



Falkirk Council

Carbon Sequestration

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Approach

- Phase 1 desktop study - LUC
- Using GIS assessment of:
 - Current carbon sequestration on Council owned land
 - Sequestration potential through habitat creation (woodland, grassland, wetland)
- Also desktop study of potential for retrofitting green roofs.

Current sequestration values

- Estimated 4,628 tCO₂e p.a. on 3,588ha of land

Site typology	Area (ha)	Total current carbon sequestration tCO ₂ e	Average current carbon sequestration per ha tCO ₂ e
Agricultural land	267.91	66.28	0.25
Allotments	0.37	0.9	2.43
Amenity open space	111.37	182.77	1.64
Churchyard / cemetery	43.19	57.82	1.34
Golf course	57.44	162.85	2.84
Industrial / commercial ²	65.06	20.38	0.31
Inland water	35.55	0.02	0.00
Natural, semi-natural greenspace & green corridor	639.02	2279.03	3.57
Play space	8.41	9.3	1.11
Private house grounds (including institutional)	706.86	1.94	0.00
Public building complex	24.94	17.06	0.68
Public park & garden	423.92	1490.66	3.52
Quarry	29.73	38.44	1.29
Railway	7.37	2.18	0.30
Road	209.47	1.9	0.01
Roadside	173.04	68.41	0.40
School grounds	125.94	57.56	0.46
Sports area	132.28	88.44	0.67
Tidal water	462.19	42.02	0.09
Undetermined	64.45	40.41	0.63
TOTAL	3588.51	4628.37	1.29

Potential sequestration values

Table 2.4: Potential average carbon sequestration value of habitat most suitable for change by all site typologies

Site typology	Total area (ha) of habitat most suitable for change	Carbon sequestration value tCO ₂ e per annum as 50% deciduous and 50% semi natural grassland	Carbon sequestration value tCO ₂ e per annum as 50% mixed woodland and 50% semi natural grassland	Carbon sequestration value tCO ₂ e per annum grassland habitat ⁶ only	Carbon sequestration value tCO ₂ e per annum Inland wetland ⁷ only	Carbon sequestration value tCO ₂ e per annum Saltmarsh only	Carbon sequestration value tCO ₂ e per annum Coastal wetland ⁸	Conversion limitations	Conversion opportunities
Churchyard / cemetery	32.11	86.18	147.92	12.75	0	0	0	Available land area limited by functional space for graves/memorials	Potential for creation of natural burial grounds to combine carbon sequestration, biodiversity and burial requirements
Golf course	38.69	103.83	178.22	15.36	0	0	0	Loss of income, loss of recreational spaces	Significant land area
Industrial / commercial	12.67	30.83	52.92	4.56	0	0.3	3.13	Space may be used for vehicle parking or turning	Improved amenity and climate change adaptation
Inland water	0.01	0.04	0.07	0.01	0	0	0	Marginal locations only suitable for change	
Natural, semi-natural greenspace & green corridor	284.61	378.47	649.62	55.99	0.33	94.78	348.59		Significant area with opportunity to improve habitat connectivity
Play space	6.65	16.60	28.49	2.46	0.32	0	0	Loss of play space	Creation of natural play areas

Key points

- Identified potential of additional 2,006 tCO₂e p.a. and 4,082 tCO₂e p.a.
- To achieve highest sequestration value:
 - Mixed woodland and grassland creation
 - Implementation of habitat changes in 'challenging' sites e.g. golf courses
- Achieving max. levels = c.10 years for grassland and up to 60 years for broadleaved woodland.

Scenarios

- 3 scenarios modelled
 1. Based on certain sites (agriculture, open space, public park, school grounds, sports areas) and planting deciduous. Potential net gain of 2,006 tCO₂e p.a
 2. Same typologies as scenario 1 but mixed woodland. 3,641 tCO₂e p.a. on 987 ha
 3. All habitats most suitable for change – deciduous woodland. Potential for 2,972 tCO₂e p.a. Habitat change of around 1,500 ha

Next steps

- Phase 2 study which includes:
 - Site studies to provide more accuracy
 - Develop detailed proposals for priority sites
 - Identification of potential funding streams
 - -develop plans to access these funding streams