

PERTH AND KINROSS COUNCIL**Environment Committee – 31 March 2010****BIODIVERSITY IMPROVEMENTS TO PARKS AND OPEN SPACES****Report By Depute Director (Environment)**

This report outlines proposed changes to the maintenance of selected parks and open spaces, with the objective of improving biodiversity. It covers issues associated with the proposed changes to grass management, including steep bank maintenance. It reviews the outcome of the 2009 meadow trials and recommends continued grass management trials during the 2010 growing season, along with changes to the steep bank maintenance.

RECOMMENDATIONS

The Committee is asked to:

- (i) Note the improvements to biodiversity in the 2009 trials of changes to grass management.
- (ii) Approve the extension of these trials to include additional sites in 2010.
- (iii) Approve the amendment to the cutting of a number of bankings (as identified in the report).

BACKGROUND

1. As a public body, the Council has a duty to further the conservation of biodiversity under the Nature Conservancy (Scotland) Act 2004. As part of the Council's response in endeavouring to fulfil this duty, the Environment Committee approved trials of changes to grass management, on 28 January 2009. (Report 9/52. Article 29)
2. The Grounds Maintenance Kaizen carried out in February 2009 also resulted in some changes to grass maintenance practices, including the possibility of a reduction in grass maintenance on some areas of ground, infrequently used by the public.

REVIEW OF 2009 TRIALS

3. The 2009 trials sought biodiversity improvements to some grass areas, through a number of pilot schemes. At selected areas within Western Edge Park, Viewlands Reservoir Park, Millennium Park and the South Inch, formerly close mown grass areas were converted to meadow.

4. The key objectives of the trials undertaken in 2009 were to monitor biodiversity improvements at each site; determine the operational resource requirements associated with meadow management and gather public opinion on the resulting change.
5. As three of the sites were formerly close mown, the trials provided an opportunity to monitor the changes that occur when such areas are left uncut for a summer season. The flora present was recorded and this now provides baseline information against which future surveys of these areas can be compared and any changes to biodiversity measured.
6. A variety of wildflower species were identified that would not have had an opportunity to develop when these areas were close mown. This was particularly evident at Western Edge Park and Viewlands Reservoir Park. For a more detailed review of each site see Appendix 3.
7. Consultation on the changed grass management practice at the trial sites included informing local members, the appropriate Community Council, and through site meetings to which the public were invited. The feedback has generally been positive and despite previous concerns that the long grass may attract use as 'dog toilet' areas, no complaints related to the trial meadows were received by the Council's Customer Service Centre.
8. The trials have shown that by simply changing the frequency of grass cutting, biodiversity can be improved. Whilst useful information has already been gained from the 2009 trials, it is recommended that they are extended for a further two year period and that additional sites are added to the trials, to gauge the potential for more widespread changes to the management of sites the Council maintains.

PROPOSED 2010 TRIALS

9. It is recommended that in 2010, the trials in four parks and one cemetery are expanded to include an additional 17 parks and open space sites throughout the Council area. This will enable further information to be gathered on various changes to grass management and a more comprehensive assessment on whether this can both improve biodiversity and reduce operational costs.
10. The following three types of grass management will be assessed during the trials:
 - (i) Meadow areas receiving a single cut and lift operation.
 - (ii) Areas which will be cut on a 3 yearly cycle to prevent reversion to scrub.
 - (iii) Areas where grass cutting will cease allowing natural colonization by trees and shrub seedlings. In time, the area will eventually become woodland, through natural succession. Young trees may be planted to accelerate the conversion to woodland. Pernicious weed control will be carried out within all the above areas.

11. It is proposed that the following 22 sites are included in the 2010 trials. Outline details of the type of change at each site are described in the table below. Site plans indicating the specific areas of change at each site will be available in the Councillors' lounge.

Settlement	Ward	Site	2010 Proposal
Aberfeldy	4	Victoria Park	Type (i) - 1 'cut and lift' to peripheral area beyond cricket outfield and below trees
Alyth	2	Market Muir Park	Type (i) – 1 'cut and lift' in central areas and Type (ii) – 1 cut every 3 years to peripheral areas
Auchterarder	7	Auchterarder Park	Type (i) - 1 'cut and lift' to peripheral areas
Auchterarder	7	Kincardine Road Play Area	Type (i) - 1 'cut and lift' to selected areas
Blairgowrie	3	Piggy Lane	Type (i) - 1 'cut and lift' to selected areas. Type (iii) – no grass cutting in new tree planting areas
Coupar Angus	2	Larghan Park	Type (i) - 1 'cut and lift' to existing Bumble bee meadow Type (iii) – cease cutting at tree areas
Crieff	6	Maxton Road	Type (i) – 1 'cut and lift' to peripheral areas
Kinross	8	Kirkgate Park	Type (i) - 1 'cut and lift' at existing meadow areas. Type (iii) – cease cutting on steep bankings and tree areas
Perth	10	Viewlands Park	Type (i) - 1 'cut and lift' in areas as 2009
Perth	11	Western Edge Park	Type (i) - 1 'cut and lift' in areas as 2009
Perth	12	South Inch	Type (i) - 1 'cut and lift' in areas as 2009 with areas below trees added
Perth	12	Millennium Park	Type (i) - 1 'cut and lift' in areas as 2009. Type (ii) 1 cut every 3 years to peripheral area
Perth	11	Mathieson Drive	Type (i) - 1 'cut and lift' to area between football pitch and Lade
Perth	12	Greyfriars Cemetery	Type (i) - 1 'cut and lift' at existing meadow areas
Perth	11	Jeanfield Park	Type (i) - 1 'cut and lift' on high ground adjacent to cemetery, Type (ii) - 1 cut every 3 years to peripheral areas

Settlement	Ward	Site	2010 Proposal
Perth	12	North Inch	Type (i) - 1 'cut and lift' in area between riverside trees and riverbank, Type (ii) - 1 cut every 3 years at 'barrier' strip along riverbank.
Perth	12	Bute Drive/St. Johnstone's Club, North Muirton	Type (ii) - 1 cut every 3 years with close mowing continuing along path
Perth	11	Almond riverside path, Inveralmond	Type (ii) - 1 cut every 3 years, with close mowing continuing along path
Perth	10	Broxden Flood Prevention	Type (i) - 1 'cut and lift' at existing meadow areas
Perth	10	St Magdalene's Hill	Type (iii) – no grass cutting in naturalising woodland areas, with close mowing continuing along paths
Pitlochry	4	Atholl Road/East Moulin Road	Type (i) - 1 'cut and lift' on banking
St. Madoes	1	Sidlaw Park	Type (i) - 1 'cut and lift', with existing 'desire line' routes mown 5 times.

12. The trials include sites where meadow areas have been created as part of improvement projects, such as Larghan Park and Kirkgate Park. At some sites, more than one treatment is proposed, which will create a varied landscape character. In all cases, close mowing will still continue on some areas of the site, including mowing the grass adjacent to surfaced paths and at garden boundaries. In some cases, routes will be mown through the long grass/meadow areas, to encourage access. This ensures that the long grass areas are not perceived as 'unmanaged' or abandoned. Consultation will be an essential part of the trials and signs explaining the planned change are to be erected at all sites, inviting feedback from users, as they were in 2009.
13. Meadow areas provide excellent opportunities to involve communities in their local greenspace. Tasks which enhance meadow areas such as planting native flower plugs, or assisting with operations such as raking up cut grass, are manageable and rewarding volunteer activities. Community involvement is planned at the orchard/meadow project at Mathieson Drive, Perth and the bankings at the East Moulin Road junction with Atholl Road, in Pitlochry. This will enable volunteer assistance with meadow management to be assessed in the current trials.

STEEP GRASS BANKINGS

14. In 2004, health and safety legislation resulted in the need to cease using grass cutting machinery on steep slopes. A report outlining changes was submitted to the Environment Committee (Report 05/16) on 19th January 2005 (Appendix 1). This was followed in November 2005, by a Convenor's Briefing Note on the outcome of ceasing bank maintenance at 38 of the 42 sites with gradients too steep for operatives to mow safely. (Appendix 2). There has been a general public acceptance of the changed appearance of steep banks, however at certain sites, concerns have been raised over their appearance.
15. Through the 2009 report, approval was granted for no longer cutting grass at the following sites:
- Victoria Park, Aberfeldy
 - Bruce Crescent, Perth
 - West Moulin Road Park, Pitlochry

It is therefore proposed that these sites be revisited as, by using an alternative method of cutting, the extent of the uncut areas can be reduced. The proposals are indicated below:

Settlement	Ward	Site	2010 Proposal
Aberfeldy	4	Victoria Park	Type (i) - 1 'cut and lift' where accessible on formerly uncut steep bank by play area.
Perth	11	Bruce Crescent	Type (ii) - 1 cut every 3 years where accessible on currently uncut banking, with close mowing continuing along paths.
Pitlochry	4	West Moulin Road Park	Type (ii) - 1 cut every 3 years where accessible on currently uncut banking, with Type (i) - 1 'cut and lift' on level area at base of bank.

CONSULTATION

16. The Head of Legal Services and the Head of Democratic Services have been consulted in the preparation of this report.
17. It is proposed that local residents and communities will be informed about the changes to grass management, in early spring. An open invitation will be extended to park users, elected members and community councillors, to meet officers on site, during March and April to see the extent of the proposed meadows and discuss any issues of concern. Subsequent meetings will be held prior to cutting the areas, to gauge local opinion.

RESOURCE IMPLICATIONS

18. The 2009 trials were implemented within the existing Operations Revenue Budget. The cost of hiring contractors to carry out the cutting, baling and removal of bales at three sites, was £1,465. This was met from an existing Revenue budget allocation for contracted out operations of this nature, which resulted in reduced maintenance on other sites. Whilst they undoubtedly led to improvements in biodiversity, these limited trials were not of a scale sufficient to warrant the hire of new machinery which could have made cutting and lifting of long grass more efficient.
19. It is recognized that current financial constraints require a comprehensive reassessment of all aspects of service delivery. The proposed changes to grass management at the 2010 trial sites, will be managed within existing resources. One of the key objectives of the trials, alongside the need to encourage biodiversity, is to examine ways of reducing maintenance costs.
20. It may be possible, following a review of these further trials, to identify a sufficient number of sites or areas which could be managed on a reduced cutting regime in order to generate savings in the future, for example, by reducing our overall grass cutting machinery and staffing requirements.

COUNCIL CORPORATE PLAN OBJECTIVES 2009-2012

21. The Council's Corporate Plan 2009-2012 lays out five objectives which provide clear strategic direction, inform decisions at a corporate and service level and shape resources allocation. The report impacts on the following:-
 - (iii) A Safe, Secure and Welcoming Environment
 - (iv) Healthy, Caring Communities
 - (v) A Prosperous, Sustainable and Inclusive Economy
 - (vi) Confident, Active and Inclusive Communities

EQUALITIES IMPACT ASSESSMENT (EqIA)

22. An equality impact assessment needs to be carried out for functions, policies, procedures or strategies in relation to race, gender and disability and other relevant protected characteristics. This supports the Council's legal requirement to comply with the duty to assess and consult on relevant new and existing policies.
23. The function, policy, procedure or strategy presented in this report was considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome:-
 - (i) Assessed as **relevant** and actions taken to reduce or remove the following negative impacts: Perceived risk to personal safety

- To highlight positive impacts, clear information in the form of signs, leaflets and web-based information will be produced to encourage use of parks and open spaces by the whole community
 - Staff will be provided with training to minimize any negative impact of the proposals.
 - Ensure active community involvement in the changes to grass management
- (ii) Assessed as **relevant** and the following positive outcomes expected following implementation:-
- Enhance the public's experience and interest and increase park use by creating a variety of habitats for wildlife to visit
 - The creation of a variety of habitats will provide an educational resource for schools.
 - The reduction in the use of fuel and recycling, will improve the environment to the benefit of public health.

STRATEGIC ENVIRONMENTAL ASSESSMENT

24. Strategic Environmental Assessment (SEA) is a legal requirement under the Environmental Assessment (Scotland) Act 2005 that applies to all plans, programmes and strategies, including policies (PPS). An SEA is not required for the proposed changes to grass management at selected parks as they are currently at the trial stage. However, during 2010, a screening report will be submitted to the SEA Gateway, as feedback from SNH and SEPA on these positive improvements to biodiversity will ensure wider consultation on the trials.

CONCLUSION

25. The 2009 trials have shown that biodiversity has been improved by converting formerly close mown grass areas, to meadow, within parks. The planned expansion of the trials will enable a more comprehensive assessment to be carried out on various grass management practices. This will provide useful information for determining the potential for more widespread changes to the management of sites which the Council maintains. The long term objectives are to both improve biodiversity and reduce operational costs at the selected sites. To date, public reaction to the changed landscape character, that results from including meadow areas in parks and open space areas, has been positive. However the reduction of grass maintenance at certain sites, as proposed in this report, may cause concern to some residents and this will

be gauged over the coming year. Subject to the success of the 2010 trials, they will be expanded the following year, to examine the implications of more widespread changes. Councillors in the affected Wards will be advised of any planned changes prior to their implementation.

JIM VALENTINE
DEPUTE DIRECTOR (ENVIRONMENT)

NOTE

The following background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (and not containing confidential or exempt information) were relied on to a material extent in preparing the above Report; (list papers concerned)

Biodiversity Improvements to Grasslands – Pilot Schemes

28 January 2009 Environment Committee

MAINTENANCE OF GRASS BANKS (Report ECS185).

19th January 2005 Environment Committee

Convenors Briefing Note November 2005

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Date: 10 February 2010

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PERTH AND KINROSS COUNCIL

Environment Committee – 19 January 2005

MAINTENANCE OF GRASS BANKS

Report by Head of Outdoor & Support Services (Environment Services)

This report identifies areas of grass on steep banks which are being considered for alternative maintenance treatment to reflect health and safety difficulties being experienced.

1. RECOMMENDATION

It is recommended that Committee agree to:

- I. Community Councils being advised of difficulties with grass cutting on steep slopes and of proposals to introduce alternative maintenance regimes at selected sites listed in Appendix 1.**
- II. The implementation of alternative grass cutting regimes following consultation.**

2. BACKGROUND

There have, for a number of years, been difficulties for grounds maintenance operatives cutting grass on certain steep slopes. The difficulties are, firstly, an absence of satisfactory places on which to stand and hold grass cutting machinery in a safe manner, and secondly, the practice of working a rotary mower on the end of a rope now being considered by mower manufacturers and health and safety practitioners as a potentially unsafe activity.

Means of overcoming this problem have been reviewed, for example, the use of crampons and/or harnesses and machinery modification. However, these have neither been practical nor possible as a means of substantially improving safety for operatives.

3. PROPOSALS

Appendix 1 shows a list of sites in parks and open spaces throughout the Council area on which steep slopes feature. These sites are currently close cut every 2 weeks as part of the main grass cutting cycle. It is proposed that grass cutting cease on these sites because a safe method of working can not be established.

This would result in a change in appearance with longer grass replacing shorter grass and it is important therefore that the issues and proposals described in this report be shared with Community Councils to help with public understanding. A closely mown strip would be cut out around the edge of

each banking to clearly indicate that it was being managed as opposed to being missed from the mowing route. Whilst the key driver of this report is the need to have safe systems of work in place, there is an added benefit in that longer grass will also contribute to biodiversity, something for which there is currently significant momentum at both local and national level. Each site would be 'badged' with the local biodiversity symbol to indicate its inclusion in our contribution towards biodiversity.

It is important that other maintenance tasks such as litter picking are carried out to the same frequency and standard which existed prior to the introduction of a different regime and that the maintenance of adjacent areas continues at the same level.

4. CONSULTATION

The Chief Executive and Executive Director (Corporate Services) have been consulted on this report.

5. RESOURCE IMPLICATIONS

The reduction of resources gained from not cutting these sites will be offset to some degree by the time taken to properly manage a more biodiverse approach, including the removal of undesirable plants. It is estimated that the work required will be managed within existing resources.

6. COUNCIL PRIORITIES AND PRINCIPLES

The recommendations within this report support the delivery of the following corporate priorities and principles:

Priorities

- **Environment:** *protecting and enhancing the environment of Perth and Kinross.*

Principles

- **Continuous Improvement:** *ensuring that we use Best Value principles in all our service planning and delivery decisions.*
- **Partnership:** *working with our Community Planning partners and all sectors of the local community to plan and deliver responsive and effective services.*

7. CONCLUSION

As the manager of public land, Perth and Kinross Council has a responsibility to address operational health and safety issues. Whilst a relatively small number of sites are included in the proposed list for a biodiverse longer grass regime, it is important to communicate the matter prior to the alternative maintenance regimes being introduced. The biodiversity dividend is also a small but significant step in meeting national and local targets for habitat

creation which, if agreed, should be monitored carefully to inform further actions. Planning for biodiversity in our parks and open spaces and the consequential changes to maintenance regimes will be the subject of reports to future Committee Meetings.

Bill Ronald
Head of Outdoor & Support Services (Environment Services)

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Date of Report: 14 December 2004
Note: No background reports.

Appendix

Aberfeldy	Old Crieff Road
Aberfeldy	Victoria Park (part banking only)
Blairstown	River Erich Walk
Crieff	Fletcher Place
Crieff	Macrosty Park (part banking only)
Killicrankie	Primary School
Kinross	Davies Park
Perth	Commercial Street West
Perth	Bell Park
Perth	Craigie School Playing Fields
Perth	Brahan Terrace
Perth	Potterhill Gardens
Perth	Perth High School
Perth	Crieff Road Pre School
Pitlochry	Altholl Road
Pitlochry	Railway Bridge South
Pitlochry	Area opposite Scout Hall
Pitlochry	Scout Hall Banking
Pitlochry	East Moulin Road South
Pitlochry	East Moulin Road North
Scone	Mayfield Road Garages
Scone	Goshen Park

**Environment Services – Outdoor Services
Briefing note for Convenors – Steep Grass Bankings**

During September, Officers from Outdoor Services carried out a review of the condition and maintenance of those grass bankings which were deemed to be of too steep a gradient for operatives to mow safely and were the subject of a report to the Environment Committee in March this year.

A total of 21 bankings were included in the report, however, during the growing season a further 21 bankings were found to exceed the gradients for safe working and consequently had to be removed from the maintenance programme. (List of all banks attached)

The review has established that, of the 21 banks in the original report, four are still being regularly maintained and the remainder, including the 21 additional banks, are not being maintained at all. This has led to the majority of the bankings looking untidy and uncared for, although one or two are starting to generate a mix of different flora as the attached photograph shows. Very few complaints from members of the public were received. However, a number of expressions of concern were received from local members. As a result of this and following consultation with Catherine Lloyd, Tayside Biodiversity Coordinator, the following works are proposed:-

- Erect signage on all sites during winter 05/06 (sample attached)
- Cut all bankings to a height of 75mm using a tractor mounted side arm flail removing all arisings in early May and again in late August
- Spot spray undesirable plants with non selective herbicide
- Carry out a survey of banks to establish what flora is growing there during 2006 growing season
- Introduce a wildflower planting programme (species based on survey results) involving local schools, community groups and other voluntary organisations where possible. This should be done over a seven year period planting six banking per annum commencing autumn 2006.

Once wild flower areas are established maintenance regimes (particularly cut times and frequencies) will need to be modified to allow for flowering and seeding of the flora.

Continuous reviews of banking maintenance and assessment of gradients must take place as technological advances are made and new equipment becomes available for working on steep banks. At present Ransome Jacobsen have a remote controlled rotary mower which is designed for bank mowing but the cost is prohibitive at £15000.00 per machine. Etesia are introducing a hydraulic powered pedestrian rotary mower designed to work on banks up to 30 degrees with an estimated cost of £1200.00 per machine, though operator safety is a continuing problem with any pedestrian operated machinery.

Mike Constable
Outdoor Services Manager
17/11/05

Perth area;

Muirhall Road verge west of Langley Drive junction
Lochie Brae
Commercial Street sculpture bank
Bellwood Park banks
Strathmore St
Maxton Place in Tulloch
Scone Glebe School
Scone Goshen Park
Scone Mayfield road verge
Luncarty Poachers green
Bankfoot war memorial
Bell Park
Craigie School Playing fields
Braham Terrace
Potterhill Gardens
Perth High School
Crieff Road Pre School

Kinross area;

Crook of Devon football pitch area of bank
Portmoak Primary School banks at play area and football pitch
Milnathort Donaldson park bank down to Whyte Place
Davie Park, Kinross

Eastern area;

Caputh Cemetery bank
Craighall Place bank in Rattray
Glenshee Drive (in Ferguson Park estate)
Ardblair bank (going into Blairgowrie)
Ardblair oap area small area at back.
River Ericht Walk

Highland area;

Appin Place, Aberfeldy
Dunkeld road approaches, Aberfeldy
West-end Park, Pitlochry
Dome Site, Pitlochry
Breadalbane Academy Playing Field, Aberfeldy
Old Crieff Road, Aberfeldy
Victoria Park, Aberfeldy
Atholl Road, Pitlochry
Area opposite scout Hall, Pitlochry
Scout Hall Banking, Pitlochry
East Moulin Road south, Pitlochry
East Moulin Road North, Pitlochry
Killiecrankie Primary School

Strathearn area;

Fletcher Place, Crieff
Macrosty Park, Crieff - bankings

REVIEW OF 2009 MEADOW TRIALS

1. In April 2009, the boundaries of the meadow areas were marked out to guide staff responsible for mowing at these sites and assist public consultation. Temporary signs were erected to inform the public about the proposed grass management regime and the date on which a site consultation meeting was to be held, at which the Parks Development Officer would be available to respond to any queries.

Western Edge Park

2. Two distinct meadow areas were formed at Western Edge Park. The damp area, in the middle of the park, was particularly lush and had areas of docken that were treated with herbicide during the summer to keep it under control. There were three perimeter areas, with the western and northern areas having a variety of weeds, including docken, thistles and stinging nettles which were not treated with herbicide. The eastern area, however, was an outstanding success, with no weeds present and a wide variety of wild flowers present, flowering between May and September. These include daisy, dandelion, ribwort plantain, white clover, cowslip, germander speedwell, ox-eye daisy, selfheal, greater knapweed, yarrow, sheep's sorrel, and ragged robin.
3. From the results at Western Edge it can be concluded that, while there were areas with problem weeds, which will require treatment. There was also one area where a wildflower meadow was created just by changing the grass cutting regime from sixteen times a year to once a year.

Viewlands Reservoir Park

4. There are two distinct areas of meadow at Viewlands Reservoir, the bowl of the former reservoir which is permanently damp, where the grass is particularly lush, and the north facing slope which has fairly shallow soil, including some areas of bare soil and the vegetation is shorter. This area has been more successful than the damp area, with no problem weeds in evidence and a more varied flora and fauna.
5. Flora identified at Viewlands Reservoir Park include daisy, ribwort plantain, dandelion, germander speedwell, field mushrooms, docken, meadow buttercups, cow parsley, yarrow, greater knapweed, ribwort plantain, red clover and meadowsweet. There is also a high possibility that there are colonies of ground nesting species of bumble bees resident on the north side of the park.
6. It was planned to have mown footpaths that would meander through the meadow areas, however Operations did not manage to carry out the regular cutting required to achieve this. It is hoped that this will be achieved in 2010.

Millennium Park

7. Large areas of Millennium Park were not cut in previous years, which meant the meadow area already had areas of long grass. This made it more difficult to identify lower growing plants during the trial period. Flora that were identified at Millennium Park during the trial include daisy, dandelion, white clover, red clover, ribwort plantain, forget-me-not, germander speedwell, creeping buttercup, cow parsley and sheep's sorrel. Cow parsley was present in abundance in the damp areas to the north west of the park, and the remainder of the park was dominated by lush grasses with meadow buttercup. Daffodils have been planted in various places throughout the park and could be increased to provide more interest. There is a large area of docken near the field gate which will need to be treated with herbicide to eradicate it.
8. Following a meeting with the Bridgend and Gannochy Community Council, approval was given to continue the trial with some changes to the areas of meadow and amenity grass. This is shown in the 2010 trial plan.

South Inch

9. This site has a number of areas of bulbs which gives early interest and nectar sources for insects. Other flora identified at the South Inch meadow area included daisy, dandelion, docken, creeping buttercup, cow parsley, germander speedwell, yarrow, ribwort plantain, selfheal, sheep's sorrel, cuckoo flower, white clover and white deadnettle. However, as the trial progressed, the area became untidy with docken, thistles and ragwort standing out above the grass.
10. The location of the site makes it very visible to residents and visitors alike and it is essential that weeds are treated with herbicide at an early stage to prevent them from growing. Timing the single cut of the meadow area in July, is also recommended.

Greyfriars Cemetery

11. Greyfriars Cemetery has been managed as a long grass area since 2005. It has recently been used a school resource, with ecological surveys being undertaken by biology students.

General

12. When grass areas are left to grow unchecked on fertile soils, pernicious weeds such as docken and thistles can occur detracting from the visual appearance of the area. This is the most frequent cause of complaints regarding long grass areas. The treatment of these weeds requires spot applications of herbicides and the cost of this operation requires to be factored in to future meadow management. However, if treated at the appropriate time, i.e. before seed has developed, the areas requiring treatment will diminish in subsequent years.

13. To sustain a diverse range of plant species in rich meadow grassland and prevent the area from reverting to scrub, it is necessary to carry out an annual cut. The lifting and removal of cut grass is also required to prevent nutrient enrichment which is detrimental to meadow management. It was initially proposed that the trial meadow areas would be cut in July, however it was decided to defer the cut to September. This was due both to the continued presence of flowering species in the meadows and difficulties resourcing this operation during the peak summer workload period. This delay appears to have had no detrimental effect on the meadows.
14. The trial sites were all accessible by tractor which enabled a cost efficient cut of the long grass. Two methods were trialled for the subsequent lifting and removal of cut grass:
 - (i) using an existing PKC machine (Trillo) generally used for collecting leaves and litter from grass areas, (this proved slow and labour intensive).
 - (ii) employing a contractor to use an agricultural machine to bale the cut grass. This operation has provided useful information in the efficient implementation of this crucial aspect of meadow management.
15. On-site composting of the cut grass was considered, however no suitable locations were found within the trial sites and the collected grass was removed to the composting plant at Binn Farm. The possibility of selling the resulting hay was explored, however due to its poor quality and possible contamination by litter and dog faeces, no outlets were found.

Operational Resource Implications

16. It was anticipated that the reduction of 16 'cut and leave' operations to 1 'cut, lift and remove' operation would result in a reduction in operational costs. However, as the areas of grass involved in the trials were relatively small and there was continued use of tractor gang mowing on the remaining close mown areas of the sites, the time saved by not cutting the meadow areas during each site visit was not significant in operational terms. In addition, the need to collect and remove the cut grass from site, is expensive, particularly at sites such as burial grounds, where headstones preclude access by certain machines and hand raking of cut grass is required. Indeed, the burial ground trials proposed for 2009 were not carried out as the resource implications for collecting cut grass at these sites had not been fully determined.
17. On large areas of grass accessible to tractors and baling machines, there is potential for meadow management to cost less than an equivalent area of close mown grass. The late timing of the single meadow cut also releases a certain amount of labour and machinery time to work on other areas during the main growing season. The reduced mileage travelled by machines no longer cutting the short grass areas, does result in a reduction of fuel consumption, which contributes to the Council's sustainability targets.

Conclusion

18. Through the regular monitoring that took place during 2009, it will be possible to refine the meadow areas and effect changes, with the agreement of Operations, where problems have been encountered. The South Inch was the least successful area, with weeds evident in the later stages, particularly as the site is in a highly visible position. The most successful was Western Edge Park, with the widest range of interesting and visual wild flowers.
19. The trials have shown that simply by altering the management of grass in some parks, biodiversity can be increased, while also creating a more varied landscape character. It is recommended that the trials are expanded to other appropriate sites.