

My May 8, 2008
Distributed Sept 8, 2008
to the Committee
from Barbara Ackley

SEP - 8 2008

Methods of Increasing Piping Plover Survival on our Beaches.

Outer Banks Group

While this committee is charged with developing an ORV plan for Cape Hatteras National Seashore Recreational Area, much attention has been given to the preservation of certain species in relation to the use of the beach. Today I will address the Piping Plover. In my view after research of CAHA data and observation, there are three main problem areas affecting the decline of this bird: the storms, predators, and foraging area. Over the past 20 years various management emphases have changed.

Piping Plovers need special safe places to brood and raise chicks. Recently it has been attempted to encourage them to the open beach because the pond areas where they used to locate are densely vegetated.

Vegetation overgrowth began approximately 1989 due to lack of storm overwash. Nesting and feeding at the pond area was blocked. A vegetation control program, mowing and lightly disking, was begun in 1993 and continued through 1996. In 1995 the treated area was 90 acres at Cape Point and 20 acres at Hatteras Spit.

In the years after vegetation control was stopped, the number of Piping Plovers on the Seashore dropped. Beginning in 2005 increasingly large, extensive areas of the beach were set aside for nesting. In 2006, finding these attractive places for nests on the beach, more pairs began nesting at Cape Hatteras, staying here instead of flying farther north. However, the birds weren't weatherpersons. Storms claimed nests and eggs. Predators inhabited the vegetated areas and beaches and claimed eggs and fledglings. There are this year nearly as many pairs and surviving fledglings as the earlier years.

In the past 20 years, the highest number of pairs was 15 in 1989; the fewest, 2 in 2002 and 2003. The statistic of greatest value is the number of fledglings. That occurred in 1998 when 12 pair produced 9 chicks. It was a year of no damaging spring storms. In the last 15 years there have been 11 storm events in the late spring-early summer months. Our fledge rate this year was 0.64. Last year it was slightly better, 0.67. Last year the first five nests were lost to storms. This year 2 were lost to storms, 6 nests to predation. Only 3 of the thirteen nests fledged chicks.

In the past 12 years vegetation has been growing around the ponds and on the upper beach. This has forced the nesting onto the front beach where the storm action is greatest. However, the fledglings forage primarily on the ephemeral ponds, not the ocean front.

What can we do to have greater Piping Plover production on the Outer Banks? What do our CAHA Resource Reports and the observation of those on the beach tell us? Storms and predators are our greatest enemies. The native animals have always been here. The number of animals removed in 2007 totaled 385. Totals are expected to be higher this year because there has been a full time predator control person. These animals thrive in the thick vegetation.

Suggestion: resume the management of the vegetated land on the interior sections of the beaches. Conduct an active program of restoration of the pond areas, even create ponds. This will provide a safer place for nesting and foraging. This will remove an attractive area for predators.

Again I ask you to study the reports of this particular habitat, use your funds productively. Manage this bird population while still providing full public recreation.

Sources: *CAHA Piping Plover Management Program Summary*, unpublished report of Ries Collier and Marcia Lyons given at the November 1995 Atlantic Coast Piping Plover Conference.

CAHA 2007 Annual Piping Plover Report

CAHA 2008 Resource Management Reports

Barbara Ackley

September 7, 2008

**Cape Hatteras National Seashore
Resource Management Weekly Field Summary; July 17 to July 23, 2008
(Bodie Island, Hatteras, and Ocracoke Districts)**

Nests/Brood data:

PIPL Nest 1 (Cape Point) was lost due to storm.
PIPL Nest/Brood 2 (Ocracoke) fledged three chicks on 7/4.
PIPL Nest/Brood 3 (Ocracoke) chick was determined lost on 6/20.
PIPL Nest/Brood 4 (Cape Point), fledged two chicks on 7/2.
PIPL Nest/Brood 5 (Cape Point) fledged two chicks 7/15.
PIPL Nest 6 (Bodie Island) failed 7/20.
PIPL Nest 7 (Ocracoke) was lost due to a storm.
PIPL Nest 8 (Ocracoke) was abandoned after two eggs were predated.
PIPL Nest/Brood 9 (Cape Point) chicks lost to predation.
PIPL Nest/Brood 10 (South Beach) chicks lost to predation.
PIPL Nest/Brood 11 (Ocracoke) chicks lost to predation.
PIPL Nest/Brood 12 (Cape Point) chicks lost to predation.
Nest 13 (Cape Point) was lost to ghost crab predation.

Eleven breeding pair (one on Bodie, six on Hatteras and four on Ocracoke) of PIPLs were confirmed on the Seashore for 2008. A total of seven chicks fledged, for a productivity of .64 chicks/pair.

PROPOSED VEGETATION CONTROL

I have reviewed the information provided by David Allen and found that there are a few suggestions that may increase the effectiveness of a herbicide program to control vegetation in the waterbird nesting areas. While I am more than happy to provide my suggestions I am not a wetlands specialist, my expertise is in field crops. A very good contact for further information is Dr. Allen York at the North Carolina State University, he is the extension weed scientist. I don't believe that glyphosate is the complete answer for this issue, but amended use of the product may lend itself to more positive results.

The first issue with glyphosate is that it has no soil activity, which means it controls what is up but will have no effect on subsequent germination. There are other herbicides that may be used in these situations that would provide control of vegetation for numerous years. A few examples are diuron, sulfometuron, imazepic, and imazapyr. I have experience with imazapyr and diuron and both are very safe to vertebrates and invertebrates. They have soil activity for up to 5 years in some areas but I anticipate this to be much less in a beach sand environment as clay content and organic matter tend to provide for a more favorable condition for longevity of control. One area for further investigation would be the use of multiple herbicides and their effectiveness. I feel that a contact non-selective herbicide such as glyphosate combined with a long lasting herbicide such as those mentioned above may be the best approach. The use of mechanical control of these weeds would be less than that obtained with herbicides as in a beach environment we would expect a certain percentage of these weeds to regrow through the loose sand that would be piled on top of them. Burning would have a better effect than mechanical control but in the case of sedges, rushes and woody plants the effect would be less than that which can be obtained with glyphosate when used appropriately. Finally, rates of glyphosate have to be increased dramatically to control woody species. This may be up to 4 times the rate to control annual herbaceous weeds.

Control of woody species, biennials or perennial weedy species is best achieved in mid summer to early to mid fall. The reason for this is that these types of weeds have underground reproductive structures and can regrow if the top of the plant is removed from either mechanical methods, burning or herbicide application. The key is to apply herbicides when the photosynthate is moving to the roots of the plant and can carry the herbicide to those structures and control them as well. Early in the season the mass flow in a plant is primarily to the top portions of the plant as starches stored in the roots are converted into sugars and transported to the actively growing portions of the plant which is the above ground portions. Application of herbicides at this time will simply remove the top of the plant and the plant will likely regrow. We can often see this with young annual grasses early in the season when the growing point is still underground. The top of the plant is controlled but the grass regrows from the growing point. However, when glyphosate is applied in mid summer to mid fall the herbicide moves into the roots and can effectively control the plant, this is especially true with woody species. In summary, a fall application for control of sedges and more perennial weeds combined with a late spring application to control annuals for the annual weeds may be the best approach. Burning or mechanical control methods employed before glyphosate application will reduce its effectiveness. Glyphosate will only control green tissue, so any prior method of control employed before herbicide application to remove green tissue will negate and effect from glyphosate.

While adding dredge material may be effective I would suppose that it would be rather costly and is itself a temporary fix for the problem. Once the seeds get deposited they will again grow in the new dredge material. This brings us back to the same place we are presently a few years in the future. I feel that properly applied glyphosate at the most appropriate timing and rate will provide much better control of the species that were mentioned. The addition of other longer lasting herbicides will provide control of these weeds for more than one season. I believe that further investigation of these weed control measures is warranted and would be happy to provide any information that may be needed. I appreciate the opportunity to discuss this information with those parties interested in improving bird nesting habitat on the CHNS.

Respectfully;

J. Andy Ackley Ph.D.