

Education & Outreach: Trends & Opportunities

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Invasive Species
Council of BC

Overview

Current Educational Research

Public Education and Invasive Species

***Challenges: Disconnection, Duality, Denial,
Powerlessness***

Strategies and Techniques

Primary Audience??



People are the
Main Vectors / Pathways



ALL OF US!

Therefore - ***Education and Outreach*** is an Essential and Critical Tool for Invasive Species Management... for whatever audiences we work with.....



Public Education & Environment: *4 Major Challenges Identified*

1. Disconnection
2. Dualism
3. Denial
4. Powerlessness





The average North American spends almost 90% of their day indoors....

(State of the World Report: 2012)

Over 87% of the world's population live in cities..

Technological Age



"Why should I go outside to play?... there are no electrical outlets."

- third grader, San Diego (Louv, [Last Child in the Woods](#) (2007))



An assumed
polarity of
humans and the
environment...
**“Us” and “the
environment”**
*- as if we are
somehow
separate, or
independent.*



Dualism

Denialism is the rejection of undisputed scientific facts.

- differs from scientific debate; it attempts to **manufacture uncertainty** on an otherwise undisputed topic.

(e.g. tobacco smoking, causes of AIDS, climate change, evolution...)

Invasive species - included in the list

The Rise of Invasive Species Denialism
(Russell & Blackburn, 2017) Trends in Ecology and Evolution, Vol. 32 No. 1

Invasion Biology: Specific Problems and Possible Solutions
(Courchamp et al, 2017) Trends in Ecology and Evolution, Vol. 32 No. 1

Powerlessness or Paralysis

Psychic numbing – coined during the nuclear era / peace movement

Helplessness and despair lead to *tuning out* of a problem or crisis

Fuelled by a lack of concrete actions to take.....



“ Despite increasing evidence, the importance of invasive species is not generally acknowledged by the public, not fully accepted by decision makers, and has recently been increasingly disputed by some scientists and the media”.

Invasion Biology - Four Distinct Types of Difficulties:

- Understanding
- Alerting
- Supporting
- Implementing

Difficulties: Invasive Species Outreach

1. Understanding

- IS poorly understood by society
- Need basis in ecology and evolution - complex
- Wide array of *inconsistent terminology: alien, exotic, foreign, non-indigenous, domesticated, weeds, pest.....*

2. Alerting

- Main challenge is measuring & demonstrating impacts –
- **Time:** significant impacts take a long time (usually decades)
- Direct consequences **complex** to demonstrate: = heavy burden of proof

Difficulties Related to Invasive Species Outreach

3. Supporting

- Large “***sympathy capital***” for many invasive species – beautiful (exotic plants, fish, pets), cute (squirrels, cats, rabbits) or useful (game, fur animals)
- Not fair or ethical to kill them – “*not their fault*”

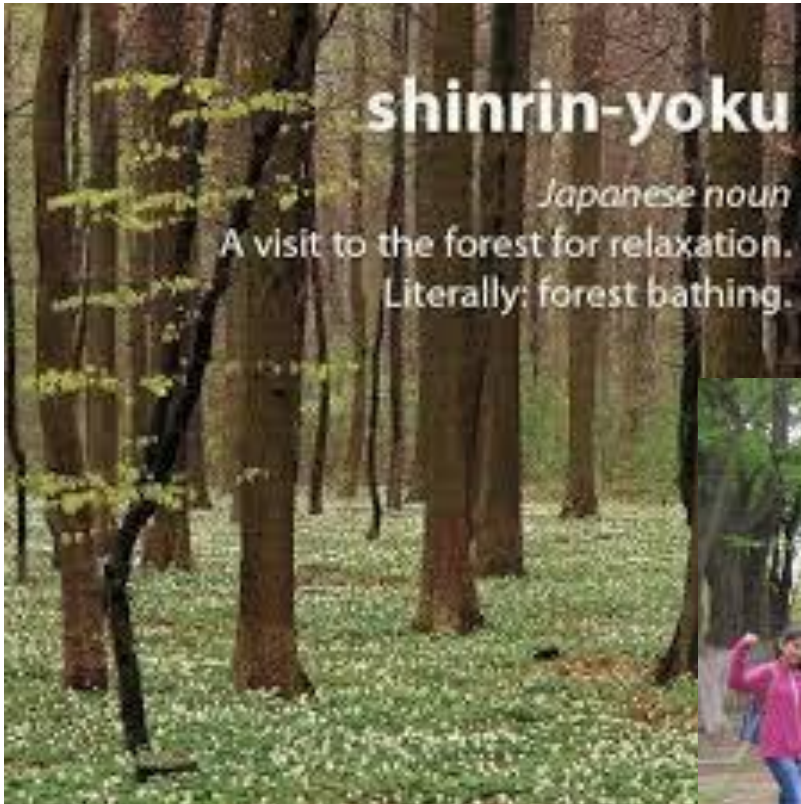
4. Implementing

- Success is never definitive: years of management can be undone by one breach....
- Legal difficulties: - whose ***responsibility*** is it when one is released? Trader? User? Releaser?
- Very few adequate laws internationally.... “non-native” political borders, not geographical ones..... colonies

- ***Re-Connection*** – Direct Experiences Outdoors
- ***Explicit Ecology***
Interdependence
- Use **consistent, clear Definitions & Concepts**

- Better Understanding:
Tailored Programs
- Ensure **Relevance** to audience
- **Current Research** on Education, Outreach
- Change / **Update Communication models**

Direct Experience, Outdoors



Disconnection: *Re-Connection*

Substantial body of research: directly links importance of nature and the outdoors to:

- Fundamental childhood development,
- Adult mental and physical health/ Healing
- ADHD treatment success
- Addiction treatment success
- Stress relief - Japanese: Forest Bathing"



Duality: *Understanding Interdependence*



“Passion does not arrive on videotape or CD; passion is personal. Passion is lifted from the earth itself by the muddy hands of the young; it travels along grass-stained sleeves to the heart” - *Richard Louv*

Better Understanding

- *Define **What*** invasive species are: Use clear, consistent definitions and terms
- Know your neighbours – know what **Native Species** are, and their importance
- **Impacts** of invasive species: **Know Your Audience!**
Focus on **Issues Relevant** to them



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Terminology

Alien

Non-native

Introduced

Noxious

Invasive

Exotic

Weedy

Native Species

**Non-Native but non-
invasive**

Invasive Species

**Characteristics of
Invasiveness**



Better Communications Models: Learning Styles Theory

How people perceive and process the world around them

- based on brain research



- **There is no "1 type" of learner or "best way" to learn, but at least four**

(Lawrence describes 16 , Gardner describes eight multiple intelligences)

4-MAT System - McCarthy

Type one: Imaginative Learners

Learn by listening and sharing ideas, strengths

Favorite question: Why??

Type 2: Analytic Learners

Good at creating concepts and models, need details and data, do well in traditional classrooms

Favorite question: What?

Type 3: Common Sense Learners

They are real pragmatists, very skills-oriented and hands-on

Favorite question: How does this work?

Type 4: Dynamic Learners

learn by trial and error, believe in self-discovery, risk takers, like change - good at adapting.

Favorite question: What if?

Better Communication Models

Exemplary Outreach Programming

- Use **current research**
- Develop programs with **direct input from users**, and pilot them thoroughly
- Ensure wide range of **learning styles** reached

Community-based Social Marketing

- Clean Drain Dry
- PlantWise
- PlayCleanGo
- Don't Let It Loose!
- Buy it Where You Burn It



Hands-on Projects & Events

Participatory Projects

Clear goals and sub-goals
to demonstrate success



Action Education

Important, large area of research:
skills and techniques to support
and promote action and service
learning

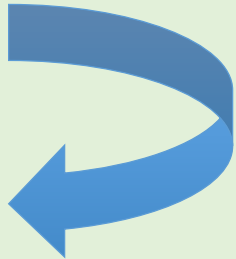


Prescribed Learning Outcomes Links

- **Critical element when working in formal education system to ensure implementation**
- BC Ministry of Education website links
- Develop learning resources with PLO connections made by subject, grade level, age
- Applicable to **non-formal education** as well

- Raise **Awareness** →
- Encourage **Appreciation** →
- Leading to deeper **Understanding** →
- Inspiring appropriate

Action



= basic educational process

“AAUA”

- **What** are invasive species?
 - definitions, characteristics
- **Why** are they important / why should we care- impacts specific to your audience
- **How** they get here/ get around
 - understanding actions, pathways
- **What** we can do about them: Appropriate Actions with measurable, staged results



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Thank You!

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