



# Early Detection and Rapid Response (EDRR) Efforts in Canada

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# Outline

- EDRR and IAS
- EDRR for Invasive Plants (CFIA)
- EDRR Parks Canada, AAFC





# IAS Strategy for Canada (2004)

i n v a s i v e   a l i e n   s p e c i e s

respond to IAS through a hierarchical approach that prioritizes:

- 1) *prevention* of new invasions;
- 2) *early detection* of new invaders;
- 3) *rapid response* to new invaders; and
- 4) *management* of established and spreading invaders (containment, eradication, and control).

## An Invasive Alien Species Strategy for Canada



September 2004

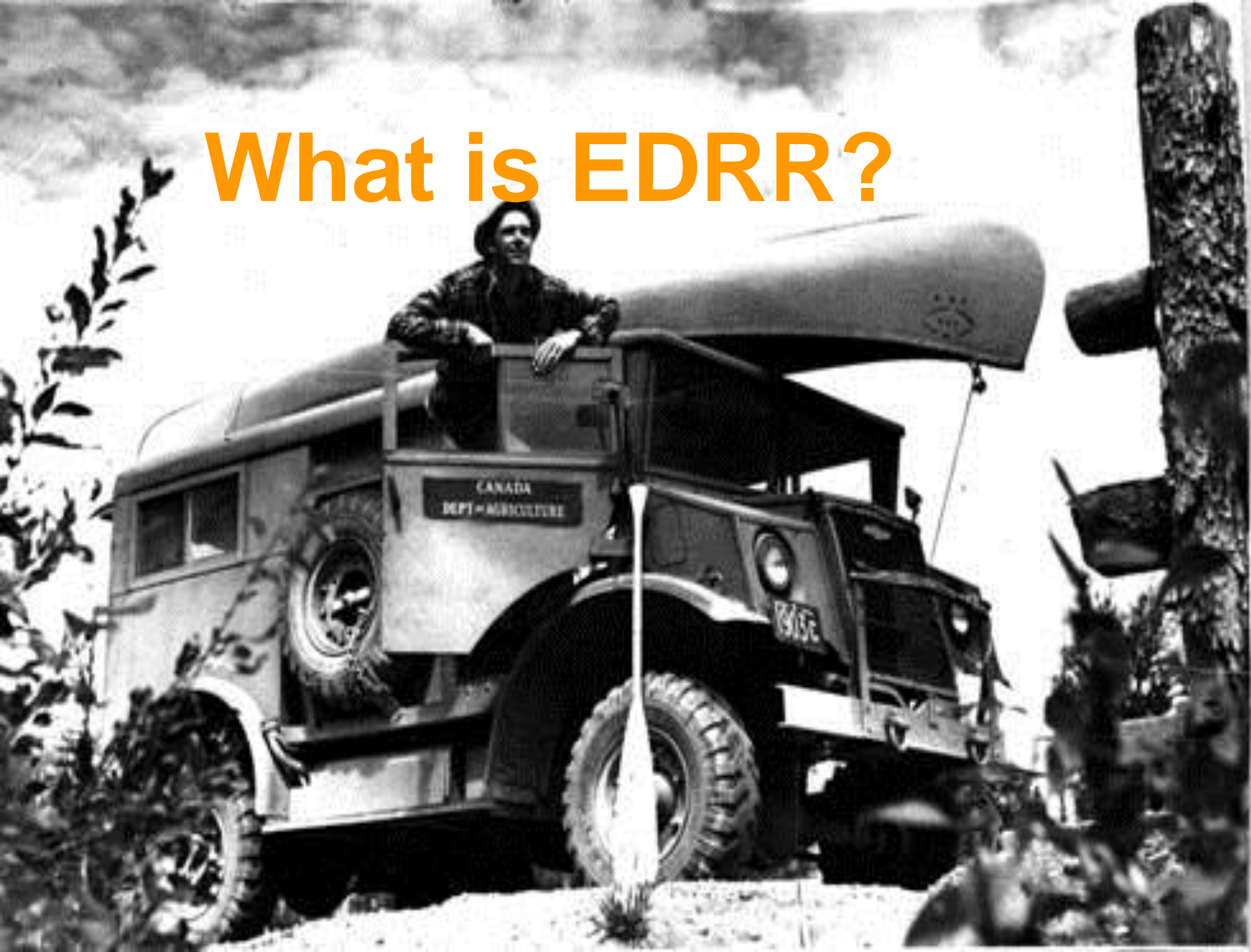


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# What is EDRR?





# Early Detection Worrall (2002)

i n v a s i v e   a l i e n   s p e c i e s

1. system of active or passive **surveillance** to **find** and **verify** the identity of new IAS as early **after entry** as possible, when eradication and control are still feasible and less costly. It may be targeted at:

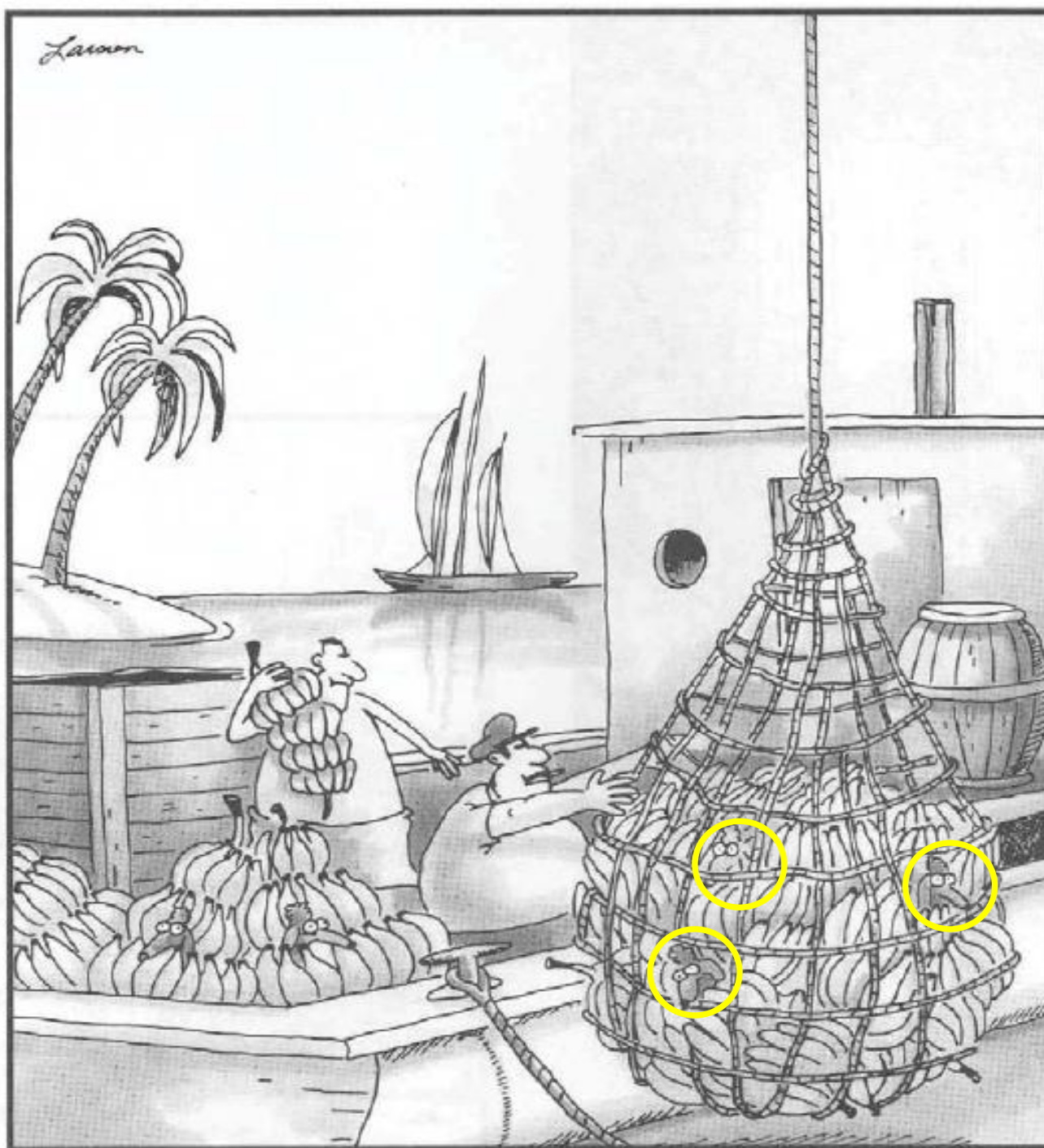
## FIND AND VERIFY

### Detection and Identification

- a) areas where introductions are likely, such as near pathways of introduction, and
- b) sensitive ecosystems where impacts are likely to be great or invasion is likely to be rapid.







**Increased  
EDRR  
Surveillance  
may have  
helped  
detect the  
first  
incursions  
of invasive  
poodles  
into  
Canada!**



# Rapid Response Worrall (2002)

i n v a s i v e   a l i e n   s p e c i e s

1. **effort to eradicate, contain or control IAS while the infestation is still localized.**
2. **implemented in response to new introductions or to isolated infestations of a previously established pest - assessment and monitoring may be part of the response.**
3. **It is based on a system and infrastructure organized in advance so that the response is rapid and efficient.**





# Why is EDRR so IMPORTANT??

i n v a s i v e   a l i e n   s p e c i e s

1. EDRR programs increase the likelihood that pests can still be eradicated.....
1. **Costs** of EDRR efforts are less than those of long-term management programs.....

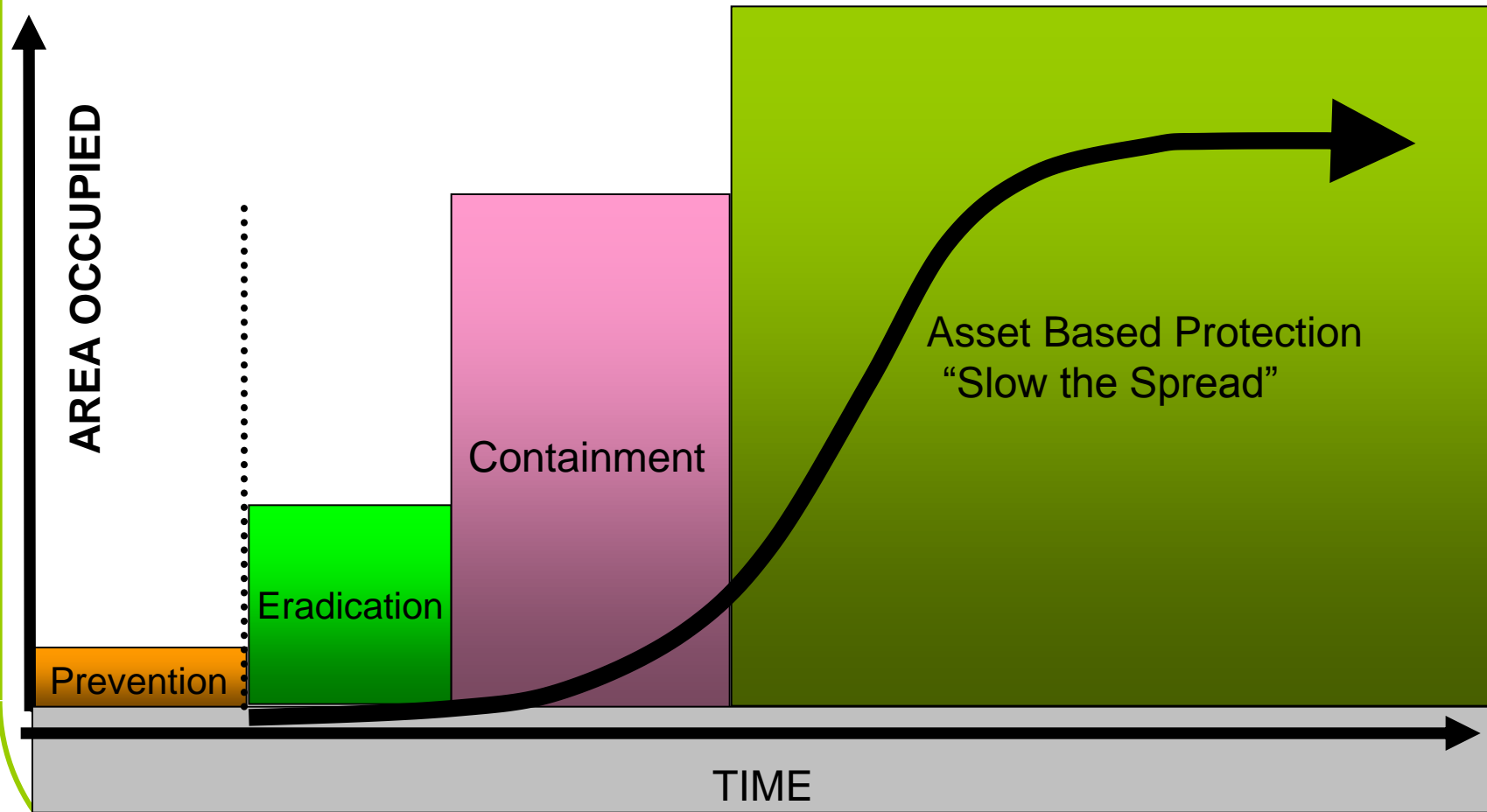






# GENERALIZED INVASION CURVE

i n v a s i v e   a l i e n   s p e c i e s



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# Early Detection and Rapid Response Considerations for Invasive Plants in Canada

e n s p e c i e s



*First detection of knotweed in southern Ontario, Canada.  
Photo by Dana Meeij, EDD*



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## Canadian Invasive Plant Framework

*A Guide for Discussions Concerning How to Address  
Invasive Plants in Canada through Risk Analysis,  
Science, Legislation and Regulations, Education and  
Outreach, and International Cooperation.*



# Canadian Invasive Plant Framework Workshops

## Stakeholder Recommendations:

**Develop a National  
EDRR Plan for  
Invasive Plants in  
Canada**





**Completed in  
Sept 2010**

- monthly  
forum  
meetings**
- agenda set by  
participants**

# Early Detection and Rapid Response Considerations for Invasive Plants in Canada



*First detection of Kudzu in southern Ontario, Canada.  
Photo by Dana Mooij, 2009*



***The following individuals and organizations contributed to this document or discussions:***

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# National EDRR Discussion Forum for Invasive Plants

i n v a s i v e   a l i e n   s p e c i e s

## Objective of the Working Group:

***The objective of the EDRR Forum working group is to develop (and implement) considerations of an early detection rapid response model for invasive plants in Canada that can inform national, provincial and territorial strategies. The second objective is to identify existing resources. It is agreed that all vascular plants, including aquatic plants, are in the scope.***





# Minimum aspects of a EDRR System

i n v a s i v e   a l i e n   s p e c i e s

**detection or  
surveillance**

**assessment**

**respond**



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# Summary of National EDRR Forum discussions (2008-2011)

i n v a s i v e   a l i e n   s p e c i e s

- **Detection and Identification of IPs**
- **Assessment and Risk of IPs**
- **Planning and Responding to IPs**
- **Detection Activities**
- **Sept 2010 EDRR Document Finalized**
- **IPCANnet Concept**
- **Aquatic Pesticides as EDRR Tools**
- **Emerging invasive plants for proactive label registration**



# Early Detection of Invasive Plants (Labs)

i n v a s i v e   a l i e n   s p e c i e s

## CFIA monitoring and sampling programs.....

**examine imported and domestic plants and seeds for regulated species and species of concern (Least Wanted)**

**examine foods, supplements, grains and other commodities for quarantine species and species not known to occur in Canada.**



**CFIA  
Herbarium**



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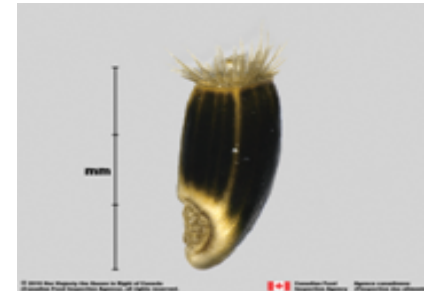
# Early Detection of Invasive Plants (Labs)

i n v a s i v e   a l i e n   s p e c i e s

## CFIA certification programs:

**Provide training for CFIA Inspectors,  
seed analysts and seed testing  
laboratories**

**Our Labs are a national resource for  
plant and seed Identification,**



**Yellow  
Star thistle**



**Jointed  
Goatgrass**



# Collaborative research in support of EDRR

i n v a s i v e   a l i e n   s p e c i e s

## New morphological and molecular EDRR tools

- Development of weed seed identification tools: image database and computer based (LUCID) identification keys.
- Development of a weed molecular identification methods and reference sequence database.
- Protection of Canadian biodiversity and trade from the impacts of global change through improved ability to monitor invasive alien and quarantine species.



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# Parks Canada

## i n v a s i v e   a l i e n   s p e c i e s

- **Canada's National Parks have invasive species monitoring and action plans, based upon their perceived regional threats**
- **these are EDRR approaches**
- **Removing IAS from the Garry Oak**







# Parks Canada

i n v a s i v e   a l i

## Weed Control in Banff, Kootenay and Yoho National Parks

### Rooting Out the Invaders: non-native plants

#### **Responding:** Integrated Pest Management Program

- Prevention
- Control
- Monitoring
- Restoration





# AAFC – Agri-Environment Services Branch

i n v a s i v e   a l i e n   s p e c i e s

## Community Pasture Program (CPP) IAS Strategy

- Early detection of weeds on community pastures
- Eradicate and control weeds
- Weed spotters
- “Range Days” – training on ID and control
- Mapping
- IAS Committee (CPP and AEU) meets quarterly

*(Thanks Bev Dunlop!!)*





# COTE SAN CLARA C.P.

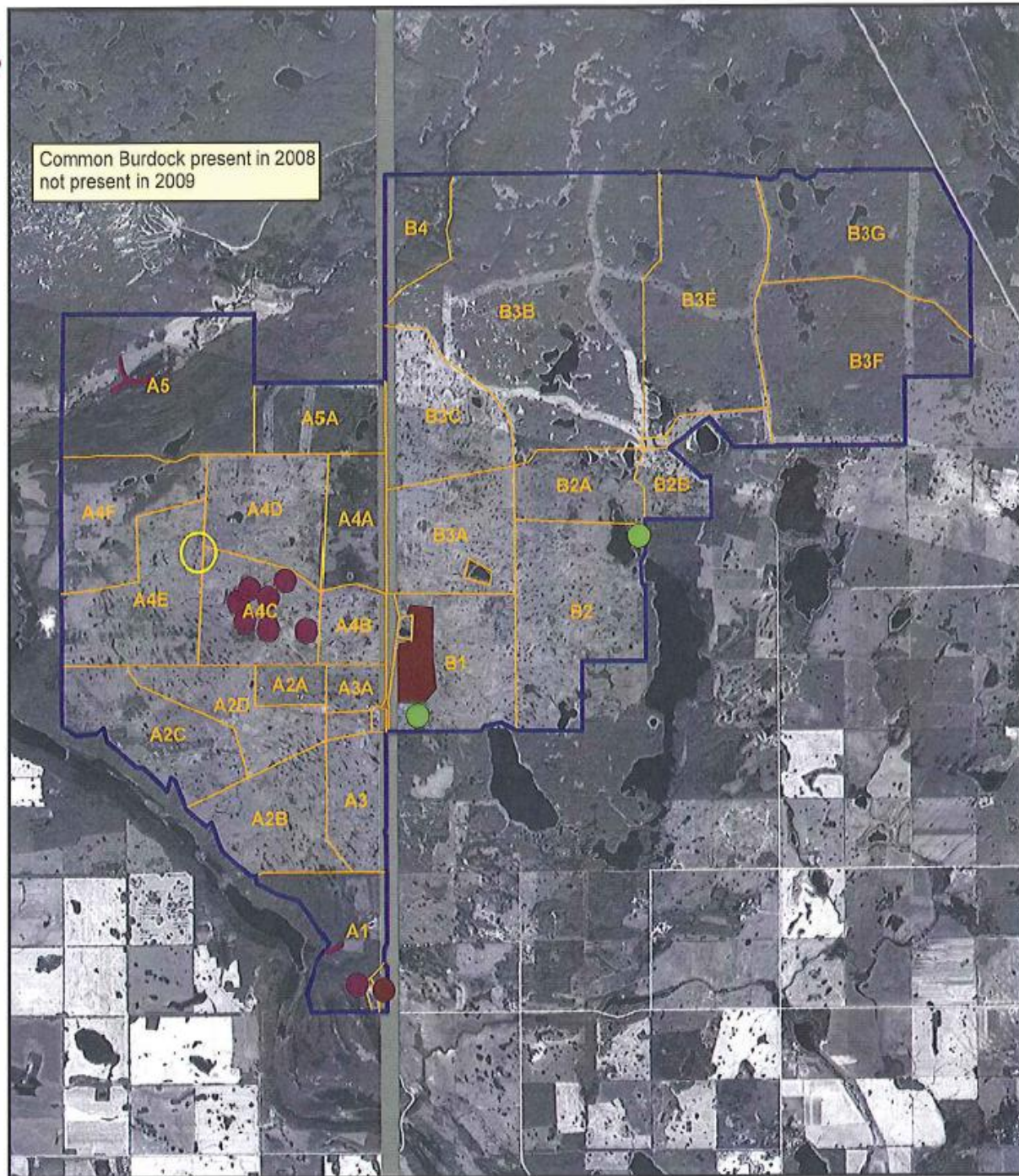
## INVASIVE WEED LOCATIONS

### 2009 INSPECTION

#### Legend

##### WEED NAME

- Leafy Spurge
- Downy Brome
- Nodding Thistle
- Spotted Knapweed
- Common Tansy
- Yellow Toadflax
- Absinthe
- Baby's Breath
- Purple Loosestrife
- Tall Buttercup
- Scentless Chamomile
- Red Bartsia
- Common Burdock
- Canada Thistle
- Ox-eye Daisy

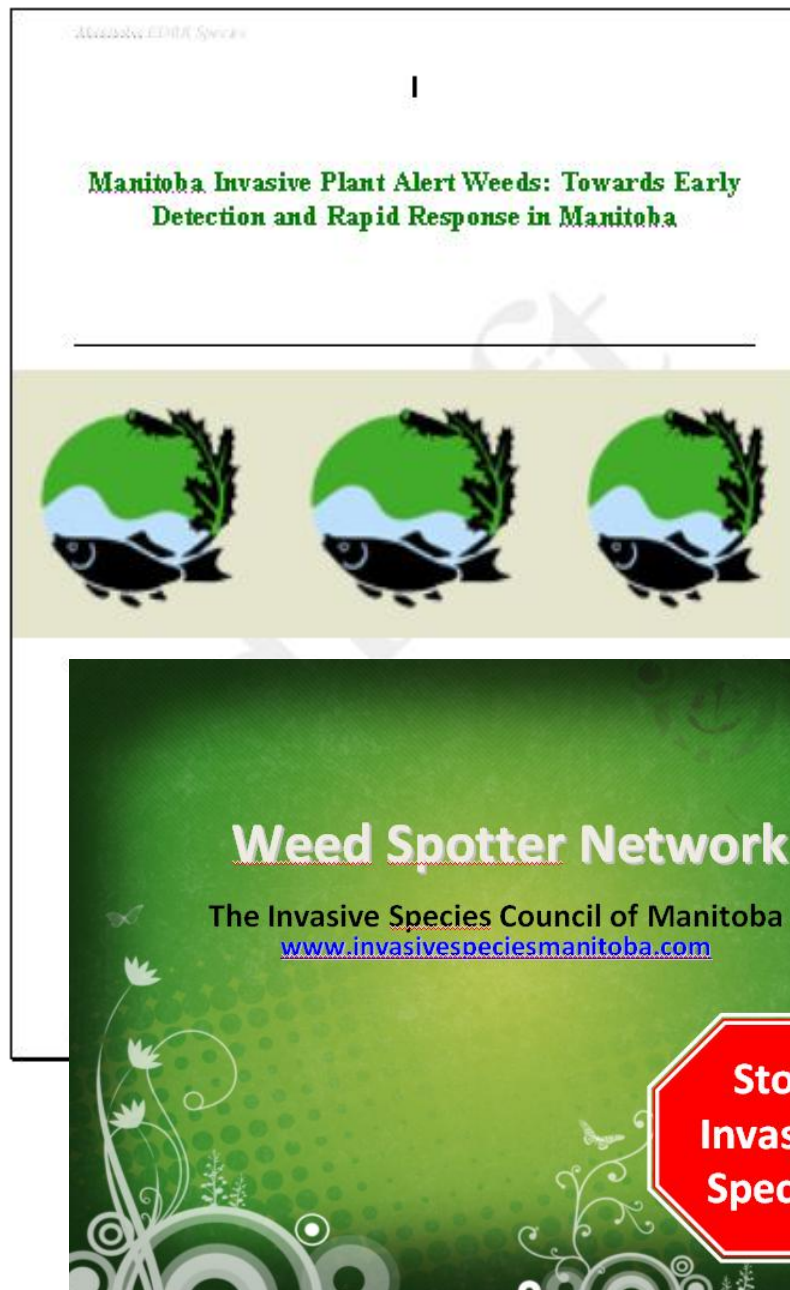




# EDRR in Programs

Invasive Species Councils have EDRR Working Groups

EDRR Alerts  
Weed Spotters Program  
EDDMaps



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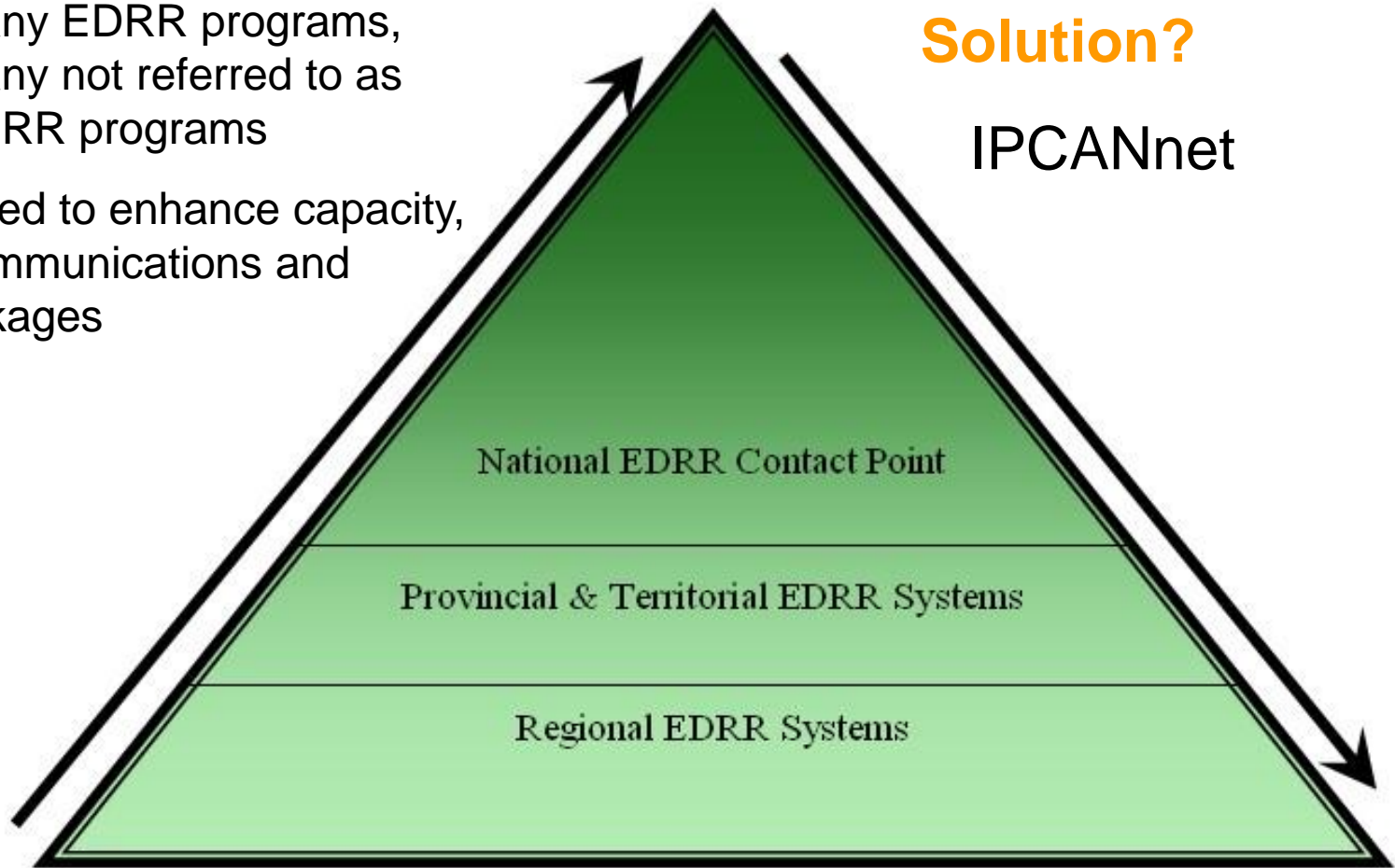
## Challenges?

Many EDRR programs,  
many not referred to as  
EDRR programs

Need to enhance capacity,  
communications and  
linkages

## Solution?

IPCANnet



*Send me an email if you wish to join the National EDRR Forum discussions??*



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# Future of EDRR??

## iTunes EDRR Applications!

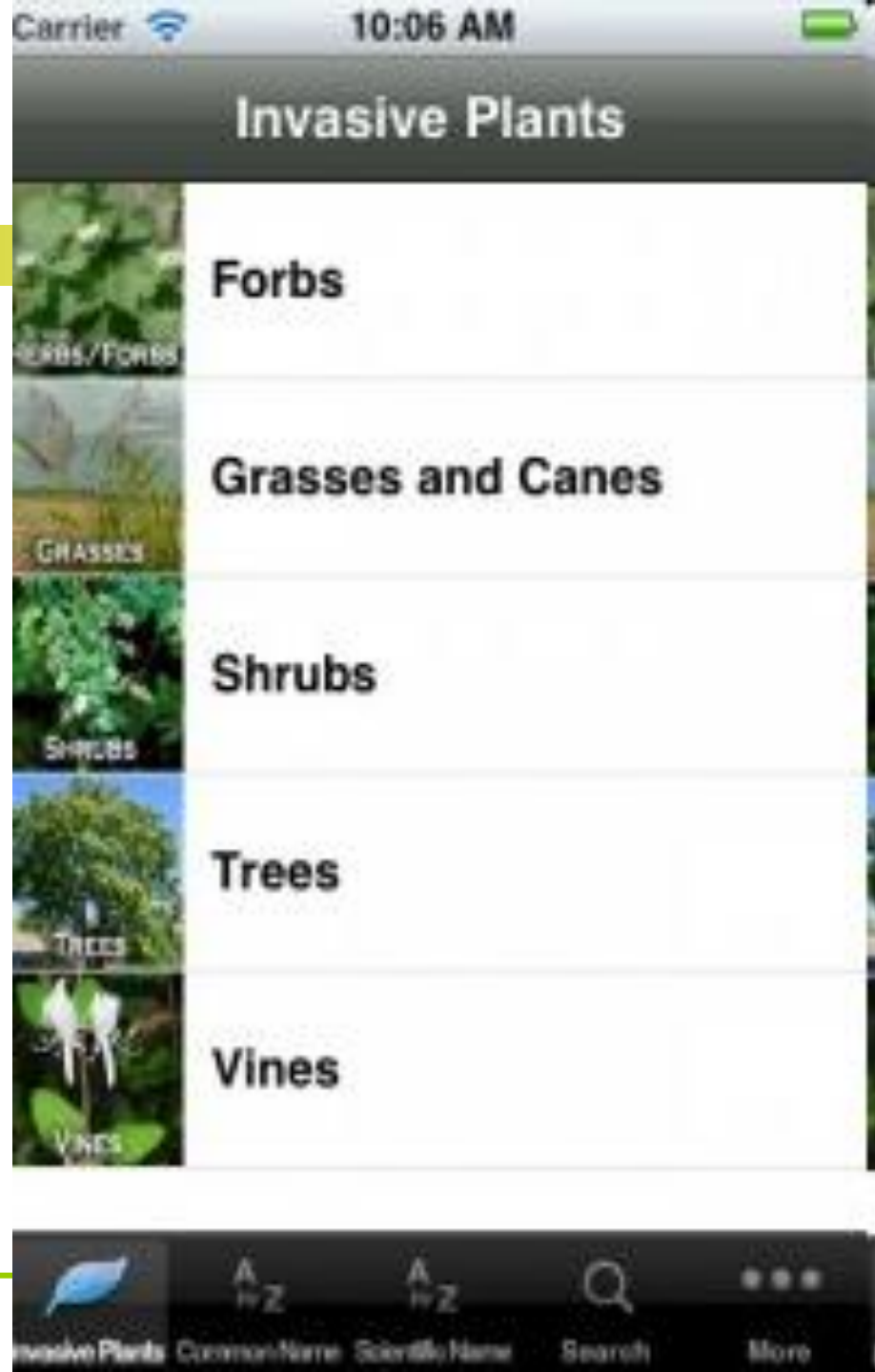
Future versions of the app are expected to include the ability to submit photos and report new sightings of invasive plants on the spot throughout the United States to University of Georgia's [Early Detection and Distribution Mapping System](#).

*University of Georgia Center for Invasive Species and Ecosystem Health*



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