

Invasive Plant Program Annual Report 2004

Ministry of Water, Land & Air Protection
Environmental Stewardship Division
Okanagan Region

Parks, Protected Areas and Ecological Reserves

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Summary

Invasive plant program management inventories and treatments were completed on Ministry of Water, Land and Air Protection (MWLAP), Environmental Stewardship Division, Okanagan Region, provincial parks, protected areas and ecological reserves as well as the Nature Trust of BC's lease-back lands. All invasive plant management projects, including biological, mechanical and chemical control, were completed under Pest Management Plan (PMP) #671-0003-2002/2007 and Approval Letter (May 31, 2002). All invasive plant inventory and treatment records were entered into PENWEED[©] database and digitised into ArcView GIS.

Provincial Inter-Ministry Invasive Plant Committee funds (\$43,500.00) allowed the Okanagan Region to focus inventory and treatment (mechanical and chemical) initiatives within the 5 fire affected areas: Anarchist PA, Myra-Bellevue PP, Vaseux PP, Vaseux PA and Okanagan Mountain PP. These funds also enabled the creation of an Invasive Plant Program Technician (IPPT) position (Auxiliary – STO3) from July 12, 2004 to November 26, 2004.

Base budget funds (\$24,000) permitted additional inventories and treatments (mechanical, biological and chemical) on other priority areas (non-fire affected areas) throughout the Okanagan Region (White Lake Grasslands PA, Inkaneep PP, Kettle River PP, Trout Creek ER, Bear Creek PP, Fintry PP, Ellison PP and the Vaseux Restoration Area).

Inventories were completed by contractors (OUC-Okanagan Mountain PP; Chris Wood-Vaseux PP/PA), BC Parks Rangers and the IPPT. Mechanical control was completed by contractors (TerraFirm Forestry Consulting Ltd-Okanagan Mountain PP; John Kuli-Kekuli PP), the Nature Trust of BC crew, BC Parks Rangers, Area Supervisors and the IPPT. Biological control agents (*Cyphocleonus achates*, *Larinus minutus* and *Galerucella californiensis*) were released at Hayne's Point PP (purple loosestrife), Fintry PP (spotted and diffuse knapweed) and Kentucky-Alleyne PP (spotted knapweed).

Chemical control (spot-treatment or wipe-on application) was completed by TerraFirm Forestry Contracting Ltd. In total, 6.023 hectares were treated with 5.8 liters of Tordon 22K (1.392 kilograms of picloram active ingredient) and 9.940 liters of Round-up (3.539 kilograms of glyphosate active ingredient).

Recommendations and a tentative work plan are provided as an appendix to this Annual Report. The projected cost estimate for the Okanagan Region's Invasive Plant Program for 2005 is **\$63,746.46**.

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1.0 Okanagan Region Invasive Plant Program Overview

Invasive plants are typically introduced to British Columbia (BC) without insect predators and pathogens that would otherwise keep their populations in check in their natural habitats. Therefore, introduced invasive plants can be extremely aggressive and difficult to control, displacing natural plant communities and disrupting natural ecosystem functions. Invasive plants may or may not be designated as noxious weeds under the *BC Weed Control Act* (see Pest Management Plan (PMP) #671-0003-2002/2007 for designated invasive plants).

It is the Ministry of Water, Land and Air Protection's (MWLAP) mandate to conserve biological diversity by reducing invasive plant populations to protect natural plant communities and habitats. Designing and implementing an effective Invasive Plant Program (based on integrated invasive plant management principles) within the Okanagan Region is critical in fulfilling this mandate.

Provincial Inter-Ministry Invasive Plant Committee funds allowed the Okanagan Region to focus inventory and treatment initiatives within 5 fire affected areas: Anarchist PA, Myra-Bellevue PP, Vaseux PP, Vaseux PA and Okanagan Mountain PP. Additional inventories and treatments were completed on other priority areas (non-fire affected areas) throughout the Okanagan Region.

All inventories and treatments were completed in accordance with PMP #671-0003-2002/2007, PMP amendments and associated Approval Letter. Spatial and attribute data was captured to meet PENWEED[©] and Field Data Capture Criteria requirements. All inventory and treatment records have been entered into the PENWEED[©] database and digitised into ArcView GIS as of October 2004.

2.0 Invasive Plant Program Budget – 2004

The 2004 Invasive Plant Program operated from base budget funds (\$24,000) and Provincial Inter-Ministry Invasive Plant Committee funds (\$43,500). Funds and their operational implementation in the invasive plant program are detailed in the following table:

Table 1: Budget – 2004

| BASE BUDGET | | 24,000 | | | | |
|---|--------------|------------------|------------------|---------------|-----------------------------------|--|
| Project | Involvement | Allocated Funds | Used Funds | Balance | Details | PP/PA/ER |
| Coordinator (April/May/June/mid-July) (WLAP/TNT Agreement) - need ROE | Crystal Klym | 5,020.50 | 5,020.50 | 0.00 | 4653.00 (wage) 367.50 (milage) | Throughout Okanagan Region |
| Mechanical Control Crew | TNT Crew | 4,500.00 | 4,500.00 | 0.00 | 10 days @ 450.00/day | Throughout Okanagan Region |
| Chemical Control Crew | TerraFirm | 6,600.00 | 6,460.00 | 140.00 | 15 days @ 440.00/day | Throughout Okanagan Region -5278.45 chemical control -1320.00 mechanical control |
| Mechanical Control Contract | John Kuli | 1,000.00 | 650.00 | 350.00 | 1 day @650.00/day | Kekuli PP - Canada thistle control |
| Total | | 17,120.50 | 16,630.50 | 490.00 | | |
| Available Funds: Nov 03 - Base Budget | | 7,369.50 | | | | |

Provincial Inter-Ministry Invasive Plant Committee Funds

| Project | Involvement | Available Funds | Used Funds | Balance | Details | PP/PA/ER |
|--|-------------------------|------------------|------------------|-----------------|---|--|
| Inventory - fire affected areas | IPPT | 2,000.00 | 2,000.00 | 0 | IPPT Salary | Anarchist PA |
| | Chris Wood (Contractor) | 5,000.00 | 5,000.00 | 0 | Field: 500.00/day Office: 300.00/day | Vaseux PP and PA (part of \$10,000) |
| | IPPT | 5,000.00 | 5,000.00 | 0 | IPPT Salary | Myra-Bellevue PP |
| | OUC Crew | 5,000.00 | 5,000.00 | 0 | | Okanagan Mountain PP |
| Coordination and Data Management - fire affected areas | IPPT | 1,000.00 | 1,000.00 | 0 | IPPT Salary | Vaseux PP and PA |
| | IPPT | 2,000.00 | 2,000.00 | 0 | IPPT Salary | Okanagan Mountain PP |
| | IPPT | 2,000.00 | 2,000.00 | 0 | IPPT Salary | Myra-Bellevue PP |
| | IPPT | 3,500.00 | 1,167.00 | 2,333.00 | IPPT Salary | All fire affected areas |
| | IPPT | 1,000.00 | 1,000.00 | 0 | IPPT Salary | Anarchist PA |
| Research and Monitoring - fire affected areas | IPPT | 5,000.00 | 5,000.00 | 0 | IPPT Salary | Okanagan Mountain PP |
| | IPPT | 1,000.00 | 1,000.00 | 0 | IPPT Salary | Myra-Bellevue PP |
| | IPPT | 1,000.00 | 1,000.00 | 0 | IPPT Salary | Anarchist PA |
| Chemical/Mechanical Control - fire affected areas | | 5,000.00 | 0.00 | 5,000.00 | ITQ was sent - no quotes were received | Vaseux PP and PA (part of \$10,000) |
| | TerraFirm | 5,000.00 | 5,000.00 | 0 | 11 days @ 440.00/day | Okanagan Mountain PP [combined funds from Anarchist (1,000), Myra-Bellevue (2,000) and Okanagan Mtn (1,000)] |
| Total | | 43,500.00 | 36,167.00 | 7,333.00 | | |
| Available Funds: Nov 03 - Inter-Ministry Funds | | 7,333.00 | | | | |
| Remaining Funds Base + Inter-Ministry | | 14,702.50 | | | | |

| | |
|-----------------------------------|-----------|
| IPPT | |
| Administered Inter-Ministry Funds | 23,500.00 |
| Required Funds | 21,167.00 |
| Available Funds | 2,333.00 |

3.0 Invasive Plant Inventory – 2004

Priority areas within the Okanagan Region were selected for inventory if they displayed any of the following characteristics:

- Sensitivity and vulnerability to invasive plant encroachment due to disturbance and/or fire;
- Lack of historical inventory data;
- Absence of invasive plant species;
- Adjacent land manager participation (e.g. the Nature Trust, SOSWC, etc); and/or
- Control program historical success (mechanical, cultural, biological and/or chemical).

Inventory data should be monitored frequently to ensure control/containment success as well as any potential changes in invasive plant species composition, density and distribution. All invasive plant inventory records are in the **Invasive Plant Program Inventories – 2004** binder.

Table 2: Inventories Completed – 2004

| PP/PA/ER | Areas Inventoried | Involvement |
|-----------------------------|--|---|
| South | | |
| Anarchist PA | Inventory completed within 2003 fire affected area; focused on the east access and southern boundary; one vegetation and plot and three photo points were established | Kevin Wilson, Crystal Klym, Sara Bunge, Jen Picker, Rose Gunoff |
| Hayne's Lease ER | Puncturevine inventory and control initiated; focused north of Black Sage Road | Rose Gunoff, Crystal Klym, Mark Weston |
| SOG - Chopaka East | Isolated patches of sulphur cinquefoil were inventoried and controlled | Sara Bunge, Jen Picker, Kevin Wilson |
| Vaseux PP | Entire park inventoried by Chris Wood (contractor) | Rose Gunoff, Kevin Wilson, Judy Millar, Crystal Klym, SOSWC |
| Vaseux PA | Fire affected areas within the protected area were prioritized and inventoried by Chris Wood (contractor) | Rose Gunoff, Kevin Wilson, Judy Millar, Crystal Klym, SOSWC |
| WLGL - MacDonald Dam | Photo points established in 2003 were revisited | Kevin Wilson, Crystal Klym |
| East | | |
| Myra-Bellevue PA | Inventory completed within prioritized sites of the 2003 fire affected area; focused on areas of disturbance, trails, roads | Mark Weston, Crystal Klym, Sara Bunge, Jen Picker, Marty Cancilla |
| Okanagan Mountain PP | Inventory completed within prioritized sites of the 2003 fire affected area; focused on areas of disturbance, trails, roads as well as tansy ragwort infested areas (determining a containment boundary) | Mike Ladd, Mark Weston, Judy Millar, Crystal Klym, OUC |
| North | | |
| Enderby Cliffs | Priority sites inventoried | Desi Cheverie |
| Kal Lake PP | Inventory completed on Rattlesnake Hill, Bear Valley and site adjacent to private land where scotch thistle is located | Desi Cheverie and Crystal Klym |
| Silver Star | Orange hawkweed inventory completed | Desi Cheverie |
| Vance Creek ER | Sulphur cinquefoil inventory initiated | Desi Cheverie |
| Central | | |
| Fintry PA | Sulphur cinquefoil inventory initiated | Marty Cancilla |
| Trepanier Crk PA | Sulphur cinquefoil inventory initiated | Marty Cancilla |
| West | | |
| Cathedral PP | Inventory/assessment initiated at lower high use areas and campgrounds as well as Ashnola River Rd | Judy Millar, Crystal Klym |
| Manning Park | Inventory initiated on all invasive plant species; focused on areas of disturbance, high use areas, campgrounds, trails, roads, etc | Kirk Illingworth, Jackie Zinger, Kerry Hinds, Crystal Klym |

3.1 Vegetation Monitoring and Photo Point Establishment

Vegetation plots and permanent photo points were established to monitor post-fire regeneration and reestablishment of natural plant communities, as well as the potential encroachment of invasive plants, on provincial parks and protected areas affected by the 2003 forest fires.

Vegetation plots and photo points were established in areas which represented various burn severities (extreme, high, moderate and low) and dominant plant communities within Okanagan Mountain Provincial Park and Anarchist Protected Area during the 2004 field season. Due to seasonal time constraints, vegetation plots and photo points were not established in Myra-Bellevue Provincial Park; therefore, it is recommended that this be a priority area for 2005.

Through vegetation plot and photo point establishment, the following questions can be studied over time:

- What are the stages of plant community development and change (species diversity and percent cover, plant community succession, etc.)?
- What invasive plants encroach on fire affected areas and is there a relationship between burn severity and invasive plant species.
- What site characteristics (adjacency to fire guards and roads, moisture receiving sites, etc.) influence plant community species composition and succession as well as invasive plant encroachment.

All vegetation plot and photo point monitoring data and photos are compiled in the **2004 Vegetation & Photo Point Monitoring** binder.

4.0 Invasive Plant Control – 2004

All treatment records and photos are compiled in the **Invasive Plant Program – 2004 Mechanical, Biological and Chemical Control** binder.

4.1 Biological Control

Biological control agents were released in Fintry PP, Hayne's Point PP and Kentucky-Alleyne PP in 2004 on purple loosestrife (*Lythrum salicaria*), diffuse knapweed (*Centaurea diffusa*) and spotted knapweed (*Centaurea biebersteinii*).

Table 3: Biological Control Releases – 2004

| Biological Control Program 2004 | | | | | | |
|--|-----------|------------------|-----------------------------------|-----------------------|-----------------|---|
| Weed Species | Status | PP/ER/PA | Biological Control Agent | No. of Agents/Release | No. of Releases | Release Site Description |
| <i>Diffuse knapweed</i> | Completed | Fintry PP | <i>Cyphocleonus achates</i> | 600 | 3 | Above disturbance area where mowing is to occur |
| | Completed | Fintry PP | <i>Larinus minutus</i> | 1955 | 2 | Group site area; RV pull-out |
| <i>Spotted knapweed</i> | Completed | Kentucky-Alleyne | <i>Cyphocleonus achates</i> | 400 | 2 | Adjacent to <i>Larinus minutus</i> releases |
| | Completed | Kentucky-Alleyne | <i>Larinus minutus</i> | 1400 | 2 | See record for details |
| <i>Purple loosestrife</i> | Completed | Hayne's Point PP | <i>Galerucella californiensis</i> | 350 | 1 | Boardwalk area (11. 0320509E. 5431852N) |
| Total <i>Cyphocleonus achates</i> | | | | 1000 | | |
| Total <i>Larinus minutus</i> | | | | 3355 | | |
| Total <i>Galerucella californiensis</i> | | | | 350 | | |

In total, 1000 *Cyphocleonus achates* agents (spotted and diffuse knapweed), 3355 *Larinus minutus* (spotted and diffuse knapweed) and 350 *Galerucella californiensis* (purple loosestrife) were released in the Okanagan Region in 2004.

Biological control release requests, for 2005, were submitted to Juliet Craig, Invasive Plant Program Technician (Ministry of Forests, Southern Interior Region) in October 2004.

Table 4: Biological Control Release Requests – 2005

| Biological Control Program Requests - 2005 | | | | | |
|--|-------------------------------|-----------------------------|--------------------------|--------------------|---|
| Weed Species | PP/ER/PA | Biological Control Agent | Number of Agents/Release | Number of Releases | Release Site Description |
| <i>Canada thistle</i> | Hayne's Point PP | | | 1 | Adjacent to boardwalk and into riparian area |
| | Mahoney Lk ER | | | 1 | Anywhere around Mahoney Lake |
| | Inkaneep PP | | | 1 | Along dyke trail |
| <i>Dalmatian toadflax</i> | Kekuli PP | <i>Mecinus janthinus</i> | 400 | 3 | Throughout the PP |
| | Field's Lease ER | <i>Mecinus janthinus</i> | 400 | 1 | Throughout the ER |
| | Vaseux PA | <i>Mecinus janthinus</i> | 400 | 2 | Above NT Brock property |
| | Manning PP | <i>Mecinus janthinus</i> | 400 | 1 | McDermont meadows (deactivated day use area); start of DT infestation 10. 673477E. 5444593N |
| | Myra-Bellevue PA | <i>Mecinus janthinus</i> | 400 | 2 | Under powerline |
| | Hayne's Lease ER | <i>Mecinus janthinus</i> | 400 | 1 | Assess prior to release |
| <i>Diffuse knapweed</i> | Okanagan Mtn PP | <i>Cyphocleonus achates</i> | 200 | 1 | Buchan Bay: 11.305092E. 5510100N |
| | Anarchist PA | <i>Larinus minutus</i> | | 1 | Area around old access road on the west boundary (access from Long Joe Road) |
| | Okanagan Mtn PP | <i>Larinus minutus</i> | | 1 | Buchan Bay: 11.305092E. 5510100N |
| | Myra-Bellevue PA | <i>Larinus minutus</i> | | >2 | Under powerline |
| <i>Hound's tongue</i> | WLGL-PA (Old Equestrian Area) | | | 1 | In riparian area (see map) |
| | Inkaneep PP | | | 1 | Along the river bank (entire length of the PP) |
| | SOG - Chopaka East | | | 1 | Along the access road within the PA and Pendergraft property (near tire salt area) |
| | Mahoney Lk ER | | | 1 | Mahoney Lake at south end above sand berm |
| | SOG - Kilpoola South | | | 1 | Blue Lake Road near Blue Lake |
| | Field's Lease ER | | | 1 | Get UTM Coordinates |
| <i>Spotted knapweed</i> | Manning PP | <i>Cyphocleonus achates</i> | | 2 | Mule Deer Campsite (#35-48) and trailhead starting at East Gate bear |
| | Manning PP | <i>Larinus minutus</i> | | 1 | Mule Deer Campsite (#35-48) |
| | Manning PP | <i>Larinus minutus</i> | | 2 | Along Hwy 3 |
| <i>St. John's-Wort</i> | Manning PP | <i>Chrysolina</i> | | 1 | Blackwell Road |
| | Kal Lake PP | <i>Chrysolina</i> | | 2 | As identified by Desi Cheverie |
| | Vaseux PA | <i>Chrysolina</i> | | 1 | As identified by Chris Wood |

4.2 Chemical Control

Chemical control treatments were completed by TerraFirm Forestry Contracting Ltd as per PMP #671-0003-2002/2007, Approval Letter (May 31, 2002).

Table 5: Chemical Control Treatments – 2004

| Product Name | Pesticide (AI) | Target Weed Species | Total Chemical Used (L) | Application Rate (L chemical/ha) | Quantity of AI Used (Kg) | Area Treated (ha.) | Date | Location of Treatment |
|------------------------------|----------------|--|-------------------------|----------------------------------|--------------------------|--------------------|------------|--|
| Tordon | picloram | Sulphur cinquefoil | 0.150 L | 2.25 | 0.036 | 0.1 ha. | May 31/04 | Mahoney Lake ER/WLGL-PA |
| Tordon | picloram | Sulphur cinquefoil | 0.300 L | 2.25 | 0.072 | 0.1 ha. | May 31/04 | WLGL Macdonald Dam |
| Roundup | glyphosate | Hound's tongue Diffuse knapweed | 3.500 L | 6.00 | 1.246 | 0.6 ha. | June 02/04 | Inkaneep PP: Handwicked - wipe-on 20% |
| Tordon | picloram | Sulphur cinquefoil | 0.400 L | 2.25 | 0.096 | 0.2 ha. | June 03/04 | Mahoney Lake ER/WLGL-PA |
| Tordon | picloram | Sulphur cinquefoil | 0.200 L | 2.25 | 0.048 | 0.1 ha. | June 03/04 | WLGL Equestrian Area |
| Tordon | picloram | Sulphur cinquefoil | 0.050 L | 2.25 | 0.012 | 0.0 ha. | June 03/04 | WLGL Seacrest Restoration Area |
| Tordon | picloram | Sulphur cinquefoil Hound's tongue | 0.200 L | 2.25 | 0.048 | 0.1 ha. | June 08/04 | WLGL White Lake to Kearns Crk area |
| Tordon | picloram | Sulphur cinquefoil Leafy spurge Common anchusa | 0.100 L | 2.25 | 0.024 | 0.0 ha. | June 09/04 | Kettle River PP |
| Tordon | picloram | Sulphur cinquefoil | 0.050 L | 2.25 | 0.012 | 0.0 ha. | June 14/04 | Trout Creek ER |
| Tordon | picloram | Sulphur cinquefoil | 0.200 L | 2.25 | 0.048 | 0.1 ha. | June 15/04 | Bear Creek PP |
| Tordon | picloram | Sulphur cinquefoil | 0.200 L | 2.25 | 0.048 | 0.1 ha. | June 15/04 | Fintry PP |
| Tordon | picloram | Sulphur cinquefoil | 0.200 L | 2.25 | 0.05 | 0.1 ha. | June 16/04 | Ellison PP |
| Tordon | picloram | Sulphur cinquefoil | 1.000 L | 2.25 | 0.24 | 0.4 ha. | June 17/04 | WLGL McIntyre Bluff/Rattlesnake Lk area |
| Tordon | picloram | Tansy ragwort | 0.600 L | 2.25 | 0.14 | 0.3 ha. | Oct 03/04 | Okanagan Mtn PP - SE corner |
| Tordon | picloram | Tansy ragwort | 0.600 L | 2.25 | 0.14 | 0.3 ha. | Oct 05/04 | Okanagan Mtn PP - SE corner |
| Roundup | glyphosate | All Invasive Plant spp | 4.600 L | 2.25 | 1.64 | 2.0 ha. | Oct 07/04 | Brock Property - Vaseux Restoration area |
| Roundup | glyphosate | All Invasive Plant spp | 0.400 L | 2.25 | 0.14 | 0.2 ha. | Oct 09/04 | Divide Lake Road |
| Tordon | picloram | Tansy ragwort | 0.450 L | 2.25 | 0.11 | 0.2 ha. | Oct 11/04 | Okanagan Mtn PP - SE corner |
| Tordon | picloram | Tansy ragwort | 0.400 L | 2.25 | 0.10 | 0.2 ha. | Oct 12/04 | Okanagan Mtn PP - SE corner |
| Tordon | picloram | Tansy ragwort | 0.300 L | 2.25 | 0.07 | 0.1 ha. | Oct 13/04 | Okanagan Mtn PP - SE corner |
| Tordon | picloram | Tansy ragwort | 0.400 L | 2.25 | 0.10 | 0.2 ha. | Oct 14/04 | Okanagan Mtn PP - SE corner |
| Roundup | glyphosate | All Invasive Plant spp | 1.440 L | 2.25 | 0.51 | 0.6 ha. | Oct 15/04 | Vaseux Restoration area |
| Total Tordon (L) | | | 5.800 | | | | | |
| Total picloram (kg) | | | 1.392 | | | | | |
| Total Roundup (L) | | | 9.940 | | | | | |
| Total glyphosate (kg) | | | 3.539 | | | | | |
| Total ha | | | 6.023 | | | | | |

In summary, 1.382kg of picloram (Tordon active ingredient) and 3.539kg of glyphosate (Round-up active ingredient) were spot-treated (unless wick applied) within 6.023ha of the Okanagan Region.

4.3 Mechanical Control

The Nature Trust's crews completed mechanical control (cutting, hand digging and hand pulling) throughout the southern portion of the Okanagan Region.

Table 6: Mechanical Control – 2004

| Date | Location | Control Prescription | Mark's Crew | Daryl's Crew | Comments |
|---------------|-------------------------------|--|-------------|--------------|---|
| July 5, 2004 | Mahoney ER | Follow-up 2003 treatments for all weed spp | 1 | 1 | COMPLETED |
| July 7, 2004 | Kilpoola North (SOG-PA) | Follow-up 2003 treatments for hound's tongue | 1 | 1 | COMPLETED |
| July 9, 2004 | Sun-Oka (along Trout Creek) | Follow-up 2002-2003 mechanical treatments for baby's breath (hand digging) | 0.5 | 0.5 | COMPLETED - finished 100m Reduced density observed in baby's breath trial area |
| July 13, 2004 | Old Equestrian area (WLGL-PA) | Mechanical control for all weed species within riparian areas | 1 | | COMPLETED |
| | Boy Scout Camp (WLGL-PA) | Mechanical control for all weed species within riparian areas | | 1 | COMPLETED |
| July 15, 2004 | Sun-Oka (along Trout Creek) | Follow-up 2002-2003 mechanical treatments for baby's breath (hand digging) | 0.5 | 0.5 | COMPLETED |
| July 16, 2004 | McIntyre area (WLGL-PA) | Mechanical control for all weed species (except Dalmatian toadflax unless an isolated occurrence) within riparian areas; bag old hound's tongue seeds if possible; hand cut and remove Russian knapweed under large ponderosa pine | 1 | | COMPLETED - Kevin will be onsite with the NT Crews; monitor chemical control treatments completed in June 2004 (see Mark Weston's map) |
| July 23, 2004 | Hayne's Point PP | Cut and bag Russian knapweed near boardwalk entrance; cut and bag baby's breath in wetland area | 0.5 | 0.5 | COMPLETED |

| | | | |
|---------------------------------------|--|----------------|------------|
| Total Days | | 5.5 | 4.5 |
| Total \$ (450.00/day/crew) | | 4500.00 | |

In addition to the mechanical control completed by the Nature Trust crew, BC Parks' Rangers, Area Supervisors and the Invasive Plant Program Technician assisted with mechanical control throughout the Okanagan Region (see **Invasive Plant Program – 2004 Mechanical, Biological and Chemical Control** binder for details). Invasive plants were also mechanically controlled by TerraFirm Forestry Contracting Ltd. within Pesticide Free Zones (PFZs) in Okanagan Mountain PP.

5.0 Invasive Plant Work Plan Recommendations – 2005

Invasive plant program recommendations provided in the Work Plan – 2005 (Appendix 7) are based on management goals and participant recommendations (Judy Millar, Park Rangers, Area Supervisors, adjacent land managers, committees, etc.). The Work Plan – 2005 is subject to change pending new priorities that are identified prior to and throughout the 2005 field season.

6.0 Invasive Plant Program Cost Estimate – 2005

Table 7: Invasive Plant Program Cost Estimate – 2005

| Project | Involvement | Required Funds | Details | Project Details |
|--|------------------|------------------|--|---|
| Invasive Plant Program Technician (February - March) | Auxiliary | 6,499.41 | 2,166.47 bi-weekly (salary based on 2004 position) 4 pay periods | 2005 invasive plant program scheduling (inventory, control, training, etc); Impact Assessments for control strategies in identified PP/PA/ER; Okanagan Region Invasive Plant Management Strategy development; Field Data Capture Guide Criteria updates; 2005 Area Supervisor field packages; invasive plant control contract development |
| Invasive Plant Program Technician (April - October) | Auxiliary | 32,497.05 | 2,166.47 bi-weekly (salary based on 2004 position) 15 pay periods | Operational implementation, coordination, monitoring and auditing for 2005 Invasive Plant Program activities; vegetation and photo point monitoring transect establishment following 2004 procedures; data coordination, management and entry for PENWEED; volunteer and MWLAP staff invasive plant program training and presentations; annual report; 2006 Work Plan and recommendations |
| Mechanical Control Crew | TNT Crew | 6,750.00 | 15 days @ 450.00/day | Throughout Okanagan Region as identified in the proposed 2005 Work Plan; to be scheduled in February-March 2005 |
| Chemical Control Crew | Spray Contractor | 11,000.00 | 25 days @ 440.00/day (rate based on TerraFirm Forestry Contracting Ltd.; may increase/decrease with other contractors) | *10 days @ Okanagan Mtn PP *10 days @ Vaseux PP/PA & NT Lease-Back Lands *5 days in other priority areas throughout the Region |
| Fintry Fields (mowing/seeding/etc) | Contractor | 5,000.00 | | To be coordinated by Blake Dixon and Judy Millar |
| Mechanical Control Contract | Contractor | 2,000.00 | 1-2 days of work | Kekuli PP - Canada thistle control |
| Total | | 63,746.46 | | |

7.0 Appendices

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| Appendix 1: | 2004 Chemical Control Maps |
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| Appendix 3: | E.C. Manning IP Inventory Summary |
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