Minutes of the 25th Annual Rare Plant Forum
29 March 2003, 10 AM
Bush House Hotel, Bellefonte

Present: Jim Bissell, Tim Block, Lucy Boyce, Beth Brokaw, Eric Burkhart, Robert Coxe, Tim Draude, Janet Ebert, Amy Faivre, Chris Firestone, Steve Grund, Robert Gruver, Maggie Harlan, Mary Joy Haywood, George Hildenbrandt, Jack Holt, Robert Holt, Bonnie Isaac, Joe Isaac, Karen Johnston, Joan King, Larry Klotz, John Kunsman, Carol Loeffler, James Macklin, Darlene Madarish, Joel McNeal, Rick Mellon, April Moore, Cynthia Morton, Susan Munch, Glenda Paxton, William Paxton, Barry Poglein, Ann Rhoads, Autumn Sabo, Peter Sharpe, Sue Thompson, Nina Thumser, Erin Tripp, Jeff Wagner, Paul Wiegman.

Introduction, updates. Steve Grund welcomed participants and gave a brief introduction to the purpose of the Rare Plant Forum – to develop and maintain a list of plant species needing protection in Pennsylvania, and to categorize these plant species as endangered, threatened, etc., using the best scientific information available. The first of the annual meetings that we now call the Rare Plant Forum was held 24 years ago, and a list of plant species was developed then based on occurrence in just a few counties. The plant list, known as the Plant Species of Special Concern (POSCIP) list, is on the web now and is up-to-date at this time. The site, which has other information as well, is:

www.dcnr.state.pa.us/forestry/pndi/pndiweb.htm

In other updates, Grund noted that what we have been calling PNDI, the conservation science program that among other things tracks rare species, is now called the Pennsylvania Natural Heritage Program (PNHP). "PNDI" (Pennsylvania Natural Diversity Inventory) may end up referring to just the environmental review part of the program. Until recently we had PNDI East, PNDI Central, and PNDI West. These groups are now merged into one "happy family".

Grund reminded us that Autumn Sabo, environmental review botanist for the PA Heritage Program, has developed a form to help standardize the way that the surveys are done by consultants. The form has been e-mailed out and Sabo would appreciate feedback.

Sue Thompson updated us on the activities of the PA Biodiversity Partnership, a public-private organization recommended in the Governor's 21st Century Environmental Review. The Partnership promotes coordination and communication among groups supporting the conservation of biodiversity in PA and has been meeting since 2001. Their first project is a statewide comprehensive plan. Phase 1 is production of a color book entitled *Snapshot 2002*, of which 15,000 copies have been printed, and a six page executive summary, of which 50,000 copies are printed. The Partnership wants to get the summary, or the book itself, into the hands of people making land use decisions and who need our help. Thompson had a number of copies of the *Snapshot* for us and invited us to

contact her (contact information is on the *Snapshot)* to request additional copies of the summary and/or the book.

The PA Biodiversity Partnership also needs input from people working on biodiversity and from the general public. The target date is 2005 for developing a comprehensive plan to protect biodiversity in the state. Thompson had a survey which she requested that we complete and return (a prize is being offered for this: a reprinted copy of *Inventory and Monitoring in PA).*

Thompson also noted that PA Biodiversity Partnership hosts a listserve for open discussion. There are now approximately 400 members, and 1-2 messages per day. One can join by going to www.pa.biodiversity.org and clicking on the listserve button.

Grund announced that available to us on the table was a draft key to *Pycnanthemum* by Troy Weldy of the NY Heritage Program. We are welcome to use the key and Weldy would welcome suggestions if we have them.

Chris Firestone provided several items for us, including applications for Wild Plant Management Permits for collecting listed plants. There is a $5 fee for a permit. She reported that the Wild Resource Conservation Fund has $150,000 available for grants this year; applicants should send a letter of intent to her or to Frank Felbaum by April 30 and should get the application itself in by June 30. Funding is for 2004 and decisions on which projects to fund would be made in November. Firestone also made available to us brochures on native plants and invasive plants, along with a PA Game Commission and Fish Commission brochure showing the layout of a native plant garden at a garden expo. WRCF has a video, poster, patch, and magnet for the year. This year's theme is invasive plants, although the patch features *Trollius laxus.* (The magnet is a "No purple loosestrife" design.) $5 from purchases goes to WRCF. Contact Chris Firestone or Frank Felbaum for copies. Finally, there is a video from Penn State's IPM program on invasives. Again, contact Chris Firestone if interested.

In memory of Jim Parks. Steve Grund opened by saying that we were sorry to hear over Christmas of the passing of Jim Parks, and he passed the floor to Ann Rhoads to say a few words. Rhoads said that we of the botanical community suffered quite a loss, and she cited Parks' thoughtful contributions at Rare Plant Forums and at meetings of the Vascular Plant Technical Committee. His intellectual yet wry approach made it a joy to work with him and we will all miss his comments today. Some 20 years ago he introduced her to a lot of fern sites in Lancaster County. In these ways and in his research and teaching he has left a great legacy and a void. (Secretary's note: a look through minutes turns up many valuable insights from Jim, and many colorful images. He was the one who referred to species such as *Nuphar lutea* as the "gunk at the bottom of the barrel of TU species". Yet he could be charmingly optimistic: *Desmodium,* he said, could be figured out in a couple of weeks if someone were to go out in a pair of corduroy trousers. His was the story of several students who sent eight specimens from one *Crataegus* individual to an expert and got them back identified as representing three different species. His famous comment about lawyers and cracks was recalled by Paul

Wiegman (see under **HONORING THE PEOPLE WHO GOT THE RARE PLANT FORUM STARTED,** below).

Grund added that Jim Parks was not a politician yet he was politically astute, at the same time that he was adamant about basing decisions on science. The way that Jim can live on in us is for us to always keep him in mind – what would he had said, in a given circumstance. Jim Bissell mentioned that he and Parks had made plans to botanize last fall, and that Parks' passing was a big, big loss. He was a great guide. Mary Joy Haywood remarked on the loss to Millersburg University for his regular and summer programs. Grund noted that on the Millersburg website was an article by Jim Parks, offering perspectives as a retiring faculty member. The article, if still up, is well worth reading and says a lot about Jim. Finally, Rhoads remarked that many people working in the DCNR today were students of Jim Parks. Thus he had a great impact on conservation programs both through his own work and through his students.

Splitting up *Aster* into multiple genera. Steve Grund introduced the issue by saying that according to our current understanding of things, the genus *Aster* needs to be split up. It is paraphyletic: some goldenrods are more closely related to some asters than some asters are to each other. Cynthia Morton then briefed us on recent research. There are two articles that are particularly relevant: a 1995 article by Guy Nesom (Phytologia 79:281-285) which shows the features he is using to split the genus, and a 1994 article by the same author (Phytologia 77:141-297) containing a morphological and phylogenetic analysis. More recent molecular analysis by Dr. Brouillet, not yet published, is agreeing 99% with the morphological analysis. The findings are thus coming from more than one type of data and should be stable.

Grund noted that one reason the asters are difficult is that they are a big group; splitting the genus may help people to sort them out more easily. Tim Draude disagreed, saying that from the perspective of a field worker, asters are a perfectly good group and he couldn't see that splitting them up would add clarity.

Regarding where the field references are: James Macklin noted that the third edition of John Semple's book, *Cultivated and Native Asters of Ontario (Compositae: Astereae)*, is available. He kindly brought some copies; one can also order from the University of Waterloo Biology Series, Department of Biology, University of Waterloo, Ontario, N2L 3G1. VISA not accepted; price is $28 although we aren't sure if that's US or Canadian. This third edition does split up *Aster*, arguing that the time has come. (The second edition did not, because the authors felt that a fraction of doubt remained at that time.) Grund noted that John Kartesz, in updating the USDA website, went with the split and the new names several years ago. NatureServe.org, which has similar range maps that include Canada and that show species' statuses within states, has gone with the split as well. Grund had a sheet for us allowing us to crosscheck Ann Rhoads and Tim Block's *Plants of Pennsylvania* names with the new names (but not implying a real opinion on the whole issue, he said). Grund said that we would take up the issue of whether we should split *Aster* ourselves, on the POSCIP list, at the Vascular Plant Technical Committee meeting to follow the Rare Plant Forum; anyone interested was welcome to stay. NOTE:

the issue was discussed at greater depth at the VPTC meeting and we decided to split *Aster* on the POSCIP list, with the name *Aster* also listed as a synonym for reference for a few years.

Splitting up *Senecio* into *Senecio* and *Packera.* Steve Grund indicated that we will discuss this possible change at the VPTC meeting; if we adopt it, all PA native species of *Senecio* will go to *Packera.* NOTE: We did not adopt a change at the VPTC meeting, having concluded that the supporting data are too preliminary.

Ginseng. Over the lunch break, which actually happened after discussion of several of the species below, Erik Burkhart gave us an illustrated talk on the biology and status of ginseng in PA. Steve Grund introduced the presentation by noting that it is difficult to categorize a species that used to be common and now is rare, because one can't necessarily relocate and check all the historic sites. Ginseng is especially problematic because some populations may be planted. Burkhart then explained that he is a botanist and horticulturist, interested in both conserving ginseng and helping people cultivate it in forests. Many populations in PA today are just scattered plants; one doesn't find the populations of hundreds of individuals that one used to. He is appealing to us for help in finding extant populations, and is willing to go out with us. He passed out postage-paid postcards to aid in communication. He also wants to contact collectors and growers, and again needs our help in locating people. American ginseng was listed as a CITES species in PA in 1973, soon after the U.S. signed onto the treaty. Pennsylvania has been exporting more of it than before, according to the records exporters are required by conditions of their collecting permits to submit, so people must be cultivating it somewhere in the state.

Burkhart described the plant, showing how one can age it by the number of leaves. It can probably be disseminated by chipmunks and birds but most seed dispersal appears to be passive (the seed falls off the plant), resulting in large colonies. Ginseng has a rhizome and can be clonal. One way to propagate it is to divide the rhizomes. About 50% of the time one can get two plants that way. The plants can grow under artificial shade. Wild ones are especially prized for health purposes because of their twisted root shape.

The status of wild ginseng is largely unknown throughout its range. The Midwest and Ontario are the source of most data; there is essentially no information from PA or the mid-Atlantic, despite at least 220 years of harvesting in PA. Southern states have had studies done but no demographic modeling.

Statewide, 65 counties have reported populations or have exported ginseng recently. It does not appear possible that all that is being sold as "wild" from PA really is wild – there aren't enough wild plants to account for the amounts reported. Forty-six of the counties that have exported ginseng in the last ten years show declining exports; 19 counties show a growth in amounts exported in recent years. Carbon Co. and Philadelphia Co. are the counties not reporting exports in the last ten years. It takes ca. 200 plants to make one dry pound of roots, and calculations from this conversion indicate that somewhat over 900,000 plants were harvested in 1990, compared to ca. 500,000 in

2001. Where are all of these plants coming from? Wild roots typically range in price from $150 to $450 per pound (average $300). But prices can be much higher; Burkhart attended the first annual Catskill ginseng festival and found plants selling at $800/green pound (=ca. $2000/dry pound) there, selling to Chinese people from New York City. Lehigh Co. is an example of a county that harvested little through 1997, and then began having big harvests; Burkhart would like to find out why. The top five exporters among counties in the state are in the southwest and McKean Co.; numbers 6-10 are in the north, west, and southwest; numbers 11-15 are mainly west-central but also Susquehanna Co.

Burkhart hopes in his study to model the demography pf PA populations. He plans to use size class-based modeling, in a transition matrix approach. He discussed the size classes – three-pronged plants, for example, are those 7-10 years old, and four-pronged plants are generally greater than 10 years old. He will include herbivory in the modeling (folks in northwestern PA have told him that herbivory on ginseng is bad there). He already knew that deer browse larger plants; if one finds only young plants in a population, one can figure that the population is known to either people or deer. After four years of study, he has some parameters for his model. He noted that he hopes to find out if poaching is discouraged in state forests where one can get permits, as opposed to protected sites.

A second goal for Burkhart is to determine PA habitat characteristics. He hopes to plug into the PNDI framework and then be able to predict what areas have ginseng, and also to find ways to use habitat information to help in the restoration and cultivation of populations. One question concerns the frequent association of ginseng with Virginia creeper. Does it mimic Virginia creeper and get passed over by collectors in areas where Virginia creeper is common? Burkhart also hopes to determine any glacial and geological relationships of ginseng distribution.

A third goal for Burkhart is to investigate the ginseng industry – growers and collectors – and find out what they are doing so that he can assure that they have satisfactory income and that ginseng gets conserved. Ginseng is sold in three forms: cultivated, wild-simulated, and wild. Wild-simulated ginseng is that grown in thin understory, and wild-simulated populations could be used to enhance or reestablish ginseng populations. We need to do extension work to help growers see the benefits.

Burkhart's needs from us are as follows:

1. Site locations, especially in the southeast where there are big gaps in information now although he'd like site locations from all regions. They can be protected and unprotected sites. (Burkhart noted that some collectors have lied to him about locations, reporting that their collections were taken from the next county over, in order to protect the site.)

2. Collector and grower contacts.

To contact Erik with information, use the cards he handed out OR contact him at

Erik Burkhart
7 Ferguson Building

University Park, PA 16802
epb6@psu.edu

Paul Wiegman remarked that he saw a $13,000 price tag on a ginseng mounted on a 3x5 foot frame in China, as a piece of art.

In response to a question, Chris Firestone reported that PA is no longer allowing ginseng to be collected from state forest lands. The issue of ginseng is being addressed in the nontimber forest products section of a management plan currently being worked on. Burkhart urged that the state bear in mind that strictly conservation-based management won't work to conserve the species. He noted in response to questions that ginseng doesn't resprout within the year after being browsed, but it won't necessarily die – the long term effect of herbivory has not been studied. Plants can be dormant underground for a year. They are self-compatible, and the main pollinators are sweat bees and syrphid flies.

HONORING THE PEOPLE WHO GOT THE RARE PLANT FORUM STARTED, AND NOTES ON THE HISTORY OF THE RARE PLANT FORUM

On this occasion of the 25th Rare Plant Forum, Steve Grund gave us a look back at the history of plant conservation in PA. It goes way back. In the 1920s, Dr. Otto Jennings gave radio talks in western PA in which he expressed his concern about over-picking of wildflowers. Ohiopyle was always a popular spot for botanists and a haven for rare plants. The Western PA Conservancy eventually acquired land around there and transferred it to the state. It is now known for its white-water rafting but it was originally acquired for rare plant conservation.

In 1973 the Endangered Species Act was passed. Information was needed on rare plants. Carl Keener, who could not be with us today, and Edgar Wherry looked at information at the Morris Arboretum and complied a list of species found in four or fewer counties. The list was later whittled to those plants in two or fewer counties, but some species found in 3-4 counties were left on the list.

In 1978-9 Paul Wiegman called people together to discuss the list, and sent it out for review to additional people, some 30 folks in all. In 1982 a group got together again and launched field trips. Eventually it was decided that a core group was needed to advise the state on rare plant conservation. The Vascular Plant Technical Committee was formed. The Pennsylvania Biological Survey formed at about the same time.

The first 30 or so people deserve recognition for getting the first list together. Among them, and present at today's meeting, were Rick Mellon and Paul Wiegman. Rick is an active member of the VPTC. Paul ran the Rare Plant Forum until 1996, and has been the guiding force for rare plant conservation in PA. In recognition for his outstanding efforts, Grund awarded him at this time a shirt, which proved to be large enough to wear over lots of other clothing so that the plants and words on it could be readily seen.

Paul Wiegman took the floor and gave us some additional historical perspective. Six people besides himself did the bulk of the work in assembling the first rare plant list for PA. These were Wherry, Keener, Bucher, Jennings, Henry, and state forester Jim Nelson. Wherry and Keener complied a list of plants found in four or fewer counties. In 1973 the Fish and Wildlife Service asked states to each develop a rare plant list. Paul took the Wherry-Keener list and winnowed it to those plants in two or fewer counties. On January 25, 1979, Paul got the whole group together at the Holiday Inn on Eisenhower Boulevard in Harrisburg to do a final review of the list. Nelson pointed out that there would be legislation out of this effort, so if they came up with 8-10 species of endangered plants, it would be plenty. (The Wild resource Conservation Act was passed in 1982 using this list.) Nelson also insisted that there be no single group appointed or nominated by DCNR to be the advisory group. Hence the Rare Plant Forum came into existence as an open group making decisions in a very democratic way.

Paul Wiegman concluded his remarks by praising Steve Grund for taking over the running of the Rare Plant Forum in 1996 and for doing a beautiful job, from that time to the present. Paul also praised the late Jim Parks for his contributions, not least of them being his wit. He recalled a comment Jim once made about lawyers "getting into these matters the way crud gets into a crack".

Steve Grund remarked that his last communication from Jim Parks was an e-mail in response to one that Steve had sent out to the people who were involved in the Rare Plant Forum from the beginning. Jim took exception to being included in the list of those to be honored, and argued that **"Without a doubt, Paul Wiegman is the father of modern plant conservation in Pennsylvania."**

CHANGES TO THE POSCIP LIST

To facilitate discussion and decisions, Grund projected the species nomination forms and dot maps provided by the Pennsylvania Flora Project (Morris Arboretum). Grund also had available maps and rank information for neighboring states downloaded from NatureServe.org.

(Note: the actions indicated after each species are changes from the old PaBS status to the new PaBS status, For example, *Diarrhena obovata* (second species under Deletions) has a PA status of PE and its PaBS status (our recommendation) was PR before this meeting. We now decided to make the PaBS status N, so these minutes record the action as PR -> N.)

Additions

***Carex planispicata,* sedge.** Proposed for addition to the Watch List by Janet Ebert, who indicated that she was looking for feedback on this species. It is recently described (Naczi, 1999), and PA is at the northeastern end of its range. She has seen it three times in the last few years, which is less than some of the other watchlist *Carex* spp. She wondered where it is locally frequent. It has been considered to be other species in the past; Larry Klotz noted that it keys out in Cronquist with *Carex oligocarpa*, and he has

looked for *oligocarpa* because *oligocarpa* was a list candidate. It turned out to be too common for POSCIP listing, but now he is wondering if some of the *oligocarpa* that he saw was actually *planispicata.* The key in Rhoads and Block *(Plants of Pennsylvania)* is more recent and more reflective of current thinking. We agreed to put it on the Watch List to encourage more records. **N -> Watch List**

***Diarrhena americana,* American beakgrain.** Proposed for addition as PE by Bonnie and Joe Isaac. Recently discovered in PA, this species has been seen at three sites, 2-3 acres apiece, with several thousand individuals. Two of the sites are in within a mile of each other in Greene Co. (separated by unsuitable habitat so they are two distinct populations), and one is about 40 miles away in Washington Co. Two of the sites are subject to longwall mining; one of those sites will be monitored. The species is very rhizomatous so it is difficult to tell how many individuals there are; the Isaacs said that there are probably many, and that they have been growing and producing abundant fruit for the two years that the Isaacs have seen them. The plants are very recognizable – very big with broad leaves. They grow in woodlands on extremely steep, south-facing hillsides. The habitat is quite distinct. Mary Joy Haywood commented that she was nervous about the huge extent of longwall mining in Greene Co. and that we might support a PE designation on that basis. But John Kunsman wondered if *D. americana* would prove to be adaptable to other habitats and able to spread like the eastern *D. obovata,* which turned out to be less habitat-specialized than previously thought. Steve Grund agreed that *obovata* is now in places where it wasn't before. Kunsman asked the Isaacs if they would propose listing *D. americana* if two of the sites weren't threatened by longwall mining. Joe Isaac said yes, although Bonnie remarked that they picked out the Washington Co. site based on similarities to the Greene Co. sites and then went and found the plant there, suggesting that it might turn up in other places as well if we look. Jeff Wagner suggested that we do more fieldwork. Kunsman said that *D. obovata* was originally known from just one site, and look at it now; but Rick Mellon noted that he's found that being in the same genus is absolutely no guarantee that a species will behave in the same way as another species. Meanwhile, Joe Isaac answered a question from Larry Klotz: *D. americana* is an early fall bloomer. Grund noted that neighboring states are also finding new sites for *D. obovata. D. americana* is "reported" (meaning present but status not clear) in Ohio, and West Virginia, and S1 (endangered) in Maryland. Bonnie Isaac noted that the 1991 revision of the genus shows many sites in southern Ohio. However, PA still has just three, with threats. A majority of voters in a straw poll favored PE (one person voted for PT, and one person voted for both PE and PT, citing a split personality).

N -> PE

***Fraxinus quadrangulata,* blue ash.** Proposed for PE status by Darlene Madarish. She had located a 1985 collection in the dendrology collection at California University. The student who made the collection, Paul Ladrowski, who is now working in the school of forestry at WEU, did not remember exactly where the collection was made; the label indicated simply that it was in mature upland canopy "on a west slope in Fayette Co. near Bruceton Mills, WV". P.J. Harmon knows of two extant populations in West Virginia, one in Mineral Co. and one in southeastern WV. Madarish assured us however that

Ladrowski was sure that he was in PA when he made the collection. She said also that he would have indicated on the label if he had gotten the specimen from a yard. He hunts and fishes, so he often got out into the woods. He had suggested a few possible locations to Madarish, who also had suggestions of her own. We discussed whether it would necessarily be on the Bruceton Mills quadrangle; Grund suggested Laurel Run and Paul Wiegman suggested two specific ravines. Joe Isaac expressed reservations about listing something that we don't know right now to occur in PA, and Bonnie Isaac reminded us of a time when we listed a plant based on Erie Co. specimens and then found that they were from Erie Co., Rhode Island. In response to Joe's concern about recentness, Grund noted that we have plants on the list that have been collected less recently than 1985. Jeff Wagner asked if the specimen was good; Madarish said yes, it has a four-angled twig. The other question, then, said Wagner, is if it WAS collected in PA. Madarish said that Ladrowski had not made any collection from West Virginia. Larry Klotz asked if the specimen might be a waif – how many trees were there? Wiegman noted that habitat – limestone – exists in a strip on both sides of the ridge in that area. Madarish said that it was confined mostly to the west side but did not have numbers. Kunsman pointed out that to map it for environmental review, we need to know where it is and whether or not it still exists. We debated whether to leave it off the list for a year to answer some of these questions or whether we would want it on the list so that we would be inspired to go look for it if the Bureau of Forestry wanted to do some logging in that area in the coming year. The latter concern held sway and we listed it as UEF. **N -> UEF**

Hierochloe hirta* ssp. *arctica* (a relative of vanilla sweetgrass).** Formerly PA specimens were thought to be *Hierochloe odorata,* which is PE. Bonnie Isaac and Steve Grund have keyed specimens from extant populations to *Hierochloe hirta* ssp. *arctica,* so that taxon needs to be added to the PA Flora and the POSCIP list. See additional discussion under **Status Changes, *Hierochloe odorata, below. **N -> PE**

***Rhynchospora recognita,* beak-rush.** See discussion under Taxonomic/Nomenclatural Changes, below (the original proposal was to change *Rhynchospora globularis to R. recognita).* **N -> PE**

Status Changes

***Hierochloe odorata,* vanilla sweetgrass.** This species was brought up at the fall, 2002 VPTC meeting, but tabled because people wanted more information. There are four or five historic sites and three extant currently tracked by PNHP, but it turns out that it has been confused with *Hierochloe hirta* var. *arctica* (Presl.) G. Weim. The two species are discussed (with convincing evidence that they are distinct) in a 1971 paper at which Bonnie Isaac and Steve Grund have taken a look. Kartesz had *hirta,* but not *odorata,* in PA. So Isaac and Grund got a key from western Europe and keyed PA specimens. Western specimens keyed to *hirta,* while eastern ones keyed to *odorata.* The *odorata* specimens are from Wayne Co., 1937, and John Kunsman said that they are not extant. **PE -> PX**

***Lysimachia quadriflora,* four-flowered loosestrife.** Proposed by Steve Grund to be changed from UXD to PX. Grund said that the only PA specimen is a 1889 specimen

from Berks Co., PA, kept in the Missouri Botanical Garden collection. It got into the database under the wrong name, *quadrifolia,* which led us to classify the species as UXD in PA (dubious, maybe all based on the wrong name). But the Garden has sent Grund a photocopy, from which one can see that the specimen was confirmed as *quadriflora* by Vincent Coffey in 1973, and by others earlier. Bonnie Isaac noted that there was a second specimen, which Ann Rhoads mentioned in 1988 when she first brought the species up for consideration. It was housed at the University of Arizona, and collected at "Wildcat, PA Aug 1890" by the same collector as the 1889 specimen. Grund presented the NatureServe data for the species and noted that it is rare, but present, in eastern states so it would not be disjunct in PA. It occurs in calcareous wetlands. Jim Bissell commented that it is common in Ohio. John Kunsman said that "Wildcat" is Wildcat Falls in York Co., PA. We've established that, he said, because the same collector collected other plants at that same location. Bissell inquired about the habitat at Wildcat Falls; Kunsman said there are no fens or calcareous seeps, but there are some unusual plants; Bissell said what are they, Kunsman said *Sida hermaphrodita,* also collected by the same collector, and Bissell said "yeah?" as if to express doubt about anything turned up by that collector at that spot. There was some laughter and further debate concerning the location of Wildcat. We agreed however that the plant has been collected in PA, that it would be native, and that it hasn't been seen in recent decades. **UXD -> PX**

***Nuphar microphylla,* a split-off from spatterdock.** Proposed by Tim Block and Ann Rhoads to be changed from UTT to PE. This is *Nuphar lutea* subsp. *pumila.* A recent unpublished dissertation (Donald Padgett, 1997, University of New Hampshire) presents a good case for treating the taxon as *N. microphylla.* It is distinct from *lutea* both molecularly and morphologically. The name change also follows the *Flora of North America.* Historically there were 21 locations in 10 counties, all collected before 1950. Many but not all of these sites have been checked. Block and Rhoads indicated that there is now one confirmed location (2002) in Wayne County plus two recent (1982) but unconfirmed locations in Pike County. John Kunsman updated this, noting that there are actually six populations in the database: one with hundreds of individuals (the one that Block and Rhoads had visited), one with a single plant, and the rest with less than 200 plants apiece. But Kunsman indicated that he would like to check out the identifications of specimens at some of the sites, using the dissertation, and make sure that we really had *microphylla* in each case. The total number of individuals is clearly well within the guidelines for PE status and everyone was comfortable with the taxonomic recommendation. **UTT -> PE**

***Ophioglossum vulgatum,* Southern adder's tongue.** Proposed by Bonnie and Joe Isaac to be changed from PE to perhaps PR. Critical examination of PA *Ophioglossum* specimens in several herbaria reveals that the majority of the specimens are indeed *O. vulgatum,* and it now has more than 50 historic sites. (It may turn out that *O. pusillum* is the one that is rare.) Meanwhile, Joe Isaac has found lots of extant plants, in seven separate locations within a mile area in Greene Co. and in other spots. The populations are usually small, sometimes several hundred individuals but sometimes just a handful. So, although it is hard to see, it is out there. Joe described finding 8-10 fertile plants, walking 200 yards, finding 7-8 more fertile plants, walking another 100 yards, finding 6-

8 more fertile plants, and then digging around and finding a number of juveniles. Bonnie noted that Beth Brokaw found it in Huntingdon Co. (six plants) and that it had also been found in Westmoreland Co. There are over 20 recently documented sites. One site is extremely large, with an estimated 5,000-6,000 individuals. The habitat is woods in neutral or calcareous, humus-rich soils, often along small streams and on floodplains, mostly south of the glacial boundary.

Jack Holt said that he has been looking for *Ophioglossum* and has seen all *pusillum. Ophioglossum pusillum,* he said, occurs in low woods and rich wet neutral areas near streams, whereas *vulgatum* seems to be strictly coastal, occurring in acidic low woods. Bonnie Isaac said that someone has found that *pusillum* rarely gets south of the glacial boundary, and among the specimens they've looked at, even on the coastal plain, anything south of the glacial boundary was *vulgatum.* Nonetheless she did not doubt that Holt had found *pusillum* in Chester Co., and the two of them agreed on the characters*: pusillum* has relatively pale green leaves while *vulgatum* has darker, shinier leaves.

Because the number of extant sites is slightly over 20 and the estimated number of individuals several thousand, the species falls more or less between guidelines for PT and PR. Joe Isaac expressed concern that we will find more of it, which could undermine our credibility if we call it PT. We discussed whether or not we should delist it entirely, based on expectations of future findings. Based on what we know now, however, we agreed that our best and most defensible designation is PR. Sue Thompson argued that neither environmental groups nor businesses could dispute that designation, and Steve Grund quoted the late Jim Parks insight that you can't get hair off a toad. **PE -> PR**

***Rhynchospora globularis*, beak-rush.** See discussion under Taxonomic/Nomenclatural Changes, below (the original proposal was to change *Rhynchospora globularis to R. recognita).* **PE -> UXH**

***Utricularia minor*, lesser bladderwort.** Proposed by Steve Grund and Jim Bissell to be changed from PT to PR, but ended up being delisted; see Deletions below.

Taxonomic/Nomenclatural Changes

From *Aster puniceus* var. *firmus* (purple-stemmed aster) to *Symphyotrichum firmum*. Proposed by Steve Grund, who had consulted with John Semple and had sent us copies of the e-mail correspondence between the two. John Semple had a student try to separate the specimens with a key and came away fairly confident that *firmus* is not a good species. John Kartesz also doesn't think that it is a good taxon but others do, including Jim Bissell who said that *firmus* grows with *puniceus* and maintains its identity. *Aster firmus,* he said, tends to be in alkaline wetlands whereas *puniceus* occurs everywhere. Where they grow in the same place, they are distinct, especially the underground parts *(firmus* has more elongated rhizomes). Part of the confusion, he and Grund agreed, is that Gray's manual separates the two taxa based on hairs *(puniceus* has hairs, *firmus* has glabrous stems that may be sparsely hispid above the middle according to Gray), but in fact you can get hairy *firmus.* Cronquist's key works better. Grund observed that IF we

split *Aster* and start using the name *Symphyotrichum,* no name has been published for *firmus* at the variety level (Semple simply lumps it with *puniceus).* He proposed that we call it *Symphyotrichum firmum,* and if necessary we could change it to a variety later,

Changed to *Symphyotrichum firmum* pending VPTC discussion of *Aster* split

From *Rhynchospora globularis* (beak-rush) to *Rhynchospora recognita.* Proposed by Steve Grund and Bonnie Isaac. Crow studied the taxon and decided to split *globularis* into *globularis* and *recognita.* He reported *globularis* but not *recognita* from PA. BUT, Grund said that he had looked at the Carnegie specimens and found that the extant and historic plants from Ohiopyle were *recognita,* not *globularis.* The only extant plants in PA are at Ohiopyle, so PE status should be maintained. Jack Holt said that he would be reluctant to drop *globularis* until the non-Carnegie specimens are also checked. He has seen *globularis* twice in Maryland but that is all; it is RARE. Grund suggested that we make *globularis* UXH for now, until the remaining specimens are checked. (The discussion took place at this point in the forum but the actions are listed above in the Additions for *recognita* and in the status changes for *globularis.)*

Honorable Mention

***Carex texensis,* sedge.** Proposed by Janet Ebert for N status as a "preemptive strike" – she wanted us to accept it as a nonnative before someone noticed it and proposed it for POSCIP listing. Fewer than 50 plants were discovered along a path near an old house site in filtered sunlight, and a specimen from the population was examined and identified by Peter Ball in June of 2002. Steve Grund noted that we can put an adventive on the POSCIP list if we consider it to be the result of natural processes, but this is disturbed habitat. We agreed to treat the species as non-native. **N -> N**

Deletions

***Diarrhena obovata,* American beakgrain.** Proposed by Bonnie and Joe Isaac. Joe Isaac explained that this species was first listed in the 1980s or 90s. Over the years a few people have looked for it, and currently there are 32 known sites where it is extant. Several sites are acres in extent, with probably close to a million plants in some of them. The plant occurs in habitats ranging from shrubby to old-growth forest and is becoming more common and widespread, mainly in the southwestern part of the state. Steve Grund noted that there have been a lot of new occurrences in other states as well, including in New York where they question if it is native. **PR -> N**

***Gentiana linearis,* narrow-leaved gentian.** Proposed by Tim Block and Ann Rhoads. This species is not yet on the POSCIP list although its PaBS status (i.e., our most recent VPTC recommendation) is PR. Block said that it does not usually occur in huge populations but any meadow or powerline right-of-way in the Poconos has it. Rhoads added that it occurs also on stream and lake shores, mostly in formerly glaciated areas. Its habitat is said to be bogs, moist barrens, and wet meadows. There are 32 extant populations known (there were 50 historic locations in 11 counties). John Kunsman noted that 28 of those 32 extant populations are on either public land or protected private land. Block remarked that there is a lot of potential habitat and Rhoads noted that populations range in size from a few flowering stems to about a thousand. Bonnie Isaac

compared the numbers and circumstances to those for *Ophioglossum vulgatum,* which we placed in the PR category. Sue Thompson said it sounded as if we need to rewrite the guidelines and lower the numbers for PR; Kunsman agreed. Rhoads noted that the guidelines are just guidelines, not rigid rules, and said that in the case of *Gentiana linearis* there are many small populations on disturbed sites, so it is not likely to be wiped out. Thompson argued that it would still be more comfortable a decision to delist this species if the numbers of sites and/or individuals was clearly greater than the numbers in the PR guidelines. Grund noted that one of our problems with getting enough information to delist species is that people tend to stop looking for and collecting species once they start approaching the upper limits of the PR range. We decided to keep this species off the list for now, partly because it has not officially been on the list yet; in effect we are saying that it does not warrant listing until more information is gathered.

PR -> N

***Glyceria borealis,* Northern mannagrass.** Proposed by Tim Block and Ann Rhoads. They know of 19 populations in eastern PA, some of them very large. There are an estimated 5,000+ individuals. The numbers are within PT guidelines, but Block argued that there is a lot of unsearched habitat, and one needs to be able to extrapolate. The plant has a very short flowering and fruiting period and is difficult to identify at other times. It occurs on the shores of low quality (eutrophic) lakes, beaver ponds, and highly managed ponds. Jim Bissell agreed that the plant is "out there" and John Kunsman said that he thinks it is spreading around, and that it is no longer just found in glacial lakes. Rhoads said that it might just be overlooked, rather than spreading. The general feeling was that this species was abundant enough, and sufficiently partial to disturbed habitats, to delist, but that we need to alter the guidelines to give us more support for delisting species that are clearly overlooked and much more abundant than the documentation indicates. Indeed, we have not listed a good number of species for which fewer than 50 populations are documented, based on our scientific guess that there are undiscovered populations out there. We should make sure that our guidelines truly reflect our opinion of how rare a species should be to be listed, and we should make provision for extrapolation when that is appropriate and can be done scientifically. **PT -> N**

***Lygodium palmatum,* climbing fern.** Proposed by Tim Block and Ann Rhoads. Historically there are 60 locations in 12 counties. There are 20 extant populations, of which the six known to Block and Rhoads have over 100,000 plants. Some of the populations are extremely large, covering hundreds of acres. The number of individuals exceeds PR guidelines. **PR -> N**

***Najas gracillima,* slender waternymph.** Proposed by Tim Block and Ann Rhoads. There are 35 historic locations in 15 counties. Block and Rhoads know of six large populations with a total of 30,000-50,000 individuals, all found in just the last 2-3 years in a variety of types of lakes, including manmade lakes and beaver ponds. The species is easily overlooked among other plants. Scientific extrapolation suggests that the species should be delisted. **PT -> N**

***Phyla lanceolata,* fog-fruit.** Proposed by Robert Coxe. Coxe found the species during his inventory of Mercer County, growing on gravelly shores of Shenango Lake and upstream along the Shenango River. Jim Bissell noted that it is also at the Pymatuning Reservoir. There are populations in several south-central counties as well, for a total of 23 extant occurrences (29 historic). The western ones are extensive, stretching for miles, with >100,000 individuals. Tim Draude reported that it is well-distributed on gravelly shores of the Susquehanna, where one might call it one huge population or 30 small ones. It is not as abundant there as in the west, but if the eastern plants were the only ones in PA, he would call it PR. With the western ones, it becomes worthy of delisting. **PR -> N**

***Polygonum amphibium* var. *stipulaceum,* water smartweed.** Proposed by Tim Block and Ann Rhoads. There are 45 historic locations in ten counties. Block and Rhoads know of five extant locations in eastern PA including Shohola Lake in Pike County, an Army Corps of Engineers lake, where the plant is abundant over several acres. There are at least 50,000 individuals, they estimated. Jim Bissell said that there are also that many if not more in the northwest, and that it should be delisted. There is even question of whether it is a good variety or an ecological variant, according to Block. **UTT -> N**

***Potamogeton bicupulatus,* pondweed.** Proposed by Tim Block and Ann Rhoads. There are 30 historic locations in 12 counties. Block and Rhoads know of 12 populations in eastern PA, some very large, with a total of many more than a thousand plants and all discovered within the last three years. It has been largely underrepresented in collections due to lack of surveys in northeastern PA and difficulty in identification. It is also difficult to survey and count; it grows fairly deep in the water and has to be fished up with a grappling hook if there are no floating leaves. It grows in a wide range of lake types, from "nice" to eutrophic lakes. Steve Grund noted that this species gets confused with *Potamogeton diversifolius.* In New York most of what they thought was *diversifolius* turned out to be *bicupulatus.* Jim Bissell said that it is not that common in the west but obviously it is common in the east. Sue Thompson asked if one can count the number in quadrats and multiply by the area of the lake to estimate numbers of individuals. Rhoads said no, depth variation is a problem. But, she said, more than half of the occurrences are in impoundments, and Grund agreed that that is important because it indicates that the plants are doing better because of human activities. Block said that the species was proposed for listing based on the number of historic sites but that it is turning up everywhere they go, and Rhoads estimated that ca. half of the lakes they have checked might have it, although she would have to check. **URF -> N**

***Spirodela punctata,* Eastern water-flaxseed.** Proposed by Steve Grund. This plant is native to Australia and southeast Asia and introduced in North America, according to Landolt. His conclusion is based on collection history and genetic studies, which show the highest diversity in the species to be in Australia and southeast Asia. The oldest specimen from North America was collected in Missouri in 1934. **UXF -> N**

***Utricularia geminiscapa,* bladderwort.** Proposed by Tim Block and Ann Rhoads. There are 39 historic locations in 13 counties, and Block and Rhoads know of seven

populations in eastern PA, with a total of many more than a thousand individuals. They believe it to be vastly under-collected due to the cryptic nature of the plant and difficulty with identification. It frequently has only cleistogamous flowers. It is found in a variety of habitats: little depressions, bogs, old beaver meadows, tree holes (pits where trees fell), also bogs, vernal ponds, and river margins. Rick Mellon agreed that it is much too abundant to list, saying that he could probably find more than 100,000 in Bear meadow alone. Larry Klotz said that it is the second most consistent species in seasonal ponds in Franklin Co., and that he agrees that there are more than 100,000 out there. **URF -> N**

***Utricularia minor,* lesser bladderwort.** Proposed by Steve Grund and Jim Bissell to be changed from PT to PR, and discussed under status changes but reported in the Deletions section for convenience. Bissell indicated that it is very common – with tens of thousands of individuals – in Crawford and Erie Counties in lots of different kinds of wetlands and fens, beaver ponds, even vernal ponds. There are 21 extant sites now, with more likely to be found because it is easily overlooked. It occurs mostly north of PA. It is tracked in about half of the states and provinces in which it occurs, and it is apparently extirpated in DE and NC (a former disjuncture), but it is considered globally secure. Grund noted that on the basis of numbers of individuals, we could delist it entirely now. Tim Block reported finding three more extant sites in the last couple of years and he agreed that it should be delisted. Ann Rhoads remarked that she would not recommend delisting based just on information from northeastern PA, but with the information from the northwest, she agreed that we could delist. Bonnie and Joe Isaac asked why this species was being treated differently from *Ophioglossum vulgatum,* which has similar numbers and similar prospects for more discoveries. The answer seemed to be that *Utricularia minor* has a greater estimated number of individuals, although as Rhoads pointed out, the number of individuals is difficult to determine, given that the vegetative parts grow in the muck. **PT -> N**

***Wolffia borealis,* dotted watermeal.** Proposed by Tim Block and Ann Rhoads. There are nine historic locations in seven counties. Block and Rhoads know of two large populations in eastern PA, including a big population in a state park in Lackawanna Co. where the lake is drawn down every 4-5 years. There are unquestionably at least 100,000 individuals. Jeff Wagner said that this was a case where he would lean toward the number of locations, not the number of individuals. Steve Grund said that there is a lot of it in western PA, probably a million individuals in Edinboro Lake. It is the quintessential overlooked plant, turning up all over mixed with other *Wolffia* and with *Lemna.* There are about 8-10 extant sites known in the state. James Macklin noted that the problem with small aquatics is that no one makes specimens. Jim Bissell recommended floating *Wolffia* on paper to make specimens, and Grund recommended preserving them in alcohol with comments on the label about the morphology. **UTF -> N**

***Xyris montana,* yellow-eyed grass.** Proposed by Tim Block and Ann Rhoads. There are 33 historic locations in six counties. Block and Rhoads know of nine large populations in eastern PA, with an estimated total of well over 100,000 individuals, found rather easily. The habitat is in peat on pond edges and in floating bog mats. **PR -> N**

Additional questions and comments. Tim Draude is working on *Adiantum aleuticum* on serpentine and requests that we get any information we may have on it to him. (This was a project with Jim Parks.)

The meeting was adjourned at ca. 2:30 PM.

Respectfully submitted,

Carol Loeffler