



Mississippi Native Plants

Volume 15, Issue 3

Fall 1995

Alien tropical soda apple invades Mississippi

by Charles T. Bryson and John D. Byrd

In *The Silent Spring*, Rachel Carson warned of environmental pollution by pesticides. Carson's book directly affected modern agriculture. Today, the food and fiber produced in the U.S. is the safest anywhere in the world and research continues to discover methods and technologies that reduce the risk of pesticides and agriculture on the environment. Currently, agriculture, forests and natural areas are faced with another major problem, biological pollutants. Annually numerous plant and animal species are introduced intentionally and unintentionally into the US. Each of these plants has the potential to harm natural biodiversity, pristine ecosystems, and agricultural production.

Tropical soda apple, *Solanum viarum* Dunal (Solanaceae), is an aggressive, shrubby perennial that is native to Argentina and Brazil which has been introduced into the U.S. It is spreading at an alarming rate in the southeastern US. The first U.S. collection of this weed was made in Glades County, Florida in 1988, but the plant may have been in Florida since the early 1980's. Since that time, tropical soda apple has spread rapidly in the southern U.S. Currently, it infests an estimated one million



acres of pastures, croplands, forests, and natural areas in Alabama, Florida, Georgia, and Mississippi.

Tropical soda apple is distinct from other closely related plant species. Mature plants of tropical soda apple are three to six feet tall and are armed on the entire above ground portion of the plant with broad-based white to yellowish thorn-like prickles. The

leaves and stems are hairy. Flowers are white with five recurved petals and white to cream colored stamens surrounding a single pistil. Immature fruits are mottled whitish to light green and dark green, like a watermelon. Mature fruits are yellow, about the size of a golf ball, and each fruit can contain up to 420 flattened reddish-brown seeds.

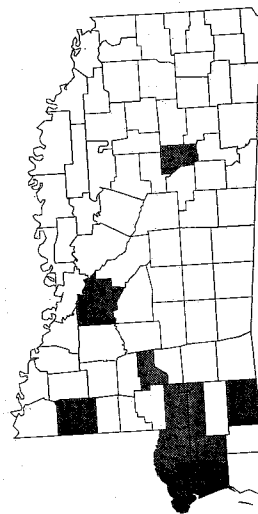
Tropical soda apple has spread rapidly in the southeastern US because habitat requirements are extremely diverse, it possesses a high reproductive capability, it has numerous mechanisms of dispersal, and it has no known natural enemies in the US. This weed grows well in both shade and full sunlight, on diverse soil types, and in competition with native and other weedy plant species. A single plant has the capability of producing up to 100,000 seeds during a single growing season. Tropical soda apple plants also produce long, enlarged lateral roots that give rise to additional plants. Although the foliage is unpalatable, livestock and wildlife such as coyotes, deer, feral hogs, fox, raccoons, and opossum eat the sweet smelling mature fruit. Scarification of the seed by the digestive systems of livestock and wildlife enhance germination. Seeds also adhere to and are dispersed by animals and other objects because of a sticky substance produced in the fruit.

In Mississippi, tropical soda apple was first observed in Hinds and Hancock Counties in 1993. Since then, it has been detected at 18 additional sites in Amite, Forrest, Greene, Hancock, Jefferson Davis, Lamar, Pearl River, Stone, and Webster Counties. Population sizes vary from a single plant to more than 200 to 400 plants per acre in 20 to 200 acre pastures and surrounding rights-of-ways, vegetable crop fields, forests, and natural areas. Thus far,

tropical soda apple population sizes and numbers of acres infested outside Florida are directly proportional to the number of livestock introduced from infested areas in Florida, but in Mississippi, there is evidence that wildlife has dispersed tropical soda apple to areas adjacent to infested pastures.

Based on surveys during 1994, tropical soda apple is not yet a widespread problem in Mississippi; however, the total number of acres infested in Mississippi are similar to the acreage infested in Florida five to six years ago where it now infests nearly a million acres. During 1994 in Florida, tropical soda apple cost the cattle business over 11 million dollars. Damage to natural habitats and forestlands is difficult to determine, but the problem has become so great in Florida that recreational horseback riding may be prohibited in several state parks and recreational areas.

It is apparent that tropical soda apple poses a real threat in Mississippi through the potential for personal injury, competition with native plant species, and destruction of natural habitat through displacement of native flora and fauna. Early detection and destruction is paramount to eliminate the





threat of this pernicious weed which has the potential to infest millions of acres in Mississippi. The best means of control varies according to the size and location of the population. Individual plants and small populations of tropical soda apple should be pulled up and burned completely including all fruit. Larger populations require repeated mowing and/or one or more applications of an effective herbicide.

Individuals who find tropical soda apple should contact their county forester,

county agent, or the authors to verify the identity, document tropical soda apple spread in Mississippi, and begin control measures.

Note about authors: Charles T. Bryson, is Research Botanist with the USDA-ARS, Southern Weed Science Lab, Stoneville, MS 38776. John D. Byrd, Jr., is Extension Weed Specialist, Mississippi State University, MS 39762.



FEATURE	TROPICAL SODA APPLE	HORSE NETTLE
Plant height	to 6 feet	to 4 feet
Stem diameter at soil level	to 1 inch	to ¼ inch
Stem color at soil level	green	brown
Leaf orientation	drooping	upward
Longest leaf prickles	½ to ¾ inch	¼ to ⅝ inch
Root system	shallow to 6 inches	deep to 3 feet
Flower petal color, shape	white, curl backwards	white or purple, flat
Immature fruit color	green and white mottled	light and dark green mottled
Fruiting pattern	usually singular	usually clustered
Fruit size at maturity	up to 1 inch diameter	up to ½ inch diameter
Fruit color at maturity	yellow	yellow

President wants to hear from you!

Having trouble finding local native plant sources? Do you need information about a plant? We're here to give you the best information and services that we can to help you learn more about Mississippi's native plants.

In order to serve your needs better, please take a moment to fill out the following survey. Send your comments to Bob Brzuszek, President, MNPS, P.O. Box 190, Picayune, MS 39466, fax him at 601-799-2372, or give him a call at 799-2311.

1. Should educational seminars should be sponsored by the MNPS? Yes No

2. If yes, please list topics that you feel are appropriate. _____

3. Would you like to see more field trips sponsored by MNPS? Yes No

4. If yes, please list places of interest and suggest program format. _____

5. Are there areas of interest that you feel MNPS should focus upon? _____

6. Do you have any suggestions for the MNPS newsletter? _____

7. The Crosby Arboretum has offered to become the permanent home of the MNPS, which would mean assistance with the membership and mailing lists, and a mailing address that wouldn't change every year or two with changes in officers. Do you support establishing a permanent MNPS home office at The Crosby Arboretum?
Yes No

8. Are there any other suggestions that you have? _____

Thanks for taking the time to help your society!

Member says coast residents need to understand why seagrasses must be preserved

Hi. I am a member of the Mississippi Native Plant Society and enjoy your newsletter very much. On the front page of the newsletter published early this year, there was an article by Dr. Lionel N. Eleuterius about the decline of seagrasses. I am an ardent activist trying to stop the destruction and loss of seagrasses in the Mississippi Sound and in our bays.

Last year about this time Bay St. Louis and Waveland began the process of dredging sand for re-nourishment of the beaches in Hancock County. A contract was negotiated for the complete coastline beach re-nourishment including a 1.3 mile stretch of non-beach in which seagrass grows, which the Department of Marine Resources stopped (DMR). In the May 1 issue of our local Hancock County newspaper **The Seacoast Echo**, the irate editor and an out-of-state landowner wrote an editorial and letter complaining about DMR stopping them from destroying the seagrasses. Many more citizens who are ignorant of the value of seagrasses were also very upset about it. I wrote a rebuttal letter to the editor explaining the importance of preserving seagrasses.

What really made these people more angry was when an act of nature, a bad storm, washed much of the saved seagrass up on the roadway a few month later after the re-nourishment project was over. This act of nature seemed in their minds to confirm that seagrass is valueless and a nuisance weed. These people all love to eat seafood, but no one wants to preserve the nursery for it, and for the food chain sources

for larger species of sealife provided by seagrasses.

They cannot seem to see that if we don't preserve safe places for the eggs and young to grow, there won't be any larger fish, shrimp and crabs. All they see is the greedy economic value of the beach. There is plenty of beach where there is no seagrass to provide for the recreational and economic growth in the area.

What I am writing about is that in the article by Dr. Eleuterius at the end of page one, part of the article is missing. There is no continuity of meaning between page 1 and the beginning of page 2. I want to send copies of the article to some of the people who do not understand the value of seagrasses, but cannot do so because of this meaningful gap. Do you have a copy of the complete article that you could send me? It would be greatly appreciated. Please publish more articles on seagrasses and coastal marshland plants. Thank you.

Naturally, Don Holt, Bay St. Louis

Editor's note: Sorry about the error in the seagrass article. The paragraph in question is reprinted below, with the missing sentence underlined. Also, the dateline on the seagrass issue was mistakenly left off. It should say "January 1995." Also, at request of readers we're starting to use volume and issue numbers, using Volume 15 for this issue since the society is 15 years old.

Prop scars here in Mississippi waters start a destructive pattern of erosion; once the seagrass cover is broken, the ruts score out because of currents and waves, and the bed is destroyed. In South Florida some recovery has been observed in seagrass beds damaged by propellers. No recovery has been observed here or is believed to occur.

On the national scene...

Plant preservation blossoms with creation of Native Plant Conservation Committee

by Joan E. Canfield, Ph.D., Native Plant Coordinator, U.S. Fish and Wildlife Service

Most of our nation's endangered and threatened species are plants, and the prospects for their survival brightened recently. On May 25, 1994, representatives of seven federal agencies joined in Washington, D.C. to announce a new partnership to conserve native plants and their habitats.

The partnership, formalized under a Memorandum of Agreement, created the Federal Native Plant Conservation Committee. Interior Department agencies included in the partnership are the Fish and Wildlife Service, National Biological Survey, Bureau of Land Management, and National Park Service. The Department of Agriculture's Agricultural Research Service, Forest Service and Natural Resources Conservation Service (formerly the Soil Conservation Service) also joined.

Recognizing the esthetic, ecological, educational, recreational, and scientific value of native plants, the signatories agreed "...to conserve and protect our native plant heritage by ensuring that, to the greatest extent feasible, native plants species and communities are maintained, enhanced, restored, or established on public lands, and that such activities are promoted on private lands."

To help with this ambitious goal, the committee will work with state and local organizations to identify and address key conservation needs for native plants and their habitats. It will also encourage education on

the importance of plant resources, coordinate research, and provide a mechanism to share information among cooperating interests.

Why single out the plant kingdom? "The future of our public lands depends on native plants and plant communities," Fish and Wildlife Service Director Mollie Beattie said the day of the signing ceremony. "Plant biodiversity is the basis for healthy ecosystems, upon which all life depends. By working in a cooperative spirit, we can better manage these resources and avoid future conflicts."

"Healthy ecosystems and sustainable development depend on native plants and plant communities," added Bureau of Land Management Acting Director Mike Dombeck. "The conservation and recovery of threatened and endangered species is a tremendous challenge. This partnership offers exciting opportunities for recovering species. This partnership offers exciting opportunities for recovering species. We can work to prevent species from becoming threatened and endangered, which will provide great fiscal savings."

U.S. Senator Daniel K. Akaka of Hawaii, who hosted the May 25 ceremony, also praised the new program. "This agreement represents an important commitment to preserving our rich, living heritage of native plants for future generations. Because all major federal land managers will be party to this document, we

can do a better job of preventing threatened native species from falling through the cracks."

Other federal agencies with land or resource management responsibilities are expected to join the committee in the near future. The memorandum also encourages non-federal organizations, whether state or private groups, to become official cooperators. Five organizations signed on at the May 25 ceremony: the Center for Plant Conservation, National Association of Conservation Districts, and Water Conservation Society, Society of Ecological Restoration, and The Nature Conservancy. The Garden Club of America became a cooperator on June 30 at the committee's second meeting, and many more groups are expected to join us in the near future. (Note: MNPS is investigating becoming involved in this effort).

Cooperator status will provide a network through which organizations interested in plant conservation can pool and access plant databases, learn how to duplicate locally successful projects, and discover new potential funding sources.

The initial goals of the committee are to bring in additional partners, develop a strategic plan, and help set up regional task forces and national working groups. Regional groups will be the focal point for developing a prioritized list of sites for concerted plant conservation efforts. National working groups will focus on the four major program areas: conservation actions, databases/information exchange, education/public outreach, and research.

For details, including information on how to join as a cooperating organization, please contact the Federal Native Plant Conservation Committee. Write or call Ken Berg, Wildlife-Fisheries Division, Bureau of Land Management, Washington, D.C. 20240

(telephone 202-452-7764) or Joan Canfield, Division of Endangered Species, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Room 452, Arlington, VA 22203 (telephone 703-358-2105).

Calendar of Events

Every Saturday, 9 a.m., medicinal plant walk with Darrell Martin, Blue Boy Herbs and Aquatics, Carriere, \$15 fee includes vegetarian lunch. More info/directions, 1-800-798-9951.

Sept. 7: How to Design and Build Ponds, Pools and Waterfalls, 7:30 p.m., Crosby Arboretum, Picayune. Members, \$5; non-members, \$8. (Note: Admission prices are the same for other Crosby Arboretum listings below.)

Sept. 13-15: Seventh Annual Urban Forestry Conference, New York City, New. More info: American Forests, 202-667-3300.

Sept. 16: Plant propagation workshop at 10 a.m. at Crosby Arboretum led by horticulturist Becky Henopp.

Sept. 26: Coast Herb Society, formed to promote the understanding, use and appreciate of herbs, holds its first meeting at 6:30 p.m. at the Ocean Springs Library meeting room. More info: 872-3457.

Sept. 30: Fall Wildflower Walk with Larry Pardue, executive director of Crosby Arboretum. Meet at Welcome Center. Reserve by Sept. 28 by calling 799-2311.

Oct. 5: Crosby Arboretum Fall Plant Sale Preview Party, 6:30 to 8 p.m. Planting Perennials lecture by Gail Barton at 8 p.m.

Oct. 5: "Ecology plants: Landscaping for the Health of People, Wildlife and the Environment." Becky Gillette will share tips, seeds and cuttings of herbs, natives and wastewater treatment plants at the Hattiesburg Audubon meeting, 7:30 p.m., Trustmark Bank, downtown.

Oct. 7: Fall Plant Sale at Crosby Arboretum from 10 a.m. to 5 p.m. Free admission.

October 20-21: Return of the Natives, Central South Native Plant Conference, Birmingham Botanical Gardens. Registration is \$65 (includes buffet supper and two lunches). More info: Birmingham Botanical Society, 205-879-1227.

October 30: Coast Herb Society meeting, 6:30 p.m., Ocean Springs Library.

Nov. 14: Easy care landscaping with native roses, MNPS vice-president Liz Cox will give a talk on native roses to the Gulf Coast Rose Society at 7:30 p.m. at the Herbert Wilson Recreation Center. More info: 928-5837.

Nov. 17: Coast Herb Society, 6:30 p.m., Ocean Springs Library.

Biophilia Nature Center preserves native plants

In you happen to be in South Alabama, consider stopping to visit the Biophilia Nature Center, 6816 South Bayou Drive, Elberta, 36530.

The Biophilia Nature Center's goals are to preserve the diversity of our southeastern native plants and animals, to encourage a love of nature, and to promote active conservation through environmental

education.

More than 6,000 trees have been planted after culling alien species such as Japanese honeysuckle and the dreadful Chinese tallow or popcorn tree (Sapium sebiferum).

A live butterfly conservatory allows visitors to watch the full life cycles of several species of showy moths and butterflies. The center has workshops on topics such as gardening for butterflies and how to grow wildflowers.

A swamp, pitcher plant bog, flatwoods, and meadows on the Nature Center's 20-acre site are currently being restored with native species. The botanical gardens are being planted with rare and endangered plants from all over the Southeast. Biophilia needs donations of native seeds or plants, which can be mailed to the address listed above. Volunteers are also needed.



You can support the effort by joining the Biophilia Nature Center, \$10 per year includes quarterly newsletter. Or you can buy seeds or plants from the center's nursery. Or you can take a fund-raising nature sail. The primary financial support for the Biophilia Nature Center is Sailboat Charters and Fred A. Saas Associates, Architectural Firm. The nature sails are Saturday from noon to 3 p.m. on Alabama's back bays and bayous.

The Nature Center is open Wednesdays and Saturdays, 8 a.m. to 10 a.m. or by appointment. Elberta is located between Gulf Shores, Alabama, and Pensacola, Florida. For more information, call Carol E. Lovell-Saas at 334-986-7018.

Thanks to lifers!!!

We want to take this opportunity to thank those people who are life members of the Mississippi Native Plant Society. Supporting the society at the life membership shows two things: 1. Confidence in the future of the society. 2. Generous support for the mission of the society.

Life members:

Judith W. Freeman

Joan A. Pitcher

Eugenia Summer

Bobbie and Don Burkhalter

Angela Long

Robert E. Dendy

C. Morris Terry

Sarah Gillespie

Fred T. Searcy, Jr.

Robert Stewart

John R. MacDonald

William L. Giles

Mrs. Robert B. Holland

Halla Jo Ellis

Travis Salley

Elna C. Ezell

Julie Mabus

Bentley & Shelley Crawford

Lynn Crosby Gammill

Mary Anne Townes

Julia Anderson

Steve L. Timme

Glenn and Sherrie Wiygul

Charles T. Bryson

Robert B. Deen

Opah H. Dakin

Dr. Sidney McDaniel

Sara P. Fore

Native plant conference in May a great success

The native plant conference co-sponsored by MNPS in Jackson in May was a success both in terms of attendance and the attention the conference brought to preserving native plants in Mississippi.

"Judging from the comments I received from the registrants, I felt that both the workshop and conference were a great success," says MNPS President Bob Brzuszek. "Craig Tufts did excellent presentations both days, and there was a good balance of speakers and their topics. According to Ron Wieland's figures, the Friday workshop had 18 in attendance; the conference, 92."

Conference expenses outweighed income by only about \$100. The expenditure can certainly be justified because this conference--the first MNPS has sponsored in recent years--not only got the word out about native plants, but also brought us a number of new members.

Bob and Ron did a great job planning the conference, and Felder Rushing helped a lot by promoting the workshop in his weekly gardening column in the **Clarion-Ledger**. Ron and Bob were sweating it when, ten days prior to the conference, only a few folks had registered. There's always a chance planning events like this that not enough people will show up to meet costs.

Then Felder's column came out detailing the conference. "I love being superfluous, but I don't have to go overboard describing the speakers," Felder said. "Each is a celebrity, known far and wide for his expertise and ability to share what he knows (They're all great speakers, which is as or more important than knowing a lot)." Sponsors included the Museum of Natural Science, Extension Service and Garden

Clubs of Mississippi in addition to the MNPS. Felder also said he'd attended lesser conferences that cost a lot more than the \$10 fee.

After Felder's fine publicity, Ron was deluged with calls from people interested in coming. So, thanks for the plug, Felder! And thanks to Ron and Bob for their work planning the conference.

Board meeting report

The MNPS Board of Directors met during the plant conference in May with newly elected officers Bob Brzuszek, president, and Elizabeth Cox, vice president. Also present were Ron Weiland, secretary/treasurer; Vic Rudis, past president; and Roger Danley, editor.

Ron has requested a revision of his duties to be more of an educational liaison with Natural Heritage projects. This would mean finding another person to serve as secretary, or to accept Crosby Arboretum's offer to serve as a home base for the MNPS. The accounting, membership and registration duties would be assumed by arboretum staff.

Board members favor Crosby's proposal for several reasons: It would mean a permanent mailing address for the society, and keeping up with accounting and membership is a big job--one it is hard to find a volunteer to do for very long.

Input on this issue is being solicited from members in the survey published in this newsletter. Assuming no members are opposed to the proposal, Crosby's generous offer will be accepted.

Other business at the board meeting included the following:

- *Discussed developing educational brochures to promote native plants.

- *Suggested having a display table for

events such as environmental meetings.

- *Discussed working with a graphic designer to improve newsletter.

- *Approved culling names from the membership roles of people who have not renewed since 1993. Final notice letters will be sent first.

Ever thought about starting a native plant business?

by Vic Rudis

Have you ever thought about turning your hobby and knowledge of plants and the woods into a business? If so, you might be interested in a handbook called "Income Opportunities in Special Forest Products," Agriculture Information Bulletin 666, published by the USDA Forest Service.

The bulletin covers subjects such as aromatics, berries, botanicals, cones and seeds, greenery, honey, mushrooms, nuts, pine straw, wildlife and recreational enterprises, wood for flavoring and decoration, and other nontimber forest products. Each chapter contains a description of the product; its uses, marketing and competition concerns; distribution, packaging and equipment needs; resource conservation, management and rural development strategies; and a bibliography for more in-depth information. Also included is a profile of one of more "typical entrepreneurs" and a selected list of sample buyers, organizations, and periodicals, addresses and phone numbers.

Among species of interest for native plant enthusiasts, mayhaw (*Crataegus* sp.) cultivation is one of the profiled specialty fruits. The book also furnishes a 70-page section devoted to forest plants, a representatives list and value of popular medicinal and pharmaceutical plants, and permits for collection in National Forests.

Living in the South, I would have liked to see a section on rearing livestock in forest, a profile of Spanish moss (Tillandsia spp.) collecting operations, and more in-depth treatment of species endemic to the southeastern U.S. However, I cannot fault the authors. The breadth of nationwide information and length, 206 pages and 16 subject areas, are more than enough for any single publication. The book serves its intended purpose, which is to provide enough information to "lead" other toward

additional sources. The book serves as a handy reference useful for multiple forest product specialists and the bookshelves of rural community libraries and county extension agents, 4-H leaders, forest farm organizations, and "hobby" farmers.

Available through U.S. government depository libraries, individual copies of the publication are available while supplies last by writing to the USDA-Forest Service, Forest Products Lab, One Gifford Pinchot Drive, Madison, WI 53705-2398.

Send renewals to Ron Wieland, MNPS Secretary/Treasurer, Miss. Museum of Natural Science, 111 North Jefferson St., Jackson MS 39202. Phone: (601)-354-7303. **WE NEED ARTICLES, SO PLEASE SEND STORIES AND PHOTOS** to Becky Gillette & Roger Danley, 6104 Olvida Circle, Ocean Springs MS 39564. Deadline for the next issue is Nov. 1.

Membership Application or Renewal

☐ New member	☐ Renewal
☐ Student, \$5.00	
☐ Individual or family, \$7.50	
☐ Sustaining, \$10.00	
☐ Contributing, \$25	
☐ Life, \$125.00	

All members receive MNPS Quarterly. Life members also receive Wildflowers of Mississippi, by S. L. Timme. Return form and check to: Miss. Native Plant Society, c/o Ron Wieland, Miss. Museum of Natural Science, 111 N. Jefferson St., Jackson MS 39202. Include the following information with your payment:

Name _____ Address _____

_____ Telephone: _____

_____ If Mississippi, county _____

_____ Check here if you do not want your name to appear on membership list.

1995-96 MNPS Board of Directors

President: Bob Brzuszek, Picayune, 601-799-2311

Vice-president: Liz Cox, Perkinston, 601-928-5837

Secretary/Treasurer, Ron Wieland, Jackson, 601-354-7303

Editors, Becky Gillette/Roger Danley, Ocean Springs, 601-872-3457

Non-elective positions

Past President: Vic Rudis, Starkville, 601-324-0403

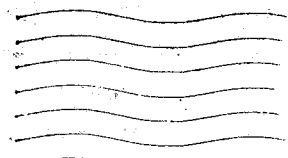
Education Chair: Felder Rushing, Jackson, 601-372-4651

Trips Chair: Sidney McDaniel, MSU, 601-325-7570

MNPS Statement of Purpose

The purpose of the Mississippi Native Plant Society, which was established in 1980, is to promote the preservation of native and naturalized plants and their habitats in Mississippi. Activities include field trips to locations throughout state, plant rescues, roadside and community wildflower and tree plantings, and educational programs on native plant conservation, ecology, propagation and landscaping.

Mississippi Native Plant Society
6104 Olvida Circle
Ocean Springs MS 39564



Mr. Charles T. Bryson
USDA/ARS P.O. Box 350
Stoneville, MS 38776

LIFE

