

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

**NOTICE OF RELEASE
OF
'Kinchafoonee'
Virginia Wildrye Selected Class of Natural Germplasm**



August, 2003

Notice of Release of ‘Kinchafoonee’ Virginia Wildrye

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Director, Ecological Sciences Division	

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

**NOTICE OF RELEASE
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Virginia Wildrye Selected Class of Natural Germplasm**

The Natural Resources Conservation Service, U.S. Department of Agriculture announces the naming and release of a Selected ecotype of 'Kinchafoonee' Virginia Wildrye (*Elymus virginicus*) for the Southeastern U.S.

As a selected release this plant will be referred to as Kinchafoonee Germplasm Virginia Wildrye. It has been assigned the number 486971. 'Kinchafoonee' Germplasm is released as a selected class of certified seed. ⁿ P.1, 3

This alternative release procedure is justified because no commercial sources of Virginia wildrye exist in the Southeastern U.S. The potential for immediate use is high and commercial potential beyond specific uses is probably limited.

Collection Site Information: Kinchafoonee Germplasm was originally collected from native plants located in Anderson County, Texas.

Description: Kinchafoonee Germplasm Virginia Wildrye is a native, perennial cool season bunchgrass. Erect growth ranges from 68 – 110 cm in height with total culm height of 130 cm at seed maturity. Plant basal width ranges from 4 – 8 cm with many basal leaves 20 – 37 cm long. Leaves have a blue-green color. It blooms around early-mid June. Seed matures late July-August. Seed are heavily-awned.

Method of Breeding and Selection: A total of 6 Virginia wildrye accessions were evaluated at Americus, Georgia from 1983 – 1984. All accessions were evaluated from survival, vigor, seed production and overall growth. Kinchafoonee outperformed all others evaluated. It was well adapted to this region.

Ecological Considerations and Evaluation: Kinchafoonee Germplasm Virginia Wildrye is a selection of naturally occurring Germplasm and has undergone minimal purposeful selection. Kinchafoonee Germplasm does not differ significantly in rate or spread, seed production and vigor from naturally occurring Virginia wildrye. Kinchafoonee Germplasm was "OK to Release" when evaluated through the "worksheet for Conducting and Environmental Evaluation of NRCS Plant Releases". See attached.

Anticipated Conservation Use: The potential uses of Kinchafoonee Germplasm Virginia wildrye includes erosion control for field borders, logging roads, critical area treatments and cool season cover crop.

Anticipated Area of Adaptation: Kinchafoonee Virginia Wildrye is a cool season low **woods** plant also commonly found in open waste areas. It inhabits moderately well to well drained soils and does well in full sunlight and partial sunlight.

Availability of Plant Materials: GO Seed (equivalent to Breeder Seed) will be maintained by USDA-NRCS Jimmy Carter Plant Materials Center and is available in limited quantities to interested parties for increase purposes.

References:

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:

Malcome S. Kirkland & C. M. Owsley, USDA-NRCS, Jimmy Carter Plant Materials Center, Americus Ga.

Reviewed by:

Donald Surrency, USDA-NRCS, Plant Materials Specialist, Athens, GA

Elymus virginicus Summary Data

Acc. No.	Vigor	Foliage	
		HT (cm)	WD (cm)
436972	4	35	15
436951	4	35	15
436971	2	50	15
T19888	5	25	10
436959	3	40	15
436969	3	40	15

Acc. No.	Seed Amount	Fill	Seed Production			Maturity Date
			Uniformity	Shatter	Lodge	
436972	4	3	3	3	3	7/30
436951	5	3	3	3	3	7/30
436971	3	3	3	3	3	7/30
T19888	5	3	3	3	3	7/30
436959	4	3	3	3	3	8/04
436969	4	3	3	3	3	8/04

Rating 1 - 9
1 Best 9 Worst

‘Kinchafoonee’ Virginia Wildrye Marketing Plan

OBJECTIVE: To increase the use of “Kinchafoonee” Virginia wildrye as a cover crop in crop rotations, including conservation tillage systems, to enhance soil fertility, improve soil health, crop production and to reduce soil erosion.

Target Audiences: Southeast Row Crop Farmers, Commercial Seed Growers, University and College Professionals, Agency and Resource Specialists and NRCS Specialists.

Regions include: **GA**, AL, FL, MS, NC, SC, and TN.

PUBLICITY AND TECHNOLOGY TRANSFER ACTION PLAN

1. State Public Affairs Specialist will take the lead in the preparation of a NRCS plant release information campaign. Develop information packet with photos for seed companies, possible slide show.
2. State, regional and plant materials PAS will assist with the preparation of the plant release. Contact State PAS's in PMC area to assist.
3. Network with other agencies and partners (Auburn University) to develop an information plan.
4. Network with Crop Improvement Association, Academia and Seed Company to cooperatively develop a color brochure on “Kinchafoonee” Virginia wildrye. All partners will share in the cost of publishing the new release.
5. Prepare Technical Note for inclusion in the NRCS FOTG in each state served by the PMC.
6. Provide plant release information to new NRCS linkages, such as institutes, MOU's, RTT's ...et.al.
7. The plant release notice, tech notes, and other plant science technology for ‘Kinchafoonee’ Virginia wildrye will be put on internet. Plant release notices will be sent to all states within the PMC service area. (for future releases, maybe the PMC needs a Home page).
8. Obtain Plant Variety Protection for releases when appropriate and increase efforts to either receive royalties or research fees as part of the process.
9. Notification of plant release to State FAC.
10. News release sent to all regional daily and weekly newspapers, radio stations, Extension editors and other media specialists, and university and agency newsletter editors.

11. Feature article and/or abstract on new plant release to submit to selected publications including Southeast Farm Press, Progressive Farmer, etc.
12. Prepare and submit registration article for Crop Science Society of America.
13. Prepare and submit article for scientific journal with assistance from University scientists.
14. Send copy of release document to NHQ, NTC's, 50 State Conservationists, PMC's, Plant Materials Specialists, and Agronomists.
15. Plant Materials Specialist presents programs at national resource and agriculture related conferences, such as SWCS, National Agronomy Conference, and Water Quality conferences.
16. PMC manager shall make presentations to local agricultural groups, farmer groups, districts and make presentation on Channel 10 in Albany, Georgia and Cordele, Georgia.
17. Include video in marketing plan to enhance the visibility of the new Virginia wildrye release.

Prepared by Donald Surrency, Plant Materials Specialist, Athens, Georgia.

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 judgement 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: Malcome S. Kirkland Mike Owsley Date of scoring: May 12, 2003

Scientific Name: Elymus virginicus Common Name: Virginia Wildrye

Release Name: Kinchafoonee

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? SE US

Erosion Control
Cool Season Cover
Crop

What is the intended use for this plant?

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

	<u>Score</u>
Part 1. Impact on Habitats, Ecosystems, and Land Use	<u>10</u>
Part 2. Ease of Management	<u>14</u>
Part 3. Conservation Need and Plant Use	<u>8</u>
Part 4. Biological Characteristics	<u>40</u>

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.

Malcome S. Kirkland & Mike Owsley
 Signature of Person Scoring Date 5-12-03

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

Richard S. White 12/29/03
 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) **3x**
 - 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
 - b) Minor negative impacts to ecosystem processes **2x**
 - 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 **0X**
 - 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 **0X**
 - 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
 - b) Minor negative impact on habitat (e.g., decreased palatability; lower wildlife value; decreased value for undesirable animal species) **2x**
 - 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
 - b) Minor impacts (plant could invade adjacent areas and decrease its value) **3X**
 - 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 3/10

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 OX
 - 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
- b) Seeds remain viable in the soil for 2-3 years 1X
- 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
- b) Regeneration from pieces of the root left in the soil 3 x
- 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
- c) Resprouts and produces seed in same year 5 x

Total Possible Points 40

Total Points for Part 2 14

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 2x
- c) Has many uses within conservation as well as outside of conservation 4
- d) Has high-priority use within conservation 5

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 Not Releasing This Plant

- | | |
|---|-----|
| a) No impact to conservation practices | 0 |
| b) Minor impact on one or more conservation practice | 1 |
| c) Serious impact on one conservation practice | 3 x |
| d) Serious impact on more than one conservation practices | 5 |

Total Possible Points 15

Total Points for Part 3 8

Part 4. Biological Characteristics

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 under natural conditions, 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 (skip to #11) | 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 |
| d) Requires 1 year | 5 x |

**** If reproduces only by seed. skip to #5**

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

- | | |
|--|-----|
| a) Vegetative reproduction rate maintains population (plant spreads but older parts die out) | 1 |
| b) Vegetative reproduction rate results in moderate increase in population size (plant spreads <3' per year) | 3 x |
| 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 **5x**
- 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) **3x**
 - 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 **5x**
 - 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 OX
 - b) Hybridizes with other species in the same genera 3
 - c) Hybridizes with other genera 5

II) Competitive ability (of established plants)

a) Poor competitor for limiting factors	0
b) Moderately competitive for limiting factors	5x
c) Highly competitive for limiting factors	10
Total Possible Points	70
Total Points for Part 4	<u>40</u>

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.

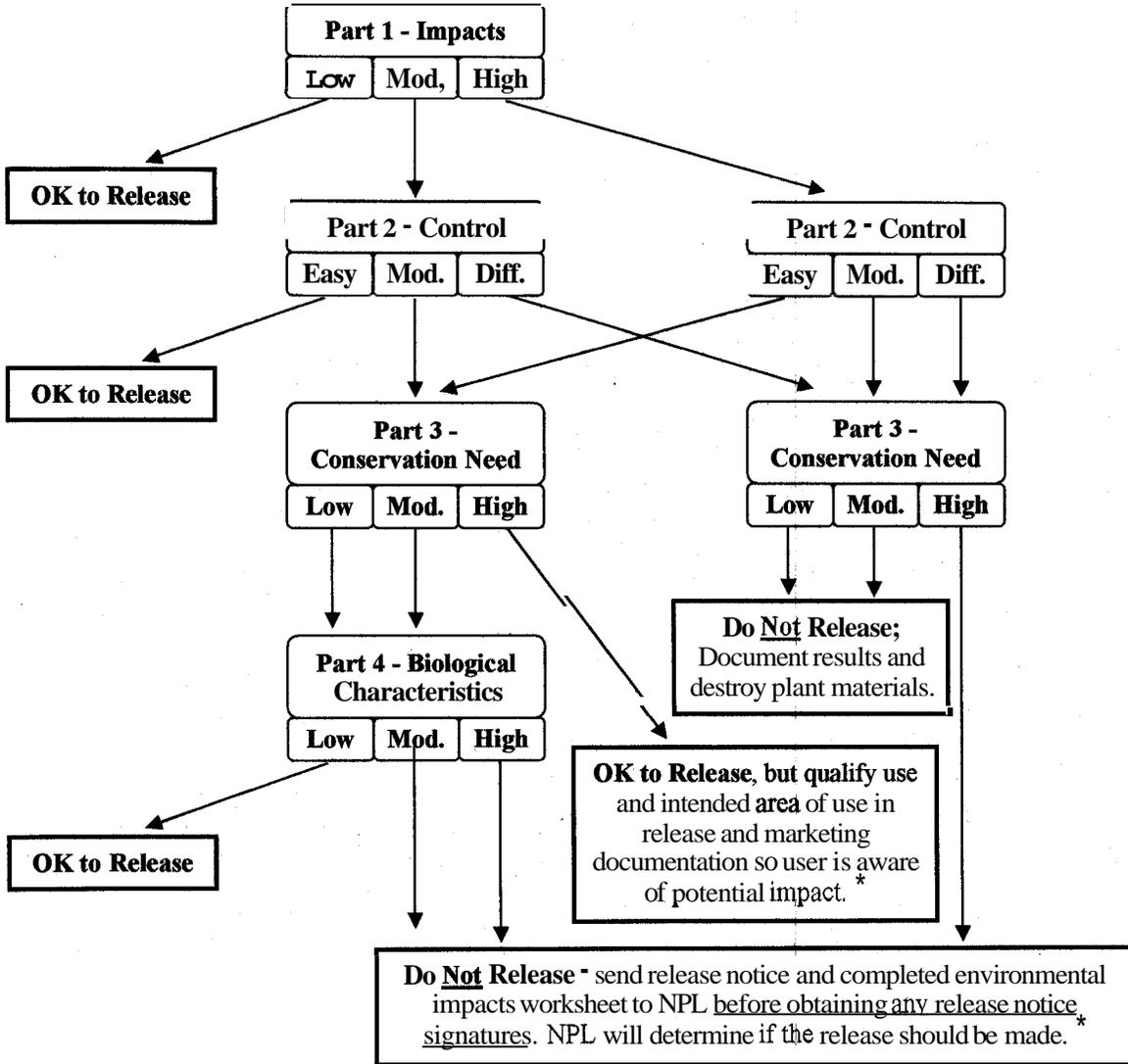
Section B. Scoring and Interpretation

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	<u>Low</u> chance plant is going to affect the environment
	16-25	<u>Moderate</u> chance plant is going to affect the environment
	26-45	<u>High</u> chance plant is going to affect the environment
Part 2. Ease of Management	0-20	<u>Easy</u> to control
	21-30	<u>Moderate</u> to control
	31-40	<u>Difficult</u> to control
Part 3. Conservation Need and Plant Use	0-5	<u>Low</u> need
	6-9	<u>Moderate</u> need
	10-15	<u>High</u> need
Part 4. Biological Characteristics	0-25	<u>Low</u> chance plant is going to propagate and increase itself
	26-40	<u>Moderate</u> chance plant is going to propagate and increase itself
	41-70	<u>High</u> chance plant is going to propagate and increase itself

Section C. Action to Take for Releasing Plants

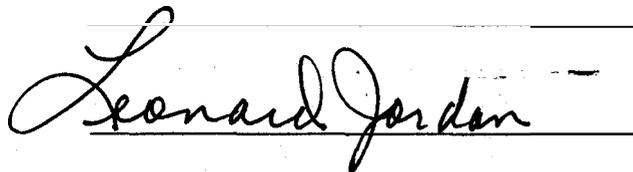
Based on the interpretation above, follow the decision tree below. Start with your interpretation rating for Part 1 (Low, Moderate, or High) and follow the appropriate arrow to the next level until you reach a decision box. Once you reach a decision box you may stop and record the decision on the first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

State Conservationists' Advisory Committee

Signatures for release of:
'Kinchafoonee' Virginia Wildrye *Elymus virginicus*



Leonard Jordan
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Athens, Georgia

8/11/03

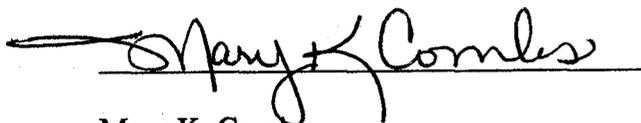
Date



Walter Douglas
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Columbia, South Carolina

08/22/03

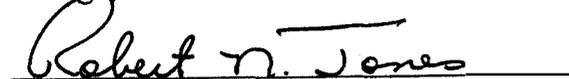
Date



Mary K. Combs
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Raleigh, North Carolina

9/19/03

Date



Robert Jones
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Auburn, Alabama

9/17/03

Date



James Ford
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Nashville, Tennessee

8-15-03

Date