Forest Enterprise England

Using Natural Capital Accounting to Improve Sustainable Forest Management in England

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226 million visits...

We are the **largest** single provider of countryside leisure visits in England.

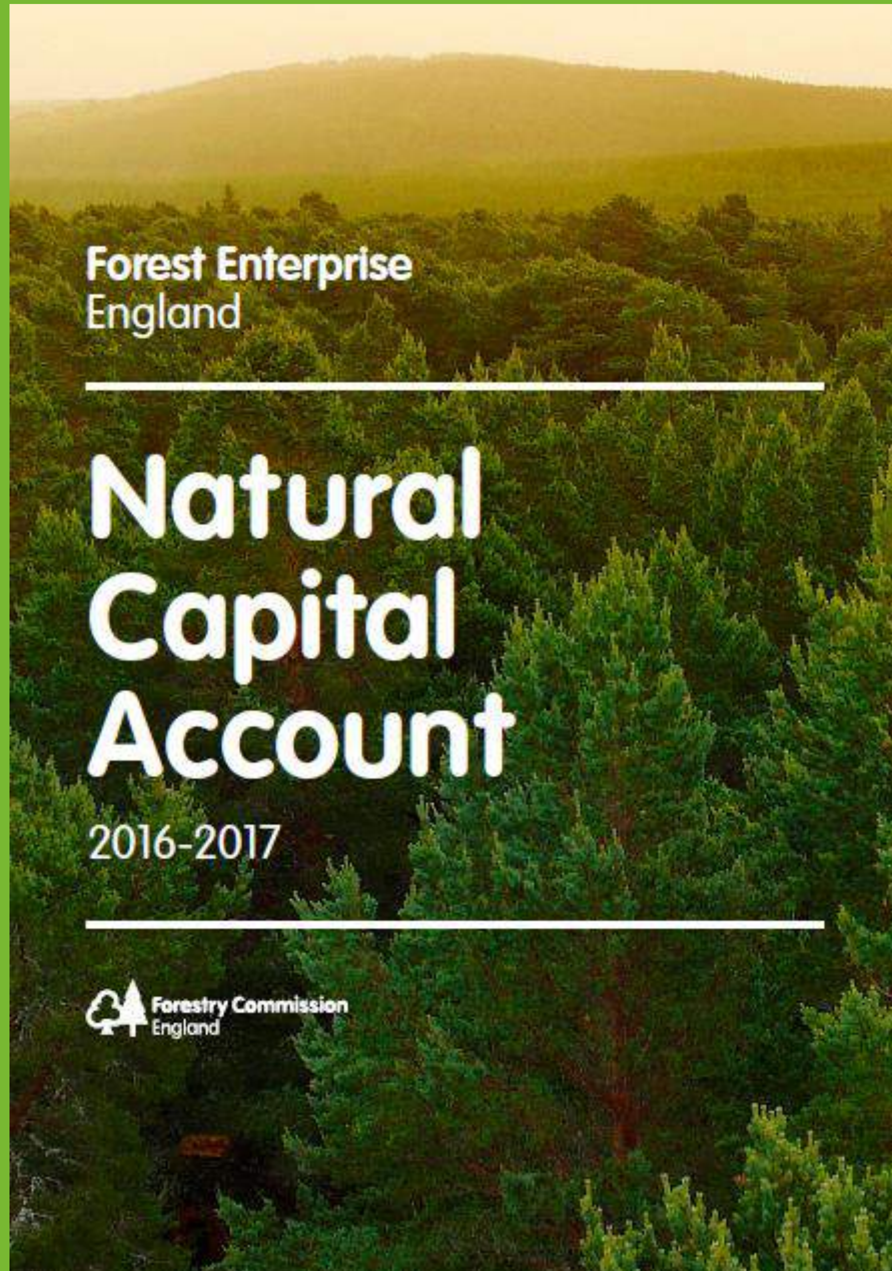
Live music
Unique locations

We have **23** concerts over **7** sites each year.

Over **1.5 million people** have been to our concerts and seen artists as diverse as Massive Attack, Simply Red and the London Philharmonic Orchestra.

Amazing care for our environment

Forest Enterprise England


Forest Enterprise
England
Natural
Capital
Account
2016-2017
Forestry Commission
England

Balance Sheet

	Private value				
	*Baseline 2013-14	Cumulative gains (losses)	Additions / disposals	Revaluation / adjustments	Reporting year 2016-17
	Present value (£m)				
Non-renewables					
Minerals	4	-	-	-	4
Total non-renewables	4	-	-	-	4
Renewables					
Timber	238	14	-	88	340
Food	7	(1)	-	-	6
Plant and seeds	-	-	-	-	-
Carbon	-	-	-	-	-
Recreation and public access	(270)	90	-	-	(180)
Total renewables	(25)	103	-	88	166
Government PES funding	578	-	-	-	578
Total gross asset value	557	103	-	88	748
Maintenance costs	(428)	(53)	-	-	(481)
Total net natural capital assets	129	50	-	88	267

	External value				
	*Baseline 2013-14	Cumulative gains (losses)	Additions / disposals	Revaluation / adjustments	Reporting year 2016-17
	Present value (£m)				
Non-renewables					
Minerals	-	-	-	-	-
Total non-renewables	-	-	-	-	-
Renewables					
Timber	-	-	-	-	-
Food	-	-	-	-	-
Plant and seeds	14	6	-	-	20
Carbon	7,282	(104)	-	529	7,707
Recreation and public access	15,108	-	-	9	15,117
Total renewables	22,404	(98)	-	538	22,844
Government PES funding	(578)	-	-	-	(578)
Total gross asset value	21,826	(98)	-	538	22,266
Maintenance costs	(31)	(26)	-	-	(57)
Total net natural capital assets	21,795	(124)	-	538	22,209

	Total value				
	*Baseline 2013-14	Cumulative gains (losses)	Additions / disposals	Revaluation / adjustments	Reporting year 2016-17
	Present value (£m)				
Non-renewables					
Minerals	4	-	-	-	4
Total non-renewables	4	-	-	-	4
Renewables					
Timber	238	14	-	88	340
Food	7	(1)	-	-	6
Plant and seeds	14	6	-	-	20
Carbon	7,282	(104)	-	529	7,707
Recreation and public access	14,838	90	-	9	14,937
Total renewables	22,379	5	-	626	23,010
Government PES funding	-	-	-	-	-
Total gross asset value	22,383	5	-	626	23,014
Maintenance costs	(459)	(79)	-	-	(538)
Total net natural capital assets	21,924	(74)	-	626	22,476

- **Quantified** the scale of the (partial) benefit compared to the financial accounts. £22.5bn vs £1.4bn.

- **Highlighted** the need to understand the areas we can’t quantify – we have no idea how much impact including air quality, flood protection, water quality would make.

Asset register

Key	
↑	↑
↔	↔
↓	↓
Changes that are unplanned or unwelcome	Changes that are planned & welcome

The asset register is an inventory of the status of the natural capital assets that make up the PFE, including evidence of their extent, condition, and spatial configuration. Other forms of capital (such as car parks) that may influence natural capital benefits are also included.

	Indicator	*Baseline year 2013-14	Reporting year 2016-17	Trend	% change	Units	Explanation of trend
Ecological communities and species							
Extent	**Broad and priority habitat area**						
	Broad habitat area						
	Woodland area	207,876	205,336	↔	-1.2%	ha	**Broad habitat area** The plantation on ancient woodland site (PAWS) and open habitats policies continue to impact on woodland area with other broad habitat changes mostly being reclassification or landholding change related. Because the woodland area change is small in percentage terms it is not RAG rated as a decline.
	Grassland area	12,748	13,992	↑	9.8%		
	Mountain, moors heathlands area	26,564	28,730	↔	0.6%		
	Enclosed farmland	724	723	↔	-0.1%		
	Freshwater	265	257	↔	-3.1%		
	Urban area	742	720	↔	-3.0%		
	Coastal margins	17.0	17.1	↔	0.6%		
	Total area	250,936	249,776	↔	-0.5%		
	Priority habitat within PFE						
	Broadleaved, mixed and yew woodland	22,757	22,915	↔	0.7%	ha	**Priority habitat within PFE** Priority habitats continue to increase in area according to PAWS and open habitat policies being implemented via the Forest Plans. Minor changes to classification of open land and upland agricultural land have also been made.
	Lowland dry acid grassland and lowland heath	14,628	14,709	↔	0.6%		
	Other priority grassland	522	587	↑	12.5%		
	Lowland raised bog	782	782	↔	0.0%		
	Blanket bog	6,793	6,844	↔	0.8%		
	Upland heathland	6,881	6,830	↔	-0.7%		
	Other	364	383	↔	5.2%		
	Total area	52,727	53,051	↔	0.6%		
	Woodland area						
	Plantation	165,192	166,825	↔	1.0%	ha	**Woodland area** The trends generally indicate an increase of recording in species diversity and a trend of moving toward native species. However this is marked by landholding changes in this instance.
	Native	37,897	35,220	↓	-7.1%		
	Non-intervention	13,275	13,275	↔	0.0%		
	Wood pasture	735	735	↔	0.0%		

* Baseline year 2013-14 or more recent year if data has just become available.

	Indicator	*Baseline year 2013-14	Reporting year 2016-17	Trend	% change	Units	Explanation of trend
Ecological communities and species							
Extent	**Total land area holdings**						
	Freehold	197,527	199,377	↔	0.9%	ha	**Total land area holdings** Some significant leasehold areas were surrendered this year with minor amounts being converted to freehold. The decline in leasehold is a function of the terms of those leases and is therefore anticipated and is therefore not RAG status red.
	Leasehold	58,319	52,699	↔	-9.6%		
	Total agricultural land use	3,345	7,178	↔	114.6%		**Total agricultural land use** Reclassification of some upland heathland to agricultural land use due to their ongoing management results in this unusual increase this year. Although a substantial increase, this has no impact on FEE's achievement of its strategic priorities.
	Area of land under statutory designations (SSSIs, AONB, SAM, NP)	147,823	147,795	↔	0.0%		
	Area of priority open habitat restored or created	42,844	44,398	↑	3.6%		
	Area of land with potential to restore to priority open habitats	54,474	54,474	↔	0.0%		
	PAWs (area by semi-naturalness score)						
	1 (over 80% native)	8,261	9,792	↑	18.5%	ha	**Area of priority open habitat** The open habitats policy implementation via the Forest Plans continues to create or restore targeted areas of open priority habitat. The rate of policy implementation is as per our open habitat plan and therefore this is green RAG rated.
	2 (between 50-80% native)	3,332	3,876	↑	16.3%		
	3 (between 20-50% native)	5,765	5,949	↑	3.2%		
	4 (under 20% native)	27,252	24,941	↓	-8.5%		
	0 (no trees)	993	952	↓	-4.1%		**PAWs (area by semi-naturalness score)** The PAWS policy implemented predominately by thinning continues to impact negatively on SN4 conifer and positively on the SN1, 2 and 3 native species becoming dominant.
	Total area	44,610	44,558	↔	-0.1%		
	Ancient semi natural woodland and PAWS (area by semi-naturalness score)						
	1 (over 80% native)	19,774	21,054	↑	6.5%	ha	**Ancient semi natural woodland and PAWS (area by semi-naturalness score)** The PAWS policy implemented predominately by thinning continues to impact negatively on SN4 conifer and positively on the SN1, 2 and 3 native species becoming dominant.
	2 (between 50-80% native)	4,272	6,320	↑	47.9%		
	3 (between 20-50% native)	6,459	6,672	↑	3.3%		
	4 (under 20% native)	28,614	26,523	↓	-7.3%		
	0 (no trees)	1,700	1,769	↑	4.1%		
	Total area	60,819	62,338	↔	2.5%		
Condition	**Conditions of SSSIs**						
	% in favourable condition	35.6	36.8	↑	3.3%	%	**Conditions of SSSIs** Changes to SSSI condition occur slowly as both resurvey and the result of restoration works combine but the increase in favourable condition reflect ongoing work to improve these important habitats.
	% in unfavourable recovering condition	63.9	61.8	↓	-3.2%		
	% in unfavourable no change or declining condition	0.5	1.4	↑	182.0%		
	% part destroyed or destroyed condition	-	-	↔	0.0%		

- **Visibility** to the underlying natural capital that contributes to the balance sheet.
- **Traffic lighting** means we have to be happy any negative changes are understood or intended.
- **Highlights** what we do and don’t measure at the moment.

- **New data on priority woodland habitat** in 2nd year of NCA.

- **Published with 'gaps'** to motivate us to fill them

Indicator		*Baseline year 2013-14	Reporting year 2016-17	Trend	% change	Units	Explanation of trend
Ecological communities and species							
Condition	**Site condition of non-SSSI priority woodland habitat**						
	Ancient and semi-natural woodland						
	Favourable	1,422	1,422		–	%	**Site condition of non-SSSI priority woodland habitat** Habitat condition records are new for this so there is no long term trend at present.
	Recovering	2,667	2,667		–		
	Declining	170	170		–		
	Unfavourable	763	763		–		
	Not known	92	92		–		
	Priority ancient woodland						
	Favourable	2,061	2,061		–	%	
	Recovering	10,850	10,850		–		
	Declining	1,364	1,364		–		
	Unfavourable	791	791		–		
	Not known	14,793	14,793		–		
	Broadleaved (non-ancient woodland)						
	Favourable	3,130	3,130		–	%	
	Recovering	7,634	7,634		–		
	Declining	1,077	1,077		–		
	Unfavourable	1,898	1,898		–		
	Not known	2,458	2,458		–		
	Wood pasture						
	Favourable	283	283		–	%	
	Recovering	192	192		–		
	Declining	–	–		–		
	Unfavourable	260	260		–		
	Not known	–	–		–		
	Non-intervention						
	Favourable	679	679		–	%	
	Recovering	1,352	1,352		–		
	Declining	330	330		–		
	Unfavourable	573	573		–		
	Not known	10,340	10,340		–		
	Site condition of non-SSSI non woodland habitat						
	Lowland dry acid heath and grassland						
	Favourable	–	–		–	%	**Site condition of non-SSSI non-woodland habitat** This is newly recorded data and at present is only available at a top-level, though in future years we hope to be able to expand this into the categories shown.
	Recovering	–	–		–		
	Declining	–	–		–		
	Unfavourable	–	–		–		
	Not known	–	–		–		

Impact of NCA So Far

- Increased Board level of the benefits and how undervalued they are by the financial accounts.
- Internal focus on understanding how ‘much’ we have of different parts of our natural capital.
- Improved the types of data we are collecting.

2017/18 NCA

- **Improving understanding of lower priority areas**
- **Correcting errors**
- **Filling gaps in asset register**
- **Improving explanations**
- **Creating a 'self serve' air quality tool** that any organisation could use.

Next Steps:

- **Project underway to test whether a natural capital assessment can influence land management decisions:**
    - Woodland planting a brownfield ex-industrial site on the edge of London.
    - Conversion of upland agricultural land to woodland with recreation paths.

More Information:

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On our website at:

https://www.forestry.gov.uk/forestry/BEEH-APTCAS

END

Physical flow account summary

This schedule reports the flow of natural capital benefits (by FEE as well as FEE tenants and contractors) that are produced from the PFE in the baseline year and the reporting year.

Spatial accounting unit by natural capital benefit	Indicator	Units	*Baseline year 2013-14	Reporting year 2016-17
Timber provision				
Woodland	Total PFE timber production	m³ / yr	1,520,129	1,476,720
Climate regulation				
Woodland	Carbon sequestered / emitted	Tonnes CO_2 / yr	1,645,657	1,677,396
Bogs			(8,717)	(8,784)
Grassland			-	-
Heathland			-	-
Woodland	Carbon embodied in environmental goods (timber)	Tonnes CO_2 / yr	2,786,903	2,707,320
Recreation				
Whole estate	Visits to PFE	Visits / yr	226,000,000	226,000,000
	Visitors to PFE	Visitors / yr	21,000,000	21,000,000
Plant and seed supply				
Whole estate	Plant supply number	Number / yr	14,961,000	15,982,000
	Seed supply number	Kg / yr	-	-
Food provision				
Whole estate	Wild game carcass numbers	Number / yr	11,586	12,914
	Livestock production from tenant farmers	Number / yr	7,309	7,146
	Crop production from tenant farmers	Kg / yr	381	421
Minerals				
Whole estate	Mineral production value	Tonnes / yr	1,295,850	1,054,867

* Baseline year 2013-14 or more recent year if data has just become available.

Notes:

A. Physical flow estimates are the total (annual) production from the PFE. This includes production by FEE itself, contractors and tenants. Total production is relevant to report because total (annual) production relates to FEE management decisions.

B. Carbon embodied in environmental goods does not represent a release of carbon to the atmosphere. Therefore the flow associated with the movement of embodied carbon in these products is neither a benefit nor a dis-benefit. The subsequent decision to use this timber in construction or as a fuel is often outside the control of FEE and where FEE does burn wood fuel, the decision to do so is unrelated to the management of natural capital and therefore outside of the scope of the NCA.

Monetary account summary

This schedule collates the estimated total annual value (£) of natural capital benefits that are produced from the PFE in both the baseline year and the reporting year. These values are calculated after deducting production costs (but not maintenance costs, which cannot be attributed to individual benefits but are netted off the gross value of assets in the balance sheet.

Spatial accounting unit by natural capital benefit	Indicator	Units	*Baseline year 2013-14	Reporting year 2016-17
Timber provision				
Woodland	Net asset value for timber produced	£ / yr	£9,658,116	£11,618,967
Climate regulation				
Woodland	Carbon sequestration value	£ / yr	£98,739,421	£94,140,801
Bogs			£(523,001)	£(549,699)
Grassland			-	-
Heathland			-	-
Recreation				
Whole estate	Net asset value for recreation	£ / yr	£477,550,332	£480,712,211
Plant and seed supply				
Whole estate	Plant and seed supply revenues	£ / yr	£3,091,288	£4,284,880
Food provision				
Whole estate	Wild game carcass value	£ / yr	£12,677	£(17,233)
	Livestock production value	£ / yr	£143,783	£145,336
	Crop production value	£ / yr	£57,030	£59,265
Minerals				
Whole estate	Mineral sales value	£ / yr	£896,060	£283,587

* Baseline year 2013-14 or more recent year if data has just become available.

Notes:

The monetary account does not report the estimated value of the total output that is reported in the physical account. Instead it reports the value to the reporting entity (private value from rents) and to wider society (external value from the direct consumption of benefits only). It does not include the indirect or downstream value to farmers and aggregates/timber contractors from the sale of their produce. This is because these sales are based on decisions outside of the control of FEE and exist further along the value chain.
Values reported above are the sum of annual private and external value.

Maintenance account summary

The aggregate estimate of maintenance costs produced from this worksheet feeds into the balance sheet.

Liabilities			
Private		External	
Legal maintenance obligations	£(91,166,789)	Other maintenance provisions	£(57,283,644)
Other maintenance provisions	£(390,128,822)		
Total net maintenance provisions	£(481,295,610)		