

Effects of West Nile Virus Infection and Immune Function on Female Yellow-headed Blackbird Reproduction

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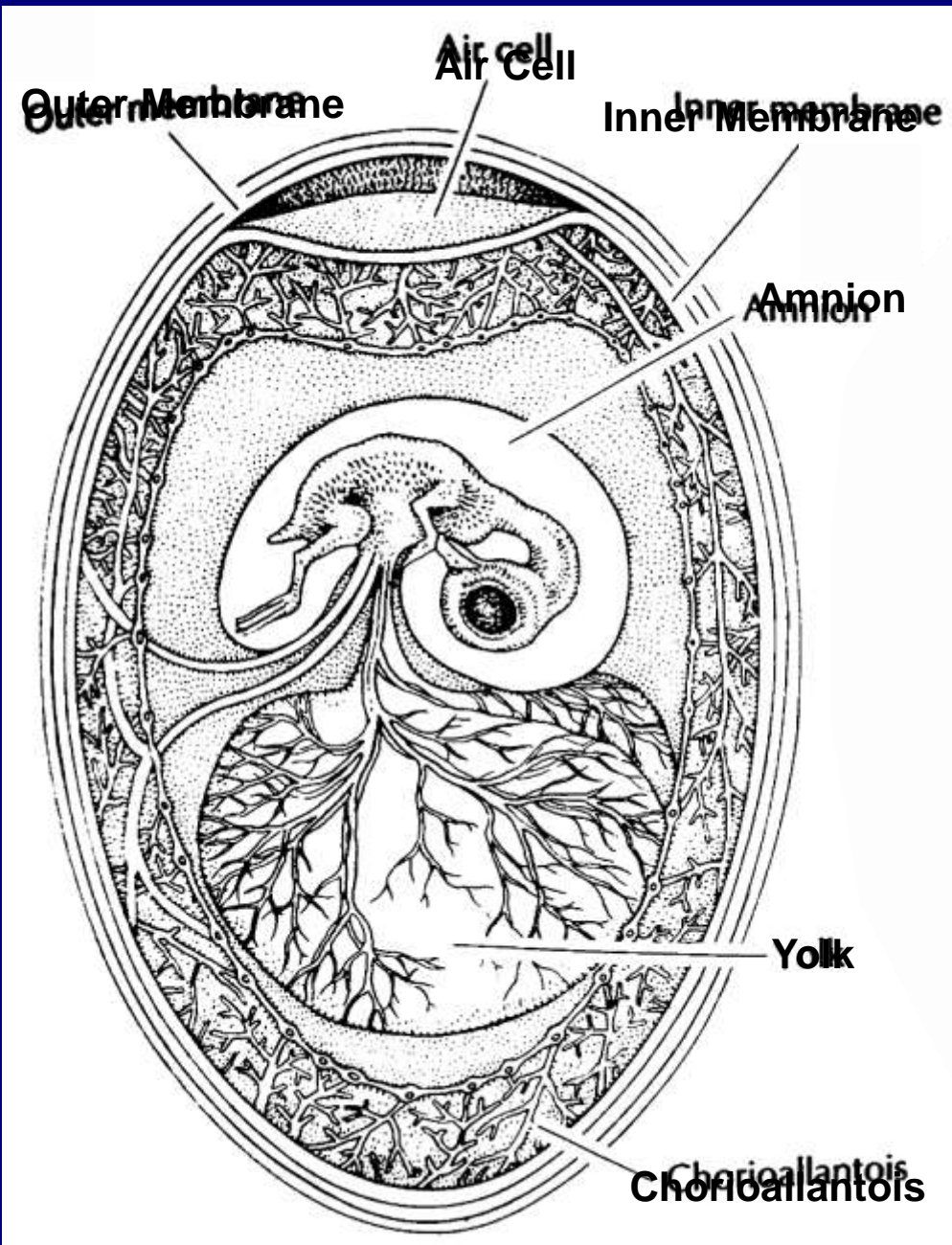
West Nile Virus

- **Introduced into eastern North America in 1999**
- **Reached North Dakota in 2002**
- **Can cause fatal meningitis**





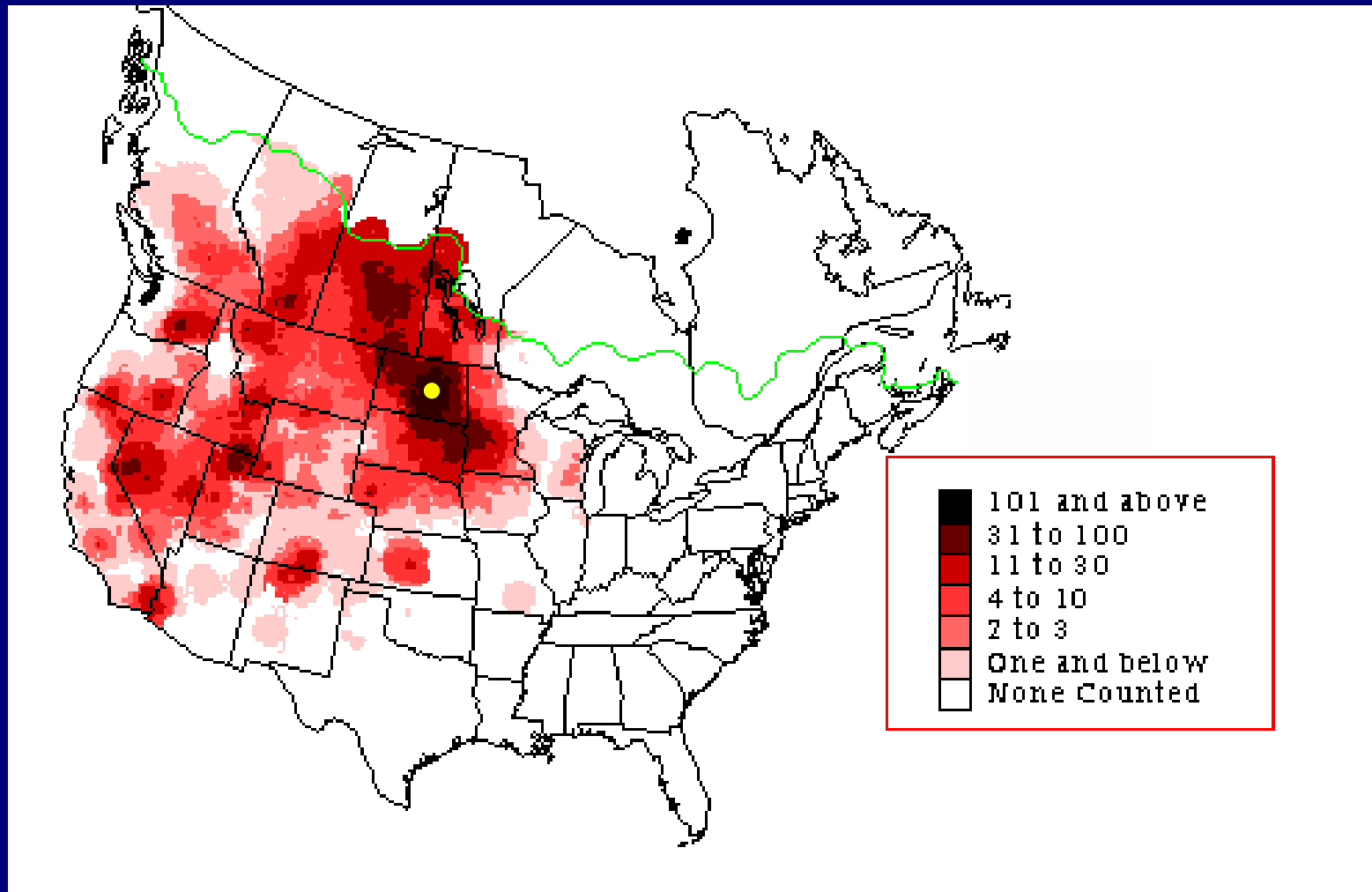






Objectives

- 1. Quantify prevalence of WNV in a population of yellow-headed blackbirds**
- 2. Quantify variation in immune function of female blackbirds**
- 3. Measure relation between female immune function and carotenoid allocation to eggs**



● Study Area



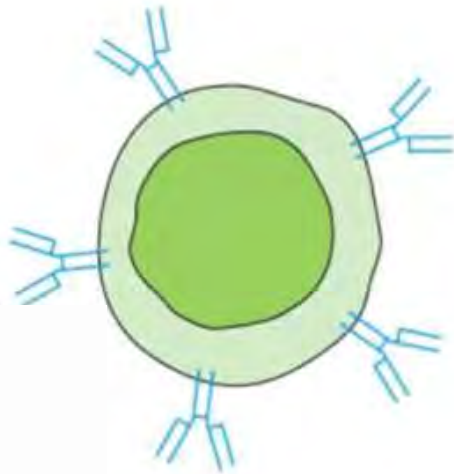




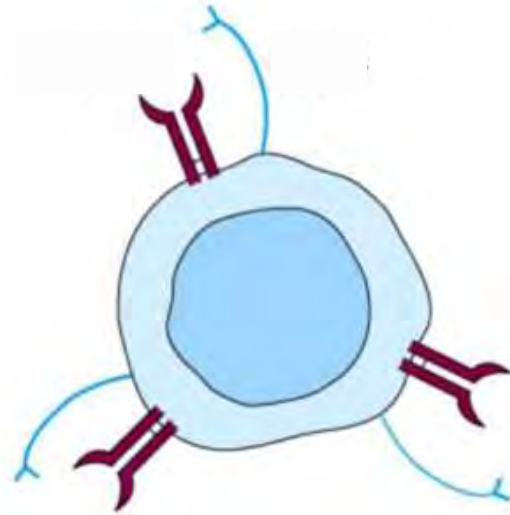


Methods: Objective 2

- Cell-mediated (inflammation) & Humoral immunity (antibodies)



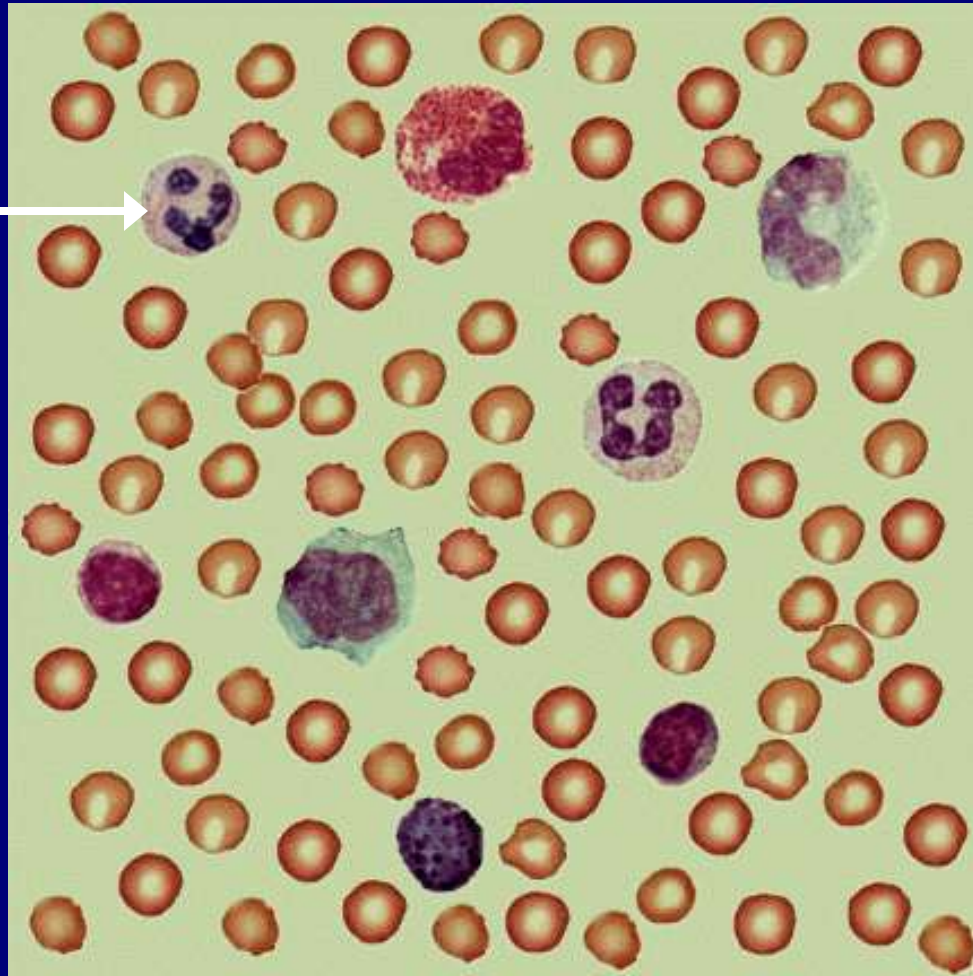
B- Cell



T- Cell

Cell-mediated Immunity

WBC



Humoral Immunity



RBC





Project Update

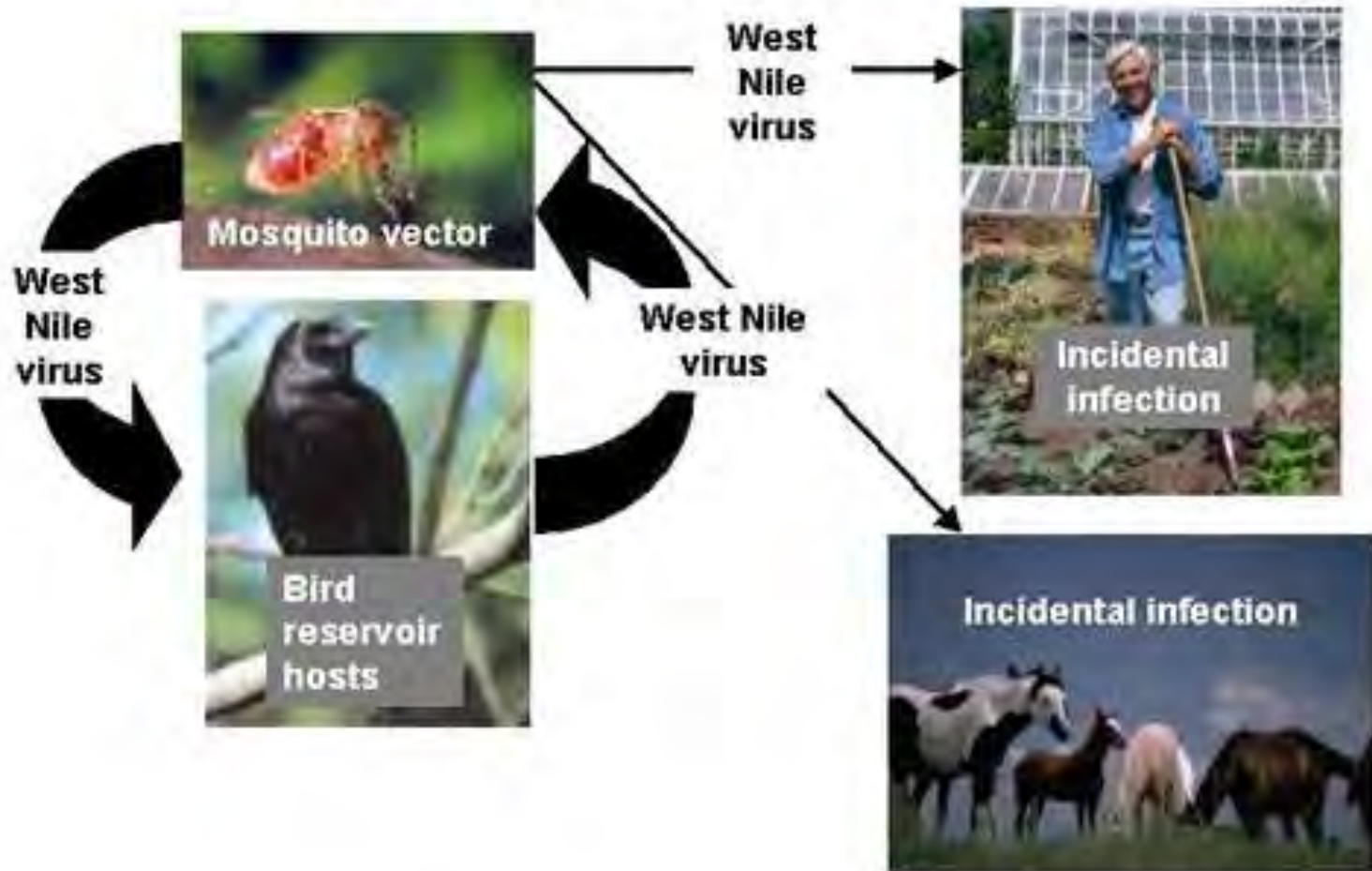
2003 Field Season

	Females	Males	Other
Eggs	51	-	-
Feathers	20	9	-
Blood	20	9	22





West Nile Virus Transmission Cycle





Acknowledgements

- **ND Water Resources Research Institute**
- **ND Department of Health**
- **ND EPSCoR**
- **University of Colorado**
 - **Dr. Bradley Blitvich**
- **Graduate Committee**

Chair: Dr. Wendy Reed

 - **Dr. Penelope Gibbs**
 - **Dr. James Grier**
 - **Dr. Gary Nuechterlein**
- **Field Assistance**
 - **Becky Wentzel**
 - **Larry Newbrey**

