

# Species and Habitat Action Plan Assessment Form

Please refer to the accompanying guidance for information about how to complete this form and an explanation of terms used

## Field 1: Action Plan details

<b>Species/Habitat Action Plan</b>	<i>Trichomanes speciosum</i> (Killarney Fern)
<b>Lead Partner/Agency</b>	English Nature and Natural History Museum
<b>Steering Group/Other organisations</b>	Yes. EN, CCW, SNH, NHM, BPS
<b>Work programme in existence?</b>	Yes

## Field 2: Objectives and targets overview

Please list the targets for the action plan, indicating in which country/region the target is applicable, and additional comments including the rationale for new targets. For each new target please add new sequential paragraph numbers and target text. Please provide information about progress and country disaggregation in Table A for all targets.

Number and text	UK	E	NI	S	W	Comments
4.1 Maintain & Monitor existing populations	X	X	X	X	X	Ongoing in E, S, W. Situation in NI unknown.
4.2 Assess gametophyte status and distribution	X	X	X	X	X	Paper published. SNH funded survey in SAC/SSSI areas, ongoing all regions but situation in NI unknown.
4.3 Investigate genetic diversity and population ecology to aid effective conservation management	X	X	X	X	X	Ongoing. Published study on S.W. Scotland, information on >75% known British sporophyte sites.
4.4 If feasible, restore colonies to four former locations by 2004					X	Objective not feasible/ inappropriate. Action may proceed in the one site where the exact location of lost material is known and the stock is still in cultivation. Identification of the gametophyte distribution and knowledge of sporophyte recruitment alleviates need for action.

## Field 3: Proposed actions overview

Please list the proposed actions for the action plan, indicating in which country/region the action is applicable. For each new action please add new sequential paragraph numbers and action text. If the action is regarded as significant (please see guidance) indicate this in the box and provide further details in Table B. For actions not regarded as significant simply state if the action is ongoing or complete. Remember any action which is being dropped from the workplan will be regarded as significant for the first round of reporting.

Number and text	UK	E	NI	S	W	Action significant?	Action complete or ongoing? (Please state yes, not started, or ongoing.)
5.1 Policy and legislation	-	-	-	-	-	No proposed action	Species (including gametophyte) maintained on schedule 8

<b>5.2.1</b> Seek to ensure the requirements of the species are taken into account in site management plans and attempt to secure favourable management agreements for sites containing this species which are not protected through designation. (ACTION: CCW, DoE(NI), EN, FA, FE, SNH)	X	X	X	X	X	Yes	Ongoing. Where appropriate to disclose the locations then the requirements of the Killarney Fern are taken into account in SSSI management plans. Where sporophytes exist outside of statutory sites then the agencies have informed relevant regulatory authorities if this does not compromise confidentiality issues.
<b>5.2.2</b> Consider the protection of additional sites through SSSI/ASSI notification where this is necessary to secure appropriate management and does not compromise the security of the site. (ACTION: CCW, DoE(NI))	X	X	X	X	X	Yes	Under consideration in one English site which may be proposed as a SAC, (views of steering group and relevant societies canvassed).
<b>5.3.1</b> Consider re-introduction to four localities, in Merioneth, Cumbria, Arran and Argyll, where the precise site of previous occurrence is known, and the fern was lost either by collecting or through exceptional conditions. Use only cultivated material of known provenance to the four localities. (ACTION: CCW, EN, JNCC, SNH)		?	-	?	X		May proceed in single site meeting the stated criteria (W). Action abandoned (E,S).
<b>5.4.1</b> Ensure that landowners are aware of the importance and legal status of this species, appropriate methods of habitat management for its conservation and the threats currently facing known populations. (ACTION: CCW, DoE(NI), EN, SNH)	X	X	X	X	X		Met under management agreements (see 5.2.1). Further guidance notes in preparation.
<b>5.4.2</b> Ensure the relevant societies are aware of the legal and ecological implication of collecting this species. (ACTION: CCW, DoE(NI), EN, SNH)	X						Complete. Stressed in research publications, popular articles, BSBI code of conduct, etc. and at field meetings.
<b>5.5.1</b> Continue experimental studies on the gametophyte, and seek to determine the conditions required for the production of sporophytes. (ACTION: NERC)	X						NERC Funding now ceased. Preliminary data complete but additional sources of funding required for continued research. Action no longer considered as high priority.
<b>5.5.2</b> Consider research needs to clarify the taxonomy of the species, including the relationship between the gametophyte and sporophyte forms, and the suitability of the species for re-introduction or translocation. (ACTION: CCW, DoE(NI), EN, JNCC, SNH)	X						Completed. Relationship between gametophyte and sporophyte established. Translocation shown to be largely inappropriate/ unnecessary.
<b>5.5.3</b> Compile an inventory of all sporophyte populations in cultivation, in botanic gardens and private collections, and establish provenances if possible. Consider the feasibility of using material of known provenance in re-introduction experiments.	X						Data gathered, databasing ongoing. Exact UK provenance of material only clear in one case but ongoing molecular research may assist in the general identification

(ACTION: CCW, DoE(NI), EN, JNCC, SNH)							of source areas of cultivated stocks.
<b>5.5.4</b> Monitor all sporophyte colonies regularly to assess status of the species in the UK. (ACTION: CCW, DoE(NI), EN, JNCC, SNH)	X	X	X	X	X		Ongoing in E, S, W. Situation unclear in NI
<b>5.5.5</b> Subject to confidentiality and data ownership, pass information gathered during survey and monitoring of this species to JNCC or BRC so that it can be incorporated in national databases. (ACTION: CCW, DoE(NI), EN, SNH)	X						Ongoing. Species included in JNCC/BSBI Threatened Plants Database pilot study. All available gametophyte data processed and accessible.
<b>5.5.6</b> Provide information annually to the World Conservation Monitoring Centre on the UK status of the species to contribute to maintenance of an up-to-date global Red Data List. (ACTION: JNCC)	X						Ongoing. See 5.5.5
<b>5.6.1</b> Publicity is not recommended for this species due to the risk from collectors.	X	X	X	X	X		

**Field 4: Assessment of status**

Please tick the appropriate category to indicate the assessment of status of the species or habitat, for each country/region where appropriate, and provide a statement supporting the category selected.

	Not appropriate	Recovered	Signs of recovery	No change	Declining	Lost	Insufficient information
UK		*?					
England		*					
Northern Ireland							*
Scotland		*					
Wales		*					
Brief text description justifying assessment of status: (~ no more than 100 words for each country/region)							
<p>* The true extent of the gametophyte generation and its definite identity with the sporophyte were unclear when the action plan was originally drafted. Survey has revealed the gametophyte to be widespread (present in &gt;120 hectads) and importantly sporophyte recruitment has been noted in several sites. Monitoring of sporophytes reveals remarkable long-term stability in population size and extent if habitats remain undamaged. No decline has been noted in the known sporophyte populations over the last 5 years. More novel sporophyte localities have been detected as the result of increased field activity than the number of populations to be re-introduced as an original target. More populations are currently known in the British Isles than at any time in the past and the species is not considered at long term risk. It may thus be deemed "recovered" or at least of lessened conservation concern. The situation in Northern Ireland is unlikely to differ but should be clarified as a matter of urgency.</p>							

**Field 5: Summary statement**

Please provide an overview of plan implementation, including new factors affecting the species or habitat which will accelerate or constrain progress towards meeting of the targets. Where a factor results in new action(s) please cross-reference back to the relevant numbers under Field 3 and Table B.

<p>The true extent of the gametophyte generation and its definite identity with the sporophyte were unclear when the action plan was originally drafted. Survey has revealed the gametophyte to be widespread (present in &gt;120 hectads) and importantly sporophyte recruitment has been noted in several sites. Monitoring of sporophytes reveals remarkable long-term stability in population size and extent if habitats remain undamaged. No decline has been noted in the known sporophyte populations over the last 5 years. More novel sporophyte localities have been detected as the result of increased field activity than the number of populations to be re-introduced as an original target. More populations are currently known in the British Isles than at any time in the past and the species is not considered at long term risk. It may thus be deemed "recovered" or at least of lessened conservation concern. The situation in Northern Ireland is unlikely to differ but should be clarified as a matter of urgency.</p>
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**Field 6: Signing off**

Please 'sign off' the form below to confirm that steering group members or key contacts have been consulted and agreed the information provided.

Contact details	Lead Partner	Contact Point
Name	Fred Rumsey/Rob Cooke	Ray Woods
Organisation	Natural History Museum/EN	CCW
Assessment date (dd/mm/yy)	01/08/99	01/09/99

Completed forms should be submitted to JNCC

*Biodiversity Information Service  
Joint Nature Conservation Committee  
Monkstone House  
City Road  
Peterborough PE1 1JY  
Tel: 01733 562626  
Fax: 01733 555948  
E-mail: [lpr99@jncc.gov.uk](mailto:lpr99@jncc.gov.uk)*

**Table A: Action Plan objectives and targets (Copiable table)**

For each target please state how, if applicable, it has been disaggregated to the country level. Please insert the paragraph number, UK target and country-specific disaggregated target(s) into the table. Please tick the appropriate category to indicate progress against published and disaggregated targets. For each target please copy the table and detail the (existing or new [new paragraph numbers should run sequentially, under relevant headings in the published volumes]) paragraph number, target text and an assessment of progress.

<b>Objective/target</b> (For new or revised targets please provide the new paragraph number and target text.)	4.1 Maintain & Monitor existing populations				
<b>Country</b>	<b>Not appropriate</b>	<b>Target achieved</b>	<b>Some progress</b>	<b>No progress</b>	<b>Insufficient information</b>
UK			X		
England		X			
Northern Ireland					X
Scotland		X			
Wales		X			
Text description of target progress (separate for each country/region):  E, S & W: all sporophyte populations known to the agencies are monitored  NI: situation unclear, current status of only known sporophyte population not known					
<b>Objective/target</b> (For new or revised targets please provide the new paragraph number and target text.)	4.2 Assess gametophyte status and distribution				
<b>Country</b>	<b>Not appropriate</b>	<b>Target achieved</b>	<b>Some progress</b>	<b>No progress</b>	<b>Insufficient information</b>
UK			X		
England		X			
Northern Ireland				X	
Scotland		X			
Wales		X			
Text description of target progress (separate for each country/region):  E, S & W. Preliminary assessment of British gametophyte distribution and status completed (paper published in Watsonia). Detection of new localities is ongoing.  NI. No survey has as yet been performed in Northern Ireland.					
<b>Objective/target</b> (For new or revised targets please provide the new paragraph number and target text.)	4.3 Investigate genetic diversity and population ecology to aid effective conservation management				
<b>Country</b>	<b>Not appropriate</b>	<b>Target achieved</b>	<b>Some progress</b>	<b>No progress</b>	<b>Insufficient information</b>
UK			X		
England			X		
Northern Ireland				X	
Scotland			X		

Wales			X		
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Text description of target progress (separate for each country/region):

S. Allozymic diversity investigated in W. Scotland (paper published – Biol. J.Linn. Soc.) Kintyre sporophyte populations not investigated yet.

E. Allozymic diversity of Northern England sporophyte site investigated (unpubl. report) and genetic structure in a range of gametophyte sites documented.

W. Preliminary study of allozymic diversity of one extensive Welsh sporophyte colony completed but would benefit from repetition.

NI. No progress – collection of material for analysis a priority.

UK. C. 75% of known sporophytes characterised allozymically. CpDNA sequence variation assessed for a wide range of sporophytes and gametophytes (Preliminary results published). The characterisation of allozyme and cpDNA from cultivated material is ongoing.

<b>Objective/target</b> (For new or revised targets please provide the new paragraph number and target text.)	4.4 If feasible, restore colonies to four former locations by 2004				
<b>Country</b>	<b>Not appropriate</b>	<b>Target achieved</b>	<b>Some progress</b>	<b>No progress</b>	<b>Insufficient information</b>
UK			X		
England	X				
Northern Ireland	X				
Scotland	X				
Wales			X		

Text description of target progress (separate for each country/region):

E, S & NI – objective not feasible/inappropriate as exact location of extinct sites cannot be determined and material from these areas is not known in cultivation.

W- Above criteria met in one Welsh site where re-introduction is being planned.

UK- Information gathered as to records of past locations and the provenance of cultivated stocks of this species (see 5.5.3) revealed that the criteria for action to proceed could not in most cases be met. Furthermore, now that the distribution of the gametophyte is known and shown to be present in all localities where the plant was believed “extinct” this action is regarded as generally unnecessary, however, the re-introduction planned in Wales could generate positive publicity and be of scientific value and should proceed.

**Table B: Proposed actions (Copiable table)**

<b>Published action/organisation(s) responsible</b> (For new or revised actions please provide the new paragraph number)	5.1 Policy and legislation Consideration of removal of all, or part of life-cycle (gametophyte) from Schedule 8 of the Wildlife and countryside act.
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<i>and action text.)</i>	
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	Discussed at Quinquennial review. No action proposed.
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	No
<b>Description of work taken and organisation responsible</b>	
<b>Output and timescale</b>	Action by
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	Yes
<b>Next steps</b>	None
<b>Output and timescale</b>	Action by

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.2.1</b> Seek to ensure the requirements of the species are taken into account in site management plans and attempt to secure favourable management agreements for sites containing this species which are not protected through designation. (ACTION: CCW, DoE(NI), EN, FA, FE, SNH)
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	Where it is considered appropriate to disclose the locations then the requirements of Killarney Fern are taken into account in SSSI management plans. Where sporophytes exist outside statutory sites then the conservation agencies will ensure that the relevant regulatory authorities are informed (Local authorities, National Parks and Forestry Authority) if this does not compromise any confidentiality issues. CCW cannot include the requirements of Killarney fern in the management plans of two SSSI's where it is believed to occur, as the precise location of the species within the site has not been disclosed to CCW, similarly, the location of one English colony has not been disclosed to EN. (EN, CCW, SNH, DOE(NI)).
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	Yes
<b>Description of work taken and organisation responsible</b>	<i>Please provide details of progress to date, including information about outputs, deadlines, which organisations and where action is being undertaken.</i>
<b>Output and timescale</b>	Action by EN, CCW, SNH, DOE(NI).
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should</i>	Action is hampered by lack of knowledge as to the exact location of some sporophyte colonies. Short of very extensive field survey or release of information from certain recalcitrant sources this is unlikely to be remedied.

<i>also be detailed.)</i>	
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	Ongoing
<b>Next steps</b>	As new sites are detected appropriate action will be undertaken, as above.
<b>Output and timescale</b>	<i>Action by</i> EN, CCW, SNH, DOE(NI).

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.2.2</b> Consider the protection of additional sites through SSSI/ASSI notification where this is necessary to secure appropriate management and does not compromise the security of the site. (ACTION: CCW, EN, DoE(NI))
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	EN are giving active consideration to the possible notification of one recently discovered major population as an SSSI/ candidate SAC. This follows an extensive discussion at the steering group and the canvassed views of the relevant NGO's/societies as to the advisability of this action at the site in question. CCW [anything to report?] NI [anything to report?]
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	Yes
<b>Description of work taken and organisation responsible</b>	EN -
<b>Output and timescale</b>	<i>Action by</i>
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	Secrecy as to the plant's location has hitherto been considered paramount as the greatest threats are perceived to be from collection, disturbance by visitors, etc. Notification with the inevitable disclosure involved may thus ultimately prove more deleterious to the species survival than the advantages to be gained from this course of action. This dilemma is exacerbated by the requirements imposed under European law which require the notification of habitats of this species but which will inevitably lead to the identification of the sites of this species.
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	Started but not complete
<b>Next steps</b>	Ongoing as sites are discovered or the need for secrecy lessens
<b>Output and timescale</b>	<i>Action by</i>

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.3.1</b> Consider re-introduction to four localities, in Merioneth, Cumbria, Arran and Argyll, where the precise site of previous occurrence is known, and the fern was lost either by collecting or through exceptional conditions. Use only cultivated material of known provenance to the four localities. (ACTION: CCW, EN, JNCC, SNH)
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	Determine precise sites of previous occurrence (if possible) and assess reasons for loss. Establish precise provenances of cultivated stocks and then determine whether re-introduction is feasible, or indeed desirable. (NHM)
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	Yes

<b>Description of work taken and organisation responsible</b>	Historical survey of past records combined with visit to identified areas to determine if the species was still present. Establish which institutions and private individuals grew the species and the provenance of their material (see 5.5.3).	
<b>Output and timescale</b>	Survey data compiled (unpubl. PhD. thesis), S – sites discussed in unpubl. SNH report. Survey of cultivated stocks completed - databasing ongoing (completed by Jan.2000).	Action by NHM
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	The information gathered as to the records of past locations and the provenance of cultivated stocks of this species (see also 5.5.3) revealed that the criteria for action to proceed could not in most cases be met. Furthermore, now that the distribution of the gametophyte is known and shown to be present in all localities where the plant was believed “extinct” this action is regarded as generally unnecessary.	
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	ongoing	
<b>Next steps</b>	In the one case where the original criteria for re-introduction to proceed can be met then it should proceed given the availability of material .	
<b>Output and timescale</b>	Re-introduction of one sporophyte population by 2002 with frequent (initially) to annual monitoring to determine success.	Action by CCW

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.4.1</b> Ensure that landowners are aware of the importance and legal status of this species, appropriate methods of habitat management for its conservation and the threats currently facing known populations. (ACTION: CCW, DoE(NI), EN, SNH)	
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	Met under management agreements (see 5.2.1).	
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	yes	
<b>Description of work taken and organisation responsible</b>	<i>Please provide details of progress to date, including information about outputs, deadlines, which organisations and where action is being undertaken.</i>	
<b>Output and timescale</b>		Action by
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>		
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	ongoing	
<b>Next steps</b>	Further guidance notes for landowners to be prepared	
<b>Output and timescale</b>	Publication of guidance note	Action by NHM, CCW, EN, SNH, D.o.E (NI)

<b>Published action/organisation(s) responsible</b> (For new or revised actions please provide the new paragraph number and action text.)	<b>5.4.2</b> Ensure the relevant societies are aware of the legal and ecological implication of collecting this species. (ACTION: CCW, DoE(NI), EN, SNH)	
<b>Work plan/organisation(s) responsible</b> (Summary of work plan agreed by the steering group, broken down by year if possible.)	Raise awareness of both legal situation and the biological necessity for non-collection through publications, posters, lectures and informally to the members of the relevant societies.	
<b>Action/workplan undertaken?</b> (Please state yes or no.)	yes	
<b>Description of work taken and organisation responsible</b>	Legal and biological situation stressed in a range of research publications, the BSBI code of conduct, popular press articles and at numerous field meetings and talks.	
<b>Output and timescale</b>		Action by
<b>Constraints to action</b> (Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)		
<b>Action complete or ongoing?</b> (Please state yes, not started, or ongoing.)	Complete	
<b>Next steps</b>	-	
<b>Output and timescale</b>		Action by

<b>Published action/organisation(s) responsible</b> (For new or revised actions please provide the new paragraph number and action text.)	<b>5.5.1</b> Continue experimental studies on the gametophyte, and seek to determine the conditions required for the production of sporophytes. (ACTION: NERC)	
<b>Work plan/organisation(s) responsible</b> (Summary of work plan agreed by the steering group, broken down by year if possible.)		
<b>Action/workplan undertaken?</b> (Please state yes or no.)	Yes	
<b>Description of work taken and organisation responsible</b>	Field collected gametophyte material has been employed in a range of experiments to determine its ecological requirements, photosynthetic characteristics, ultrastructure, reproductive success and growth rates. This has been combined with field observations, eg. microclimatic monitoring in this country and abroad. (University of Manchester/ NHM/ NERC)	
<b>Output and timescale</b>	Research summarised in two PhD theses and several papers. NERC Funding relevant to this aspect of the species biology ceased in 1994.	Action by University of Manchester/ NHM/ NERC
<b>Constraints to action</b> (Please provide an explanation of	Funding has now ceased. Considerable progress has been made towards an understanding of the ecology and reproductive biology of this species.	

<i>the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	Complete?
<b>Next steps</b>	NHM to assess further research needs and if appropriate to seek further funding
<b>Output and timescale</b>	Action by NHM

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.5.2</b> Consider research needs to clarify the taxonomy of the species, including the relationship between the gametophyte and sporophyte forms, and the suitability of the species for re-introduction or translocation. (ACTION: CCW, DoE(NI), EN, JNCC, SNH)
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	Determine relationships between, and distinctiveness of <i>T.speciosum</i> from other non-European taxa. Establish that newly detected gametophyte populations are <i>T.speciosum</i> using morphological, biochemical and molecular methods. Assess the species suitability for re-introduction. (NHM)
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	Yes
<b>Description of work taken and organisation responsible</b>	Morphological and molecular studies indicate that gametophytes (with the exception of one population in a Cornish garden) are conspecific with <i>T.speciosum</i> . This has been confirmed as a Macaronesian – European endemic, the phylogenetic relationships of which are the subject of ongoing research
<b>Output and timescale</b>	Research papers (5) published Action by
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	Re-introduction/translocation of sporophytes has been deemed inappropriate in the majority of cases (see 5.3.1).
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	Largely complete. Phylogenetic research largely beyond the scope of the Action Plan is ongoing.
<b>Next steps</b>	
<b>Output and timescale</b>	Action by

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.5.3</b> Compile an inventory of all sporophyte populations in cultivation, in botanic gardens and private collections, and establish provenances if possible. Consider the feasibility of using material of known provenance in re-introduction experiments. (ACTION: CCW, DoE(NI), EN, JNCC, SNH)
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<b>Work plan/organisation(s) responsible</b> (Summary of work plan agreed by the steering group, broken down by year if possible.)	Request information via specialist society publications, from pre-existing databases and other literature records. Compile data as hard copy and then database. If accurately localised cultivated stocks can be traced consider potential for re-introduction.	
<b>Action/workplan undertaken?</b> (Please state yes or no.)	Yes	
<b>Description of work taken and organisation responsible</b>	List institutions and private growers cultivating plants of <i>T. speciosum</i> with their provenances (NHM)	
<b>Output and timescale</b>	Hard copy and database to be produced by Jan. 2000	Action by NHM
<b>Constraints to action</b> (Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)		
<b>Action complete or ongoing?</b> (Please state yes, not started, or ongoing.)	Ongoing	
<b>Next steps</b>	The inventory will be made accessible to bona fide researchers when complete.	
<b>Output and timescale</b>		Action by

<b>Published action/organisation(s) responsible</b> (For new or revised actions please provide the new paragraph number and action text.)	<b>5.5.4</b> Monitor all sporophyte colonies regularly to assess status of the species in the UK. (ACTION: CCW, DoE(NI), EN, JNCC, SNH)	
<b>Work plan/organisation(s) responsible</b> (Summary of work plan agreed by the steering group, broken down by year if possible.)	Monitoring protocols discussed and formalised by the steering group. Basic monitoring is underway at all sporophyte stations known to the agencies on an annual/biennial basis (CCW, DoE(NI), EN, SNH)	
<b>Action/workplan undertaken?</b> (Please state yes or no.)	Yes	
<b>Description of work taken and organisation responsible</b>	Census of sporophytes documenting colony dimensions, frond number and fertility with photographic documentation where feasible. Undertaken by both the voluntary and statutory sectors.	
<b>Output and timescale</b>	Unpublished confidential records currently held by the respective agencies – ongoing	Action by (CCW, DoE(NI), EN, SNH, NHM, BPS, BSBI)
<b>Constraints to action</b> (Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)	As elsewhere the situation re- activity in Northern Ireland is unclear. Several additional sporophyte sites are known to exist the locality of which has not been disclosed to the agencies. These tend to be monitored on an ad hoc basis by the few individuals who are aware of their existence. It is unlikely that these individuals will reveal the localities but they might be prevailed upon to monitor sites more regularly and using the standardised methodology recommended by the Steering group/countryside agencies.	
<b>Action complete or ongoing?</b> (Please state yes, not started, or	Ongoing	

<i>ongoing.</i> )	
<b>Next steps</b>	Continue monitoring in recommended fashion and seek to persuade others to adopt these methods (see constraints).
<b>Output and timescale</b>	<i>Action by (CCW, DoE(NI), EN, SNH, NHM, BPS, BSBI)</i>

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.5.5</b> Subject to confidentiality and data ownership, pass information gathered during survey and monitoring of this species to JNCC or BRC so that it can be incorporated in national databases. (ACTION: CCW, DoE(NI), EN, SNH)
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	A confidential report was prepared as a result of the Workshop held at the NHM in July 1997. This proposed that the NHM act as the repository of data with records forwarded to BRC, JNCC and bona fide researchers and conservation organisations as appropriate, i.e. where confidentiality is not compromised.
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	Yes
<b>Description of work taken and organisation responsible</b>	All available gametophyte records have been forwarded to the JNCC funded Threatened Plant Database (TPDB) administered by the BSBI and are now available.
<b>Output and timescale</b>	<i>Action by</i>
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	Confidentiality concerns limit the usefulness of databases as the majority of information is withheld by, or not even known to the statutory authorities. The inclusion of this species as one of the first seven to be worked up by the TPDB was to assess how real a problem this might be. Gametophyte data is held at NHM and the TPDB, sporophyte data has not been forthcoming – requests to BRC have also gone unanswered.
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	ongoing
<b>Next steps</b>	
<b>Output and timescale</b>	<i>Action by</i>

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.5.6</b> Provide information annually to the World Conservation Monitoring Centre on the UK status of the species to contribute to maintenance of an up-to-date global Red Data List. (ACTION: JNCC)
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>	JNCC have the available distribution data via Steering group workshop report and TPDB (see 5.5.5)
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>	?
<b>Description of work taken and organisation responsible</b>	Transfer of summarised data to WCMC (JNCC)
<b>Output and timescale</b>	<i>Action by</i>

		JNCC
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>		
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>	?	
<b>Next steps</b>	<i>Please outline future action/work including an indication of expected output, timescale and organisation responsible.</i>	
<b>Output and timescale</b>		Action by

<b>Published action/organisation(s) responsible</b> <i>(For new or revised actions please provide the new paragraph number and action text.)</i>	<b>5.6.1</b> Publicity is not recommended for this species due to the risk from collectors.	
<b>Work plan/organisation(s) responsible</b> <i>(Summary of work plan agreed by the steering group, broken down by year if possible.)</i>		
<b>Action/workplan undertaken?</b> <i>(Please state yes or no.)</i>		
<b>Description of work taken and organisation responsible</b>	<i>Please provide details of progress to date, including information about outputs, deadlines, which organisations and where action is being undertaken.</i>	
<b>Output and timescale</b>		Action by
<b>Constraints to action</b> <i>(Please provide an explanation of the significant issues or difficulties encountered and how they have been or will be resolved. Any constraints which the steering group are unable to resolve should also be detailed.)</i>	Essentially a non-action! A greater openness with regard to this species gametophyte generation has not apparently brought about damage. Publicity for the exciting work done on this species has had to be somewhat muted given concerns over collection, etc. The profile of the species has however been raised and our understanding of it greatly improved such that informed conservation actions can now be sensibly made.	
<b>Action complete or ongoing?</b> <i>(Please state yes, not started, or ongoing.)</i>		
<b>Next steps</b>	<i>Please outline future action/work including an indication of expected output, timescale and organisation responsible.</i>	
<b>Output and timescale</b>		Action by