 2003 | 1,610      | NA                     | 198                            | NA                   | NA                            |
| 2004 | 211        | NA                     | 109                            | NA                   | NA                            |
| 2005 | 139        | 1,623-1,710            | 92                             | 44                   | 111                           |
| 2006 | 555        | NA                     | 104                            | NA                   | NA                            |
| 2007 | 91         | 1,585-1,656            | 73                             | 52                   | 100                           |
| 2008 | 44         | 1022-1084              | 66                             | NA                   | NA                            |
| 2009 | 2,659      | 763-764                | 54                             | 5                    | 33                            |
| 2010 | 1,016      | 401-405                | 23                             | 5                    | 21                            |
| 2011 | NA         | 350-352                | NA                             | NA                   | NA                            |
| 2012 | 6,393      | 424-441                | 28                             | 8                    | 8                             |

\* These are part of the main population where demographic monitoring occurs annually

Grant PUD is continuing efforts to conduct demographic monitoring of the population annually. In addition to demographic monitoring, Grant PUD will continue to perform annual census surveys, weed control efforts, and maintain the access fence excluding the population from vehicle access. Grant PUD is also continuing to collect and provide seeds to Kelly Amsberry, Native Plant Conservation Program, Oregon Department of Agriculture where they have been using the seeds collected at the Beverly population to propagate surrogate Wormskioldii's northern wormwood populations downriver near The Dalles, OR.