

GUIDE TO

GARDENING FOR LIFE

IN SOUTHEASTERN PENNSYLVANIA



CHALLENGES AND CHAMPIONS

SPONSOR



Think Green® Think Waste Management.

PARTNERS





PRODUCED BY

Audubon At Home

Since individual actions can have a direct impact on native bird populations, Audubon At Home encourages people to protect native birds by incorporating small conservation actions into their daily lives.

Audubon At Home provides the tools needed to create safe and healthy habitats for people and wildlife on private property and local public land, including backyards and city parks. It helps people understand their connection to local habitats, and empowers them to live in harmony with nature through wise decisions made in the home, in the store, and in the community.

With Audubon At Home, the National Audubon Society hopes to create a culture of conservation, where home and neighborhood activities help protect local, regional, and global bird populations.

IN PARTNERSHIP WITH

Bucks County Audubon Society



Our mission is to foster an awareness, understanding, and above all, a sense of stewardship of the environment.

The Bucks County Audubon Society (BCAS) is a private, non-profit organization founded as a chapter of the National Audubon Society in 1969. Since its inception, BCAS has been dedicated to conserving wildlife, promoting awareness of environmental problems, watching birds, educating the community about the interdependence of humans and their world, and furthering the wise use of land, air, and water.

WITH FUNDING BY

Waste Management



Margaret Mead said, “Never doubt that a small group of thoughtful, committed citizens can change the world...” As the largest solid waste management and recycling company in North America, Waste Management continues to explore ways to further environmental protection, stewardship and conservation in our community. We believe in supporting programs that build a better world for tomorrow. Whether it’s promoting environmental education, encouraging active participation in civic affairs or ensuring that tomorrow’s environment will be one we can be proud of — commitment to community is a priority.

Waste Management is proud to offer comprehensive solid waste services including collection, disposal, recycling and waste reduction for municipal, residential, commercial and industrial customers. Think GreenSM. Think Waste Management.

FRONT COVER PHOTOS: AMERICAN ROBIN (GEORGE JAMESON); NEW ENGLAND ASTER (CHUCK YOUNGER); AMBUSH BUG ATTACKING A PEARL CRESCENT BUTTERFLY (CHUCK YOUNGER); BUMBLE BEE ON JOE-PYE WEED (KIM PHILLIPS).

BACK COVER PHOTO: TRUMPET HONEYSUCKLE (CHUCK YOUNGER)

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PAUL GREEN



How To Use This Book

Many of the issues discussed here relate directly to the challenges we face in southeastern Pennsylvania. And within our region, there are people who have actively addressed topics such as rain and drainage problems, lawn transformation, and campus spaces. At the end of each “Challenge” essay, you will find an At Home Action (AHA!) page. Combine the AHA!s with the personal tips of the “Champions” profiled in the accompanying stories and you will have the makings of a plan to adopt similar actions to tackle your interest or issue. Not every yard is the same, nor resources equal and, in some cases, the champion profiles represent projects that took several years to complete. We live in an ecologically rich region that will easily accommodate your changes and commitment to conservation. To achieve your own conservation goals, be patient, take small steps, and of course, enjoy the journey.

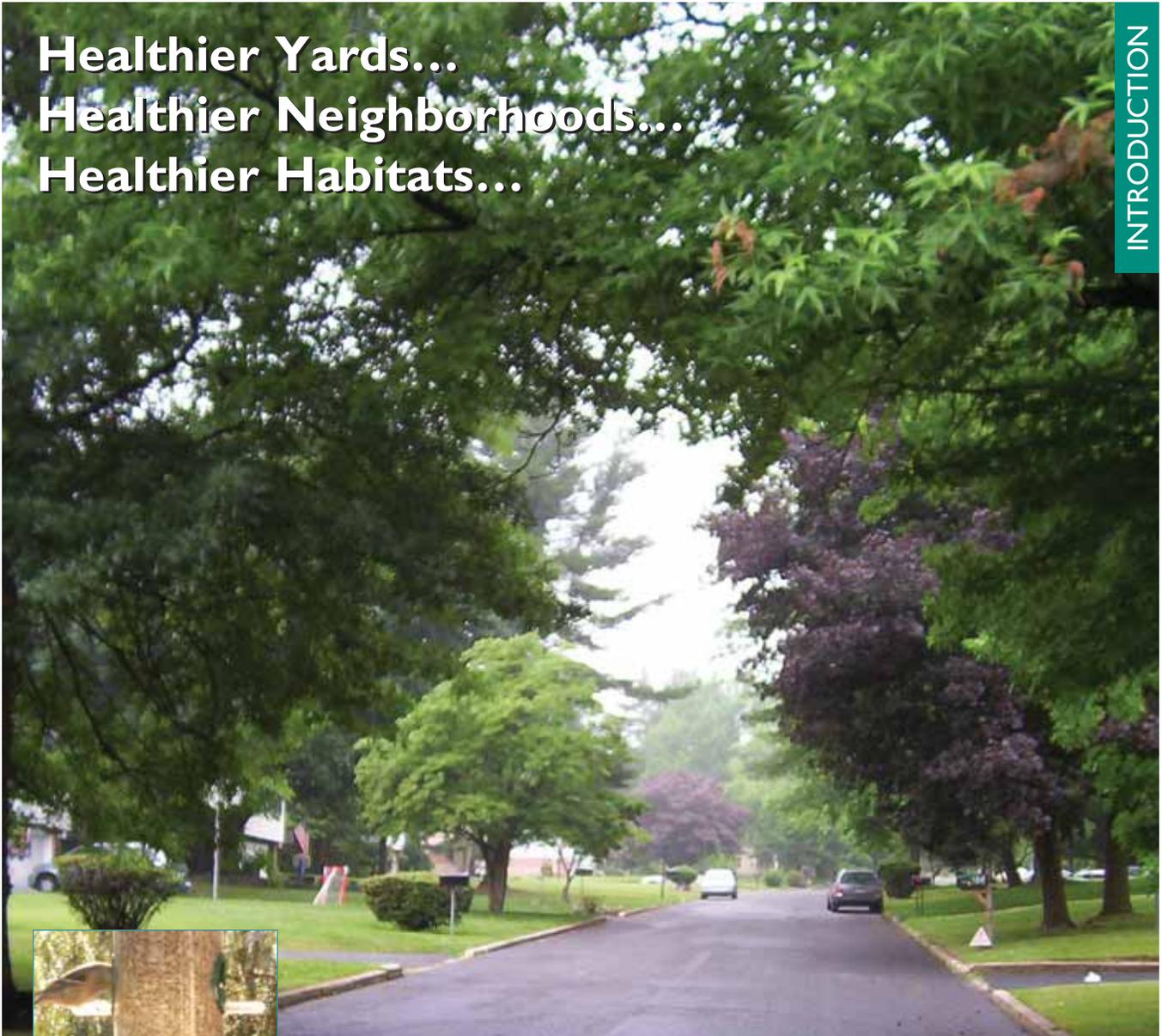
Throughout the text, we generally refer to “yards” and “backyards,” but the principles and practices of habitat gardening are equally applicable to both smaller and larger landscapes...from patio gardens and schoolyards to corporate campuses and other commercial properties.

Use the spaces provided in the book to make notes or to create lists of things that exist in your yard and things you would like to add. This “wish list” becomes the basis for transformation. Take the book with you outside and add notes as you observe and brainstorm ideas.

The plant lists will help focus your search for the right plants given the conditions of your personal space. The bird, insect, and other wildlife lists are provided to enhance the exploration of your corner of the world, your ecological address, and the changes that occur within it.

Healthier Yards... Healthier Neighborhoods... Healthier Habitats...

INTRODUCTION



PAUL GREEN

STEVEN J. SAPIER

Tess Present



Audubon At Home's "Big 5"

- Plant native species.
- Remove exotic plant pests.
- Conserve water.
- Protect water quality.
- Reduce pesticide use.

STEVEN J. SAPIER

Our backyard is our private space. It is our piece of the world. But it is also part of a larger landscape we share with our community and with plants and wildlife. The health and well being of all of us depends on having a clean, healthy, sustainable place to live. How we take care of our yards and properties — the water and other resources we use, the fertilizer and pesticides we apply, the type of plants and landscape features we choose — impacts the health and quality of our living space, as well as that of our human and wildlife neighbors. Healthier yards for our families mean healthier neighborhoods for our community, and healthier habitats for all living things.

No matter how small, our yards and properties are becoming more and more important as wildlife habitat. Loss, fragmentation, and degradation of suitable habitat are the leading causes of population declines in birds, other wildlife, and plants. With an average of 2.1 million acres converted to residential use every year (Vesterby & Krupa, 2001), our backyard habitats are critically important pieces holding together an increasingly fragmented landscape. Our garden and landscaping practices directly affect the health of that habitat for ourselves and for the naturally occurring

wildlife and plants that must depend on it to a larger and larger extent.

Our actions at home, furthermore, are intimately connected to the health and quality of our larger environment — our local ecosystems, our watersheds, our regional landscapes, and beyond. Whether we live 10 feet or 10 miles from the nearest stream, river, or coast, everything that washes off our terrace, driveway, lawn, or garden has the potential to make its way eventually into local surface waters or groundwater supplies. Consider also that many plant species introduced as ornamentals for home gardens have escaped cultivation, displacing native plants and impacting the integrity and viability of natural ecosystems nationwide. Our stewardship of our piece of the world has ramifications around the world — literally.

We Can Make a Difference!

Most of us, regardless of where we live, envision a typical yard as a mowed lawn bordered by an assortment of shrubs, trees, and flowers that are readily available at the local garden center or nursery. Whether we live in the desert southwest, temperate northeast, or somewhere in between, such a landscape is widespread and familiar. Less familiar perhaps to many of us, however, is the

We need to recognize that any pesticide we apply to our lawn or garden may kill beneficial and non-pest species, may not stay where we apply it, and may persist in the environment for years.



Red-bellied Woodpecker

more runoff (Kelly, Kidwell, & Lehrer, 1998). Plant choice, landscaping materials, and general soil health can make an enormous difference in whether our aquifers get recharged.

Water lost as runoff diminishes not only the quantity of our water supply but also its quality. Pesticides and fertilizers that are applied to our lawns and gardens can potentially contribute to water quality problems. The 2000 National Water Quality Inventory (US EPA, 2002b) reports that 39 percent of assessed rivers and streams, 45 percent of assessed lakes, ponds, and reservoirs, and 51 percent of assessed estuaries in the U.S. are polluted. Urban runoff is one of the most significant sources of water quality impairment found in estuaries, lakes, ponds, and reservoirs.

Sobering Facts About Lawn and Garden Pesticide Use

Lawn and garden pesticide use is widespread and growing. Homeowners apply an estimated 78 million pounds these pesticides, herbicides, and fungicides per year to their homes, lawns, and gardens — not including applications made by pest control or lawn care professionals (Donaldson, Kiely, & Grube, 2002). Approximately 50 percent of all U.S. households treat their yards with some sort of outdoor pesticide alone

(professional or do-it-yourself applications) (Templeton, Zilberman, & Yoo, 1998). According to a recent analysis of outdoor residential pesticide use, a sizable number of households “apply more than recommended doses,” “treat symptoms of pest problems without suitable information about the causes,” and “do not read pesticide labels, follow the directions, or obtain information about precautions and proper uses against specific pests when reading labels” (Templeton et al., 1998, p. 420) Some consumers do not even realize when they are using a pesticide product. “Weed and feed” products, which contain herbicides as well as fertilizers, are particular sources of confusion. In one residential survey of lawn care practices, 63 percent of 981 residents in one watershed reported using “weed and feed” products, but only 24 percent realized that they were actually applying herbicides (Schueler & Swann, 2000).

Surveys indicate that the general public recognizes that there are risks associated with the use of pesticides. Despite this, however, they continue to use them because there is little familiarity with or awareness of healthier pest control options. Lawn pesticides should be eliminated because this is where wildlife, pets and even children are most likely to be exposed. Other home and garden pesticides should be used only as a

EVICT YOUR INVASIVES

Tens of thousands of plant species have been introduced to the U.S. over the past centuries. They were brought, intentionally or unintentionally, from around the globe and have become embedded in our culture and landscapes. Many of these non-native plants are valuable agricultural crops (corn, rice) or beloved elements in our gardens (tulips, peonies). An estimated 5,000 species, however, have escaped cultivation and are found growing in the wild (Morse, Kartesz, & Kutner, 1995). A number of these, the invasive species, are displacing native plants and altering the structure of our natural communities.

Invasive plants are a severe and growing threat to our native habitats and ecosystems. They infest approximately 100 million acres in the U.S. and spread 14 percent per year (Babbitt, 1998). Wetlands, forests, and grasslands are under assault — no habitat or geographic region is immune regardless of how remote. Community parks, national parks, wildlife refuges, roadsides, and backyards are being choked — no natural area or green space is immune regardless of size.

Some of our most destructive invasive species (purple loosestrife, kudzu, saltcedar) were first introduced for landscaping purposes as ornamentals, windbreaks, or for erosion control. Despite its widespread recognition as a serious invader of wetlands and its legal

designation as a noxious weed in over 30 states, purple loosestrife continues to be promoted and sold in several states. In fact, many commonly used and readily available ornamental plants are invasive in some regions of the country — English ivy, oriental bittersweet, vinca, Norway maple, and Japanese barberry, to name a few.

In the Delaware Valley, garlic mustard, multiflora rose and Japanese stiltgrass are among the most prolific invasive plants which threaten natural habitat by aggressively out-competing natives. From aquatic plants to vines and shade trees, nearly 50 plants species are considered invasive in the Mid-Atlantic region.

Invasive plants are a big problem. As gardeners, consumers, and stewards of our piece of the world, there are a number of things we can do:

- Learn which plants are invasive in our area. Share the information with neighbors, landscapers, and local nurseries.
- Do not buy or share invasive plants.
- Remove invasives from our property.
- Volunteer for invasive control efforts in our community.

See page 80 for list of invasives and alternative native plants.



STEVEN J. SAFFER



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TODY SHIMP / INVASIVE.ORG

Top to bottom: Japanese stiltgrass and English ivy; Stiltgrass meets its match; Porcelainberry; Garlic mustard.

The health and well being of all of us depends on having a clean, healthy, sustainable place to live.



References Cited

- American Water Works Association. (2001). *Water use outside the home: Basic landscape types and corresponding "S" factor*. Retrieved January 21, 2003, from WaterWiser Web site: <http://www.waterwiser.org>
- Babbitt, B. (1998). Statement by Secretary of the Interior Bruce Babbitt on Invasive Alien Species. *Proceedings, National Weed Symposium, BLM Weed Page*. April 8–10, 1998. Retrieved January 21, 2003, from <http://www.blm.gov/weeds/sympos98/addrbabb.html>
- Donaldson, D., Kiely, T., & Grube, A. (2002). *Pesticides industry sales and usage: 1998 and 1999 market estimates*. Washington, DC: United States Environmental Protection Agency, Office of Prevention, Pesticides, and Toxic Substances.
- Kelly, S. Kidwell, D., & Lehrer, G. (1998). Urban runoff. In *Groundwater pollution primer*. Retrieved January 21, 2003, from Virginia Tech, Civil and Environmental Engineering Department, Environmental Engineering Program Web site: http://www.ce.vt.edu/program_areas/environmental/teach/gwprimer/group18/urbanr.htm
- Lu, C., Knutson, D.E., Fisker-Andersen, J., & Fenske, R.A. (2001). Biological monitoring survey of organophosphorus pesticide exposure among pre-school children in the Seattle metropolitan area. *Environmental Health Perspectives*, 109, 299–303.
- Morse, L.E., Kartesz, J.T., & Kutner, L.S. (1995). Native vascular plants. In E.T. LaRoe, G.S. Farris, C.E. Puckett, P.D. Doran, & M.J. Mac (Eds.), *Our living resources: A report to the nation on the distribution, abundance, and health of U.S. plants, animals, and ecosystems* (pp. 205–209). Washington, DC: United States Department of the Interior, National Biological Service. [Electronic version]. Retrieved January 21, 2003, from <http://biology.usgs.gov/s+t/noframe/j085.htm>
- Schueler, T., & Swann, C. (2000). Understanding water-shed behavior. In T. R. Schueler & H. K. Holland (Eds.), *The practice of watershed protection* (Article 126). Ellicott City, MD: Center for Watershed Protection.
- Templeton, S.R., Zilberman, D., & Yoo, S. J. (1998). An economic perspective on outdoor residential pesticide use. *Environmental Science & Technology*, 2, 416A–423A.
- United States Environmental Protection Agency (US EPA). (1996). *Managing urban runoff*. Pointer No. 7, EPA-841-F-96-004G, Polluted Runoff (Nonpoint Source Pollution) Factsheet. Retrieved January 21, 2003, from <http://www.epa.gov/OWOW/NPS/facts/point7.htm>
- US EPA. (2002a). *Whitman stresses water conservation – suggests ways to cut water use*. Headquarters Press Release August 15, 2002. Retrieved January 21, 2003, from <http://yosemite.epa.gov/opal/admpress.nsf/b1ab9f485b098972852562e7004dc686/c2abc8de2aacb0bf85256c1600615f54?OpenDocument>
- US EPA. (2002b). National Water Quality Inventory: 2000 Report. EPA-841-R-02-001. Factsheet: EPA-841-F-02-003. [Electronic version] Retrieved January 21, 2003, from <http://www.epa.gov/305b/2000report>
- Vesterby, M., & Krupa, K. S. (2001). *Major uses of land in the United States, 1997*. Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin No. 973. [Electronic version]. Retrieved January 21, 2003, from <http://www.ers.usda.gov/publications/sb973>
- Whitford, F. (1993). Pesticide facts and perceptions. *Journal of Extension* 31(1). [Electronic version]. Retrieved January 21, 2003, from <http://www.joe.org/joe/1993spring/a2.html>