



BLACK DUCK JOINT VENTURE

JV update to Chesapeake
Bay Program Habitat Goal
Implementation Team

Annapolis, MD

22 May 2012

www.blackduckjv.org



BLACK DUCK JOINT VENTURE

Mission:

Implement and coordinate cooperative population monitoring, research and communication programs to provide information required to manage ABDU and restore numbers to the NAWMP goal.

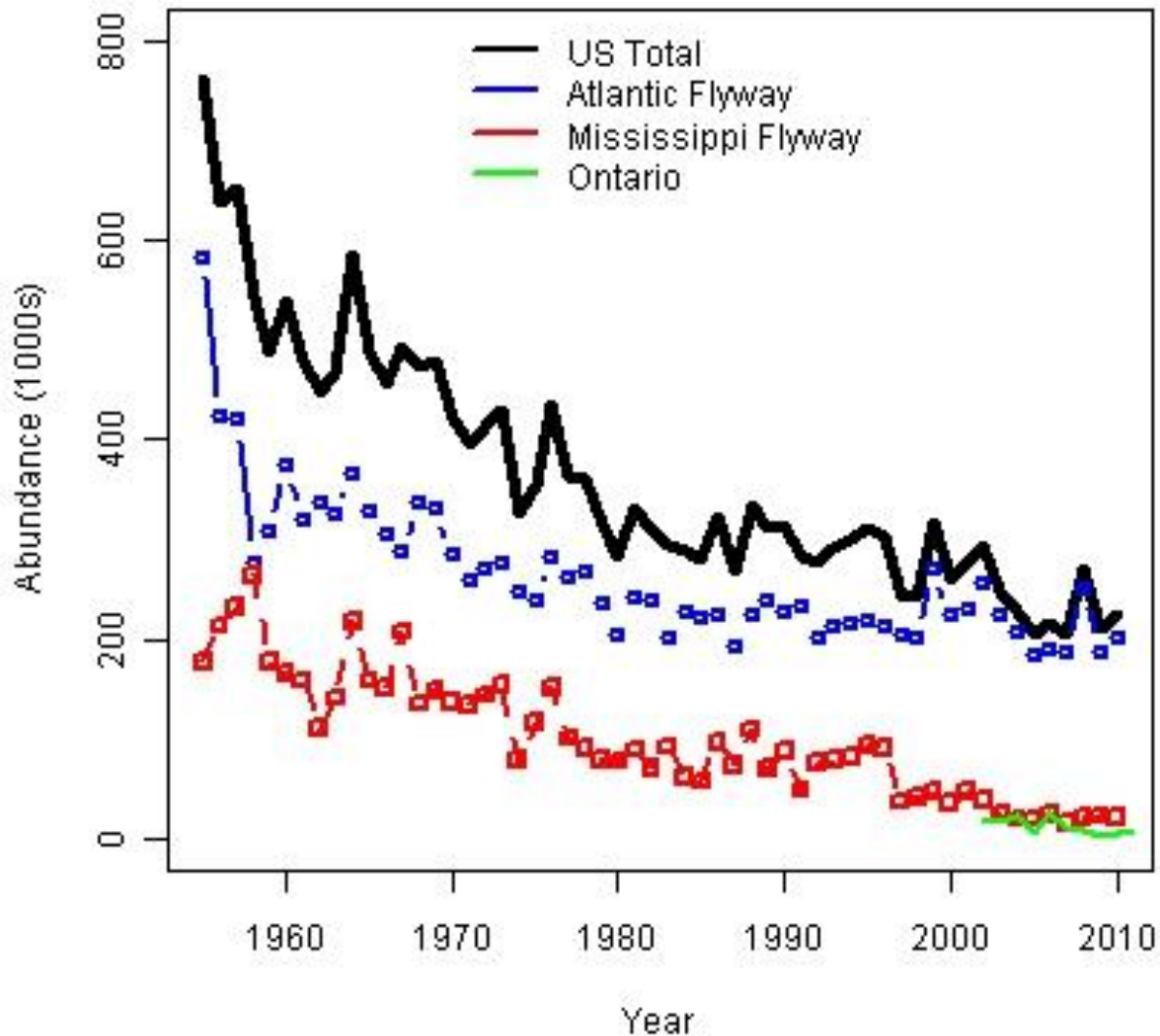
History:

- Est. 1986 NAWMP – “Species of Int’l Concern”
- Developed BPOP survey
- Formalized banding program
- Developed AHM framework
- Research
 - Mall competition
 - Habitat use
 - Effects of harvest
 - Winter carrying capacity



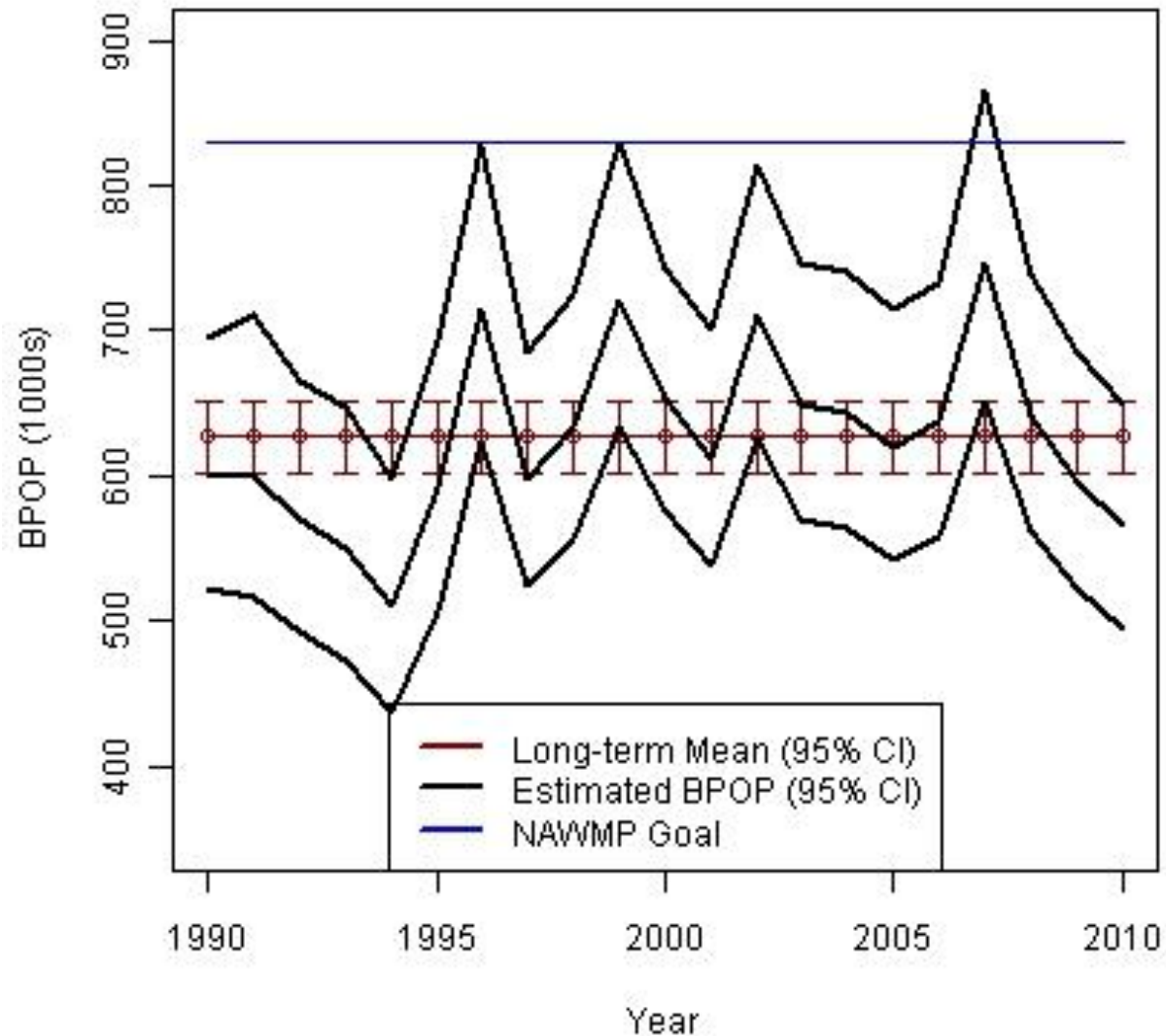
Population Status

ABDU MWI Trend, 1955-2010



Population Status

ABDU BPOP Estimates in Core Survey Area



BDJV Strategic Plan: 2013-2018

Objectives

1. Inform/Coordinate habitat and population management decisions to ensure sustainable management of ABDU (and species that share its range).
2. Learn: understand ABDU population regulation and responses to management



BDJV Strategic Plan: 2013-2018

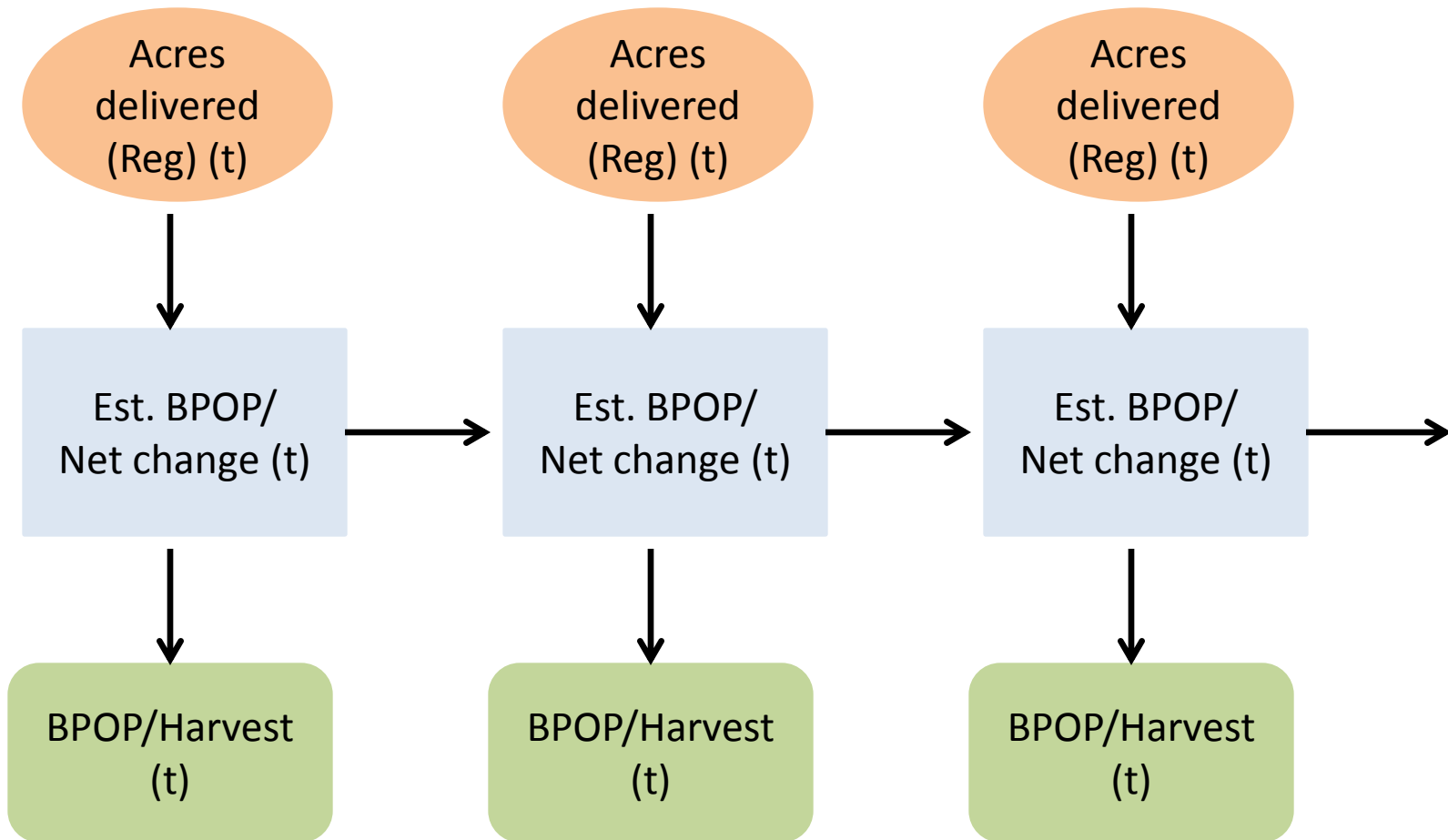
Priority Tasks

- i. Develop adaptive mgmt framework for habitat delivery
 - a) Fundamental objectives:
 - a) Achieve and maintain NAWMP popn. goal
 - b) Provide recreational opportunity
 - b) Ho's: Density dependent reproduction vs. winter survival
 - c) Given regional rates of habitat loss and prob. of success:
 - i. What is an optimal allocation of acres delivered by region?
 - ii. What is the expected cost?



BDJV Strategic Plan: 2013-2018

AM Framework



BDJV Strategic Plan: 2013-2018

Priority Tasks

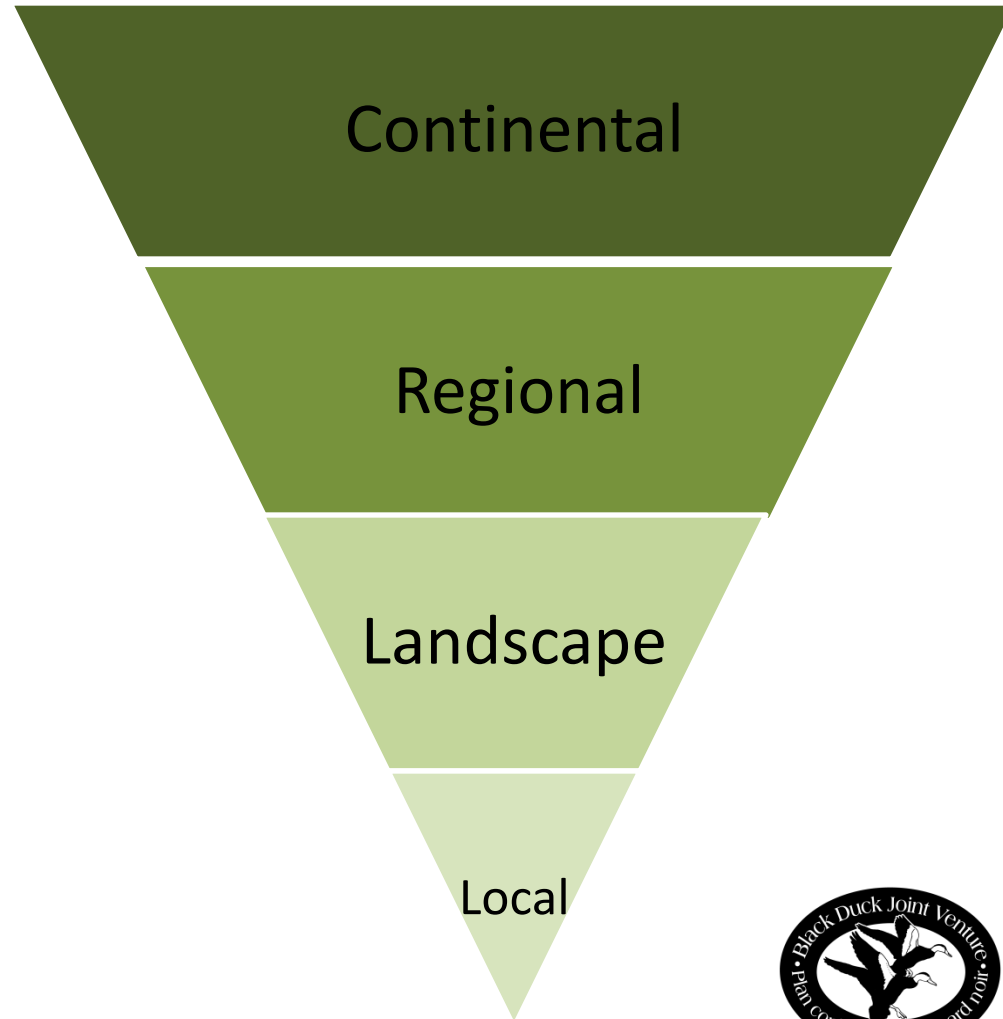
- i. Develop adaptive mgmt framework for habitat delivery
 - a) Regions
 - a) Northern Breeding (BCR 7 & 8)
 - b) Southern Breeding (BCR 12, 13, and 14)
 - c) N. Atl. Wintering (BCCR 14)
 - d) Mid. Atl. Wintering (BCR 27 & 30)
 - e) Interior Wintering (BCR 13, 22, 24).



BDJV Strategic Plan: 2013-2018

Key Uncertainties:

- At what spatial and temporal scale(s) do ABDU respond to habitat/mgmt?
- Quantifying response
 - Directed research
 - Monitoring



BDJV Strategic Plan: 2013-2018

Priority Tasks

- I. Monitoring and Research
 - a) Develop/support monitoring programs for AM.
 - b) Research
 - a) Est. Winter carrying capacity
 - a) GIS model development for US Atlantic Coast.
 - b) Quantifying ABDU response to habitat delivery
 - a) Survival
 - b) Density
 - c) Home range size and movement



QUESTIONS



Winter Carrying Capacity Studies

- Coluccy and Yerkes – True metabolizable energy of American black duck foods.
- Gray and Hagy – Habitat use and energetic carrying capacity among managed and unmanaged sites for the American black duck in the interior U.S.
- Huang, M. Wintering habitat use, survival, and time and energy budgets of American black ducks in Connecticut.
- Williams et al. Incorporating nocturnal behaviors in an American black duck bioenergetics model estimation of carrying capacity.
- Yerkes et al. Determining food resources and estimating habitat carrying capacity for wintering and spring staging American black ducks in New Jersey and Virginia.
- Yerkes et al. Determining food resources and habitat carrying capacity for wintering black ducks on Long Island, NY.



Winter Carrying Capacity Studies



AHM Development

Population Model:

$$N_{t+1} = N_t(S_t + f_t S'_t)$$

