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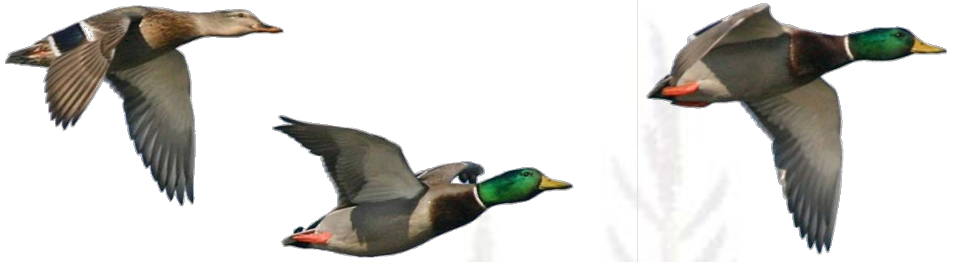

Conservation Planning for Waterfowl in the Illinois River Valley

Local Management and Flyway Conservation

Heath M. Hagy

2 October 2013

Contributors: *Aaron Yetter, Chris Hine, Michelle Horath, Stephen Havera*

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Conservation Planning?

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Habitat Objectives: The Process

Population Size * Duration of Stay = Use Days

Use Days * Daily Energy Requirements = Energy Requirements

Energy Requirements / Energy Density = Habitat Objectives

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INHS Waterfowl Aerial Inventories

- **Fall**
  - **1948 - Present**
- **Spring**
  - **1955 – 2001 (intermittently)**
- **Weekly flights (~15)**
- **Index of abundances**

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

WILDLIFE RESTORATION

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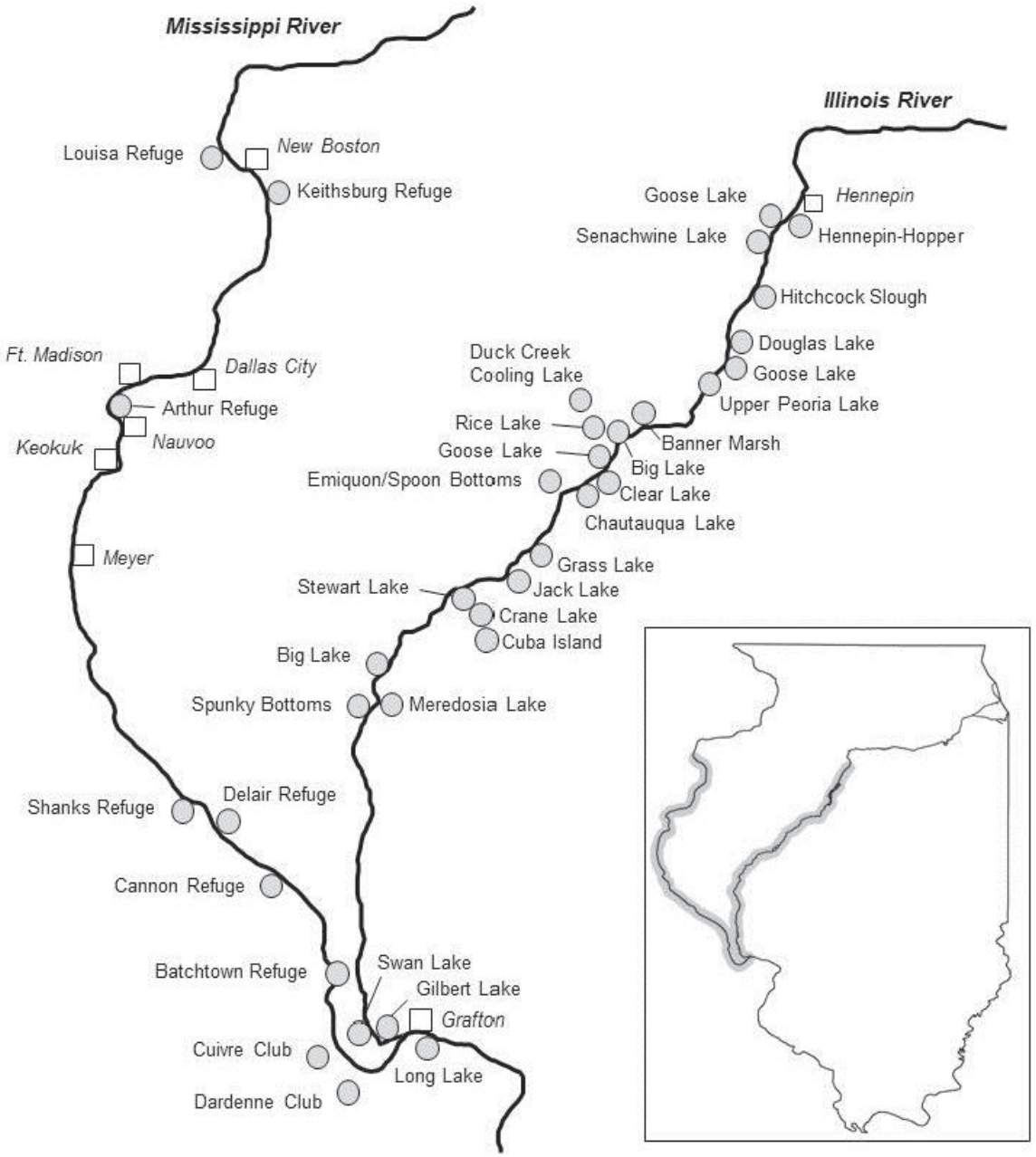
- **Illinois River**
  - **22 locations**
  - **91% total duck use**
- **Mississippi River**
  - **16 locations**
  - **94% total duck use**

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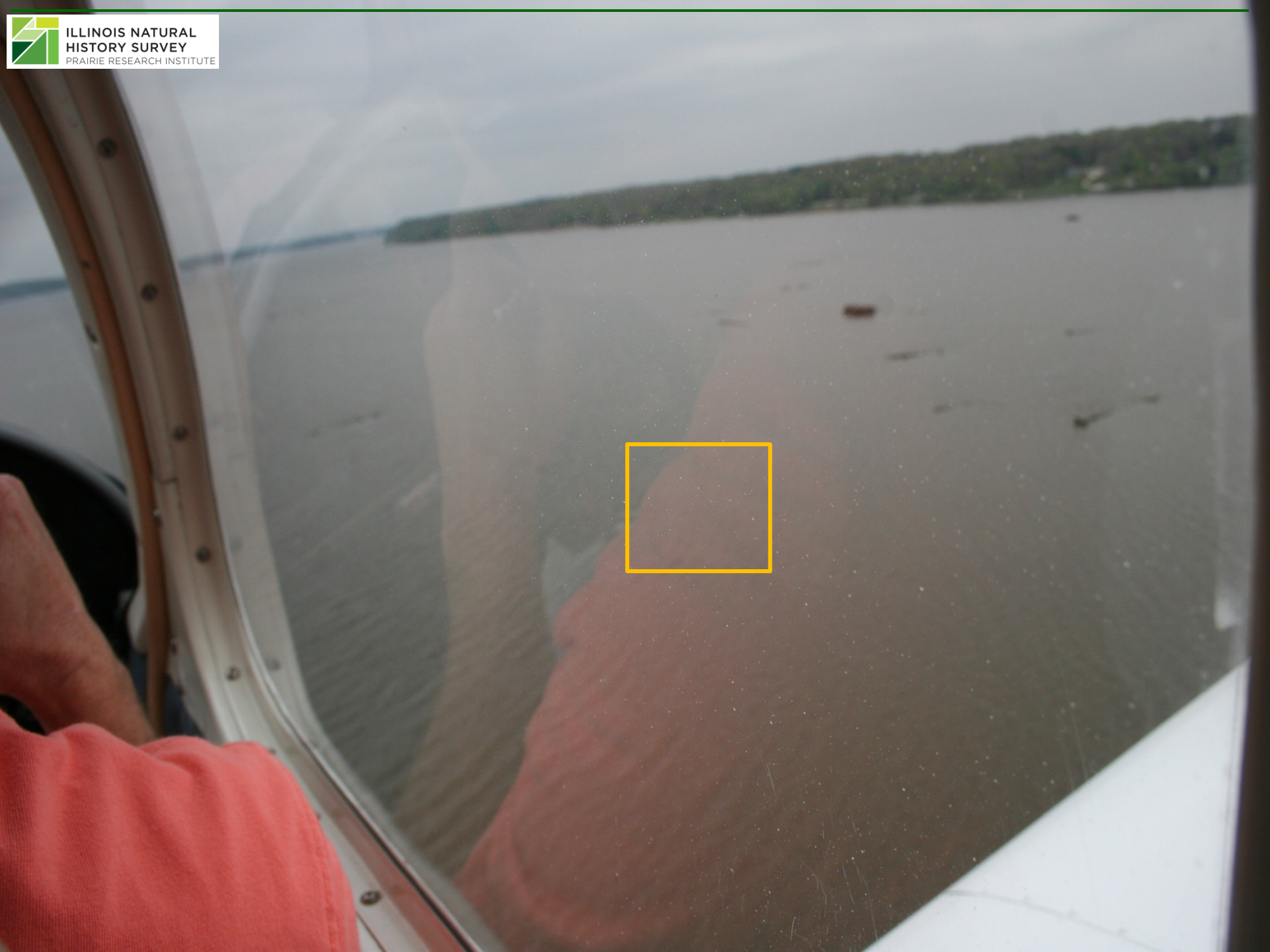
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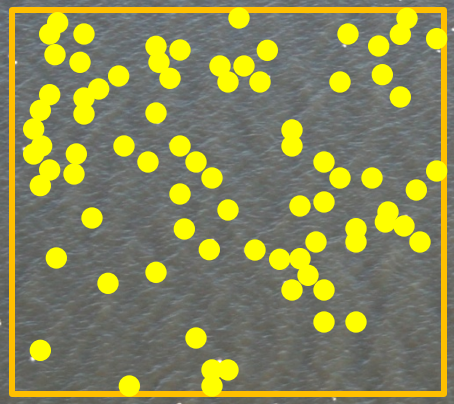

90 Canvasback


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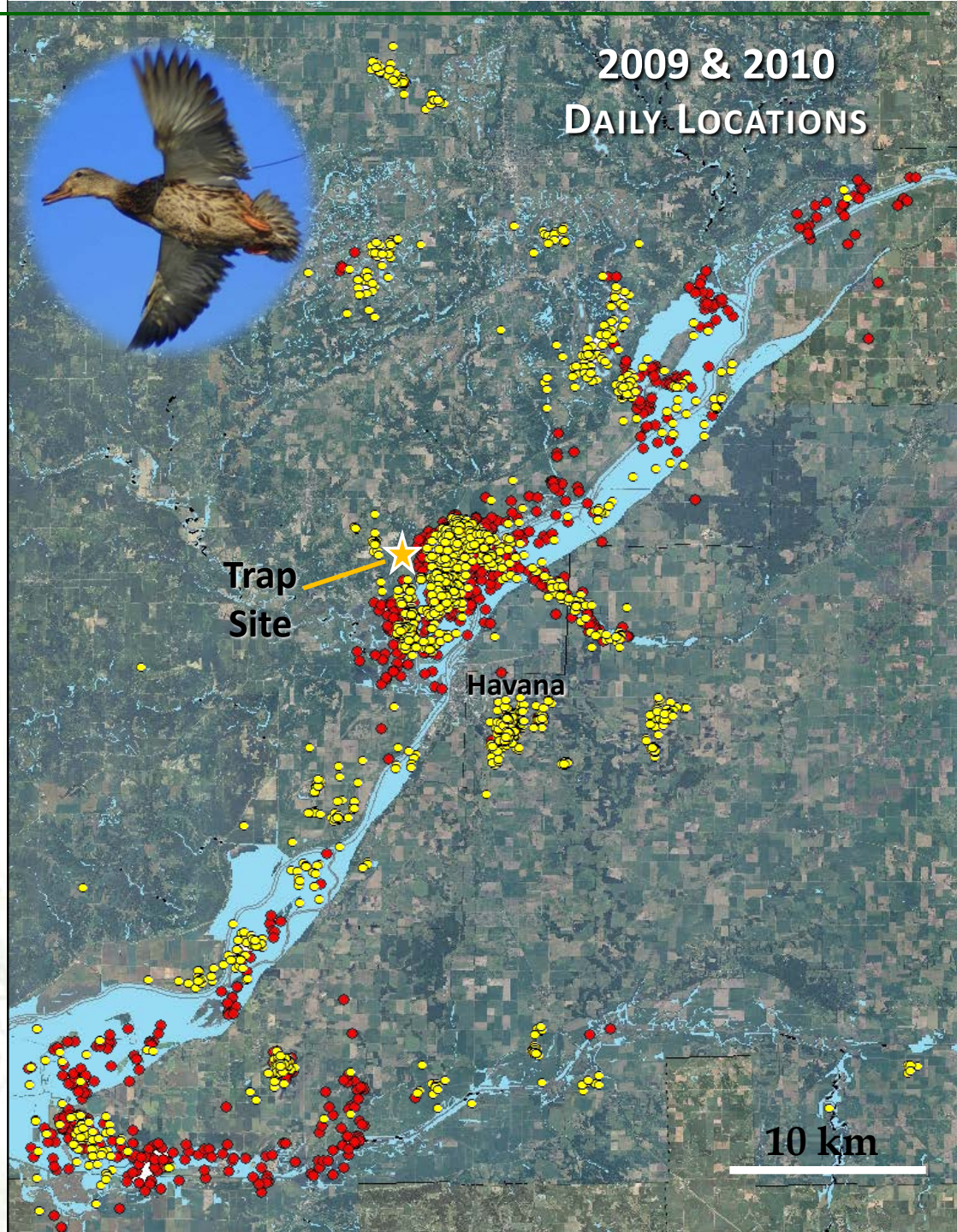
Ecology of Migrating Mallards

142 Mallards Marked
>3,500 locations

Duration of stay =
60 days



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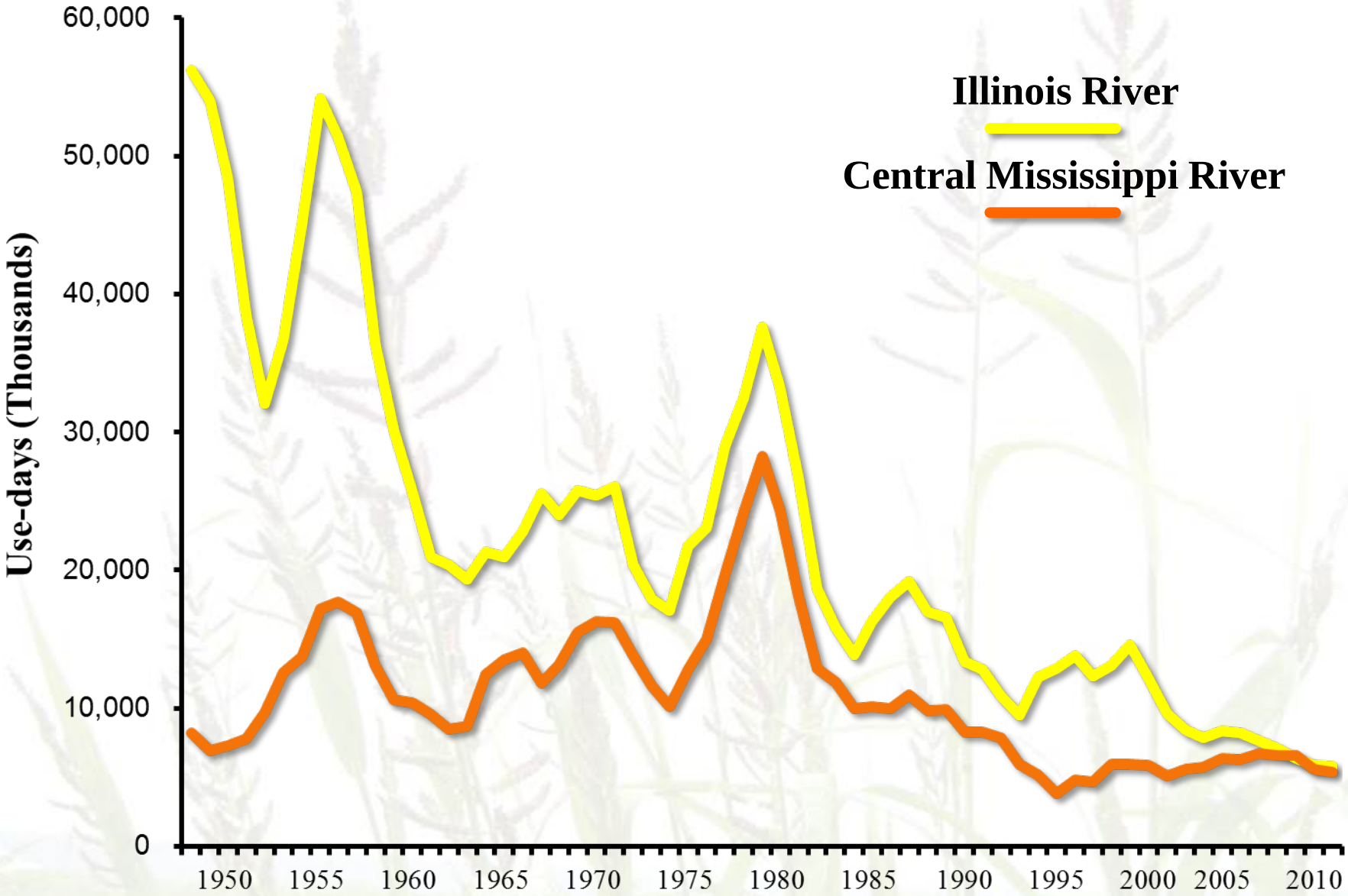
Fall Use-day Estimates of Mallards, 1948-2011



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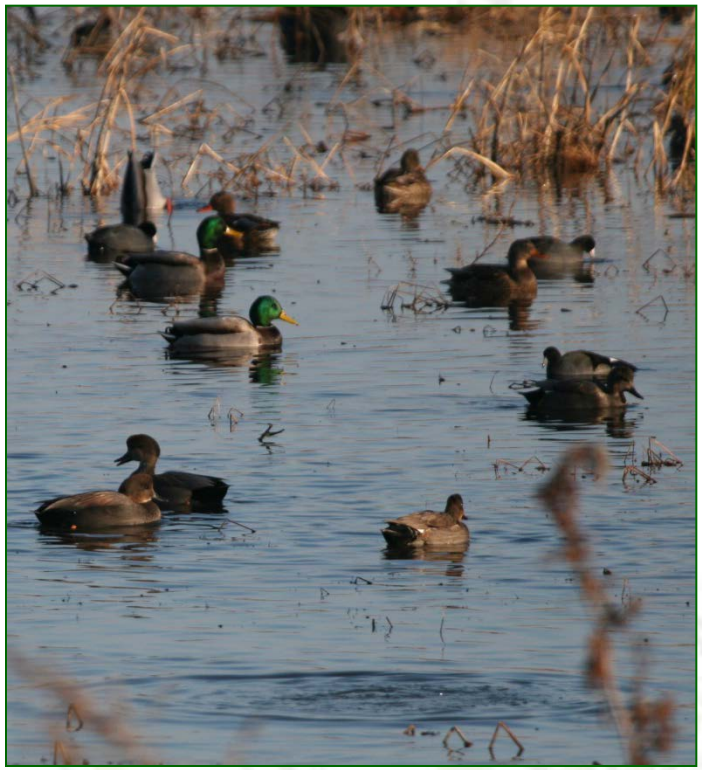
Habitat Objectives



825 million Duck Use Days!!!

Table 9. Spring migration and winter use-day goals (current needs + deficit needs) for species commonly occurring in the Upper Mississippi River and Great Lakes Joint Venture (JV) region. Numbers are based on continental population estimates (average for 1994–2003, NAWMP 2004) and estimates of the duration of stay in the JV region during each season (Appendix G).

		Use days		
Guild/foraging habitat	Species	Spring	Winter	Total
Wet mudflat / moist soil plants				
	Blue-winged Teal	41,625,029	0	41,625,029
	Northern Shoveler	7,633,091	0	7,633,091
	Northern Pintail	19,686,675	0	19,686,675
	Green-winged Teal	21,939,032	0	21,939,032
	Total	90,883,827	0	90,883,827
Shallow semi-permanent marsh				
	Wood Duck	38,083,080	10,476,180	48,559,260
	Gadwall	11,137,685	0	11,137,685
	American Wigeon	12,658,056	0	12,658,056
	American Black Duck	10,455,602	9,585,437	20,041,039
	Mallard	129,691,043	167,383,620	297,074,663
	Total	202,025,466	187,445,237	389,470,703
Deep water marsh				
	Mute Swan	954,000	484,200	1,438,200
	Trumpeter Swan	216,000	175,410	391,410
	Tundra Swan	1,000,000	0	1,000,000
	Ring-necked Duck	19,336,412	4,221,450	23,557,862
	Hooded Merganser	6,125,873	6,150,870	12,276,743
	Ruddy Duck	6,437,548	274,050	6,711,598
	Total	34,069,833	11,305,980	45,375,813
Extensive open water				
	Canvasback	7,443,585	11,702,970	19,146,555
	Redhead	12,849,990	7,121,070	19,971,060
	Greater Scaup	14,301,019	3,996,135	18,297,154
	Lesser Scaup	60,578,203	23,400,009	83,978,212
	White-winged Scoter	3,374,657	12,004	3,386,661
	Black Scoter	3,001,785	7,875	3,009,660
	Long-tailed Duck	8,193,905	16,597,629	24,791,534
	Bufflehead	20,298,053	8,673,210	28,971,263
	Common Goldeneye	21,296,386	37,316,160	58,612,546
	Common Merganser	12,453,643	17,614,080	30,067,723
	Red-breasted Merganser	2,174,109	4,193,820	6,367,929
	Total	165,965,335	130,634,962	296,600,297
All cover types	Total	495,458,161	329,398,150	824,856,311

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Estimating Energy Density








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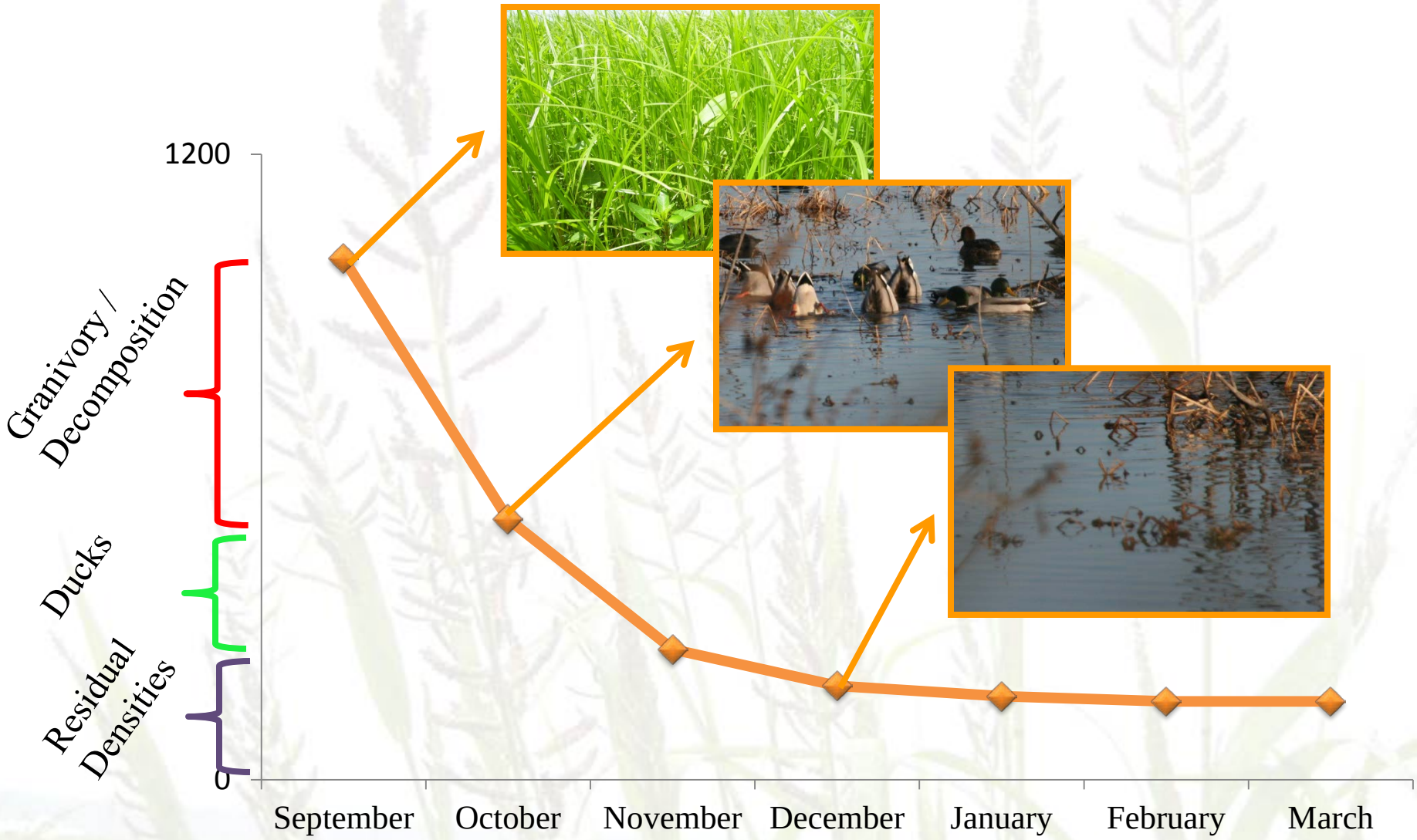
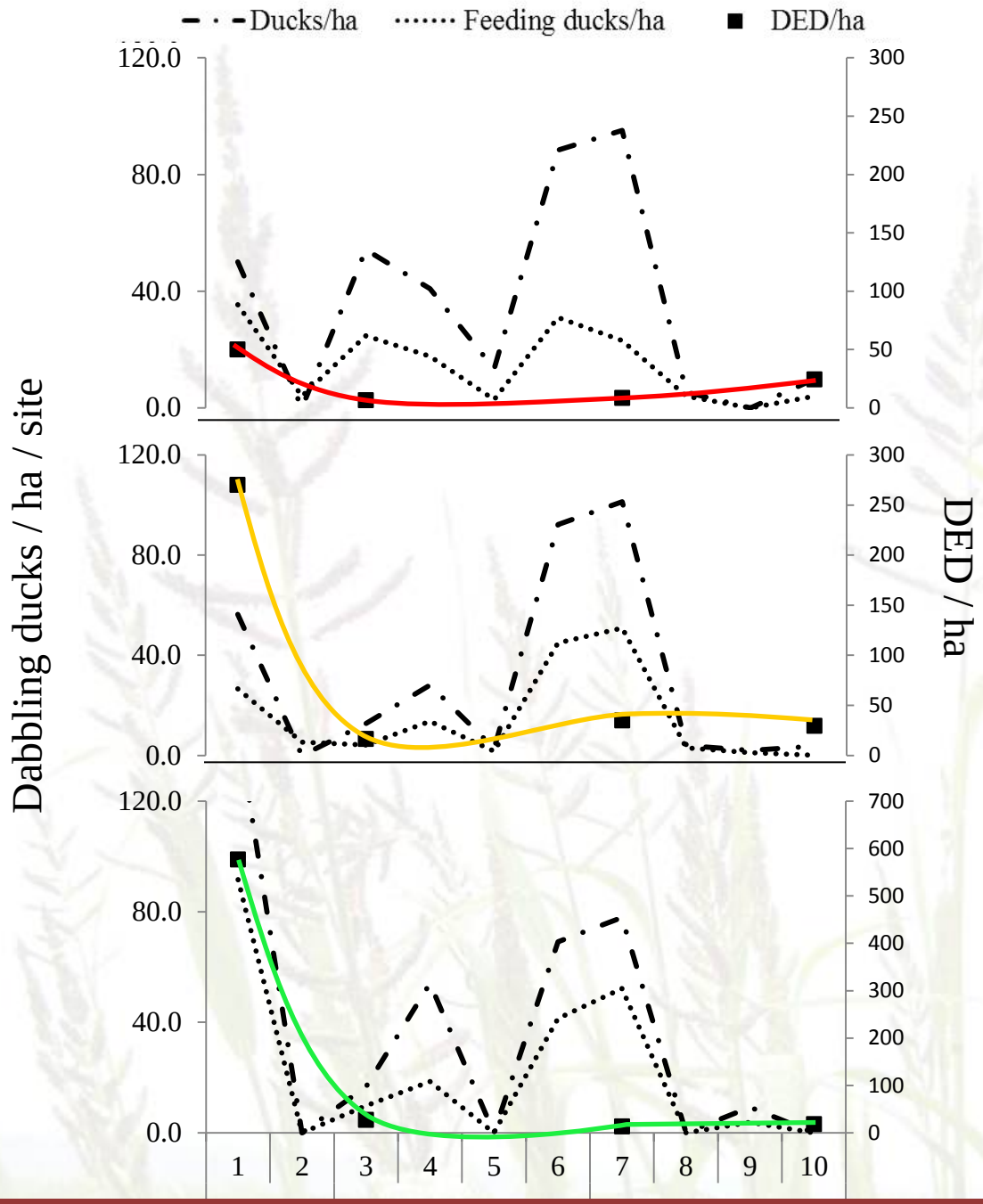
Estimating Food Availability



Case Study: Illinois River Valley (Smith et al. 2011)



50 kg/ha

250 kg/ha

550 kg/ha

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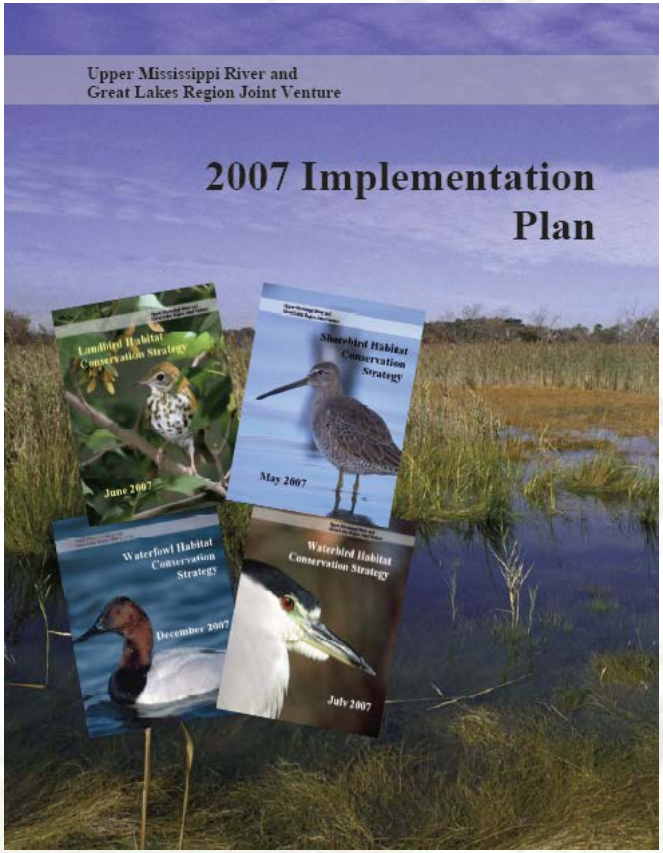
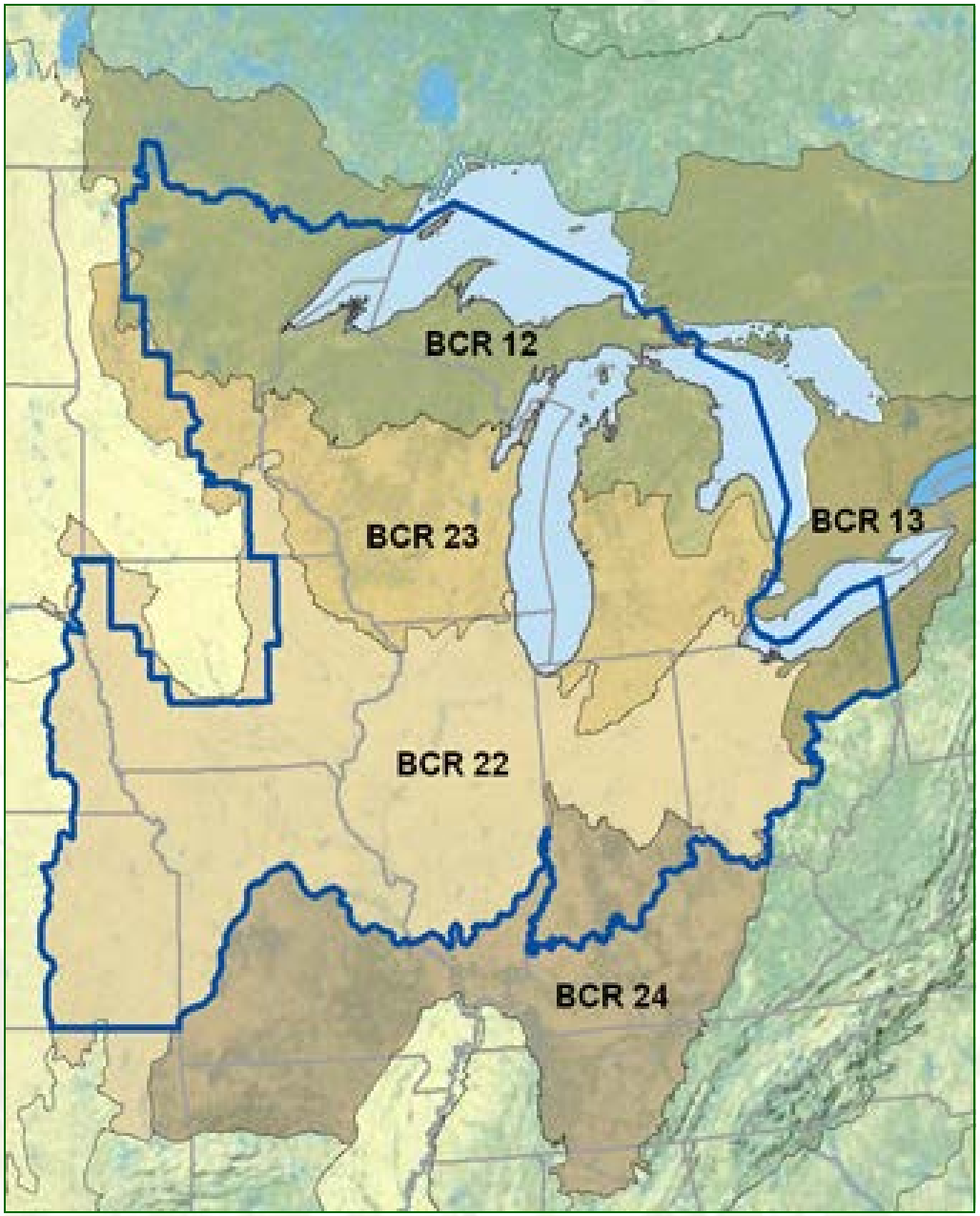
Illinois Wildlife Action Plan





Illinois Wildlife Action Plan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