

Weeks, David A.

From: Lori Sargent [sargent@michigan.gov]
Sent: Thursday, July 08, 2010 10:58 AM
To: Weeks, David A.
Subject: RE: Fermi 3 and the American lotus

OK, this is the response I got to your question:

"According to our database, we currently track 24 statewide occurrences of *Nelumbo lutea*. In the Rare Species Explorer, it notes 13 EOs in Monroe County, and 3 in Wayne County, so therefore 66% of the known populations are in SE Michigan. In terms of what constitutes a healthy population, I can tell you that only 4 of the populations in those counties (unfortunately) are ranked other than simple "Extant" or "Historical", but those four EOs are ranked BC, B, B, and B, (A = excellent condition, B = good condition, C = viable, D = non-viable) so at least one can say that several populations are in good condition. It is likely that some of the other occurrences might be considered healthy (more or less those that would be ranked as viable or higher, i.e. C rank and above) if we were able get more current information on them. One of the reasons we can't place a rank higher than "E" on many occurrences is that the reports we have (often based on herbarium specimens or anecdotal reports) typically fail to provide the necessary data sufficient to give a sense of population size, extent, condition, and threats. Of course, we don't really know the condition until it is checked, but given that there are several more populations, it is very likely that at least some would turn out to be decent.

In terms of population structure, yes, this is one of those species for which it is difficult to ascertain the number of genetic individuals (i.e. the number of distinct plants). Plants arise from tubers rooted in a mucky substrate, and practically speaking, it would be quite onerous to count or determine single plants, given that one would have to feel through the ooze to figure out which leaves and peduncles are attached to which individual tubers. If needed, determining population structure would be a job best left for molecular systematists or taxonomists, who could take leaf tissue and make a reasonable stab at that, but as noted, it would be pretty difficult to figure out how many plants could be represented in a lotus colony. If needed, someone could peruse the literature to see if there has been any work on this, if only to establish whether there are any population data anywhere that gives a sense of population diversity in the species, demonstrates whether the species may be clonal, and so on.

Lastly, I can't comment on the ability to transplant this species, thus that may be a question for botanical gardens or those versed in aquatic plant horticulture. It is not uncommon to see ornamental varieties of lotus species, so undoubtedly there are many who have some knowledge of how to cultivate the species. I would wager that it is possible to transplant, but I'm aware that garden clubs (and I believe there is a lotus club somewhere down in Monroe County, with which Jean Micka has been involved) have long been seeding this species around (they've possibly moved the tubers as well), so I would guess that the species can be both transplanted and seeded, though I don't have a good sense of just how easy it is. It's probably very easy as a guess.

On the latter question, I would refer you to Chris Hoving, as this species has undoubtedly come up in the past concerning species permits, and thus the Wildlife Division could search it's endangered species files to see what's been done under permit. I would assume there is enough history on this species to provide some information."

Lori Sargent
Nongame Wildlife Biologist
Wildlife Division
Michigan Dept. of Natural Resources & Environment PO Box 30180
Lansing, MI 48909
SargentL@michigan.gov (mailto:SargentL@michigan.gov)
517-373-9418

David A. Weeks
Ecology and Environment, Inc.
368 Pleasant View Drive
Lancaster, New York 14086
716-684-8060, ext. 2550
www.ene.com