E D M O N T O N

Integrated Natural Areas Conservation Plan

Public-at-large and ENGO workshop

November 29, 2006

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Agenda

1. Office of Natural Areas mandate 6:20-6:30
   i. Coordinating, stewardship function *v.* operations
2. 2005 *State of Natural Areas* report 6:30-7:30

BREAK

3. Edmonton successes (designate scribe) 7:45-8:30
   i. What is the City doing well?
   ii. What can it do better?
4. Community mapping 8:30-9:00

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Agenda

5. Where should the Office of Natural Areas focus its efforts? 9:00-9:30

BREAK

6. Summary and wrap-up 9:45-10:00

Office of Natural Areas

- Created in 2002, the role of the Office of Natural Areas is to ensure that natural areas – from forest and grassland to wetlands, lakes and riparian areas – are conserved and restored, and integrated into new development in a way that enables them to remain healthy and sustainable.
- Two committees are in place : the Natural Areas Policy Implementation Committee (NAPIC) and the Natural Areas Advisory Committee (NAAC).

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What *is* a "natural area"?

- The Natural Areas Advisory Committee has defined natural areas as follows.

  "An area of land and/or water especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means."

- Areas such as groomed parks and recreation areas are not included within the definition.

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Related plans and initiatives

1. *Natural Connections*: the Integrated Natural Areas Conservation Plan (in development).
2. Edmonton Land Trust (approved yesterday).
3. Ecological Conservation Assistance Program.

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5. Plan Edmonton, Environmental Strategic Plan, Policy C-467, Environmental Review in NSRVRS, new structure plans.

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Natural Connections

- a ***State of Natural Areas* report**, that updates the natural area inventory map and identifies a natural area network for Edmonton;
- a **Conservation Vision**, developed through public consultation; and
- an **Implementation Plan**, which will outline roles, responsibilities and strategies for moving forward on the protection of Edmonton's natural areas.

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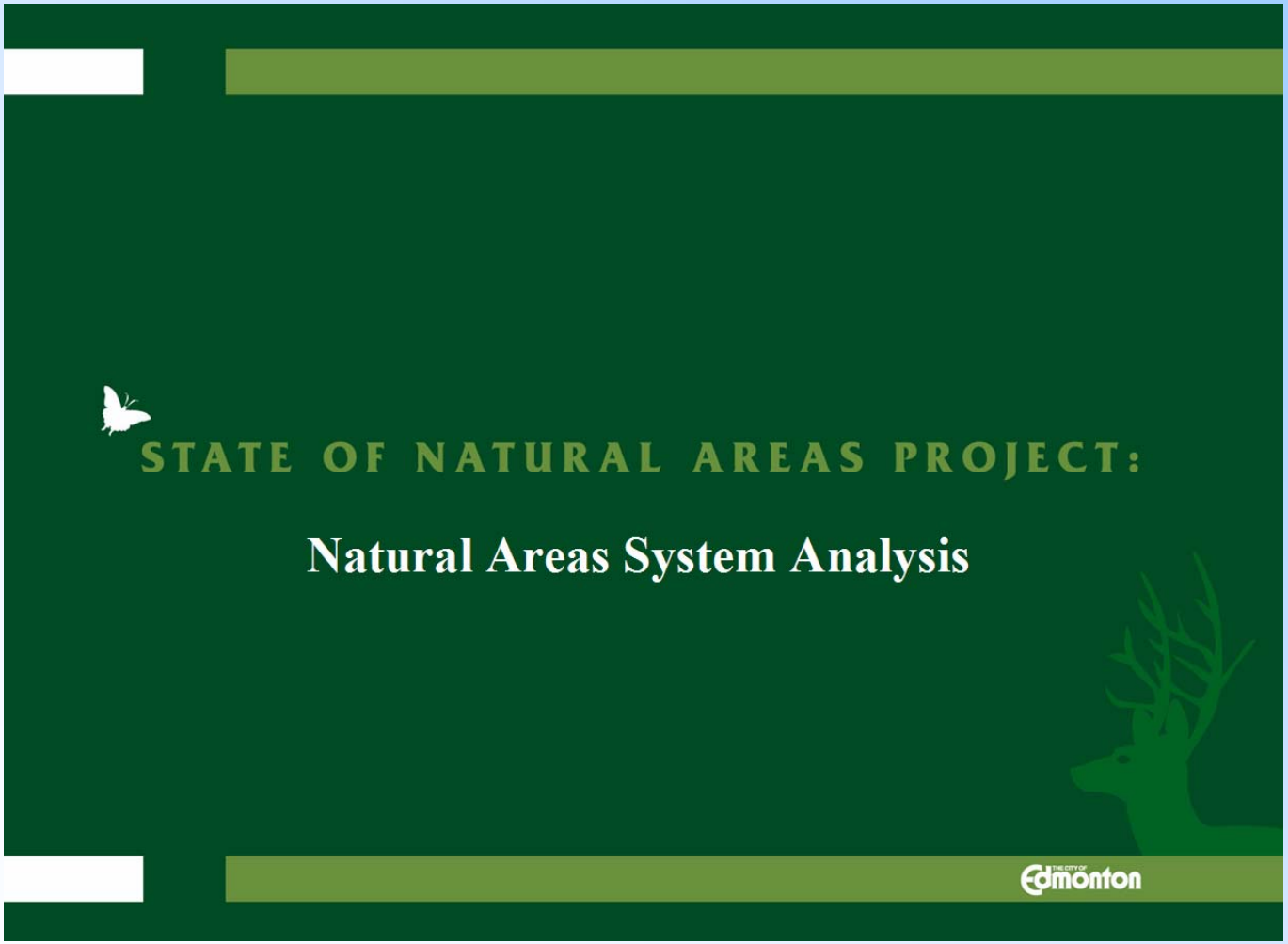
E D M O N T O N



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STATE OF NATURAL AREAS PROJECT:

Natural Areas System Analysis

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Overview

- History of Natural Areas Management in Edmonton.
- Why conserve Natural Areas?
- What do we need for effective conservation?
- What can we learn from other plans?
- Conservation efforts to date.
- Findings of current study.

River Valley Natural Areas Management

- Natural Area conservation began in 1900s with protection of Victoria Park.
- For many years, focus was largely on the River Valley.
- First official policies:
  - **NSRV ARP (1985);**
  - **Ribbon of Green (1992).**

Tableland Natural Areas Management

- Value of Natural Areas in the upland areas (tablelands) recognized in the mid 1980s.
- Inventories identified sites:
  - City of Edmonton (1986);
  - Geowest (1993).
- 1995: Policy C-467, *Conservation of Natural Sites in Edmonton's Tablelands.*

Integrated Management Approach

- 1998 - Plan Edmonton (Edmonton's Municipal Development Plan).
- 2006 - revision of City's *Environmental Strategic Plan*.
  - **<u>Integrated</u> management of river valley (NSRVRS) and tableland Natural Areas.**

Current Process

- Develop and implement a new Integrated Natural Areas Conservation Plan (INACP).
- Integrated management of the NSRVRS and tableland Natural Areas- treat as one system.

Why Conserve Natural Areas?- Global Perspective

- Globally, populations have increased six-fold since the 1800s.
- Extensive conversion of natural lands to support growth.
- Currently, **83%** of world modified by human land use and resource extraction.

Fragmentation – Global Perspective

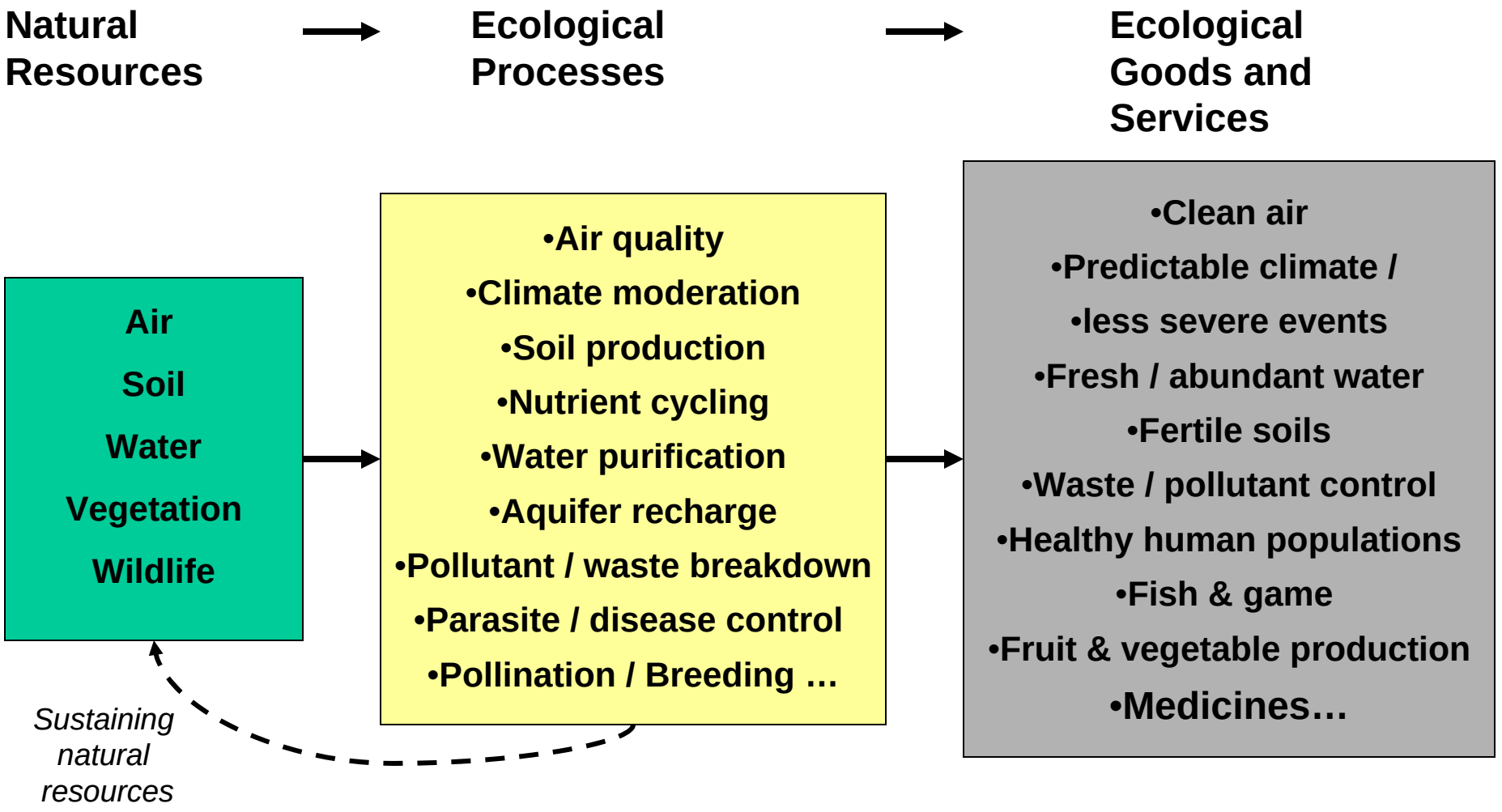
- Result = remnant habitat patches.
- Only **16%** of world's land base comprises wilderness areas > 4000 $km^{2.}$
- Many of those sites are isolated.
- Biodiversity contained within them also isolated.

Local Perspective

- 1904 population of 8,350.
- 20 minute walk in any direction: wilderness.
- Horseback, honeywagon.
- 21st century population of +700,000 in Edmonton, 1 million regionally.

Local Perspective

- Same fragmentation happening at local scale
  - Result = remnant natural areas
- Local conservation efforts produce **local benefits**
- Such efforts also contribute to **global solutions**

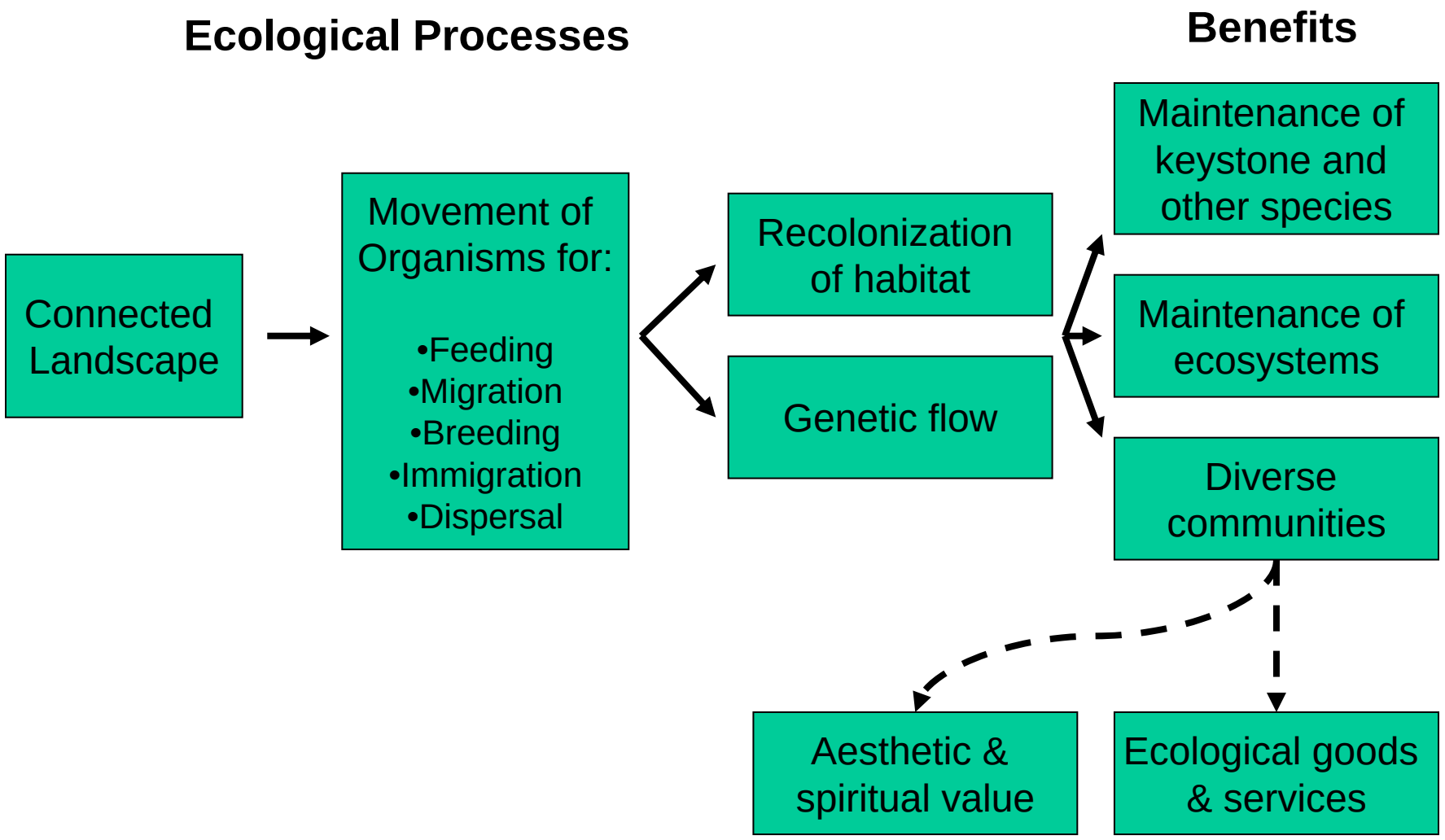

Natural Resources
Ecological Processes
Ecological Goods and Services
Air
Soil
Water
Vegetation
Wildlife
•Air quality
•Climate moderation
•Soil production
•Nutrient cycling
•Water purification
•Aquifer recharge
•Pollutant / waste breakdown
•Parasite / disease control
•Pollination / Breeding …
•Clean air
•Predictable climate /
•less severe events
•Fresh / abundant water
•Fertile soils
•Waste / pollutant control
•Healthy human populations
•Fish & game
•Fruit & vegetable production
•Medicines…
Sustaining natural resources

Effective Natural Areas Conservation

- Is based on conservation science.
- Focuses on maintaining healthy, functional ecosystems.
- Recognizes that management must focus on Natural Areas *and their relationships with their surroundings.*

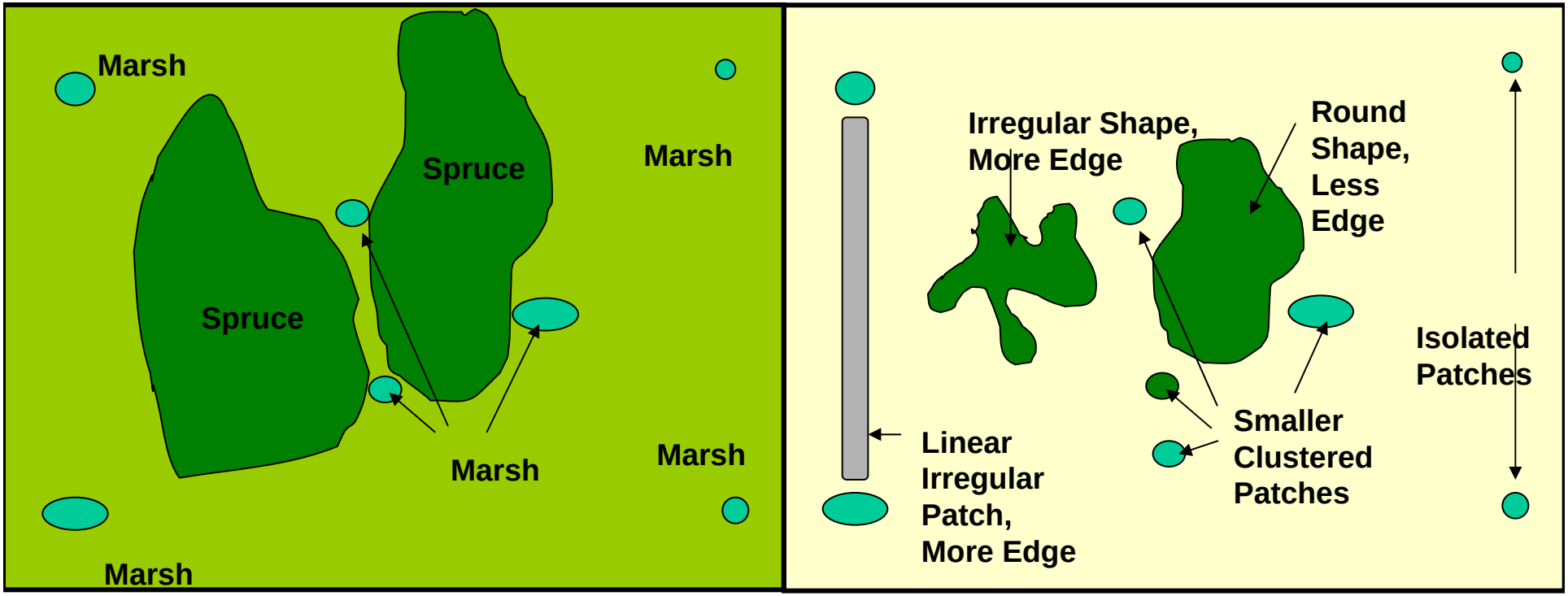
Effective Conservation

- Conservation science tells us that a healthy, functioning landscape depends on:
  - genetic exchange;
  - landscape connectivity.
- And ecological processes operating under principles of:
  - ecological resilience;
  - ecological redundancy;
  - temporal and spatial scales.


Ecological Processes
Benefits
Connected Landscape
Movement of Organisms for:
•Feeding
•Migration
•Breeding
•Immigration
•Dispersal
Recolonization of habitat
Genetic flow
Maintenance of keystone and other species
Maintenance of ecosystems
Diverse communities
Aesthetic & spiritual value
Ecological goods & services

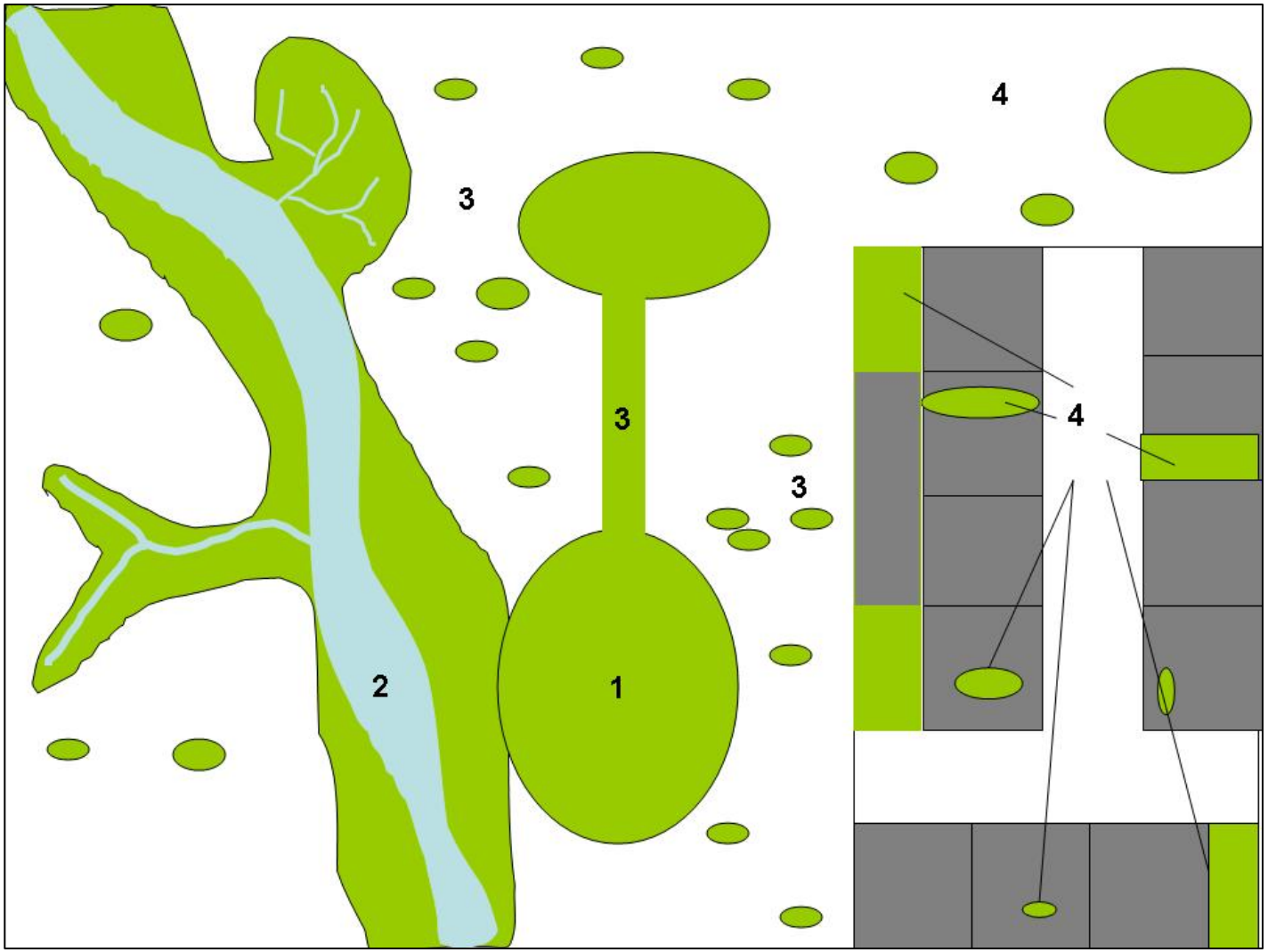
Integrated Management - Basic Premise

- A conservation plan that focuses simply on retention of NAs will not succeed in sustaining functional ecosystems, and their associated benefits.
- To be effective, such a plan must manage NAs in the context of the surrounding landscape.



Undeveloped Landscape

More Developed (Fragmented) Landscape



Connected Urban Landscape

1 = Core Areas
2 = Water corridor
3 = Connections (Linkages)
4 = Scattered small habitat patches

Existing Conservation Plans

- Wide range of conservation-oriented plans, policies and strategies.
- Exist at various levels of government and cover a diversity of focal resources.

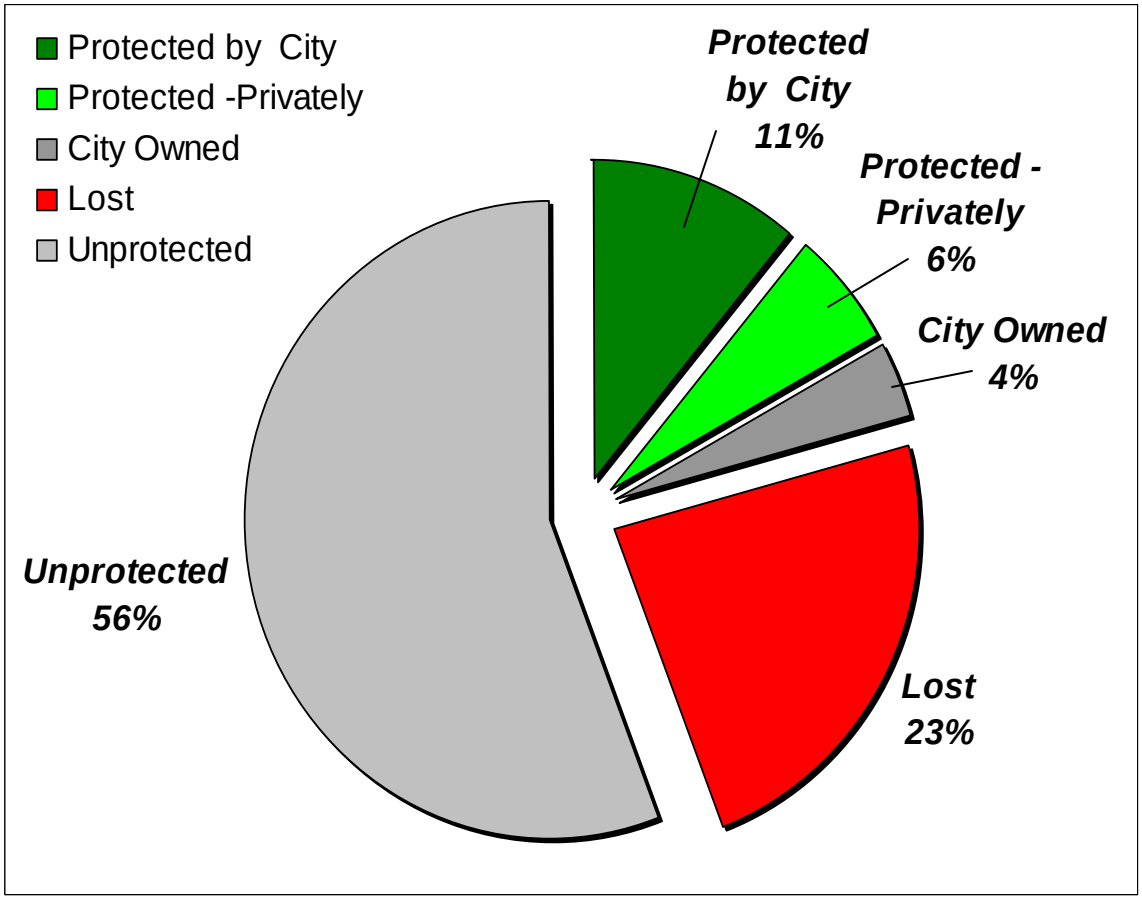
- Survey of 23 plans identified three common themes:
  - the importance of engaging the public;
  - the desire to form cooperative partnerships;
  - the need to focus on habitat protection.
- Protection of urban NAs is compatible with and contributes to the mandates of these higher-order initiatives.

Analysis of Edmonton's Natural Areas

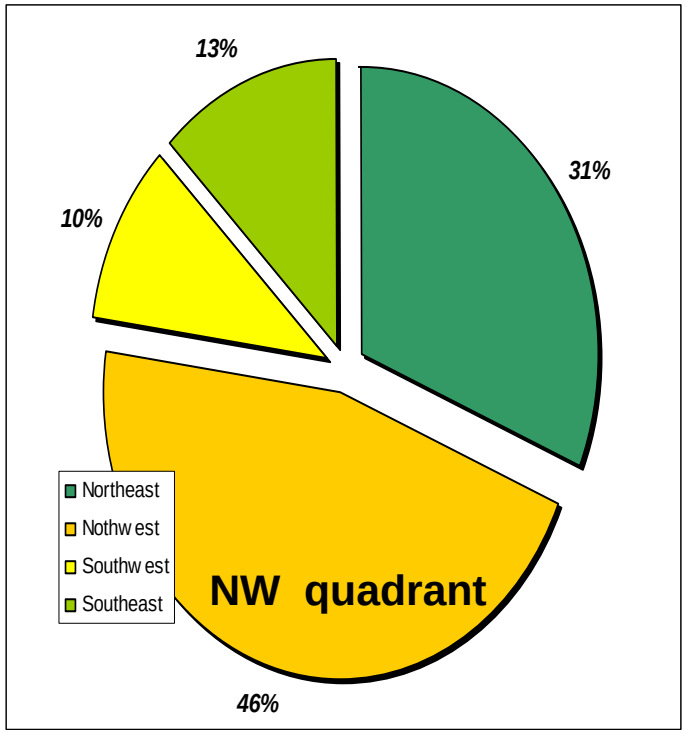
1993 to 2005

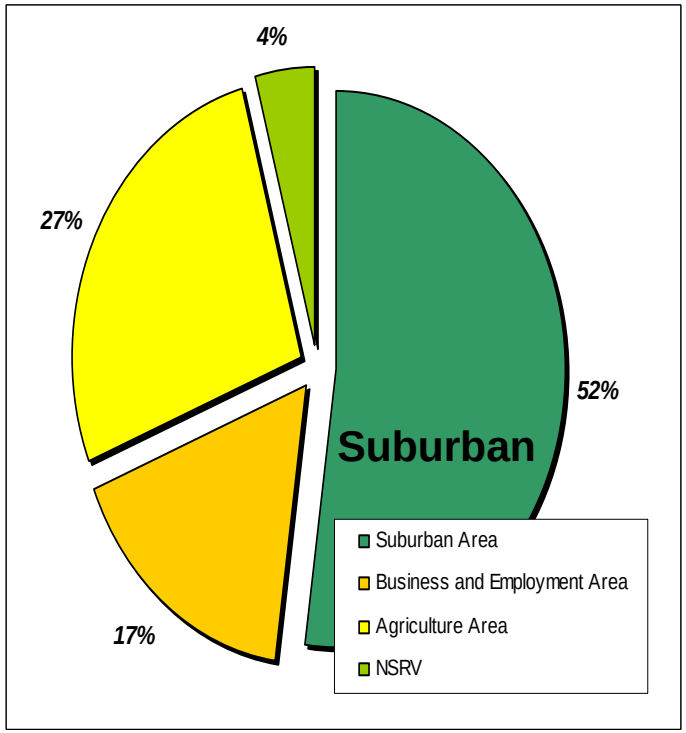
- The 1993 Inventory:
  - 85 Environmentally Sensitive Areas (ESAs) and Significant Natural Areas (SNAs);
  - combined area approx. 1300 ha.
- Between 1993 and 2005:
  - 8 sites completely lost (80 ha);
  - 40 sites partially lost (228 ha);
  - 22 sites at least partially protected (250 ha).

- In terms of area that means...



- Majority of losses occurred to sites located in...
  - the northwest quadrant of the City, and
  - suburban areas.





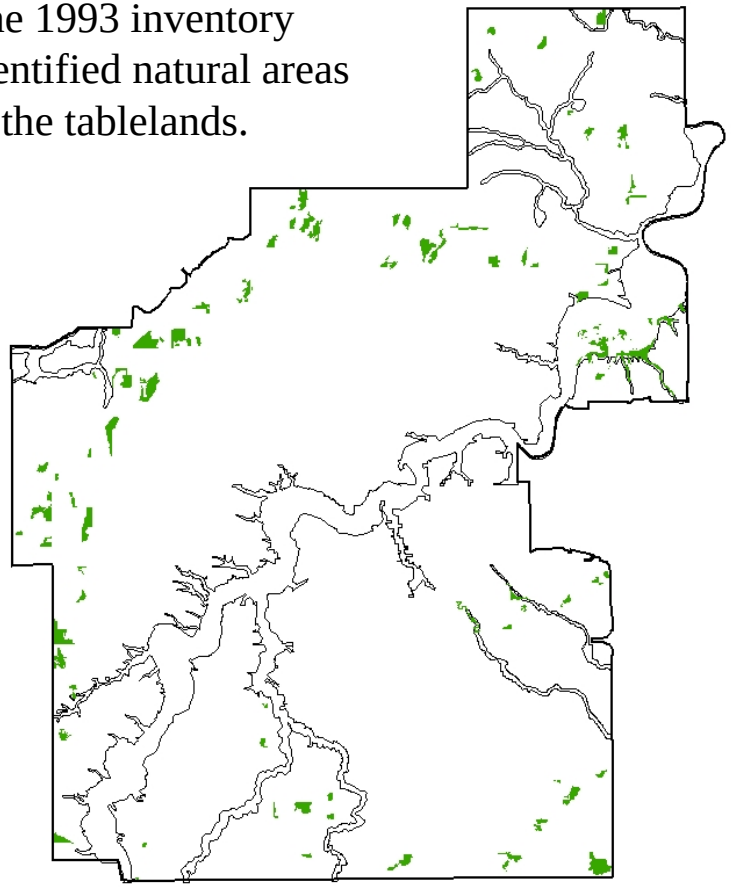
Note: based on # of sites

Results of Current Study

- The State of the Natural Areas Project :
  - included comprehensive mapping of *all* Natural Areas > 1 ha in Edmonton;
  - comprised an *integrated* approach, mapping Natural Areas in the Tablelands and the NSRV.
- The result? A new and expanded inventory of Natural Areas...

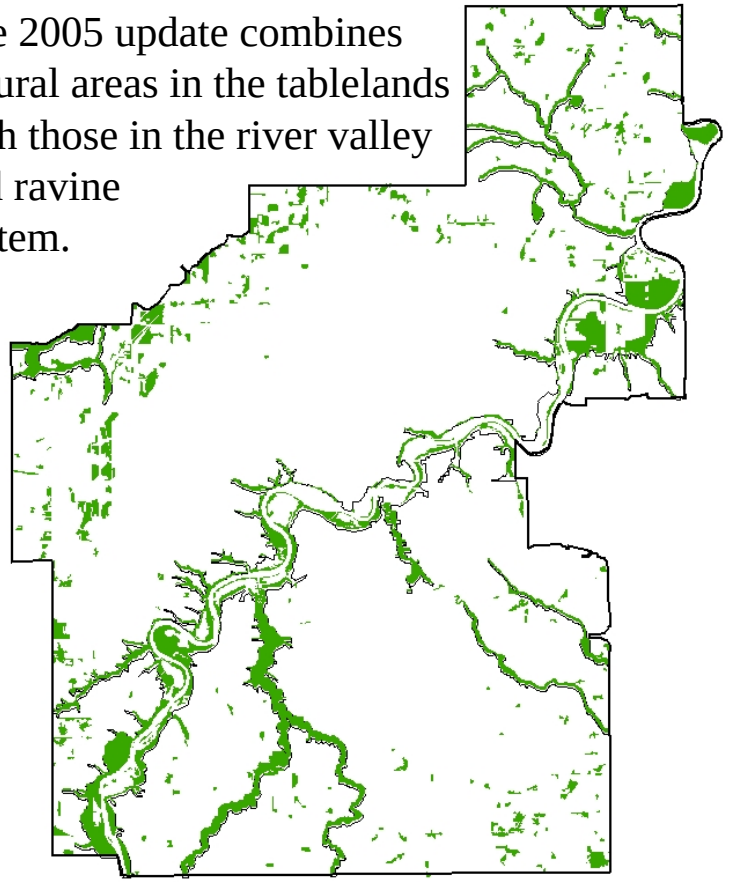
1993

The 1993 inventory identified natural areas in the tablelands.



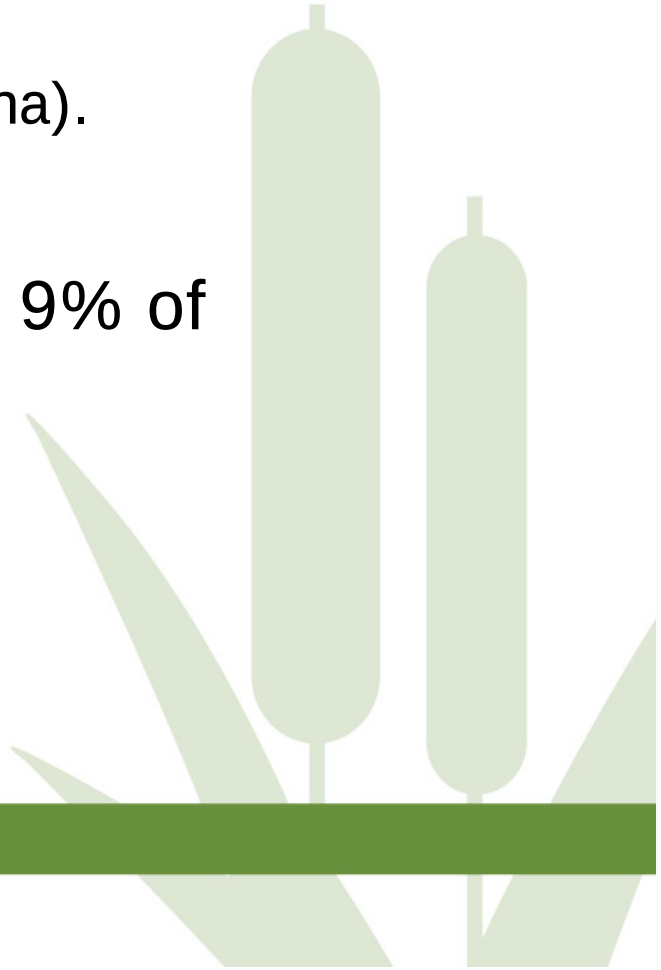
2005

The 2005 update combines natural areas in the tablelands with those in the river valley and ravine system.



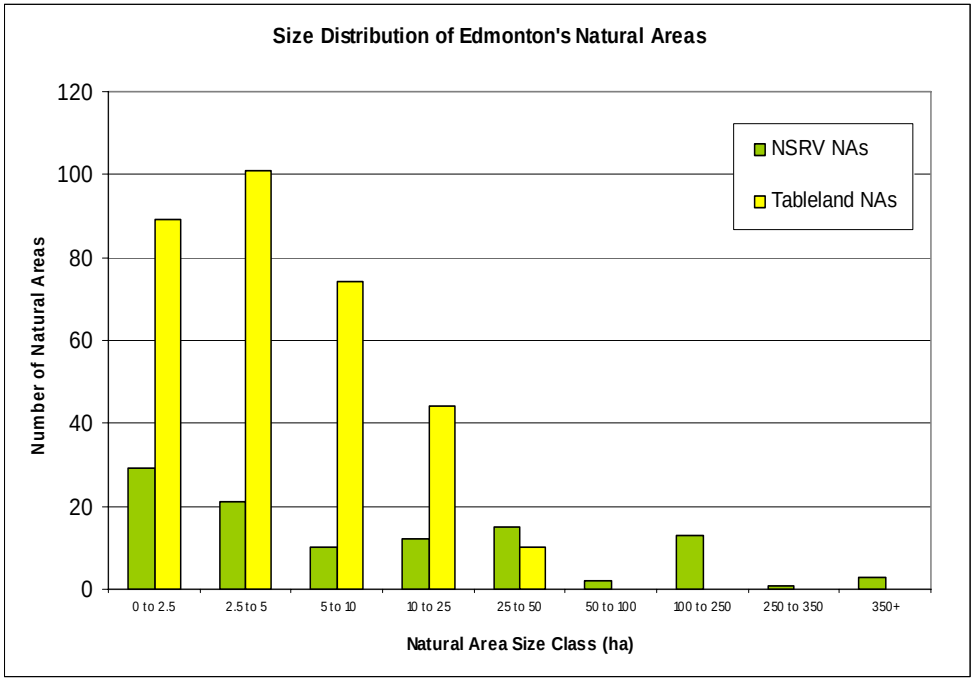
Natural Areas in Edmonton (2005)

- 424 Natural Areas = ~7225 ha.
  - 318 Tableland Natural Areas (~2050 ha).
  - 106 NSRV Natural Areas (~5175 ha).
- Combined, Natural Areas comprise 9% of Edmonton's landscape.
  - 63% of the NSRV.
  - 3% of the Tablelands.



Size and Distribution

- Natural Areas range in size from 1.0 ha to 865.8 ha.
  - NSRV Natural Areas average ~49 ha.
  - Tableland Natural Areas average ~6 ha.



Ecological Networks

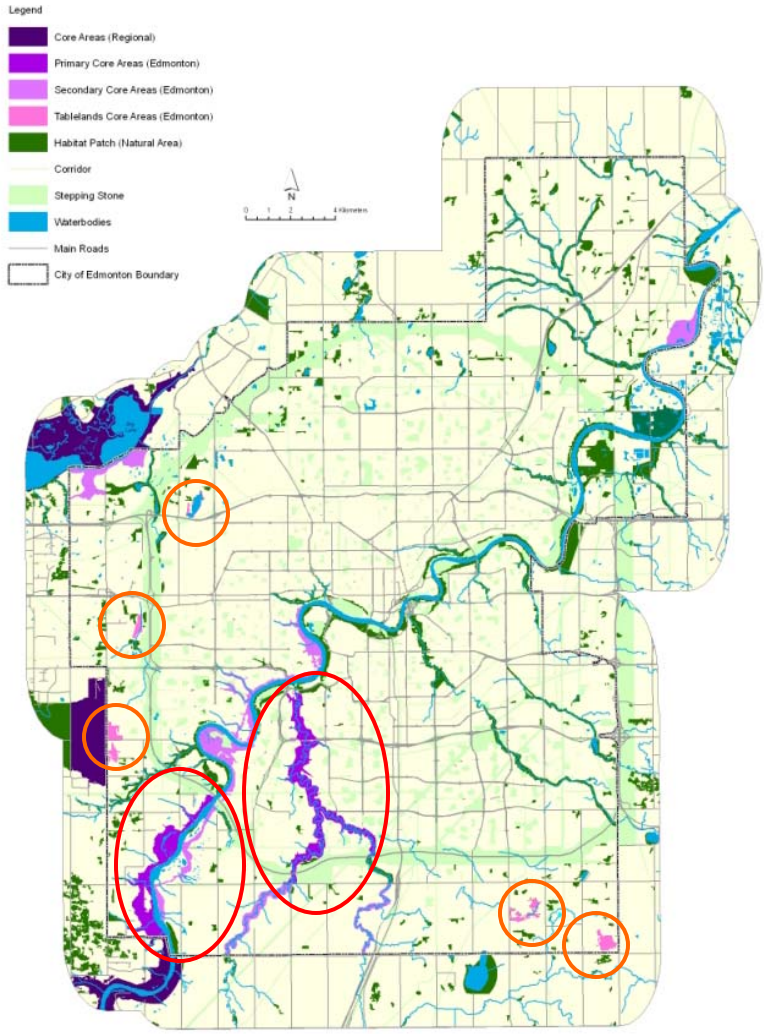
- In *Land Mosaics*, Harvard ecologist Richard Forman identified four essential elements to any ecological network.
  1. A few large patches of natural vegetation, *i.e.*, core areas.
  2. Wide vegetation corridors along major water courses.
  3. Connectivity with corridors and stepping stones.
  4. Heterogeneous nature within human developed areas.

Edmonton's Ecological Network

- Identified these elements from Natural Areas and other supportive habitats:
  - parks, golf courses, pipeline right-of-ways, and roadway verges.
- This led to...

Edmonton's Ecological Network

- Two primary Core Areas: 554 ha and 416 ha in size, both part of the NSRV.
- Other Core Areas include smaller Tableland Core Areas.



Challenges

- Core Areas in tablelands under development pressure – losses since 1993 almost exclusively in tablelands.
- Trend toward loss of connectivity and, perhaps, secondary core areas.

Recommendations

- Cannot rely on retention of Natural Areas alone, must manage Natural Areas in the context of the surrounding landscape.
- Edmonton has an existing, functional Ecological Network that requires careful and comprehensive management.
- Most important of all...

Recommendations

- ...the maintenance of:
  - **Connections and Core Areas**
- Connections = dispersal of source populations, movement of wildlife, ecological processes.
- Core Areas = area-sensitive species, biodiversity, resilience.

Conclusions

- Some successes, some set-backs.
- Edmonton's Ecological Network has strengths and sensitivities.
- Conservation plan should encourage:
  - sustainability; and
  - protection of essential ecological processes and intrinsic, natural value.

Overall goal

A vibrant, sustainable natural heritage of which Edmontonians can be proud today and in future generations.

Public engagement process

1. On-line survey ➢ +1,100 responses
2. Public open houses ➢ +100
3. **Public workshops** ➢ ~40
   i. Includes ENGOs
   ii. Additional consultation with UDI and development community upcoming
4. Plan implementer workshops
5. Landowner workshops

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Conservation successes

(Designate scribe)

1. What, from your perspective, does the City do well with respect to natural areas?
2. What should the City be doing that it doesn't do now, or what could it be doing better?

Community mapping

- What do natural areas contribute to your quality of life?
- What natural areas are deserving of special consideration?
- Errors and omissions.

Focused efforts

- Where should the Office of Natural Areas focus its efforts?
  - Protection
  - Public outreach and involvement
  - Planning

Summary

- We will be following up with you on your input.
- Expect to be invited to complete an opinion survey in mid-December.

More information

- For more information, or to follow-up on today's session, contact Mike Evans at mevans@teleologic.ca or 496-6080.
- Don't forget the on-line survey: visit www.edmonton.ca/naturalareas and click on "News and Events" in the left hand menu.

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