Disturbance and Discovery – is the rare blue toad flax back?

This delicate figwort, with its distinctive sharply curved spurs, last showed its face in the state back in 2004. The little blue flowered annual has likely never been common in Washington, and is now ranked by the state's Natural Heritage Program as S1 in the states review group 1 – meaning it's been found in fewer than 5 places in the state but is not yet ranked endangered. This spring it was spotted on three prairies, including Scatter Creek Wildlife Area, West Rocky Prairie Preserve and, perhaps, most amazing, in a pipeline restoration area on Fort Lewis.

In 2006, a natural gas pipeline was replaced through riparian prairie habitat on Fort Lewis. The top soil was carefully scraped back prior to work beginning and replaced after the pipe was laid. The following spring, numerous plants sprouted in the footprint of the pipeline, including several native species that were not known to occur at the site prior to the replacement work beginning. "One of these plants was the rare annual, blue toadflax (*Nuttallanthus canadensis)*, which had not been seen on the Fort for several years and was thought to have been extirpated", said Rod Gilbert, biologist with the Fort Lewis Fish and Wildlife Program, who discovered the small slender plants. "This is one of only three known locations in Washington where this plant is known to occur. It's an exciting find."

After an extensive survey of the area, a total of 48 plants were found, according to Gilbert, who has been caring for them ever since. About a week after finding the plants small weevils were discovered eating both the flowers and the seed capsules. "It was a nightmare trying to keep the weevils from devouring them", said Gilbert. "They required constant control or we wouldn't get any seed". Gilbert went back to the site every few days to remove the weevils and collect some of the seed from the capsules as they ripened. The seed will be germinated and grown out at The Nature Conservancy's nursery at Shotwell's Landing, where they produce plugs and seed for much of the prairie restoration that occurs on Fort Lewis.

The site along Muck Creek was one of the first locations in Washington where European settlers farmed and grazed sheep for the Hudson Bay Company and much of the site has been covered with reed canary grass and other invasive weeds for decades.

Following repair of the pipeline and back filling the trench, site preparation and planting native prairie plants was initiated by The Nature Conservancy.
Cliff Chapman, biologist for The Nature Conservancy talks about the sequence of events involved in the restoration work. "First the top soil sprouted with weeds – especially invasive Kentucky blue grass. We sprayed the whole area with an aquatic approved herbicide because the site is intersected by the south fork of Muck creek. A lot of the site was actually under water during part of the winter. When the water subsided, we planted

thousands of native fescue grass plugs. That is when Rod Gilbert found more than a dozen native wet prairie species had popped up in the area. We were surveying the site to determine management needs and were amazed to discover this ghost of our Prairies; blue toad flax."

"As humans, we tend to assume that leaving areas completely untouched is better for habitat," Cliff explains. "This example helps us see, first hand, as land managers and ecologists, just how many questions are still unanswered. This could be a real learning opportunity for conservationists dealing with monoculture invasives, especially turf-forming species like quack grass and Kentucky blue grass. Minor disturbance of earth layers may be an interesting, supplemental method of restoration worth examining for certain areas."