

# Green Kirkland Phases of Restoration

## Introduction

To assist with management and to help track restoration progress, the more than 512 acres of natural areas in City of Kirkland parks have been divided into numbered restoration management units (RMUs). Restoration management units generally range between 0.25 and 5 acres in size.

The restoration process typically consists of the removal of invasive vegetation followed by replanting with native plants. Once native vegetation has been successfully established, a process that can take many years, sites will transition into a long term-monitoring and maintenance phase.

As restoration in different parts of a management unit may not progress at the same rate, especially for larger management units, distinct smaller restoration sites may be recognized within management units.

## Phases of Restoration

Restoration progress is tracked using GIS (Geographic Information Systems) technology. For the purpose of tracking restoration progress, any area of natural parkland is considered to be in one of four phases of restoration, each depicted in a different color on the Green Kirkland restoration map layer.

### **Not enrolled (phase 0)**

These are areas that have not been enrolled in restoration, i.e., areas where no restoration activities have occurred. Areas that have not been enrolled in restoration are shown in yellow on the restoration map.

### **Invasive removal phase (Phase 1)**

Once any form of invasive removal has occurred in an area, it is in the invasive removal phase and is mapped in light purple. Restoration sites typically remain in the invasive removal phase for multiple years. Restoration activities may include any, or all, of the following: removal of invasive trees, brush cutting invasive shrubs, creating ivy rings around trees, manual or chemical removal of invasive shrubs and ground covers such as Himalayan blackberry or ivy, sheet mulching, and more.

### **Planting and Native Plant Establishment (Phase 2 & 3)**

The installation of native plants is phase 2. Once a site has been replanted with native vegetation, it is in the native plant establishment phase (phase 3) which is mapped in dark

purple. Restoration tasks for project sites in these phase include planting, installation of browse protection, watering, and maintenance weeding to help plants establish successfully.

#### **Long-term maintenance and monitoring (Phase 4)**

The final phase consists of long-term monitoring and maintenance. In disturbed environments, reinfestation by invasive vegetation is likely. Also, site conditions will change over time. For example, small trees planted at an open sunny site will in time create shade and plants installed at the site may not be suitable for the changed conditions, requiring planting of shade-tolerant understory species. Continuing to monitor and maintain restoration sites in the long term will ensure that natural areas will continue to be healthy in the long term. These areas are mapped in dark green.

To achieve and maintain phase 4 status, a restoration site must generally demonstrate the following conditions:

- Vegetative structural diversity, i.e., plants of different heights.
  - For forested sites this means all three layers of vegetation must be present: trees, shrubs, and ground covers.
  - Non-forested sites will be evaluated on a case-by-case basis.
- Species diversity in the shrub and ground cover layers.
  - At least three native plant species in each layer of vegetation.
  - A mix of evergreen and deciduous vegetation.
- Tree diversity and density (forested areas only)
  - At least 193 trees/per acre. At this density trees will be spaced about 15 apart.
  - Ideally this will include a mix of mature trees and saplings.
  - Unless this is a frequently disturbed area, e.g. an area on a steep slope prone to soil movement, 50% to 66% of the trees should be evergreen, predominantly conifers.
  - At least 3 species of trees.
- At least 80% native plant cover. Native vegetation must be healthy and vigorous, and spreading into new areas.
- No regulated noxious weed species (or if present, at a small enough scale that they can be eradicated within 12 months).
- Less than 10% cover of invasive plant species.
- No evidence of dumping, encroachments, erosion, or other issues that should be addressed.

Additional notes:

- To qualify for enrollment into phase 4 a site must generally be at least 5,000 square feet in size.

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- Some areas, e.g., areas infested with invasive plants species that cannot be controlled effectively with current resources, e.g., reed canary grass or yellow archangel, may never transition to phase 4.

### **Notes on Mapping**

Restoration map layers are updated twice a year, in May and December.

Changes in restoration status of areas will typically be triggered by:

- Reports from staff or stewards of invasive removal in areas not yet enrolled or of planting in new areas.
- Staff and stewards can nominate areas for evaluation for phase 4 status. This may include relatively healthy areas where invasive removal or planting may not be needed.

Requests for a change in site restoration status will be field verified during biannual map updates.