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**APPENDIX A.**

**Waterfowl Conservation Region Species Prioritization**

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Table A.1. Conservation prioritization for breeding and nonbreeding ducks by Waterfowl Conservation Region (WCR) in the ACJV. Blank cells indicate low or absent conservation needs. Taken from the 2004 Update of the North American Waterfowl Management Plan.

WCR	Species/Population	Continental Priority	Breeding Importance	Breeding Need	Nonbreeding Importance	Nonbreeding Need
13	American Black Duck	HIGH	MOD HIGH	HIGH	MOD HIGH	HIGH
	Common Eider	HIGH			MOD LOW	MODERATE
	Lesser Scaup	HIGH			HIGH	HIGHEST
	Mallard	HIGH	MOD HIGH	HIGH	MOD LOW	MODERATE
	Northern Pintail	HIGH			MOD LOW	MODERATE
	Wood Duck	HIGH	MOD LOW	MODERATE		
	American Wigeon	MOD HIGH	MOD LOW	MOD LOW		
	Black Scoter	MOD HIGH			MOD HIGH	MOD HIGH
	Blue-winged Teal	MOD HIGH	MOD LOW	MOD LOW		
	Canvasback	MOD HIGH	MOD LOW	MOD LOW	MOD HIGH	MOD HIGH
	Common Goldeneye	MOD HIGH	MOD LOW	MOD LOW	HIGH	HIGH
	Long-tailed Duck	MOD HIGH			HIGH	HIGH
	Redhead	MOD HIGH	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Surf Scoter	MOD HIGH			HIGH	HIGH
	White-winged Scoter	MOD HIGH			MOD HIGH	MOD HIGH
	Bufflehead	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Gadwall	MODERATE			MOD LOW	MOD LOW
	Greater Scaup	MODERATE			MOD HIGH	MOD HIGH
	Green-winged Teal	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Ring-necked Duck	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
Common Merganser	MOD LOW			MOD HIGH	MODERATE	
Hooded Merganser	MOD LOW	MOD HIGH	MODERATE			
Red-breasted Merganser	MOD LOW			HIGH	MODERATE	
14	American Black Duck	HIGH	HIGH	HIGHEST	MOD HIGH	HIGH
	Common Eider	HIGH	HIGH	HIGHEST	HIGH	HIGHEST
	Lesser Scaup	HIGH			MOD LOW	MODERATE
14	Mallard	HIGH	MOD LOW	MODERATE	MOD LOW	MODERATE
	Northern Pintail	HIGH	MOD LOW	MODERATE	MOD LOW	MODERATE
	Wood Duck	HIGH	MOD HIGH	HIGH	MOD LOW	MODERATE

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WCR	Species/Population	Continental Priority	Breeding Importance	Breeding Need	Nonbreeding Importance	Nonbreeding Need
	American Wigeon	MOD HIGH	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Black Scoter	MOD HIGH			MOD LOW	MOD LOW
	Blue-winged Teal	MOD HIGH	MOD LOW	MOD LOW		
	Common Goldeneye	MOD HIGH	MOD HIGH	MOD HIGH	MOD HIGH	MOD HIGH
	Long-tailed Duck	MOD HIGH			HIGH	HIGH
	Surf Scoter	MOD HIGH			HIGH	HIGH
	White-winged Scoter	MOD HIGH			MOD HIGH	MOD HIGH
	Barrow's Goldeneye	MODERATE			MOD HIGH	MOD HIGH
	Bufflehead	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Gadwall	MODERATE	MOD LOW	MOD LOW		
	Green-winged Teal	MODERATE	MOD HIGH	MOD HIGH	MOD LOW	MOD LOW
	Harlequin Duck	MODERATE			MOD HIGH	MOD HIGH
	Ring-necked Duck	MODERATE	MOD HIGH	MOD HIGH		
	Common Merganser	MOD LOW			MOD HIGH	MODERATE
	Hooded Merganser	MOD LOW	MOD HIGH	MODERATE		
	Red-breasted Merganser	MOD LOW			MOD HIGH	MODERATE
27	American Black Duck	HIGH			MOD HIGH	HIGH
	Lesser Scaup	HIGH			MOD HIGH	HIGH
	Mallard	HIGH			MOD HIGH	HIGH
	Wood Duck	HIGH	MOD HIGH	HIGH	MOD HIGH	HIGH
	American Wigeon	MOD HIGH			MOD LOW	MOD LOW
	Canvasback	MOD HIGH			MOD LOW	MOD LOW
	Common Goldeneye	MOD HIGH			MOD HIGH	MOD HIGH
	Redhead	MOD HIGH			MOD LOW	MOD LOW
	Bufflehead	MODERATE			MOD HIGH	MOD HIGH
	Gadwall	MODERATE			MOD LOW	MOD LOW
	Greater Scaup	MODERATE			MOD HIGH	MOD HIGH
27	Ring-necked Duck	MODERATE			MOD HIGH	MOD HIGH
	Ruddy Duck	MOD LOW			MOD HIGH	MODERATE
27.1	American Black Duck	HIGH	MOD LOW	MODERATE	HIGH	HIGHEST
	Lesser Scaup	HIGH			HIGH	HIGHEST
	Mallard	HIGH			MOD HIGH	HIGH
	Northern Pintail	HIGH			MOD HIGH	HIGH

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<b>WCR</b>	<b>Species/Population</b>	<b>Continental Priority</b>	<b>Breeding Importance</b>	<b>Breeding Need</b>	<b>Nonbreeding Importance</b>	<b>Nonbreeding Need</b>
	<b>Wood Duck</b>	HIGH	MOD HIGH	HIGH	MOD HIGH	HIGH
	<b>American Wigeon</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Black Scoter</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Blue-winged Teal</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Canvasback</b>	MOD HIGH			HIGH	HIGH
	<b>Common Goldeneye</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Long-tailed Duck</b>	MOD HIGH			MOD LOW	MOD LOW
	<b>Redhead</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Surf Scoter</b>	MOD HIGH			HIGH	HIGH
	<b>White-winged Scoter</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Bufflehead</b>	MODERATE			HIGH	HIGH
	<b>Fulvous Whistling Duck</b>	MODERATE			MOD LOW	MOD LOW
	<b>Gadwall</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Greater Scaup</b>	MODERATE			HIGH	HIGH
	<b>Green-winged Teal</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Mottled Duck</b>	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	<b>Northern Shoveler</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Ring-necked Duck</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Hooded Merganser</b>	MOD LOW			MOD HIGH	MODERATE
	<b>Red-breasted Merganser</b>	MOD LOW			MOD HIGH	MODERATE
	<b>Ruddy Duck</b>	MOD LOW			HIGH	HIGH
27.2	<b>Lesser Scaup</b>	HIGH			HIGH	HIGHEST
	<b>Mallard</b>	HIGH			MOD LOW	MODERATE
	<b>Northern Pintail</b>	HIGH			MOD LOW	MODERATE
27.2	<b>Wood Duck</b>	HIGH	MOD HIGH	HIGH	MOD HIGH	HIGH
	<b>American Wigeon</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Blue-winged Teal</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Canvasback</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Common Goldeneye</b>	MOD HIGH			MOD LOW	MOD LOW
	<b>Redhead</b>	MOD HIGH			HIGH	HIGH
	<b>Bufflehead</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Gadwall</b>	MODERATE			MOD HIGH	MOD HIGH
	<b>Greater Scaup</b>	MODERATE			MOD HIGH	MOD HIGH

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WCR	Species/Population	Continental Priority	Breeding Importance	Breeding Need	Nonbreeding Importance	Nonbreeding Need
	Green-winged Teal	MODERATE			MOD HIGH	MOD HIGH
	Mottled Duck	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	Northern Shoveler	MODERATE			MOD HIGH	MOD HIGH
	Ring-necked Duck	MODERATE			MOD HIGH	MOD HIGH
	Hooded Merganser	MOD LOW			MOD HIGH	MODERATE
	Red-breasted Merganser	MOD LOW			MOD HIGH	MODERATE
	Ruddy Duck	MOD LOW			MOD HIGH	MODERATE
28	American Black Duck	HIGH			MOD HIGH	HIGH
	Mallard	HIGH			MOD LOW	MODERATE
	Wood Duck	HIGH	MOD LOW	MODERATE	MOD LOW	MODERATE
	Canvasback	MOD HIGH			MOD LOW	MOD LOW
	Common Goldeneye	MOD HIGH			MOD LOW	MOD LOW
	Bufflehead	MODERATE			MOD LOW	MOD LOW
	Gadwall	MODERATE			MOD LOW	MOD LOW
29	American Black Duck	HIGH			MOD HIGH	HIGH
	Lesser Scaup	HIGH			MOD LOW	MODERATE
	Mallard	HIGH			MOD LOW	MODERATE
	Wood Duck	HIGH	MOD LOW	MODERATE	MOD HIGH	HIGH
	Canvasback	MOD HIGH			MOD LOW	MOD LOW
	Common Goldeneye	MOD HIGH			MOD LOW	MOD LOW
	Redhead	MOD HIGH			MOD LOW	MOD LOW
29	Bufflehead	MODERATE			MOD LOW	MOD LOW
	Greater Scaup	MODERATE			MOD LOW	MOD LOW
	Ring-necked Duck	MODERATE			MOD LOW	MOD LOW
	Hooded Merganser	MOD LOW			MOD HIGH	MODERATE
30	American Black Duck	HIGH	MOD HIGH	HIGH	HIGH	HIGHEST
	Common Eider	HIGH			HIGH	HIGHEST
	Lesser Scaup	HIGH			MOD HIGH	HIGH
	Mallard	HIGH	MOD LOW	MODERATE	MOD HIGH	HIGH
	Northern Pintail	HIGH			MOD LOW	MODERATE
	Wood Duck	HIGH	MOD LOW	MODERATE	MOD LOW	MODERATE
	American Wigeon	MOD HIGH			MOD LOW	MOD LOW
	Black Scoter	MOD HIGH			HIGH	HIGH

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<b>WCR</b>	<b>Species/Population</b>	<b>Continental Priority</b>	<b>Breeding Importance</b>	<b>Breeding Need</b>	<b>Nonbreeding Importance</b>	<b>Nonbreeding Need</b>
	<b>Blue-winged Teal</b>	MOD HIGH			MOD LOW	MOD LOW
	<b>Canvasback</b>	MOD HIGH			HIGH	HIGH
	<b>Common Goldeneye</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>King Eider</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Long-tailed Duck</b>	MOD HIGH			HIGH	HIGH
	<b>Surf Scoter</b>	MOD HIGH			HIGH	HIGH
	<b>White-winged Scoter</b>	MOD HIGH			HIGH	HIGH
	<b>Bufflehead</b>	MODERATE			HIGH	HIGH
	<b>Gadwall</b>	MODERATE			MOD LOW	MOD LOW
	<b>Greater Scaup</b>	MODERATE			HIGH	HIGH
	<b>Green-winged Teal</b>	MODERATE			MOD LOW	MOD LOW
	<b>Harlequin Duck</b>	MODERATE			HIGH	HIGH
	<b>Hooded Merganser</b>	MOD LOW			MOD HIGH	MODERATE
	<b>Red-breasted Merganser</b>	MOD LOW			MOD HIGH	MODERATE
	<b>Ruddy Duck</b>	MOD LOW			MOD HIGH	MODERATE
<b>31</b>	<b>Lesser Scaup</b>	HIGH			MOD HIGH	HIGH
	<b>Northern Pintail</b>	HIGH			MOD LOW	MODERATE
	<b>Wood Duck</b>	HIGH	MOD LOW	MODERATE		
<b>31</b>	<b>American Wigeon</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Blue-winged Teal</b>	MOD HIGH			MOD HIGH	MOD HIGH
	<b>Canvasback</b>	MOD HIGH			MOD LOW	MOD LOW
	<b>Redhead</b>	MOD HIGH			MOD LOW	MOD LOW
	<b>Bufflehead</b>	MODERATE			MOD LOW	MOD LOW
	<b>Fulvous Whistling Duck</b>	MODERATE	MOD LOW	MOD LOW	MOD LOW	MOD LOW
	<b>Green-winged Teal</b>	MODERATE			MOD LOW	MOD LOW
	<b>Mottled Duck</b>	MODERATE	HIGH	HIGH	HIGH	HIGH
	<b>Northern Shoveler</b>	MODERATE			MOD LOW	MOD LOW
	<b>Ring-necked Duck</b>	MODERATE			HIGH	HIGH
	<b>Hooded Merganser</b>	MOD LOW			MOD HIGH	MODERATE

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Table A.2. Conservation prioritization for breeding and nonbreeding geese and swans by Waterfowl Conservation Region (WCR) in the ACJV. Blank cells indicate low or absent conservation needs. Taken from the 2004 Update of the North American Waterfowl Management Plan.

<b>WCR</b>	<b>Species/Population</b>	<b>Continental Priority</b>	<b>Breeding Importance</b>	<b>Breeding Need</b>	<b>Nonbreeding Importance</b>	<b>Nonbreeding Need</b>	
<b>13</b>	<b>Canada Goose - Giant</b>	Above Objective		HIGH	HIGH	MOD HIGH	MODERATE
	<b>Greater Snow Goose</b>	Above Objective				HIGH	HIGH
	<b>Canada Goose - Atlantic</b>	HIGH				HIGH	HIGHEST
	<b>Canada Goose - Southern James Bay</b>	HIGH				HIGH	HIGHEST
	<b>Atlantic Brant</b>	MOD LOW				MOD LOW	MOD LOW
	<b>Tundra Swan - Eastern</b>	MOD LOW				MOD HIGH	MODERATE
<b>14</b>	<b>Canada Goose - North Atlantic</b>	MOD HIGH				HIGH	HIGH
	<b>Atlantic Brant</b>	MOD LOW				MOD HIGH	MODERATE
<b>27</b>	<b>Canada Goose - Southern James Bay</b>	HIGH				MOD LOW	MODERATE
<b>27.1</b>	<b>Greater Snow Goose</b>	Above Objective				HIGH	HIGH
	<b>Canada Goose - Atlantic</b>	HIGH				MOD HIGH	HIGH
	<b>Atlantic Brant</b>	MOD LOW				MOD HIGH	MODERATE
	<b>Tundra Swan - Eastern</b>	MOD LOW				HIGH	HIGH
<b>28</b>	<b>Canada Goose - Atlantic</b>	HIGH				MOD HIGH	HIGH
<b>29</b>	<b>Canada Goose - Atlantic</b>	HIGH				MOD HIGH	HIGH
<b>30</b>	<b>Canada Goose - Giant</b>	Above Objective	MOD HIGH	MODERATE		MOD HIGH	MODERATE
	<b>Greater Snow Goose</b>	Above Objective				HIGH	HIGH
	<b>Canada Goose - Atlantic</b>	HIGH				HIGH	HIGHEST
	<b>Canada Goose - North Atlantic</b>	MOD HIGH				HIGH	HIGH
	<b>Atlantic Brant</b>	MOD LOW				HIGH	HIGH
	<b>Tundra Swan - Eastern</b>	MOD LOW				HIGH	HIGH

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**Appendix B**

**Stepping Continental NAWMP Population Objectives in Joint Venture Habitat Goals**

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As part of its responsibility in implementing the goals stated by NAWMP, joint ventures are developing habitat goals that are biologically linked to the breeding population goals. Ultimately, these goals are to be expressed as an amount of habitat that needs to be protected, enhanced or restored in the ACJV area in order to contribute to achieving NAWMP waterfowl population objectives at the regional and continental scales. At this time there is no consensus on how migratory or wintering waterfowl populations and habitat relate to the breeding objectives of NAWMP. The NAWMP National Science Support Team (NSST) has therefore recommended an interim method that uses a combination of MWS and harvest data to proportionally allocate the continental objectives between the various joint ventures. An evaluation of these methods indicates that this allocation works reasonably well for most duck species (exceptions include: Mottled Duck, whistling-ducks, Blue-winged Teal and Wood Ducks) but not for geese in general (M. Koneff, pers. comm.).

Implicit in such an endeavor is the assumption that local or regional actions are hierarchical in nature and can be aggregated to, in this case, a larger spatial scale. Although intuitive, there is no clear consensus on the functional form of such a relationship. In the absence of a clear analytical solution to the problem, the NSST reviewed alternative approaches and reached consensus in November 2003. As the official technical advisory committee of NAWMP, the NSST recommendations are being followed by non-breeding joint ventures in North America. The method being recommended by the NSST is a three-step approach that allows non-breeding joint ventures to “step-down” the continental population goals into regional goals that can be used for planning habitat delivery programs. The NSST recommends that these numbers not be used as a performance metric per se, but only for baseline planning purposes. As such the first step of the process is to determine the proportion of the continental population goals a joint venture might be responsible for over-wintering. The second step is to explicitly state the assumptions being made as to the regional requirements of waterfowl, resource availability and assess trends of the resource. Lastly, joint ventures need to evaluate the validity of the assumptions made in the second step.

The NSST recommendations only concern the first of this process: determination of the proportional allocation of continental objectives to the regional scale. The NSST is advocating the use of MWS and county level, species specific harvest data as a reasonable first approximation of the wintering distribution of waterfowl. It was noted that use of this approach incorporates all the potential biases that have been identified regarding the MWS data (Heusmann, Eggemann and other citations here). Although there are local data sets that might overcome some of these limitations, there is no other data set that covers the entire joint venture that could be used as a surrogate. Likewise, the county level-harvest data contain their own biases but lack of an alternate surrogate argues in favor of their use.

As a first approximation of objectively determining how many acres the ACJV needs to protect, restore or enhance, we used the NSST approach to calculate what the Waterfowl Technical Committee has termed a Wintering Habitat Capability Index (WHCI). MWS data for all four flyways from 1955 - 2001 were obtained from the U.S. Fish and Wildlife Service, Division of Migratory Bird Management. These data were used to determine the proportion of the total wintering population index counted within each state of the ACJV between 1990 and 2001. These years were used to account for observed shifts in resource availability and use and

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changes in the MWS population index since the mid-1970s (Tables B.1 and B.2). The mean proportion for each state was then multiplied by the NAWMP population goal for each duck species. The resulting value is the WHCI for a given state and species combination (Table B.3). To reiterate, the WHCI values do not represent actual population numbers, they are only intended to be numbers that can be converted into habitat goals at a time when we have the necessary information.

An alternative to the use of MWS data is to use just the county-level harvest data. Although this might reduce the bias thought to exist in the MWS data, the county-level harvest data is not without its own biases and assumptions. However, it is possible to use the county-level harvest data to estimate a proportional allocation of the continental population goal to every county within the ACJV. Harvest data from December through February were used to reduce the effect of migration on the proportion of total harvest estimated for each county. The state-level WHCI index is derived by then summing county-level objectives within a state (Table B.3).

Unfortunately, there are numerous technical issues with both of the approaches explored as part of these analyses. In addition to the obvious biases associated with using the MWS and harvest survey data in ways they were never designed to be used we have identified the following issues that need to be resolved before we can quantitatively determine habitat objectives for the ACJV.

1. What do the continental NAWMP goals actually represent? Are they breeding population numbers, fall flight or  $\frac{1}{2}$  maximum sustained yield. Until this is answered it is not clear what we are stepping down to a regional level.
2. Determine spatial biases in both MWS and harvest survey data; determines how representative the proportional allocation is and identifies potential biases that we believe exist,
3. There is a general lack of information regarding energetic carrying capacities of most habitat types with the ACJV. Unlike other wintering joint ventures, waterfowl in the ACJV rely on a wide range of natural foods in addition to agricultural wastes. Although some of this work has been done in the Southeast and during the breeding season, there is not enough information to parameterize models to convert either numbers of ducks or duck-use days into required amount of habitats,

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Table B.1. Mean (1970 -1979) Mid-winter Survey counts for selected species in the Atlantic Coast Joint Venture. Mean totals are averages of yearly totals for the entire U.S. portion of the Atlantic Flyway. Species abbreviations are 4-letter ABA codes.

State	Species										
	ABDU	AGWT	AMWI	CANV	GADW	MALL	NOPI	NSHO	REDH	RNDU	RUDU
<b>Connecticut</b>	5,573	6	254	560	13	1,217	8	2	4	0	0
<b>Delaware</b>	15,014	342	181	1,313	250	13,411	987	292	1	2	4,385
<b>Florida</b>	810	3,590	11,950	4,010	870	1,630	11,610	2,020	82,130	24,250	5,700
<b>Georgia</b>	830	2,140	1,090	1,360	1190	5,390	210	260	40	2,740	20
<b>Maine</b>	21,529	0	0	0	0	99	0	0	0	0	0
<b>Maryland</b>	31,360	390	1,720	51,610	250	29,440	830	50	8,800	130	10,840
<b>Massachusetts</b>	19,041	63	20	648	0	994	0	0	57	0	0
<b>New Hampshire</b>	1,578	0	0	0	0	76	0	0	0	0	0
<b>New Jersey</b>	72,117	3,040	3,040	11,809	285	13,867	1,215	740	189	65	5,696
<b>New York</b>	23,258	566	566	7,253	1	7,664	6	14	6,110	0	40
<b>North Carolina</b>	23,310	16,800	21,670	21,340	7050	21,340	40,350	680	19,440	8,380	19,860
<b>Pennsylvania</b>	6,445	70	56	1,980	65	10,742	413	43	146	69	3,430
<b>Rhode Island</b>	3,423	0	56	292	3	350	0	0	2	0	5
<b>South Carolina</b>	14,170	33,360	21,970	2,300	7030	89,780	37,140	6,880	190	14,700	2,080
<b>Vermont</b>	148	0	0	835	0	16	0	0	0	0	0
<b>Virginia</b>	23,258	1,389	6,308	11,543	4135	18,167	3,362	827	2,699	984	7,206
<b>West Virginia</b>	791	1	1	1	1	998	0	0	0	1	0
<b>Mean Totals</b>	262,426	60,171	68,882	116,854	21,143	215,181	96,131	11,808	119,808	51,321	59,262

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Table B.2. Mean (1990-2001) Mid-winter Survey counts for selected species in the Atlantic Coast Joint Venture. Mean totals are averages of yearly totals for the entire U.S. portion of the Atlantic Flyway. Species abbreviations are 4-letter ABA codes.

State	Species										
	ABDU	AGWT	AMWI	CANV	GADW	MALL	NOPI	NSHO	REDH	RNDU	RUDU
Connecticut	3,000	0	0	1,000	0	1,000	0		0	0	
Delaware	11,000	5,000	0	1,000	1,000	8,000	4,000	1,000		1,000	1,000
Florida	0	12,000	14,000	2,000	1,000	1,000	6,000	4,000	90,000	48,000	4,000
Georgia	0	2,000	1,000	3,000	1,000	2,000	0	0	0	11,000	0
Maine	17,000	0				1,000	0				0
Maryland	23,000	2,000	2,000	44,000	2,000	47,000	2,000	0	2,000	3,000	33,000
Massachusetts	21,000	0	0	0	0	3,000	0				0
New Hampshire	1,000	0		0		1,000				0	
New Jersey	80,000	3,000	2,000	6,000	1,000	29,000	2,000	0	0	0	1,000
New York	21,000	0	0	9,000	0	20,000	0	0	7,000	0	1,000
North Carolina	10,000	29,000	12,000	11,000	6,000	14,000	25,000	1,000	8,000	9,000	12,000
Pennsylvania	3,000	0	0	0	0	6,000	0	0	0	0	0
Rhode Island	2,000		0	0	0	1,000			0		0
South Carolina	3,000	29,000	14,000	0	5,000	12,000	9,000	4,000	0	24,000	1,000
Vermont	0			0		0	0				
Virginia	22,000	2,000	3,000	18,000	3,000	19,000	1,000	0	1,000	5,000	13,000
West Virginia	1,000	0	0	0	0	4,000	0		0	0	0
<b>Mean Totals</b>	<b>221,000</b>	<b>81,000</b>	<b>49,000</b>	<b>96,000</b>	<b>19,000</b>	<b>169,000</b>	<b>49,000</b>	<b>11,000</b>	<b>109,000</b>	<b>101,000</b>	<b>66,000</b>

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Table B.3. Atlantic Flyway totals for duck species that have established NAWMP population objectives. Mid-winter Survey means are shown for the 1970s (NAWMP baseline) and the 1990s. Flyway wide wintering habitat capability indices (WHCI) are shown for two different methods. The first, NSST, shows the National Science Support Team’s recommended method of using MWS to determine proportional allocation of individuals by state. The second, Harvest, uses only harvest survey data to determine the proportional allocation between counties which are then summed to the state level.

Common Name	MWS Means		Step-down Method	
	1970s	1990s	NSST	Harvest <sup>b</sup>
American Black Duck <sup>a</sup>	262,426	219,949	268,433	232,953
American Wigeon	68,880	50,904	149,000	382,000
Canvasback	116,853	97,639	194,000	140,000
Gadwall	21,144	16,929	19,000	96,000
Green-winged Teal	60,169	83,066	93,000	167,000
Mallard	215,180	169,471	303,000	987,000
Northern Pintail	96,131	50,760	129,000	387,000
Northern Shoveler	11,807	10,694	22,000	129,000
Redhead	119,806	108,143	115,000	90,000
<b>Total Ducks</b>	<b>972,396</b>	<b>807,554</b>	<b>1,292,433</b>	<b>2,610,953</b>

<sup>a</sup> – Population objective used for step-down methods corresponds to 1986 wintering objective of 385,000 ducks in the Atlantic (260,000) and Mississippi (125,000) Flyways. This objective is approximately 46% of the population objective published in the 2005 NAWMP Update (640,000).

<sup>b</sup> – Uses harvest data for December through February only.

# DRAFT

4. Method must allow for development of sound evaluation plan. At this time that would not be possible.

The Waterfowl Technical Committee and staff of the ACJV are resolved to pursue further development of scientifically sound, objective method to determine the amount of habitat that is necessary to protect, enhance and restore to meet our responsibilities under the North American Waterfowl Management Plan. However, we believe there are too many biases and information gaps to begin designing conservation plans based on the analyses that have been presented here.