Keystone Wild! Notes

Summer 2012 Edition

Check out this issue:

Cover Story- WRCP at 30 . . 1

The WRCP Board 2

A Message From Pa's State Forester 3

From the Editor's Desk. . . . 4

WRCPeople: Thirty Years of Thanks 7

Our Changing Climate: Has the Climate Changed Since WRCP was Founded?. 8

Cover Story continued . . . 9

PA Native Wild Plant Conservation—30 Years Later 13

WRCP Grants in Action: 30 Years of Support 17

Friends of the Fund: Non-Profits Look Back and Ahead 19

Wild! Watch: 30th Anniversary of WRCP. . . . 20

Color Me Wild! 30th Anniversary Party. 22

Wild! Words: Web Search Contest 23

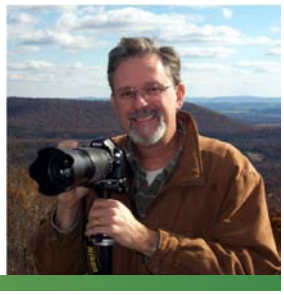
Weed It and Reap: Norway Maple 24

Wild! Buys 25

WRCP at 30

Looking Back on a Generation of Conservation

by Greg Czarnecki, WRCP Director



Thirty years is a long time. Thirty years ago I was a student at Gannon University. A brand new newspaper called USA Today was reporting on the Falkland Islands war between Argentina and England. E.T. was tops at the box office, Epcot Center opened and the CD player was introduced. And in that same year of 1982, the Pennsylvania legislature passed the Wild Resource Conservation Act.

The visionaries that created WRCP, and most of the researchers that benefited from the funding it provided during the early years, have long since retired. Now as we enter our second generation, let's look back at what we've accomplished since those early days.

There's no way to succinctly quantify the impact WRCP has had. It's provided leadership and vision for conservation in Pennsylvania. It has provided financial support to more than 1,700 projects leading to a better understanding and conservation of our state's biodiversity. And it's served as nexus for the research, conservation and education communities.

As I look back over all that we've accomplished in the past 30 years, the following stand out as some of our most significant accomplishments:

article continues on page 9

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Administered by the
PA Department of Conservation & Natural Resources in cooperation with the PA Game Commission and PA Fish & Boat Commission

Pennsylvania Wild Resource Conservation Program

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Richard J. Allan, **Secretary**
Department of Conservation & Natural Resources

Greg Czarnecki, **Executive Director**
Wild Resource Conservation Program

Do Something Wild!
Pennsylvania Wild Resource Conservation Program

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Do Something Wild!
Keystone Wild! Notes

Keystone Wild! Notes is the official online publication of the Pennsylvania Wild Resource Conservation Program. Its goal is to inform people about the activities of the program, which supports research and protection efforts for the state's natural heritage—its unique collection of native nongame animals and wild plants. The program is funded by the Pennsylvania Department of Conservation and Natural Resources and by public contributions: voluntary checkoffs on the state income tax return form, direct donations or the purchase of the Wild Resource license plate. If you have comments about *Keystone WILD! Notes*, please send them to The Editor, Wild Resource Conservation Program, P.O. Box 8764, Harrisburg, PA 17105-8764, or e-mail to ra-wrcp@pa.gov. To subscribe, please go to **www.dcnr.state.pa.us/wrcp/subscribe.html** and enter your e-mail address.

A Message from Pa's State Forester, Dan Devlin

This year marks the 30th anniversary of Pennsylvania's Wild Resource Conservation Program. As many readers know, the program was established with the passage of the Pennsylvania Wild Resources Conservation Act of 1982. The mission and goals of the act are to conduct and support research, conservation and education projects focused on preserving Pennsylvania's nongame wildlife species and native wild plants.

The Wild Resource Conservation Program has had many successes, such as developing County Natural Heritage Inventories that locate and identify rare species and special habitats, identifying species most at risk from a variety of environmental threats, reintroducing river otters and ospreys, and producing the Emmy award-winning biodiversity film series, *Cosmo's World*.

As we look back on the many accomplishments of the program and reflect on all that it has done in advancing conservation in Pennsylvania, it's also important to look forward in how the program is positioned to address the state's pressing conservation needs. In July, the Department of Conservation and Natural Resources made some changes in how the program is set up within the organization. Namely, it integrated the Office of Conservation Science, and with it the Wild Resource Conservation Program, into the Bureau of Forestry, which I have the privilege to lead.

The bureau is responsible for conserving the Commonwealth's forests and native plant communities, and manages the 2.2-million acre state forest system, which is the largest block of publically owned land in the state. The bureau is well versed in managing forests for native plant conservation and biodiversity. With an overall philosophy of ecosystem management, the bureau is a leader in science and ecological based land management.

With the integration of the Office of Conservation Science and the Wild Resource Conservation Program into the bureau, we have created a new administrative unit, the Division of Ecological Resources and Conservation Science. This division houses our previously existing Ecological Services Section with the Office of Conservation Science and Wild Resource Conservation Program staff.

These changes will help integrate DCNR's on-the-ground conservation and research-support functions while positioning the Wild Resource Conservation Program and conservation science staff at the forefront of emerging conservation issues and challenges. Also, it will improve efficiency within DCNR and reduce some administrative layers. Former Conservation Science and Wild Resource staff will become part of DCNR's largest team of professional ecologists and on-the-ground resource management practitioners.

Thirty years may seem like a long time to some but it seems like yesterday to me. I remember the first meeting of the Wild Resource Conservation Board. I was DCNR's technical representative at that meeting and I have great memories of attending many subsequent meetings as either a board member or agency representative. After a short hiatus from participation with WRCP I look forward to leading the new Division of Conservation Science and Ecological Resources, and building off 30 years of success of the Wild Resource Conservation Program.

State Forester Dan Devlin
Pennsylvania Department of Conservation and Natural Resources

From the Editor's Desk

The Evolution of *Keystone Wild!Notes*

by Jessica Sprajcar, Editor of *Keystone Wild!Notes*

For the past seven years I have worked in DCNR's Office of Conservation Science, which housed the Wild Resource Conservation Program. Over those years I have enjoyed reviewing grant applications, creating activities for the festivals and starring in Cosmo's World, but it has been my time as editor of *Keystone Wild!Notes* that really stands out to me. Working on this publication has exposed me to new topics and interesting people that otherwise I might not know.

For this anniversary issue I decided to take a look back at all 27 years of *Wild!Notes* (the publication lags behind the anniversary of the program) and share my thoughts with you on how the publication, and therefore the program, has changed over the course of time. And indeed it has changed considerably.

Volume 1 Number 1 of *Keystone Wild Notes* was published in the summer of 1985. This publication was set up in newsletter format, consisted of eight pages, and featured several short articles, black and white photos and line drawings. It looked like a typical nonprofit newsletter and served the purpose of letting people know what the program was all about, including highlights of the Breeding Bird Atlas, snake hunts and snow trilliums.

An update on one of the articles from that issue, "Pennsylvania Native Wild Plant Conservation" by Kathy McKenna, is provided by Greg Podniesinski, director of the Pennsylvania Natural Heritage Program, on page 13 of the *Wild!Notes* issue you are currently reading. Greg's article shows that much progress has been made on plant conservation, thanks in part to WRCP and PNHP, but considerable work remains.

Keystone Wild Notes was published quarterly in the black and white newsletter format through the summer of 1992. Readers were introduced to stories on osprey and otter reintroductions, educational resources like The Phantom of Fiddler Creek, and statewide bat surveys. The fall 1992 issue debuted a new logo—the one with the saw-whet owl with which we are all so familiar.

With a decade of conservation under its belt, the Wild Resource Conservation Fund celebrated the occasion with a "special issue" of *Keystone Wild Notes*. This was the first issue to showcase color photos and text boxes, in an eight-page newspaper format. For me, this marks the first major step in the evolution of *Wild Notes*. The publication stepped up a notch in terms of professionalism and readability. It went from an average newsletter to a colorful publication that drew your attention. And the length of the articles grew too, providing more information and quotes from experts.

Editor Jessica Sprajcar is an Ecological Program Specialist in DCNR's Bureau of Forestry, Conservation Science and Ecological Resources Division

WILD RESOURCE CONSERVATION FUND
P.O. Box 1467 Harrisburg, PA 17120

WILD
KEYSTONE WILD NOTES

The cover image of the debut issue was of the heads of the Game Commission, Department of Environmental Resources and Fish and Boat Commission with a baby river otter.

Important Events & Accomplishments for the

Wild Resource Conservation Program's First 30 Years

WILD!

The Wild Resource Conservation Act creates the Wild Resource Conservation Fund

1982

From the Editor's Desk continued...

The following issue, in the spring of 1994, saw the addition of the exclamation point to the title. I'm not sure who suggested it, or why that change was instituted, but I like it. Some people have questioned the grammatical-correctness of that punctuation… and they are right… but as WRCP's slogan is "Do Something Wild!" it only seems fitting to have that exclamation point in the publication's title too. Our publication is special and this calls attention to that.

The masthead of the publication and the size of the paper differed a little over the years, but the editor remained the same for quite a number of years, more than 20 years in fact. Karl Blankenship helped take *Keystone Wild!Notes* from a simple newsletter to a more reader-friendly publication. In the spring of 1996, Kathleen Gaskell joined Blankenship on the editing team. She worked as Design and Copy Editor until the Fall/Winter issue of 2007. While I never met either of them in person their work inspires me as I continue to bring *Wild!Notes* to you. Theirs is a legacy I hope I can live up to.

Each issue they worked on came out quarterly, with the exception of a few times when a combined Fall-Winter issue was released due to funding issues. Some of my favorite covers are shown on the left.

Wild!Notes was not produced during the spring and summer of 2008, as the program searched for a new editor with the departure of Blankenship. Linda Steiner became the editor of *Wild!Notes* with the fall 2008 print issue. However, due to shrinking budgets and the high costs of printing and shipping, WRCP decided to switch to an electronic version of *Wild! Notes*. The premier online-only issue came out in the winter of 2009. Steiner did a wonderful job adapting the newspaper format into an electronic publication.

WRCP Funded Reintroductions

Here are some rough estimates of the number of animals reintroduced in the state between 1993 and today, thanks to projects supported financially by the Wild Resource Conservation Fund. Editor's note: data was compiled from old issues of *Keystone Wild!Notes*, so it may not be 100 percent up-to-date.

Otters – 153 released between 1983 and 2007

Osprey, extirpated from the state in 1945 – 265 released between 1986 and 1996

Fishers, extirpated from the state in 1921 – 189 released between 1994 and 1995

Bald eagles, nearly extirpated from the state by 1983 *(only three pairs found)* – 88 released between 1983 and 2000

Regal fritillary butterflies – WRCP is funding work at Fort Indiantown Gap to raise and release these endangered insects at sites throughout their historic range. The first butterflies could be released as soon as this year. Look to future issues of *Wild!Notes* for more information.

The first Fund supported bald eagle reintroductions occur in the state

1983

River otters are reintroduced into the Pine Creek watershed

1983

From the Editor's Desk continued...

Without having to worry about printing costs, *Wild!Notes* became a much more substantial publication. No longer limited to eight pages, it grew to more than twice the size. Each photo could now be in color, as opposed to just a few pages in the paper version, and the layout became more colorful as well. To me this was the second major step in the evolution of *Wild!Notes*. And while we do continue to receive letters and emails from readers who miss the print version and voice their concern about access to the internet, on the whole I think the move online made *Wild!Notes* a much more useful and modern publication.

Steiner did a great job as editor, but unfortunately the budget became even tighter and we could no longer afford to pay an external editor to put together the publication. Director Greg Czarnecki asked me if I would like to take over the role as editor. I had been the editor for a local Audubon chapter newsletter, a freelance newspaper journalist and occasional author of magazine articles, so I jumped at the chance.

The spring 2010 issue was my first run with the publication. That issue debuted with a new masthead and layout, thanks to the creative talents of Lisa Cook with the Department of Environmental Protection. It was a bit tough balancing my other work duties with learning the ropes of editing such a large publication (what was first referred to as a newsletter we now call an e-zine), but it was, to me, worth all the effort.

Wild!Notes grew from a 16-page document to more than two dozen pages and started to focus on specific topics—from energy extraction to water to forestry—in each issue. We began to include interactive web links so that people could gain additional information, should they want it. And want it they did indeed, as letters to the editor pointed out.

Another thing that differs between the old and new issues is that there were more game species-related stories than there are now. While those species are important, they are outside the mission of WRCP. Our partners at the Game Commission and Fish and Boat Commission can and do focus on those species; it is up to us to bring to light the issues that non-game wildlife and plants face in Pennsylvania. I am glad that the publication's editors before me started that trend, and I will continue along those lines.

Beginning with the winter 2012 issue, we included Pennsylvania Academic Standards and additional children's activities to make the publication more useful for educators, one of our primary audiences. Knowing how busy teachers are, and how important the standards are to the teaching profession nowadays, we see this as a valuable addition, and perhaps the third step in the evolution of the publication.

What will be the next step in the evolution of *Keystone Wild!Notes*? Only time will tell, but we welcome your ideas on ways to make the publication more useful, interactive and enlightening. Please send your suggestions to me at jsprajcar@pa.gov. Thanks for ***Doing Something Wild!***

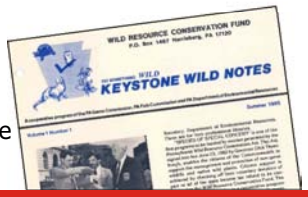
The first online edition came out in the winter of 2009.

Here is *Keystone Wild!Notes* as we know it today.

The first Fund-supported reintroduced ospreys return to the Poconos to nest

1984

The first issue of Keystone Wild Notes is published



1985

WRCPeople *Thirty Years of Thanks!*

We would like to recognize all the board members and advisory committee members that have served the Wild Resource Conservation Program from 1982 to today. Thank you for your support!

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Raphael Musto
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John Yudichak

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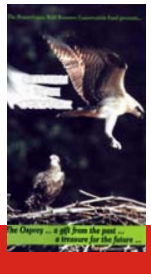
Jean Stull, Waterford
Sue Thompson, Pittsburgh
Ralph Trax, Wilkes-Barre
Scott Weidensaul, Schuylkill Haven
Ralph Widner, Philadelphia
Candie Wilderman, Carlisle

1986
WRCP's first documentary, "Return from Forever", is released



1989
The first "Atlas of Breeding Birds in Pennsylvania" is completed

Has the Climate Changed Since WRCP was Founded?

by Greg Czarnecki
Director of the Wild Resource Conservation Program

By 1982, when WRCP was founded, concern about climate change was growing within the scientific community, but it wasn't yet considered a major threat to biodiversity. Today, of course, it's one of our biggest concerns. Since climatologists calculate averages based on periods of 30 consecutive years, let's look at how the climate has changed since WRCP began.

Let's begin by looking at one of the primary causes of climate change—atmospheric carbon dioxide. CO_2 has been measured at the Mauna Loa observatory in Hawaii since the 1950s, because its remote location eliminates interference from human activities and CO_2-absorbing vegetation. In June of 1982, there were 342.89 parts per million (ppm) carbon dioxide in the atmosphere, just below the 350 ppm level that most climate experts feel is the safe upper limit. Today the level is 395.77 ppm, and the rate of accumulation is increasing. Over the past 30 years the rate has increased from 1.4 percent to 2.07 percent annually.

As we know, temperature increases as CO_2 levels increase. There are so many statistical measures of global temperatures, it's hard to decide which ones to discuss, so here are just a few. The globally-averaged land surface temperature in May this year was 2.18 degrees Fahrenheit above the 20th century average, making it the warmest May ever recorded. Additionally, the worldwide average sea surface temperature in May was 0.81 degrees F above last century's average. If you're more interested in what's happening closer to home, the past 12 months were the hottest measured in the contiguous U.S. since records began in 1895.

The Mauna Loa observatory is located in Hawaii to be as far away from human activities and CO_2-absorbing vegetation as possible. (Photo: NASA Earth Observatory)

Glaciers like this one in the Cascade Mountains have been losing mass over the past 30 years. (Photo: USGS)

As you'd expect, increasing air and water temperatures lead to decreasing global ice cover. The World Glacier Monitoring Service has been monitoring the advance and retreat of glaciers worldwide for the past 100 years. One of the parameters they look at is mass balance, which is the difference between snow and ice loss and gain. A positive mass balance means a glacier is growing, a negative value means it's shrinking.

The 84 glaciers they monitor have had a negative mass balance 27 of the past 30 years, with the past 20 years seeing increasingly larger mass balance losses. Among the glaciers they monitor are those in the Northern Cascades. After recording positive or neutral mass balance measurements from 1950 to 1975, all of these glaciers are now shrinking and have lost 20 to 40 percent of their volume since WRCP was formed.

Another interesting metric is the level of scientific research focused on climate change, as measured by how many papers are being published in scientific journals. Using the Google academic search function, you'll find there were 3,840 climate change articles published from 1981 to 1982. From 2010 to 2011 that number climbed to 27,800. This is a clear indication of the level of concern within the scientific community and means a lot more data and information is being collected today than when WRCP was founded.

These are just a few of the changes we've seen over the past 30 years.

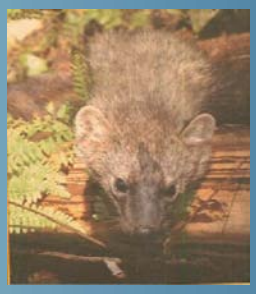
River otters are reintroduced into the Allegheny River watershed

1990

The first Fund-supported Peregrine falcons are reintroduced to Pennsylvania

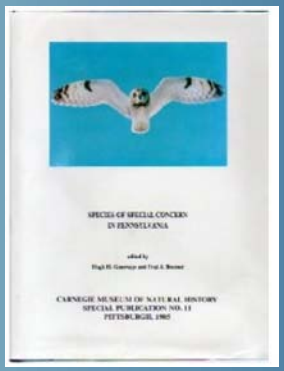
1991

Cover Story "WRCP at 30" continued...



Fishers are just one of many species reintroduced into Pennsylvania thanks in part to WRCP. (Photo: Lori Richardson, PGC)

County Natural Heritage Inventories are updated periodically and cover the entire state.



The Species of Special Concern book is a comprehensive volume of species at risk in Pennsylvania.

***Wild!Notes* has changed a lot over the years, but the focus is still on non-game wildlife, plants and habitats.**

Species Reintroductions

We've helped fund and facilitate the reintroduction of osprey, bald eagles, river otters and fishers, and will soon reintroduce regal fritillary butterflies too. These animals, all of which declined because of man's influence, are now firmly established and again fill their rightful ecological niche.

County Inventories

In Pennsylvania, land use planning takes place at the county and local level. In order to develop useful comprehensive plans, county officials need to know where rare species and ecologically important places are. WRCP, along with DCNR's Bureau of Recreation and Conservation, has funded natural resource inventories in all of Pennsylvania's 67 counties. These inventories provide the most comprehensive view we have of species and habitat distribution in the state.

Species of Special Concern in Pennsylvania

Working with the Pennsylvania Biological Survey, WRCP funded the publication of this first ever analysis of the Commonwealth's at-risk species. Nearly thirty years later it's still the most comprehensive volume on the state's species of concern.

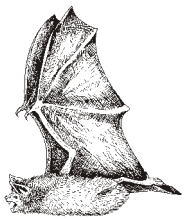
Keystone Wild!Notes

Since 1985 this has been the only publication dedicated solely to Pennsylvania's non-game animals and wild plants. Over the years it has chronicled the work of researchers and conservationists, brought rare species and habitats to life in stories and photos, and been a valuable teaching tool. As budgets and media have changed, so has *WildNotes*. From humble beginnings as a black and white newspaper it has morphed into a multimedia publication that incorporates video, online content and educational standards. And after all of these years it's still free!

The saw-whet owl license plate debuts

1993

The bat church at Canoe Creek State Park was purchased by the Fund



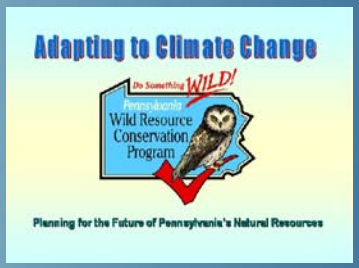
1993

Cover Story "WRCP at 30" continued...

Surveys of species, like this water shrew, help increase our understanding of Pennsylvania's biodiversity.

Photo: Charles Eichelberger, PNHP

Documentary videos like Return from Forever were produced by WRCP over the years.



WRCP hosted the first-ever climate change adaptation conference in the state.

You can easily search the new grant report database to find 30 years worth of projects.

Species Surveys

Our understanding of the state's biodiversity has increased dramatically over the past 30 years. We've funded hundreds of species surveys for everything from diatoms and snails, lichens and mosses, to otters and shrews.

Videos

Education has always played a central role for us, and one of our primary educational tools has been videos. Our approach, however, has evolved significantly over the years. Up until a few years ago we developed half-hour documentaries for general audiences that focused on a single species or taxa. Commonwealth Media Services produced more than a dozen exceptional videos for us in this format. In more recent years we've turned to producing short videos designed specifically for use in the classroom. These high-energy films are accompanied by lesson plans, are closely tied to the Department of Education's standards, and available online for instant access. From VHS tapes to DVDs and now to YouTube, we've really come a long way.

Preparing for Climate Change

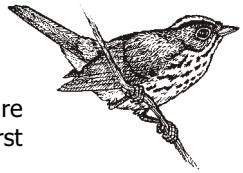
WRCP has been at the forefront of the climate change issue. We hosted Pennsylvania's first ever climate change adaptation and natural resource conference, helped develop the state's natural resource adaptation plan, and funded multiple projects identifying those species most at risk from climate change. The issue has also figured prominently in our educational materials, including *Keystone Wild!Notes* and the Cosmo's World film series.

Research and Conservation Database

This is one of our most recent and most significant accomplishments of the past 30 years. Since 1983, WRCP has granted nearly $18 million for more than 1,700 projects. Up until now, the results of that work has not been widely available. It's now digitized and searchable online. That's a pretty good way to mark our 30th birthday.

Fishers are reintroduced to the Sproul State Forest in Clinton County

1994



The first Important Bird Areas are designated in the state (PA is first state to designate such sites)

1997

Cover Story "WRCP at 30" continued...

Over the years the funding needed to accomplish this important work has waxed and waned as revenue sources have come and gone. The legislation that created WRCP both prohibits us from receiving any general fund tax revenues and also established our first, and still very important, funding source - the state income tax check off.

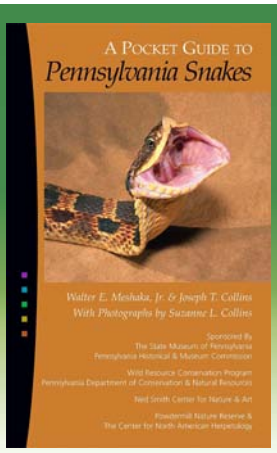
For the past 30 years taxpayers have been able to donate all or a portion of their state income tax refund to WRCP by simply checking a box on their annual tax form. While the amount has declined over the years, we still receive more than $100,000 annually.

In addition to the check off we've been pretty creative in raising money other ways as well. In partnership with PennDOT we issued the state's first specialty license plate in 1993 featuring the saw-whet owl. That was followed in 2000 with the river otter license plate, which is still available today. Over the years the income from these plates has gradually declined due to competition from other specialty plates and a saturated market. Nonetheless, we received almost $23,000 from the sale of the plates last year. I'm occasionally asked if we'll be issuing a new plate in the future, but it's unlikely. We first need to use up the existing supply of river otter plates, which will likely take many more years.

Part of WRCP's funds is generated through the sale of license plates like these.

Over the years we've also raised money by selling merchandise, from t-shirts and earrings to stuffed river otters and patches. While every little bit helps, we never made a significant amount of money from these sales. While some of these items are still available, we're liquidating our inventory and now focusing on selling items that more closely align with our mission, like educational books and videos. Our pocket wildlife identification guides, which we produce in partnership with the Pennsylvania State Museum, have been very popular. Look for our newest title, *Lizards and Turtles*, to be released soon.

Pocket guides to Pennsylvania's snakes, frogs and toads are available now, and one for lizards and turtles will be available soon.



Grant funding is going to be especially challenging as we enter our fourth decade. For quite a few years now the main funding source for our grants has been the Environmental Stewardship Fund, which was established under the original Growing Greener program. Unfortunately, Environmental Stewardship Funds have declined precipitously in the past couple of years, and we need to seek new revenue sources to cover this shortfall.

There is legislation pending that would expand the tax check-off by allowing any state income tax payer to make a donation on their tax form, even if they're not eligible for a refund. If just five percent of Pennsylvanians donated $1 when they filed their state income tax form, we'd triple the revenue we receive from the tax check off!

It's not just our funding that will be evolving as we enter the next 30 years. When WRCP was founded there was much we didn't know about the state's species and habitats. While that's still true, we know a great deal more now thanks to the many projects we've funded since 1982.

The otter license plate debuts

2000

WRCF moves into the Department of Conservation and Natural Resources

pennsylvania
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

2000

Today, however, the threats our natural systems face are very different. Thirty years ago acid rain, acid mine drainage and urban sprawl were among the biggest concerns. To be sure, those issues still exist, but in many parts of the Commonwealth they've been eclipsed by the bigger issues of invasive species, energy extraction and transport, and the growing threat of climate change. As a result, we've been gradually moving away from funding species inventories to funding applied projects that look at the impacts of, and solutions to, dealing with environmental stressors.

Conservation is also evolving. The conditions under which our species and natural systems evolved are rapidly changing, largely due to climate change, so trying to preserve them as they are, or restoring them to what they used to be, may not always be the best conservation model. Species will come and species will go as conditions change. If we preserve the stage (i.e. habitat) and accept that the actors (i.e. species) will change, then we can ensure that the ecological functions of natural systems will persevere. This is a fundamental shift in conservation, and one that will play a central role in WRCP's work as we enter our second generation.

Thanks for Your Support!

We would like to thank the recent donors to the Wild Resource Conservation Fund. Our educational materials, research grants and other projects depend on generous donations from people like you. Whether you mail in a check or donate your state income tax refund to us, you are helping to conserve our natural resources. **Thanks for Doing Something Wild!**

$1 to $25
S. Murawski
C. Thompson

$26 to $50
J. Ressler
T. Witmer
IBM Matching Funds –
This program matches donations ½ to 1 for their retirees and 1 to 1 for employees. Does your company match charitable donations? Why not ask?
That way your gift to WRCP grows even larger!

$51 to $100
M. Mekosh

$500+
American Order of Otters

WRCP Reports Now Online

Over the past 30 years WRCP has funded more than 1,700 research, conservation and education projects. The results of these projects, including data, recommendations and publications have generally been available only to the grantees, their colleagues and a handful of people within the state's natural resource agencies.

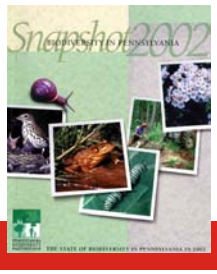
Now, for the first time, this treasure trove of information is available to anyone with access to the internet. Using Google Search you can peruse a database that contains the final reports from nearly all of the projects we've funded since 1983.

This will be a powerful tool for anyone interested in learning more about Pennsylvania's biodiversity. Researchers will have access to all of the data and findings from three decades of research. Students can gather information for school reports, and teachers will find lesson plans and other educational resources to use in the classroom.

You'll find that for a small number of reports only the executive summary is available. That's because the full reports contain detailed location information for species that are sensitive to disturbance or prone to collection, like bog turtles. We will provide these reports, as needed, to people working to conserve those species, so contact us if you'd like to discuss getting the full report.

2000 — The State Wildlife Grants Program begins funding research work for non-game species, thereby leveraging WRCP funds

2002 — The publication "Biodiversity in Pennsylvania: Snapshot 2002" is released, highlighting biodiversity conservation issues in the state



Pennsylvania Native Wild Plant Conservation—30 Years Later

by Greg Podniesinski,
Director of the Pennsylvania Natural Heritage Program for DCNR

In 1982, very little information was available on the distribution and status of Pennsylvania's plants, especially those that were rare, threatened or endangered within the state. At that time, Pennsylvania had proposed 69 plant species for ranking as endangered or threatened, yet the capacity to perform surveys or assess the rarity status of plants was very limited. In addition, there was no centralized system for collecting, maintaining or providing information on rare, threatened or endangered flora or fauna within Pennsylvania.

Both the white fringed orchid and showy lady's slipper are state endangered plant species. (Photos: PNHP)

Wild Resource Conservation Act

The passage of the Wild Resource Conservation Act that year set the stage for a thorough, systematic survey of the flora of Pennsylvania. The Act created the Wild Resource Conservation Program, which began directing money towards wild plant surveys and conservation. At the same time, the Department of Conservation and Natural Resources (DCNR), The Nature Conservancy (TNC) and the Western Pennsylvania Conservancy (WPC) met and established the Pennsylvania Natural Heritage Program (PNHP) for the purpose of creating and maintaining a database of Pennsylvania's species of special concern, referred to as the Pennsylvania Natural Diversity Inventory. At that time, PNHP had 2,385 records for 405 species of special concern. Over the following seven years, the handful of PNHP biologists added additional records through surveys of public and private lands that they thought might harbor rare plant species.

Pennsylvania Academic Standards that apply to this article:

4.5.5. and 6.D. – Explain the differences and identify reasons why organisms become threatened, endangered and extinct.

4.3.7.B. – Explain the management of natural resources and differentiate between conservation, preservation and exploitation.

Editor's Note: *This article updates information that was included in the Summer 1985 issue of Wild Notes, "Pennsylvania Native Wild Plant Conservation" by Kathy McKenna. All issues of Wild!Notes are available online in pdf format.*

The first Important Mammal Areas are designated in the state

2003

The first Wild Resource Festival held at Bald Eagle State Park

2005

County Inventories

In 1989, TNC and WPC received funding from the Recreational Improvement and Rehabilitation Act Program, administered by the Pennsylvania Department of Community Affairs, Bureau of Recreation and Conservation (precursor to the current DCNR Bureau of Recreation and Conservation), for the purpose of inventorying the ecological resources of Lancaster, Butler and Centre counties. These county inventories became the model for much of the PNHPs inventory efforts across the state. The final county inventories are now nearing completion, with assistance from Morris Arboretum, who inventoried Bucks and Montgomery counties, and Clarion University for Clarion County. The PNHP now has nearly 14,000 records for plant species of special concern and plant communities, the majority of which were documented through county inventories.

Recognizing that the older county inventories were performed over 20 years ago, eight counties have been revisited through County Natural Inventory updates, which allows PNHP to review and update plant records and visit unique and rare habitats that may have been missed the first time around. PNHP biologists will continue to scour the Pennsylvania countryside for rare botanical gems.

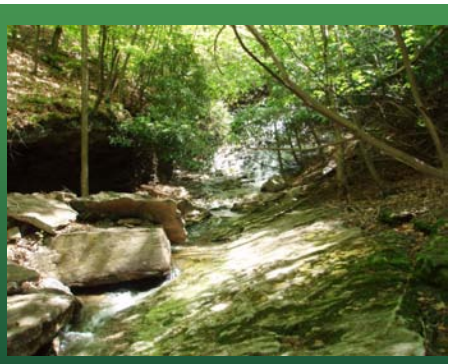
The Wild Resource Conservation Program has been instrumental over the years in supporting not only PNHP botany surveys and county inventories, but it has also supported Pennsylvania botanical surveys by the Carnegie Museum of Natural History, Morris Arboretum, the Cleveland Museum of Natural History and a number of researchers from Pennsylvania colleges and universities. The results of these WRCP-funded efforts have all contributed to the PNHP database for rare, threatened and endangered plants.

Wild Plant Sanctuaries

The Wild Resource Act of 1995 authorized DCNR to create a Wild Plant Sanctuary Program to recognize private and local public lands that have been protected and managed to promote native plant biodiversity. The program also commends landowners for wise management of their lands and provides them with tools and assistance for continued good stewardship.

While it took awhile to get the program started, the first wild plant sanctuary was designated in 2009 at the Panther Creek property of Barbara and Michael Yavorosky in Lackawanna and Wayne counties. While this site did not contain any rare plants, it did contain a diverse and unique collection of plant communities from the top of Moosic Mountain to the valley bottom where Panther Creek meets the Lackawanna River. Since that time, DCNR has designated 11 other Wild Plant Sanctuaries in seven counties (Erie, Greene, Montgomery, Westmoreland, Chester, Pike and Dauphin). These sanctuaries include private land, local municipal parks and lands belonging to several conservation organizations, including the Western Pennsylvania Conservancy, Natural Lands Trust and the Lacawac Sanctuary. These sanctuaries vary from private wood lots to managed parks to relatively wild natural landscapes, but they share a common theme: a commitment to conserve and protect native wild plant diversity.

The first wild plant sanctuary, Panther Creek, was dedicated in 2009. The site includes many native wildflowers like painted trillium and lady slipper orchids.



(Photo: Michael Yavorosky)

Photo by Joe Kosack

Bald eagle nests in the state top 100 for first time in over a century

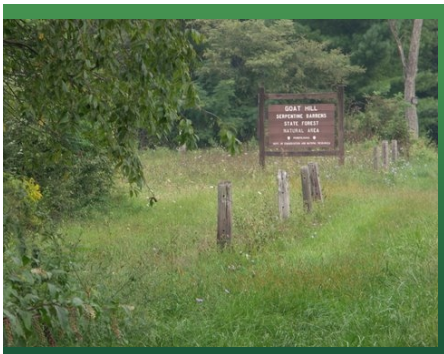
2006

WRCP holds its 25th anniversary symposium at Fort Indiantown Gap

2007

Natural and Wild Areas

DCNR has also identified and protected 22 Natural Areas and 16 Wild Areas on State Forest and State Park lands, as well as a number of public wild plant sanctuaries, such the Goat Hill Wild Plant Sanctuary, home to globally rare serpentine bedrock barrens. Natural Areas are areas of unique scenic, geologic or ecological value that will be maintained in a natural condition by allowing physical and natural processes to operate, usually without human intervention. Wild Areas are extensive tracts generally larger than 3,000 acres that are protected from development to retain the remote and wild character of the lands. Both Natural and Wild Areas prohibit new roads, motorized vehicles, surface mineral development and new rights-of-way. Public wild plant sanctuaries, such as Goat Hill, are designated to protect and conserve plant species of special concern that may be in jeopardy of population decline. DCNR is currently reviewing wild plant sanctuaries on its lands and may be designating a number of new sanctuaries as part of the next State Forest Resource Management Plan. Unlike Wild and Natural Areas, public wild plant sanctuaries allow for onsite management of the habitat to enhance conditions for plant species of special concern.



Goat Hill is one of many State Forest Natural Areas in Pennsylvania, and is home to many rare plants.

Pennsylvania Biological Survey's Vascular Plant Technical Committee has also advanced native wild plant conservation in Pennsylvania. This group of botanical experts represents many Pennsylvania institutions, including the DCNR, PNHP, the Carnegie Museum of Natural History, Morris Arboretum and several Pennsylvania colleges and universities, as well as professional botanical consultants. This group of experts meets annually to discuss native plant conservation, especially the status of Pennsylvania's rare, threatened and endangered plants. The Vascular Plant Technical Committee gathers information from across the state and discusses which species need more surveys to determine the health of its population, and also provides recommendations on the relative trends for native plants (e.g., Is a species increasing or decreasing in abundance? Does it need to be monitored? Should it be listed threatened or endangered?). The committee's recommendations are shared with DCNR and the PNHP to help guide field survey priorities and aids DCNR in making decisions to list or delist threatened and endangered plant species. These recommendations can also inform how the Wild Resource Conservation Program prioritizes grant funding.

Federally Listed Plant Species

DCNR and PNHP are currently working on a project to monitor one of Pennsylvania's two federally listed native plants, the Northeastern bulrush (*Scirpus ancistrochaetus*). While this species is found from West Virginia to New Hampshire, it is very rare in most states and is very uncommon in Pennsylvania, even though 70 percent of the known populations occur in the state. Because Pennsylvania is host to most of the known populations, DCNR has taken the lead in conserving this species. Working with a group of researchers in Ohio led by Dr. Kendra Cipollini, research is under way to analyze the genetics of the Northeastern bulrush to determine patterns of genetic diversity across its entire range. Using that information, it will be possible to establish a long-term monitoring program to determine the health of each genetic population in Pennsylvania and to identify management and conservation needs—many of the Northeastern bulrush populations are on public lands, especially in vernal pools on state

Cosmo's World film series is released and wins an Emmy Award

2009

30 Years!

WRCP celebrates 30 years of protecting the state's non-game wildlife and plant species

2012

forest lands. It should be noted that Dr. Cipollini has been studying the Northeastern bulrush for a number of years, starting with her graduate work at Penn State University and has received support for her research from the Wild Resource Conservation Fund.

Northeastern bulrush is one of Pennsylvania's two federally listed native plants.

(Photo: Steve Croy)

Native Wild Plant Conservation Internet Resources

Another major change that has occurred since 1982 has been the explosion of online resources for native plant conservation. The DCNR Wild Plant Program webpage (http://www.dcnr.state.pa.us/forestry/plants/index.htm) now has links to rare, threatened and endangered plant species lists, information on landscaping with native plants, descriptions of Pennsylvania plant communities and common Pennsylvania trees, invasive species information, and details on the Wild Plant Sanctuary Program and DCNR's ginseng program.

In addition, PNHP has now made the results of all of the completed and updated county inventories available online and as an interactive online tool at http://www.naturalheritage.state.pa.us/CNHI.aspx. The

The DCNR Wild Plant Program webpage has a wealth of information on the state's common and rare plants.

reports and interactive map can serve as important tools for the conservation of native plants by calling attention to unique habitats and areas of high biodiversity. Knowing where the ecological important places are leads to better conservation and smarter planning for development.

Since 1982 and the inception of the Wild Resource Conservation Program, native plant conservation in Pennsylvania has taken great strides forward. After 30 years of inventory and surveys we now have a much better sense of what are truly rare, threatened and endangered plant species, what habitats they occur in, and what threats may put their future in jeopardy. We also have developed tools to help conservation efforts protect critical habitat for those species and to guide development away from them. While the next 30 years will hold challenges for native plant conservation, whether from energy development, climate change, changes in residential development or agriculture, or from some other source we haven't considered yet, DCNR and the Wild Resource Conservation Program will work to conserve and protect our native plant biodiversity.

Pennsylvania Natural Heritage Program

"Information for the Conservation of Biodiversity"

The Pennsylvania Natural Heritage Program (PNHP) is a member of NatureServe, an international network of natural heritage programs that gather and provide information on the location and status of important ecological resources (plants, vertebrates, invertebrates, natural communities and geologic features). Its purpose is to provide current, reliable, objective information to help inform environmental decisions. PNHP information can be used to guide conservation work and land-use planning, ensuring the maximum conservation benefit with the minimum cost. To learn more about what we do, and about species of special concern, visit us on the web at **Pennsylvania Natural Heritage Program**.

WRCP Grants in Action:

30 Years of Grantees Supporting Statewide Conservation!

Academy of Natural Sciences
Albright College
Allegheny College
Allegheny National Forest
Allentown College (now DeSales University)
Alliance for the Chesapeake Bay
American Littoral Society
Appalachian Conservation Biology
Arcadia University
Audubon Council of PA
Backyard Wildlife Network
Bat Conservation International
Beaver College (now Arcadia University)
Berks County Conservancy
Berks County Conservation District
Borough of Ellwood City
Borough of Hatboro
Bowman's Hill Wildflower Preserve Association
Brodhead Watershed Association
Bucks County Audubon Society
Bushkill Steam Conservancy
California University of Pennsylvania
Canoe Creek State Park
Capital Area Greenbelt Association, Inc.
Carnegie Institute
Carnegie Mellon University
Carnegie Museum of Natural History
Center for Coalfield Justice
Clarion University
ClearWater Conservancy
Clearfield County Recreation and Tourism Authority
Cleveland Museum of Natural History
College of New Jersey (formerly Trenton State University)
Community Partnerships RC&D
Dickinson College
Duquesne University
East Stroudsburg University
Ecology III, Inc.
Family Resources
French and Pickering Creeks Conservation Trust
Freshwater Molluscan Research
Frostburg State University
Gannon University
Hawk Mountain Sanctuary
Heritage Conservancy
Indiana University of Pennsylvania
Indiana University of Pennsylvania Research Institute
K.F. Kauffman Design
Lafayette College
Land Studies, Inc.
Lock Haven University
Lycoming College
Manada Conservancy
Messiah College
Mid-Atlantic Exotic Pest Plant Council, Inc.
(now Mid-Atlantic Invasive Plant Council)
Missouri Botanical Garden
Morris Arboretum of the University of Pennsylvania
Mountain Watershed Association, Inc.
Municipality of Murrysville
National Audubon Society, Inc.
National Aviary
Natural Lands Trust, Inc.
Northwood Publications
PA Biodiversity Partnership
PA Biological Survey
PA Bureau of Forestry
PA Chapter of the American Chestnut Foundation
PA Fish & Boat Commission
PA Game Commission
PA Landscape and Nursery Association
PA Natural Heritage Program
PA Parks and Forest Foundation
PA Raptor Association, Inc.
Penn State Institutes of the Environment
Pennsylvania Association of Conservation Districts, Inc.
Pennsylvania Environmental Council
Pennsylvania Sea Grant
Pennsylvania State University
Pennsylvania Wildlife Federation
Philadelphia University
Phipps Conservatory & Botanical Garden
Pine Creek Land Conservation Trust
Pittsburgh Zoo and PPG Aquarium
Pocono Northeast Resource Conservation and Development Council
Pocono Wildlife Rehabilitation Center
Powdermill Environmental Station
Presque Isle Audubon Society
Purple Martin Conservation Association
Regional Science Consortium at the Tom Ridge Environmental Center
Robert Morris University
Rocky Mountain Elk Foundation
Rodale Institute
Sand County Foundation
Sanders Environmental Inc.
Shippensburg University
Slippery Rock University
Southern Alleghenies Conservancy
Susquehanna University

WRCP Grants in Action:

30 Years of Support for Statewide Conservation!

Sweet Sorrow Communications
Thalker & Walters Consulting
The Nature Conservancy
The Wilderness Society
Tinicum Conservancy
Township of Cheltenham
Tri State Bird Rescue and Research
U.S. Army Corps of Engineers
University of Pittsburgh
University of Scranton
WLVT PBS 39
West Chester University of Pennsylvania

Western PA Conservancy
Westsylvania Heritage Corporation
Wildlands Conservancy
Wildlife Information Center, Inc.
Wildlife Managers Inc.
Willistown Conservation Trust
Wilmington College
Wilkes University
York County Parks Foundation Charitable Trust
Youngstown State University

Wild! Words

Answer Key to page: 23.

ANSWERS:

1. spadefoot toad
2. education
3. flying squirrel
4. luna moth
5. yellow
6. bryophytes
7. Biological Survey
8. mile-a-minute

"Like" us on Facebook

WRCP has revamped our Facebook page and we hope that you "like" it. When you click on the "like" button, you will become a member of our online presence and be the first to know about upcoming events, publication debuts and important news in the world of WRCP and conservation. So please find us on Facebook by searching for **"PA Wild Resource Conservation Program"** and join our group.

Friends of the Fund

Non-Profit Partners Look Back and Ahead

Over the past 30 years, WRCP has interacted with myriad organizations throughout Pennsylvania through our grant program, educational events, research projects and publications. We reached out to a handful of these "Friends of the Fund" to ask them what they see as the benefits of partnering with WRCP and how they envision our role will adapt over the next three decades.

Jeff Wagner,
Western PA Conservancy
Director of PNHP

"Over the years, WRCP has enhanced PNHP's and the Western Pennsylvania Conservancy's mission by leveraging funds from federal, state and private partners and by allowing projects to develop that service needs across agencies and partners. WRCP has also provided critical funding to support botanical work and service the needs of wild plant conservation not otherwise supported in the state.

Without WRCP, we would know less about the status of species of concern in Pennsylvania and be much less prepared to manage for those species. For my organization, WRCP has allowed us to update and review thousands of records through numerous inventory projects, providing that information for environmental review and planning across the state.

PNHP provides a strong level of botanical expertise to the Pennsylvania Biological Survey and to state agencies like the Department of Conservation and Natural Resources. WRCP helps to support the projects that focus on important aspects of wild plant conservation, helping to answer habitat, distributional and taxonomic questions that must be addressed to effectively manage and conserve native plants and the natural communities that they depend upon. Over the next 30 years of WRCP work, it is important those projects continue."

Kristina Strosnider,
Executive Director of Natural Biodiversity

"WRCP has provided resources, funding and state-wide networking imperative to assisting Natural Biodiversity fulfill and exceed our stewardship and environmental education goals that align with our mission. WRCP has enabled us to reach a broader audience and expand our projects statewide, increasing the impact of our environmental education projects and products.

We hope that over the next 30 years, WRCP continues to provide resources and highly capable staff to play a supportive role in plant and wildlife conservation. Increased networking and capacity building will be essential for the future, as will funding sources."

Jim Thorne, Ph.D.,
Senior Director of Science for Natural Lands Trust

"Over the last 30 years, WRCP has done a fantastic job of raising awareness about Pennsylvania's non-game wild resources.

Natural Lands Trust got a big boost from WRCP because it allowed us to publish our report on Keystone Grasslands, which is a template for grassland restoration in Pennsylvania. It divides the state into ecological and soils provinces to make recommendations about what grassland to plant. In the future we hope to work with WRCP to develop a program to promote the ecological roles played by beneficial invertebrates."

Wild!Watch

by
Heidi Mullendore
Environmental
Education Specialist at
Canoe Creek State Park

30th Anniversary of the WRCP

High overhead a kaleidoscope of trembling leaves, patches of brilliant blue sky and glimpses of white clouds constantly shift in a stiff summer breeze. Hiking along a sandy ridge in south-central Pennsylvania, the group stops now and again to bend over various plants nodding among rocks and fossils of the forest floor. Forming a sort of skirmish line among the fissured gray trunks of chestnut oaks are botanists working on conducting a natural inventory in Blair County.

"Here, over here!" comes a shout as others scramble over to appreciate a low nodding grass, heavy with seed. A stiff draft shakes tree branches and rattles pages as the experts identify and catalogue species on the ridge. Plants with steadfast, serious names such as sideoats grama, or with whimsical names such as monkey flower, are noted as the crew moves among forest, field and creek-side, sharing discoveries as they are made.

Once again, the Wild Resource Conservation Program is at work, lending a hand in conservation efforts. These visitors, laden with backpacks and notebooks, are chronicling species and habitats. Their data is used by the WRCP, and woven into the context of geology, vegetation, travel corridors and land use. Such a comprehensive natural inventory is used as an important planning tool for state agencies, communities and homeowners across the state.

The people searching diligently for plants on this ridge are a part of the legacy of the WRCP, which was established 30 years ago. As a part of the Department of Conservation and Natural Resources, the WRCP acts "to conduct and support research, conservation and education projects focused on Pennsylvania's biodiversity."

Sideoats grama grass is a native grass used for erosion control and as a forage crop. (Photo: Howard Schwartz, Colorado State U., www.forestryimages.com)

WRCP funds various research projects to increase knowledge surrounding the state's plants and animals. (Photo: PNHP)

Wild Watch "30th Anniversary of the WRCP" continued...

As a front of thick clouds scuds in from the west, the group pauses to make notes, sip water and decide where to go next. These experts are from different agencies, all working through the WRCP to build inventories for each county. As everyone stows gear, we look over the lip of a large, south-facing limestone outcrop. The group eagerly scrambles over rocks studded with fossilized coral attachments. Grins and shouts signal more interesting specimens are found.

As the front reaches us, a blast of warm air sweeps over the hillside, followed by sheets of driving rain. Everyone is soaked in a matter of seconds, but no one seems to mind, instead dragging on ponchos and raincoats as we press on.

Much later back in my office, I spread out my gear to dry and try to read my scribbled notes. I have to use guides and the internet to identify species new to me. This isn't the first time the WRCP has benefited our state park. As an organization with conservation as its main focus, the WRCP helped our park acquire a crucial resource, the Frank Felbaum bat sanctuary. This summer maternity site has hosted thousands of little brown bats as well as the federally endangered Indiana bat.

Visitors flock to Canoe Creek State Park to watch the bats leaving the "bat church".
(Photo: Cal Butchkoski, Game Commission)

Each year since we acquired the bat sanctuary, our state park has welcomed thousands of visitors to watch the bats emerge at night. As a result, we have been able to educate people about bats and the crucial role they play in our ecosystem. When I visit local classrooms, students raise their hands to share stories of going with their families to watch the bats, and many tell me how they've put up a bat box in their back yard.

The county inventory data compiled today will also go a long way in helping us manage the park—identifying areas of concern and priority as we juggle recreation, conservation and education.

Since its inception in 1982, the WRCP has worked hard not only to catalogue Pennsylvania's flora and fauna, but to identify areas in need of conservation and provide resources such as county natural heritage inventories and more. In addition, the WRCP has worked to educate Pennsylvania residents by providing their newsletter, *Keystone Wild! Notes*, a newsletter first published in 1985 highlighting conservation efforts, Pennsylvania species, local and regional efforts, and other interesting topics.

Like the organization, the newsletter has evolved over the years in its span of stories and issues. As the Wild Resource Conservation Program has grown into its name, the newsletter has reflected the breadth and depth of the organization's approach to the overwhelming range of needs inherent in conservation.

WRCP takes a holistic approach to conservation, looking at flora and fauna within the context of the environment and human impacts: a scale that defies human-drawn boundaries. The newsletter, over the years, has shared this progress to showcase the resources of the state and the challenges of conservation.

In addition, the WRCP has evolved in answer to Pennsylvania's growing use of technology. The WRCP website hosts a range of information and planning tools. The field data acquired is just part of a complex network of information organized and made user friendly for everyone in the state.

As the rain beats against my window and the last of the vehicles leave the parking lot, I know our field excursion with the WRCP has come to a close—for now. My boots are soaked, my backpack is leaking and my notes are smeared, but being in the field with experts for this kind of excursion is always an eye opener and worth every minute. Taking a look at nature through the eyes of the Wild Resource Conservation Program makes me realize just how complex and necessary its work is and how much we depend upon it.

Happy 30th Anniversary, WRCP, and keep up the good work!

30th Anniversary Party

Color Me Wild!

Terra the river otter invited a bunch of her wildlife friends to a party to celebrate the 30th anniversary of the Wild Resource Conservation Program. They all decided to surprise their friend Cosmo Squirrel, so they hid as best they could. Can you identify and find all the critters before Cosmo arrives?

Find the party guests:

Fisher
Eastern spadefoot toad
Regal fritillary butterfly
Allegheny woodrat
Golden eagle
Wood thrush
Green salamander
Damselfly

Web Search Contest

Wild! Words

The answers to the following questions can be found by searching through the information, links and documents on our website - http://www.dcnr.state.pa.us/conservationscience/wrcp/index.htm. The first ten students (age 17 and under please) to send in the correct answers to all eight questions will receive a small prize. Please email answers to jsprajcar@pa.gov or mail to Keystone Wild!Notes Editor, P.O. Box 8764, Harrisburg, PA 17105. Include your name, age and mailing address. Contest will end by September 28. Be sure to get your parent's/guardian's permission before entering the contest. Best of luck!

1. This amphibian is listed as "extremely vulnerable" to the expected impacts of climate change, according to the Climate Change Vulnerability Index.

   ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

2. Research, conservation and _____ are the three main foci of the Wild Resource Conservation Program.

   ___ ___ ___ ___ ___ ___ ___ ___ ___

3. A river otter and a _____ - a small nocturnal animal - are the stars of the Cosmo's World video series.

   ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

4. This is a brightly colored moth that is featured in the 2012 WRCP calendar and on one of the program's collectible patches.

   ___ ___ ___ ___ ___ ___ ___ ___

5. The timber rattlesnake has two color phases, black and _____.

   ___ ___ ___ ___ ___ ___

6. Mosses and liverworts are _____, and are sometimes referred to as the "simplest true plants."

   ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

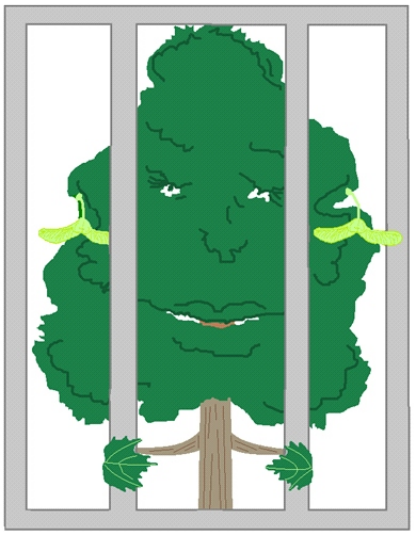
7. The Pennsylvania _____ is an organization whose purpose is to foster natural biological diversity within the Commonwealth.

   ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

8. This invasive plant has bright green, arrowhead shaped leaves.

   ___ ___ ___ ___ - ___ - ___ ___ ___ ___ ___ ___

Answer key located on page 18.



Norway Maple

Text and illustration by
Jessica Sprajcar
Ecological Program Specialist,
Department of Conservation & Natural Resources
Bureau of Forestry
Conservation Science and Ecological Resources Division

Some cultivars of Norway maple have purplish-red foliage and samaras.
(Photo: Bill Cook, Michigan State University, www.invasive.org)

Weed It & Reap

Have You Seen This Weed?

Norway Maple

Aliases: *Acer platanoides*

Last Seen: Planting itself in back yards, along streets and forest edges throughout the northeastern U.S. and Pacific Northwest.

Description: A tall and broad deciduous tree that grows up to 90 feet tall. Leaves are palm-shaped, wider than they are long, paired and dark-green (or dark purplish-red in the case of some cultivars). Fall leaf color is yellow to orange. Seeds are in the form of double-winged samaras, either light green or red in color.

Stay away from this shady character: Because of the dense shade created by Norway maple, very little will grow underneath it—removing habitat for native plants. Norway maple resembles several of our native maples. The easiest way to tell them apart is by breaking off a leaf or stem. Norway maples will release a milky white sap. Choose native trees whenever possible to ensure the best possible habitat for Pennsylvania's wildlife.

WRCP Videos Available Online

The two most recent WRCP documentaries, **"Fungi: Pennsylvania's Hidden Treasures"** and **"Dangerous Invasions,"** can be viewed online at **www.pacast.com.**

Just click on the Productions tab to see these and other Commonwealth Media Services videos.

00:00 | 00:00

Use Order Form on Page 28

Wild! Buys

Show Your Wild Side!

SALE!—Many Items Limited—SALE!

COSMO'S WORLD T-SHIRTS
The WRCP logo is on the front (see above) and Cosmo and Terra are on the back (at right). The T-shirt is 100% cotton, pre-shrunk and available in both Tangerine and Natural.
Children's sizes: M, L -- ~~$15~~ $10
Adult sizes: S, M, L -- ~~$17~~ $10

WRCP Logo T-shirt (Youth)
The WRCP logo is embroidered on a 100% cotton T-shirt available in Sand.
Youth sizes: S, M, L -- ~~$10~~ $5

WRCP Logo Long-sleeved Faded Blue Denim Shirt
Men's sizes: 3XL -- ~~$25~~ $20
Ladies' sizes: S, M, L, XL, 2XL, 3XL -- ~~$25~~ $20
This 100% cotton shirt features double-needle stitching and a button-down collar. WRCP logo is embroidered above the patch pocket (no pockets on ladies' shirt).

Quantities of these shirts are limited.

Quantities of these apparel items are limited. Before ordering, please call Deb at 717-787-3212 or email at debmiller@pa.gov to make sure that we have your size.

Wild! Buys

Show Your Wild Side!

Colorful Embroidered Patches to Wear or Collect

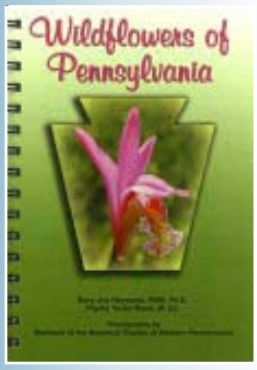
2009 Massasauga Rattlesnake --$6 (+ .36 tax)
2009 Cosmo's World Patch - $6 (+.36 tax)
2008 Presque Isle Festival -- $10 (+ .60 tax)
2008 Serpentine Barrens -- $6 (+ .36 tax)
2007 Northern Flying Squirrel Festival -- $10 (+.60 tax)
2007 Rachel Carson Centennial -- $6 (+.36 tax)
2006 Wine-capped Stropharia Festival -- $10 (+.60 tax)
2006 Yellow Morel -- $6 (+.36 tax)
2005 American Kestrel Festival -- $10 (+.60 tax)
2005 American Kestrel -- $6 (+.36 tax)
2004 Allegheny Crayfish -- $6 (+.36 tax)
2003 Spreading Globeflower -- $4 (.24 tax)*
2002 Red Eft -- $5 (+.30 tax)
2001 Luna Moth -- $5 (+.30 tax)
1999 Wood Thrush -- $5 (+.30 tax)
1998 Dogwood -- $4 (+.24 tax)*
1997 Bog Turtle -- $4 (+.24 tax)*
* Limited quantities

Use Order Form on Page 28

Wild! Buys

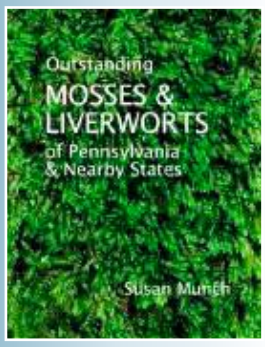
Show Your Wild Side!

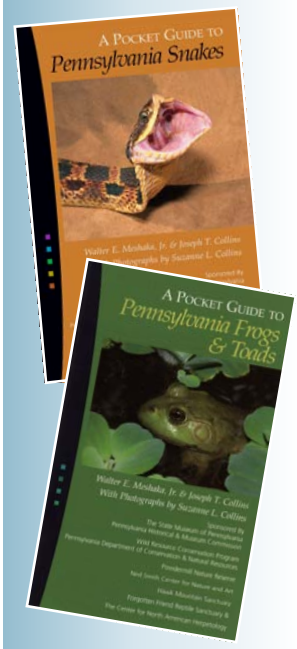
Read All About It—In Wild! Books



WILDFLOWERS OF PENNSYLVANIA
This book is for all who enjoy nature and would like to become more acquainted with wildflowers. It will help the observer to identify the plants seen on a spring, summer or fall hike in a natural area. The book uses photographs of the plants, as photos reveal much more detail than can be found in drawings.
Price: $20 (+ $1.20 tax)

OUTSTANDING MOSSES AND LIVERWORTS OF PENNSYLVANIA
Botanist Susan Munch brings us the first full-color field guide for mosses in the Mid-Atlantic region. The guide's 89 pages contain detailed color photographs allowing for easy ID of many of the most common, yet striking, mosses and liverworts. No microscope is necessary. The guide is suitable for both professionals and non-botanists.
Price: $20 (+ $1.20 tax)





POCKET GUIDE TO PENNSYLVANIA SNAKES and POCKET GUIDE TO PENNSYLVANIA FROGS AND TOADS
WRCP teamed up with the State Museum to produce these affordable and informative little books that provide photos and natural history information about all of the state's serpents, frogs and toads.
Price: $4.72 (+ $.28 tax) each

FUNGI: A KINGDOM OF THEIR OWN
This colorful children's book teaches kids about the variety of fungi in the state. Follow the Stone Family's adventures in the Kingdom of Fungi. Through photos, watercolor illustrations and stories, the tale of mushrooms and their brethren is told. Written and illustrated by Wendy Plowman and geared toward late elementary school students.
Price: $7 (+ $.42 tax)

Use Order Form Below for All Orders

Wild! Buys

Show Your Wild Side!

ITEM DESRIPTION	QUANTITY	PRICE	SALES TAX	ITEM TOTAL

CONSERVE WILD RESOURCES LICENSE PLATE: Please send me a form ___ **KEYSTONE WILD! NOTES:** Please enter my web subscription_____	**Total Order** **Postage**	
DONATION to WRCP: If you wish to receive thank-you gifts, for $15 choose either Invasive Plants DVD or Fungi DVD. Donate $25 and up, receive both! Add donation amount:		
Please make check payable to: **"Wild Resource Conservation Program"**	**TOTAL ENCLOSED**	

SHIP TO: Name

Street Address (No P.O. Boxes)

City State Zip

Phone Email

Mail form to:
WRCP
P.O. Box 8764
Harrisburg, PA 17105
Info: (717) 787-3212
or email:
debmiller@pa.gov

To Order Merchandise:

Print out and fill in the form above. Mail with check payable to Wild Resource Conservation Program. and add Pa. sales tax and appropriate shipping fees. For more information, call (717) 787-3212 or e-mail **debmiller@pa.gov**.

PA State Sales Tax

WRCP is responsible for collecting 6% Pennsylvania sales tax on most items we sell, excluding apparel. The amount owed on each item is noted next to the item price.

Shipping Fees

Total amount of order	Postage Fee
$0 - $10.00	$2
$10.01 - $20.00	$4
$20.01 - $40.00	$5
$40.01 - $70.00	$6
$70.01 - $100.00	$7
$100.01 or more	$8