

Ecosystem Services & Municipal Priorities

Conservation, Compensation & Unintended Consequences



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ALI Land Use Conference 2016

Outline

- Conservation Planning needs & priorities in Calgary
- Challenges in municipal land use planning
- Lessons learned – *Calgary Wetland Conservation Plan*



View of Bow River looking west – August
1893 Glenbow Archives NA-1172-2

Ecosystem Services is an implicit element of Calgary's planning for conservation

Recognise conservation and biodiversity as an urban issue

Watershed health is one of Calgary's many priorities



Calgary



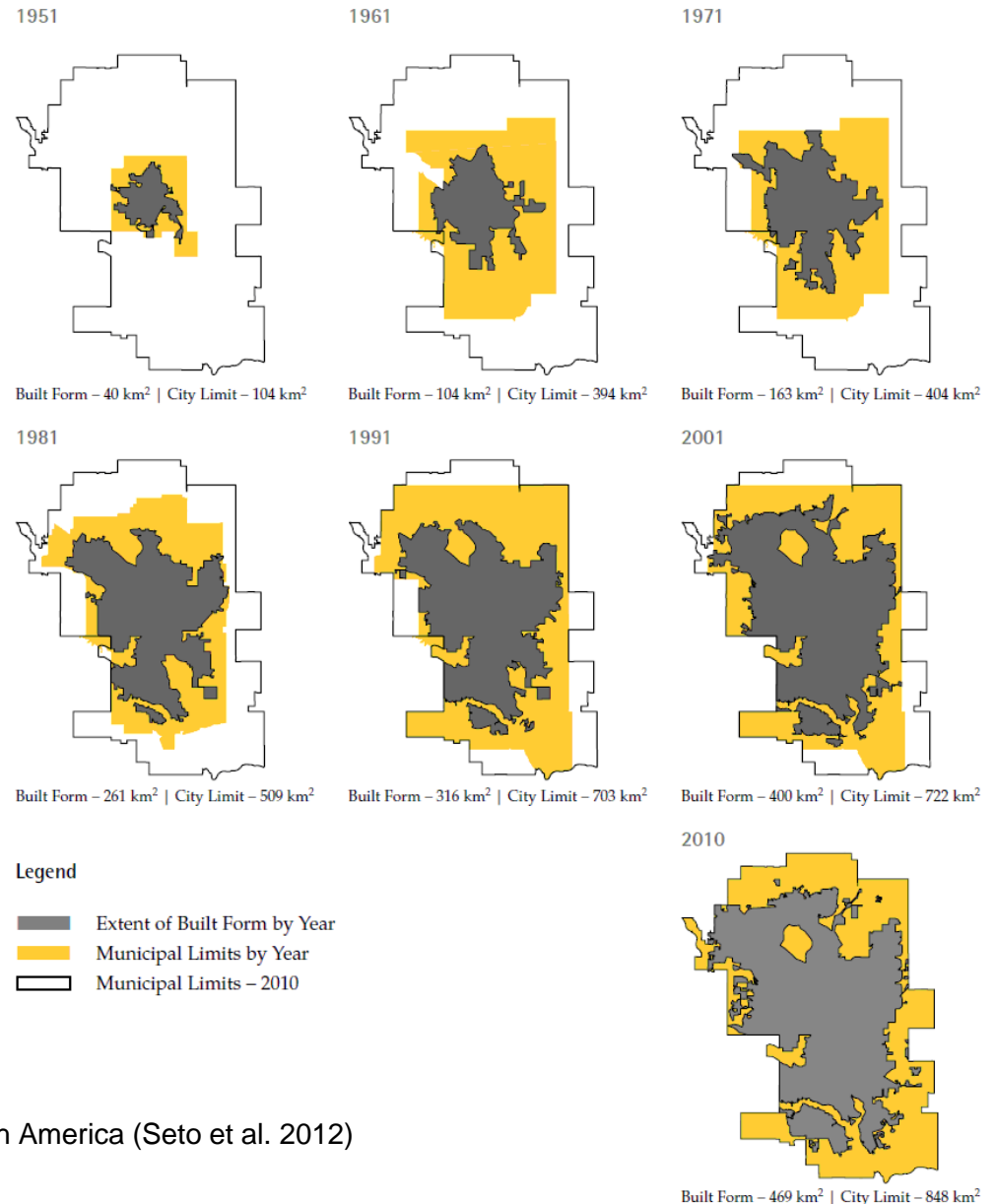
Population: 1.2 million
Size: 848 km²

Growth of the City

Decade	Built out area (km ²)	City limit size (km ²)	10 year Increase in built area
1951	40	104	—
1961	104	394	260%
1971	163	404	156%
1981	261	509	160%
1991	316	703	121%
2001	400	722	126%
2010	469	848	55%

- 81% of Canadians live in cities
- 83% of Albertans are urban*

CALGARY'S GROWTH 1951 – 2010 Calgary's spatial growth, built form and municipal limits, 1951 – 2010

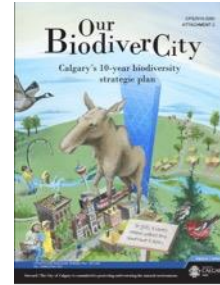


- 2000-2030: Projected 90% increase in urban area in North America (Seto et al. 2012)
- * Statistics Canada 2011 Census

Growth of Calgary 1951-2010

Calgary has a history of progressive conservation planning, e.g.

- 1993 - Calgary Urban Park Master Plan
- 1994 - Natural Area Management Plan
- 2004 - Calgary Wetland Conservation Plan
- 2006 - Imagine Calgary
- 2009 - Municipal Development Plan
- 2014 - Riparian Strategy
- 2015 - Biodiversity Strategic Plan

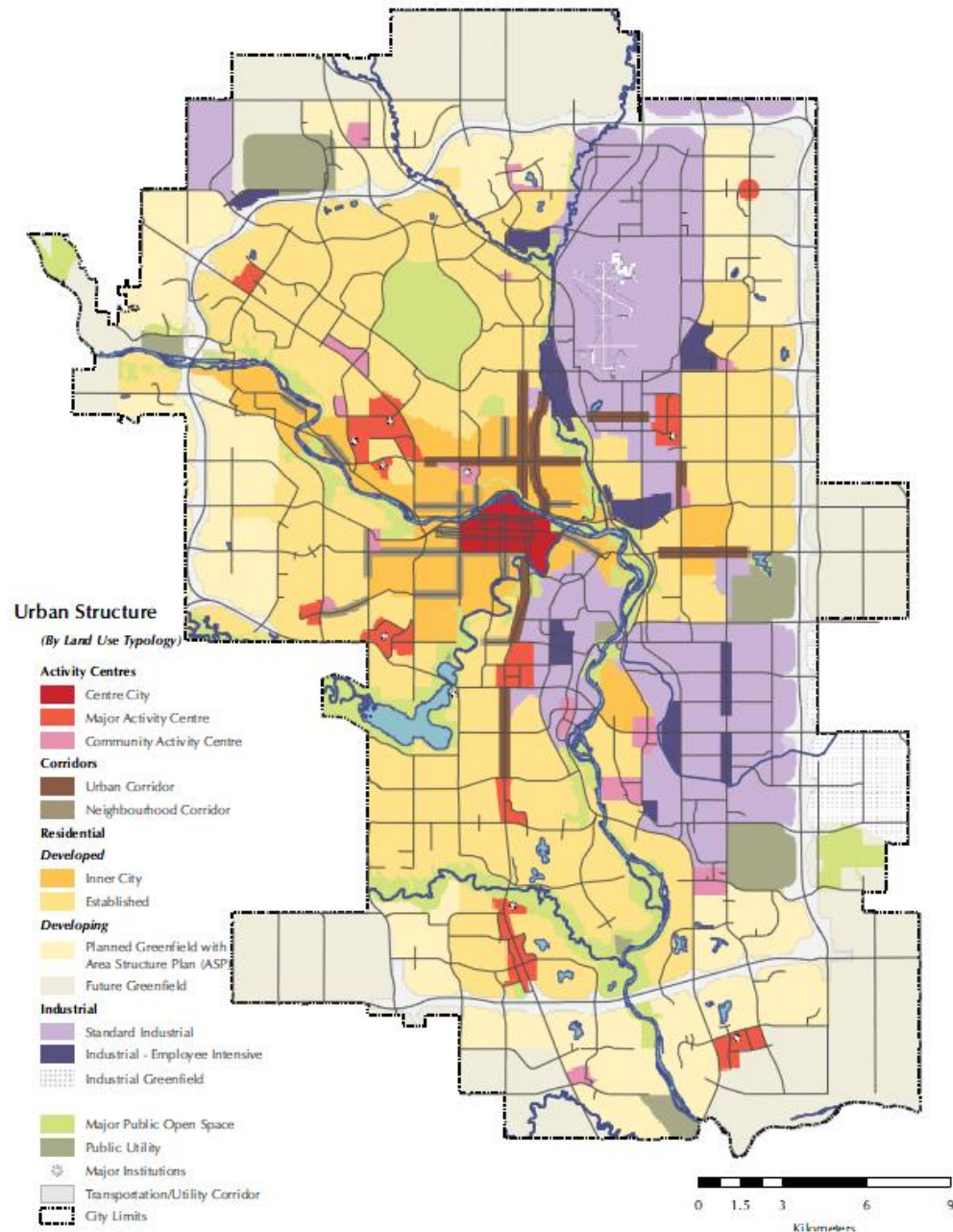


MDP has strong environmental policy

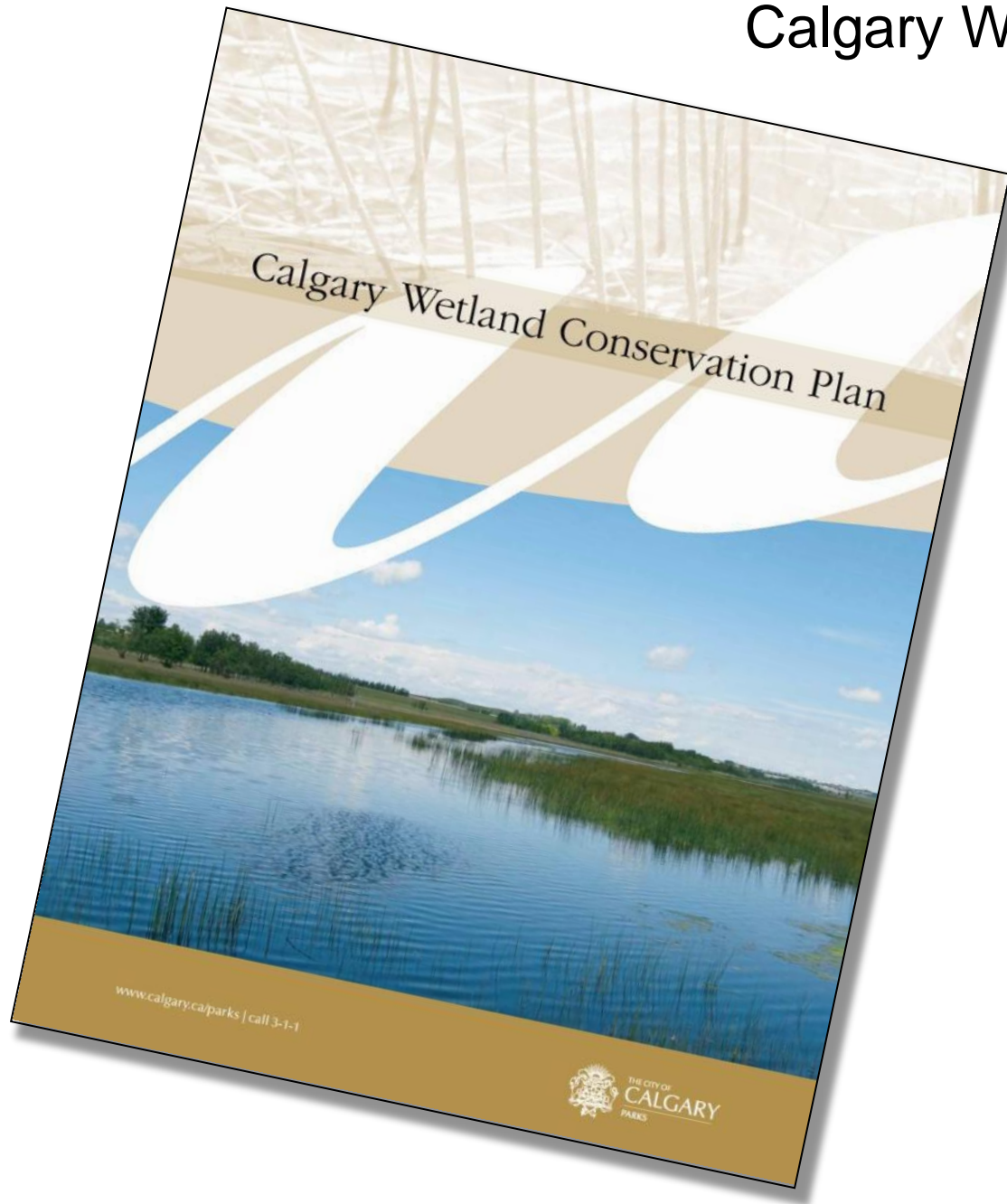
2.6 Greening the City (excerpts)

Goal: Conserve, protect and restore the natural environment

- Connect green infrastructure
- Minimize the amount of land that is taken from undeveloped areas and placed in permanent use
- Protect, conserve and enhance water quality and quantity
- Maintain biodiversity and landscape diversity,



Calgary Wetland Conservation Plan



Approved in 2004

Developed in response to concern about wetland loss

Sought to clarify regulatory overlaps with province and federal government

Provide a decision-making framework for wetland and watershed conservation

Municipal Government Act

MGA provides two important tools to protect open space:

Municipal Reserve: 10% of the land is dedicated to parks and school sites

Environmental Reserve:

Defined as:

- a swamp, gully, ravine, coulee, or natural drainage course,
- land that is subject to flooding or is, in the opinion of the subdivision authority, unstable, or
- a strip of land, not less than 6 m in width, abutting the bed and shore of any lake, river, stream, or other body of water for the purpose of preventing pollution, or providing public access to and beside the bed and shore.

Municipal Government Act, Sect. 664(1)

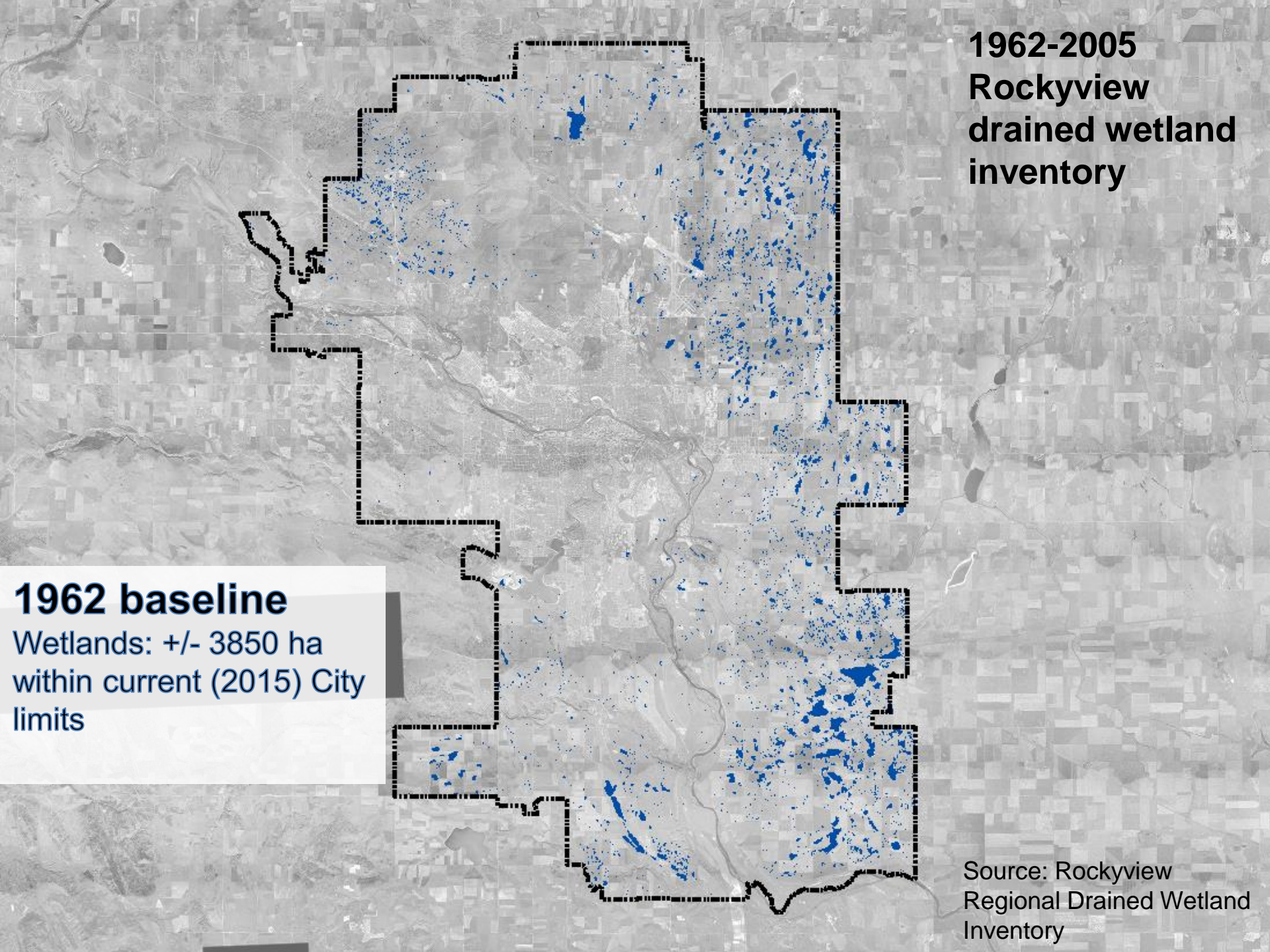
General Approach to Policy

- Based on municipal authority under the MGA
- Provided a technical definition for wetlands taken as Environmental Reserve
- Introduced a mitigation framework to municipal land use decisions
- Wetlands not taken as ER require compensation (land value + restoration cost)

**1962-2005
Rockyview
drained wetland
inventory**

1962 baseline
Wetlands: +/- 3850 ha
within current (2015) City
limits

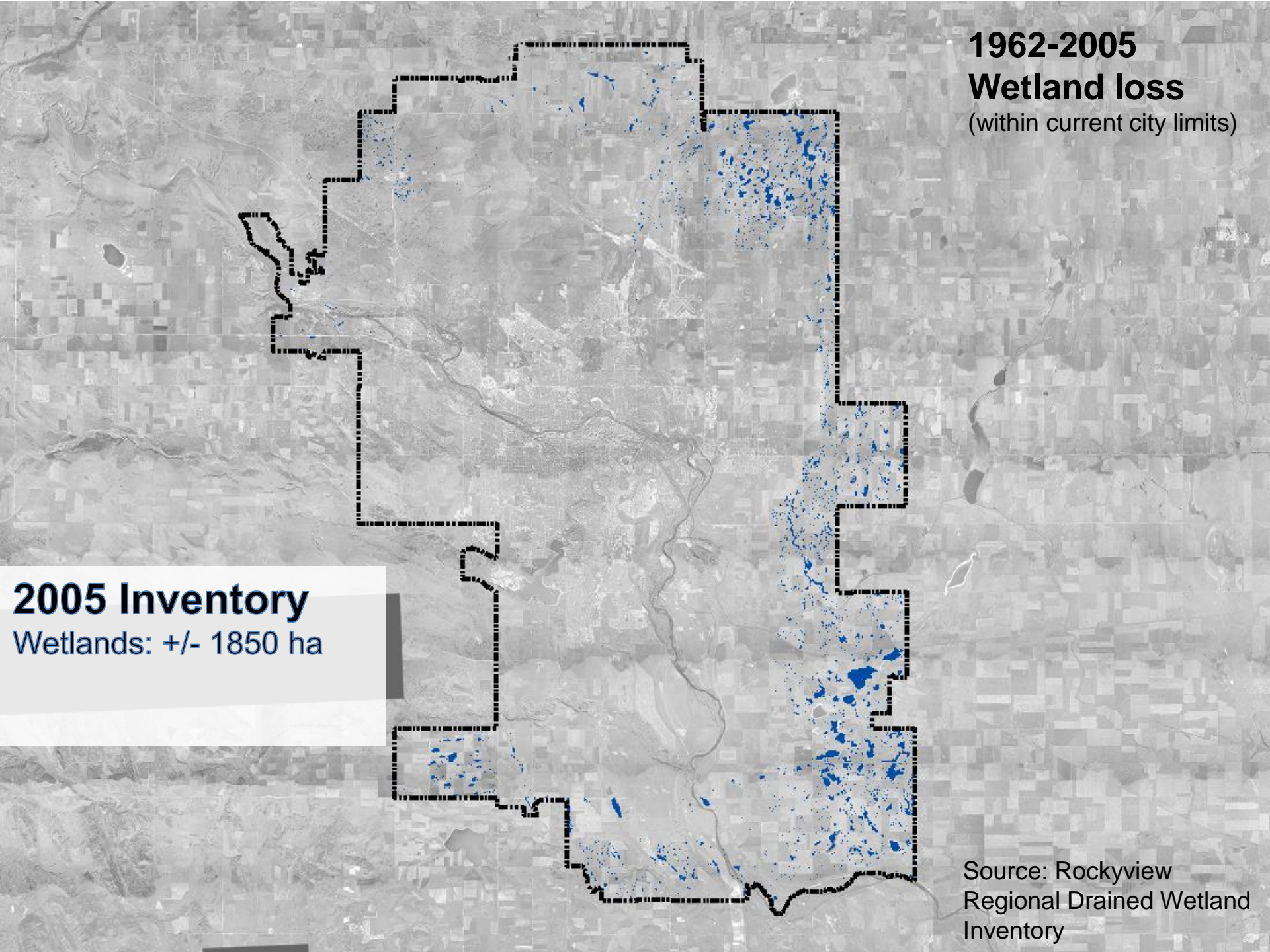
Source: Rockyview
Regional Drained Wetland
Inventory



1962-2005
Wetland loss
(within current city limits)

2005 Inventory
Wetlands: +/- 1850 ha

Source: Rockyview
Regional Drained Wetland
Inventory



How much wetland area has Calgary lost?

Year	Wetland area (hectares)
1962	3,848
2005	1,853
2014	1,685

Stormwater facilities in 2014 amounted to +/- 1900 hectares

What happened?

- Developed a parallel process for wetland approvals with AEP
- Compensation costs less of a disincentive than anticipated
- “Wetland communities” became a marketing tool
- Water licensing pose a significant challenge
- Ability to use stormwater as a management tool remains a challenge

Compensation now handled provincially (2015)

“Nature’s Community”

Challenges

- Clarity and overlap in legislation and policy
- Recognition of the municipal impact on ecosystem services
- Inclusion of local goals and priorities — protection and loss is determined at the local level
- Using municipal policy to further provincial/regional goals





More information:

www.calgary.ca/biodiversity

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