



**Rochford District
Council**

REPORT TITLE:	Parks for Nature Review
REPORT OF:	Adam Aldridge, Corporate Manager – Green Spaces

REPORT SUMMARY

This report provides a summary of the Council's progress of the Parks for Nature programme introduced in December 2021.

Rochford District Council has pledged its commitment to achieve a net zero carbon status for its own managed estate by 2030. The change in management of the Council's Open Spaces was forecast to achieve a circa £100,000 year on year saving, whilst contributing to the Council's Carbon Neutral 2030 Action Plan.

Through the Parks for Nature Public Consultation in May 2021, the Parks for Nature initiative has worked to achieve our residents' interest in Nature over Neat (managing sites for increased biodiversity) and to spend more time and money on tree planting and nature conservation.

RECOMMENDATIONS

R1 - To note the findings of this report.

SUPPORTING INFORMATION

1.0 INTRODUCTION

- 1.1 The decision to undertake the initiative was agreed by the Executive (July 2021), that:
1. *The comments and summary of the Parks for Nature public consultation be noted;*
 2. *The Parks for Nature initiative would be rolled out, with the changes to the ground's maintenance regime;*
 3. *The members approve to deliver grounds maintenance 'in-house', commencing December 2021.*
- 1.2 The above decision had given consideration to the Council's commitment to achieve a net zero carbon status for its own managed estate by 2030; the benefits to wildlife and biodiversity; and, that the reduced management regime of the Council's Open Spaces would save an estimated annual £100,000.

2.0 PARKS FOR NATURE INITIATIVE

2.1 The below table shows a breakdown of each site where the Parks for Nature initiative has already been implemented, and those considered for this forthcoming season. A study appended to this report provide greater detail (Appendix 1).

Current Sites	Site Area (ha)	Area of Site Converted for Parks for Nature				Number of new Trees
		Meadow (ha)	Woodland (ha)	Wetland (ha)	Total (ha)	
Ashingdon – King George’s Playing Field	6.51	1.24			1.24	855
Brocksford Avenue Open Space	0.17	0.09			0.09	
Fairview Open Space	6.07	0.31	0.33		0.64	320
Ferndale Open Space	1.25	1.25			1.25	
Great Wakering Open Space	6.2	0.89	0.41		1.3	730
Grove Playing Fields	4.4	1			1	
Hullbridge Open Space	3.94	0.58	0.37		0.95	600
Rawreth Lane Open Space	10.51	0.75	0.6		1.35	990
Turret House Open Space	4.5	0.16			0.16	
Woodlands Avenue Open Space	2.23	0.38			0.38	
Kingley Wood	4.21	0.42			0.42	
Cherry Orchard Jubilee Country Park	61.14		0.2		0.2	100
2024 Sites						
Bedford Close Open Space	0.17	0.09			0.09	
Brookland Gardens	1.05			0.24	0.24	
Canewdon Village Green	0.87	0.14			0.14	
Lower Lambricks Open Space	0.43	0.43			0.43	
Malvern Road	0.1	0.1			0.1	
Southend Road Memorial Gardens	0.06	0.06			0.06	
Millview Meadows	4.5		1.31		1.31	2000
Rochford Reservoir	3.44	0.49			0.49	
Ashingdon	6.51			1	1	
Total	121.75	8.38	3.22	1.24	12.84	5595

- 2.2 Of the 121.75 hectares of Open Space set out above, a total of 12.84 ha will have been affected by the Parks for Nature Policy by the end of 2024. It should be noted that Cherry Orchard Country Park, Sweyne Park, and Turret House Meadows have been historically managed for hay meadow and have not formed part of the Parks for Nature project.

Carbon Absorption

- 2.3 It has been calculated that delivery of the Parks for Nature policy has enabled the Council to store 22.6 tonnes more Carbon annually in its first year of application. This is through the creation of meadow areas and woodland planting within our Open Spaces, in place of traditional maintained amenity lawns.
- 2.4 The districts open spaces are now in total estimated to store 386.6 tonnes of CO₂ annually.
- 2.5 The Parks for Nature project has increased the districts carbon absorption by 3.1% annually by converting 10 hectares of amenity grassland to meadow. The project aims increased the Councils meadow and woodland creation areas to a total of approximately 55 hectares, which would indicate a 16.7% increase in carbon absorption annually, if the project were completed.

Biodiversity

- 2.6 Surveys undertaken by Officers this year have recorded an increase in plant species, 50% higher within Parks for Nature meadow areas than compared to formal grass cutting areas.
- 2.7 Butterfly species richness has also increased, - 61.5% higher in Parks for Nature meadow areas compared to formal grass cutting. It would be expected that further survey work would also reveal increases in on other invertebrate species.

Financial Savings

- 2.8 The budget for Parks and Open Spaces in 2021/22, before the implementation of the Parks for Nature Initiative was set at £986,001. The budget for the current year is £741,790 and represents an annual saving of approximately £150,000.

3.0 OTHER OPTIONS CONSIDERED

To revert to formally managed green spaces.

- 3.1 The option to revert to formally mown areas of open space would require a decision by the Executive to reduce or cease the Parks for Nature initiative.
- 3.2 If this option were to be considered, the Council would in all probability need to employ additional staff at an estimated cost of approximately £110,000 per year.
- 3.3 By reverting to formally managed grassed areas the Councils carbon footprint would increase and reduce the ability for the Council to use carbon-capture as means of off-setting its carbon emissions. It should be considered that whilst areas of meadow can be reverted relatively easily, it is presumed that the new planted woodland areas would remain.

- 3.4 It is important to note that Cherry Orchard Country Park, Sweyne Park and Turret Meadows have been historically managed for hay meadows and have not formed part of the Parks for Nature project. Any changes to mowing regime to these hay meadows would require further consideration and cost to the Council.
- 3.5 Should members be minded to consider the ceasing, or significant reduction of the parks for nature initiative, it would be advised that a further report is undertaken providing a more detailed study of the impact and costs to the Council.

4.0 FINANCIAL IMPLICATIONS

- 4.1 Any future increase in the resources for parks and open spaces to implement a reversal of the initiative have not been budgeted for in the current financial year, and would represent a growth item in any future medium term financial strategy requiring additional resource to be identified if indeed the changes were to be made.

5.0 LEGAL IMPLICATIONS

- 5.1 There are no legal implications arising from this report.

6.0 RESOURCE IMPLICATIONS: STAFFING, ICT AND ASSETS

- 6.1 There are no additional resourcing implications linked to continuation of the policy, however any change would require a further report to consider implications.

7.0 RELEVANT RISKS

- 7.1 Given the recent Climate & Biodiversity Emergency declared by the Council, any reversal of the Parks for Nature policy would risk criticism and reputational damage, due to the increased carbon footprint and reduction in biodiversity that would follow. It is presumed that the newly planted woodland would remain, and that focus on any policy change would concentrate on the grass cutting.
- 7.2 There has been some negative comments relating to the scheme, this is discussed further below. There can be a perceived risk by the public that the Open Space are not managed due to the relaxed mowing. New signage and street furniture is planned for installation at these sites to emphasise that the parks and open spaces are still suitably managed.

8.0 ENGAGEMENT/CONSULTATION AND COMPLAINTS

- 8.1 The Council has not received any formal complaints regarding the implementation of the Parks for Nature programme. It is noted that there are two significant cases for objection received through email.
- 8.2 One on-going complaint is at Kingley Woods, by a resident who is unhappy with the naturalisation of the glade area adjacent to the Woods.

- 8.3 A further objection was made at Woodland Avenue Open Space regarding the rewilding of an area, as the resident was concerned over an ongoing issue with vermin. Officers worked with the resident to relocate the area, and the resident was satisfied with the outcome.
- 8.4 Additional concerns were raised at Fairview Open Spaces and Rayleigh Leisure Centre football teams who were previously using this area to operate organised football. This was without permission from the Council. Officers sought to engage with the clubs to accommodate, however this lost momentum when the clubs were asked to follow the Council’s procedure for pitch booking and payment.
- 8.5 It is recommended that it may be prudent to undertake a public consultation to ascertain a wider view from park users, particularly if any changes are to be considered to the existing management regime.

9.0 ENVIRONMENT AND CLIMATE IMPLICATIONS

- 9.1 Rochford District Council has recently declared a climate emergency. The Parks for Nature initiative directly contributes towards a reduction in the carbon emissions of the Council for its managed estates, and impacts upon the available carbon absorption for the district.
- 9.2 Any reduction in the planned meadow areas, or tree planting, would result in a reduction in available carbon stores within the district. Contrary, an increase in meadow land and woodland area would increase the districts carbon absorption at a rate estimated at 3 tonnes of CO2 per hectare.

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SUBJECT HISTORY (last 3 years)

Council Meeting	Date
Review Committee	7th October 2021
Executive	22nd July 2021

Executive Summary

- Parks for Nature management has enabled the Council to sequester 22.8 tonnes more CO₂ annually, this is 2.7 times more carbon than traditional management.
- The district's open spaces are now estimated to store 386.6 tonnes of CO₂ annually.
- Parks for Nature has ensured 3.1% more carbon will be sequestered each year.
- By the end of the Parks for Nature Scheme, it's predicted that 16.7% more carbon will be sequestered annually.
- Carbon sequestration in meadow habitats has increased by 25.8% since Parks for Nature has been implemented.
- Plant biodiversity is 50% higher in Parks for Nature meadow areas compared to formal grass areas.
- Butterfly species richness is 61.5% higher in Parks for Nature meadow areas compared to formal grass areas.

Definitions:

- Carbon Sequestration – is the process of carbon in the atmosphere becoming stored in plants, soils, geologic formations, and oceans.
- Carbon Neutrality – is a state of net zero carbon dioxide emissions.
- Biodiversity - is a measurement used to determine the variation of species in a given area.

Introduction

On Wednesday 28th June, Rochford District Council made an official declaration of a Climate and Ecological Emergency. This declaration confirms the Council's commitment to achieve net zero carbon status by 2030 for its own estate, and by 2040 for the Rochford District area. Efforts to protect and enhance biodiversity were agreed within this declaration.

The Council's Carbon Neutral Action Plan includes the objective '*protect, conserve and enhance our District's high quality natural environment and its biodiversity whilst improving our parks and open spaces, public rights of ways and green corridors*'. The approved action for this objective was to implement the Parks for Nature scheme.

Parks for Nature is a scheme run by the Open Spaces team at Rochford District Council to manage the district's green spaces with greater economic, and environmental impact. The project provides a significant benefit to the council with regards to meeting the commitment of carbon neutrality by 2030.

After public consultation in 2021, the consensus from district residents was for the council to do more to mitigate climate change in the local area, with 65% of people setting it as a high priority. 88% also strongly agreed that parks should be managed

with wildlife and biodiversity in mind and 80% believed suitable land should be considered for rewilding and tree planting.

From the conclusions, the council recognised the opportunity to adopt more environmentally sensitive practices in the Council's 315 hectares of open space. Since April 2022, the council had begun to consciously landscape the district's green spaces. These practices benefit the district by reducing carbon dioxide (CO₂) emissions and effects of extreme weather events, while increasing CO₂ sequestration/storage and developing more resilient habitats to help sustain wildlife.

Parks for Nature allows the Council to meet its targets while aligning with resident's desires for the open spaces.

Carbon emissions

To fulfil Rochford District Council's commitment to achieve net zero carbon status by 2030, Parks for Nature management strategy heavily focuses on methods to reduce the Council's carbon emission output, and increase carbon storage in the district's green spaces.

To reduce CO₂ emitted by the Council, certain practices needed to be revised. The Open Spaces team produce large quantities of greenhouse gases whilst undertaking ground maintenance. A simple strategy to reduce these emissions is to reduce the area of grass requiring regular ground maintenance. This has been achieved by increasing areas of meadow and woodland in the district's green spaces, which require less intensive grass cutting practices. The new habitats replacing formally cut grass also help to sequester more CO₂ from the atmosphere.

For meadows to be optimal carbon sinks, they must feature a diverse number of plant species, as increased biomass leads to larger carbon storage capacity. Diverse meadows have the potential to store 3 tonnes of CO₂ per hectare per year. Whilst British woodlands can store between 1-4 tonnes of CO₂ through carbon sequestration and have the ability to transfer carbon to the soil via leaf litter breakdown. In comparison, formal grass can only store up to 1 tonne of CO₂ per hectare per year.

As urban communities are disproportionately affected by pollution-related sickness, incorporating more woodlands and meadows into urban areas is crucial. Improved grazing management and biodiversity restoration can also provide low-cost and high-carbon-gain options for natural climate solutions.

2023 is the baseline year for the Parks for Nature scheme. It has been calculated that Parks for Nature has enabled Rochford District Council to sequester 22.8 more tonnes of CO₂ than traditional management would permit, see table 1. Currently 4 tonnes of CO₂ has been emitted through maintaining formal grass areas (see table 2), this can be reduced further by increasing meadow and woodland areas. At present, 2000 trees have been planted and an estimated 1600 more will be planted over winter 2023.

Parks for Nature has increased the Council’s meadow and woodland areas to 176.9 hectares, this now stores 386.6 tonnes of CO₂, see table 3. The Parks for Nature scheme has ensured the Council’s commitment to become carbon neutral by 2030, increasing carbon sequestration in the district’s green spaces by 3.1% annually, see table 3. In particular, the meadow areas have increased their carbon sequestration by 25.8% since the Parks for Nature project has been implemented, see table 3. These habitats are of high value to biodiversity and are highly effective carbon stores. Meadows that are cut and collected annually continue absorbing CO₂ with new growth, creating a rich soil full of carbon. In addition, meadow and woodland habitats support a variety of organisms, including pollinators, birds, reptiles, and mammals due to the range of vegetation structures they provide.

The land area used by Parks for Nature previously sequestered 10.4 tonnes of carbon when it was formal grass (see table 1). Under jurisdiction of Parks for Nature these grass areas have been transformed into various habitats, and currently sequester 22.8 tonnes of carbon. Once the Parks for Nature scheme is complete, with 43.2 hectares of previous formal grass transformed, it will sequester 118 tonnes of carbon (see table 1). This is 2.7 times more carbon than was previously sequestered by the land.

Land Area (ha)	Carbon Sequestered (tonne)	
	Traditional Management	Parks for Nature
10.4	10.4	22.8
43.2	43.2	118

Table 1: Compares carbon sequestered by traditional management and the Parks for Nature scheme. Data is provided for current land area used by Parks for Nature and an estimation for the predicted land area used by the end of the scheme. The estimation uses the land area provided in the initial report.

Month	Baseline CO ₂ Emissions (tonnes)
January	0
February	0.25
March	0.15
April	0.61
May	1.25
June	1.07
July	0.67
Total	4

Table 2: Displays the monthly CO₂ emissions of large-scale grass cuts since Parks for Nature has been implemented.

Land Use	Traditional Management	PfN Management	Predicted PfN Management	Annual Percentage +/-	Predicted Annual Percentage +/- of
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	Land Area (ha)	Carbon Sequestration (tonne)	Land Area (ha)	Carbon Sequestration (tonne)	Land Area (ha)	Carbon Sequestration (tonne)	in Carbon Sequestration	Carbon Sequestration by end of PfN Management
Formal Grass	136.4	136.4	126.6	126.6	83.6	83.6	-7.2%	-38%
Hay Cut	11.5	34.6	11.5	34.6	11.5	34.6	0%	0%
Meadow	26.0	78.1	32.8	98.3	62	186.1	25.8%	138%
Woodland	141.1	282.2	144.1	288.3	156.1	312.2	2.2%	10%
Wetland	0	0	0	0	1	2	0%	0%
Orchard	0.54	1.04	0.74	1.48	0.74	1.48	0%	0%
Total	315	531	315	548	315	620	3.1%	16.7%

Biodiversity

Biodiversity is a measurement used to determine the variation of species in a given area. High biodiversity is where there is a diverse population consisting of many species that are evenly distributed across an area. Whereas low biodiversity occurs when there is a low number of species that are distributed unevenly. High biodiverse habitats can better adapt to changes in the environment, and therefore are better able to withstand climate change.

Table 3: Displays a comparison between traditional management and Parks for Nature (PfN) management with regards to land area usage and carbon sequestration. Indicates predictions of carbon sequestration by the end of the programme.

Simpson's Index of Diversity has been used to measure the biodiversity of the district's green spaces as it considers both species richness and evenness of abundance among the species present. The highest possible defined value of the index is 1, with a higher value corresponding with higher species diversity.

The baseline survey was conducted in 2023 over the months of June and July, on sites involved in Parks for Nature. Both vegetation and butterfly surveys were conducted at each site on. A comparison was established between site under Parks for Nature management and sites that were traditionally managed, providing an evaluation of how biodiversity has altered within the district since the programme began.

A survey was also conducted at Cherry Orchard Jubilee Country Park, which for over 10 years has been managed for biodiversity. This survey has been used to illustrate our target for how the Parks for Nature sites would develop after long-term management.

From the results of the vegetation surveys, evidence shows on average there is greater biodiversity and species richness on sites following Parks for Nature management compared to traditional management, see table 4. In fact, plant biodiversity is 50% higher in Parks for Nature meadow areas compared to formal grass areas.

Management Type	Average Simpson’s Index of Diversity	Average Species Richness
PfN Management	0.63	4.6
Traditional management	0.42	3.9
Target	0.88	14

Table 4: Displays the average biodiversity and species richness of vegetation for each management type, with a comparison to the target.

There is a correlation between more diverse vegetation and greater diversity of butterfly species. The butterfly survey results indicate the sites under Parks for Nature management had an average species richness of 2.1, while traditionally managed sites only had a species richness of 1.3, see table 5. Butterfly species richness was found to be 61.5% higher in Parks for Nature meadow areas compared to formal grass areas.

Management Type	Average Species Richness
PfN Management	2.1
Traditional Management	1.3
Target	6

Table 5: Displays the average species richness of butterfly populations for each management type, with a comparison to the target.

Future Plans - Ponds and Wetlands

Predicted changes in rainfall patterns will mean ponds may dry out partially or in full when weather conditions are hot and dry. Floods may also become more frequent in wetter periods. This means there is a greater need for new ponds and wetland areas to add to sustainable local drainage and widen the species of flora and fauna.

As climate change puts more pressure on biodiversity there will be more need for ponds and associated wetlands to build local habitat networks. Well-designed ponds and wetlands are excellent for biodiversity in parks.

Wet woodlands occur on poorly drained or seasonally wet soils, often on flood plains. They tend to be dominated by alder, birch, and willow trees. Trees near waterbodies can be useful flood defences, as trees reduce the amount of rainwater entering watercourses. Therefore, trees lower the likelihood of rivers bursting their banks and causing floods.

Parks for Nature intend to landscape wetland habitats around the district’s areas prone to poor drainage in future years.

Conclusion

Parks for Nature is ensuring the Council will attain its commitment to carbon neutrality by 2030 and address the climate emergency. The Parks for Nature project has currently used 10.4 hectares of land. This is only 13.2% of Council owned land currently being used as formal grass. This land will now sequester 22.6 tonnes of carbon emissions every year, which increases the carbon stored by the district's open spaces by 3.1% annually. By the end of the Parks for Nature scheme, it is predicted that meadows will cover 32ha, woodland will cover 10ha, and miscellaneous habitats will cover the remaining land. It is estimated that 16.7% carbon will be sequestered annually at the end of Parks for Nature re-landscaping.

The green spaces managed under Parks for Nature has 50% greater plant biodiversity and 61.5% greater butterfly species richness. The meadow's diverse plant species will continue to attract greater numbers of pollinators, invertebrates, birds, and mammals. This will increase the local food webs complexity, and in turn will increase the stability of the local ecosystem.

From public consultation it has been made evident that local residents wish for parks and open spaces to be managed for wildlife and nature. The improvements made by Parks for Nature will increase public enjoyment of the parks and will provide health benefits to local residents.

The table below indicates the area of each open space that has been transformed as part of Parks for Nature. The areas converted for Parks for Nature have been separated by habitat type. The table includes the predictions for 2024, suggesting the chosen sites and their predicted area coverage.

Current PfN Sites	Site Area (ha)	Area of Site Converted for PfN				Number of Trees
		Meadow (ha)	Woodland (ha)	Wetland (ha)	Total (ha)	
Ashingdon – King George's Playing Field	6.51	1.24			1.24	855
Brocksford Avenue Open Space	0.17	0.09			0.09	
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**OVERVIEW & SCRUTINY COMMITTEE –
13 September 2023**

**Item 9
Appendix 1**

Woodlands Avenue Open Space	2.23	0.38			0.38	
Kingley Wood	4.21	0.42			0.42	
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Total	121.75	8.38	3.22	1.24	12.84	5595