Dave K's comment on Canadian sensibilities
1. Principles...foundation for all restoration activities

2. Guidelines...tools for practitioners

3. Implementation Framework...process for consistent application

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What is Ecological Restoration?

Definition
The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed (Society for Ecological Restoration International 2004).

Goal
To initiate, re-initiate, or accelerate processes that will lead to the evolution of an ecosystem that is characteristic of a protected area’s natural region…not to reproduce a static historic ecosystem state…
Why Do We Restore? (1)

Protected natural areas

• Play a critical role in the conservation of biodiversity and natural capital

• Are established to protect natural heritage for all Canadians to experience, learn, discover, and appreciate into the future

• Face a variety of challenges

Ecological Restoration

• Offers a way of halting and reversing ecosystem degradation
Why Do We Restore? (2)

To Improve Ecological Integrity

- Restore ecosystem functions (e.g., fire, flood)
- Control harmful invasive species
- Replace lost or fragmented habitat
- Connect protected areas with surrounding landscapes
- Clean up chemical contamination
Why Do We Restore? (3)

To Connect Canadians to their Heritage Places

• Reflect the relevance of the place to Canadians through enhanced visitor experience and education
• Enhance understanding, appreciation, support, and engagement towards natural and cultural heritage
• Support long-term community-based engagement for the conservation of natural and cultural heritage
Development Process

Consensus of a broad range of experts, managers, and jurisdictions

Multi-jurisdictional Working Group

• Provincial and Territorial Protected Areas Agencies
• Parks Canada and other Federal Departments
• Canadian and International Universities
• US National Park Service
• Society for Ecological Restoration International and its Indigenous Peoples Restoration Network Working Group
Principles of Good Ecological Restoration: “The 3 E’s”

Effective in restoring and maintaining ecological integrity
Principles: “The 3 E’s”

Efficient in using practical and economic methods to achieve functional success
Engaging through implementing inclusive processes and by recognizing and embracing interrelationships between culture and nature

Principles: “The 3 E’s”
125 Guidelines for Ecological Restoration

- Selected according to the degree and type of intervention required to meet goals and objectives

- Specific recommendations for intervening in a manner consistent with the 3 principles
Ecosystem Degradation and Restoration Model

- Fully functional requires physical-chemical modification.
- Requires biological modification.
- Requires improved management.

Ecosystem State:
- Intact
- Degraded

Abiotic Barrier:
- Ecosystem Degradation

Biotic Barrier:
- Ecosystem Restoration

Ecosystem Attribute:
- Non-functional
- Fully functional
Guidelines for Ecological Restoration

Improvements in Management Strategies
• Restoration of natural disturbances and perturbations (20)
• Control of harmful invasive species (20)

Improvements in Biotic Interactions
• Re-creation of native communities or habitat (9)
• Species-re-introductions for functional purposes (14)

Improvements in Abiotic Limitations
• Landforms (12)
• Hydrology (18)
• Water and Soil Quality (10)

Improvements in Landscapes and Seascapes (21)
Examples of Guidelines (1)

Improvements in Management Strategies
- Restoring natural frequency of fire, floods, insect outbreaks
- Promoting natural regeneration and nutrient cycling
- Removing invasive species
- Promoting responsible exploration and learning activities
- Seeking advice of visitor, education and cultural resource specialists
- Respecting cultural heritage resources in the area

Improvements in Biotic Interactions
- Using native species and genetic material
- Considering interactions among species
- Considering individual species recovery plans while working towards the goal of restoring ecological integrity of the protected area
- Working with neighbours and other stakeholders and partners
- Facilitating public engagement, understanding, appreciation
Examples of Guidelines (2)

Improvements in Abiotic Limitations

- Considering impacts on cultural resources and visitor experience before removing constructed features, including dams and weirs
- Using natural organic material to amend soils
- Restoring natural hydrologic flow regimes
- Protecting surface water quality

Improvements in Landscapes and Seascapes

- Identifying relevant ecosystem boundaries
- Favouring ecosystem connectivity
- Identifying and considering local and global threats
- Increasing public understanding, appreciation, support
- Recognizing the need to adapt to global challenges such as climate change
Implementation Framework

7 step planning and implementation process: How to use the Principles and Guidelines in a protected areas context

- Engagement and communication with partners, stakeholders, public
- Relevant legislation, policies, and strategies (Environmental Assessment, Species at Risk, CRM Policy, Invasive Alien Species Strategy)
- Site, regional data; scientific, traditional knowledge
- Clearly-defined goals and objectives
- Linkages between monitoring, reporting, and planning processes
- Adaptive Management
Implementation Framework

Step 1
Identify Natural & Cultural Heritage Values

Step 2
Define the Problem

Step 3
Develop Restoration Goals

Step 4
Develop Objectives

Step 5
Develop Detailed Restoration Plan

Step 6
Implement Detailed Restoration Plan

Step 7
Report

Adapt

Evaluate

Monitor

IUCN Categories, Legislation, Management Plans

Ecological Restoration Principles

Ecological Restoration Guidelines

Ecological Models or Experiments

Ecological Restoration Guidelines

Field-Scale Experiments

Ongoing Engagement with Partners, Stakeholders, Public

Site Data – Monitoring, ATK, Other

Ecoregion Data – Landscape context, Reference Area, Case Studies
Now What

- Implementation in planning and priority setting in Protected Areas active management programs
- Continued broad-based collaboration
- Demonstration of best practices through case studies that illustrate real-world application
- Evolution of guidelines in response to new issues, information, knowledge, and understanding
- Serving as the basis for development of global guidance through the IUCN World Commission on Protected Areas
What has happened so far

• IUCN World Conservation Congress agreed that this approach should serve as the basis for a global approach to ecological restoration in protected areas

• IUCN World Commission on Protected Areas - Best Practice Guideline for Ecological Restoration by 2012

• Multiple partners collaborating

• Process to be launched at the Society for Ecological Restoration’s International conference in Perth Australia in August 2009
Global Issues to Address

1. Raising awareness and support, and building commitment for this approach to ecological restoration

2. Is the approach sufficiently globally applicable:
   • To diverse protected areas and ecosystems?
   • At a range of scales?
   • To the issues and concerns of indigenous and local communities?

3. Does the approach adequately address complex issues associated with climate change? Should it?
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