JIMMY CARTER PLANT MATERIALS CENTER
USDA-NRCS
AMERICUS, GEORGIA,

UNITED STATES FOREST SERVICE
COLUMBIA, SOUTH CAROLINA
and

SOUTH CAROLINA NATIVE PLANT SOCIETY

NOTICE OF RELEASE OF

Newberry Germplasm Indiangrass

Source-Identified Class of Natural Germplasm

March, 2004

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OF
NEWBERRY GERMPLASM INDIANGRASS

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UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
AMERICUS, GEORGIA

UNITED STATES FOREST SERVICE
COLUMBIA, SOUTH CAROLINA
and

SOUTH CAROLINA NATIVE PLANT SOCIETY

NOTICE OF RELEASE OF Newberry Germplasm Indiangrass Source-Identified Class of Natural Germplasm

The Natural Resources Conservation Service, U.S. Department of Agriculture, U.S. Forest Service and the South Carolina Native Plant Society announce the naming and release of a source identified ecotype of indiangrass (*Sorghastrum nutans (L.) nash.*) for South Carolina.

As a source identified release this plant will be referred to as Newberry Germplasm Indiangrass to document its original collection location. The seed was collected in Newberry County, South Carolina by members of the South Carolina Native Plant Society and employees of the US Forest Service in South Carolina. Newberry Germplasm Indiangrass is released as a source identified type of certified seed (Natural track). It has been assigned the NRCS accession number 9085834.

This alternative release procedure is justified because there are no existing commercial sources of South Carolina Indiangrass ecotypes. Propagation material of specific ecotypes is needed for conservation and restoration in South Carolina.

The potential for immediate use is high, and commercial potential beyond South Carolina is limited.

Collection Site Information: Newberry is located in Newberry, South Carolina. GPS coordinates North 34 24 02 .1 West 81 33 29 .2 Highway 176 on the US Forest Service National Forests.

Ecotype Description: Indiangrass is a tufted perennial; culms to 2.5 m tall; nodes usually appressed pubescent, internodes glabrous. Blades to 6 dm long and 15 mm wide; ligules retuse to cordate, 4-6 mm long, appearing auriculate when split. Panicle 1-4 dm long, mostly 3-4 cm broad; rachis nodes usually appressed, pubescent, internodes glabrous. Glumes yellowish brown, acute; lemmas ciliate, 4-5 mm long, awns yellowish, twisted, slightly geniculate, mostly 1-2 cm long. (n = 10)

Ecological Considerations and Evaluation: Newberry Germplasm is a native plant material which has undergone no purposeful selection. Newberry Germplasm Indiangrass does not differ in rate or spread, seed production and vigor from other naturally occurring indiangrass. Since Newberry Germplasm is native material it is not expected to behave any differently in the environment than other native material. Newberry Germplasm was "OK to release" when evaluated through the "worksheet for conducting Environmental Evaluation of NRCS plant releases".

Anticipated Conservation Use: The potential use of Newberry Germplasm Indiangrass includes erosion control on national forest, wildlife habitat improvement, and natural plant restoration on the Francis Marion and Sumter National Forests in South Carolina. Additionally, to provide a source of native indiangrass plant materials for South Carolina.

Potential Area of Adaptation: Newberry Germplasm Indiangrass is adapted to the upland soils of South Carolina especially the Francis Marion and Sumter National Forest area.

Availability of Plant Materials: Newberry Germplasm Indiangrass seed will be maintained by USDA-NRCS Jimmy Carter Plant Materials Center and will be available in limited quantities to growers in South Carolina.

Seed Collection: Newberry County

South Carolina Native Plant Society collection of splitbeard seed

Seed Orchard

Seedling Plug Production

References:

Hitchcock, A.S. and A. Chase. 1971. Manual of the Grasses of the United States. New York, New York.

Radford,A.E., H.E. Ahles and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. The University of North Carolina Press, Chapel Hill, North Carolina.

Prepared by:

C. M. Owsley, E. D. Surrency USDA-NRCS, Jimmy Carter Plant Materials Center, 295 Morris Drive, Americus GA

Request for Release Name Clearance

1. Request from Jimmy Carter Plant Materials Center
2. October 24, 2003
3. Mike Owsley 229-924-4499
4. Sorghastrum nutans
5. Yellow Indiangrass
6. SONU 2
7. 9085834
8. Grass
9. Source-Identified Release
10. Proposed names in Order of Preference (a) Newberry Germplasm Indiangrass
11. Anticipated Release Time February 2004

Exhibit 540-31 Worksheet for Documenting an Environmental Evaluation of NRCS Plant Releases

Introduction

This worksheet is used to conduct and document an Environmental Evaluation of Plant Materials releases. Criteria relating to the biological characteristics of a plant, the potential impact on ecosystems, the ease of managing the plant, and conservation need are scored. These scores and their interpretation are used with a decision flowchart to determine the appropriate course of action for making a release. As with any such ranking system, it is necessary to use sound judgment and experience when interpreting the final results.

Understanding this worksheet

The primary purpose for this worksheet is to determine if the plant release has the potential to adversely affect the environment or natural surroundings. It is possible for a plant to rate low on Part 1 (Impact on Habitats), and thus be released without further consideration, and still have a high rating on Part 4 (Biological Characteristics) indicating that the plant has the ability to propagate and maintain itself naturally. Good conservation plants usually need to persist to be able to solve the conservation problem or need for which they were intended. This is even more important for plants used in critical areas, i.e. severely eroding sites. In light of this fact, the most important criteria being used in this worksheet to determine release include those in Part 1 (Impact on Habitats) and Part 2 (Ease of Management). Parts 3 (Conservation Need) and 4 (Biological Characteristics) are used when the decision is not so clear and there is the potential for a high impact on habitats and control may be moderate to difficult.

Instructions

Rate the plant or release based on the following criteria by circling your assessment. If the criteria does not apply to the species or release, then do not rate for that criteria. If you do not have enough information on the species or plant release to complete at least Parts 1, 2 and 4 in Section A, then additional data must be accumulated through literature searches, cooperators, or studies to be able to complete these sections. Additional notes which may be used to clarify or interpret the ranking should be included in the margins of this worksheet. For plant releases which may be considered nearly unacceptable for release it may be helpful to have other PM staff or cooperators complete copies of this worksheet to provide additional documentation.

All rating criteria must be completed, even if it is found in Section A, Part 1 that the plant has a low impact on the environment. Evaluation of all criteria will provide documentation that a thorough evaluation was completed for the plant at the time of release. This documentation may be needed in the future if questions are raised about the potential invasiveness or control of the plant.

When finished with ranking, interpretation, and decision making, record the final decision on the next page of this worksheet. A completed worksheet must be included with the release documentation and a copy sent to the NPMC for filing.

Environmental Evaluation of Plant Materials Releases

Name of person scoring: Mike Owsley **Date of scoring:** October 24,2003

Scientific Name: Sorghastrum nutans **Common Name:** Yellow Indiangrass

Release Name: Newberry Germplasm

Is the plant native to the US?	**Yes**	**No**	**Yes**
Is the plant native to the area of intended use?	**Yes**	**No**	**Yes**
Authority used to determine native status:	**Vascular flora of**		**Carolinas**
What is the intended area of use for this plant?	**Southeastern US**		**S.C.**
What is the intended use for this plant?	**Erosion,wildlife,restoration**		
Areas in which the release is known to be invasive or has a high probability of being invasive:	**none**		

Summary of Criteria from Section A	**Score**
Part 1. Impact on Habitats, Ecosystems, and Land Use	**3**
Part 2. Ease of Management	**9**
Part 3. Conservation Need and Plant Use	**9**
Part 4. Biological Characteristics	**36**

Final Determination of Release Based on the Environmental Evaluation:

X ☐ **OK to Release**

☐ **OK to Release but qualify use and intended area of use***

☐ **Do Not Release - NPL determines if release is made***

☐ **Do Not Release - document and destroy materials**

I certify that this Environmental Evaluation was conducted with the most accurate and current information possible.

Charles M Owsley & Malcome S. Kirkland

Signature of Person Scoring Date

Signature of NPL indicating that it is OK to make the release:

National Program Leader, PM **Date**

* An Environmental Assessment (EA) and/or Environmental Impact Statement (EIS) may be required prior to release. If required, attach the EA and/or EIS to this worksheet and to the release notice.

Section A. Scoring of Criteria for Impact, Management, Need and Biological Characteristics

Circle the appropriate number for each of the following criteria. Add up the scores for each part and record at the end of each part. Comments which clarify answers or provide supporting information may be included in the right margin of the worksheet or attached on a separate sheet of paper.

Part 1: Impact on Habitats, Ecosystems, and Land Use

This section assesses the ability of the species or release to adversely affect habitats, ecosystems, and agricultural areas.

1) Ability to invade natural systems where the species does not naturally occur

a)	Species not known to spread into natural areas on its own	0
b)	Establishes only in areas where major disturbance has occurred in the last 20 years (e.g., natural disasters, highway corridors)	3 X
c)	Often establishes in mid- to late-successional natural areas where minor disturbances occur (e.g., tree falls, streambank erosion), but no major disturbance in last 20-75 years	6
d)	Often establishes in intact or otherwise healthy natural areas with no major disturbance for at least 75 years	10

2) Negative impacts on ecosystem processes (e.g., altering fire occurrence, rapid growth may alter hydrology)

a)	No perceivable negative impacts	0 X
b)	Minor negative impacts to ecosystem processes	2
c)	Known significant negative impacts to ecosystems processes	6
d)	Major, potentially irreversible, alteration or disruption of ecosystem processes	10

3) Impacts on the composition of plant communities where the species does not naturally occur

a)	No negative impact; causes no perceivable changes in native populations	0 X
b)	Noticeable negative influences on community composition	5
c)	Causes major negative alterations in community composition	10

4) Allelopathy

a)	No known allelopathic effects on other plants	0 X
b)	Demonstrates allelopathic effects on seed germination of other plants	3
c)	Demonstrates allelopathic effects to mature stages of other plants	5

5) Impact on habitat for wildlife or domestic animals (aquatic and terrestrial), including threatened and endangered species (coordinate with USFWS and state Heritage Programs as appropriate)

a) No negative impact on habitat, or this criteria not applicable based on intended use for the plant	0 X
b) Minor negative impact on habitat (e.g., decreased palatability; lower wildlife value; decreased value for undesirable animal species)	2
c) Significant negative impact on habitat (e.g., foliage toxic to animals; significantly lower value for wildlife; excludes desirable animal species from an area)	5

6) Impact on other land use

a) No negative impacts on other land uses	0 X
b) Minor impacts (plant could invade adjacent areas and decrease its value)	3
c) Significant impacts (plant may alter the system or adjacent lands significantly enough to prevent certain uses)	5

Total Possible Points 45

Total Points for Part 1 3

Part 2. Ease of Management

This part evaluates the degree of management which might be needed to control the species or release if it becomes a problem, or eradicate the species or release if it is no longer desirable.

1) Level of effort required for control

a) Effective control can be achieved with mechanical treatment	0 X
b) Can be controlled with one chemical treatment	2
c) One or two chemical or mechanical treatments required or biological control is available or practical	5
d) Repeated chemical or mechanical control measures required	10

2) Effectiveness of community management to potentially control the plant release

a) No management is needed, the plant release is short-lived and will significantly decrease or disappear within 5 years under normal conditions without human intervention	0
b) Routine management of a community or restoration/preservation practices (e.g., prescribed burning, flooding, controlled disturbance, pasture renovation) effectively controls the release	2 X
c) Cultural techniques beyond routine management can be used to control the release	4
d) The previous options are not effective for managing or controlling the release	10

3) Side effects of chemical or mechanical control measures

a) Control measures used on release will have little or no effect on other plants	0
b) Control measures used on release will cause moderate effects on other plants	3 X
c) Control measures used on release will cause major effects on other plants	5

**If spreads by seed, or both seed and vegetative means, go to #4
**If spreads by vegetative means only, go to #5

4) Seed banks

a) Seeds viable in the soil for 1 year or less	0 X
b) Seeds remain viable in the soil for 2-3 years	1
c) Seeds remain viable in the soil for 4-5 years	3
d) Seeds remain viable in the soil for more than 5 years	5

5) Vegetative regeneration under natural conditions

a) Regeneration from resprouting of cut stumps	1 X
b) Regeneration from pieces of the root left in the soil	3
c) Regeneration from root or stem parts left in the soil	5

6) Resprouts after cutting above-ground parts

a) Does not resprout or resprouts but the release is sterile and does not produce seed	0
b) Resprouts and produces seed in future years	3 X
c) Resprouts and produces seed in same year	5
Total Possible Points	**40**
Total Points for Part 2	**9**

Part 3. Conservation Need and Plant Use

This part evaluates the importance of the species or release to meet a conservation need.

1) Potential Use(s) of the Plant Release

a) Used for low-priority issues or single use	1
b) Has several uses within conservation	2
c) Has many uses within conservation as well as outside of conservation	4
d) Has high-priority use within conservation	5 X

2) Availability of Other Plants to Solve the Same Need

a) Many other plants available	1
b) Few other plants available	3 X
c) No other plants available	5

3) Consequences of <u>Not</u> Releasing This Plant

a) No impact to conservation practices	0
b) Minor impact on one or more conservation practice	1 X
c) Serious impact on one conservation practice	3
d) Serious impact on more than one conservation practices	5
Total Possible Points	**15**
Total Points for Part 3	**9**

<u>Part 4. Biological Characteristics</u>

This part evaluates the biological properties which indicate the natural ability of the species or release to propagate and maintain itself under natural conditions. Note: these criteria relate to the species <u>under natural conditions</u>, as opposed to the species under managed conditions used to increase the species, i.e. seed increase programs, or specific propagation methods which do not normally occur in nature.

1) Typical mode of reproduction under natural conditions

a) Plant does not increase by seed or vegetative means (<u>skip to #11</u>)	0
b) Reproduces almost entirely by vegetative means	1
c) Reproduces only by seeds	3
d) Reproduces vegetatively and by seed	5 X

2) Reproduction (by seed or vegetative) in geographic area of intended use

a) Reproduces only outside the geographic area of intended use	1
b) Reproduces within the geographic area of intended use	3 X
c) Reproduces in all areas of the United States where plant can be grown	5

3) Time required to reach reproductive maturity by seed or vegetative methods

a) Requires more than 10 years	1
b) Requires 5-10 years	2
c) Requires 2-5 years	3 X
d) Requires 1 year	5

<u>** If reproduces only by seed, skip to #5</u>

4) Vegetative reproduction (by rhizomes, suckering, or self-layering)

a) Vegetative reproduction rate maintains population (plant spreads but older parts die out)	1 X
b) Vegetative reproduction rate results in moderate increase in population size (plant spreads <3' per year)	3
c) Vegetative reproduction rate results in rapid increase in population size (plant spreads >3' per year)	5

** If reproduces only vegetatively, skip to #11

5) Ability to complete sexual reproductive cycle in area of intended use

a)	Not observed to complete sexual reproductive cycle in the geographic area of intended use, but completes sexual reproduction in distant areas of the United States	1
b)	Not observed to complete sexual reproductive cycle in the geographic area of intended use, but completes sexual reproduction in adjoining geographic areas	3
c)	Observed to complete the sexual reproductive cycle in the geographic area of intended use	5 X

6) Frequency of sexual reproduction for mature plant

a)	Almost never reproduces sexually	0
b)	Once every five or more years	1
c)	Every other year	3
d)	One or more times a year	5 X

7) Number of viable seeds per mature plant each reproductive cycle

a)	None (does not produce viable seed)	0
b)	Few (1-10)	1
c)	Moderate (11-1,000)	3 X
d)	Many-seeded (>1,000)	5

8) Dispersal ability

a)	Limited dispersal (<20') and few plants produced (<100)	1 X
b)	Limited dispersal (<20') and many plants produced (>100)	3
c)	Greater dispersal (>20') and few plants produced (<100)	7
d)	Greater dispersal (>20') and many plants produced (>100)	10

9) Germination requirements

a)	Requires open soil and disturbance to germinate	1
b)	Can germinate in vegetated areas but in a narrow range or in special conditions	5 X
c)	Can germinate in existing vegetation in a wide range of conditions	10

10) Hybridization

a)	Has not been observed to hybridize outside the species	0 X
b)	Hybridizes with other species in the same genera	3
c)	Hybridizes with other genera	5

11) Competitive ability (of established plants)

a) Poor competitor for limiting factors	0
b) Moderately competitive for limiting factors	5 X
c) Highly competitive for limiting factors	10
Total Possible Points	**70**
Total Points for Part 4	**36**

References

Many of the criteria used in this rating system were adapted from the following sources:

Hiebert, Ron D. and James Stubbendieck. 1993. Handbook for Ranking Exotic Plants for Management and Control. US Department of the Interior, National Park Service, Denver, CO.

Randall, John M., Nancy Benton, Larry E. Morse, and Gwendolyn A. Thornhurst. 1999. Criteria for Ranking Alien Wildland Weeds. The Nature Conservancy, Arlington, VA.

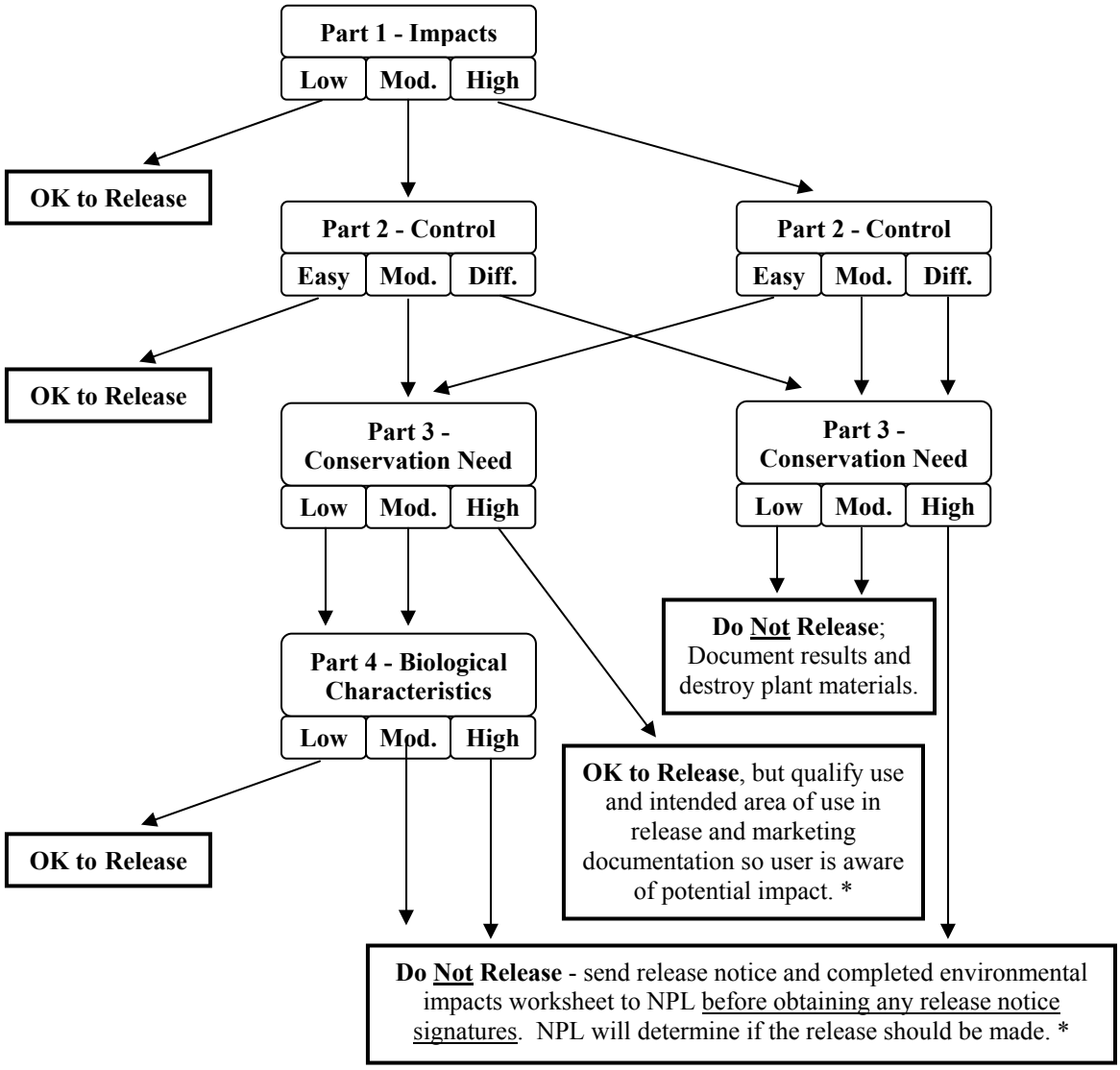
Section B. Scoring and Interpretation

Based on the scores from above, circle the points range you scored to determine the appropriate interpretation. The interpretation will be used to determine the course of action for the release.

Part	Points Scored	Interpretation
Part 1. Impacts on Habitats, Ecosystems, and Land Use	0-15	**Low** chance plant is going to affect the environment
	16-25	**Mod**erate chance plant is going to affect the environment
	26-45	**High** chance plant is going to affect the environment
Part 2. Ease of Management	0-20	**Easy** to control
	21-30	**Mod**erate to control
	31-40	**Diff**icult to control
Part 3. Conservation Need and Plant Use	0-5	**Low** need
	6-9	**Mod**erate need
	10-15	**High** need
Part 4. Biological Characteristics	0-25	**Low** chance plant is going to propagate and increase itself
	26-40	**Mod**erate chance plant is going to propagate and increase itself
	41-70	**High** chance plant is going to propagate and increase itself

Section C. Action to Take for Releasing Plants

Based on the interpretation above, follow the decision tree below. Start with your interpretation rating for Part 1 (Low, Moderate, or High) and follow the appropriate arrow to the next level until you reach a decision box. Once you reach a decision box you may stop and record the decision on the first page of this worksheet.



* Indicates that an Environmental Assessment or Environmental Impact Statement may need to be prepared prior to release (see NPMM Part 540.73(a)(3)).

Worksheet Revised 5/23/00

MARKETING PLAN FOR NEWBERRY GERMPLASM INDIANGRASS

OBJECTIVE: To inform the public and promote the use of Newberry Germplasm Indiangrass Release by the USDA-Natural Resource Conservation Service (NRCS) Plant Materials Program. To increase the use of Newberry Germplasm native grass for erosion control, 2002 Farm Bill implementation, wildlife habitat improvement and native grass restoration.

Target Audiences: Native Plant Society, Natural Resources Conservation Service, US Forest Service, University and College Professionals, Commercial Seed Growers, Agency and Resource Specialists.

Regions include: South Carolina.

Publicity and Technology Transfer Action Plan

1. NRCS plant materials specialist will provide the leadership for the implementation and the coordination of the marketing plan within NRCS, US Forest Service, South Carolina Native Plant Society, Conservation Districts, Colleges and Universities, Land Users and Partnerships.

2. NRCS and US Forest Service Public Affairs Specialists will partner to develop information packages for the media, state and federal agencies.

3. State Public Affairs Specialists will take the lead in the preparation of a plant release information campaign. Develop information packet with photos for seed companies, native plant society and power-point presentations.

4. Plant Materials Specialist will network with partnerships implement marketing plan.

5. State, regional and plant materials public affairs specialists will assist with the preparation of the plant release information for distribution to media, conservation districts, customers, NRCS field offices and partnerships.

6. NRCS and US Forest Service Public Affairs Specialists, South Carolina Native Plant Society will network with Crop Improvement Association, Academia and Seed Companies to cooperatively develop a color brochure on Newberry Germplasm Indiangrass. All partners will share in the cost of publishing the new release.

7. Plant materials specialists will prepare technical notes and appropriate technology for establishment and management to state resource conservationists for integrating into Field Office Technical Guide (FOTG) in South Carolina.

8. Plant materials specialists will provide plant release information to new NRCS linkages, such as National Tech Centers.

9. The plant release notice, technical notes, and other plant science technology for Newberry Germplasm Indiangrass will be included on the PMC homepage www.ga.nrcs.usda.gov/technical/pmc/pmc.html.

10. Provide notification of plant release to State Food and Agriculture Council (FAC).

11. News release notices will be provided to all media in South Carolina to include regional daily and weekly newspapers, radio stations, extension public affairs and other media specialists, South Carolina Native Plant Society and university and agency newsletter editors.

12. Feature articles and/or abstract on new plant release to submit to selected publications including, Southeast Farm Press, Progressive Farmer, native plant information outlets, and other appropriate media.

13. Plant release information will be provided to NHQ, State Conservationists in South Carolina, North Carolina, Georgia, Alabama, and Tennessee, Plant Materials Centers, Plant Materials Specialists, State Biologists, Agronomists, and National Tech Centers.

14. Plant Materials Specialist will present programs at national resource and agriculture related conferences, such as Soil & Water Conservation Society, National Agronomy Conference, Erosion and Sediment Control Conference, Native Plant Society Meetings.

15. Plant Materials Center manager shall make presentations to local agricultural groups, farmer groups, conservation districts, WALB Channel 10 in Albany, Georgia and WSST Channel 55 in Cordele, Georgia.

16. PowerPoint presentations and exhibits will be developed to enhance the visibility of the Newberry Germplasm Indiangrass release.

17. Plant Materials Specialist will provide plant release information to Crop Improvement Associations and commercial seed growers, etc.

Prepared by: Donald Surrency, Plant Materials Specialist, Athens, Georgia.
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Approved by the Jimmy Carter Plant Materials Center Technical Committee

Ronnie Feaster

Ronnie Feaster, Chairperson
State Resource Conservationist
Columbia, South Carolina

Signatures for release of:
Newberry Germplasm Indiangrass

State Conservationists' Advisory Committee

Leonard Jordan 11/12/04

Leonard Jordan
State Conservationist
United States Department of Agriculture
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Date

National Headquarter Approval

Robert T Escheman — 6-29-05

Robert Escheman
National Program Leader
United States Department of Agriculture
Natural Resources Conservation Service
Washington, D.C.

Date

Robert T Escheman for — 6-29-05

Diane Gelburd
Director, Ecological Sciences Division
United States Department of Agriculture
Natural Resources Conservation Service
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Date