

Species and Habitat Action Plan Assessment Form

Field 1: Action Plan details

Species/Habitat Action Plan	Pearl bordered fritillary
Lead Partner/Agency	Butterfly Conservation
Steering Group/Other organisations	Yes, Scottish Natural Heritage, English Nature, Countryside Council for Wales, Dartmoor National Park, National Trust, Farming and Rural Conservation Agency, Forestry Commission (FA/FE).
Work programme in existence?	Yes

Field 2: Objectives and targets overview

Number and text	UK	E	NI	S	W	Comments
4.1 Obtain accurate data on distribution and abundance by 1998.		✓		✓	✓	Complete in all but Scotland, summary report available from BC.
4.2 Halt the current decline by the year 2005, through maintaining viable networks of populations in core areas of distribution.		✓		✓	✓	The definition of many key areas has been determined by the survey. But decline is continuing in England and Wales. Insufficient information in Scotland.
4.3 Encourage restoration of suitable habitats throughout the butterfly's former range, with the long-term aim of re-introducing the species to at least 3 sites per previously occupied county.		✓		✓	✓	Some progress in coppice woodland habitats in England, and some bracken habitats in Wales.

Field 3: Proposed actions overview

Number and text	UK	E	NI	S	W	Action significant?	Action complete or ongoing?
5.1.1 Encourage extensive grazing regimes in acid grassland/bracken mosaics where the butterfly survives, promoting the uptake of ESA and Countryside Stewardship and other agreements as appropriate.		✓		✓	✓	Yes	England - ongoing Wales - ongoing Scotland - not started
5.1.2 Encourage appropriate woodland management in occupied sites through the Woodland Grant Scheme.		✓		✓	✓	Yes	On going through WGS. There is a need for a new initiative to build on the success of the Coppice for Butterflies Challenge.
5.1.3 Ensure the habitat requirements of this species are considered when drawing up or reviewing management prescriptions and grants in ESAs and other agri-environmental schemes, with particular attention to the need for bracken control.		✓		✓	✓	Yes	Ongoing
5.2.1 Seek to ensure that three large or medium-sized colonies are notified in each Biogeographic Zone or equivalent where the species occurs.		✓		✓	✓	Yes	England - ongoing Wales - complete Scotland - ongoing

5.2.2 Encourage sympathetic habitat management at all sites containing large or medium-sized colonies.		✓		✓	✓	Yes	There are approximately 130 medium and large colonies in the UK. Ongoing
5.2.3 Where feasible, encourage restoration of suitable habitats throughout the butterfly's former range to aid restoration programme.		✓		✓	✓	Yes	England - ongoing Wales - ongoing Scotland - not started
5.3.1 Following feasibility assessments and habitat restoration, where necessary, seek to restore populations to at least three sites per previously occupied county.		✓		✓	✓	Yes	England - ongoing (a few proposals) Wales - not started Scotland - not started
5.4.1 Ensure site managers are aware of the presence, legal protection and importance of conserving this species, and appropriate methods of management and restoration for its conservation.		✓		✓	✓	Yes	England, Wales and Scotland - Ongoing
5.5.1 Collate all recent records and update national distribution map by 1998.	✓	✓		✓	✓	Yes	England, Wales and Scotland - achieved
5.5.2 Promote surveys to identify the locations of large and medium-sized colonies and to identify potential sites for re-introduction.		✓		✓	✓	Yes	England - achieved Wales- achieved Scotland - ongoing
5.5.3 Encourage further research on habitat requirements and habitat management techniques, especially in unimproved grassland/bracken and open woodland habitats.	✓	✓		✓	✓	Yes	Habitat requirements - ongoing - research to date on adult population structure, and larval ecology. Management techniques - not started. Urgent need for research on management techniques for Bracken slopes and open woodlands
5.5.4 Encourage regular monitoring of extant sites, collating transect data annually and using this information to compare trends on individual sites.	✓	✓		✓	✓	Yes	The pearl-bordered fritillary is currently only monitored on 2 Butterfly Monitoring Scheme transects. BC audit of monitoring is ongoing.
5.5.5 Pass information gathered during survey and monitoring of this species to JNCC or BRC so that it can be incorporated in national databases.	✓	✓		✓	✓	Yes	On going through national recording scheme run by BC/BRC.
5.5.6 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 lists.	✓	✓		✓	✓	Yes	Action dropped

Field 4: Assessment of status

	Not appropriate	Recovered	Signs of recovery	No change	Declining	Lost	Insufficient information
<i>UK</i>					✓		
<i>England</i>					✓		
<i>Northern Ireland</i>	✓						
<i>Scotland</i>							✓
<i>Wales</i>					✓		

At the beginning of the century the Pearl-Bordered Fritillary was widespread and common, occurring in most large woodland complexes across the warmer parts of the UK. Data from the recent survey present a radically different picture and highlights the butterfly's alarming range contraction of more than 75% since the beginning of the century (c850 10-km squares 1800-1998, compared to 226 ten-km squares 1993-1998). Of more concern is the dramatic recent decline, by an estimated 52% in the last 15 years (431 ten km squares 1970-88, compared to 226 1993-98). At a smaller spatial scale the decline is likely to be even greater still. For example, in south-east Cornwall the Pearl-bordered Fritillary was recorded in 65 1km squares between 1985 and 1990. In 1997/1998, the butterfly was only located in 2 of these 1-km squares, suggesting a massive decline of 96% in just ten years. It is unlikely that present management practices, many as a result of the BAP, have yet succeeded in turning this around.

In Scotland, new survey work has extended our knowledge of the butterfly's range, in formerly under-recorded areas. Several new nationally important colony networks have been located. However, survey work also indicates that there have been local losses through coniferisation and more general losses in the Lowlands. Recent large-scale land management changes in the Highlands (woodland recovery programmes) are thought to be leading to local population increases, but are likely to lead to declines in the longer-term. Further research/monitoring is urgently required to evaluate these impacts.

Field 5: Summary statement

To be written later

Field 6: Signing off

Contact details	Lead Partner	Contact Point
Name	Dr Nigel Bourn	Dr David Phillips
Organisation	Butterfly Conservation	Scottish Natural Heritage
Assessment date (dd/mm/yy)		

Table A: Action Plan objectives and targets

Objective/target	4.1 Obtain accurate data on distribution and abundance by 1998.				
Country	Not appropriate	Target achieved	Some progress	No progress	Insufficient information
<i>UK</i>			✓		
<i>England</i>		✓			
<i>Northern Ireland</i>	✓				
<i>Scotland</i>			✓		
<i>Wales</i>		✓			
<p>In 1997 and 1998 Butterfly Conservation conducted the first nation-wide co-ordinated survey of the Pearl-bordered Fritillary in the UK, funded by the Country Agencies and ICI. The aims of the survey have been:</p> <ul style="list-style-type: none"> • to determine the butterfly's changing status, • to locate and measure the size of remaining colonies, • to identify and highlight the most important regions and individual colonies <p>The survey has become the largest of its kind ever undertaken in Britain with more than 300 recorders visiting over 1100 past and potential sites.</p> <p>See 4 Assessment of Status for detailed results.</p>					

Objective/target	4.2 Halt the current decline by the year 2005, through maintaining viable networks of populations in core areas of distribution.				
Country	Not appropriate	Target achieved	Some progress	No progress	Insufficient information
<i>UK</i>					✓
<i>England</i>					✓
<i>Northern Ireland</i>	✓				
<i>Scotland</i>					✓
<i>Wales</i>					✓
<p>See 4. Assessment of Status for survey results. It is unlikely that present management practices, many as a result of the BAP, have yet succeeded in halting, or even reducing, the rate of decline.</p> <p>While there have been some local successes, for example in the Wyre Forest, England, these have been too limited to have much impact on the national decline. The exact scale of this is difficult to assess accurately. In Scotland, new survey work has extended our knowledge of the butterfly's range, in formerly under-recorded areas, and several nationally important colony networks have been located. Survey work indicates that there have been local losses through coniferisation and more general losses in the Lowlands. Recent large-scale land management changes in the Highlands (woodland recovery programmes) are thought to be leading to local population increases, but are likely to lead to declines in the longer-term. Further research/monitoring is urgently required to evaluate these impacts.</p>					

Objective/target	4.3 Encourage restoration of suitable habitats throughout the butterfly's former range, with the long-term aim of re-introducing the species to at least 3 sites per previously occupied county.				
Country	Not appropriate	Target achieved	Some progress	No progress	Insufficient information
<i>UK</i>			✓		
<i>England</i>			✓		
<i>Northern Ireland</i>	✓				
<i>Scotland</i>				✓	

Wales			✓		
<p>Some progress in coppice woodland habitats through WGS and other schemes in England. In Wales the focus of the restoration work has to be to encourage suitable management adjacent to remaining key areas, this is ongoing, including an initiative on National trust properties in Ceredigion.</p>					

Table B: Proposed actions

Published action/organisation(s) responsible	<p>5.1.1 Encourage extensive grazing regimes in acid grassland/bracken mosaics where the butterfly survives, promoting the uptake of ESA and Countryside Stewardship and other agreements as appropriate.</p> <p>ACTION: MAFF, CCW, EN, MAFF, SNH, SERAD, WOAD (Countryside Commission deleted as Lead Agency as Countryside Stewardship is now administered by MAFF).</p>
Work plan/organisation(s) responsible	<p>1 Action through the development of new schemes in Scotland and Wales and with ESA reviews in 1998. Ongoing. CCW, SNH, WOAD, SERAD 2 Pass information on sites to relevant advisors – ongoing, (All) 3 Publish the Bracken & open woodlands leaflet specific to Scotland (SNH/BC) 4 Determine which SSSI's have management agreements and review (EN, CCW, SNH). 5 Monitor the impact of these schemes on priority BAP species (MAFF, BC)</p>
Action/workplan undertaken?	<p>Yes 1 2 4 No 3 5</p>
Description of work taken and organisation responsible	<p>In England, the review of ESAs has targeted BAP species, but no extra funding for work on marginal areas such as bracken slopes, or for scrub control etc., appears to have been made available. Wales – New all Wales Agri-environment scheme launched Tir Gofal. Project Officers have undergone training by CCW including invertebrate conservation courses run by the specialists in CCW. Scotland – the Countryside Premium Scheme is due to be replaced with a new scheme, details not available to the Steering Group. BC also providing information and advice on a regular basis. Summary information on SSSIs provided by CCW and SNH, while BC agreed to chase local teams in England to clarify the situation as no national data base that cross links species and SSSIs exists in England. Following on from this the Steering Group agreed that efforts should be made to ensure lists of sites are given to local teams (SSSIs) and Wildlife Trusts (CWSs) to encourage further designation.</p>

Output and timescale	An assessment of how much land is now in favourable land management has not been possible. A paper by BC to an International Bracken Conference subsequently presented to the UK Woodland Habitat Steering Group. Bracken for Butterflies leaflet produced and distributed SAP Progress report published in 1999 by BC. SNH are intending to produce an Advice Note written by BC explaining PBF ecology and areas where bracken and open woodland is important in Scotland.	Action by BC, CCW, EN, SNH, MAFF
Constraints to action	The Steering Group expressed concern that the budget for Tir Gofal appeared low (£3 Million) in relation to the potential uptake (estimated at 600 farms) and that without targeting of BAP species (applicants are ranked on the basis of habitat) the scheme's contribution to the implementation of the BAP would be limited. Many of the ESA reviews, aims and objectives cannot be met without significant increases in funding to the schemes. The schemes will need to be flexible and will rely on the commitment and knowledge of the Project Officers. Lack of resources, particularly to target management on key sites and monitoring of impact. Precise figures are impossible for the steering group to determine, but are considerable.	
Action complete or ongoing?	Ongoing	
Next steps	Scotland – the Countryside Premium Scheme is being developed. The Steering Group felt that further work was going to be needed to inform the Project Officers (FWAG advisors) of the importance of bracken areas in Scotland where the Pearl-bordered Fritillary occurs. A review of these schemes together with targeted monitoring will be essential to allow reporting back in future.	
Output and timescale	As appropriate.	Action by SERAD, SNH, MAFF (FRCA),

Published action/organisation(s) responsible	5.1.2 Encourage appropriate woodland management in occupied sites through the Woodland Grant Scheme. ACTION FA
Work plan/organisation(s) responsible	1 Continue to target WGS entrants in England to on or near PBF colonies. 2 Continue Coppice for Butterflies Challenge, which finished in 1999. (There could be scope for further targeting in the Wilts/Hampshire and Sussex areas). 3 Much new planting is targeted at areas of bracken but it is vital that those areas used by rare and declining butterflies are not planted. FA rely on consultees to inform them of the location of important sites, and potential habitats (with bracken and violets) should be surveyed thoroughly prior to planting approval.
Action/workplan undertaken?	Yes 1 3 No 2

Description of work taken and organisation responsible	<p>220ha has been restored within the scheme to date. A further 150ha of woodland in failed bids (within this scheme) have been entered into standard (50% payment rate) WIG Schemes.</p> <p>WGS applications on key sites for PBF are targeted/encouraged in England and Scotland.</p> <p>Forest Enterprise has written a GB plan for Butterflies on Forestry Commission land. The plans are based on a 'whole woods' approach and highlights the woodlands with priority BAP species where much can be achieved.</p> <p>Woodland Grant Schemes, that involve the fencing of areas to allow woodland regeneration, potentially threaten many PBF sites. Open woodlands and woodland edges are key habitats for this species in Scotland, and widescale bracken control and planting/fencing should be avoided. The Forestry Commission is leading a consultation process on the development of a new Scottish Forestry Strategy.</p>	
Output and timescale	<p>Report on the monitoring (by volunteers) of the Coppice for Butterflies Challenge, results indicate that it may take some time for butterfly populations to respond to the coppice management.</p> <p>BC and FC continue to liase over conservation of the PBF.</p> <p>BC to prepare a list of 20 most threatened sites, and liase with FC to ensure some positive steps taken</p>	<i>Action by</i> FC, BC
Constraints to action	<p><u>Woodland clearings</u> The Steering Group highlighted the need for a new initiative to build on the success of the Coppice for Butterflies Challenge. Uptake was poor in some targeted areas and it is clear that factors other than finance play a role in deciding whether to restore coppice or not, while it remains important that the restored coppice becomes economically viable. There is little evidence that further entrants would come forward in the pilot areas.</p> <p>The Steering Group highlighted the problems of PBF in coniferised woodlands where there is little prospect of management to maintain suitable conditions in the future.</p> <p><u>Open woodlands</u> It should be emphasised that deer control should be seen as the best method of allowing limited re-generation and not fencing which would make woods too shaded and risks losing the crucial grazed wood-edge habitat used by the Pearl-bordered Fritillary in Scotland. Effective deer management is also essential in lowland coppice woods.</p> <p><u>Bracken hillsides</u> Reviews of new planting schemes are not being done due to time constraints on staff of all organisations concerned.</p>	
Action complete or ongoing?	Ongoing	
Next steps	<p>Continue to monitor situation.</p> <p>Continue to target key sites for WGS in England, and increase level of funding for coppice and liase with FC over new planting.</p> <p>In open woodlands and bracken hillside sites with PBF fencing, planting and bracken control should be avoided.</p>	
Output and timescale	<p>As appropriate.</p> <p>Increased area of woodland actively coppiced.</p> <p>Reduced level of WGS funded planting on key PBF sites.</p>	<i>Action by</i> FC, SNH, EN, CCW, BC
Published action/organisation(s) responsible	<p>5.1.3 Ensure the habitat requirements of this species are considered when drawing up or reviewing management prescriptions and grants in ESAa and other agri-environmental schemes, with particular attention to the need for bracken control.</p> <p>ACTION MAFF, SERAD, WOAD</p>	

Work plan/organisation(s) responsible	Pass new information on sites to relevant advisors All to continue to pass on new information to relevant advisors. BC/MAFF/FRCA
Action/workplan undertaken?	Yes
Description of work taken and organisation responsible	See 5.1.1. In England the ESA review process is ongoing with an increased profile for BAP species and habitats, it is unclear (to the steering group) whether extra resources will be available for BAP species and what the financial implications of this will be. Several schemes now have payment tiers which should allow appropriate, extensive management on key sites.
Output and timescale	Revised schemes with positive payments that will benefit BAP species. <i>Action by MAFF</i>
Constraints to action	Resources
Action complete or ongoing?	Ongoing
Next steps	To ensure new schemes in Wales and Scotland are targeted to BAP priority species.
Output and timescale	Schemes with positive payments that will benefit BAP species. <i>Action by CCW, SERAD, SNH</i>

Published action/organisation(s) responsible	5.2.1 Seek to ensure that three large or medium-sized colonies are notified in each Biogeographic Zone or equivalent where the species occurs. ACTION CCW, SNH
Work plan/organisation(s) responsible	Review coverage of species on SSSIs in England Review coverage of species on SSSIs in Wales Review coverage of species on SSSIs in Scotland
Action/workplan undertaken?	England - no Wales – yes Scotland – preliminary analysis done, more detailed work needed
Description of work taken and organisation responsible	England - ongoing Scotland - review of SSSI status indicates that the Pearl-bordered Fritillary is present in 37 SSSI's occurring in all but one of the 21 Biogeographic zones of Scotland. Steering group stressed the need to know whether the main part of the colony is in an SSSI and how important the SSSI is to the Pearl-bordered Fritillary. Follow on work will include the information collated over the last 2 years being distributed to Area Officers to help ensure that area staff are aware of presence and the management implications on SSSIs. Wales - review of SSSI status determined that a third of the medium and large colonies known in Wales are currently SSSI (2 of 6). Negotiations between CCW and the owners of one site in Denbighshire over grazing are on going. In Montgomeryshire all sites supporting colonies (8) (not just SSSI) are in a scheme or under some form of sympathetic management. CCW have also initiated a project, (in partnership with the Local Authority) to identify all potential bracken sites in Montgomeryshire using Phase I Habitat maps and GIS. Identified sites have been ranked (using size, proximity to occupied sites etc.) and the highest ranked sites visited to determine the wildlife interest and potential. The aim is to visit all sites within 2 years. Small colonies on SSSI's have also been assessed and the management now appears suitable, however there is little historical evidence to base whether or not colonies have declined or have always been small. Further notification is a possibility if threats or new sites arise.
Output and timescale	A better understanding of the contribution the SSSI system can make to the conservation of the PBF, management advice to local teams/ owners. Some increase in the SSSI series. <i>Action by CCW, EN, SNH</i>
Constraints to action	England – resources Scotland – resources
Action complete or ongoing?	Ongoing

Next steps	Review in England. Dissemination of information and advice	
Output and timescale	Advice on management, ongoing.	<i>Action by</i> CCW, EN, SNH, BC.
Published action/organisation(s) responsible	5.2.2 Encourage sympathetic habitat management at all sites containing large or medium-sized colonies. ACTION CCW, EN, SNH	
Work plan/organisation(s) responsible	Ongoing via 5.1.2 and 5.1.3. Establish monitoring trials in open woodlands that are in Woodland Grant Schemes. Send lists of PBF sites to all relevant Wildlife Trusts, to ensure that all large and medium colonies (and small sites in counties with few colonies) are designated as County Wildlife Sites. Send lists of PBF sites to all relevant Country Agency local teams, Agri-environment Project Officers etc. to encourage favourable land management of individual colonies, colony networks and past sites which have potential to be restored. Continue to work with FA (initiative started in 1998) to encourage suitable management of the most threatened private woodland sites through WGS. Continue to work with FE (initiative started in 1998) to maintain colonies in FE woodlands, by ensuring that the management requirements of the butterfly are written into Forest Design Plans, and the actions implemented. Work with FC(FE/FA)/SNH/SAC to promote the importance of Bracken and grazing for PBF in Scottish woodlands.	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	There are approximately 130 medium and large colonies in the UK (1998), determined by a major survey funded by ICI and the Country Agencies and co-ordinated and undertaken by Butterfly Conservation. There has been much progress between BC and FE/FA with the preparation of an FE action plan for butterflies which lists 79 priority woodlands throughout the UK, many containing pearl-bordered fritillary. In Scotland the importance of open woodland/bracken edge habitat is less widely known and much still needs to be done. Meetings in Scotland have taken place between BC and FE and the bracken paper (see earlier) circulated. The production of the SNH/BC advice note should aid this and the Steering Group emphasised the need for speed in producing and distributing this note.	
Output and timescale	Various reports, targeted action.	<i>Action by</i> BC, CCW, EN, SNH, FC.
Constraints to action	Lack of knowledge – advice note to help address Lack of funding Staff resources are limited FC could do more to assess the potential of sites for the species entering the WGS and accommodate its requirements in to them.	
Action complete or ongoing?	Ongoing	
Next steps	The establishment of a research programme on the PBF in open woodland habitats is a high priority in Scotland, and the steering group urged SNH to aid in this together with FC. The Steering Group also emphasised the need to monitor the potential threat from widescale changes in woodland management in Scotland. Particularly woodland regeneration schemes, which could reduce the area of open woodland and wood edge by fencing out the sheep, and deer. Grazing is thought to be vital in maintaining a sufficiently open bracken canopy with violets and litter.	

Output and timescale	Research report Better understanding of potential threats to PBF	<i>Action by</i> SNH, FC, BC
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Published action/organisation(s) responsible	5.2.3 Where feasible, encourage restoration of suitable habitats throughout the butterfly's former range to aid restoration programme.	
Work plan/organisation(s) responsible	Database of sites where the PBF has recently become extinct to be created and regions to be targeted for habitat restoration.	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	In England the delivery of this action is also being delivered in key areas through Threatened Fritillary Action Groups, and Butterfly Conservation's Regional Action Plan implementation. In Wales a contractor to BC (funded by ICI and CCW) is being employed to give advice on the management of bracken areas. Tir Gofal also has the potential to deliver and CCWs invertebrate specialists are liaising with the Project Officers. In Scotland this action is a lower priority as new sites are still being found.	
Output and timescale	Targeted advice on restoration schemes. Co-ordinated locally and nationally through the Habitat Action Plans.	<i>Action by</i> BC, local action groups, (BC co- ordinated), CCW, EN.
Constraints to action	Lack of funding Staff resources are limited	
Action complete or ongoing?	Ongoing	
Next steps	Continued development of local groups. Liaison through HAPs	
Output and timescale	Ongoing	<i>Action by</i> BC, CCW, EN, SNH

Published action/organisation(s) responsible	5.3.1 Following feasibility assessments and habitat restoration, where necessary, seek to restore populations to at least three sites per previously occupied county. ACTION EN The Country Agencies are currently developing a translocation policy, but the Steering Group would wish to see correct management which then allows natural spread of species	
Work plan/organisation(s) responsible	Low priority - Being done as necessary	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	The steering group is aware of one planned introduction in Suffolk as part of a co-ordinated programme following a feasibility study written for the Wildlife Trust. The site is an RSPB reserve. The Steering Group is also aware of one unofficial reintroduction in Warwickshire. An analysis of the Pearl-bordered Fritillary database suggests that no sites are currently ideal, as all are isolated and small.	
Output and timescale	Some restored sites and populations – long term. Action through several local BAPs.	<i>Action by</i> EN, WTs, RSPB, BC.
Constraints to action	Suitability of habitats Availability of sites with assured long term management and resources.	
Action complete or ongoing?	Ongoing	
Next steps	Steering Group to monitor situation.	

Output and timescale	None	<i>Action by Steering Group</i>
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Published action/organisation(s) responsible	<p>5.4.1 Ensure site managers are aware of the presence, legal protection and importance of conserving this species, and appropriate methods of management and restoration for its conservation.</p> <p>ACTION CCW, EN, SNH</p> <p>MAFF, FRCA and WOAD added to Lead Agencies due to the key role of ESAs for this species. (ENs advisory role is restricted to SSSIs).</p>	
Work plan/organisation(s) responsible	<p>1 EN to ensure presence of Pearl-bordered Fritillary and appropriate management is included in Site Management Statements for all relevant SSSIs.</p> <p>2 Highlight the importance of BAP species including the Pearl-bordered Fritillary in MAFF newsletter.</p> <p>3 Project officers to be informed through existing channels (advisors meetings, local contacts, specialist support within FRCA) of the need for BAP species to be taken into account.</p> <p>4 To provide training as required, targeting relevant project officers</p> <p>5 Circulate bracken leaflet, newsletters targeting woodland officers of FE, FA, ESA project officers etc.</p> <p>6 Produce factsheet (similar to draft SNH advise note) to aid management advice.</p>	
Action/workplan undertaken?	<p>Yes 3 4 5</p> <p>No 1 2 6</p>	
Description of work taken and organisation responsible	This stage of the implementation of the action plan is now well under way with local action groups, information to various project officers etc.	
Output and timescale	Various meetings, site visits, information leaflets etc.	<i>Action by BC, CCW, EN, SNH, MAFF, FRCA</i>
Constraints to action	Lack of funding Staff resources are limited	
Action complete or ongoing?	Ongoing	
Next steps	The steering group felt that a leaflet, written by BC in partnership with the agencies would aid the implementation of this action.	
Output and timescale	Leaflet, when resources are available	<i>Action by BC, CCW, EN, SNH.</i>

Published action/organisation(s) responsible	5.5.1 Collate all recent records and update national distribution map by 1998.	
Work plan/organisation(s) responsible	<p>Update list of Pearl-bordered Fritillary colonies and possible sites identified by BC/ICI/EN/CCW National Survey 1997-1999.</p> <p>Produce list of all negative sites visited by BC/ICI/EN/CCW National Survey 1997-1999.</p>	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	All recent records from volunteers and the national survey of PBF have been incorporated into the Butterflies for the New Millennium data base.	
Output and timescale	Various reports.	<i>Action by BC through funding from ICI and CCW, EN, SNH.</i>
Constraints to action	None	

Action complete or ongoing?	Complete	
Next steps	Publication of atlas and promotion of priority areas and sites from the PBF survey. Survey work is ongoing.	
Output and timescale	Further reports, site information has been passed to various organisations to ensure key sites are known by them. Liaison work is ongoing.	<i>Action by BC.</i>

Published action/organisation(s) responsible	5.5.2 Promote surveys to identify the locations of large and medium-sized colonies and to identify potential sites for re-introduction. ACTION CCW, EN, SNH	
Work plan/organisation(s) responsible	On going – further survey by volunteers only.	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	Ongoing and as complete as possible in England & Wales where we now know the key areas and priority sites with large populations. Scotland is still incomplete despite a large effort over 2 years which has increased the known records to 88 10Km squares on 110 sites containing 139 colonies.	
Output and timescale	Various reports available.	<i>Action by BC through funding from ICI and CCW, EN, SNH.</i>
Constraints to action	If resources were available, contractors would be employed to survey in Scotland.	
Action complete or ongoing?	England complete Wales complete Scotland ongoing	
Next steps	Volunteer surveys continue as part of the national recording scheme run by BC and BRC.	
Output and timescale	National atlas due October 2000	<i>Action by BC, BRC.</i>

Published action/organisation(s) responsible	5.5.3 Encourage further research on habitat requirements and habitat management techniques, especially in unimproved grassland/bracken habitats. ACTION CCW, EN, SNH	
Work plan/organisation(s) responsible	1 Develop research into the ecology and habitat requirements of larvae in woodlands. 2 Collate population structure, mobility and metapopulation research that has been carried out in bracken hillside, woodland clearing, and open woodland habitats. 3 Carry out studies on woodland clearing habitats. 4 Analyse data collected through BC/ICI/EN/CCW National Survey to describe and summarise the butterfly's declining status; and the distribution, colony size, conservation status, management and ownership of sites. 5 Develop a long-term (5 year) study to assess the effects of differing grazing and cutting regimes on habitat quality of PBF Bracken hillside sites. 6 In Scotland research is needed to determine how the requirements of the pearl-bordered fritillary can be incorporated into woodland recovery programmes. 7 Disseminate the results of the research so far through popular articles, advisory work and in a scientific paper.	
Action/workplan undertaken?	Yes 1 2 4 7 No 3 5 6	

Description of work taken and organisation responsible	<p>1 Larval ecology work is on going in woodland clearings in Gloucestershire.</p> <p>2 Research in 1998 included <u>adult population structure</u> in 3 habitats, bracken slopes (Dartmoor), open woodland (Loch Awe, Scotland) and woodland clearings (Gloucestershire). Reports have been produced, and at all three studies showed low dispersal with sedentary colonies possibly acting as a metapopulation. Females move greater distances at the end of the flight period.</p> <p>4 National survey results collated and summarised in a BC report.</p> <p>7 Bracken for Butterflies leaflet, Bracken paper, various advice notes, seminars etc.</p>	
Output and timescale	Research papers, advice notes, seminar etc.	<i>Action by</i> BC, CCW, DNPA, EN, SNH.
Constraints to action	Lack of resources, including staff time, volunteer input. The long term nature of the research required.	
Action complete or ongoing?	Ongoing	
Next steps	Main research needs identified by the steering group are research into habitat management on existing sites, and autecology of species in Scotland. Continue to seek funding and support for the research identified by the Steering Group	
Output and timescale	Reports, research papers etc. A better understanding of how to manage open woodlands and bracken slopes.	<i>Action by</i> BC, CCW, EN, FC, SNH

Published action/organisation(s) responsible	<p>5.5.4 Encourage regular monitoring of extant sites, collating transect data annually and using this information to compare trends on individual sites.</p> <p>ACTION EN, JNCC, SNH The Steering Group recommend that CCW be added to the lead agencies</p>	
Work plan/organisation(s) responsible	Produce a list of all monitored sites. Review monitoring and develop proposals for new sites if necessary.	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	The pearl-bordered fritillary is currently monitored on 2 Butterfly Monitoring Scheme transects. Volunteers currently monitor 10 to 15 populations in England and Wales.	
Output and timescale	Annual reports	<i>Action by</i> BC, BRC, JNCC
Constraints to action	Resources to analyse data collected by volunteers and provide feedback to volunteers.	
Action complete or ongoing?	On going	
Next steps	Now that the main survey period is over encourage volunteers to monitor populations through the local action groups. A minimum of 20 sites evenly spread will be the target. To continue to seek funds to allow the analysis of the monitoring data collected.	
Output and timescale	Annual reports on status of butterflies in the UK. Development of an early warning system for butterflies.	<i>Action by</i> BC, CCW, EN, JNCC, SNH.

Published action/organisation(s) responsible	<p>5.5.5 Pass information gathered during survey and monitoring of this species to JNCC or BRC so that it can be incorporated in national databases.</p> <p>ACTION EN, SNH</p>	
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Work plan/organisation(s) responsible	Ensure records passed to National Data Base (Butterflies for the New Millennium) jointly run by BC and BRC	
Action/workplan undertaken?	Yes	
Description of work taken and organisation responsible	Survey – Ongoing - all butterfly records are now co-ordinated through Butterfly Conservation’s Butterflies for the New Millennium Recording Scheme, run jointly with the BRC. Data sets are held by both organisations. The targeted surveys in 1997 have successfully covered 85% of recently recorded sites. Monitoring – only BMS sites presently analysed nationally.	
Output and timescale	National atlas in 2000	<i>Action by</i> BC, BRC, CCW, EN, SNH.
Constraints to action	None	
Action complete or ongoing?	Ongoing	
Next steps	Completion of atlas	
Output and timescale	Atlas	<i>Action by</i> BC

Published action/organisation(s) responsible	5.5.6 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 lists. ACTION JNCC	
Work plan/organisation(s) responsible	Action dropped - WCMC do not wish to receive raw data sets as they are not established to maintain them.	
Action/workplan undertaken?	No	
Description of work taken and organisation responsible	N/A	
Output and timescale	N/A	<i>Action by</i>
Constraints to action	N/A	
Action complete or ongoing?	N/A	
Next steps	N/A	
Output and timescale	N/A	<i>Action by</i>