

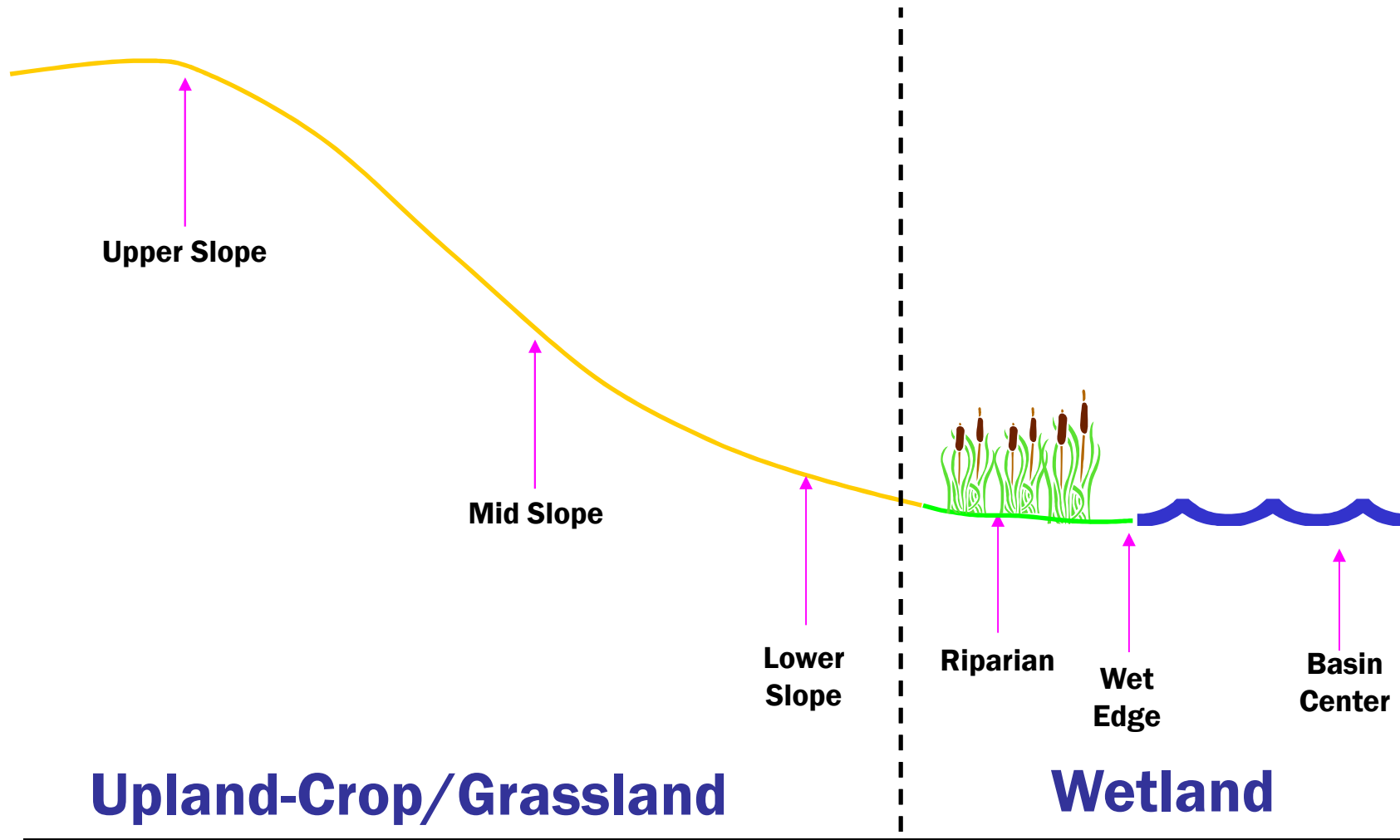
# Study Design



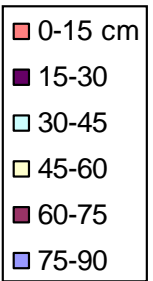
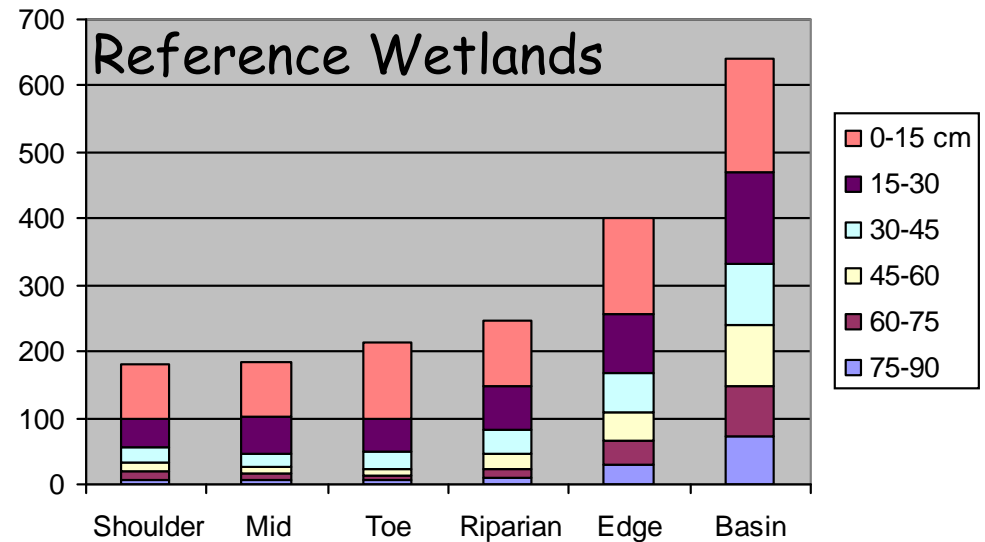
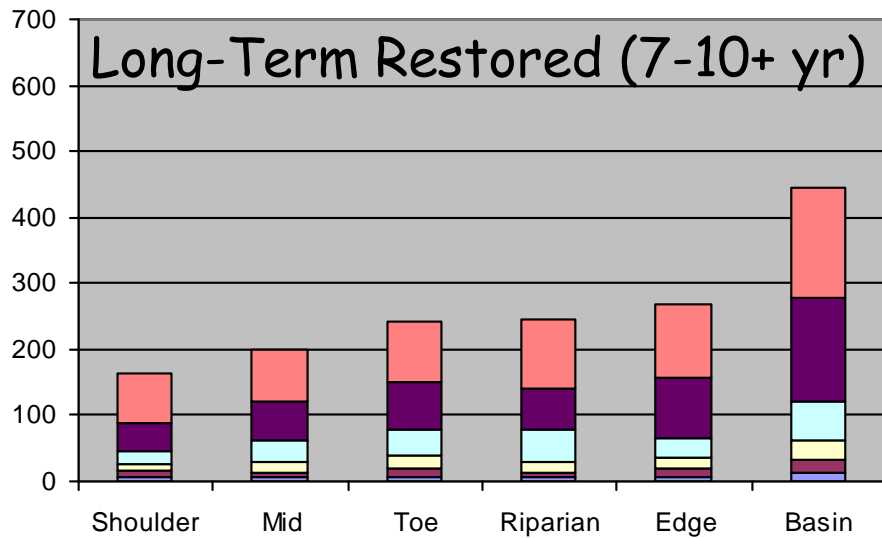
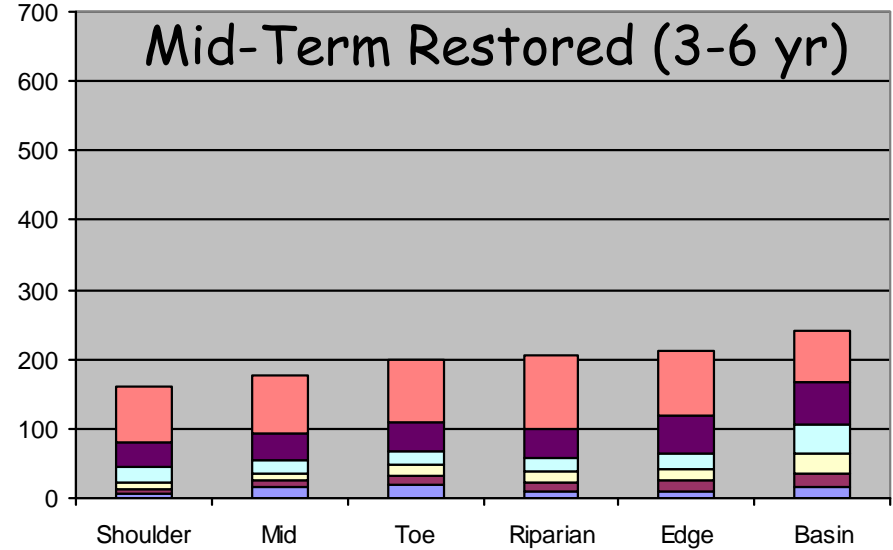
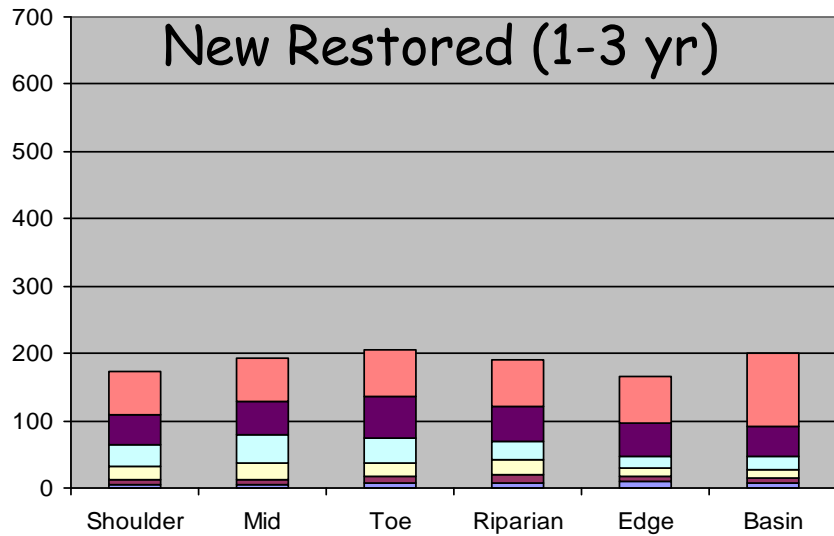
- 23 sites from DUC database of restored projects, stratified by age of restoration and soil zone
- 6 sites New Restored (1-3 yrs)
- 7 sites Mid-Term Restored (4-6 yrs)
- 10 sites Long-Term Restored (7-10+)
- 3 wetlands sampled at each site (2 restored and 1 reference)



# Landscape-scale transects



# Age of Restoration and Organic Carbon tonnes/ha



# Organic Carbon Analysis:

- Full mixed-model analyses (soil zone, basin age, transect point location, and all interaction terms)
- Basin age ( $F_{(3,12)} = 4.03$ ,  $p = 0.0338$ ) and transect point location ( $F_{(5,103)} = 4.71$ ,  $p = 0.0006$ ) were significant predictors of organic carbon.
- **Basin age:** significantly higher organic carbon in reference basins over long and mid-term restored basins
- **Transect Point:** within-basin points yielded more organic carbon than the riparian and upland points. Organic carbon steadily declined with increasing distance from basin centre.



# North American prairie wetlands are important C storage sites (Euliss et al. 2006)



Conversion has resulted in a loss of **10.1 Mg/ha SOC**



Wetland restoration has a potential to sequester **378 Tg of SOC** over a **10 yr** period



Wetland can sequester more than twice the SOC as no-till cropland



Restoration can offset **2.4% (1990) N.American CO<sub>2</sub> emissions**

- State and Provincial Boundaries
- Prairie Pothole Boundary
- DU Canada Wetland Study Points
- USGS 2004 Wetland Study Points
- USGS 1997 Wetland Study Points



**Plains CO<sub>2</sub> Reduction (PCOR) Partnership**



# Modeling Environmental Services



**Currently large push to model environmental services in ag and forest landscapes**



**Wetlands are an integral part of both these landscapes but are generally not modeled**



**As a result the environmental services provided by these landscapes may be dramatically underestimated**



Natural Values:

Linking the Environment to the Economy

# Agricultural Policy Framework

## *The Next Generation: 3-phase National Consultation*

- **1<sup>st</sup> Round – Invited participants**
  - Henry Murkin and Bernard Filion attended in December 2006
  - Summary Report on Round 1 very favourable to conservation
- **2<sup>nd</sup> Round – Public Consultations**
  - DUC staff attending across the country
  - Encouraging DUC members, supporters and partners to participate by contacting their MP, attending the consultation in their area, and participating in the on-line survey  
<http://nextgen.dialoguecircles.com/>
- **3<sup>rd</sup> Round – Invited participants**
  - Working to ensure DUC is invited to this round
  - Timeline – Spring 2007



Ducks Unlimited Canada  
CANADA'S CONSERVATION COMPANY



# Priorities for the Next Generation of Agricultural Policy Advanced by DUC

- **Recognition of environmental benefits fully entrenched in agricultural policy**
  - **Fiscal responsibility**
  - **Economic incentives based on measurable benefits**
- **Enhanced Greencover Canada**
- **Increased Wetland Restoration**



Ducks Unlimited Canada  
CANADA'S CONSERVATION COMPANY

