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Vice chair, Sussex Conservation District

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Delaware Department of Agriculture

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Sussex County Administrator

Secretary Collin O’Mara Department of Natural Resources and Environmental Control

Mr. Gordon Wood
Sussex County Association of Towns

Mr. Ed Ambrogio
(Ex-officio); U.S. Environmental Protection Agency

CIB STAFF

Mr. Chris Bason
Executive Director

Mr. Edward Lewandowski
Executive Director until October 1, 2011

Dr. Dennis Bartow
Schoolyard Habitat Coordinator

Ms. Sally Boswell
Education & Outreach Coordinator

Mr. Eric Buehl
Habitat Coordinator

Mr. E.J. Chalabala
Restoration Coordinator

Ms. Pat Drizd
Volunteer Coordinator

Ms. Jennifer Jones
Development Coordinator

Mr. Roy Miller
Policy Coordinator

Ms. Loretta Smith
Administrative Assistant

Mission

To promote the wise use and enhancement of the Inland Bays and their watershed...

To support and sponsor education activities, restoration efforts, demonstration projects and applied research...

To foster partnerships with all stakeholders to restore and protect the resources...

To serve as a neutral forum for consideration of Inland Bays issues; where informed decisions can lead to sound public policy regarding the protection and restoration of the Inland Bays watershed.

Cover photo: Juvenile Atlantic menhaden, an important food source for predatory fish such as Bluefish and Striped bass. Photo credit: Bob Edelen

Photo credit for Great Blue Heron and fisherman on Ingram Pond: Dennis Bartow
Working for Better Bays Ahead...

This past September, the first ever State of the Inland Bays Report was released to an enthusiastic audience gathered in the Center’s sunny community room next to the Indian River Inlet.

At the reception for the release, some special friends were asked to say a few words about how the Bays have affected their lives. The speakers included an ecotourism business owner, a farmer, a realtor, a bait & tackle shop owner, and a retired Navy Captain who has made his home on the Bays. Each related their own unique stories of the Bays while together conveying a singularly clear dedication to the waters that support them personally and economically.

Though I had known them all for years, hearing their unfiltered appreciation for the water was moving.

This is the basis of our program. The love of the Bays is a shared interest that has for decades brought us together to work and sacrifice for the protection of this unique coastal environment that both defines us and supports us. The State of the Bays report demonstrated that the sacrifices made to clean up pollution are bearing fruit, but that great strides are still needed for the Bays.

This year, your support will allow those strides to continue. Efforts to restore underwater bay grass meadows and oyster reefs will increase. Stakeholders will come together to determine how oyster aquaculture can work for everyone using the Bays. And with your input the first ever update of our Comprehensive Conservation and Management Plan will be completed.

As the new Executive Director of the Center, I hope this is the first of many reports detailing the past years’ numerous successes. As a scientist, the theme of this year’s report, By the Numbers, is close to my heart. Numbers, in the form of good data, have a way of showing us the path forward. I intend to focus on numbers, both economic and environmental, to guide choices for how the Bays are restored and to diversify the funding that sustains us in this important work.

Finally, I’d like to take the opportunity to thank all of the folks who have been so supportive during the CIB’s leadership transition this past year…the Board, our staff, and the amazing community of individuals who work with us on the Bays. I’m looking forward to a great year in which I get to know many of you better by listening to your interests and aspirations for your unique and beautiful Inland Bays.

State of the Bays Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Negative</th>
<th>Positive</th>
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</thead>
<tbody>
<tr>
<td>Watershed Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrient Loads and Management</td>
<td></td>
<td></td>
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<tr>
<td>Water Quality</td>
<td></td>
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<tr>
<td>Living Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathogens and Contaminants</td>
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<td></td>
</tr>
<tr>
<td>Climate</td>
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</tr>
</tbody>
</table>

Chris Bason, Executive Director

“The 2011 State of the Bays Report provides the public with the most comprehensive assessment of the health of the Inland Bays yet. And it paints a picture of Inland Bays that are showing signs of recovery but facing great threats.

There is still a lot of work to do to protect and restore the Inland Bays. It will require the support and cooperation of all stakeholders and a spirit of innovation and commitment.”
Citizen Science...

Hundreds of shining silversides and mummichogs filled the seine net; the two most abundant species found in the 2011 survey.

Photo credit: Dennis Bartow
Volunteers do the science on the Bays

Inland Bays Inshore Fish Survey Launched

Mummichogs, bluefish, pipefish, and thousands of silversides were hauled to shore in seine nets all over the Inland Bays this summer—the first year of a long-term study of the fishes of the inshore areas of the Inland Bays.

Led by volunteer fish biologist, Ron Kernehan, teams of volunteers captured, counted, sized, and returned the fish to the Bays. The survey will provide information about the species of fish that use the inshore areas of the bays as nursery and/or adult habitat, and monitor how the numbers change as the bays change over time.

Fish Survey
By the Numbers

39 volunteers worked on the study at 17 sites around the Bays
47 species of fish were identified
59,029 individual fish were counted
54 juvenile striped bass counted—strongly suggesting that these commercially important fish are spawning in the tributaries of the Inland Bays!

Horseshoe Crab Survey
By the Numbers

3,840 Horseshoe crabs—Highest one night count on June 1 under a New Moon
Number 1 site where most horseshoe crabs were counted—James Farm Ecological Preserve
86 volunteers participated in the 2011 Survey collecting data at 7 survey sites on beaches around the Inland Bays.

4th Annual Inland Bays Horseshoe Crab Survey Posts a Record Count

The 2011 count once again demonstrated that horseshoe crab spawning densities on Inland Bays beaches rival those found on the world-renowned Delaware Bay beaches. The surveys were conducted on dates around the New Moon and Full Moon May and June, and, at the James Farm beach, in July as well.

The annual survey is a partnership of the CIB and Dr. Doug Miller at the University of Delaware, College of Earth, Ocean and the Environment in Lewes. Graduate students from CEoE participate in the surveys and are using the data in their research.

Photo credit: Dennis Bartow
Once a ditch to convey stormwater runoff, this area was widened, deepened, and planted with native vegetation to detain runoff so that less sediment, nitrogen, and phosphorus enters Little Assawoman Bay. Photo credit: Chris Bason

16 bioretention areas were constructed in the Coastal Highway median; each designed to trap and filter 0.15 pounds of phosphorus and 1.5 pounds of nitrogen annually.  

6,815 native plants were planted in the Sea Colony wetswale project area

Anchorage Canal Project

Increases in bacteria concentrations, chemical contaminants, and changes in water flow have been found when watersheds of some estuaries reach 10% impervious surface coverage. We have crossed that threshold in two of our watersheds, Rehoboth and Little Assawoman Bay.

In partnership with South Bethany, Bethany Beach, Middlesex Beach, Sea Colony, and the DE Department of Transportation, a plan was developed to decrease the amount of untreated stormwater entering residential canals on Little Assawoman Bay.

Implementation began with a project to treat storm water from the Sea Colony high rise complex. Wet-swale bio-retention areas were created, and a series of infiltration pits were established along South Pennsylvania Avenue. In phase 2 of the project, 16 bio-retention areas were created in the median of Coastal Highway; designed to slow down and filter runoff from the highway.
Restoring Habitat...

Acres restored on the land and in the Bays

Bringing Back the Grasses

By the late 1970’s, eelgrass could not be found in the Inland Bays. Restoration efforts in the 1990’s yielded only one acre of eelgrass, but conditions for bay grasses appear to have improved in parts of Rehoboth and Indian River Bays.

In response, the CIB is stepping up efforts to restore this critical habitat by identifying favorable areas for eelgrass reestablishment, and testing techniques for seeding and planting.

Work continued this year to restore wetlands in the Great Cypress Swamp

At 10,000 acres, the Great Cypress Swamp along Delaware’s southern border is the largest remaining contiguous tract of forest on Delmarva, and supports state endangered bird species and globally rare insects and plant communities. It is owned and managed by Delaware Wild Lands, our partner on a project to restore wetlands and re-establish native Atlantic White Cedar to the swamp.

The Great Cypress Swamp is the headwaters of Pepper Creek and Vines Creek, two tributaries of the Bays so the hydrologic restoration aims to improve water quality in the Inland Bays.

Acres Restored at Great Cypress Swamp

By the Numbers

47,000 Atlantic White Cedars were planted on a 47 acres section of the swamp.

In pre-Colonial times, the Great Cypress Swamp covered more than 60,000 acres, from western Sussex County to the Atlantic coast.

Eelgrass

By the Numbers

120,000 eelgrass seeds were planted in the Rehoboth and Indian River.

The Maryland Coastal Bays south of the Inland Bays had over 10,000 acres of bay grass in 2006.
Education...

Above: A 5th grader collects macro invertebrates in her net to learn about the ecology of the headwater ponds and streams of the Inland Bays.
Photo credit: Dennis Bartow

Left: Students at E. Millsboro Elementary test the waters in their Schoolyard Habitat.
Photo credit: Dennis Bartow
More than 3,000 children had a watershed experience in 2011

At the James Farm Ecological Preserve and Ingram Pond Outdoor Education Center, at the Bethany Beach Nature Center and at schools throughout the watershed, thousands of children learned about the Inland Bays watershed, in their schoolyard habitats, their classrooms, on the Bays and in their communities.

Our on-going partnerships with the Indian River School District and the Bethany Beach Nature Center have helped us give thousands of students ‘hands-on’ watershed experiences.

**Education By the Numbers**

750 7th & 8th grade students from Millsboro Middle School, Georgetown Middle School and the Southern DE School of the Arts attended the James Farm Watershed Education Program in 2011.

850 5th grade students from Indian River School District received instruction in water quality analysis and collected data for the international database World Water Monitoring Day in 2011.

More than 841 children and their families attended the Saturday morning program and Friday afternoon programs at the Bethany Beach Nature Center in 2011.

45 children and their families helped plant the demonstration rain garden, one of a 1000 Rain Gardens for the Inland Bays at the Bethany Beach Nature Center.

The programs at the Nature Center are a partnership between the Town of Bethany Beach and the Center for the Inland Bays. Photo Credit: Sally Boswell
GRANTS AND CONTRACTS
The Chichester duPont Foundation
Delaware Clean Water Advisory Council Community Water Quality
Grants Program
Delaware Department of Agriculture, Forest Service
Delaware Department of Natural Resources and Environmental Control, Division of Fish and Wildlife
Delaware Department of Natural Resources and Environmental Control, Division of Parks and Recreation
Delaware Department of Natural Resources and Environmental Control, Division of Watershed Stewardship
Delaware State University
Ducks Unlimited
Natural Resources Conservation Service
State of Delaware, Division of Motor Vehicles
Town of South Bethany
U.S. Environmental Protection Agency
University of Delaware Sea Grant College Program
Wesley College, Environmental Studies Program

EVENT SPONSORS
Artesian Water Company
Atlantic Refrigeration and Air Conditioning
Bank's Wines and Spirits
Delaware Department of Natural Resources and Environmental Control
Delaware Seashore Preservation Foundation
Delmarva Power
Green Stone Engineering
The Greene Turtle Restaurants
Gary and Barbara Jayne
NRG Indian River Power Plant
Susan Moeschel and John Schneider
Perdue Farms Inc.
PNC Bank
Red Bull America
South Bethany Property Owners Association
The Starboard

BUSINESSES FOR THE BAYS MEMBERS
Alesi Construction & Renovation
AMI
Artesian Water Company
Atlantic Refrigeration and Air Conditioning
Bank’s Wines and Spirits
Betty’s Classic American
Charitable Games of Delaware
The Cottage Cafe
Delaware Sports League
Delaware Department of Natural Resources and Environmental Control
Delmarva Power
Drace Insurance & Investment Services
European Coach Werkes
The Greene Turtle Ocean City North, Lewes and Salisbury

Thanks! Your support is essential to healthy Inland Bags.

Green Stone Engineering
Jake’s Seafood House Restaurant
Jank’s Seafood II
Jamshirts
John F. Kleinstuber & Associates
Just Hooked
NRG Indian River Power Plant
Peninsula Dental
Perdue Farms
Port
South Bethany Property Owner’s Association
The Starboard
Surf Fishing Specialties

$1000 AND UP
Reverend Elizabeth Carl
Charitable Games of Delaware
Dewey Beach Lions Club
Cynthia Flynn and Deirdre Boyle
Barbara and George Junkin
Just Hooked

$500 TO $999
Betty Brewer
Frances Hart
Edward and Betsy Henfin
In Honor of Elaine and Erik Rifikin
Lillian and Montford Smith Family Fund
Vickie York

$250 TO $499
Thomas Adams
Robert Crim and Suzanne Schwartz
Edward D. Harner
Ann Ludwig and David Dotzert
Roy and Diane Miller
Rehoboth Bay Foundation
Edward Seyfried
Bob and Mary Ellen Williams

$150 TO $249
Mark and Joanne Anderson
Mary Appollina and Pamela Pettit
Lisa Aramony
In Memory of Garylee Cox
Glenn and Madalyn Dallas
Richard and Wanda Drnevich
Richard Fisher
William Janson and Lori Shmukler
Robert and Joanne Levy
In Honor of Edward Henfin
Mary Perkins and Kenneth Hooker
In Memory of Kenneth Keller
M.O. Riding
Nancy Steckel and Mark Caracciolo
Jim Stuart
Jack and Maggie Tarburton

$75 TO $149
Allan and Sue Allenspach
Dennis and Anne Bartow
Bob and Jo Batky
Joanne and Jack Gabry
David and Melinda Campbell
Ed and Adele Chalabala
William C. Clarke
Beverly Corelle
Pat and Terry Drzida
Muns and Linda Farestad
Margaret Forbes
Robert and Trish Gable
Bob Gallagher
Tom and Cathy Greco
Diane and Bill Hanson
Mary Harahan
Cynthia and Robert Hibbert
Terry and Martha Higgins
Gerald and Karen Hirst
Kathy Jankowski and Robert Younghans
Diane and Michael Kane
Pete and Pat Keenan
The Kiker Family
John Kramer
Katherine and Edward Lambert
James C. Mankin
Midway Lions Club
Jean Morrison and Greg Knott
Thomas and Mary Jo Murphy
Lord Baltimore Women’s Club
Margarita Lavergne
Sharon Lynn
Mari Noster
Alan Perentini and Tracie Bunton
Michael Polovina
Ron Riegel
Nancy Sager
Paula Schneider
Robert Schumm
Joanne Shipley
David and Cynthia Small
Jan and Greg Thompson
Rosalind Truopin
William Ullman
Joan Wallace
Norine and George Watson
Ed Wher Edit

UP TO $75
Jennifer Adkins
Lynn and David Andrews
Collin and Elizabeth Anolick
Richard and Kathleen Brady
Chris Bason and Chantal Bouchard
Sally Boswell
Lawrence A. Brown
David and Melinda Campbell
E.J. and Autumn Chalabala
Glenn Christman
Chris Clark
John Cirstea
Henry Cohen
William Cooper
Diana Cowell
Bob Cubbison
Michael Daniels
Sharon and Tony Darden
David and Linda Davidson
Lettitia Disseward
Kevin Donnelly
Richard Eakte and Mary Ann Hess
Bert Edwards
Joe Farrell
Dick and Sharon Fox
T. Gene Fullerston
F. Gregory Gause
John and Susan Gelb
Lisa and Brad Ginder
Susan and Charles Goorevich
Renee Grillo
Karen Hamer
Don and Carol Hasson
Jay and Mary Headman
Michael and Cynthia Headman
Ivy and Larry Hecker
James and Edie Herron
Michelle Higgins
Mr. and Mrs. David Hillegas
Ann Hobbitt and Terry Noon
Barbara Hove
Denise Hoeksema
Max Hutten
Barbara and Gary Jayne
Dorothy and Patricia Jones
Jenn Jones
Kathy Kraft
Hugh and Kathleen Leahy
William S. Lee
Robert Levy
Edward and Barbara Lewandowski
Eric Lienhard and Heidi Splean
David Ludlow
Anna Marsch
Joseph and Carey McDaniel
Ceda McGrew
Margaret Milloy
Albert and Janice Osterholz
Doug and Jan Parham
Bruce and Myra Patner
Larry and Sally Persa
Carol Pollio
Amy Roe
Cheryl Rehrig
Virginia Rex
Joan and James Rich
Thomas and Felicetta Ryan
John and Christine Sadowski
Ellen Saether
Chuck Schoender
Robert Smiles
Senator Liane Sorenson
Michael and Donna Thomas
Shuli Tor
Dell and Larry Tush
David Vineberg
Pamela White
James Williams
Lisa Wool

1000
500
250
150
Statements of Assets, Liabilities and Fund Balances—Accrual Basis
September 30, 2011 and September 2010

ASSETS

Current Assets

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
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<tbody>
<tr>
<td>Cash</td>
<td>$341,534</td>
<td>$466,123</td>
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<tr>
<td>Grants receivable</td>
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<tr>
<td>Unbilled receivables</td>
<td>12,909</td>
<td>17,405</td>
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<td><strong>Total Current Assets</strong></td>
<td><strong>544,443</strong></td>
<td><strong>483,528</strong></td>
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Property and Equipment

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<th>2010</th>
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<tbody>
<tr>
<td>Land</td>
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<tr>
<td>Building</td>
<td>872,508</td>
<td>872,508</td>
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<tr>
<td>Furniture and equipment</td>
<td>469,517</td>
<td>442,890</td>
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<td><strong>Total Property and Equipment</strong></td>
<td><strong>1,015,553</strong></td>
<td><strong>1,041,809</strong></td>
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Other Assets

<table>
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<tr>
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<tbody>
<tr>
<td>Delaware Community Foundation Endowment Fund</td>
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<td>70,145</td>
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<tr>
<td><strong>Total Assets</strong></td>
<td><strong>1,628,263</strong></td>
<td><strong>1,595,482</strong></td>
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LIABILITIES

Current Liabilities

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<th>Current Liabilities</th>
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<tr>
<td>Accounts Payable</td>
<td>$15,423</td>
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<tr>
<td>Accrued Salaries</td>
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<td>Payroll taxes withheld</td>
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<td><strong>Total Current Liabilities</strong></td>
<td><strong>39,125</strong></td>
<td><strong>47,863</strong></td>
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NET ASSETS

Unrestricted

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<td>Board designated</td>
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<tr>
<td>Invested in property and equipment</td>
<td>890,553</td>
<td>916,809</td>
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<tr>
<td>Undesignated</td>
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<td><strong>Total unrestricted</strong></td>
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<tr>
<td>Permanently restricted</td>
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<td><strong>1,547,619</strong></td>
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Total Liabilities and Net Assets

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<tr>
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<th>2011</th>
<th>2010</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$1,628,263</td>
<td>$1,595,482</td>
</tr>
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</table>

The Delaware Center for the Inland Bays is a nonprofit 501(c)(3). We need tax-deductible donations to support our work.
“The estuary defines our lives today as it has for generations before us. The tributaries, farm fields, mill ponds and marshes have nourished us with their harvests and humbled us with their beauty. As farmers, we view the watershed as a life-sustaining tapestry—a backdrop for our daily joys and struggles.

The Inland Bays enrich the lives of all of you as well, whether you are a teacher, a developer, a land manager, a county council member, a conservationist, a business owner or a legislator. It makes no difference whether you were born here or have chosen to call this piece of sand and salt and woods your own. You deserve this. But it is not free. It comes with a price. That price is a duty to preserve and protect the watershed for untold generations to come.

My husband and I have owned and operated Bennett Orchards for over 25 years. Our sons are the sixth generation of Bennett’s to till this ground. We are a designated Delaware Century Farm. We are Sussex Countians. We are vested in the watershed.”