



Crown Managers Partnership

Trans-boundary Collaborative Solutions to Landscape Scale Ecosystem Management

FIFTEENTH ANNUAL FORUM

*People, Climate and Terrestrial Invasive Species: Taking Collective Action in the
Crown of the Continent*

March 17 - 19, 2015

**Lethbridge Lodge Hotel and Conference Centre
Lethbridge, Alberta**

SUMMARY NOTES FROM THE PROCEEDINGS

Day 1

1. **Key Note Presentation - *Ecology and Management of Invasive Species: What are we Trying to Do?*** Dean Pearson, United States Department of Agriculture, Rocky Mountain Research Station
(See presentation on the CMP website)

Day 2

2. **Welcome & Greetings**
Mike Bruise Head, Councilor with Kainai - Blood Tribe welcomed attendees, brought greeting from Council and opened the forum proceedings with a prayer.
3. **Crown Managers Partnership Overview - *(See presentation on the CMP website)***
Mary Riddle welcomed attendees and provided an overview of the Crown Managers Partnership (CMP). She noted the geographic boundaries of the Crown, the jurisdictional complexity associated with the Crown and the partners involved in the partnership. Mary highlighted the themes of the past 14 forums, the evolving nature of the partnership and the accomplishments, benefits and initiatives of the CMP.
4. **An Ecological Approach to Framing Non-Native Plant Management - *(See presentation on the CMP website)***
Bruce Maxwell and Lisa Rew, Montana State University, shared their approach and research with attendees highlighting the methodology, the development of an *Invasive Species Prioritization Framework* and linkages to the Crown of the Continent.
5. **Panel #1 - Overview of the Status of High Priority Non-native Invasive Plants in the Crown of the Continent - *(See presentation on the CMP website)***

a) **Survey Results** - Dawn LaFleur, Glacier National Park, shared results of a survey completed by individuals in advance of the Forum. The results capture the legislative and management priorities for different agencies and jurisdictions. 19 people responded (8-Montana, 6-Alberta, 5-British Columbia). Find a complete summary of the survey on the CMP website (An Overview of the Status and Management of Non-Native Plants in the Crown of the Continent Ecosystem). With respect to the questions:

- "What are you managing for?" The most common response was "maintaining intact native ecosystems".
- "What are the top 10 priority species you are managing for?" Knapweed was on the top, followed by hawkweeds, leafy spurge.
- "What 3 species do you most time and money on?" Across the Crown of the Continent Ecosystem (CCE) the most time and money is spent on knapweed.
- "Why have you chosen these species to spend the most time and money on?" The "highest potential to spread" was the top answer followed by "most prolific and widespread".
- "What lurkers are you most concerned about?" Hawkweeds were the top concern, followed by blueweed and rush skeleton weed.
- "What herbicide are you using?" Milestone was the top herbicide

Questions & Comments:

Dean Pearson: Have done 620 surveys and have quantified their impacts on native systems in Montana.

1. Cheatgrass is really high on its impact.
2. Knapweed
3. Sulphur cinquefoil
4. St. Johns Wort

Cheatgrass is a sensitive issue in the agricultural sector.

Downey brome, cheatgrass, and others could be combined which it would change its rankings.

Q. Why does cheatgrass make people nervous?

- Establishes monocultures
- Can get into a fire cycle.
- As long as you are north of the MT border and east of the divide, you can manage cheatgrass.
- Wet and warm spring weather favors cheatgrass.
- Why is the agricultural community hesitant? Has made it on the weed list, but it is only as "a species of concern". People will mow it with their hay, so there is some agronomic value. It is hard to manage.

Q. Would be great to have more respondents complete the survey? Could it be redone after the Forum?

b) Invasive Species: Distributions in the Crown of the Continent - What does the Future Hold? *(See presentation on the CMP website)*

Bray Beltran, Five Valleys Land Trust/ Heart of the Rockies, described the two forum objectives, which set the framework for his presentation. First objective was to present non-native plant distribution in the Crown of the Continent and, secondly, review the potential effects of climate

change on non-native plants. Bray described the methodology used to create the model and the results generated by the model for ten non-native species located in the Crown.

Comments:

Interested in the movement of blueweed

- The model does not capture aspect and slope, but with better resolution (better than 1km) you will be able to determine the movement between microclimates.

You are being hard on the model

- Having different scales is very useful as they tell us different things.
- You gain information by finer resolution data, more species-specific information.

We are to talk about success at different scales. These tools will help us do this.

BC data was not included in the analysis. It will change the results if it is a new set of environmental variabilities.

6. Greetings

Mayor Spearman welcomed forum participants.

7. Breakout Session 1: Defining Success in Invasive Plant Management for the Crown of the Continent

Dennis Madsen, Waterton National Park, framed the nature of the discussion and desired outcomes for the first breakout session. In small groups, participants were asked to complete three tasks:

- a) Share their current land management objectives;
- b) Identify how they are measuring progress and success of their invasive plant programs in relationship to those broad land management objectives, and finally,
- c) Identify which possible measures of success could be applied at the scale of the Crown.

The results from each small group discussion follow.

Group #1
Current land management objectives
<ul style="list-style-type: none">• Ecological integrity +++ - Monitoring response / initial SWAT collaboration with partners e.g. grazing permits• Visitor opportunity• Productive sustainable agriculture• Reduce land fragmentation• Beneficial management practices for ecological services• Engagement• Meet triple bottom line – people, land, economic viability
Current and/or possible success measures

- Collaboration
- Producer adoption of best management practices
- Public participation (e.g. weed pulls)
- Monitoring treatments for efficacy (e.g. herbicide (10%) ST/ LT)
- Mapping distribution and abundance over time ++ (large scale, site specific)
- Track early detection and rapid response (EDRR) – e.g. no reports vs. 15 reports (as long as people are still looking)
- Ecological success – biodiversity, species richness
- Economic viability – avoided costs, loss of productivity, affordability, effectiveness

Measuring success at the Scale of the Crown

- Developing a simplistic protocol/ consistent[ly applied] on how you survey across the Crown
- Reporting on EDRR
- Baseline
- Standardized approach to control efforts and sharing of results/ data
- Circle of support

Group #2

Current land management objectives

Current land management objectives

- Education – raise public awareness, foster stewardship
- Natural controls where possible
- Eliminate spread of invasives
- Maintain native ecosystems

Non-Government Organization/Castle Crown Wilderness Coalition

- Promote protection of land base (Castle) for future generations
- Eliminate invasives/Promote conservation

Ranch

- Control / eradicate invasives
- Manage livestock in sustainable manner

Government of Alberta

- Maintain intact ecosystems
- Educate / assist private landowners on invasive species management / goal setting
- Protect and conserve natural landscapes for future
- Promote and facilitate recreation (responsible)

- Protect flora and fauna
- Watershed protection

Current and/or possible success measures

- Annual review of control activities (chemical, mechanical and bio-controls etc.)
- On-going assessment / inventory of known issues
- Partner reports (stewardship groups, municipal agencies)
- Assess pre/post conditions
- Achieved synergies between landowners etc. – areas/ plot surveys
- Landowner investment (money/time)
- Community Buy-in
- No noxious weeds!

Measuring success at the Scale of the Crown

- Develop shared/common measurement objectives used to measure success for each management objectives (i.e. reduce lands introduce particulates into headwaters)
- Common list of species of concern/ cross boundary (prioritized locally)
- Consistent management objectives for all user groups (i.e. grazing leases vs. recreation access vs. industry)
- Document / maintain / celebrate weed free areas (healthy, intact)
- Reduce new invaders (lurkers) - EDRR

Group #3

Current land management objectives

- Preserve rural lifestyle and traditional resources use and [p component] use
- Maintain natural systems and exclude invasive plants (2)
- Resource constraints to achieving goals
- Maintain natural ecological health of landscapes and ecosystems
- Educate landowners, recreation and industry
- Preventing spread of existing invasive plans
- Management invasive plan infestations where results are measurable and achievable
- Maintain landscapes (private, public) integrity to facilitate permeability

Current and/or possible success measures

- Focus on acres treated and species treated – small amount of outcome-based monitoring
- Report area and species treated
- One park with comprehensive IP program
- Treat hotspots/adhoc surveying
- Focus on control / management
- Limited monitoring (capacity limited)
- Outcome based: annual monitoring of presence/ absence
- Track herbicide use and effectiveness
- Wants to develop spatial representation of clean areas
- Wants
 - Decision tree process
 - Targeting interventions of high efficacy areas
 - Re-assess management objectives of chronic areas
 - More collaboration (science, monitor, capacity etc.)
- Track IP site size, % infested, average # of plants/m2 – target is reduction

Measuring success at the Scale of the Crown

- County/CCE-wide spatial data resources, capacity
- Standardized data collection/ reporting
- Decision tree and adaptive management
- Develop best management practices
- Plasticity in jurisdictional boundaries to facilitate shared management/ data objectives
 - Keep the clean areas clean / protect
 - CCE-wide monitoring linked to management actions
 - Develop landscape / ecological measures of success – formal cross-jurisdictional partnerships of management IP and agronomics
- Monitoring and protection of known, high susceptibility areas (linked to #3)
- Use the best available science tech to inform all of the above

Group #4

Current land management objectives

- Maintain functional ecosystems (resilient)
- Provide visitor experience (emotional connection)
- Maintain connectivity
- Connect to youth
- Maintain native systems/ species composition, abundance and supporting processes

- Restore function to damaged sites
- Provide forage for ranching
- Exclude new exotics (?)

Current and/or possible success measures

- Area surveyed with no infestation
- Relative native (desired): non-native (undesired) cover / biodiversity
- Forage – biomass of desirable species, native pasture, species richness, species distribution, species abundance
- Visitor survey, comment cards, reports
- Connectivity: partnerships and data sharing, cross-boundary maps

Measuring success at the Scale of the Crown

- Density (W) and Distribution (L, NI)
- Ecosystem services
- Water quality (e.g. siltation)
- Focal species (aquatic pollinators)
- Integrated land-use goals through partnerships – struggle to quantify

Group #5

Current land management objectives

Dean (researcher) – measure by acres protected or reclaimed

Steve – Protection of native plants, environment from invasive plants

Nora – (1) biodiversity conservation (Core) – Waterton Park, (2) Buffer Zone: ag. interface, productivity of agriculture land, intact grass lands, (3) Outside 1st and 2nd zones – sustainable land use

Rob – Productive lands for forest products, forestry, provide diverse and high quality recreation, manage for HQ habitat for terrestrial and aquatic species

Keith – protecting representative natural landscapes, LMO = be adaptive

Erin – maintain current native state that will be resilient, understand landscape processes and conditions presence/ absence of TIS, understand what is lost cause vs. worth effort

Deb (landowner) – know what you've got (inventory), biodiversity, pristine landscape

Keith – agency awareness (inventory) of existing invasives and trends for growth / [?]; number of existing partnerships; number of volunteer hours/events; absence of weed notices

Deb – inventory, monitor; photos; lease evaluation – grazing, capacity (increase); wildlife (increase); B&B guests returning – work for nothing!

Current and/or possible success measures

Dean – provide useful/effective tools for land managers

Steve – are weeds increasing or decreasing; are native plants increasing or decreasing; riparian weeds not moving, upland to private landowners

Nora – maintain ecosystem services – native plant ecosystem function, ag. productivity – maintained or enhanced; performance measures e.g. riparian health assessment, range health assessment

Rob – acres treated with herbicide; acres treated with bio-control; # of conservation education events; volunteer hours (in-kind from public)

Biocontrol – weed patches are not expanding /or shrinking; recreation user days; visitor experience feedback; vegetation inventories/ plant community composition – are expected native species presence – project drive

Measuring success at the Scale of the Crown

Deb – increased visitation, increased residents, increased volunteers to share what [was] learned, traffic levels increase

Dean – comprehensive, cohesive – shared weed management and strategy around the Crown

Keith – increased collaboration between agencies of Crown; native desirable [tame veg] increases; non-native invaders decrease

Rob – all interests in Crown inventorying vegetation change; sharing data for common understanding, tracked over time; tracked successful EDRR events around the Crown (share successes)

Nora – create accepted indicators to measure; sustainable economic activity, ag. production, native land use values (Maintain or improve)

Steve – measure [?] over Crown – not growing or decreasing; interests around Crown sharing data, successes, challenges; % of active participants; number of meetings

Comprehensive, cohesive, Crown-wide weed management strategy shared across the Crown

Group #6

Current land management objectives

- Manage private land for land use (grazing)
- Manage public land for protection of a natural ecosystem or restoration
- Maintain native plant biodiversity and ecological processes
- Manage for environmental, social, and economic uses on Crown lands – manage to tolerate higher thresholds for invasives in some areas, lower in others
- Preserve grasslands, maintain native species, manage croplands
- Educate our members
- Manage for industrial land uses, balancing ecosystem processes
- Maintain and protect a pristine ecosystem – remove non-natives

Current and/or possible success measures

- Presence / absence
- Risk to native species
- Abundance
- Measure success based on containment lines – measure size, area treated, success is keeping weeds within the containment area
- Measure productive soil – maintain containment of weeds in crop lands
- Measure effectiveness of treatment by different methods
- Ability to adapt to changes
- Staying within budget
- No rate payers complain about weeds
- Record / [me] weed locations
- Reduce infestation size, struggle with measuring and defining success
- Bureaucrats want #s – to measure success
- Acres treated
- Amount of herbicide applied

Measuring success at the Scale of the Crown

- Area surveyed, # of EDRR hot spots weed free –
- Focus on inter-jurisdictional boundaries – collaborate treatment with neighbours
- Avoid borders – focus on presence/absence by watershed across the Crown
- Amount and success of rapid response to new infestations

- Measure number of new species detected and success of eradication
- Hold the line in clean areas
- Work with surrounding landowners
- Keep visitors – vectors of weeds out – close areas to use
- Address primary vectors bringing weeds – shipping, trucking etc. Find ways to “clean” these sources
- We tend to focus on the highly visible weeds and not the lurkers/ quiet invaders
- Use each other to watch our borders/backs
- Predictive mapping of sites favourable to non-natives and monitor for presence/absence
- Measure / compare the # of acres treated against how many acres are protected

Group #7

Current land management objectives

Waterton Lakes National Park (WLNP) – Biodiversity, Ecosystem function, Increase visitor experience and information

United States Forest Service (USFS) – Native plant communities, awareness/impacts of weeds and education

Flathead Basin Commission (FBC) – keep free areas free, focus areas for climate change, restore critical areas

Alberta Parks – maintain biodiversity, protect ecosystem health, protect natural and cultural features, provide recreation with conservation balance

Crown Round Table – common protocols, consistent / comparable mapping

Blood Tribe Land Management – sustainable resource management, permit monitoring, manage leafy spurge/ knapweed

Alberta Invasive Species Council (AISPC)– NGO

Current and/or possible success measures

WLNP – record litres and acres, species per km/highway, % of cover / km

USFS – acres of absence (supposed)

FBC – mapping target species, monitor target landscapes

ASIP – repeat visits, monitor

Blood Tribe – assessment of new lands, GPS reserve, monitoring of [fi U-in gaps], prioritize broadly

AB Invasive Species Council – record acres protected, impacts to neighbours, educating public / all behaviour change, prevention measures

AAISC – Stop introduction and spread of invasive plants – reduce impact on AB habitats

Measuring success at the Scale of the Crown

- Common messaging
- Complimentary initiatives – tag team with other jurisdictions
- Common monitoring protocols – simplify/ remote drones
- Aquatic Invasive Species (AIS) success – Montana (MT), Alberta (AB), Blackfoot (BF), British Columbia (BC), Blood Tribe
- Adopt common predictive modeling
- Sharing control with neighbours / landowners
- Terrestrial strike force – incident management team
- Broad agency buy-in: resource dedication/budget
- Education success – broadly
- Weed free areas – predictive modeling

8. Panel 2: Case Studies on Invasive Plant Management: Strategies and Tactics from around the Crown of the Continent *(See presentation on the CMP website)*

Following the first breakout session, participants listened to a series of Panel speakers who shared their various approaches to invasive plant management. The following captures key points from each panel speaker.

Brad Jones- Alberta Environment and Sustainable Resource Development

- Forest Health – unoccupied crown land in the Green Area, Eastern Slopes
- Presentation on the Castle area
- Balance the social and economic
- Forest is mandated to manage invasive plants in the Green Area
- The department does not have an integrated program
- Lacking appropriate legislation and policy
- BC is upwind, there are a lot of pathways for weed establishment
- Lost Creek Fire in 2003, uncontrolled for 26 days. No policies around clean equipment. Created new access
- 10 years later, 2012 completed survey and found yellow hawkweed
- The hawkweed was not just in the burn, found more as they looked around

- Tend to be in difficult locations to spray.
- Well drained soils, cut blocks, old burns
- What did we do:
 - Put together a 3-year plan with \$600k funding started contract surveying, set up containment lines
 - 2-years of perimeter spraying, plants were everywhere and were moving east.
 - Wanted to contain it, eradication would not be possible. Was not a listed weed at the time.
- What we learned:
 - Opened a door to increased funding, have a year round Invasive Plants Technician based in the region
 - Developed a list of priority species targeted from EDRR
 - Working even closer with municipalities and stakeholders and the AISC
 - Working towards a shared EDRR strategy
 - Workshop on April 23
 - Play Clean Go will be adopted from Minnesota.
 - Need a single departmental program, dedicated funding and permanent staffing and better legislation and policy. All this would enable prevention.

Todd Larsen - East Kootenay Invasive Plant Council (EKIP)

- Annual Conference and AGM “Working together to minimize the spread”, April 16, 2015
- Val Miller, provincial weed specialist, was unable to attend and helped in forming the presentation
- EKIP vision An East Kootenay Free of Invasive species
- Regional District of East Kootenay is 27500 km square with 40-50% in the CCE
- Treating weeds and having targeted engagement with stakeholders and land managers.
- Forestry: Several operations with varying degrees of management. High pressures for weed introduction and spread. Enforcement of legislation is lacking.
 - Opportunities, knowledgeable, experienced workers, aware of weed impacts, ability to report on isolated and remote sites, easy to implement BMPs.
- Everyone in the province is obliged under the Weed Control Act. All forest operations need a forest stewardship plan.
- Planning to have better engagement with professional foresters, managers and crew, provide support and resources. Audit operations and monitoring, compliance vs. enforcement.
- Collaboration is key. Evaluate existing resources, collect and assess measureable data, implement a strategic plan.

Karen Laitala – Powell County Weed District/Blackfoot Challenge

- Blackfoot Challenge – diverse, complex landscape
- Rural community based
- Celebrated 20 years of existence last year.
- Concentrate on the “80% we have in common and not the 20% that we don’t”
- Blackfoot Corridor Leafy Spurge Project
 - Sprayed only leafy spurge along the river
 - Rivers was divided into sections between counties for work on weeds
 - Powell River, multiple use

- Oxeye daisy was the new invader
- Have a group of people with a boat, tank of herbicide and hose which tackled more area
- Are now only spot spraying, have never broadcast sprayed. Are seeing fewer non-native plants every year.
- Have sheep and goat prescription grazing, weed pull events, aerial spraying, and strong biological control program. Landowner meetings and tours, youth group activities.

Mike Roberts – Waldron Ranch

- Humanity is the most invasive species and we are here today because of our behavior
- Ranch has existed since 1883, ran cooperatively since 1960.
- Most prevalent species is leafy spurge, the seed can explode to 15 feet.
- 20% protein, almost as good as grazing alfalfa. Doesn't need to grow in poor soil
- Were spending \$15K/year for over 40 years to no resolve.
- Cannot spray herbicide within 30 metres of the water
- Believe that leafy spurge established on the ranch around 1950
- Sheep and goats prefer leafy spurge
- Attended a seminar in Billings, MT on grazing with sheep
- Goal was to try and control leafy spurge. First thing was to add sheep. Got sheep from local Hutterites, they paid \$3000/month to graze the sheep and the Waldron used the money to pay the shepherd to manage the sheep.
- Had beetles in place, are hitching rides on sheep, which helps in the dispersal of the beetles. Beetle larvae live in the root system of leafy spurge in the winter
- Cattle are incidentally grazing the leafy spurge. Leafy spurge is not as prevalent.

Rob Sissons – Waterton Lakes National Park

- Focusing on foothills parkland and montane areas for weed management
- Knapweed first recorded in 1968 active management began in 1970.
- 1980 Alberta developed a Knapweed Management Plan. Covered 30 ha in the park versus 300 ha in Alberta. Very roadside specific.
- 1990 non-native plant management plan. 66 species of non-native plants were recorded in Waterton. Acquired 4 summer students.
- 2000 first Waterton specific plan included consultation with neighbours and stakeholders
- 2010 increased funding and increased non-native
- Current situation 1018, 115 are non-native. 51 species have been actively controlled.

Dawn LaFleur – Glacier National Park

- North Fork (Polebridge)
 - Had a retired school teacher interested in addressing the weed problem.
 - Created a weed sub-committee. They hold weed rodeos at the end of July, have a BBQ, hand pulling, weed identification.
 - Have increased participation from 10-30 people.
 - Looking for funding to send out postcards to send out to absentee landowners to educate and provide awareness
 - Resource Advisory Council Grants – funding for mapping and education
- Marias Pass Spray Day

- 2008 GNP spearheaded an agency meeting with BNSF to address weed issue along the railway corridor
- Come up with a strategy.
- Marias Pass Spray day with all agencies involved and now private landowners are now showing up.
- 2014 vegetation specialist from BNSF came up to treat weeds and treated 600 acres
- 2005 CMP Forum – Invasive Plant Management
 - Forum about what everyone was doing and where
 - On the last day came up with a Crown Invasive Plant Network
 - Continued with conference calls and determined that there was a need for a user friendly field guide for people dealing with weeds on the ground.
 - The guide was free to the public.
 - 46 species included in the book.
 - 40 different cooperators, everyone reached out for funding
 - Books were a hot item and went fast.
 - Looking at doing a third reprint but require funding for this.

Questions and Comments:

Dawn: What are the weed species along the train tracks? What does BN use for herbicide?

- Tordon and 2-4D
- A lot of seeds leak out of the trains.
- Have not seen a lot of the agronomic species.
- Canada thistle, oxeye daisy, yellow hawkweed complex.

Mike: Are sheep really focused on the spurge, are they not grazing anything else?

- Monoculture of grazing for a long time
- Sheep will leave rough fescue no matter what stage and are more interested in lupine, hairy gromwell, spurge, and geranium.
- Need to keep partners happy, sheep go back to the Hutterites fat and happy.

Mike: Looks like there were no other weeds to come in. Did you quantify the before and after?

- No numbers.
- There is some knapweed.
- Do not allow any vehicles, however hiking, hunting, fishing is allowed by foot access only.
- Have one 20000acre public land access, just on the outskirts that is causing problems.

Mike: Access management, managing uplands and lowlands separately. Beetles have adapted to Alberta climate. The Waldron Ranch is now a harvesting site for the beetles. Received recognition from Alberta Beef Producers Environmental Award. Environmental Stewardship Award for Alberta and Canada. Have given many presentations but there has not been much follow up.

Karen: How do people approach the development of a toolbox that is so diverse?

- Start by getting landowners together. Educate, awareness, find out what people need and offer help. Cost sharing is huge, however funding is hard to come up with. Forming cooperative vegetation management areas, encouraged people talking across fences, this starts the movement.

Work with volunteers, how do you motivate them for larger objectives?

- Yes. Let them know that they can have an impact on a small scale.

How do you engage further audiences to make a wider effort?

- How to grow the sheep grazing example?
 - The Waldron will provide leadership. Have turned a liability into an asset. Should be replicated downstream.
 - Have shareholders that continue to spray. To use the sheep you have to ability to have numbers.
 - Not eradication but control.
- Collaboration with neighbors. GNP collaborates with many partners

9. Day 2 Closing

The day concluded with a summation of the day's activities and outputs. Participants were encouraged to connect with each other during the evening and give thought to they might use ideas from the day to create action plans for use following the forum.

Day 3

10. Welcome and Report Back from Day 1: Measuring Success at the Scale of the Crown

Dennis welcomed participants and shared with the group the themes generated on Day 2 to measures of success at the scale of the Crown. The measures included the following:

a) *Crown-wide inventory and monitoring*

- "Measurement of Success"
- Infested and weed free areas (hectares protected)
- Protocols, data sharing
- Baseline
- Photo documentation

b) *Maintain weed free areas*

- Celebrate success
- Monitor and report (see above)

c) *Monitoring and reporting EDRR Activity*

- Lots of monitoring effort with low control efforts required can be good
- So can lots of monitoring efforts and lots of control effort

d) *Management without boundaries*

- Identify opposing objectives on the landscape
- Crown wide collaboration
- Consistent Crown Wide Messaging
- Clean-Play-Go
- Increased public awareness and hopeful action
- Comprehensive Crown-wide Weed Management Strategy (infused with Climate Change)
- The "Playbook"
- Collaborative Vector Management

The group was then asked "what do we need to add" to the list? Ideas included:

- Established protocols allow leverage for agencies
- Challenge to understand what is going on at the scale of the CCE because of the different metrics. Would be great to have a one common metric.
- Good simple metric "where have we surveyed?"
- Predictive modeling, Bray's modeling
- Have a model to go from the Blackfoot Challenge "80-20" Rule.
- Brays' modeling is great, but he had to fight with the data, therefore it is really important to have a common metric.
- Need to establish a common data metric, common currency.

11. Breakout Session 2: Coarse Scale Strategies and Priority Areas

With the above measures of success in mind, participants broke into small group discussions to answer the following questions:

- a) What are the priority issues in the Crown of the Continent and are these issues crown-wide or localized?
- b) What coarse scale strategies and tactics could be applied to address these priority issues?
- c) What are some clear needs and opportunities to promote shared approaches across the landscape?

Results from each group are listed below:

Group #1
Priority Issues/Locations
Managing Access – Prevention, (O/C) <ul style="list-style-type: none"> • Vectors (recreation, industry, agriculture) • Policies • Regulation and enforcement
Awareness **** (Prevention & EDRR – All areas) <ul style="list-style-type: none"> • Public • Make current – crisis • Public health approach • Make positive: Play, Clean, Go
Break Silos (All mostly government, linked to Awareness) <ul style="list-style-type: none"> • Collaborate
Communication (All, linked to Awareness) <ul style="list-style-type: none"> • Academia participation • Data access
Problematic Species (Prevention) <ul style="list-style-type: none"> • Stop before introduced (linked to Awareness)

<ul style="list-style-type: none"> • Ornamental • Agronomic
Strategies & Tactics
<p>Monitoring**** e.g. rangeland health (EDRR/ OC)</p> <ul style="list-style-type: none"> • Standardize • Accessible database to all • Simple • Academics need to be involved • Ease of reporting • Citizen science • Quick post after verification <p>IPM</p> <ul style="list-style-type: none"> • Triage • Time sensitive
Needs & Opportunities for Shared Approaches
<ul style="list-style-type: none"> • [captured above]

Group #2
Priority Issues/Locations
<ul style="list-style-type: none"> • Manage pathways and vectors (Crown-wide) • Develop capacities (GOA, BC...) (L) • Harmonize / Standardize (CW, linked to develop capacities) • Data sharing (CW) • Prioritization (EDRR) – different land use objectives (CW)
Strategies & Tactics
<ul style="list-style-type: none"> • Targeting user groups • Lobbying, advocacy • Education messaging, inspection, monitoring, reporting • Citizen warriors, scientists • Centralized database, meetings, workshops
Needs & Opportunities for Shared Approaches
<ul style="list-style-type: none"> • Plant Wise • Play, Clean, Go • Standardized gravel inspections, weed-free forage

- New Invaders – In the Crown
 - Communication
 - Newsletters, alerts, webinars, web forum
- EDMAPPs (linked to centralized database)
- Weed App. (ID, reporting) – Crown-wide

Group #3

Priority Issues & Locations/ Strategies & Tactics / Needs & Opportunities (Combined notes)

1. Surveying (where have you done it?) GPS
 - Data collection protocol/ standard – date, species, coordinates, size description, datum*
2. Recreation vehicle access vs. keeping an area clean (public awareness)
 - Education program with local groups
 - Funding – monitoring and weed management programs; pooling and applying for resources across jurisdiction; trans-boundary synergy*
3. Lots of weeds/ Ecological variance – landscape scale outcome/management
 - Subcommittees – build collective capacity*
 - Southern Eastern Slopes
 - Rocky Mountain Front
 - Southern and Southwest Crown
 - Flathead Valley
 - North Fork and Kooocanusa
4. Corridors and Vectors of Introduction - How to deal with major impending changes (climate change, population impacts, humans) that affect “weeds”
 - Weed check stations, overarching land use strategies*
5. Centralized/ unified data dump directly to GIS staff
 - Landscape maps with trail access codes; weed component for all management activities *
6. Strategy to get political buy-in at the senior level*
7. Management that allows for site specific flexibility and decision making
 - Systematic surveys as part of weed budgets, success story board (CMP webpage)

Group #4

Priority Issues/Locations

1. Quantification / development shared data collection, pla, efficacy CCCC
Education / awareness
2. Coordination between parties

3. EDRR – Vectors and corridors

4. Grass issues

Strategies & Tactics

For #1 Priority

- Common currency – metrics/protocols
- Interactive website for data sharing
- Identification of vectors of interest
- Report (immediate, incidence response) of strategy taken

For #2 Priority

- Political support
- More eyes/muscle on the ground
- Altered behaviour
- Detection

For #3 Priority

- Report (immediate, incidence response) of strategy taken

For #4 Priority

- Strategies for management and sharing

Needs & Opportunities for Shared Approaches

- 1,2,3 – CCCC Players
- Throw currencies down, agree on minimum overlapping points
- Team-vector ID: action, incident command system
- Identifying communication platform
- Reinvigorate CWEE

Group #5

Priority Issues/Locations

1. Wicked weeds (Hawkweed, knapweed)
2. Awareness (Lack of) – do people value a weed-free Crown? Do we recognize and value the people?
3. Different mapping/monitoring protocols – Identify with home first, scale up
4. Different priorities
5. Different data
6. Prevention – address vectors

Strategies & Tactics

1. CMP share successes/ tools (resources for information); leverage Crown-scale peer pressure
2. Community outreach, share successes, support community champions (Jim S. Mike R); Adopt a patch across the Crown
3. Adopt consistent minimum standards
4. Establish Crown-wide priorities
5. Pick/metric to commonly report – format
6. Mandatory washing of heavy equipment on public lands, weed free hay

Needs & Opportunities for Shared Approaches

- Landowner buy-in incentives
- Crown-wide priority focal points – ecological / social
- Awareness – Play, Clean, Go
- APPs – EDMAPS (landowner, utility), NAISMA mapping standards, NAISMA weed free forage standards
- Resurrect COC Invasive Plan Network
- Work with Border Patrol

Group #6

Priority Issues/Locations

1. Identify risk associated with high priority species and vectors
2. Communication on emerging weed issues*
3. Communicate / educate on new control and eradication techniques *
4. Priority species list for whole Crown – current and with predictive mapping into the future (10, 20, 50 years)
5. Building capacity to identify invasives
6. Shared EDRR list for all programs
7. Plants (here now and could come) that will thrive in warmer climates
8. Lack of common data *
9. Vector management

Strategies & Tactics

1. Coordinate and communicate action across jurisdictional boundaries
2. Social media tool or communication network alert
3. Travelling education teams – networking body to collect and disseminate – social media

4. Develop consistent protocol Crown-wide for standards of data collection and list of Crown-wide priority weed species (by grid of cell or water) – presence, absence, no data
5. Education through schools – Community events (e.g. blueweed blitz)
6. Post on website, email list serve, Facebook
7. Develop consistent presence/absence Crown-wide grid of same scale, for reporting to use in model
8. [Same strategy as #4] - Develop consistent protocol Crown-wide for standards of data collection and list of Crown-wide priority weed species (by grid of cell or water) – presence, absence, no data; use 4 quadrant approach of invasive plant guide
9. Directing off-road vehicle use into confined areas

Needs & Opportunities for Shared Approaches

- Consistent communications
- Consistent data sets and sharing

Group #7

Priority Issues/Locations

(PI/L)Prevention strategies, keep out new invaders:

- Crown-wide strike force – one for on the ground action, one for setting goals (S/T)
- Consistent prevention strategies (S/T)

People move invasive throughout Crown

Awareness and Education (when accessing lands)

- Common and consistent terminology, messaging, re-brand “weeds” (S/T)

Enforcement

Common protocol (monitoring/mapping) that can be scaled up 1km² – 100km²

Keep weed-free areas weed free

- Keep out new invaders – prevention (improving strategies)
- Attack new infestations / areas
- Better ID of vector species
- Predictive modeling concept

- Localized
- Awareness and education; enforcement and consequences
- People bring into and move invasives throughout the Crown
- Common protocol for monitoring and mapping

Strategies & Tactics

1. Develop Terminology Standards
2. Rebrand weeds to “Terrestrial invasive” plants or “Terrestrial invader” plants or Terrestrial invasive plant species (TIS like “AIS)
3. Crown-wide strike force and messaging
 - Action on the ground
4. Prevention Strategy – i.e. Play, Clean, Go
5. Change behaviour, need to invest in “messaging” research

Needs & Opportunities for Shared Approaches

- "Playbook"

The highlights from each small group discussion were shared with the large group. The results were then analyzed and 6 themes identified. These themes formed the basis for the third breakout session.

1. Survey and Monitoring
2. Prioritization (Sub-committee to support Actions on the Landscape (ID hotspots))
3. External Communication & Awareness (including Strategy for Political Buy-in)
4. Internal Communication (in support of EDRR)
5. Common Management Approaches (The Playbook)
6. Vectors and Corridors

12. Weeds Across Borders Presentation - Barry Gibbs

- Canadian Council on Invasive Species: Formed in 2013, collaboration of invasive councils across Canada
- Weeds Across Borders
 - Biennial Conference, since 2002
 - Continental in scope, rotates every 2 years
 - Sharing information and improving invasive species management
 - Create a high level North American Invasive Species Framework
 - Strategically address issues across international borders

- Focus on prevention and detection, rapid response, pathways and communication
 - To expand coordination, collaboration and action across NA
 - Input from government (federal, state/provincial, aboriginal, industry, and NGO's)
- Establish a North American Invasive Species Directory
- Change name: North American Invasive Species Forum
- Outcomes
 - Nurture North American Framework
 - Facilitated session with Canadian Council of Forest Ministers on invasive species
 - Attended conference of Canadian Environment Ministries
 - Sustainable Forestry Initiative

Comments

- Great connections
- Should connect with Agricultural ministers and the municipal districts and counties. Landscape Conservation Cooperatives are an area with potential for a strategic relationship.

13. Breakout Session #3 - Advancing Ideas into Action

For the third breakout session participants self-selected the theme they wished to discuss. They explored the question "How might we pursue regional implementation of objectives, strategies, tactics related to this theme?"

Initial actions plans were developed for each theme and are ideas from each plan are listed on the following two pages. Additional details from each group report back then follow.

INITIAL ACTION PLANS

Survey and Monitoring

Identify individual group land-use goals and management objectives and common language THEN agree on common goals/objectives and lowest /simplest common core measurements and commonality of equipment, data formatting by each group to send to main core

Survey

- Bray outline advantages/disadvantages of current database and protocols
- Convening inventory, survey, monitoring group (private landowners, managers, practitioners, data analyst etc.)
- [ID] gaps in current data to guide survey on the ground for EDRR

Monitoring

- What, where management
- Effectiveness / condition – monitoring
- Using abundance data – again, common core of metrics

Co-chairs – Bray & Megan

- Step 1 – Bray looking at data
- Step 2 – Conference call
- Step 3 – Protocols

Prioritization

1. Divide COC into sub-regions (ecological; community basis)
2. Within each – focus on land use objectives i.e. park vs. multiuse areas
 - ID risks, opportunities
 - ID priorities, resources, knit existing groups together
3. CMP Sub-committee support for subgroups (determine appetite and interest for this, clarify roles)

External Communication & Awareness

- White paper/ political brief to increase awareness and education on the issue, threats and opportunities – [share with] elected officials, be strategic and targeted, provide hands on experience
- Promote /sell the success stories – local and broader level = COC and within different sectors/ perspectives
- Simplicity!
- Target education and messaging to the specific groups – it has to have a ‘core message’ but some specificity to make it relevant and change behaviour
- ID Audiences (key communication champions/organizations) communicators
- Knowledge transfer/training from experts to educators and those on the ground – sets us all up for success
- Build training / education that is hierarchical – all staff, front line, managers
- Travelling exhibits, resource directory
- Establish/re-invigorate a educators/communications group (COCEEC)
- N.B. of IPs in school curriculums – foster stewardship

Internal Communication

- Email – for immediate, listserv EDRR needs, alerts, Help!
- Discussion Forum – ongoing discussion, upcoming events, how to’s – ID photos, EDRR, archiving?
- Clearing House – social media – notices, webinars (for more details)
- Regional Moderators / Coordinators – responsible to contact (AB, BC, EMontana, WMontana or Montana)
- Need list of EDRR Species – Link to prioritization action plan
- Can CMP Steering Committee support/ facilitate the above?
- Crown invasive Plant Network Annual Meeting?

Common Management Approaches (EDRR – Strike Team – I.C.S.)

1. Presupposes a joint monitoring system, results-based
2. Notification System (mimic AIS system) – updates on status of actions (successful or not); structure for resource sharing – alert of new occurrence, neighbours aware to monitor; Common prioritization of SPP – Common response levels give priority
3. Management mitigation – ongoing occurrence
 - Very widespread issues
 - Communication about approaches
 - Techniques – bio/herbicide
 - Efficacy of control / area
4. Restoration
5. Crown invasive plant working group

Vectors & Corridors

- Develop comprehensive monitoring protocols/systems for what is coming into tribal/first nation lands through feed (hay), transport, gravel, sands
- ID entry points, corridors onto Blood Reserve, then begin outreach programs
 - [think carefully about reserve boundaries, and what are folks bringing out of reserve]
- Note that this is exacerbated in drought years with more feed coming in
- Think about / develop strategies around waterways i.e. irrigation sprinklers as vectors
- Treat gravel sources before gravel at pits is shipped out. (e.g. chip sealing – then it is certified weed free)
- Weed education stations with free washing stations before weed free areas or coming out of weed infested areas
- Skin cattle before bringing them back off Blood Reserve (as an example) to remove burdock being transported to new areas
- Power lines/ transmission lines - land owners (not municipal) / cooperation to ensure vehicles are (a) local and (b) clean – same thing with logging trucks
- ATVs – signs “this is an environmentally sensitive area...” etc. at trail heads.
- Enforcement budget cuts have impacted an already lean program (i.e. legal framework exists)
- Flooding as a vector – barbless fencing below high water mark
- Alberta rat free zone – use this as a model
- Cleaning trucks etc. coming into Crown (normal highway traffic)
- Hunters as vectors (clean equipment/ boots) before entering weed free zones (i.e. cleaning facilities)
- With vehicle registration etc. could fund stations
- Railroad – how to enforce cleaning/prevention
- Road closure – gated access
- Applying Montana – type cleaning protocols for firefighting equipment vehicles
- Add washing stations to existing AIS inspection stations.

Breakout #3 Report Back Highlights

Survey and Monitoring (for presence/absence, condition)

- Co-chairs: Bray will look at the data and find commonality in the data that we have
- Have a survey and compile data in presence/absence survey
- Areas to target for management
- Where and what management is going on, input this in a database
- Do not want everyone to have the same protocol but to find the lowest common denominator

Internal Communication to increase awareness

- CMP Partner Website
- Role for the CMP to facilitate communication internally
- Crown Invasive Plant Network, more that this group can do and expand on from 2005
- Email list serve for communicating immediate needs, EDRR
- A discussion forum through the CMP website. Ongoing discussions, how-to's, EDRR situations, ongoing discussion through Crown Managers
- Social media outreach, using twitter, teaching people how to use it, how do we use this as a tool
- Need for regional coordination, 3 or 4 coordinators, or leaders in future communication.
- List of EDRR species, could be somewhat regionalized.
- Is there a need for an invasive species annual workshop
- There will be a need for resource support

External Communication (public) and Strategy for political buy-in

- Politically, value having the CMP develop a white paper and have intent towards identifying issues, opportunities around invasive species. Get them on the ground.
- Target education and messaging to specific groups, has to have a common message, needs to be relevant to the group in order to change behavior. Keep it simple, promote CCE wide and local successes.
- Identify the different audiences. Identify key community champions or organizations.
- Transferring knowledge and transforming into something more manageable
- Travelling units that is available to all of the CCE
- Resource directory
- Reinvigorating the education group to bring broader awareness to the community.
- Awareness and education efforts need to foster stewardship

Playbook, Common Management Approaches

- Notification system for EDRR
 - Presuppose joint monitoring system
- Notification system that mimics the AIS system
 - Requires common prioritization of species
 - Common level of response
- Management mitigations for ongoing occurrence
 - Communication about approaches and techniques
 - Neighbours are sharing information with neighbours
- Restoration
- CMP does not have the capacity to champion terrestrial invasive species

Vectors and Corridors

- Feed and Hay, in times of drought there is a lot of feed moved around, need to monitor this better, more unified certification process
- Waterways are another vector. The waterways can infect the feed.
- Road maintenance and gravel pits, need to have weed-free gravel sources
- Movement of people and equipment: ATVs, vehicles, rail. Suggestion of vehicle wash stations. Boat wash stations.
- Washing fire equipment is very important to backcountry. Need protocols in place. Adopt some of Montana's fire protocols.
- Vehicles: Take part of vehicle registration fees and have it go back into funding public awareness and wash stations.
- Flooding. Having smooth wire instead of barbed wire.
- Access management – a tool to be used to minimize the spread. Keep people out of areas that are pristine.

Bruce Maxwell's report back/ additional comments

Ecological variability, divide the CCE down the middle. Simultaneously assume that there are certain communities that will link. Common land use objective with associated actions.

14. Wrap Up and Evaluation

The forum concluded with each group sharing their draft action plans. Ian Dyson then shared next steps with the group, which included the following items:

- Presentations and Forum materials posted to website
- Summary Report of proceedings to be completed and posted
- Planning Team to debrief forum (including evaluation responses and action plan results)
- Building upon results from Forum, determination of next steps (including actions / initiatives to advance)
- Ongoing communication with Forum Participants to continue engagement and action on the ground.

Ian then thanked the Planning Team, sponsors and attendees for their support and enthusiastic participation at the 15th Crown Managers Partnership Forum.

DAY 3 ENDS