



**THE WATERFOWL TRADITION  
IN THE  
HISTORIC ILLINOIS RIVER VALLEY**

**Dr. Stephen P. Havera  
Michelle M. Horath**

**Forbes Biological Station  
Illinois Natural History Survey**





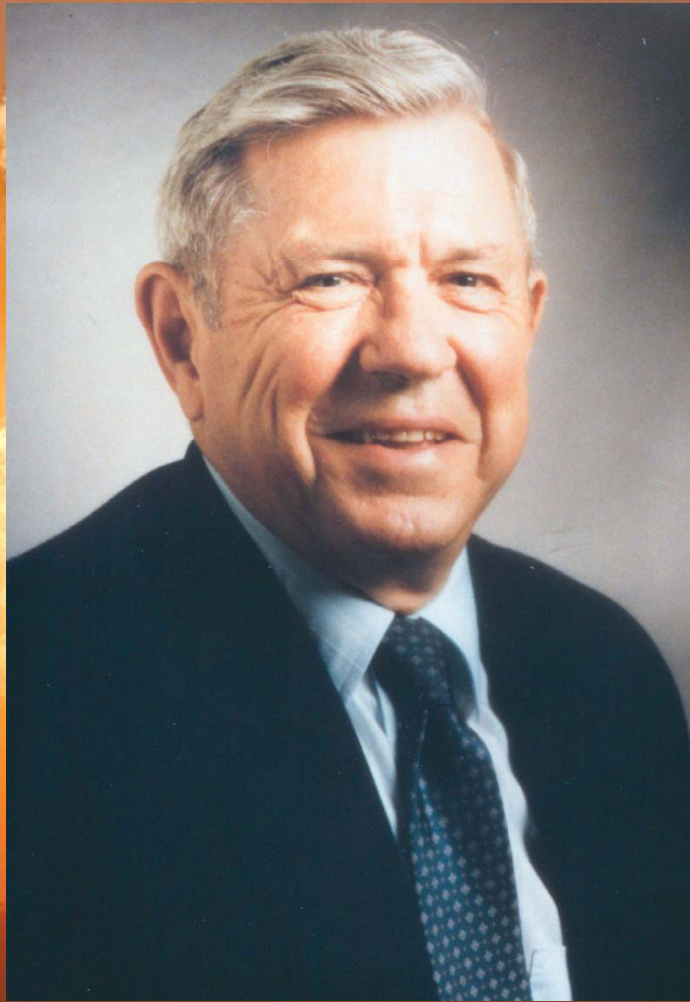
# FORBES BIOLOGICAL STATION

Frank C. Bellrose Waterfowl Research Center

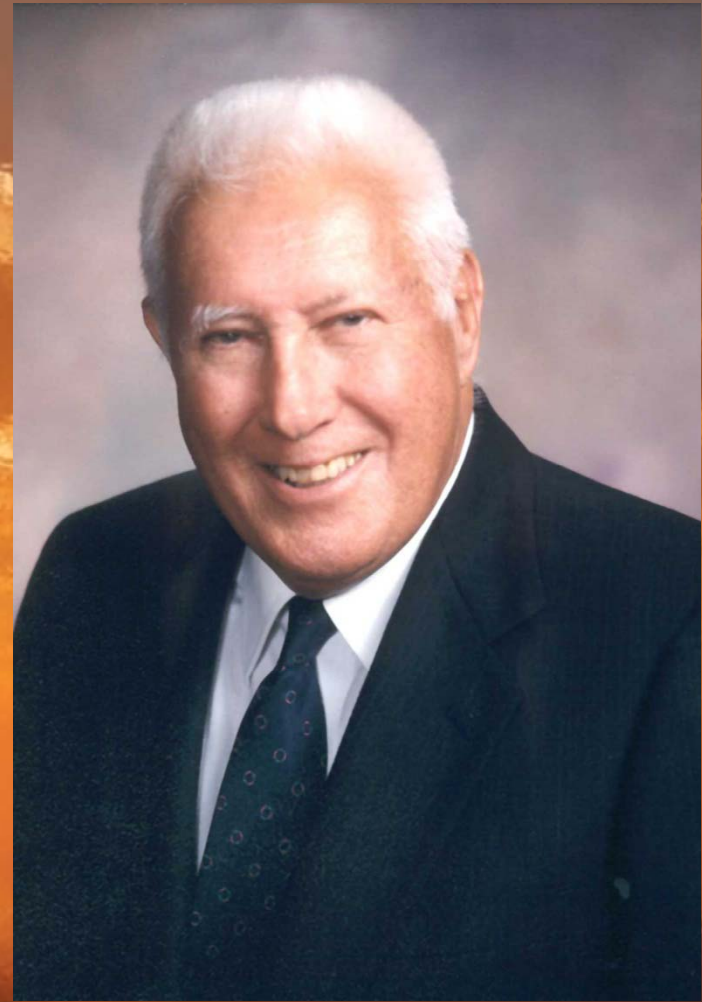
Havana, Illinois







**Glen C. Sanderson**  
**1923 – 2008**



**Frank C. Bellrose**  
**1916 – 2005**











## CURRENT STAFF AT FORBES BIOLOGICAL STATION

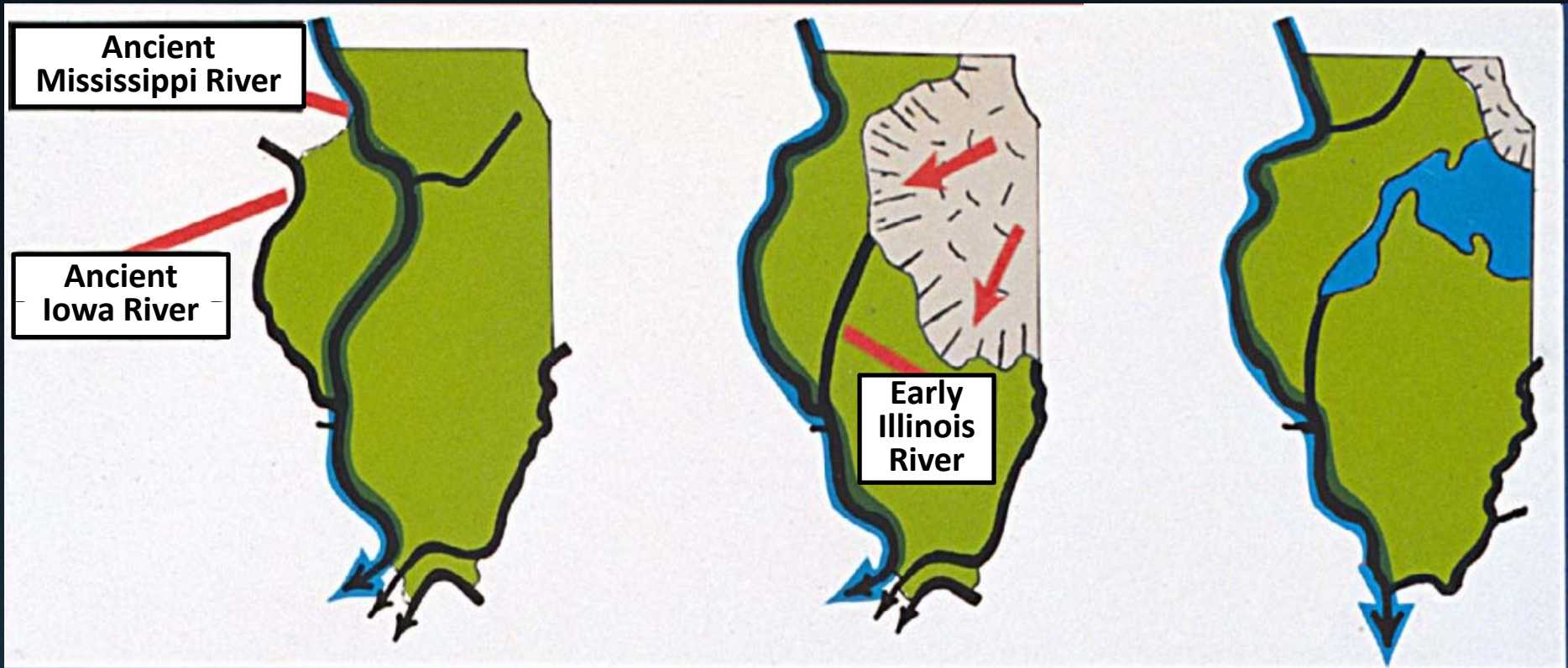








# DEVELOPMENT OF THE MODERN MISSISSIPPI AND ILLINOIS RIVERS



**Interglacial Time  
100,000 Years Ago**

**Glacial Advance  
20,000 Years Ago**

**Glacial Melting and  
Kankakee Flood  
14,000 Years Ago**

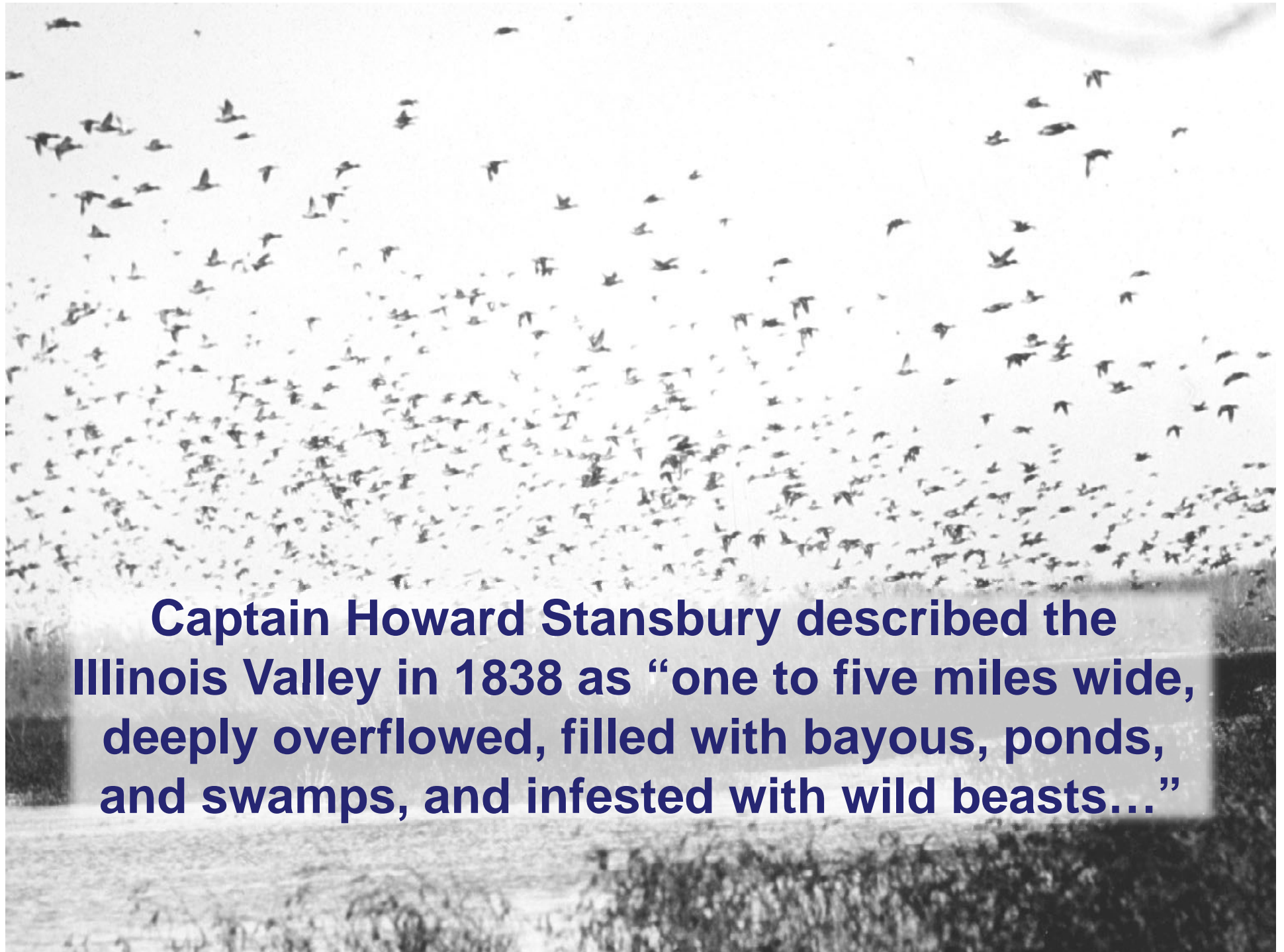






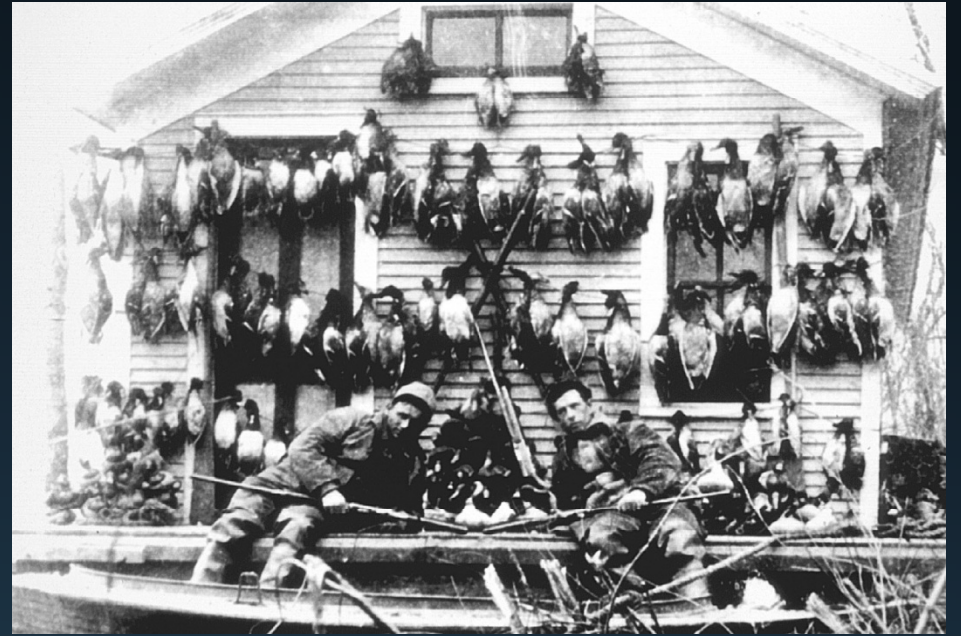
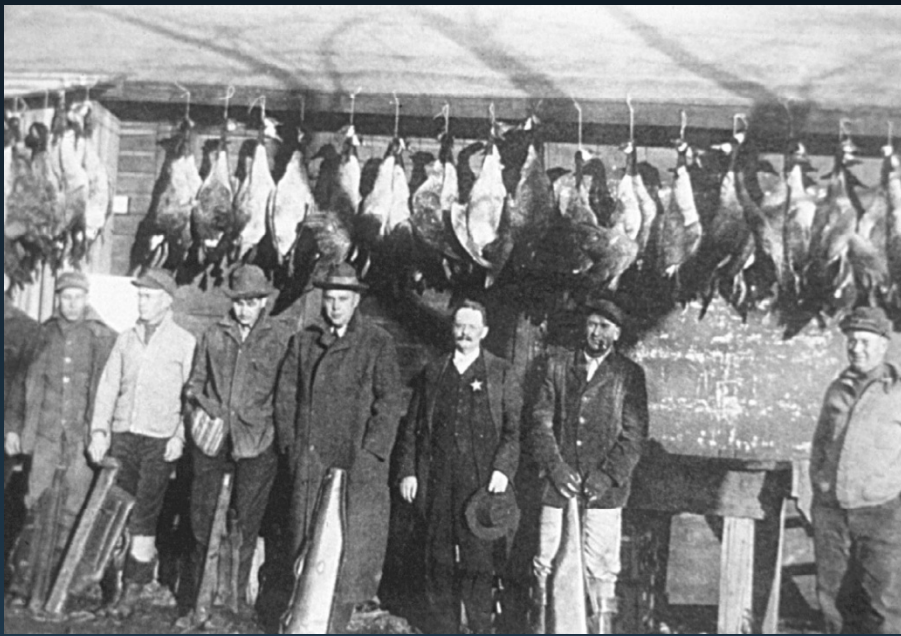






**Captain Howard Stansbury described the Illinois Valley in 1838 as “one to five miles wide, deeply overflowed, filled with bayous, ponds, and swamps, and infested with wild beasts...”**









— MENU —

• • • • •

Blue Points.

---

Soup.

Venison a la Chasseur.

Consomme of Prairie Chicken.

---

Fish.

Baked White Fish, Port Wine Sauce.

Boiled Trout, Lobster Sauce.

---

Boiled.

Wild Turkey.

Leg of Mountain Sheep.

---

Roast.

Saddle of Antelope.

Mountain Sheep.

Leg of Venison.

Pheasants.

Wild Goose.

Blue Grouse.

Mallard Duck.

Quail.

Prairie Chicken.

Red-Head Duck.

Sage Hen.

Wild Turkey.

Jack Rabbit.

Spotted Grouse.

Black Tail Deer.

Flover.

Canvass-Back Duck.

Black Bear.

Wood Duck.

English Hare.

Blue-Wing Teal.

Sand-Hill Crane.

Squirrel.

Opossum.

Ruffled Grouse.

Coon.

Leg of Elk.

Partridges.

Brandt.

Cinnamon Bear.

Saddle of Black-Tail Deer.

Widgeon.

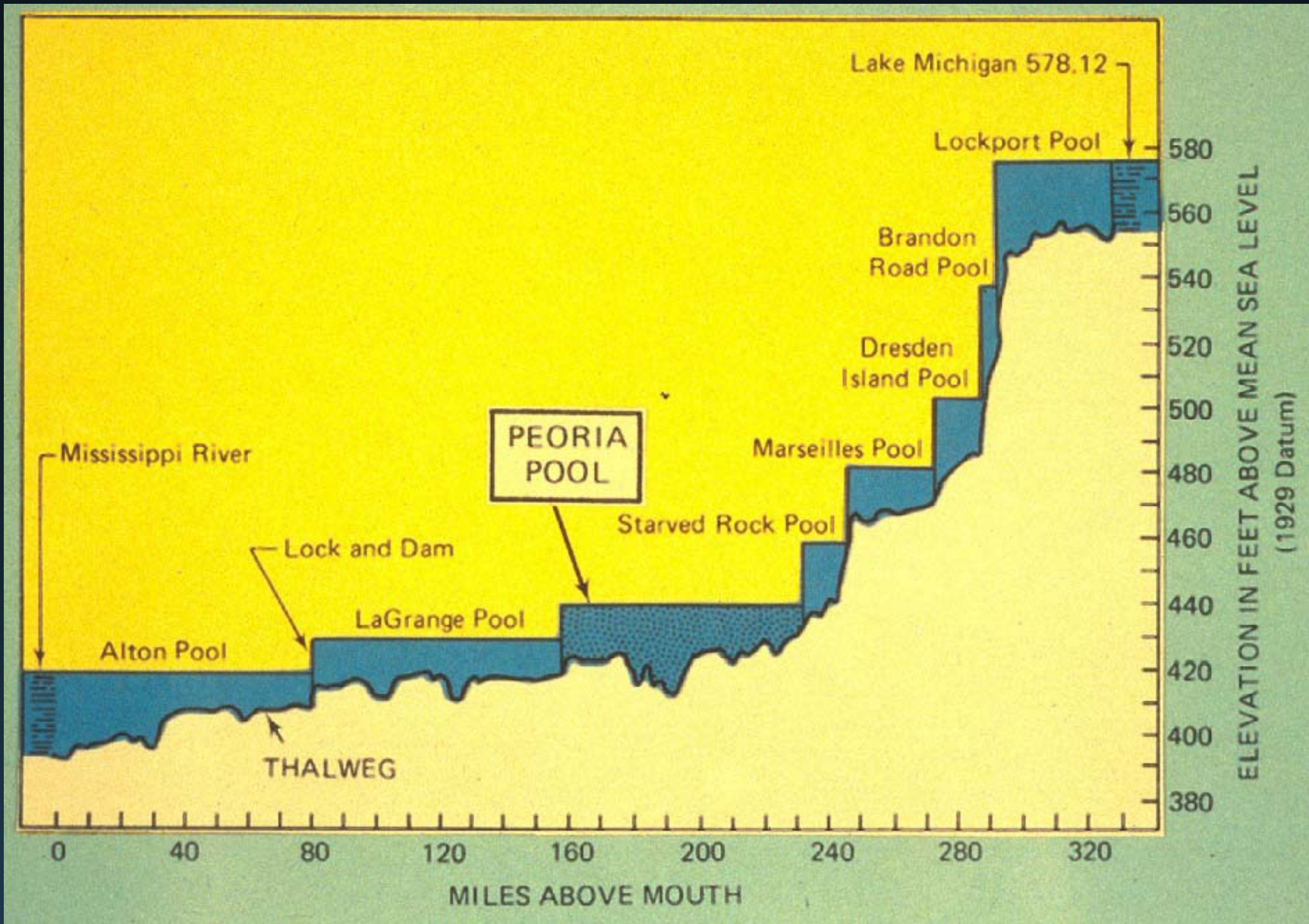


## MAN'S CHANGES TO THE ILLINOIS RIVER

- ✓ Lake Michigan Diversion, 1900
- ✓ Sewage and Industrial Wastes
- ✓ Drainage and Levee Districts, 1903-1926
- ✓ Navigation Dams, 1920-1939
- ✓ Sedimentation
- ✓ Unnaturally Fluctuating Water Levels
- ✓ Non-native Species

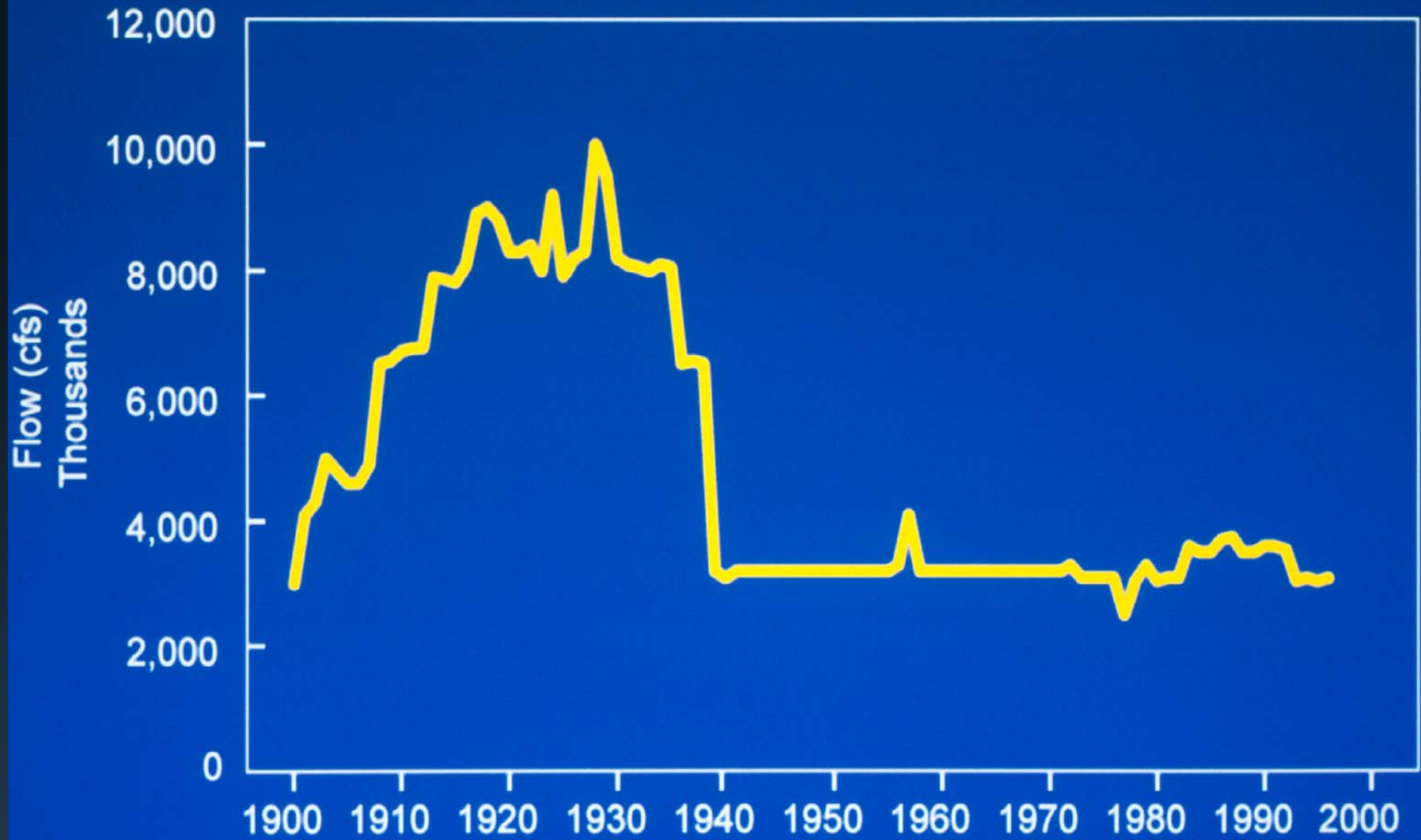


# PROFILE OF ILLINOIS RIVER WATERWAY

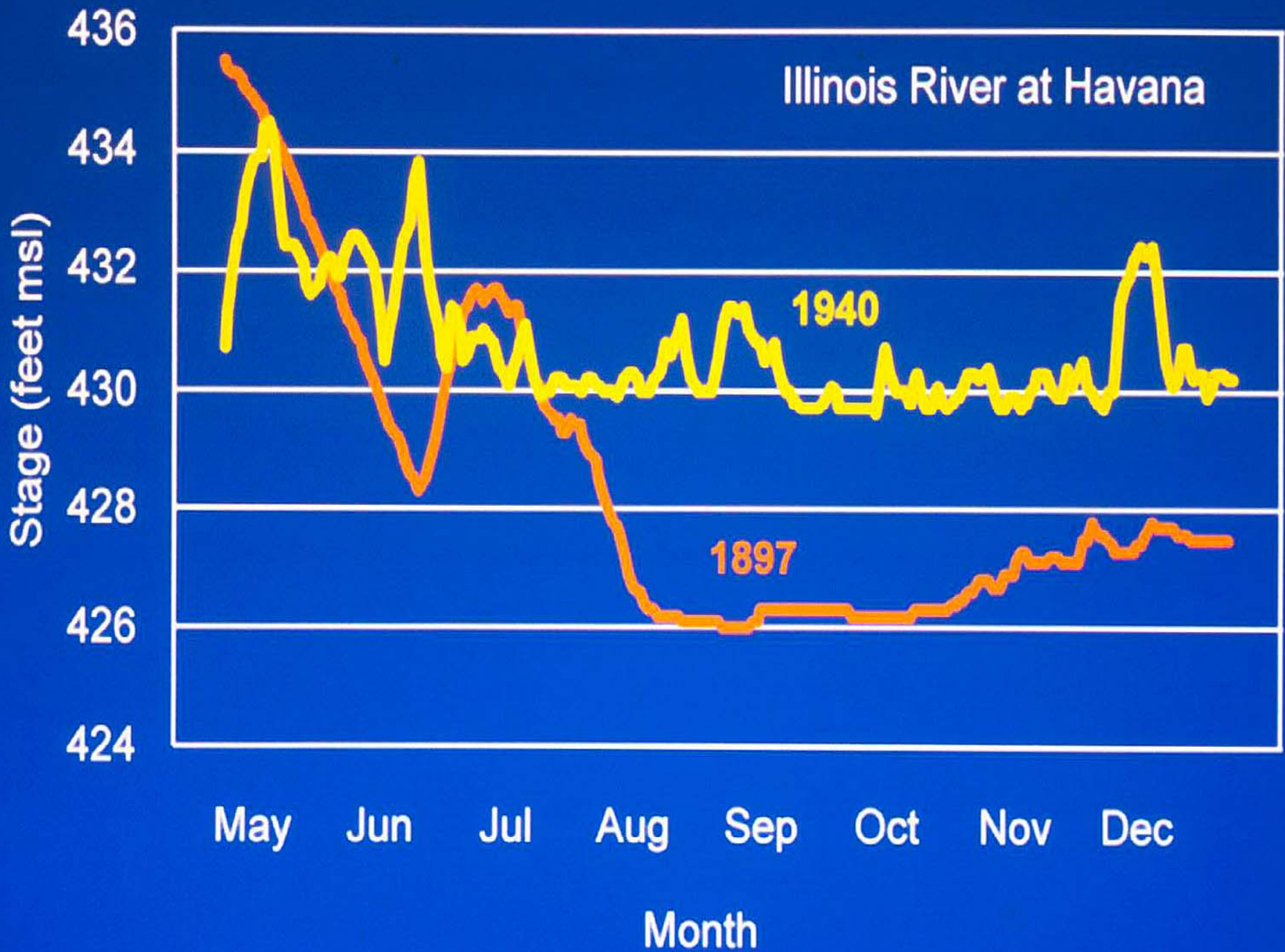




# LAKE MICHIGAN DIVERSION

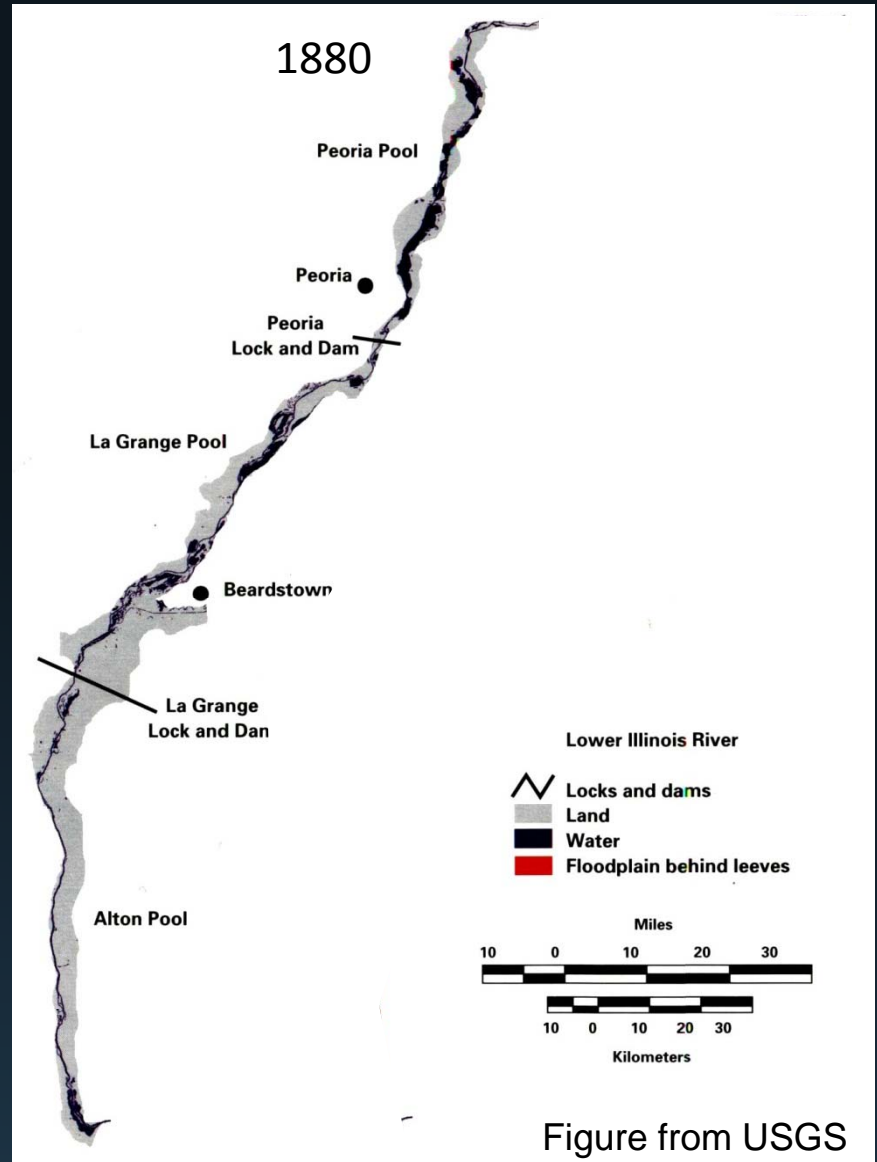
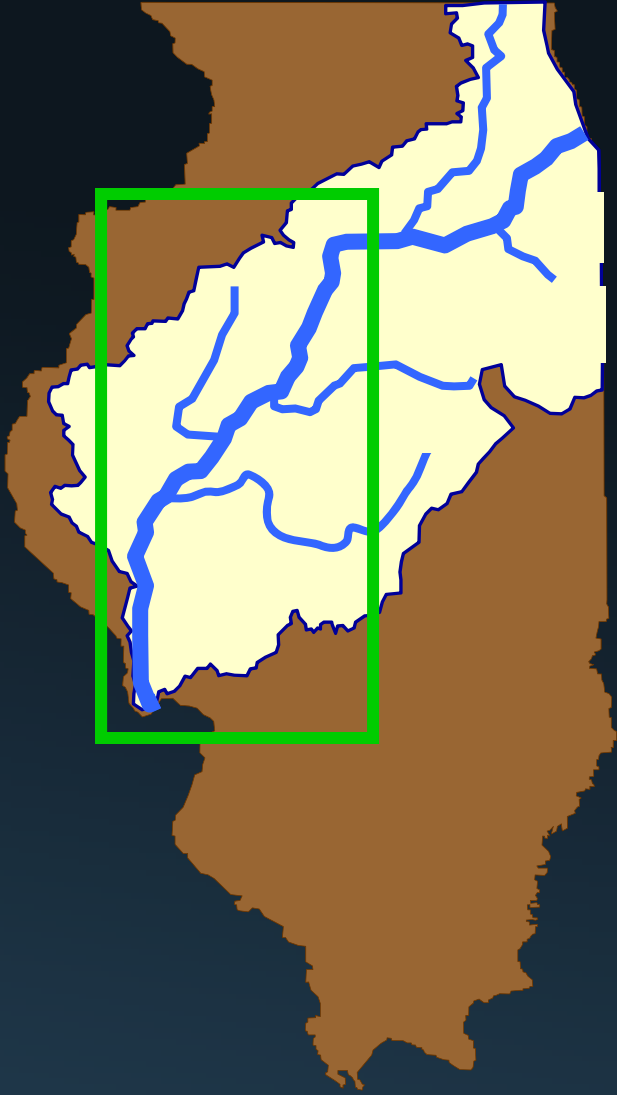






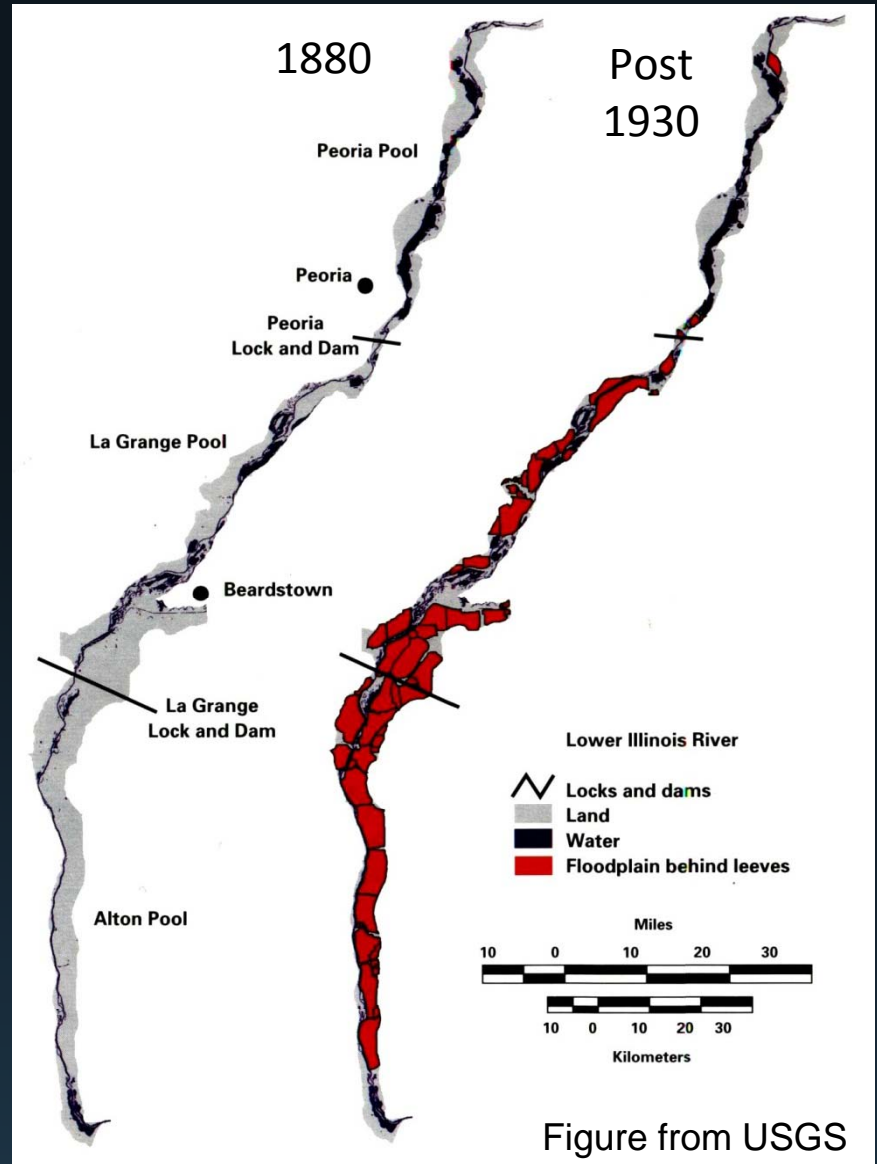
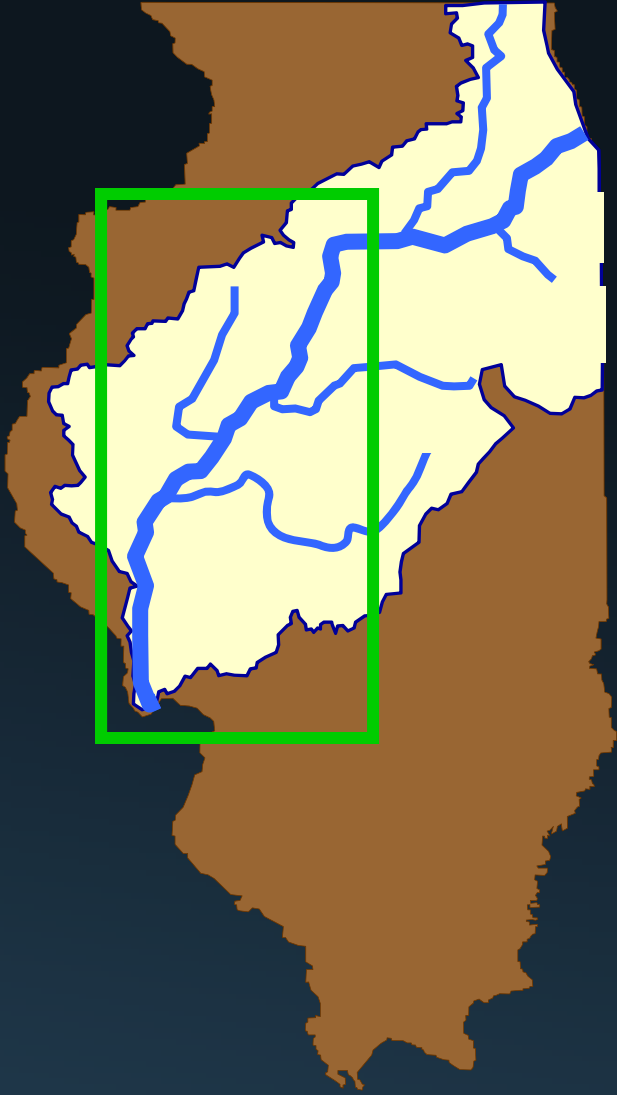


# DRAINAGE & LEVEE DISTRICTS

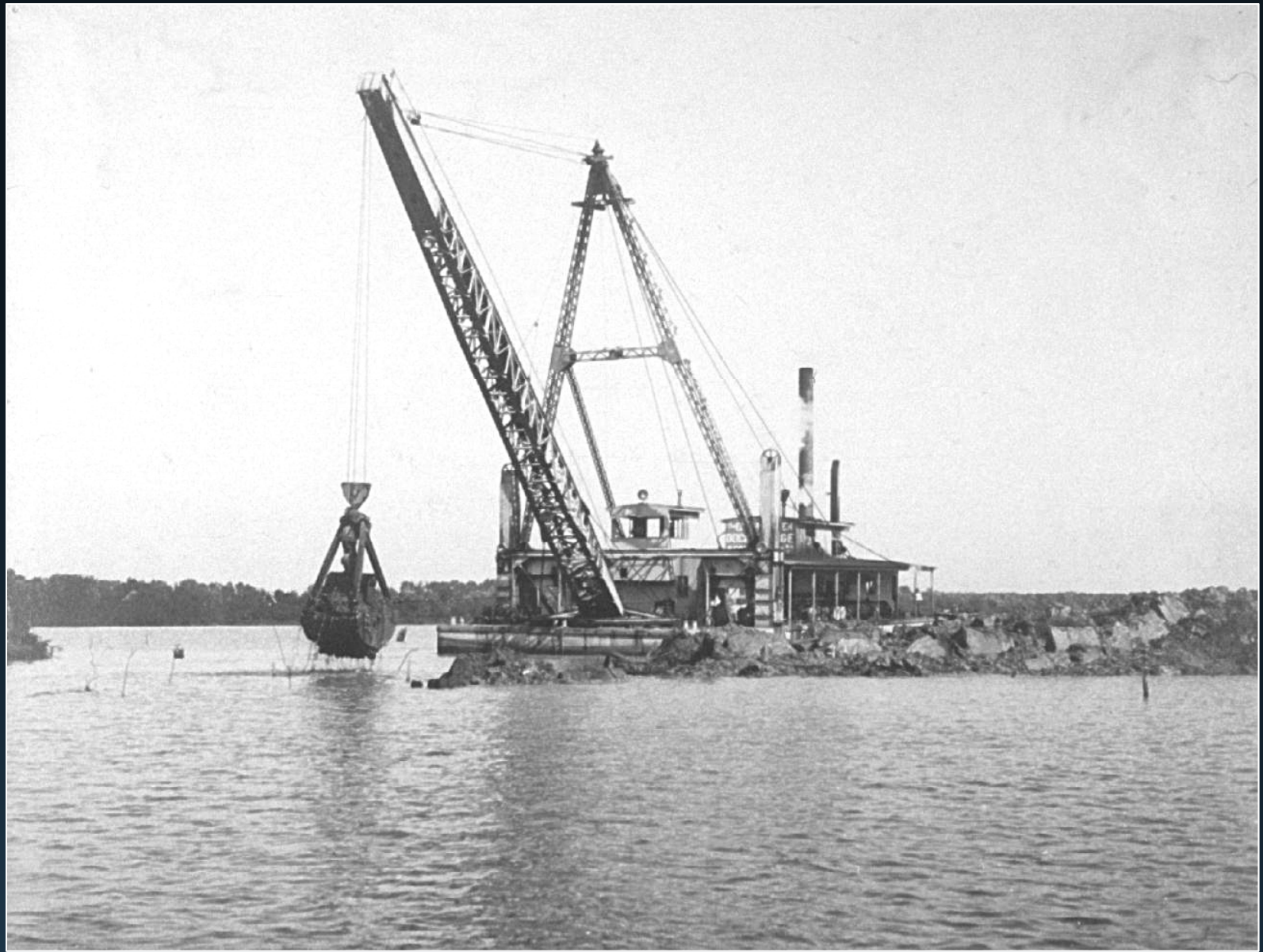




# DRAINAGE & LEVEE DISTRICTS



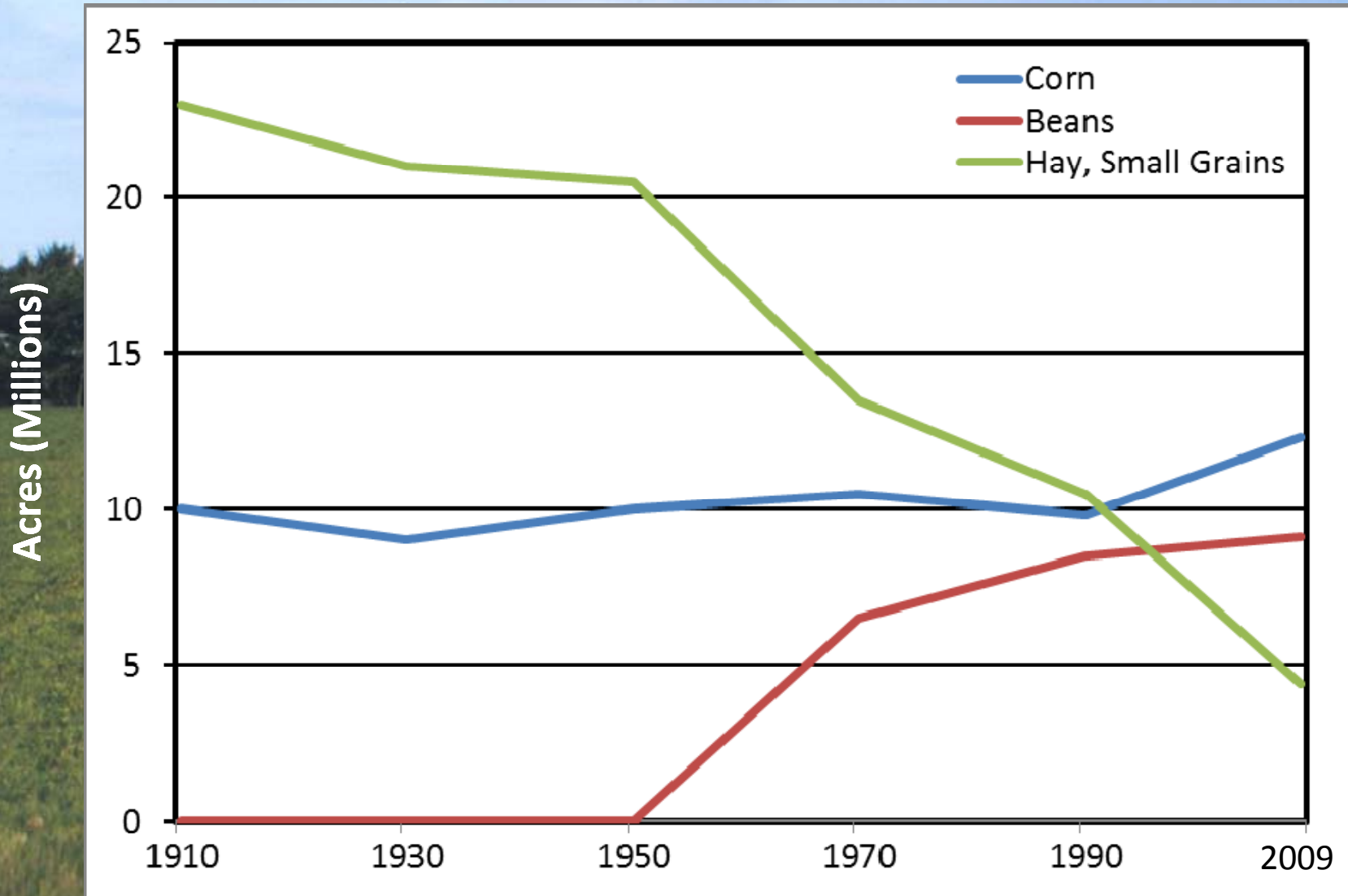








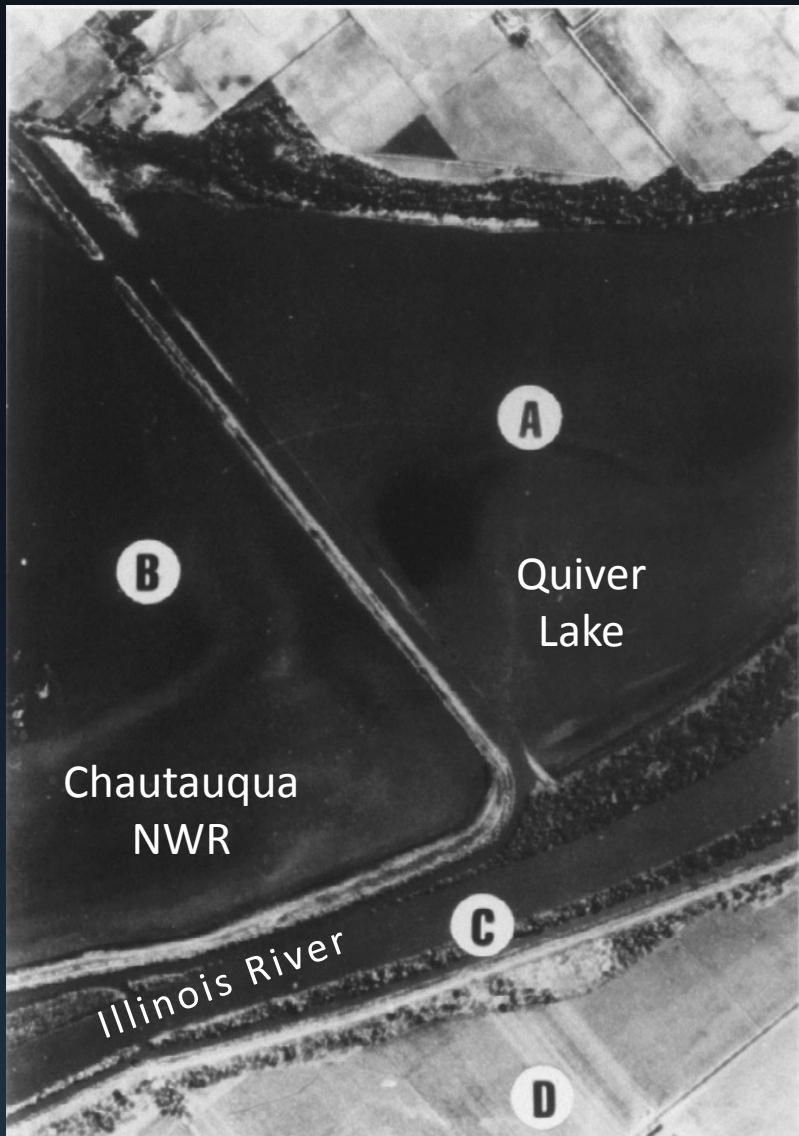
# SEDIMENTATION



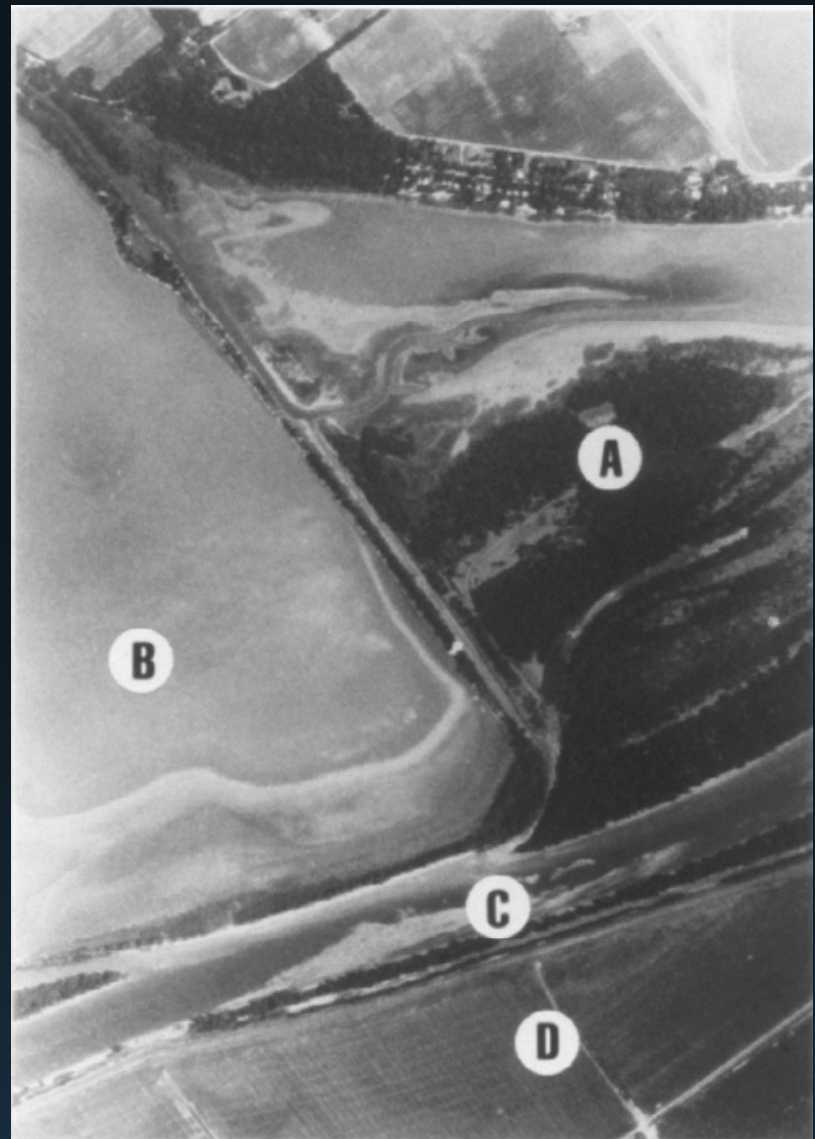








**1931**



**1978**

Tributary streams  
depositing sediment

Illinois River, 1980s



Mississippi River, 2003







IDNR Parking Lot, Havana



August, 1990



July, 2002



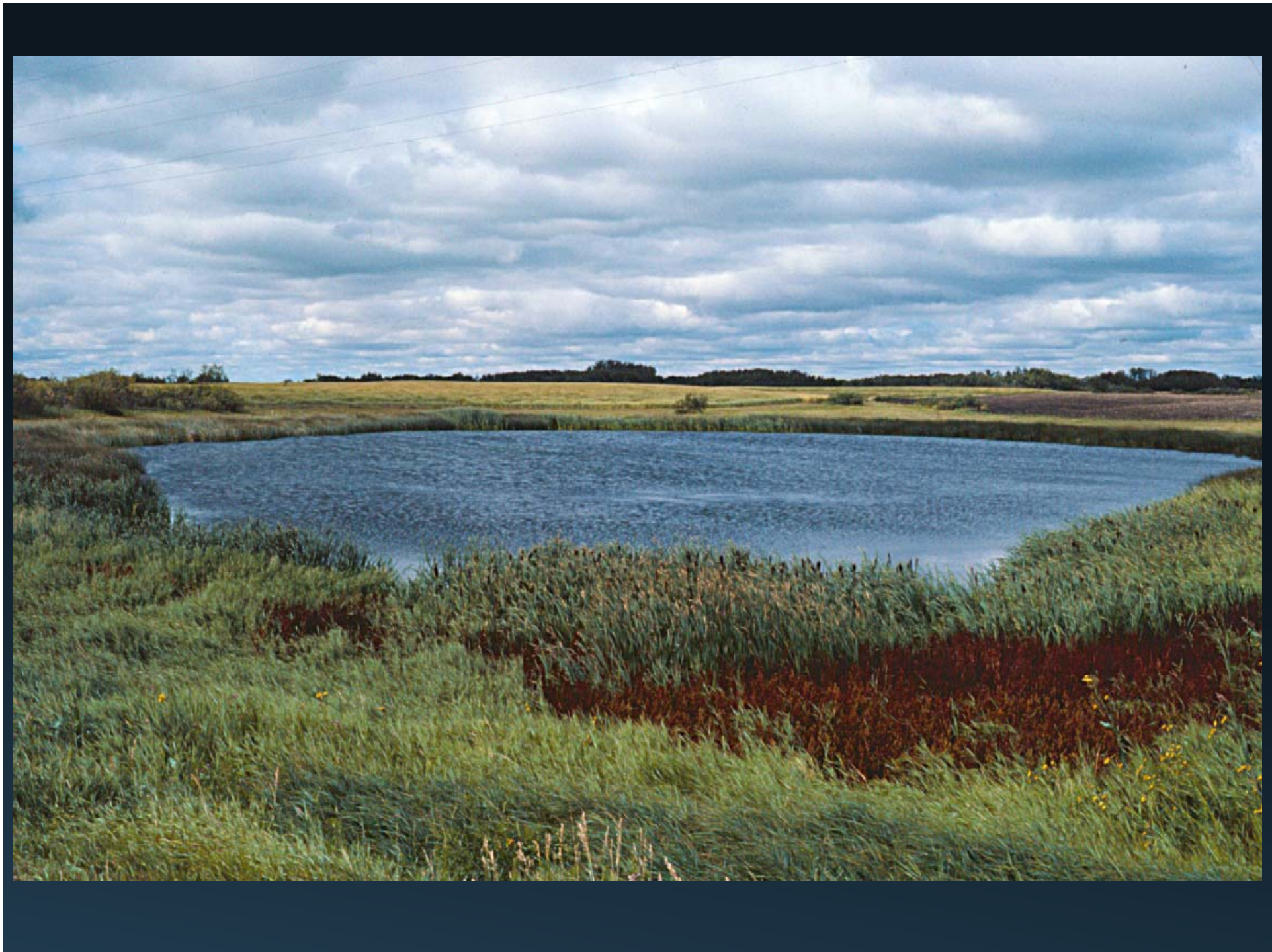
August, 2011



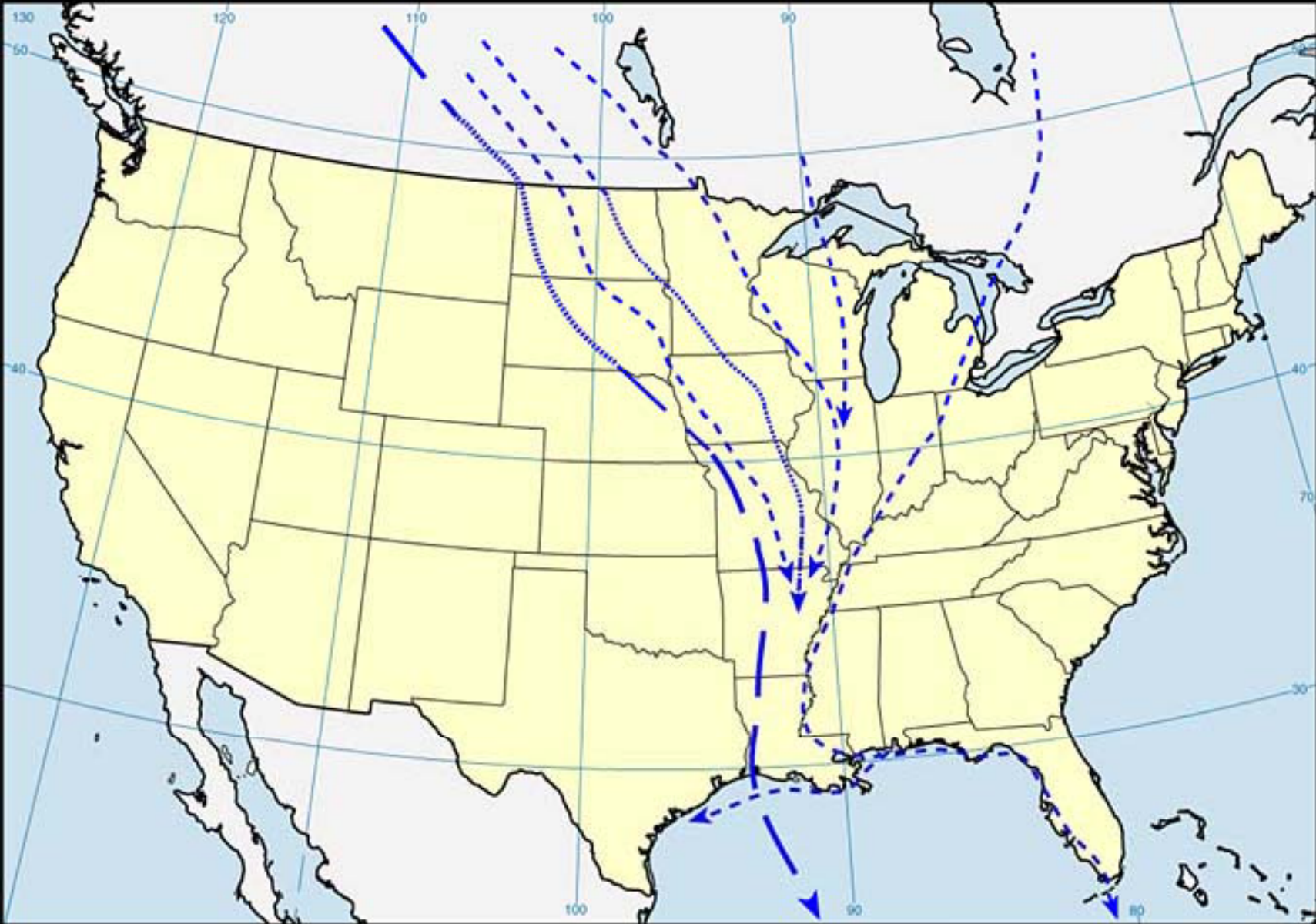


**Distribution of North American Breeding Ducks**  
**Prairie and Parkland Range in Dark Blue**









MISSISSIPPI FLYWAY









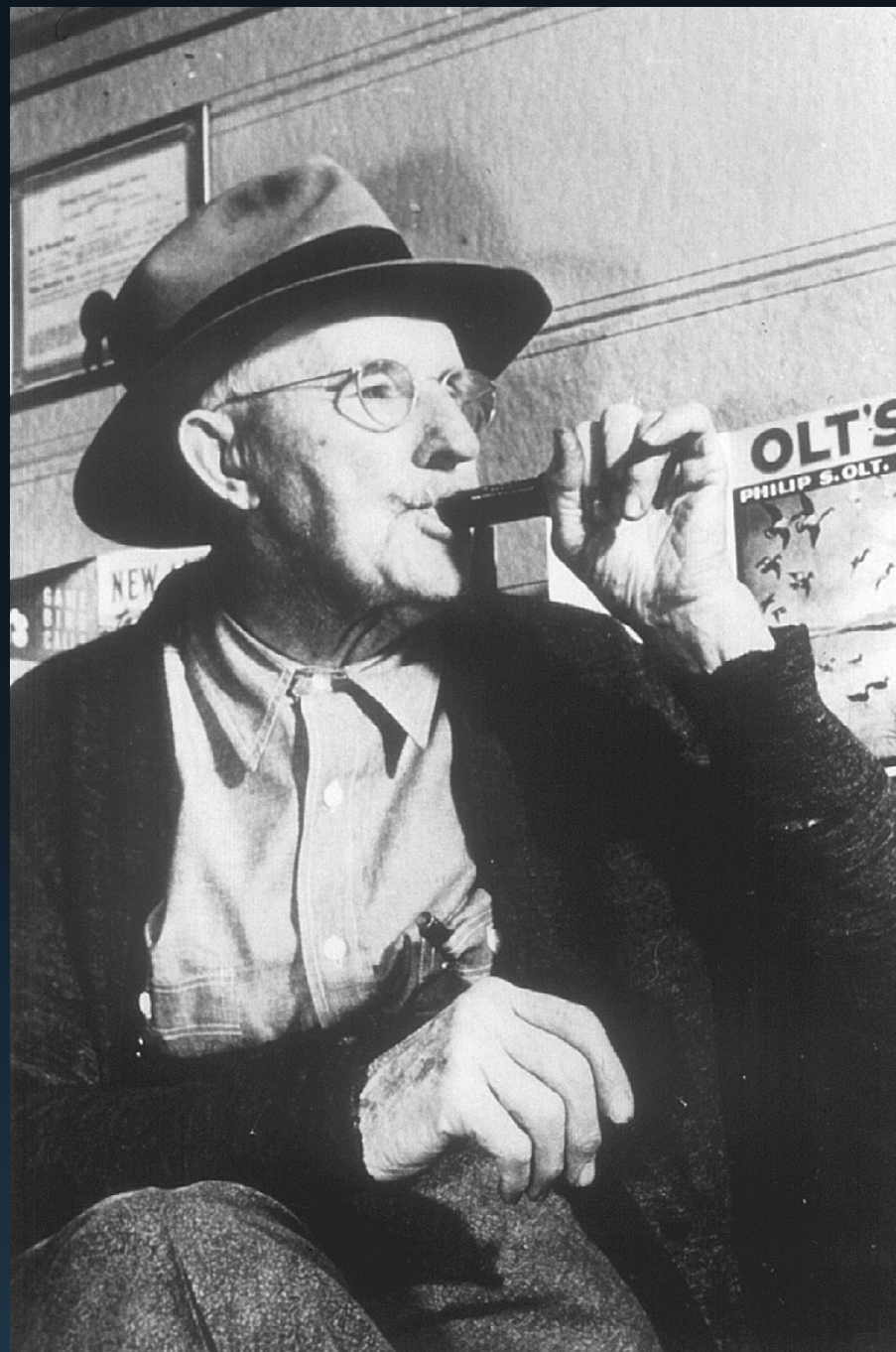
# Waterfowl Hunting in Illinois..... History and Traditions







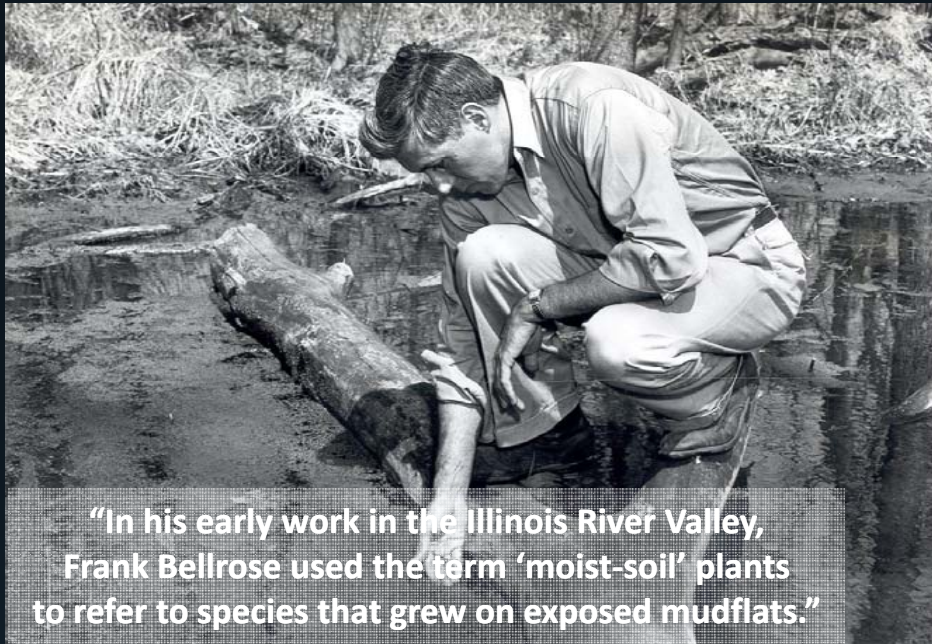




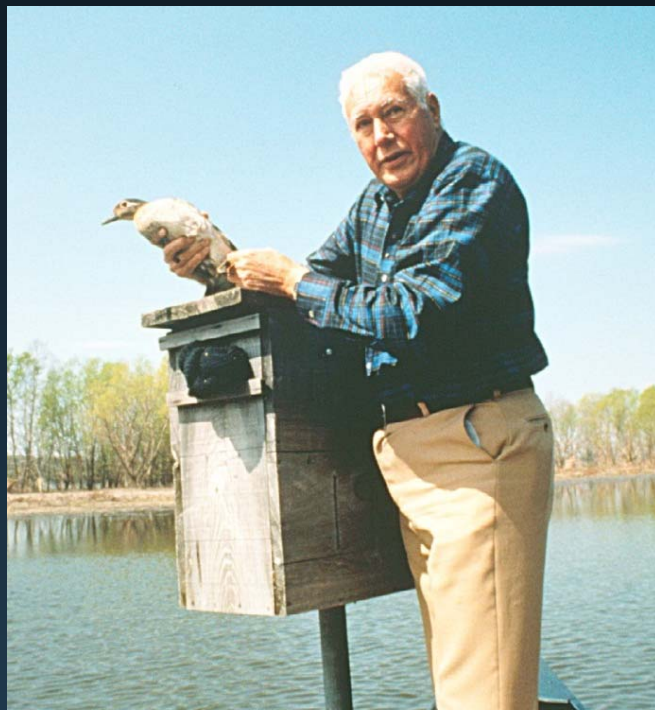
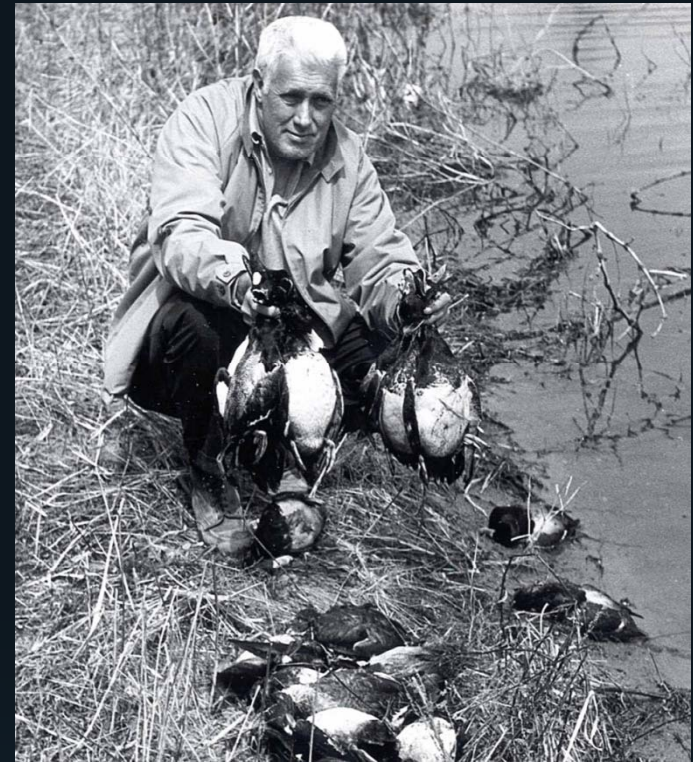








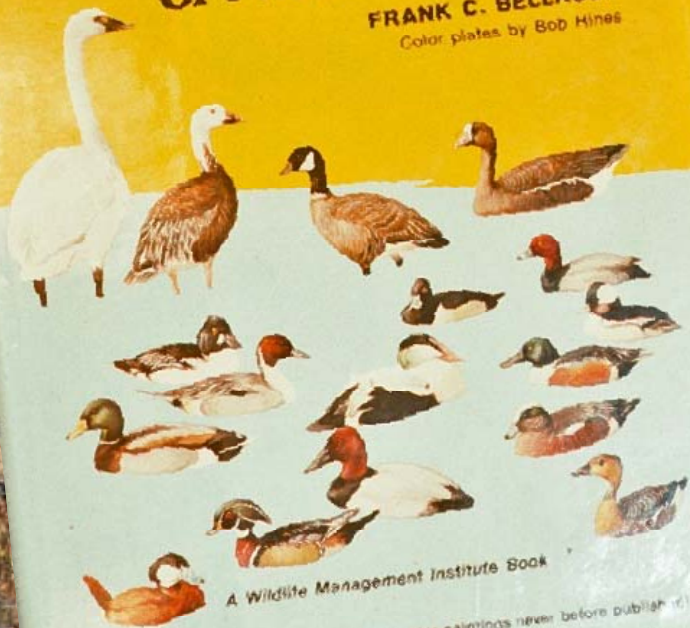
"In his early work in the Illinois River Valley, Frank Bellrose used the term 'moist-soil' plants to refer to species that grew on exposed mudflats."





# DUCKS, GEESE and SWANS of North America

FRANK C. BELLROSE  
Color plates by Bob Hines



A Wildlife Management Institute Book

Revised and Updated! With 24 pages of color paintings never before published!

## Ecology and Management of the **WOOD DUCK**







Grand Island Lodge, February 12, 1905

24° below zero













Swan Lake Club

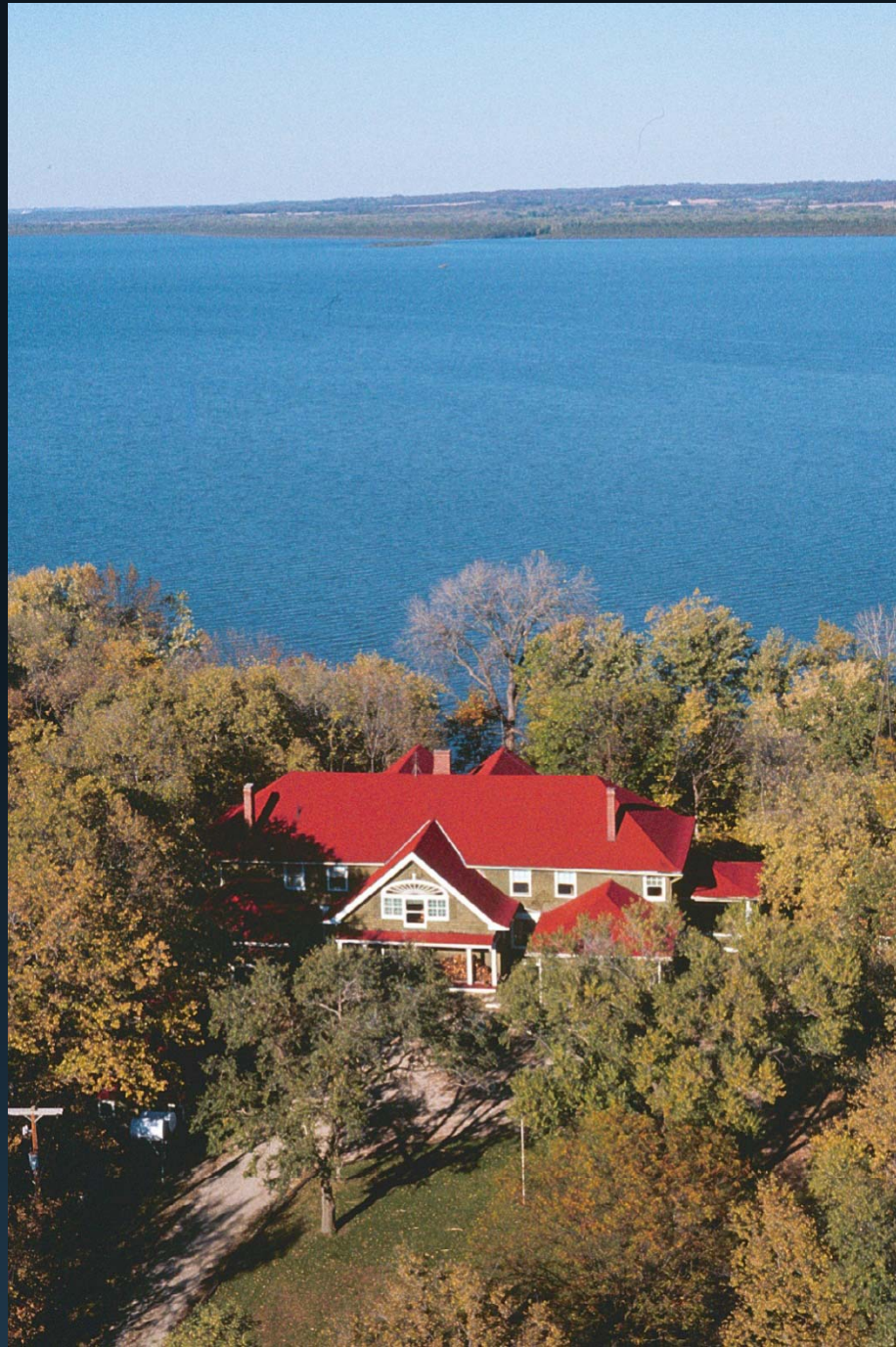
July 21, 1915

Chicago White Sox

July 21 1915

DATE	NAMES	RESIDENCE	TIME OF ARRIVAL	OF DEPARTURE
	Chicago White Sox			
	A. J. P. [unclear]			
	John Collins	Chicago		
	W. W. [unclear] Minnetonka			
	Ed L. [unclear]			
	E. [unclear]			
	Joe [unclear]			
	Thos Daly	White Sox		
	Walter Meyer			
	John Fournier			
	Edw Collins			
	Geo Weaver			
	R. Blackburn	BB		
	R. Rath			
	O. Felsch			
	Charles Rowland Mgr	Club		
	Joe J. O'Neil party			
9 p.	Jack Tomie	Chicago	Aug 5 1915	
	Joseph M. Hahn	The Nut Comedians		
8-8-15	Mr & Mrs Alfred G. Keenan	St Louis Mo.		
	Kathleen Cashion	Pennell		
	Dick [unclear]			







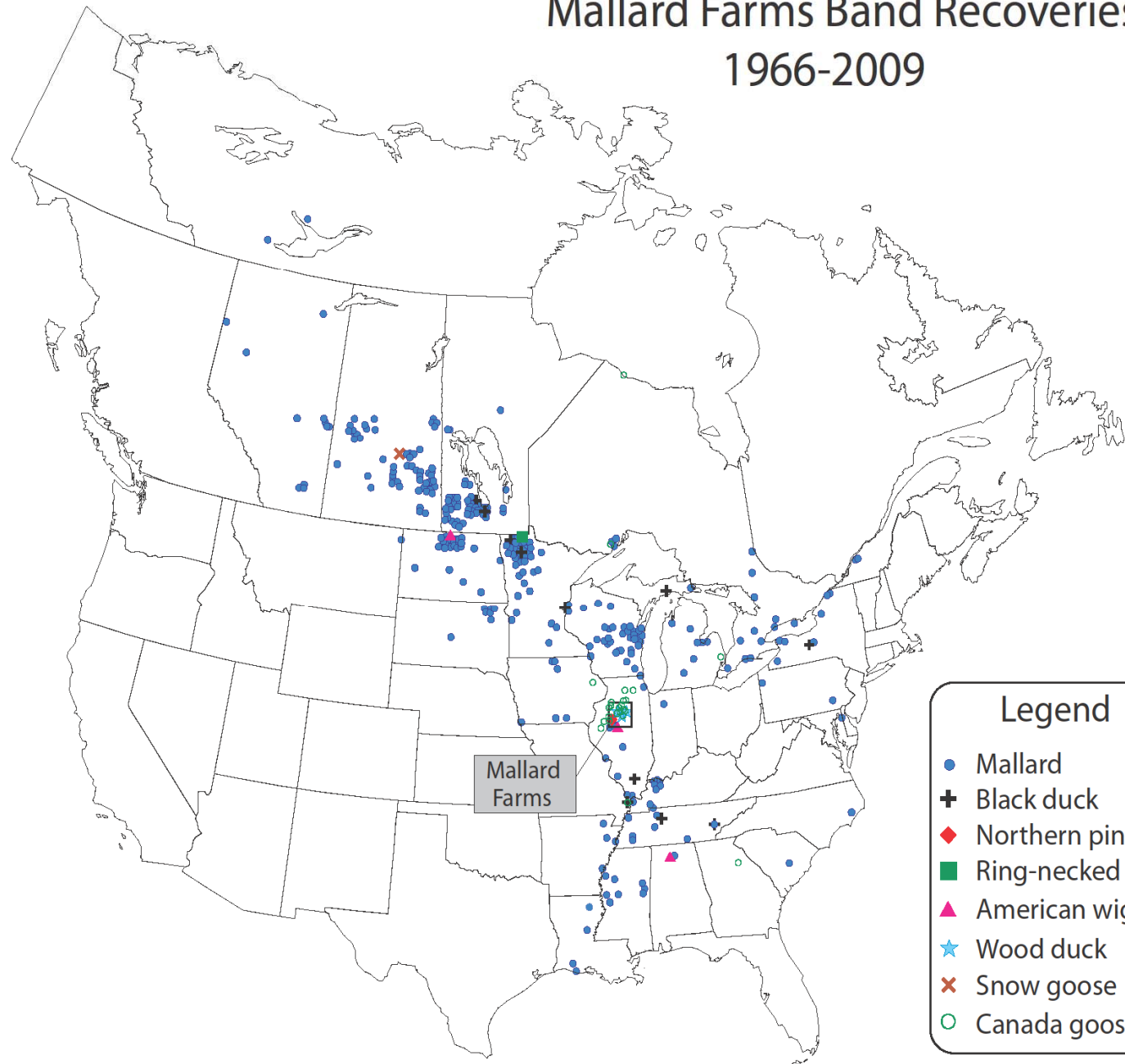






# Mallard Farms Band Recoveries 1966-2009

United States	
Alabama	2
Arkansas	6
Georgia	1
Illinois	72
Indiana	3
Iowa	12
Kentucky	17
Louisiana	5
Maryland	2
Michigan	15
Minnesota	86
Mississippi	12
Montana	1
New York	10
North Dakota	54
North Carolina	1
Oklahoma	1
Pennsylvania	8
South Dakota	17
South Carolina	1
Tennessee	27
Wisconsin	92
Canada	
Alberta	15
Mackinac	1
Manitoba	141
Northwest Territories	2
Ontario	21
Quebec	2
Saskatchewan	93
Total	720



**Legend**

- Mallard
- ⊕ Black duck
- ◆ Northern pintail
- Ring-necked duck
- ▲ American wigeon
- ★ Wood duck
- ⊗ Snow goose
- Canada goose



# Waterfowl Habitat





**Upper Peoria Lake, 1956**



**Wild Celery**



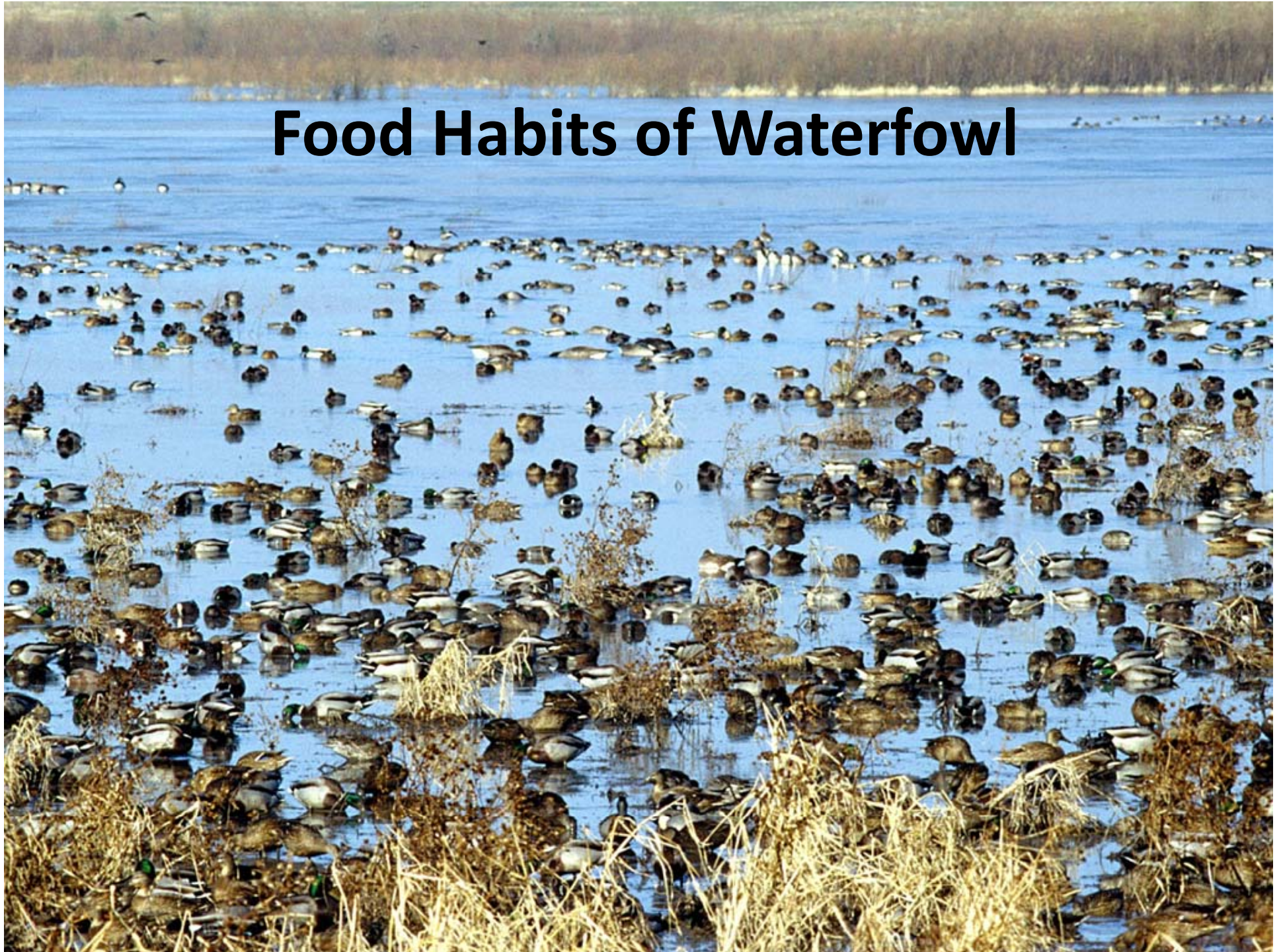


# Goose Lake, Putnam County





# Food Habits of Waterfowl





# Mallard Food Habits in the Illinois River Valley

	1938-1940	1979-1982
<b>Corn</b>	<b>47.4</b>	<b>48.0</b>
<b>Moist-soils</b>	<b>23.9</b>	<b>25.1</b>
<b>Managed</b>	<b>0</b>	<b>10.5</b>
<b>Aquatics (Submerged/floating)</b>	<b>9.1</b>	<b>0</b>
<b>Emergents</b>	<b>5.5</b>	<b>0</b>



# Chautauqua National Wildlife Refuge, Havana

**July**



**August**



**September**



**November**







**Frosty Anderson**

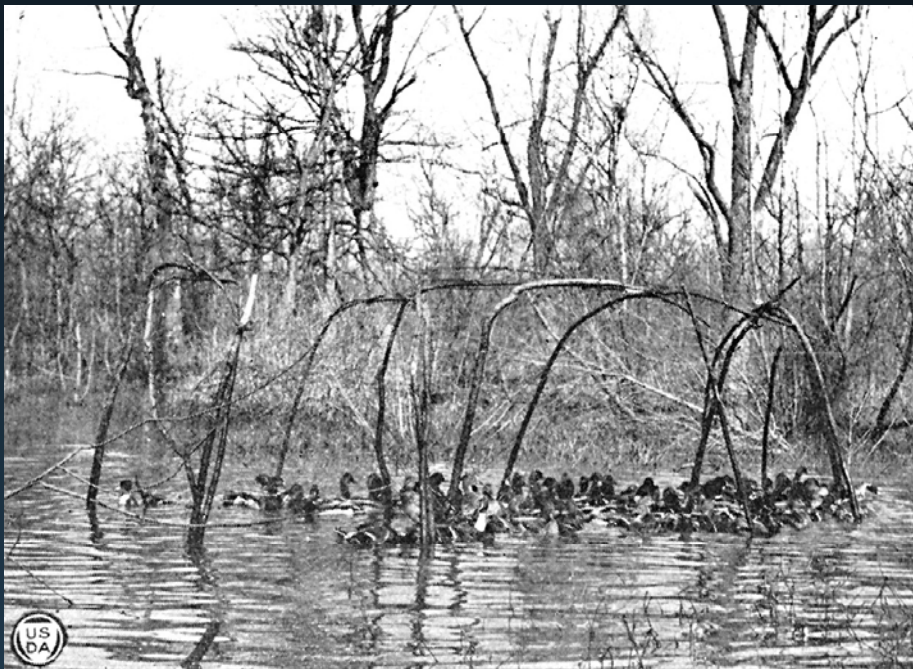
**Art Hawkins**

**Banding of Waterfowl**



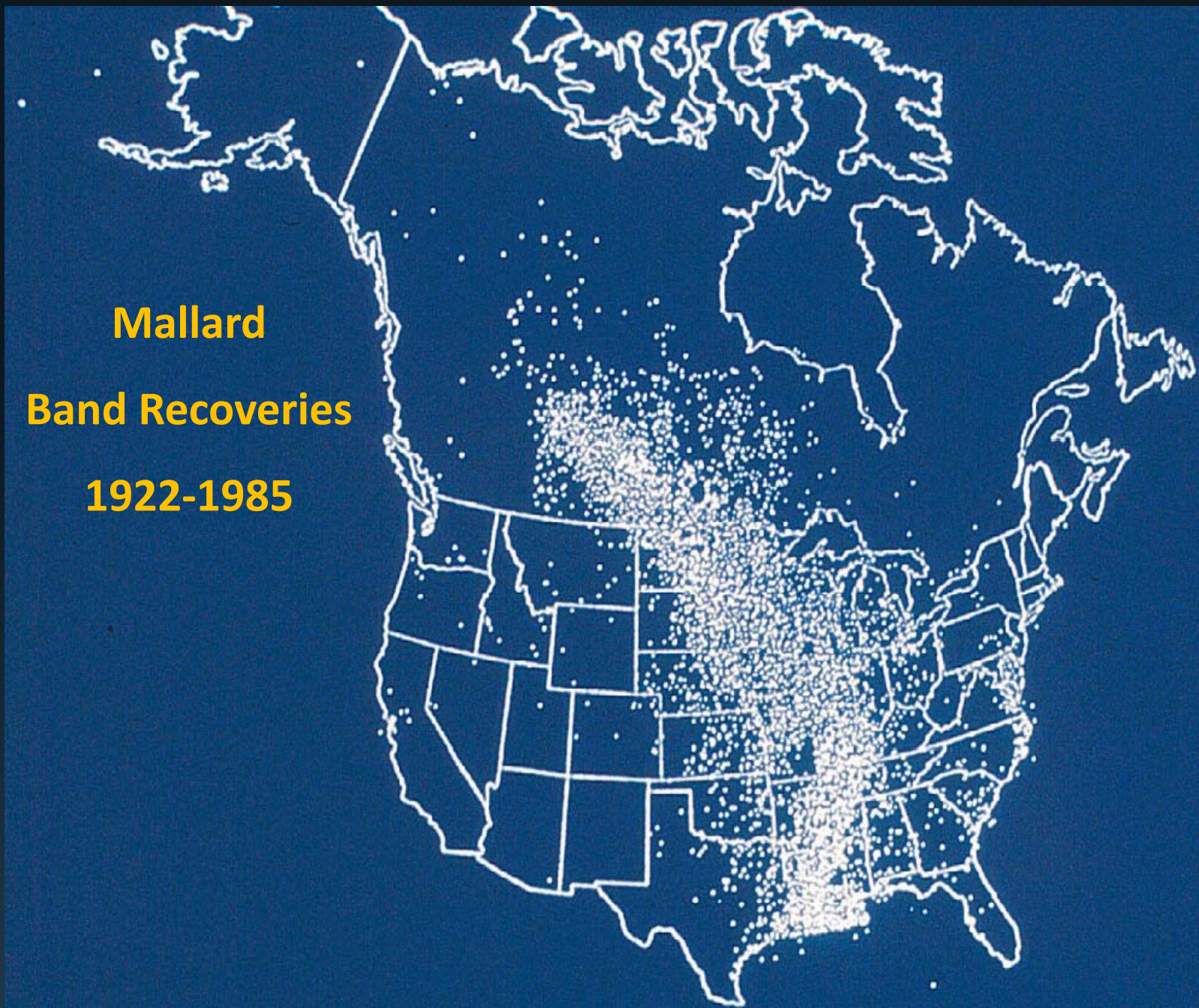
## Frederick C. Lincoln

“father of the North  
American waterfowl  
banding program”





**Mallard  
Band Recoveries  
1922-1985**





## Maximum Known Age of Selected Waterfowl Species

Species	Age (yrs-mos)
Mallard	29-1
Northern Pintail	26-6
Wood Duck	22-6
Canvasback	22-5
Lesser Scaup	18-4
Canada Goose	24-4
Lesser Snow Goose	26-7

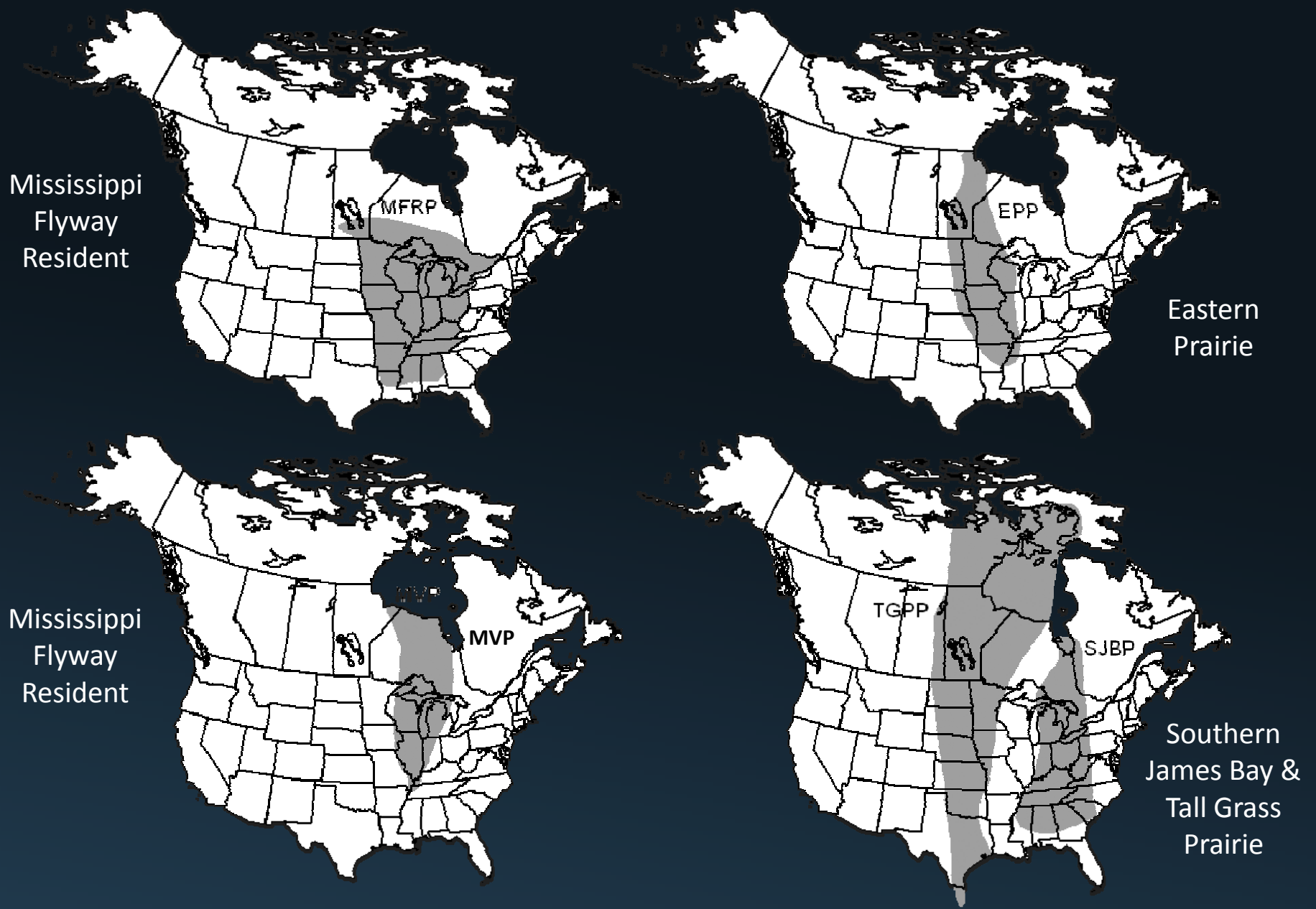


# Canada Goose: IL Visitor & Resident





# Approximate Ranges of Management Populations of Canada Geese





Goose hunters on sandbar along Mississippi River, 1931





Goose hunting club near Horseshoe Lake, 1940s









# Migration, Distribution, and Abundance









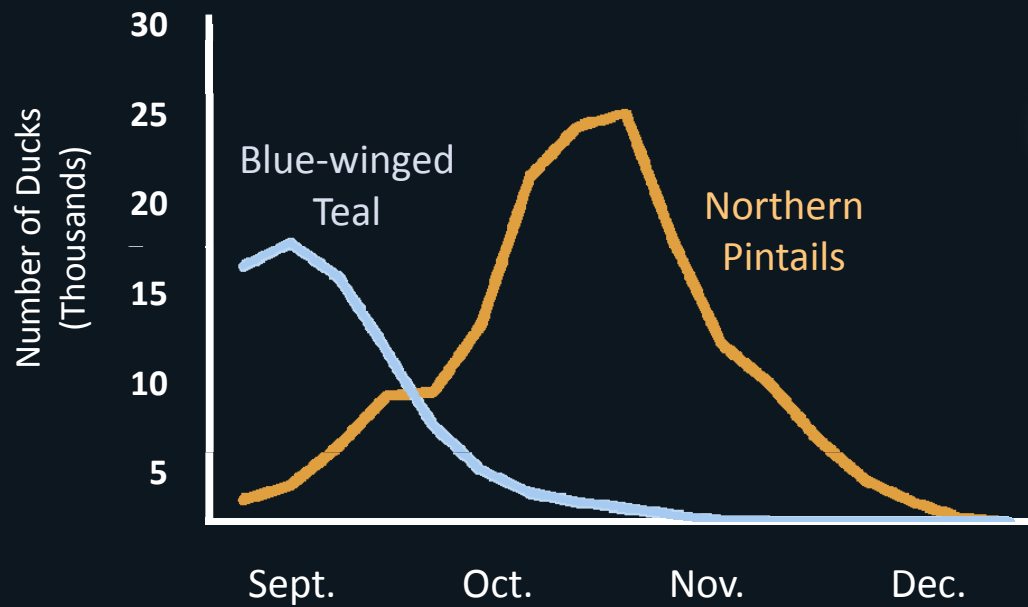
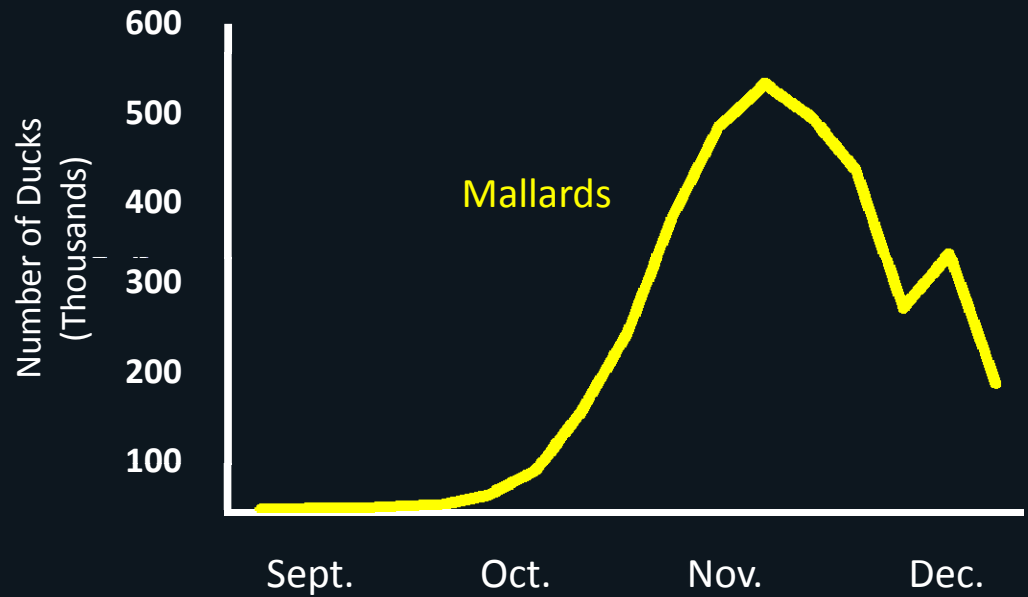
# Waterfowl Aerial Inventories

- **INHS staff have conducted aerial inventories since 1948 with only 4 observers**
- **Inventory the Illinois and Mississippi rivers**
- **Document waterfowl distributions for management decisions**



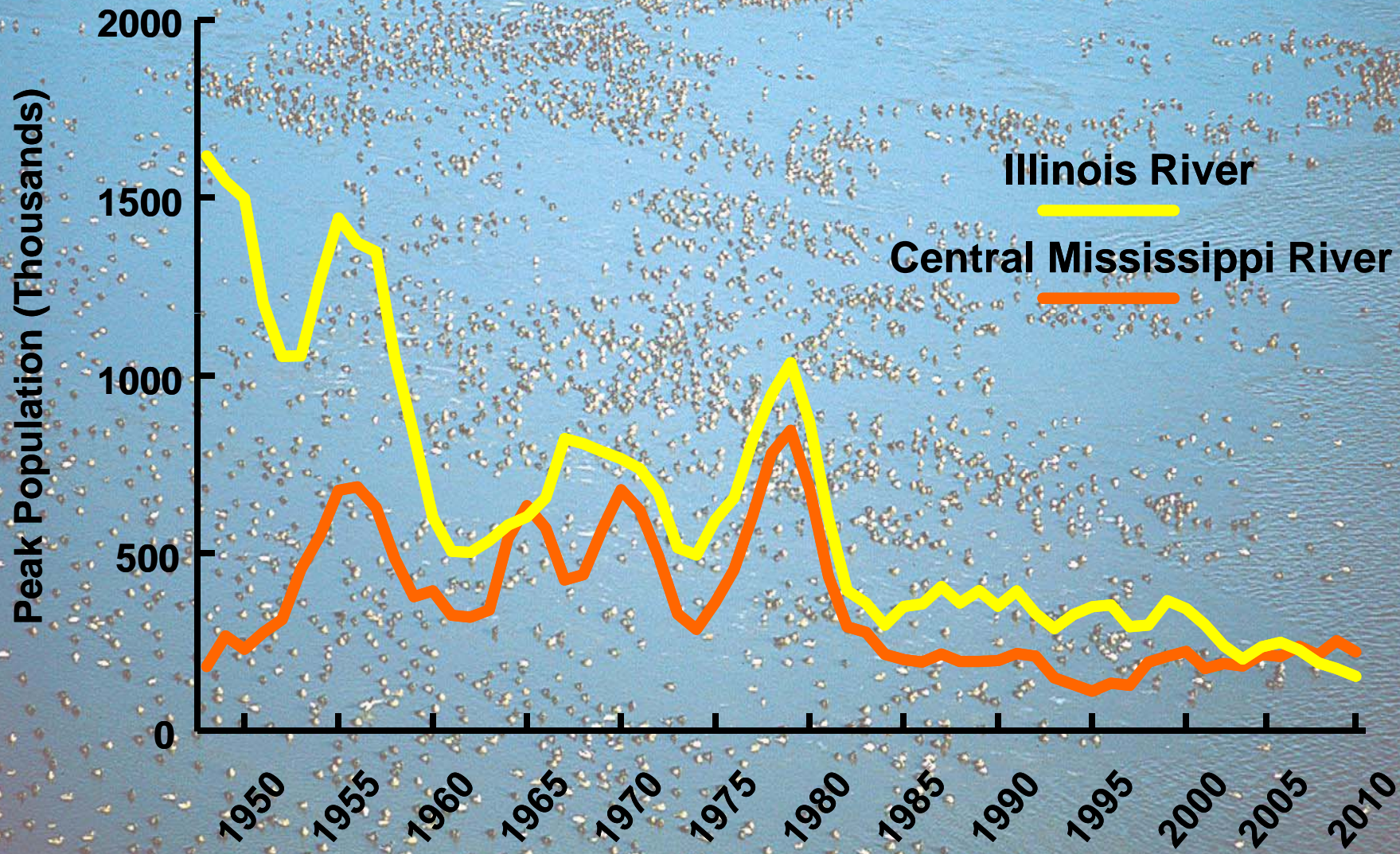


# Average Number of Mallards, Northern Pintails, & Blue-winged Teal, (1948-2007)



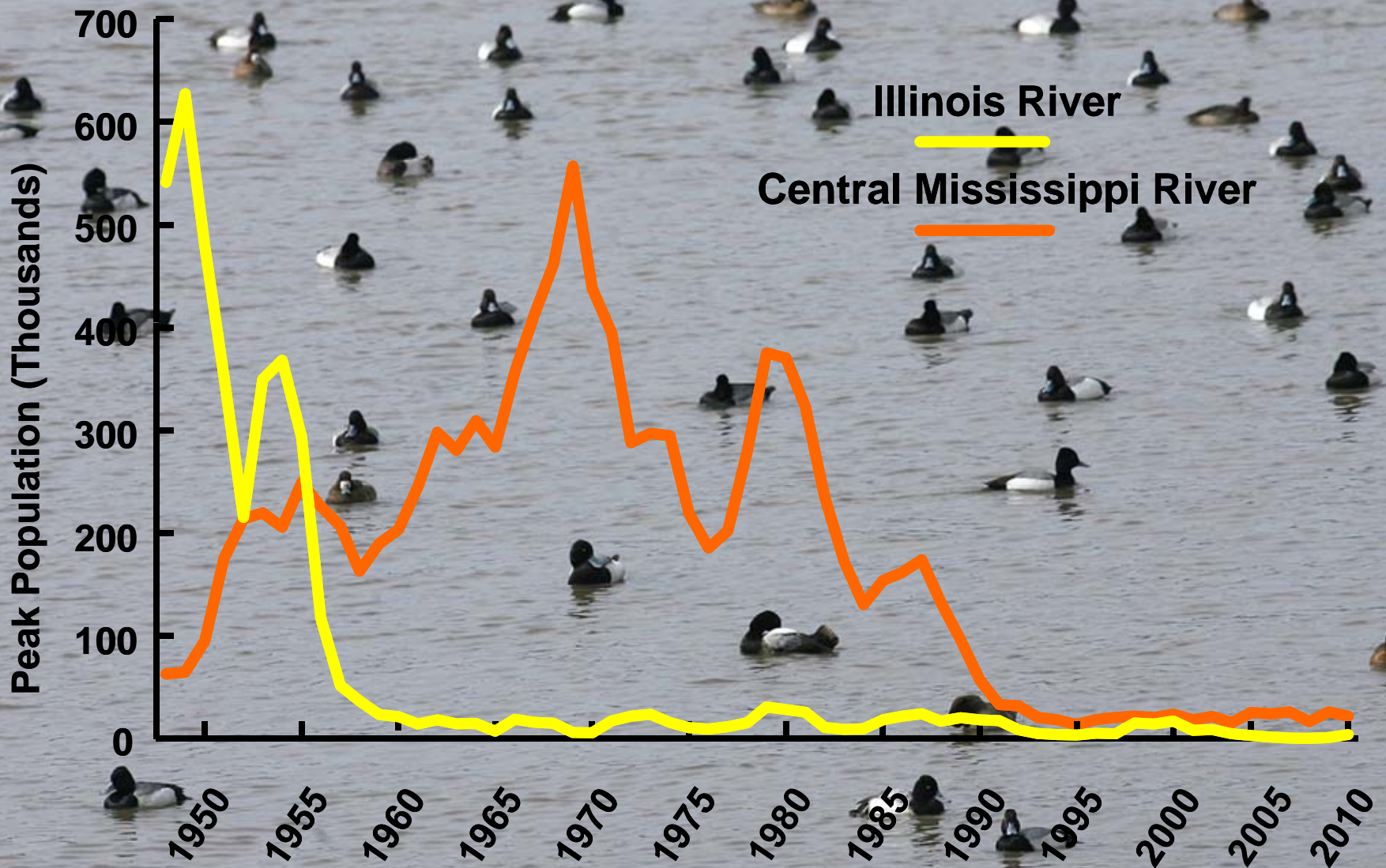


# Fall Peak Population Estimates of Mallards, 1948-2010



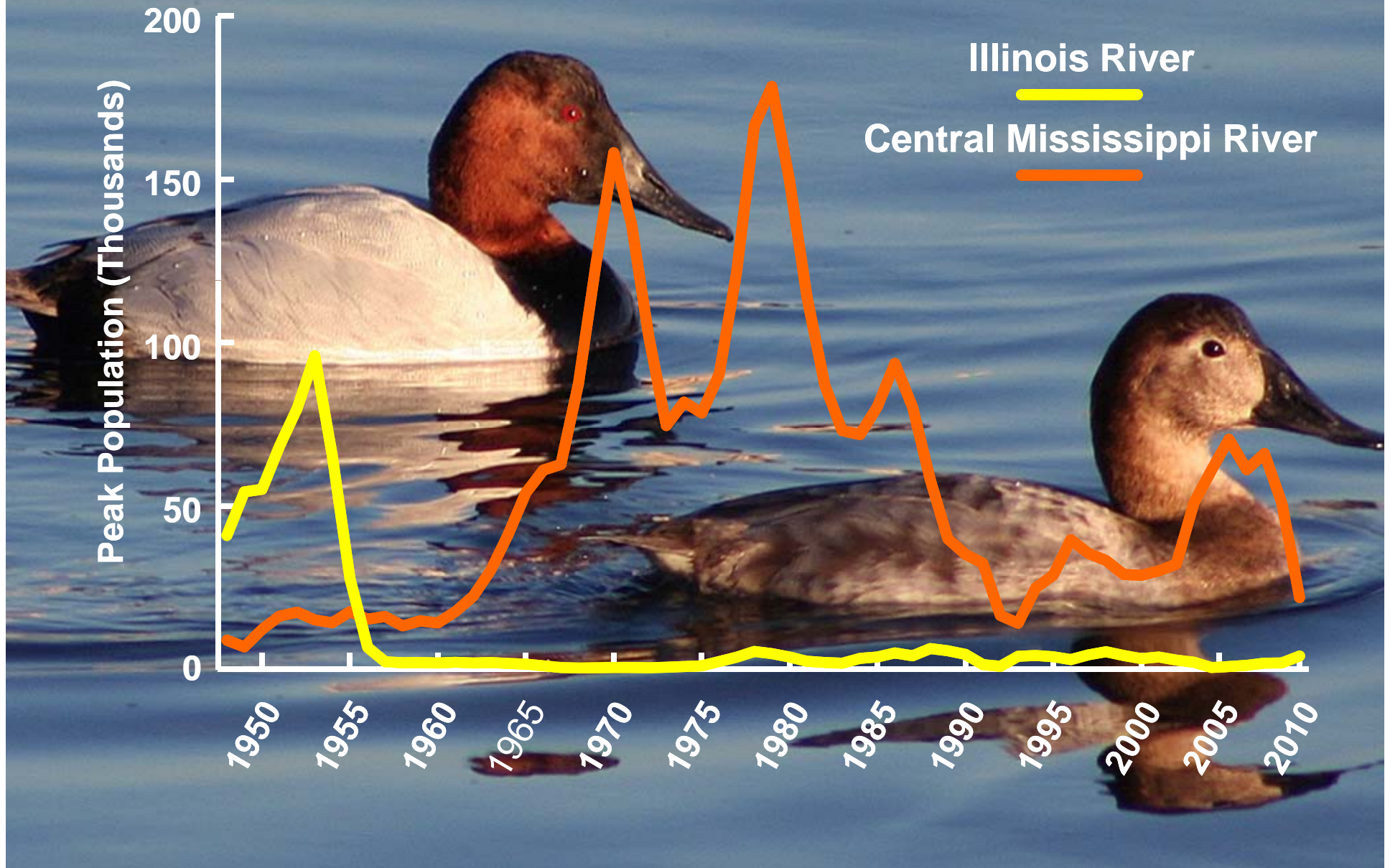


# Fall Peak Population Estimates of Lesser Scaup, 1948-2010



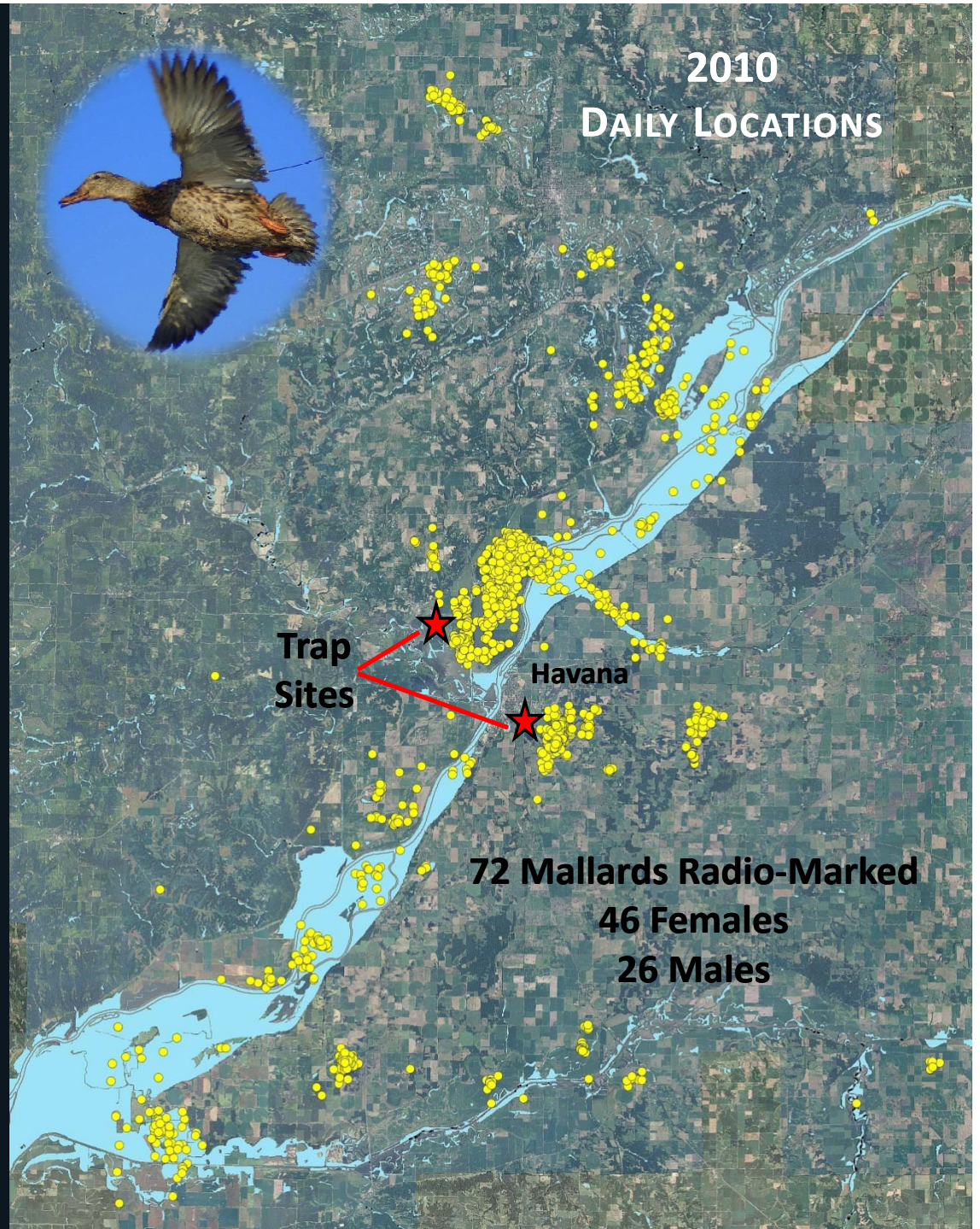


# Fall Peak Population Estimates of Canvasbacks, 1948-2010





# ECOLOGY OF MIGRATING MALLARDS





# Major Waterfowl Regulations

- 1865 1<sup>st</sup> Illinois waterfowl season
- 1903 Illinois bag limit of 50 ducks
- 1913 Spring hunting in Illinois eliminated
- 1914 Illinois protected Wood Ducks
- 1918 Migratory Bird Treaty Act
- 1934 Migratory Bird Hunting Stamp
- 1935 Baiting & live decoys prohibited; 3 shell limit
- 1975 1<sup>st</sup> Illinois Duck Stamp
- 1986 Nontoxic shot in Illinois
- 1991 Nontoxic shot nationwide





## Percentage of Total Duck Harvest by Flyway, 2005 – 2009

Flyway	Average % of Duck Harvest
Mississippi	45.8
Pacific	23.4
Central	18.4
Atlantic	12.4



# Duck Species Ranking in the Illinois and Mississippi Flyway Harvest, 2005 – 2009

## Illinois

1. Mallard
2. Gadwall
3. Green-winged Teal
4. Wood Duck
5. Blue-winged Teal

## Mississippi Flyway

1. Mallard
2. Gadwall
3. Green-winged Teal
4. Wood Duck
5. Blue-winged Teal

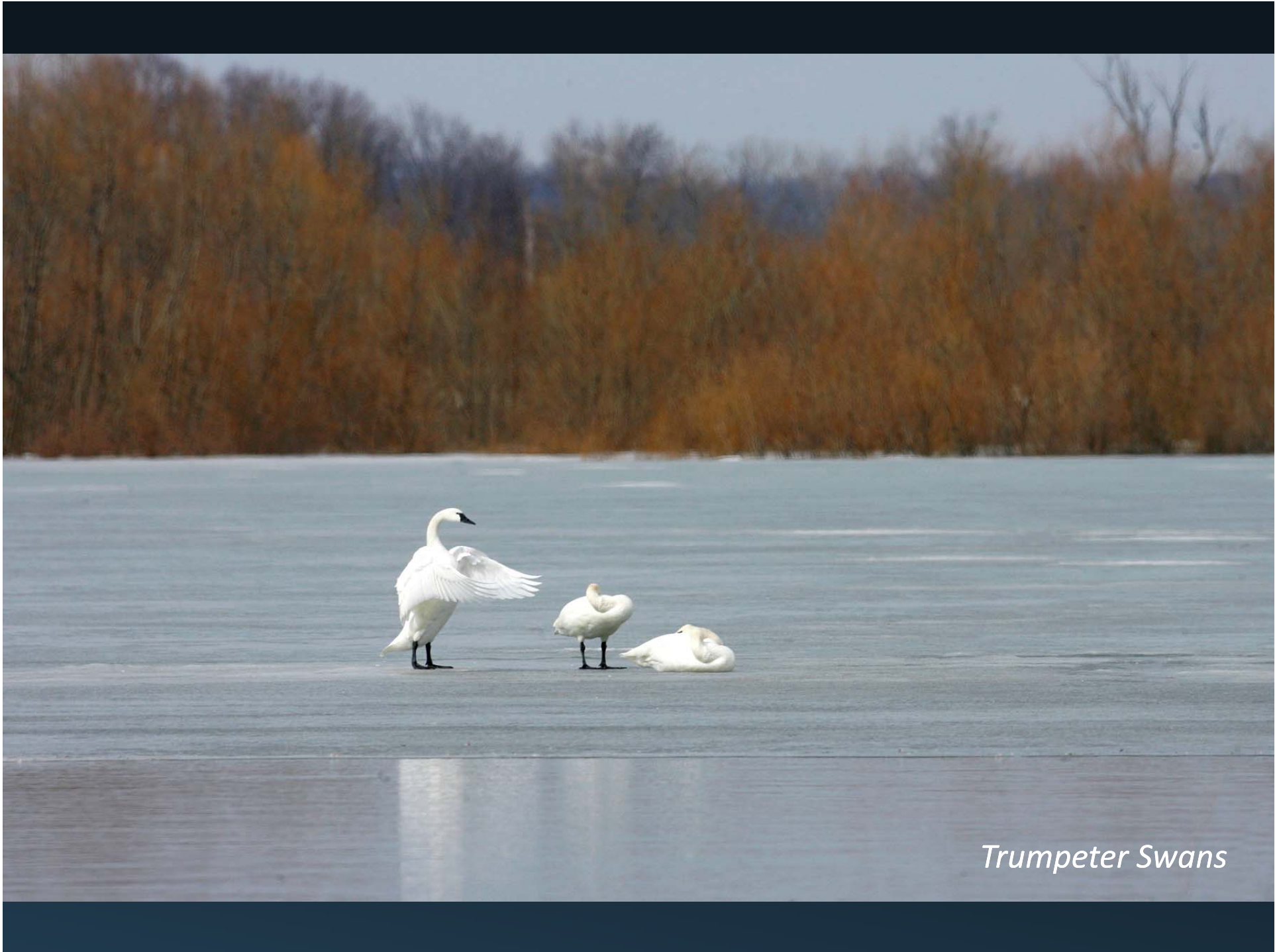
## Average Canada Goose and Snow Goose Harvest, 2005 – 2009

<b>Flyway</b>	<b>Canada Geese</b>	<b>%</b>	<b>Snow Geese</b>	<b>%</b>
<b>Mississippi</b>	<b>1,000,275</b>	<b>37.0</b>	<b>100,797</b>	<b>25.5</b>
<b>Atlantic</b>	<b>814,390</b>	<b>30.2</b>	<b>40,947</b>	<b>10.3</b>
<b>Central</b>	<b>564,389</b>	<b>20.9</b>	<b>181,713</b>	<b>45.9</b>
<b>Pacific</b>	<b>321,548</b>	<b>11.9</b>	<b>72,510</b>	<b>18.3</b>



# What Lies Ahead for Illinois Waterfowl?





*Trumpeter Swans*





*Least Sandpiper*



*Forster's Tern*



*American Avocet*

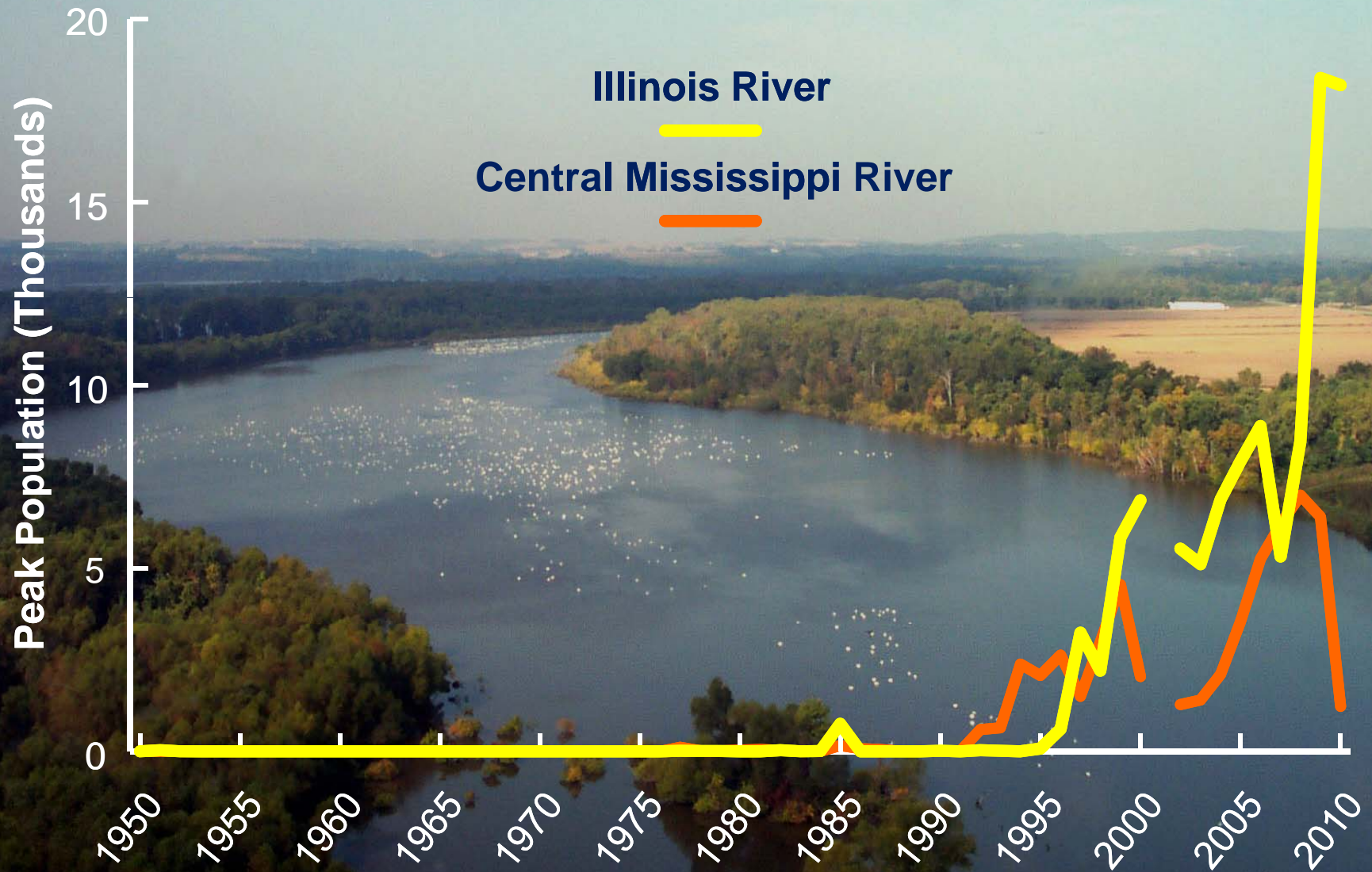


*American White Pelicans, Crane Lake, Illinois River*





# Fall Peak Population Estimates of American White Pelicans, 1950-2010





## POSSIBLE SOLUTIONS

- **Reduce sedimentation**
- **Watershed management**
- **Restore selected drainage and levee districts**
- **Private land management**







One Earth Energy Ethanol Plant  
Gibson City, IL

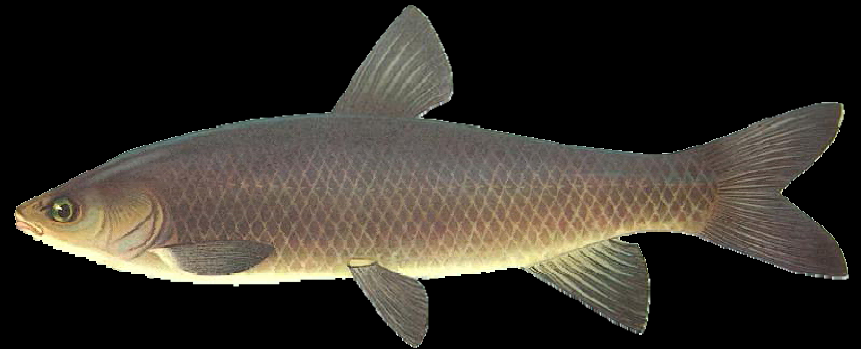




# ASIAN CARP



*Grass Carp, 1963*



*Black Carp, early 1970s*



*Bighead Carp, 1972*



*Sliver Carp, 1973*



*Common Carp, 1880s*







# Hennepin & Hopper Lakes





Waterfowl of Illinois



by Stephen P. Havera

Waterfowl  
of Illinois

ABBREVIATED  
FIELD GUIDE

by Stephen P. Havera





# ACKNOWLEDGEMENTS



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- Federal aid in Wildlife Restoration Fund through IDNR – W43-R
- The Nature Conservancy

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- Chris Young, State Journal-Register





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