Although many pages could be written about the issues raised by the recent proposal for listing threatened and endangered species in Iowa, both pro and con, I will use this opportunity to present a short overview, present examples of comments received during the public review, and briefly discuss "where we go from here".

OVERVIEW The Iowa endangered species act was enacted in 1975, and the first official list was published in 1977. Revisions were published in 1984, 1986, 1988, and 1994. The focus of these first five lists was on species which were rare in the state, regardless of how common or rare they were throughout the rest of their range. The definition of "rare" was generally based on the number of places that a species occurred in the state, specifically the number of known occurrences. Although the threshold number of known occurrences used to define "rare" varied between successive lists, the highest number was twenty. One of the outcomes of using twenty or fewer occurrences as a definition for rare, and then assigning threatened and endangered ranks to rare species, was that many of the listed species were located around the edges of the state. These "peripheral" species were often very common in adjacent states and throughout the rest of their range. The "peripheral" species were often very common in adjacent states and throughout the rest of their range, but simply had a small natural range in Iowa due to the location of the state line. At the same time, many species of prairie and wetland habitats (which have suffered historic losses of 95-99% of their original area in Iowa) did not qualify for listing because they occurred in more than twenty locations, despite the fact that these places were small, isolated fragments of formerly widespread communities. Ecologically, it seems ironic that prairie and wetland species which have lost nearly all of their original habitat would be ranked lower in priority on the threatened and endangered list (often no ranking at all) than more common species whose rarity in the state reflected a geopolitical coincidence. The revisions proposed in 1998 were based on a reversal of these rankings, i.e. that formerly widespread species of natural habitats which are now rare because of extensive habitat destruction should be ranked above species which are rare in the state due to geopolitical coincidence. This would prove to be a controversial proposal.

COMMENTS A wide variety of comments on the proposed list were received during the public comment period, ranging from supportive to highly critical. Reproduction of all eighty letters is beyond the scope of this newsletter, but following are examples of the range of comments, which I have sorted into four categories: 1) Supportive, 2) Refinements, 3) Critical, rejecting the proposal in favor of listing more species, and 4) Critical, rejecting the proposal in favor of listing fewer species:

1) Supportive.

Dr. Jim Dinsmore, Iowa State University: "I wish to state that I believe that this proposed list, without a doubt, is the finest effort in this area that has ever been attempted in Iowa. The two authors are to be congratulated for the extent that they have gone to document the rationale they have used.... I realize that this proposal has received much criticism. Much of that criticism seems to be based on the authors attempt to use a new paradigm in assigning species to various ranks. In reading through your rationale for the new manner of listing species, I find that your arguments are soundly based... This has led to a somewhat shorter list of protected species in some taxonomic groups, but the emphasis has been placed on listing species that are truly in jeopardy rather than species that are listed because their range barely...

Continued on page 4
Leaves from the President’s Notebook...

Welcome to 1999. I was just thinking about the coming millennium. First comes the year 2000 and getting used to the new numbers and celebrating the end of a century and a millennium. Then the year 2001 will be the beginning of another new century and millennium. It appears that the calendar change will affect us and that there will undoubtedly be other things that we will adapt to. The international space station will be well under construction and the mission to Mars will be more of a reality. But, I was also wondering about the state of our environment, the flora and fauna, and the biodiversity of our remaining prairies, wetlands and woodlands. The plants and animals have survived countless changes of the calendar and climate. But will they continue to survive? Will we be able to stop and smell the wild roses and photograph yellow slipper orchids? How much will remain of the Loess Hills? Which highway bypass will we be trying to relocate? Will we be able to protect and manage enough of Iowa’s wild places? These are just some of the challenges ahead.

I was also thinking about the state of our Iowa Native Plant Society. We are now in the fourth year as an organization. Attendance on many of our field-trips has been good. We have been all over the state visiting prairies, woodlands, sand dunes, marshes and fens. Members come to see new things and ask questions, and act as field-trip leaders. Articles in the newsletter have been very informative and written by many of our members. Goals for the coming year may be getting the non-profit status procedure finished and official, maintaining quality of field-trips and good attendance by members, and keeping enthusiastic involved officers. And we should continue to periodically question the society’s degree of involvement in environmental issues. As a whole, in my opinion, the society is doing well.

I do think that our members are very concerned about protecting plants, and habitat and environmental issues. First there was a large turnout to look at the proposed Eddyville bypass area on a joint field-trip with the Iowa Prairie Network. Then the recent response of email, letters, etc. on the proposed changes to the Iowa endangered species list, says a lot.

On New Year's Eve, I visited one of our 1999 field-trip venues, Palisades-Kepler State Park. I walked near the river in newly fallen snow trying-out my new polarizing filter on my camera. The only footprints to be seen were those of deer and mice. A bald eagle flew over the valley and a red-bellied woodpecker called from a nearby tree. On the far side of the river is a high, rocky face and the preserve of Palisades-Dows. Leaving the park, I drove slowly and looked down several deep and wooded ravines. By the time we arrive for our spring wildflower walk, the white blanket will be replaced by a green carpet of flowering plants.

Aldo Leopold's book of essays, "A Sand Country Almanac" was first published 50 years ago in 1949. The essays had been rewritten many times and submitted to many publishers before being accepted on 21st April 1948. Aldo died whilst helping a neighbour fight a brush fire. He was born on 11th January 1887 on Prospect Hill in Burlington, Iowa and spent his life working with nature. This collection of essays represents his observations from childhood on the Mississippi River through his careful journal notes at the family shack in Wisconsin.

Ed Freese
Editorial

March 1999 sees a bumper issue of the INPS newsletter, packed with a list of events for the summer, information on the first few field-trips of the season, a report on Cone Marsh, and an interesting and amusing article on truffles (so that’s why farmers keep hogs in barns). Also, we have dedicated quite a chunk of the newsletter to an article on the Iowa Endangered, Threatened and Special Concern Plants (T&E list) by John Pearson and a ‘pull-out’ special on people’s comments regarding the list. I, personally would like to thank all contributors to the newsletter, but want to extend special thanks to Bill Norris, Deb Lewis, Roseanne Healy and Mark Leoschke who painstakingly summarized all of your comments regarding the T&E list.

In the next few months as the field-trip season gets underway, I’d like to remind you that field-trip reports and any other articles related to the INPS are welcome. In fact the next newsletter is due out in late May, so please get any articles, reports, etc to me by the end of the first week of May. Finally, with Spring just around the corner, I'd like to remind members of the Iowa Native Plant Society that membership fees are due. Please use the form on the last page of this newsletter.

Book Review: Listen to the Land by Larry Stone

Over the years, as we read Larry Stone's writings about native Iowa in the Des Moines Register, he became our friend. He was our guide, our teacher, and sometimes our conscience. He brought to us his understanding of Iowa, her secret places and people. I, for one, miss his gentle education.

However, I no longer have to thumb through the entire Register to find and enjoy Larry’s take on earth matters. I can pick up his new book, "Listen to the Land", any time I want to be transported to all corners of Iowa, any season of the year.

"Listen to the Land" is a compilation of one hundred of Larry’s favourite columns from 25 years at the Des Moines Register and more than fifty colour and black and white photographs. The cost of the book is $20 (including tax and postage) and can be ordered by writing to Larry at 23312 - 295th Street, Elkader, Ia 52043, or by calling him toll-free at 1-888-807-1828.

Look for Larry’s articles in other publications such as The Iowan, The Mississippi Monitor, RIVER Magazine, and the journal of the Iowa Natural Heritage Foundation. Larry is also currently working with Jon Stravers on a book about the late Sylvan Runkel.

Cone Marsh Field Trip

by Jim Scott

The August 1 (1998) Cone Marsh Field Trip Adventurers met at the Conesville village park on a beautiful warm and sunny day. About a dozen and a half enthusiastic nature lovers were led by Louise MacEachern, Toni Hesseltine and Jim Scott with the help of botanist Mark Leoschke.

The first stop on a stop-and-go motorcade was at the sandy ridge coming off the alluvial plain overlooking the marsh. Some of the discoveries there were tall wormwood (Artemisia caudata) and American dodder (Cuscuta glomerata) entwined on saw-toothed sunflower (Helianthus grosseserratus).

Our second stop was on the levee road which cuts through the marsh and holds a water level in the north side of the marsh. The marsh is maintained primarily for migratory waterfowl with heavy vegetation of reeds and rushes. Most impressive was the white and pink halberd-leaved rose mallow (Hibiscus militaris) and water lilies.

The highlight of the next stop was finding the yellow creeping primrose willow (Jussiaea repens = Ludwigia peploides) which is only found in Iowa at this site and in Fremont and Lucas counties. Continuing along the west side of the marsh to the north levy we walked past button bush (Cephalanthus occidentalis) and Ed Freese retrieved a greater bladderwort (Utricularia vulgaris) for all to examine.

Our last stop was at the Don and Arlene Buckman residence near the north end of the marsh complex. A big thank you to them for sharing their private viewing area of the Trumpeter Swans and allowing us to search through the seep area.

Many plant species were identified in this wetland complex and the trip ended with a late lunch back at the park in Conesville.

(Ed. Note: The Cone Marsh field trip report was inadvertently left out of the last newsletter. We apologize for this omission and publish it now to allow INPS members to enjoy pleasant memories of this August, 1998 excursion).
extends into Iowa... Although efforts to protect species that are doing well rangewide but barely reach Iowa are commendable, in reality we should be putting our efforts toward protecting those species that really need it. In my opinion, this list takes a major step in that direction:

Gary Phillips, Iowa Lakes Community College: "I am very much in favor of the approach taken in the determination of which species should be listed in Iowa. In my opinion, it is a plan that finally addresses the reality of the situation in Iowa... In Iowa, the real endangered species is natural habitat and any program that fails to address this fact is not going to find success... By excluding species which are adapted to disturbed habitats as well as those found only in the periphery of Iowa, the plan places much more emphasis on the need to preserve not just rare species, but also the habitats in which they are found. Furthermore, the listing of species uncommon in Iowa, but common elsewhere has had, in my opinion, a negative impact by taking attention away from those species which are truly endangered. The delisting or downgrading of these species to Special Concern represents a positive step toward protecting those species which are worthy of Endangered or Threatened status:"

Dr. Erv Klaas, Iowa Cooperative Fish and Wildlife Research Unit: "I agree with your rationale for revising the current list of T & E species. It is consistent with current knowledge of conservation biology and ecosystem management. The ecoregion approach has greater scientific validity than using political boundaries to set conservation policy. The elimination of species that are contiguous with viable populations in neighboring states and are not endangered or threatened in those states enables Iowa to use our limited resources to protect truly rare species. You have accomplished this while maintaining protection for disjunct populations that are of special interest to biogeographers and ecologists... The proposed revision is a good start at establishing scientific credibility with an ecosystem approach:"

2) Refinements.

Bill Norris, Iowa State University: "Although I do not entirely agree with the proposed implementation of these criteria as currently stated, I agree with this approach in principle... The blanket exclusion of rare, peripheral species in Iowa is inappropriate because much of Iowa's flora is transitional to begin with and hence peripheral in a regional sense... On the other hand, I agree that all rare, peripheral species in Iowa are not equally worthy of protection... I suggest that the disturbance criterion be modified to consider anthropogenic versus natural disturbance regimes separately:"

Dr. Thomas Rosburg, Drake University: "The criteria used to select the most endangered species are a good start, but cannot be implemented without additional criteria. In other words, the basis of selection needs to be fine-tuned... In Iowa, peripheral habitats represent some of our most unique habitats- the Loess Hills (western Iowa) and Paleozoic Plateau (northeast Iowa)... Many disturbance species represent very unique habitats in Iowa (e.g., primary succession sites), or they represent species restricted to refugia habitats:"

Deb Lewis, Ada Hayden Herbarium: "I feel that these criteria need some further 'tinkering'... I ask only that you consider those proposals to modify the criteria to reflect a less drastic, more 'middle of the road' approach... I suggest the re-inclusion of the rare species that were delisted as peripheral that are restricted in Iowa to the Loess Hills and perhaps to the Paleozoic Plateau and the special Mississippi and Missouri River habitats:"

Dr. Mark Widrlechner, Iowa State University: "While I agree that both adaptation to disturbance and presence exclusively near Iowa's borders, may serve as criteria for the possible removal of a species from the T&E list, I am convinced that the specific criteria proposed in the present draft are too broad, and that narrower criteria would be more defensible from a scientific basis:"

3) Critical, reject proposal, favor listing more species.

Dr. Diana Horton, University of Iowa: "[I]n its present form, this list is unacceptable because of the seriously flawed selection criteria, particularly the exclusion of species that occur only in the outer two tiers of counties, which encompass important landform regions (the Paleozoic Plateau, the Loess Hills, and the Missouri and Mississippi Alluvial Plains) and comprise 60% of the surface area of Iowa; the exclusion of species characteristic of disturbed habitats and the basis for designating a species "disturbance adapted"; and the failure to afford legal protection to species believed extinct in the state:"

Steve Lekwa, Story County Conservation Board: "We see no justification to disregard peripheral species. Some of our best remaining examples of native habitat lie in peripheral areas, notably the Loess Hills and the Paleozoic Plateau... In summary, we are reluctant to see any species dropped from the Iowa threatened or endangered list unless new or increasing populations have been documented:"

Bruce Stiles: "Species of plants and animals on the edge of their range in Iowa may always have been rare. But, they are more rare now due to habitat loss. Species on the edge of their range in our state should continue to be protected in our state, even if they are secure in neighboring states... I think the Republican controlled DNR is trying a last minute attempt to weaken the Iowa Threatened and Endangered Act..."
so that more natural land in Iowa can be destroyed, endangered species hassle free, by land developers:"

4) Critical, reject proposal, favor listing fewer species.

Don Etler, Iowa Drainage District Association: "The federal and state definitions of endangered and threatened species are virtually identical, yet the federal government lists only six species as endangered and seven species as threatened in the state of Iowa. [Note: the proposed list contained a total of 221 threatened and endangered plant and animal species.- JP] The federal process is far more lengthy and inclusive of public input. Species are first listed as candidates for listing long before the year-long listing process begins. Before a species is finally listed, three independent peer reviewers must review the supporting data and give their opinions. The USFWS must then publish those opinions and respond to them in the federal register... Considering the ever-increasing influence that these listings have upon private and public land-disturbing activities, we urge the DNR to adopt rules more in line with the federal process. We believe each and every species on the proposed lists, except those now on the federal list, should be subjected to that type of intensive review.

Conrad Kleppe, Wright County Board of Supervisors: "We ask that the existing listings be dropped and all new listings be suspended until proper, legal, science-based rules, incorporating independent peer review, can be adopted. The Iowa DNR has failed to adopt administrative rules to be used to determine how the endangered and threatened species are selected for listing:"

Emmet Martin, Webster County Board of Supervisors: "[W]e feel the Iowa DNR has failed to adopt administrative rules to be used to determine how the endangered and threatened species are selected for listings. We ask that existing listings are dropped and all new listings be suspended until proper, legal, science-based rules, incorporating independent peer review, can be adopted:"

Many letters, including several quoted above, called for the development of more and better data upon which to base the endangered species list:

Gary Reiners, The Nature Conservancy: "With the legislature seemingly in a mood to fund environmental issues at a higher level, and a new governor, perhaps this is a good time to launch an attempt to revitalize the Iowa Natural Areas Inventory and begin making up for lost time (and species data)."

WHERE DO WE GO FROM HERE? Following review of the letters received during the public comment period, we have decided to stop the current rulemaking and initiate a series of workshops to develop a new proposal. Although we did receive some letters of support, and many letters indicating that the original proposal was good in principle but needed a refinement of the criteria, we also received many letters that rejected the overall principles. There were also many letters from the farming community that opposed all listings! Rather than force the issue, we have decided that a new proposal that enjoys a broader base of support needs to be developed.

As a starting point, Daryl Howell and I have asked Dr. Diana Horton (University of Iowa botanist), Deb Lewis (curator of the Ada Hayden Herbarium), Dr. Tom Rosburg (Drake University plant ecologist), Connie Mutel (University of Iowa science writer), Dr. Neil Bernstein (Mt. Mercy College zoologist), and Dr. Jim Christiansen (Drake University zoologist) for their assistance in organizing a series of workshops in which a panel of experts in botany, zoology, and ecology will discuss criteria and species for potential listing. The timing and format of these workshops is now under development. We are hopeful that this new process will lead to a T&E list that has both scientific credibility and broad consensus.

Paul Johnson, New Director of the Iowa DNR

by Ed Freese

Newly elected Democratic governor Tom Vilsack recently chose Paul Johnson as director of the Iowa Department of Natural Resources. He will replace longtime administrator Larry Wilson and confront many environmental issues.

Johnson’s most recent position was chief of the US Department of Agriculture’s soil conservation program now known as the Natural Resources Conservation Service. He spent almost four years in Washington DC from 1994 to 1997 working with farmers to better conserve their land.

As an Iowa Representative from 1985 to 1990, Paul helped write such important legislation as the Iowa Groundwater Protection Act, Iowa Resource Enhancement and Protection Program (REAP), Iowa Energy Efficiency Act, and the Iowa Integrated Farm Management Program. He has also served as trustee for the Iowa Chapter of the Nature Conservancy and was honored with the Conservation Leadership Award in 1994.

Paul has BS and MS degrees in forestry from the University of Michigan. He also served in Ghana with the Peace Corps, and has studied and consulted in Honduras, Costa Rica, Sweden and the USSR.

Johnson purchased a farm near Decorah in 1974 with the Upper Iowa River flowing through the edge of his land. Paul was born in California, grew up in South Dakota, and will once again leave the serenity of the country for conservation work in a city office.

Naturalists, birders, botanists, and concerned public will be looking for improvements in protection of Iowa’s prairies, marshes, forests, streams, parks and fresh air. They are all hoping that Paul is the man to do the job.
"You mean there are truffles in Iowa?", an acquaintance recently asked.

"Sure!", I waxed enthusiastic, gearing up to expound the research I have been conducting with Dr. Lois Tiffany. "We are finding lots of species, and they are in woodlands throughout the state!"

I braced myself for one of two questions sure to follow this enlightenment.

"I thought you needed pigs to find them;" he said with amused scepticism.

"Well, people in Europe use pigs and trained dogs to find the most prized truffles there: black Perigord and Piedmont white truffles. We don't have any economically important truffles here;" I explained. I could see that I was losing my audience. "But ecologically, they are very important;" I quickly added in an attempt to repair the damage.

"Are Iowa truffles edible?"

"Lots of things do eat them", I replied, knowing that was not what he meant, "and that is part of their intrigue. They may be an important food source for woodland fauna, but nobody has studied their significance in eastern deciduous woods;"

Not to be side tracked, he asked, "Have you ever eaten one?"

Sigh. I could see our destination.

"I ate a small one once. My husband got on the phone to a travel agent, to decide on where to vacation in the event he should collect on my life insurance." My acquaintance began to back off. "But, it tasted good!" I called after the reader, treating figure, in a last ditch effort. He turned and waved, a flicker of mild alarm crossing his face.

Who should care about these fungi if they are not known to be edible? Anyone interested in our woodland ecosystems should! If you don't fall into that category, you may skip to the last paragraph.

Truffles and false truffles are an unrelated assemblage of fungi that share several important features: they form macro fruiting bodies that do not open naturally to release their spores, they rely on mycophagy for spore dispersal, and most are thought to be ectomycorrhizal. Collectively they are called hypogeous fungi because their fruiting bodies are formed underground or at the interface of soil and humus. Truffles are the fruiting bodies of hypogeous Ascomycetes (the group that includes morels and cup fungi), and false truffles are the fruiting bodies of hypogeous Basidiomycetes (the group that includes mushrooms and boletes). The Zygomycetes also have several genera that produce hypogeous fruiting bodies, which the British call "pea truffles".

The term mycophagy means "fungus eating". Since the sporocarps do not actively release their spores, their dispersal is a potential problem. Woodland fauna detect the maturing sporocarps by smell, eat them, and deposit the spores (unharmed) elsewhere. Those that are not consumed eventually break down, often through the action of insects, and the spores are released passively. Animals known to eat..."
hypogeous fungi include species of shrews, rabbits, squirrels, chipmunks, ground squirrels, pocket gophers, mice, and voles. A study in the Pacific Northwest revealed that hypogeous fungi supplemented the diet of some mammals, but were significant in the diets of all examined species of squirrels and red-backed voles.

What happens next? The term mycorrhiza means "fungus root", and includes several different kinds of fungus-root associations. Hypogeous fungi form ectomycorrhizae. Spores deposited near roots of a woody associate can germinate, colonize the root, and extend their hyphae out into the soil. The fungus conducts water and water soluble nutrients from soil to the roots and obtains carbohydrates from the plant. Active mycorrhizae can be yellow, white, brown or black in color, depending on the fungal associate. They can be observed very close to the soil surface, or on the soil surface under a rotting log or humus. Most ectomycorrhizal trees are dependent on their fungal associates, and vice versa. In Iowa, the trees most commonly associated with hypogeous fungi are oaks, basswoods, hickories, pines, and ironwood.

So what do truffles and false truffles look like and how do you find them? Start by looking under the trees mentioned above. Assuming that the canopy of a tree roughly mirrors the extent of the roots, you can look in the soil anywhere under the canopy. I use a hand rake. Depending on the species, mature fruiting bodies can be 4 mm to 4 cm in size; white, yellow, brown, red, orange or black in color; smooth, warted and/or hairy in texture; and knobby or folded. When cut, the interior may look veined or chambered and is usually a different color than the exterior. A few will bruise a different color or change color with handling, and these changes are characteristic. Some of them look remarkably like little potatoes. A few have an opening someplace on the sporocarp, and many have mycelia emanating either from the bottom or from several places along the surface of the sporocarp. They differ from plant bulbs because they are rarely symmetrical and tend to be softer in texture. We typically find them under leaf litter or logs, at the surface of the soil, or within two inches of the surface. Look where the soil tends to retain its moisture (like under logs and leaves), but is not wet. Fellow INPS member, M.J. Hatfield has found lots of fruiting bodies while gardening under oaks in her yard. Another member, Sibylla Brown has found them in the oak savanna she and her husband are restoring. They are easily confused with Scleroderma species (which can cause great discomfort if eaten), acorns, basswood seeds, pebbles, deer scat etc. I hate to admit it, but after three years, I still pick up these "teasers".

There has been relatively little research done on hypogeous fungi in eastern deciduous woods, so we encourage (ie. beg) those who look for them to let us know about what they find! Fruiting bodies can be sent to Dr. Tiffany or me at 305 Bessey Hall, ISU, Ames, 50011. Be sure to wrap them in paper rather than plastic, as plastic promotes rotting. Last year we collected 17 new records for Iowa and know that there are more to be discovered. We are collecting information on the distribution, ecology, seasonality and correlation with precipitation for fruiting and development of each species.

O.K., this is the section to skip to if you want to avoid discussion about woodland ecology and hypogeous fungi. After a day of collecting Iowa truffles, here is what you do: In a pan over low heat, melt 6 oz. chocolate with ⅛ cup butter and 3 Tbsp cream. Stir in 1 egg yolk and remove from heat. Stir in 3 Tbsp Kalua or other liquor. Shape and let cool. Enjoy, but remember to wash hands (see two paragraphs up).
The three previous entries of this series have described plant species that not only were described on the basis of specimens collected in the Hawkeye State, but were named for it as well. Four additional names at species rank, include the epithet *iowensis* or *iowense*, but unfortunately, they have not stood the test of time. All four are today considered synonynms of other species.

Synonymy means pretty much the same thing in botanical nomenclature as in grammar: two names refer to the same thing. Anyone who has spent any time at all with wildflower or gardening guides is painfully aware of the prevalence of synonyms in botany. A plant you learned under a certain name appears in one reference work under a different name, and in a second book under a third name altogether. Experiences such as this can frustrate, even the most dedicated nature lover.

Synonymy occurs because taxonomy is not so much an exact science as a skilled craft. You cannot "prove" that a given plant should be recognized as distinct, or that it belongs in a certain genus or at a certain rank. (species, subspecies, variety). Rather, taxonomy is like the practice of law: the party who presents the most compelling evidence and argues the best case usually carries the day. And most importantly, as new evidence (e.g., additional specimens, new kinds of characters, new means of data analysis) becomes available, old cases are reopened and "tried" again.

Synonymization may occur if a species was described on the basis of too small a sample of specimens. Distinctions that seem sharply defined when a few plants are examined may melt, into a pattern of continuous variation once more material is studied or new kinds of information are employed. The case of *Cirsium iowense* illustrates this point.

Louis Herman Pammel (1862-1931) was professor of botany at what is today Iowa State University. In the late 1890's, he became interested in thistles. Examining several dozen specimens of Tall Thistle *Cirsium altissimum* (1.) Spreng.) from throughout the Midwest, he noticed that plants in western Iowa and the Great Plains differed from those farther east in their shorter stature and larger flower heads in which the innermost bracts were not dilated at the tip. These differences seemed quite clear-cut to Pammel. In his opinion, segregation of these western populations as a distinct species was warranted. He named the new species *Cnicus iowensis* Pammel in the 1901 volume of the Proceedings of the Iowa Academy of Science. The type specimen was collected by Pammel and C. R. Ball in August 1896 near Boone, at what is now Ledges State Park; it is deposited in the Ada Hayden Herbarium at Iowa State University, with duplicates given to Harvard, the Smithsonian, and Missouri Botanical Garden.

In addition to the species proper, Pammel distinguished a variant: *Cnicus iowensis* var. *crattyi* Pammel. This was said to differ by its less deeply lobed leaves, smaller heads, and woolly stem. The epithet honored Robert Irvin Cratty (1853-1940), a school teacher and amateur botanist who farmed near Algona and who later (1918-1932) served as curator of the herbarium at Iowa State. The type was a specimen collected by Cratty in Emmett County in 1887 and deposited at the University of Iowa.

Pammel was of the opinion that all thistles should be assigned to a single genus, *Cnicus*. Others believed that *Cnicus* should consist solely of the Blessed Thistle (*Cnicus benedictus* 1.), and that the remaining thistles should then be assigned to the genera *Carduus* 1. and *Cirsium* Mill. This is the view of most botanists today. In line with this view, Harvard botanist Merritt Lyndon Fernald in 1908 validated the combination *Cirsium iowense* (Pammel) Fern. in the journal Rhodora. Fernald did not think the variety worthy of formal recognition, and so did not transfer it to *Cirsium*. The combination *Cirsium iowense* var. *crattyi* (Pammel) Wolden was finally effected by amateur botanist B. O. Wolden in the 1932 volume of the Proceedings of the Iowa Academy of Science.

Though *Cirsium iowense* was recognized in the eighth edition (1950) of Gray's Manual, most subsequent references (e.g., Flora of the Great Plains, Vascular Plants of Iowa) do not. Study of hundreds of additional specimens not available in Pammel or Fernald's time reveals that there is no consistent clear-cut gap separating *C._altissimus* and *C._iowense*. Pammel's type specimen is merely one extreme in a continuum of variation. Furthermore, plants of both sorts have the same number of chromosomes (nine pairs) . As a result, *C._iowense* is listed, in most reference works as a synonym of *C._altissimus*.

In the next installment, we will examine additional species names that honor the Hawkeye State, but which posterity has relegated to the dust bin of synonymy.
INPS FIELD TRIP VENUES (MAY AND JUNE)

ALL FIELD TRIPS BEGIN AT 10:00 AM UNLESS OTHERWISE NOTED
BRING A SACK LUNCH
For more information, call 515-294-9499

Saturday, May 1: PALISADES-KEPLER STATE PARK AND PALISADES-DOWS STATE PRESERVE (Linn County). Our field trip leader will be Dr. Diana Horton, a bryologist (a person who studies a group of non-flowering plants known collectively as bryophytes—mosses, liverworts and hornworts). She will tell us about the interesting spring ephemeral flora and her special favorites, the bryophytes.

Directions: The two natural areas are located southeast of Cedar Rapids and south of U.S. highway 30, east of U.S. highway 1511 state highway 13 west of Mount Vernon/state highway 1 and east of the Cedar River (the park is marked on state highway maps with a blue conifer symbol and the name of the park in blue letters). We will meet at 10 a.m. in the large parking lot east of the Cedar River in the southwest portion of the park. The entrance to the park is on the south side of U.S. Highway 30 (park brochures with maps can be picked up near the entrance). Follow the main park road past the equestrian parking lot and the assistant ranger's residence until it forks and take a right. Look for the large parking area on your left. If you hit a dead end you have passed the parking lot.

Saturday, May 22: BLUFFTON FIR STAND STATE PRESERVE (Winneshiek County). Have you ever seen pasque flower and balsam fir growing side by side on a prairie? Bluffton Fir Stand offers this and other contradictions certain to be enjoyed by all participants on this late spring tour of the preserve. A 2-3 hour wildflower hike is planned for the morning to enjoy the spring flora of oak woodlands, prairie openings and balsam fir groves. After the hike, we will exit the preserve for a lunch break. An OPTIONAL work session is scheduled for the afternoon to begin restoration (tree cutting and removal) of a large prairie within the preserve near its west boundary. Although it is not necessary for you to bring equipment to participate, loppers, hand saws and chain saws are appreciated. All participants should be prepared for steep, rugged topography.

Leaders: Bill Norris, Bill Watson, Don Farrar
Directions: The town of Bluffton is in Winneshiek County, northwest of Decorah and east of Cresco. Meet at Randy's General Store in Bluffton (the only business in town) at 10 AM. We will proceed from there to enter the preserve at its west end.

Saturday, June 26. DINESON PRAIRIE STATE PRESERVE (Shelby County). We will explore the flora of this western prairie preserve, owned by the Natural Resource Conservation Service (formerly known as the Soil Conservation Service) and managed by the Shelby County Conservation Board. This 20 ac, sloping remnant has a diverse flora that should be at a summer peak.

Leader: Glenn Pollock, a native of nearby Crawford County who currently resides in the Omaha area in the state of Nebraska.

Directions: Meet in Harlan, which is located about 10 miles north of Interstate Highway 80 at the intersection of U.S. Highway 59 (a north/south highway). We will meet at 10 a.m. in the Hy-Vee parking lot, which is located on the southeast corner of Highways 59 and 44.

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ACKNOWLEDGEMENTS

We would all like to acknowledge and thank Bill Watson for his work in organizing last November's meeting in Cedar Falls. He did an excellent job of arranging the meeting place and securing speakers for the meeting. Many Thanks Bill!!
In a Nutshell...
related events of interest to INPS members
TNC:The Nature Conservancy
CIPN:Centrallowa Prairie Network
IPN:lowa Prairie Network
INHA:lowa Natural History Association
PSMC:Prairie States Mushroom Club

February 27(12:30): 1999 central Iowa Prairie Network Winter Meeting; Ames Public Library; CIPN (515) 382-2802
March 2(7 PM): Prairie Preview (information and displays from your local environmental organizations and agencies). Montgomery Hall, 4-H Fairgrounds, Old Highway 218 South, Iowa City. For more information call (319) 337-6232
March 20(10 AM): zahl Prairie, Turin, Monona County (Work Day); TNC (515) 244-5044
March 27(10 AM): Hanging Bog and Behrens Ponds, Linn County; TNC (515) 244-5044
April 17(1 PM): Berry Woods, Warren County; TNC (515) 244-5044
April 17(11 AM): Baylor Prairie, Fremont County; TNC (515) 244-5044
May 2: Mushroom Foray, Elk Rock State Park, Marion County; PSMC (515) 446-7358
May 8(1 PM): Freda Haffner Kettlehole, Dickinson County; TNC (515) 244-5044
May 8(1 PM): Swamp White Oak Preserve, Muscatine County; TNC (515) 244-5044
May 11 (6:30 PM): Pohl Memorial Preserve at Ames High School Prairie, Ames, Story County, TNC (515) 244-5044
May 15(1 PM): Broken Kettle Grasslands, Plymouth County; TNC (515) 244-5044
May 15(1 PM): Retz Memorial Forest, Clayton County; TNC (515) 244-5044
May 21-23: Loess Hills Seminar. For more information write: Western Hills Area Education Agency, clo Larry Benne or Carolyn Mellein, 1520 Morningside Ave., Sioux City, IA 51106
May 29-31: Warren County Foray (Rolling Thunder Prairie State Preserve, Berry Woods State Preserve, Lake Aquabi State Park, selected County Conservation Board areas; INHA (515) 294-9499.
June 5(1 PM): Crossman Prairie, Howard County; TNC (515) 244-5044
June 8(6:30): Pohl Memorial Preserve at Ames High School Prairie, Ames, Story County, TNC (515) 244-5044
June 12(1 PM): Cedar Hills Sand Prairie, Black Hawk County; TNC (515) 244-5044
June 12(1 PM): Sioux City Prairie, Sioux City, Woodbury County; TNC (515) 244-5044
June 26(1 PM): Williams Prairie, Johnson County; TNC (515) 244-5044
July 10-11: Lacey-Keosauqua State Park (Saturday) & Shimek Forest (Sunday); PSMC (515) 446-7358
September 19: Palisades Kepler State Park; PSMC (515) 446-7358

Membership/Change of Address Form and Survey:
Your input and support of the Iowa Native Plant Society are important:
Please complete and send with your 1998 dues of $10 to Mary Brown, 330 Windsor Dr., Iowa City, IA 52245.
Name.

Address:

Phone # (_____)   email address/web site:

Additional information or special interests for member directory entry:

Mark this box if you DO NOT wish this information published in the INPS member directory. The INPS mail list is never distributed to other organizations or companies. Dues are payable on a calendar year basis, from January 1st to December 31st. Use this form for change of address.

INPS form: Nov. 1997
Iowa Endangered, Threatened and Special Concern Plants - Your Comments

The following comments are condensed from comments posted on an Internet forum established last fall by Dr. Diana Horton to discuss various aspects of the recent proposals to update the lists of Iowa Endangered, Threatened and Special Concern plants (T&E list). Many people commented at length about the proposal to exclude 1) disturbance adapted species and 2) species whose occurrence in Iowa is limited to ‘peripheral’ counties from these lists. Please see Dr. John Pearson’s accompanying article which explains his perspective on this commentary as well as the current status of the review process.

We have grouped these comments into topics for ease of comprehension. We have several goals in presenting this information here: 1) to create a historic record of the discussion that was generated by the recent proposals for revision of the T&E list and 2) to allow native plant enthusiasts who are not ‘on-line’ to share in this stimulating discussion. By presenting these excerpts, we have absolutely no intention of reopening old wounds or heaping criticism on the Iowa Department of Natural Resources. To the contrary, there are a variety of viewpoints expressed below that should cause us all to open our minds a little to different ideas regarding definitions of ‘endangered species.’

I would like to thank Dr. Horton for establishing this Internet forum for discussion of an important issue and for all those who shared their viewpoints and ideas. I would also like to thank Mary Jane Hatfield, Rosanne Healy, Mark Leoschke - and Deb Lewis for helping me to summarize these comments in excerpt form. Finally, I would like to thank Dr. Pearson for graciously sharing his thoughts about this issue.

If we have taken anybody’s comments out of context, we apologize for that was not our intention. Finally, we must state here that the printed comments represent the viewpoints of their authors and may or may not reflect the opinions of the INPS newsletter staff. - William R. Norris

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GENERAL COMMENTS

This Proposed plant list is progressive in that it includes several groups of organisms - mosses, liverworts, fungi and lichens - that previously have not been represented on the state endangered species list, and the extensive documentation of the methods and rationale used in preparation of the list is impressive. Thanks to Dr. Pearson’s efforts, the Natural Resources Commission has provided the public with a document that facilitates and warrants thorough evaluation. Diana Horton, November 10 1998

Is there some sort of limit as to how many species can be on the list? Mary Jane Hatfield, November 16 1998

...it’s very easy to stand on the outside and criticize something, but totally different to be on the inside and enforcing it on a day-to-day basis. After hearing John talk about his efforts on this list a week ago, I was convinced that he had initiated these changes after a long and thoughtful process, and that the changes had stemmed from his day-to-day experiences with trying to protect Iowa’s rare species and ecosystems. As such, his approach really may require us all to rethink our natural and first inclinations.. Connie Mutel, November 16 1998

...Since Iowa has so little of its natural heritage left compared to surrounding states... It shouldn’t be a surprise that Iowa would have more T&E species listed. The state we share the most similarity with in terms of habitat loss is probably Illinois, and they list about twice as many species as we currently do. Thomas Rosburg, November 30 1998

The recognition of unique natural areas such as undisturbed forests, prairies and vegetated wetlands should be more obvious to developers and regulators alike than the recognition of individual species in ubiquitous, disturbed areas such as roadsides, oldfields, and farmed wetlands. Roger Maddux, December 7 1998

As for the collective DNR bashing, I find this to be totally unacceptable. This past weekend I spent all of my free time on DNR lands and I can only state that I am awed by the tremendous amount of environmentally positive work this agency does with the limited resources which they have available to them. Saturday afternoon was spent on Anderson Prairie State Preserve, while Sunday I walked the wetlands and restored prairies at Tuttle Lake. What a great experience. It is tough for me to sit by and watch the DNR get bashed when they have given me as an outdoors person so much. Gary Phillips, December 14 1998

The listing of any plant or animal species only serves to make us aware of its precarious status, whether it be interior or in the border counties, and thus prevent further declines in its numbers due to heedless harvesting or habitat loss. The listing will not stop development on private land. It may, however, protect the species from such threats as utility-line corridors, road construction and other developments which utilize the right of eminent domain. Most projects could be easily rerouted with little or no additional expense if the information is available.

The list’s main function is to serve as a Red Flag which reminds us to take note of our actions, not to stop development or impact agriculture.

The plants on the edge of their range may well be the most adaptable genetically. Do we really want to reduce the range of any...
species even if its core population is in Illinois or Missouri? Every area is a biological crossroads and we have an obligation to keep Iowa as diverse as we can for future generations. Carl Kurtz, December 17 1998

Finally, I’d like to comment on concerns that an expanded list of endangered and threatened species will increase conflicts between protection of species, and farmers and developers. Protection of natural areas and the beauty and recreation that they provide leads to a high quality of life. And in the long-run, high quality of life equals economic vitality because it is directly correlated with our ability to attract and retain high quality jobs and young people to the state. For this reason, I don’t believe we need to choose between protection and economics. Cathy Mabry, December 29 1998

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FUNDING ISSUES

I am concerned that too much emphasis is being put on the need to allocate resources and too little is being put on the need to protect our last slivers of natural landscape. We, in the state that probably leads the nation in the proportion of native landscape destroyed, need to do everything possible to ensure no further net loss of natural areas (both those with high quality and those that are degraded remnants with potential restoration). Thomas Rosburg, November 30 1998

The lack of reliable data on the status of existing populations of Iowa’s rare species makes it impossible to construct an objective T&E list. The first order of business is to fund the studies needed to collect the appropriate data. Glenda Buenger and Pat McAdams, December 27 1998

One reason given for changing the T&E list is to concentrate limited resources on the species needing the most protection. The WDP realizes the task of addressing the needs of all T&E and special concern species is overwhelming given, and even regardless of, current staff and funding. However, we feel that priorities can be set to direct resources toward those warranting the most protection. Furthermore, it is unclear if economics are a motivating factor for some of the suggested changes to the list. To our knowledge, the Endangered Species Act does not require all listed species to receive equal (or any) funding, nor does it prevent establishing priority species within the list for directing revenue. The ESA is simply designed to provide protection for species whose populations are in jeopardy. Jaime Edwards, Bruce Ehresman and Pat Schlarbaum, January 8 1999. Staff of the Wildlife Diversity Program

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LEGAL ISSUES

I do still have some problems with the proposed lists and their underlying rationale. My most serious difficulty is with the switch . . . from a "parochial" to a "regional" perspective in identifying species to be listed. [John] Pearson has adequately explained the reasoning behind this switch, and I fully accept the biological validity of the regional perspective. However, I do not think it is supported by law. If I'm correct in this view, then the proposed list would not survive a court challenge, and in that event the state endangered species act itself could be seriously undermined.

This clearly needs clarification, and the appropriate place to begin with is with the law itself-Chapter 481B, Endangered Plants and Wildlife, Iowa Code . . I repeat its oft-quoted definition of an endangered species, as one "which is in danger of extinction throughout all or a significant part of its range." I take "range" here to mean geographic range without regard to political boundaries, and this is consistent (so far) with the regional perspective advocated by Pearson. However, later in the chapter, section 481B.3 ("Investigations") directs the commission to list those species "which are determined to be endangered WITHIN THE STATE." (my emphasis). As I read it, the phrase "within the state" places the term "endangered" in an explicitly non-regional context- that it, the law explicitly calls for a "parochial" list . . . hence, as I read the law, abandoning the parochial view in favor of the regional view simply has no legal basis; . . chapter 481B explicitly directs otherwise. As I indicated above, I accept the biological validity of the regional view, and would like to see it implemented in Iowa and elsewhere. But I don't see that the law, as it is now written, gives us that choice.

What I do see, instead, is the following hypothetical scenario:

1) The proposed 1998 lists are implemented by the commission.
2) Some bad guy (a developer, say, or a farmer, or a DOT planner) acquires a parcel of Iowa land which he wants to bulldoze, but which is found to harbor a plant species that is protected only as a result of adopting the regional view (e.g., small white lady's slipper, Cypripedium candidum).
3) The bad guy hires a lawyer, who files suit against the state. In that suit, the lawyer argues that the protected species should not be protected, because (a) it was not protected under the older, but legally valid, parochial view, and (b) the newer regional view is not legally valid under Iowa law.
4) The court, ruling according to law (as it should), finds that the listed species indeed should not be listed, and throws out the whole list until such time as a valid one can be (re)implemented.
5) In the meantime, the bad guys have a heyday. Steve Rassler, November 18 1998
In the absence of a law that is specifically aimed at protection of communities (and it is very doubtful that we will ever have such a law due to the ambiguity of community identification and delineation of boundaries) we are left with the use of species - a biological entity that has very well defined boundaries. We must depend on species to provide whatever legal protection the law provides for preservation of Iowa's natural communities. The law specifically prohibits the taking, possession, and sale of T+E species with the state of Iowa. I interpret 'taking' to mean 'to cause the death of' the organism, which certainly happens when ecosystems that house species are destroyed. Therefore protection of Iowa's natural communities is implicit in the language of the law. Thomas Rosburg, November 30 1998
What Sunny, in a way, about this issue is that none of us . . . is in a position to settle it. To settle it would require a court test, because only through such a JUDICIAL procedure can the meaning of the law be determined with anything like finality. But I soon stop smiling at the thought of such a test. If it comes to pass, then we won't be able to assume (as we can now) that everyone involved is a nice guy just trying to do good. We won't be dealing exclusively with people who care about conservation and are impressed by biological arguments. Some of these people will be impressed only by what the law explicitly says, and may be quite unwilling to accept our interpretation of it. That's why I'm convinced we should adhere conservatively to the letter of the law rather than try to interpret it liberally in our own favor. We simply do not have the power of interpretation that the courts have, and we have no guarantee that the courts will see things our way. Furthermore, if we're going to expect others (developers, etc.) to respect the law, then we should be showing complete respect for it ourselves, and not be trying to do what they would see as a kind of administrative end-run around it. Steve Rassler, December 2 1998
Statutes are written by people, so they are not always perfect; but they are written with considerable care, with an eye to stating the Legislature's intent with the best economy of words. It is unlikely therefore that the phrases 'indigenous to the state' and 'within the state' would be intended to have the same meaning. In this context, "within the state" means that a species indigenous to Iowa, though abundant elsewhere, must be on the Iowa list. If it is threatened or endangered within the boundaries of the state of Iowa. Tom Mathews, December 3 1998
My first comment relates to the argument that all threatened and endangered species should not be listed because the DNR does not have the resources to protect them all. But there are two distinct aspects of the endangered species act. One is the listing of the species. The other is protection of those species. The listing process is strictly a scientific endeavor. If a species is threatened or endangered, it is so, whether or not the DNR has resources to protect it. Although the Iowa endangered species act has not been litigated, federal courts interpreting the federal endangered species act have uniformly held that the listing process must be based solely on good science. I am sure the Iowa courts would regard the federal cases as persuasive authority. The question of protection and enforcement is a separate matter. If the DNR wants to make choices in which species to protect or how to respond to 'non-naturalist groups' concerned about farming and economic development, that is an enforcement decision. There have also been some comments about deleting the 'Special Concern' category. I would suggest that this category does serve a purpose. Even though this status does not give the species any protection under the endangered species act itself, if an environmental assessment or environmental impact statement is being prepared or a 404 (wetlands) permit is being evaluated, a special concern species would cause the reviewing agency to more closely examine the impacts of the proposed action. It seems to me that if we are trying to protect the ecosystem..special concern species may indicate an ecosystem at risk. W. Taylor, December 20 1998
From our perspective as citizens it is clear that the Iowa Code intends the T+E list to be constructed on the basis of sound scientific principles and data (481B.3). The compilation of the list is not to be limited by funding constraints or potential conflicts with farming or development activities. Concerns of that nature are to be resolved by the political process after the list is formulated.
The protection afforded to Iowa's rare flora and fauna by Section 481B of the Code results from the Iowa Legislature's conclusion that maintenance of the state's existing species diversity is a worthy goal which the T+E list must support. This commitment is reiterated by the Legislative Finding at Section 455A.15. The prevention of further loss [of the rich diversity of life in Iowa] is therefore imperative: Two of the criteria used to formulate the proposed list are objectionable because they arbitrarily narrow the focus of the T+E list and undermine the goal of maintaining species diversity in Iowa. Pat McAdams and Glenda Buenger, December 27 1998

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AVAILABLE KNOWLEDGE

A statewide database (maybe called the Iowa Plant Inventory) would allow computerized searches and quick determinations of the number of known sites for a species. Since most plant vouchers have site information at least to the
level of township, range and section, all occurrences of specimens in the same section could be viewed as representing ‘one population’. At least we could get a better idea of the minimum number of populations for a species. Thomas Rosburg, November 30 1998

The take-home message is that we need more information on rare species than is usually available in manuals and national/regionallistings. Who has the burden of providing such information, the staff of the DNR or the state citizens? Bob Cmlden, December 10 1998

As... justifications for excluding species which have been known to occur in ‘disturbed’ areas, the proposal suggests that disturbed areas are less well-studied in Iowa than natural areas, thus species occupying them must be more common than the data suggest... In reality the only valid conclusion one can draw from this argument is that the data to dispute Eiler’s and Roosa’s determination of rarity [do] not exist. Until such data [are] collected the T+E proposal must err on the side of caution. Glenda Buenger and Pat McAdams, December 27 1998

PROPOSED EXCLUSION OF DISTURBANCE SPECIES

The decision to focus attention on natural habitat fails to adequately define the status of Iowa’s natural resource base. It is clearly important to invest in preservation of the extremely small percentage of high quality sites within our borders. However, due to a long history of land use, the majority of native and important Iowa species exist in some condition of ecological disturbance. References to disturbance types are not always accurate. The proposal suggests that disturbed areas... are probably indicators of a very rare community type, which is primarily ag land and Roosa’s determination of rarity [do] not exist. Until such data [are] collected the T+E proposal must err on the side of caution. Glenda Buenger and Pat McAdams, December 27 1998

DISTURBED OR MARGINAL AREAS ARE THE MAJOR ECOSYSTEMS OF OUR STATE

Exclusion of species from disturbed habitats should only apply to non-native species. Fossil studies document that native weeds have been a part of Midwestern landscapes for 35,000 years, and if fossil records existed they would probably show that they existed since land plants first evolved. Dick Baker, November 19, 1998

Problems with eliminating disturbance species: 1) many of these species ‘look’ like disturbance species because they are hanging on in refugia habitat; in reality they are more likely indicators of communities which we no longer have; 2) some disturbance species are probably indicators of a very rare community type in Iowa-sterile habitats resulting from primary succession; we cannot assume that disturbed Iowa (which is primarily ag land) will provide suitable habitat for these species; 3) even if we eliminate disturbance species, I am uncomfortable with the way disturbance species were identified; the short descriptions of habitat use in Floras could be misleading.

Disturbance itself is very difficult to classify because each type has different temporal and spatial scales. The issue gets more complex because one type of anthropogenic disturbance is lack of management, which results in ecosystem degradation under the guise of a ‘natural habitat’. As an example consider the native oak savannas and woodlands, which have become closed in without fire management. In the natural ecosystem, homogeneous light levels would have permitted a woodland species to do well in any part of the woodland. However, after canopy closure light levels are likely to be adequate only along the edge near a field or along trails or pathways - habitats that would be considered disturbed.

I know of sites where Yucca glauca and Spiranthes cernua occur in the roadside ditch. I would not leap to the conclusion that these are disturbed species - rather I think that some species exist where a native remnant extends into the roadside. Thomas Rosburg, November 30 1998

Ironic, isn’t it, that in 1890 Hitchcock considered ‘roadsides and railways’ to be prairie but in 1998 they are both ruled out as a source for rare plants on the proposed T+E list? Mary Jane Hatfield, December 20 1998

Robert Griggs (Bulletin Torrey Botanical Club vol. 67) noted many years ago the propensity for very rare plants to grow in disturbed habitats and in association with many of the weediest species. ‘Thus we are brought to the seeming paradox’, he wrote, ‘of putting the commonest of plants, the ubiquitous weeds, into the same category as the rarest.’ The difference between them biologically is not in habitat requirement but in ability to spread once established. In addition, natural and human disturbance are not always easy to distinguish... and human-created habitat... may act as refugia when the natural habitat has been lost. Cathy Mabry, December 29 1998

It is indeed appropriate to focus the State’s efforts on the plants and animals which occur in ‘natural habitats’. Unfortunately, there are no such areas in present-day Iowa. Our preserves and parks are not ‘undisturbed natural areas’... All these areas are far too small for natural ecological processes to operate and can be characterized, for the most
part, as dysfunctional ecosystems. They lack the wildfire that frequently burned much of Iowa's prairie, savanna, and oak-hickory timbers in pre-settlement times and have an out-of-balance large ungulate/large predator ratio. Both parks and preserves are seriously infested by exotic species... which further degrade the native ecosystems... Many rare and conservative species therefore have survived in tiny areas which, although they may be occasionally disturbed by human activities, represent the least disturbed habitat available... It is therefore inappropriate to reject protection in the T&E List every conservative species reported in either Iowa or anyone of the surrounding states that persists in these somewhat disturbed settings which function as refugia in a hostile sea of row crop agriculture. Sandy Rhodes, January 4 1998

The second list criterion is based on species of natural habitats. A point of concern is the actual nature of "natural" vs. "disturbed" habitat in Iowa. We essentially have no undisturbed habitats due to the severe fragmentation of our state's remaining natural landscape. As a result, the WDP feels it is difficult to justify excluding species of disturbed habitats in Iowa since essentially all habitat, even preserves, is subject to some degree of natural or human-inflicted disturbance. Furthermore, we are concerned the distinction between disturbed and natural habitat aims to protect current natural areas/preserves and may actually deter establishment or protection of further habitat. Jaime Edwards, Bruce Ehresman and Pat Schlarbaum. Staff of the Wildlife Diversity Program, January 8 1999

Though it may be intuitively logical that all species that are numerically scarce... should be legally protected, the intent of Iowa's Threatened and Endangered Species legislation as I understand it, is to create a list that prioritizes for legal protection, those most critically in danger of loss due to human activity. I agree with Dr. Pearson, that relatively non-conservative species such as broomsedge, currently listed as a species of special concern in Iowa, does not warrant special protection. Travels through Missouri reveal broomsedge growing abundantly in overgrazed pastures and disturbed areas. In Iowa as well, broomsedge is observed along roadsides and in disturbed areas, conditions under which it thrives. This species is not likely to be lost locally or globally if not protected.

Small white lady slipper orchid (Cypripedium candidum), however, is at risk... It is confined to good quality natural areas and currently has no legal protection in Iowa. Once common here, this orchid is now rare (reportedly existing on only 25 sites in Iowa), but it does not meet the stringent definition of numerical scarcity required for inclusion in the current Iowa Threatened and Endangered Species list. However, continued decimation of habitat critical for the survival of this species will result in destruction of populations of the orchid, eventually warranting legal protection. By that time, however, protection will be much more difficult, as the critical habitat necessary for its survival will also have been destroyed and is very expensive and difficult to reconstruct.

Use of disturbance as a criterion for describing conservatism is flawed. The reality is that most findings... of areas that will become... Iowa's finest examples of remnant natural communities are likely to be... in a disturbed condition at the time of discovery.

As a case in point, I visited a contiguous complex of remnant natural communities on pastured land in 1997... Moist areas were used as water sources for cattle and thus heavily impacted. The most obvious components of the flora was a suite of exotic species typical of grazed areas including smooth brome... and Kentucky bluegrass... In 1998, the area was not grazed, and the flora was found to include a number of rare species, three of which are included in the proposed threatened or endangered species lists, and one in the special concern category. However, if I had documented these species, I would have noted that these were found in a disturbed area. As such, a simple reference to disturbance relative to species habitat is not a valid filter for removal of species from consideration of protective status, particularly if additional comments note relationship to conservative plant associations. Pauline Drobney, Refuge Biologist, Neal Smith National Wildlife Refuge, January 29 1999

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PROPOSED EXCLUSION OF PERIPHERAL SPECIES

As noted in the Introduction of the documentation accompanying the Proposed 1998 list, 'Iowa's endangered species act... instructs the Natural Resources Commission of the Department of Natural Resources (DNR) to promulgate a rule listing those species offish, plants, and wildlife which are determined to be endangered or threatened within the state.' It is contrary to the spirit and intent of this act to exclude any portion of the state. Exclusion of species restricted to the outer tiers of counties would exclude 62 of the 99 counties and approximately 34,000 of 56,000 square miles, or 60% of the total surface of the state... Contrary to Dr. Pearson's assertion that exclusion of species found only in the outer two tiers of counties 'places species conservation on a 'biological template' (natural regions and species ranges) rather than one defined by state and administrative boundaries', this proposal actually emphasizes arbitrary, geopolitical boundaries ('interior versus 'peripheral') and ignores the landform regions of Iowa that define the natural habitats. Diana Horton, November 10 1998
First, I would like to emphasize that this is a *state* threatened and endangered species list, therefore its definition of an endangered species should be one that is in danger of extinction throughout all or a significant portion of its *Iowa* range.” Thomas Madsen, November 13 1998

How would you like it if us Wisconsinites decided not to cover species in our outer two counties? With you doing the same, we would have a huge area uncovered. We have several plants and animals that survive only in our outer layer of counties and wouldn’t dream of excluding them from protection. Robert Wemerehl, November 20 1998

Iowa has only two political boundaries (the north and south). The western and eastern borders are natural geological/ecological boundaries, and for that reason have ecological ramifications. They have played an integral role in the development of ecosystems along their valleys, including native ecosystems that are unusual within the state, and they have also undoubtedly affected species migrations. If the goal is to shift towards a more ecologically based paradigm, then we should include (rather than eliminate) the western and eastern tiers of counties that are adjacent to Missouri and Mississippi Rivers.

..If long-term climate change does occur, then those populations that are at the periphery of the species range in the direction that the range is shifting towards..are essential to provide the necessary genetic link to the species’ future range. Thomas Rosburg, November 30 1998

My comments derive from 6 years of collecting dragonflies and damsselflies in Iowa and having prepared information regarding the status of these insects for the DNR.

I believe that the underlying biological assumption of the regional concept is that we need not be too concerned about a species that is common in an adjacent state but rare in Iowa where it may reach the limits of its distributional range. In essence, if the species is listed as common or secure in an adjacent state we need not be concerned about its status in Iowa. It is assumed that populations of a species that is listed as common or secure in an adjacent state are contiguous with peripheral populations in Iowa. This need not be the case.

Populations of several of Iowa’s rare dragonflies occur only in peripheral counties next to Illinois and are listed as common or secure in Illinois. However, the closest populations in Iowa are 80-100 or more miles to the east or southeast. The Iowa’s population(s) are remnants of once wider and more continuous distributional ranges. The ranges of these dragonflies have shrunk and been fragmented by agriculture and other human activity. Even though these species are listed as secure in Illinois they are locally extinct in the central and northern parts of that state; i.e., that part of Illinois that is across the river from Iowa. These are not species that just slip into Iowa and are common across the Mississippi River. On a regional basis the Iowa populations are terribly important If these species are to recover locally as wetlands and other habitats are restored. Bob Cruden, December 10 1998

*Roger Maddux posted excerpts from an article by Malcolm 1. Hunter on December 1998. Some of these appear below.*

The Shortcomings

Skewed Allocation of Funds

..Wealthy counties allocate relatively large sums to species that are only rare locally, while in poorer nations species threatened with global extinction receive far less funding...

Lack of an Ecological Context

Failure to consider the local biota in a larger context can lead to short-sighted management. For instance, given that the geographic ranges of species are in constant flux due to climate change, trying to maintain a peripheral population will ultimately be futile roughly half the time, whenever the range is shifting away from the local area..

The Virtues

Genetic Diversity

Maintaining the full complement of genetic diversity of each species is a major reason for protecting species throughout their geographic ranges...in particular, populations that are genetically adapted to conditions at the edge of a geographic range may be well-adapted to shifting the species’ range in response to climate change..cryptic or sibling species—morphologically indistinguishable from one another but genetically isolated—are probably more common than we realize.

Ecological Roles

For example, the integrity of a forest ecosystem in northern Wisconsin depends on the complement of species in that particular ecosystem, and if the absence of wolves has led to an overpopulation of ungulates, it is irrelevant whether or not wolves are still common in Manitoba or Siberia..
Local Values
Another reason for protecting locally endangered species is parochialism itself. People in Scotland cherish their ospreys even though Russia and Canada have far more of them. As Aldo Leopold wrote, "Relegating grizzlies to Alaska is like relegating happiness to heaven; one may never get there.

Umbrella Species
Conservation efforts are highly biased toward vertebrate animals, especially birds and mammals, because we have far more information about their welfare. This casts vertebrates into the role of umbrella species because efforts to protect the habitat of these species inevitably assist many other species. Any species that elicits conservation activity can fill the umbrella role, whether it is globally endangered, or only locally endangered, or not even endangered at all.

Conservation Organizations
Conservation requires action, and action usually requires organizations, especially government agencies and private conservation groups. Virtually all such organizations operate within political, not ecological boundaries: national, state or provincial, and local...Using this existing network, despite its inherent tilt toward parochialism, is far more practical than trying to replace it with a single global system organized along ecological boundaries. In short, we could argue that conservationists are empowered by political units, rather than constrained by them.

Surrogate Species
Although the key to maintaining an endangered species is usually maintaining its habitat, conservation biologists must often step in with more proactive measures such as controlling exotic competitors or translocating populations to a new habitat.

Avoiding Endangered Status
One of the most compelling arguments for conserving populations that are not currently at risk of extinction is that it is far easier to maintain a healthy population than to save one on the brink of extinction. The arguments against a parochial approach to species conservation are simple and compelling. Clearly, in a Panglossian "best of all possible worlds" efforts to save endangered species would be allocated in proportion to the likelihood of their becoming extinct, and political barriers would not impede this process. We are exceedingly short of this goal and thus we should all generously support conservation organizations that transcend political boundaries. Nevertheless, making globally endangered species the highest priority does not negate the fact that locally endangered species still merit our concern and action.

Exerpts from an article by Malcolm Hunter ('The Virtues and Shortcomings of Parochialism: Conserving Species that are Locally Rare, but Globally Common', Conservation Biology 8:1163-1165), posted by Roger Maddux on December 17 1998.

As applied to floral species, the regional approach is misguided in its emphasis on 'interior'species that are typical of the 'original, widespread flora of the state'. It results in a focus on rare species occupying the black soil prairies and wetland habitats which characterize(d) central Iowa. Iowa was, and is, so much more. Unique habitats characteristic of landforms located in the periphery of the state, such as the Loess Hills, the Paleozoic Plateau, the Mississippi Blufflands, and the Mississippi and Missouri alluvial floodplains are uncommon or entirely absent from the interior of the state. Rare species which occur exclusively in these unique environments on the periphery of the state were not widespread in Iowa. They are nonetheless an important component of the biological diversity of the state and deserve protection as listed species. Exclusion of these species by the 'peripheral filter' (unless they are recognized as disjunct or regionally rare) is contrary to the intent of the Code.

The regional approach shifts part of Iowa's responsibilities to protect rare species to her neighbors, yet Iowa has no authority over the policies of these states. For this reason it is the responsibility and role of the Federal Threatened and Endangered species programs to implement a 'regional' approach.

The regional approach also overlooks the fact that species at the edge of their range may represent genetic diversity. Species found in Iowa are adapted to local conditions found in Iowa. Glenda Buenger and Pat McAdams. December 27 1998

I would like to propose these refinements to John Pearsons proposal for using occurrence in the outer two tier of counties as a criteria for selection:

If a plant species is restricted in Iowa to the outer two tiers of counties and is rare there, then it should be considered for inclusion on the Iowa TNE list if it meets both of the following criteria:
1) The species occurs in a habitat known to be natural for it somewhere in its distribution; and
2) The species is likewise rare in the adjacent tier of two counties across the state line.

These modifications would accommodate the retention of all rare plants restricted to the Loess Hills, since this community is non-existent across the state line in Nebraska. These modifications would also accommodate many rare species in the Paleozoic Plateau region, since most of these species are likewise rare across the border in Minnesota and Wisconsin (example: twinleaf, Jeffersonia diphylla).

Finally, these modifications would allow omission of species which are common to abundant in an adjacent state right up to the state line, but barely extend into Iowa (example: Shingle Oak).

I do see one potential problem with my proposed modifications: lack of knowledge of a species' status in the adjacent counties across the state line. William Norris, December 27, 1998

...The T&E List must be representative of the biodiversity in the entire state of Iowa, not just its center. By excluding these 'peripheral' species, you have arbitrarily excluded all of the most physiographically, and thus biologically, diverse parts of the state...

Since these 'peripheral' species often are restricted to small patches of rare and unusual habitat, their exclusion will make our efforts as conservationists more difficult in our striving to preserve the best remaining natural areas in Iowa. Furthermore, these species often co-occur with suites of other uncommon associates in such areas as algific talus slopes, fens, sand prairie/wet swale complexes, loess bluffs, etc. Even if these species are not thought to be 'typical of the original, widespread biota of the state', they are of great conservation value...

Nonetheless, I do agree that there are some 'peripheral' species which may not warrant listing. To properly determine if they should not be listed, each species distribution must be examined, not in Iowa, but in the adjacent states. If the species occurs no more than two counties away from each Iowa occurrence and is common there, then it can be safely removed to the 'Special Concern' category for Iowa. Some such objective 'tests' should replace the never-defined degree of separation needed for so-called disjunct populations. Sandy Rhodes, January 4, 1999