

PENNSYLVANIA BIOLOGICAL SURVEY HANDBOOK

CHAPTER 1. THE PENNSYLVANIA BIOLOGICAL SURVEY: SCIENTISTS, WILDLIFE MANAGERS, LAND STEWARDS, AND POLICY MAKERS WORKING TOGETHER FOR BIODIVERSITY CONSERVATION

(A LIVING DOCUMENT: UPDATED AUGUST 2023)

INTRODUCTION

The Pennsylvania Biological Survey (PABS) is an independent, nonprofit, all-volunteer organization comprised of more than 150 scientists, stewardship practitioners, and other interested and knowledgeable individuals working throughout the Commonwealth for state agencies, academic institutions, natural history collections, non-governmental organizations, consultancies, or independently. The purpose of PABS is to increase the knowledge of, and foster the perpetuation of, the natural biological diversity of the Commonwealth of Pennsylvania. PABS is governed by a Steering Committee and members work together through technical committees focused on taxonomic groups and standing committees focused on program areas.

PABS was formed in 1979 in response to the growing evidence of species endangerment and new legislative opportunities to protect declining species, mainly the federal Endangered Species Act. PABS' primary mission from 1979 through 1985 was producing the first compilation of *Species of Special Concern in Pennsylvania*, in a volume of that name, providing status information for 236 Endangered, Threatened, Near Threatened ("vulnerable" or "rare"), Extirpated, or Extinct species, including some whose status was still undetermined (Genoways and Brenner 1985).

In 1988 PABS incorporated as a 501(c)(3) nonprofit, continuing its mission of determining the conservation status of wild species of animals, plants, and other organisms in the state through the work of its technical committees (listed on page 1-6). PABS status determination is science-based and objective and is intended to be an easily and widely understood system (see Chapter 2 of this *PABS Handbook*). The process focuses attention on the prevention of further declines and on the need for action to recover long-term viability for those elements at risk of state extirpation. PABS brings together a network of experts with field experience throughout Pennsylvania to provide input to the state conservation agencies and the wider conservation community. It serves as a forum for professionals regardless of employment status or affiliation to work together toward the conservation of native biodiversity across the state. Because PABS is independent, apolitical, science-based, and focuses on all taxa

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(including those not addressed by existing law) its findings can be viewed as unconstrained and impartial. PABS's role is science, not advocacy.

Memoranda of understanding link PABS and its technical committees with agencies that hold stewardship responsibility in the public trust for mammals and birds (Pennsylvania Game Commission [PGC]) and reptiles, amphibians, fish, and other aquatic organisms (Pennsylvania Fish and Boat Commission [PFBC]). Since 2000, PABS has played a major role in the development of the State Wildlife Action Plans (SWAPs), published every 10 years starting in 2005 by the PFBC and PGC to prioritize conservation actions towards animal species of greatest conservation need (SGCN). The State Wildlife Grant Program (SWG), administered by the U.S. Fish and Wildlife Service, provides funding to address wildlife conservation needs such as research, surveys, and species and habitat management based on the recommendations put forward in the SWAP. SWG funding has been used by the agencies to step up the focus on nongame species conservation and has catapulted the agencies forward in research and management.

This chapter of the *PABS Handbook* summarizes milestones for Threatened and Endangered species protection in Pennsylvania, internal and external to PABS, and highlights how PABS has adapted to address evolving needs over the organization's more than four-decades-long history. It concludes with a discussion of PABS's present and likely future role in biodiversity conservation in the Keystone State.

HISTORICAL HIGHLIGHTS

The Pennsylvania Biological Survey (PABS) traces its origin to an initiative by representatives of the National Audubon Society, Pennsylvania Game Commission, Pennsylvania Fish Commission (later to become Pennsylvania Fish and Boat Commission), and Department of Environmental Resources (later to be divided into the Department of Conservation and Natural Resources and the Department of Environmental Protection), who met in 1979 to discuss the need to develop a coordinated inventory and assessment of the flora, fauna, and funga of Pennsylvania. The Survey's first task was to document the statuses of plants and animals of conservation concern in the state. A subsequent five-year effort resulted in the publication in 1985 of *Species of Special Concern in Pennsylvania*, which was published as Special Publication #11 of the Carnegie Museum of Natural History (Genoways and Brenner 1985).

This volume contained information on the statuses of 236 species, including representatives of the six traditional classes of vertebrates present in the state (birds, mammals, reptiles, amphibians, and lampreys and ray-finned fishes), selected groups of invertebrates, and vascular plants. The authors' foreword states that the value of the effort was to establish a baseline against which future inventory and monitoring results could be compared. In fact, bringing together the "vast cadre of interested and knowledgeable professional biologists and amateur naturalists" to achieve consensus provided the model for the continued efforts of PABS to "increase the knowledge of and foster the perpetuation of the natural biological diversity" in the state.

Those who worked on the project realized that the publication of *Species of Special Concern* represented only a first step in their efforts to assess the native biota of the Commonwealth. Thus, experts on vascular plants, invertebrates, fishes, amphibians, reptiles, birds, and mammals who had worked on the project continued their survey efforts and organized into technical committees. Although this *ad hoc* biological survey worked effectively to update and expand the coverage of its survey of the Commonwealth's native biota, members realized that the continuing nature of this effort required a more formal organization. A Steering Committee was formed, consisting of the chairs of the technical committees plus representatives of the natural resource agencies (then Pennsylvania

Game Commission, Pennsylvania Fish Commission, Department of Environmental Resources, and Department of Agriculture), and the Pennsylvania Natural Heritage Program.

TIMELINE

The timeline below focuses on events involving PABS members. Several important milestones external to the organization affected its development and are also noted below.

1978: The Pennsylvania Fish Commission and Pennsylvania Game Commission established their endangered species programs (with extremely limited staffing).

1979: Meetings were held by the National Audubon Society, Pennsylvania Game Commission, Pennsylvania Fish Commission, Department of Environmental Resources, and representatives of nongovernmental organizations and interested scientists to discuss the need to develop a coordinated inventory and status assessment of the flora and fauna of Pennsylvania.

1982: The Pennsylvania Natural Heritage Program (PNHP) was established (then called the Pennsylvania Natural Diversity Inventory, PNDI) as a partnership between the Western Pennsylvania Conservancy, The Nature Conservancy, and the Department of Environmental Resources. The program covered the Commonwealth comprehensively, although the eastern and western portions were administratively separate.

1982 external milestone: The Wild Resource Conservation Fund (WRCF) was created, funded by a state income tax refund checkoff (and later, special license plate sales) generating \$350,000-\$400,000 per year for the first decade (Kosack 1995). This program supported the early efforts of PABS.

1982 external milestone: The Wild Resource Conservation Act was adopted to “enhance the constitutional rights guaranteed by” the Environmental Rights Amendment of the Pennsylvania constitution by establishing a procedure for the protection of wild flora and fauna and imposing powers and duties on the Department of Environmental Resources, now Department of Conservation and Natural Resources, to “conserve and protect wild plant species.” The act is described in detail in Chapter 3 of this *PABS Handbook*, on pages 3-26 to 3-52.

1985: PABS published *Species of Special Concern in Pennsylvania* (Genoways and Brenner 1985).

1986: Technical committees began to be established (See Appendix C for dates and leadership details).

1987: PABS sponsored a plenary symposium at the annual meeting of the Pennsylvania Academy of Science titled “Pennsylvania Biological Survey: A Legacy of Penn’s Woods.”

1988: In January the Steering Committee developed and adopted a constitution and bylaws. In September PABS was incorporated as a nonprofit scientific organization under the laws of the Commonwealth of Pennsylvania.

1988 external milestone: The PNHP initiated the County Natural Heritage Inventory, which systematically inventoried the native biodiversity resources of each of the 67 counties. Through this new phase of inventory and data collection, the PNHP grew steadily to support this effort.

1989: PABS was granted tax-exempt status under Section 501(c)(3) of the Internal Revenue Service Code.

1989: The PGC designated the Mammals Technical Committee and Ornithological Technical Committee as official scientific advisory bodies to the Commission. Under the terms of a memorandum of understanding between PABS

and the PGC, representatives of the two organizations meet annually to discuss matters relating to conservation of the Commonwealth's mammals and birds.

1989: PABS published the journal article "Status of Cave-dwelling Bats in Pennsylvania" (Dunn & Hall 1989).

1990: PABS published the journal article "Survey of the Statuses of the Mammals of Pennsylvania" (Kirkland & Krim 1990).

1990: PABS sponsored a plenary symposium at the annual meeting of the Pennsylvania Academy of Science titled "Blueprint for the Maintenance of Biodiversity in Pennsylvania." A summary of this symposium, "Perspectives on Biodiversity in Pennsylvania and its Maintenance," a commentary paper, appeared in the *Journal of the Pennsylvania Academy of Science* (Kirkland et al. 1990).

1991: PABS adopted a new [constitution and bylaws](#) (which has evolved since then by approval of amendments by a quorum of the Steering Committee).

1992: The first Box Score was prepared quantifying the species known to live in the wild in Pennsylvania, with estimates of the total numbers of species and subspecies of mammals, birds, amphibians, reptiles, fishes, invertebrates, vascular plants, bryophytes, protists, fungi, and lichens, including the numbers in each group currently categorized as Endangered, Threatened, and Extinct or Extirpated. The Box Score was intended as an annual "report card" on biodiversity conservation performance.

1992: PABS published *Annotated List of the Birds of Pennsylvania* (Santner et al. 1992).

1992: PABS developed an association with the Center for BioDiversity Research at Penn State. The intent of this mutually supportive association was to promote interagency communication and species status assessments in order provide a partial basis for constructing a statewide network of bioreserves. To underscore the importance of this initiative, PABS contributed to a report titled, "A Heritage for the 21st Century: Conserving Pennsylvania's Native Biological Diversity," published by the PFBC (Thorne et al. 1995).

1996-1997: The PABS Education Standing Committee, chaired by Dr. Paulette Johnson at Slippery Rock University, developed a Pennsylvania biodiversity education project for Pennsylvania school students based on Windows on the Wild, a program of the World Wildlife Fund, Washington, D.C.

1998: PABS held a conference at Penn State (1996) resulting in the report, "Inventory and Monitoring of Biotic Resources in Pennsylvania" (Hassinger et al. 1998).

1999: PABS hosted a bioblitz of the Stony Creek watershed in State Game Lands 211, Lebanon County, attended by 225 people and covering 10 square miles.

2000 external milestone: The U.S. Congress created the State and Tribal Wildlife Grants program to address the longstanding need to conserve declining fish and wildlife. The program led to the development of State Wildlife Action Plans and is the principal source of funding for their implementation.

2001 external milestone: State Wildlife Grants began providing federal funds, through the U.S. Fish and Wildlife Service, to states for nongame species conservation.

2004: The Pennsylvania Wild Resource Conservation Program awarded a grant to PABS (Jerry Hassinger, principal investigator) for "A review and update of species status categories and criteria that help determine conservation priorities in Pennsylvania." (See Appendix E for a full list of grants awarded to PABS members for PABS work.)

2004-2005 external milestone: The first State Wildlife Action Plan was developed jointly by the Pennsylvania Game Commission and the Pennsylvania Fish and Boat Commission, with members of PABS technical committees contributing expertise to species status assessments and species accounts in most of Chapter 1, Species of Greatest Conservation Need.

2006: A memorandum of understanding was signed between PABS and the Pennsylvania Fish and Boat Commission, which has jurisdiction over fishes, amphibians, reptiles, and aquatic invertebrates, establishing the Fishes Technical Committee, Amphibians and Reptiles Technical Committee, and Invertebrates Technical Committee (and by extension, the later split-off Mollusks Technical Committee) as official scientific advisory bodies to the Commission. [This solidified PABS's official advisory capacity with PFBC, replacing the Advisory Committee on Fishes and the Herpetology Advisory Committee, both formed in 1976 when PFBC created the position of Endangered Species Coordinator.](#)

2006 external milestone: The Pennsylvania Natural Heritage Program became a partnership between the Western Pennsylvania Conservancy, Department of Conservation of Natural Resources, Pennsylvania Game Commission, and Pennsylvania Fish and Boat Commission.

2010: The species accounts for the 2005 State Wildlife Action Plan were recorded permanently in PABS published *Terrestrial Vertebrates of Pennsylvania: A Complete Guide to Species of Conservation Concern* (Steele et al. 2010).

2011: The annual Box Score was reorganized to a finer level of detail, with organisms divided into nearly 100 taxonomic categories (by kingdom, phylum, and class) and species within each taxonomic category enumerated by whether they are ranked as Endangered, Threatened, recently downlisted, Extirpated, Extinct, native, nonnative, non-breeding migrants, and Pennsylvania responsibility species.

2014-2015 external milestone: The second State Wildlife Action Plan was developed jointly by the Pennsylvania Game Commission and the Pennsylvania Fish and Boat Commission, with members of PABS technical committees contributing expertise to species status assessments and species accounts in most of Chapter 1, Species of Greatest Conservation Need.

2016-2023: PABS published the four-chapter *PABS Handbook*, summarizing the organization's background and mission, its procedures and those of the state agencies, and laws and regulations pertinent to biodiversity conservation in the state. The intended readership includes PABS members, educators, students, decision makers, developers, landowners, and other interested citizens.

2023: PABS adopted a [code of conduct](#) for members.

PRESENT-DAY ROLE

ORGANIZATION

The survey is governed by a Steering Committee, which consists of five elected officers (President, Immediate Past President, President Elect, Secretary, and Treasurer), chairpersons of ten technical committees and one standing committee, representatives of the Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), Pennsylvania Natural Heritage Program (PNHP), Department of Conservation and Natural Resources (DCNR), Department of Agriculture, Department of Military and Veterans Affairs (representing the resource management staff at Fort Indiantown Gap, Letterkenny Army Depot, and Tobyhanna Army Depot), U.S. Fish and Wildlife Service, plus a small number of at-large members representing organizations and programs with strong interest and influence in safeguarding the state's biodiversity, including the Pennsylvania Natural Heritage

Program, a consortium of staff from the PGC, PFBC, DCNR, and the Western Pennsylvania Conservancy. (Past officers and chairs of technical and standing committees are listed in Appendices B and C.) The Steering Committee meets twice each year (usually in January/February virtually and July/August in-person; see Appendix D). Individual technical and standing committees meet as the need arises, with a general target of at least once each year.

At present (2023), the technical committees are:

- Amphibians and Reptiles (ARTC)
- Bryophytes and Lichens (BLTC)
- Ecological Communities (ECTC)
- Fishes (FTC)
- Invertebrates (ITC)
- Mammals (MTC)
- Mollusks (Mollusks TC)
- Museums and Systematics (MSTC)
- Mycological and Protists (MAPS TC)
- Ornithological (OTC)
- Vascular Plants (VPTC)

There is one standing committee:

- Climate Change (CCSC)

MEMBERSHIP

Membership includes individuals, both professionals and dedicated amateurs, who volunteer their expertise and energies to help achieve PABS's purpose. Individuals with special biodiversity-related or taxon-based knowledge are eligible for membership and expected to uphold the PABS [code of conduct](#). New members of some technical and standing committees are appointed by the committee chair or co-chairs; in others, they are voted in by a quorum of the committee's current members. Steering Committee agency representatives are appointed by agency administrative staff. Steering Committee members-at-large are appointed by the PABS president, often but not always from the ranks of the technical and standing committee membership.

ACTIVITIES

The Survey's work includes (but is not limited to):

- Determining the status of each wild species or subspecies of plant, animal, or other organism known to occur in Pennsylvania, using uniform criteria, within a formal system of categories (Endangered, Threatened, etc.). For more information on this aspect of PABS's work, see Chapter 2 of this *PABS Handbook*.
- Providing advice and guidance to state and federal conservation and natural resource management agencies regarding the status and management of any or all species or subspecies of plants, animals, fungi, and other organisms in Pennsylvania and the Commonwealth's ecological communities. PABS leadership and technical committee chairs meet annually with the PGC and PFBC Executive Directors (or their delegates) and other staff to review species status, critical habitats, research needs and priorities, conservation needs, and other issues of mutual interest as called for in the MOUs with those agencies.
- Supporting the PGC and PFBC to maintain, revise, and implement the State Wildlife Action Plan, particularly by identifying, describing, and providing conservation best practices for Species of Greatest Conservation Need.
- Communicating the results of PABS's research and activities to appropriate audiences, including the scientific community, state and federal agencies, legislative bodies, and the public. PABS's communication efforts include, but are not limited to:
 - Updating the Box Score every 5 years. The Box Score is a count of species or subspecies by taxonomic group that are PABS-recommended Endangered, Threatened, Near Threatened, downlisted, and presumed Extirpated. For those taxonomic groups for which there is sufficient information, it also

- includes total counts of Pennsylvania species and subspecies that are globally extinct, native and nonnative breeding in the state, non-breeding migrants, and Pennsylvania responsibility species.
- Publishing species checklists at the state scale to engage the scientific community, state and federal agencies, and the public.
 - Facilitating and enhancing communication among Pennsylvania's natural resource scientists, educators, managers, and decision makers, including by co-hosting meetings with conservation leaders in Pennsylvania to provide a forum for all PABS members and others to meet and share perspectives across all taxonomic groups.
 - Promoting the preservation, digitization, and availability for research of Pennsylvania's natural history collections.
 - Fostering research by identifying research needs and questions within technical committees and in coordination among technical committees. This research increases and refines our knowledge of the biota of Pennsylvania, including the status and distribution of individual species or subspecies of plants, animals, fungi, and other organisms, as well as ecological communities.
 - Leveraging community science efforts, including iNaturalist, eBird, and similar crowd-sourced data and supporting on-the-ground conservation activities to secure imperiled species.

REFERENCES CITED

- Genoways, H.H. and F.J. Brenner, Pennsylvania Biological Survey. 1985. *Species of Special Concern in Pennsylvania*. Carnegie Museum of Natural History, Pittsburgh. vi+430 pp. Available from archive.org/details/speciesofspecia111985geno (accessed October 26, 2022).
- Hassinger, J.D., R.J. Hill, G.L. Storm, and R.H. Yahner, eds. 1998. *Inventory and Monitoring of Biotic Resources in Pennsylvania*. Series Volume 1, Pennsylvania Biological Survey, 220 pp.
- Kirkland, G.L. and P.M. Krim. 1990. Survey of the statuses of the mammals of Pennsylvania. *Journal of the Pennsylvania Academy of Science* 64:33-45.
- Kirkland, G.L., A.F. Rhoads, and K.C. Kim. 1990. Perspectives on biodiversity in Pennsylvania and its maintenance. *Journal of the Pennsylvania Academy of Science* 64:155-159.
- Kosack, J. 1995. *The Pennsylvania Game Commission, 1895-1995: 100 Years of Wildlife Conservation*. Pennsylvania Game Commission, Harrisburg, iv+233 pp. Available from archive.org/details/pennsylvaniagame00kosa (accessed October 26, 2022).
- Santner, S.J., D.W. Brauning, G. Schwalbe, and P.W. Schwalbe. 1992. *Annotated List of the Birds of Pennsylvania*. Ornithological Technical Committee, Pennsylvania Biological Survey, 59 pp.
- Steele, M.A., M.C. Brittingham, T.J. Maret, and J.F. Merritt, editors. 2010. *Terrestrial Vertebrates of Pennsylvania: A Complete Guide to Species of Conservation Concern*. Johns Hopkins University Press, Baltimore, xviii+507 pp.

APPENDIX A: PAST PUBLICATIONS AND UNPUBLISHED REPORTS

- Genoways, Hugh H. and Fred J. Brenner, editors. 1985. *Species of Special Concern in Pennsylvania*. Special Publication of Carnegie Museum of Natural History, Number 11, vi+-430 pp.
- Dunn, John P. and John S. Hall. 1989. Status of Cave-dwelling Bats in Pennsylvania. *Journal of the Pennsylvania Academy of Science* 63(3):166-172. (PABS Publication 2)
- Kirkland, Gordon L., Jr. and Patricia M. Krim. 1990. Survey of the statuses of the mammals of Pennsylvania. *Journal of the Pennsylvania Academy of Science* 64(1):33-45. (PABS Publication 1)
- Kirkland, Jr., Gordon L., Ann F. Rhoads, and Ke Chung Kim. 1990. Perspectives on Biodiversity in Pennsylvania and its Maintenance. *Journal of the Pennsylvania Academy of Science* 64(3):155-159. (PABS Publication 3)
- Shiffer, C.N. 1991. *Fish Commission Connection*. *Pennsylvania Angler*, 60(5): 7.
- Santner, Steven J., Daniel W. Brauning, Glenna Schwalbe, and Paul W. Schwalbe. 1992. *Annotated List of the Birds of Pennsylvania*. Ornithological Technical Committee, Pennsylvania Biological Survey, 59 pp. (PABS Publication 4)
- Brauning, Daniel W., Margaret Brittingham, Douglas A. Gross, Robert C. Leberman, Terry L. Master and Robert S. Mulvihill. 1994. Pennsylvania breeding birds of special concern: a listing rationale. *Journal of the Pennsylvania Academy of Science* 68(1):3-28. (PABS Publication 5)
- Hassinger, Jerry D., Robert J. Hill, Gerald L. Storm, and Richard H. Yahner, eds. 1998. Inventory and Monitoring of Biotic Resources in Pennsylvania. Series Volume 1, Pennsylvania Biological Survey, 220 pp. (PABS Publication 6)
- Hassinger, Jerry. 1998 (unpublished). Pennsylvania Biological Survey: Stony Creek State Game Lands 1999 bioblitz. Pennsylvania Biological Survey.
- Hassinger, Jerry. 1998 (unpublished). Pennsylvania Biological Survey: Stony Creek State Game Lands 1999 bioblitz. Pennsylvania Biological Survey.
- Kim, Ke Chung and John Grehan. 1999 (unpublished). Identification of Stony Creek State Game Lands 1999 bioblitz invertebrates. Pennsylvania State University.
- Hassinger, Jerry. 2003 (unpublished). Review and update of species status categories and criteria that help determine conservation priorities in Pennsylvania. Pennsylvania Biological Survey.
- Haas, Franklin C. and Barbara M. Haas. 2005. Annotated List of the Birds of Pennsylvania, Second Edition. Ornithological Technical Committee, Pennsylvania Biological Survey, 52 pp. (PABS Publication 7)
- Stauffer, J.R., R.W. Criswell, and D.P. Fischer. 2016. *The Fishes of Pennsylvania*. *Cichlid Press: El Paso, TX*, 556 pp.

APPENDIX B: PAST OFFICERS

From its founding in 1979 to its incorporation as a 501(c)(3) organization in 1982, PABS's leadership structure was informal. The principal leaders in the earliest years of PABS were Jerry Hassinger, Hugh Genoways, Gordon Kirkland, C. Jack McCoy, and Mike Puglisi.

Year	President	President Elect	Immediate Past President	Recording Secretary	Treasurer
1982-1984	*	*	*	*	*
1984-1986	*	*	*	*	*
1986-1988	Jerry Hassinger	*	*	Tom Smith	*
1988-1991	Gordon Kirkland	Jerry Hassinger	*	*	*
1991-1993	Jerry Hassinger	Tony Wilkinson	Gordon Kirkland	Al Wheeler	Harold Webster
1993-1995	Tony Wilkinson	Jerry Hassinger	Jerry Hassinger	*	*
1995-1997	Jerry Hassinger	K.C. Kim	Tony Wilkinson	*	Merlin Benner
1997-1999	K.C. Kim	Ann Rhoads	Jerry Hassinger	*	*
1999-2002	Ann Rhoads	Jerry Hassinger	K.C. Kim	*	*
2003-2007	Jerry Hassinger	Frank Felbaum	Ann Rhoads	Janet Wright	Jim Stimmel
2007-2009	Frank Felbaum	Carolyn Mahan	Jerry Hassinger	Lisa Williams	Greg Czarnecki
2009-2011	Carolyn Mahan	Tim Maret	Frank Felbaum	Betsy Leppo	Greg Czarnecki
2011-2013	Tim Maret	Rob Criswell	Carolyn Mahan	Betsy Leppo	Greg Czarnecki
2013-2015	Rob Criswell	Roger Latham	Tim Maret	Betsy Leppo	Greg Czarnecki
2015-2017	Roger Latham	Reg Hoyt	Rob Criswell	Beth Meyer	Tim Maret
2017-2019	Reg Hoyt	Ken Klemow	Roger Latham	Charlie Eichelberger	Tim Maret
2019-2021	Ken Klemow	Andy Wilson	Reg Hoyt	Charlie Eichelberger	Roger Latham
2021-2023	Andy Wilson	Brady Porter	Ken Klemow	Charlie Eichelberger	Roger Latham
2023-2024	Brady Porter	Elizabeth Crisfield	Andy Wilson	Charlie Eichelberger	Roger Latham

* Unknown

APPENDIX C: TECHNICAL COMMITTEE AND STANDING COMMITTEE CHAIRS

AMPHIBIANS & REPTILES (ARTC)

- 1979-1991: C.J. McCoy
- 1991-?: Art Hulse
- 2003-2011: Tim Maret
- 2011-2017: Howard Reinert
- 2018-present: Gian Rocco

BRYOPHYTES & LICHENS (BLTC)

- 1979-1988: Harold Webster
- 1991-2005?: Christine Manville
- 2007-2011: James Lendemer
- 2012-present: Scott Schuette

ECOLOGICAL COMMUNITIES (ECTC; formerly Community Classification SC)

- 1988-1993?: Ke Chung Kim
- 2003: Jean Fike
- 2007-2009: Greg Podniesinski
- 2010: Ephraim Zimmerman
- 2011: Greg Podniesinski
- 2012-2016: Ephraim Zimmerman
- 2017-present: Greg Podniesinski

FISHES (FTC)

- 1992-2003: J.R. Stauffer & Bob Carline
- 2004-2012: Rob Criswell
- 2012-2018: David Argent
- 2019-2022: Brady Porter
- 2023-present: Rob Criswell

INVERTEBRATES (ITC; from 2005 to 2015 split into Terrestrial Arthropods, Aquatic Arthropods, & Arachnids TCs)

- 1979-1986: Paul Opler
- 1986-1998?: Charles W. Bier
- 1999-2002: informally led by John Rawlins, Greg Hoover, Jane Earle, Tim Pearce, Charlies Bier, Ke Chung Kim
- 2003-2005: Greg Hoover
- 2005-2006: unknown (TATC), Greg Hoover (AATC), Charles Bier (ATC)
- 2006-2015: Betsy Leppo (TATC), Jane Earle (AATC), Charles Bier (ATC)
- 2016-2017: Betsy Leppo, Jane Earle
- 2018-2019: Betsy Leppo & Mike Bilger
- 2019-2020: Pete Woods & Mike Bilger
- 2021-present: Pete Woods

MAMMALS (MTC)

- 1979-1986: Hugh Genoways
- 1986-1988: Gordy Kirkland
- 1988-1991: Duane Schlitter
- 1991-1992: Richard Yahner
- 1992-?: Gordon L. Kirkland, Jr.
- 2003-2004: Alicia Linzey
- 2004-2007: Steve Ropski & Carolyn Mahan
- 2008-2009: Carlos Ludica & Shahroukh Mistry
- 2009: Sandy Whidden
- 2010-2011: Sandy Whidden & Michael Gannon
- 2012-2013: Sandy Whidden & Reg Hoyt
- 2014: Reg Hoyt and Charlie Eichelberger
- 2014-2015: Scott Bearer & Charlie Eichelberger
- 2015-2016: Scott Bearer & Keely Roen
- 2016: Lindsey Heffernan & Keely Roen
- 2017: Lindsey Erdman & Joe Duchamp
- 2018: Joe Duchamp
- 2019: Joe Duchamp & Aaron Haines
- 2020: Emily Domoto & Aaron Haines
- 2021: Emily Domoto & Mike Scafani
- 2023-present: Joe Wisgo &

MOLLUSKS TC

- ?-?:
- ?-?:
- ?-?:
- ?-present: Rick Spear

MYCOLOGICAL & PROTISTS (MAP TC; formerly Protists & Fungi TC)

- 1979-1991: Paul Biebel
- 1992-?: C.B. Wolfe, Jr.
- 2003: vacant
- 2004-2012: John Plischke III
- 2012-2016: Barrie Overton
- 2018-present: Jerry Hassinger

ORNITHOLOGICAL (OTC)

- 1979-1988: Frank Gill
- 1988-1993: Dan Brauning
- 1993-2004: Doug Gross
- 2004-2008: Bob Ross

- 2008-2016: Margaret Brittingham
- 2016-present: Terry Master

VASCULAR PLANTS (VPTC)

- 1979-1986: Paul Wiegman
- 1986-1993?: Ann Rhoads
- 2003-2005: Carol Loeffler
- 2007-2009: Tim Block
- 2009-2012: Bonnie Isaac
- 2013-2016: Chris Hardy
- 2017-2020: Ken Klemow
- 2020-2023: Heather Sahli
- 2023-present: Rachel Goad

CLIMATE CHANGE SC

- 2009-2019: Greg Czarnecki
- 2019-2020: vacant
- 2021-present: Mary Ann Furedi

ENVIRONMENTAL EDUCATION SC

- 1991-1993: Paul Zeph
- 1993-2003: ?
- 2003-2009: Paulette Johnson
- 2009-present: vacant

NEWSLETTER SC

- 1991-1993: Daniel Klem
- 1993-2003: ?
- 2003-2009: Eileen Butchkoski
- 2009-present: vacant

TEMPORARY STANDING COMMITTEES ACTIVE BETWEEN 1991 AND 2005

Genetic Resources (Kim Steiner)

Membership Directory (Frank Felbaum & Jerry Hassinger)

Wildlife Diversity Funding Initiatives (Lisa Williams)

Biotic Checklist (Jerry Hassinger)

APPENDIX D: PAST MEETINGS

Documentation of meetings before 2003 is fragmentary. Additional dates and places will be added as records are found.

Date	Place
2 Aug 1996	PSU, Land and Waters Building, State College
10 Jan 1997	PSU, Land and Waters Building, State College
23 Jan 2003	Benjamin Olewine III Nature Center, Wildwood Park, Harrisburg
9 Oct 2003	Hawk Mountain, Kempton
22 Jan 2004	PSU, Land and Waters Building, State College
12 Aug 2004	Benjamin Olewine III Nature Center, Wildwood Park, Harrisburg
20 Jan 2005	PFBC Headquarters, Harrisburg
9-10 Aug 2005	Sieg Conference Center, Lock Haven University
26 Jan 2006	PFBC Headquarters, Harrisburg
9 Aug 2006	Sieg Conference Center, Lock Haven University
25 Jan 2007	Gander Mountain, Harrisburg
7 Aug 2007	PSU, Land and Waters Building, State College
31 Jan 2008	H.R. Stackhouse, Bellefonte
5-6 Aug 2008	H.R. Stackhouse, Bellefonte
4 Feb 2009	Benjamin Olewine III Nature Center, Wildwood Park, Harrisburg
10 Aug 2009	DCNR Bureau of Geological Survey, Middletown
26 Jan 2010	DCNR Bureau of Geological Survey, Middletown
17 Aug 2010	H.R. Stackhouse, Bellefonte
11 Feb 2011	H.R. Stackhouse, Bellefonte
17 Aug 2011	H.R. Stackhouse, Bellefonte
26 Jan 2012	DCNR Bureau of Geological Survey, Middletown
15 Aug 2012	PFBC Visitors Center, Bellefonte
24 Jan 2013	DCNR Bureau of Geological Survey, Middletown
15 Aug 2013	H.R. Stackhouse, Bellefonte

Date	Place
23 Jan 2014	DCNR Bureau of Geological Survey, Middletown
17 Jul 2014	H.R. Stackhouse, Bellefonte
1 Apr 2015	Benjamin Olewine III Nature Center, Wildwood Park, Harrisburg
19 Aug 2015	H.R. Stackhouse, Bellefonte
29 Jan 2016	PFBC Headquarters, Harrisburg
24 Aug 2016	PFBC Visitors Center, Bellefonte
20 Jan 2017	Benjamin Olewine III Nature Center, Wildwood Park, Harrisburg
6 Oct 2017	PFBC Headquarters, Harrisburg
19 Jan 2018	PFBC Central Regional Office, Bellefonte
24 Aug 2018	PFBC Central Regional Office, Bellefonte
18 Jan 2019	PFBC Headquarters, Harrisburg
23 Aug 2019	PFBC Central Regional Office, Bellefonte
10 Jan 2020	PFBC Central Regional Office, Bellefonte
23 Aug 2020	virtual meeting (COVID-19 pandemic)
22 Jan 2021	virtual meeting (COVID-19 pandemic)
20 Aug 2021	virtual meeting (COVID-19 pandemic)
14 Jan 2022	virtual meeting (COVID-19 pandemic)
22 Jul 2022	Kings Gap Environmental Education Center, Cumberland County
3 Feb 2003	virtual meeting
4 Aug 2023	PFBC Central Regional Office, Bellefonte

APPENDIX E: WRCP GRANTS AWARDED TO PABS OR TO INDIVIDUALS REPRESENTING PABS

Award Number	Year	Title	Awardee	PI
878931	1987	Survey of the statuses of Pennsylvania mammals	Pennsylvania Biological Survey	Gordon L. Kirkland
389018	1998	Pennsylvania Biological Survey: Stony Creek State Game Lands 1999 bioblitz	Pennsylvania Biological Survey	Jerry Hassinger
389188	1999	Identification of Stony Creek State Game Lands 1999 bioblitz invertebrates	Pennsylvania State University	Ke Chung Kim, John Grehan
WRCP-28-04	2003	Review and update of species status categories and criteria that help determine conservation priorities in Pennsylvania	Pennsylvania Biological Survey	Jerry Hassinger