

Stavordale Estate & Stourhead (Western) Estate

By kind permission of Sir Cameron Mackintosh & Nick C Hoare
Led by David Pengelly & Christopher Guest (Forest Managers)

Theme: 'Forest resilience – response and adaption to storm'
Guest expert: Bruce Nicoll, BSc, PhD, MSB

STAVORDALE ESTATE

History

Cockroad and Pen Forest lay at the southern end of the core area of the Royal Forest of Selwood which was created in the second half of the 12th century.

In the late Saxon period the southern part of the area that later became Selwood Forest, including the Stavordale Estate area, appears to have been associated with the Royal estate at Bruton.

By the 18th century Cockroad Wood had become part of the Fox estate at Redlynch that had been developing since the late 17th century.

In the 1960's both woodlands were acquired by owners whose aim was to improve the timber productivity of the sites by converting the stands to coniferous plantations. In the case of Cockroad Wood the Forestry Commission acquired the site with an agreement that the previous owner would clear fell the broadleaved stand leaving the restocking to the Commission. The initial plantation phase lasted from 1962 to 1968. At Pen Forest a private organisation undertook a very similar exercise between 1960 and 1963.

Pen Forest became part of the Stavordale Estate in 2000 and Cockroad Wood 2003, the latter having been bought from the Forestry Commission.

Timber harvesting carried out during very wet ground conditions in Cockroad Wood in the 1980's to early 1990's resulted in severely rutted woodland rides.

Work to restore these damaged rides, and to provide lorry access via metalled tracks, commenced in 2004, with subsequent phases in the ensuing years.

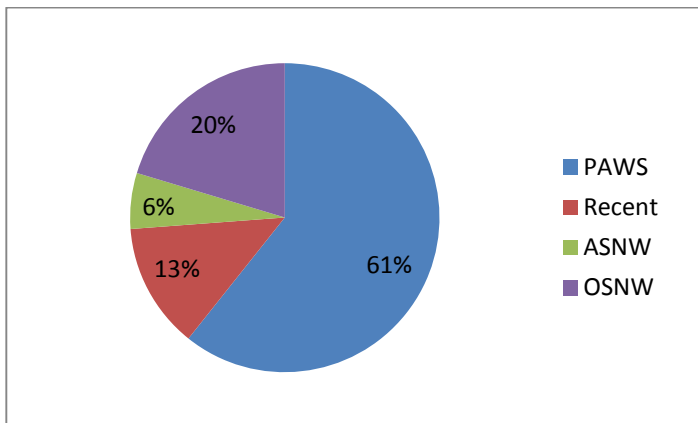
A Native Woodland Plan was prepared in 2004 and a Woodland Plan in 2006.

Woodland Details

Total woodland area: 103.55 hectares

Site status:

- Cranborne Chase & West Wiltshire Downs AONB
- Scheduled Monument – *Motte & Bailey* in Cockroad Wood
- Ancient Woodland Status

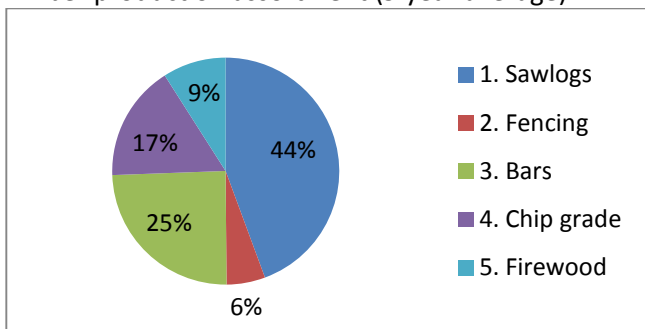


26% of woodland area dominated by native species

Timber production:

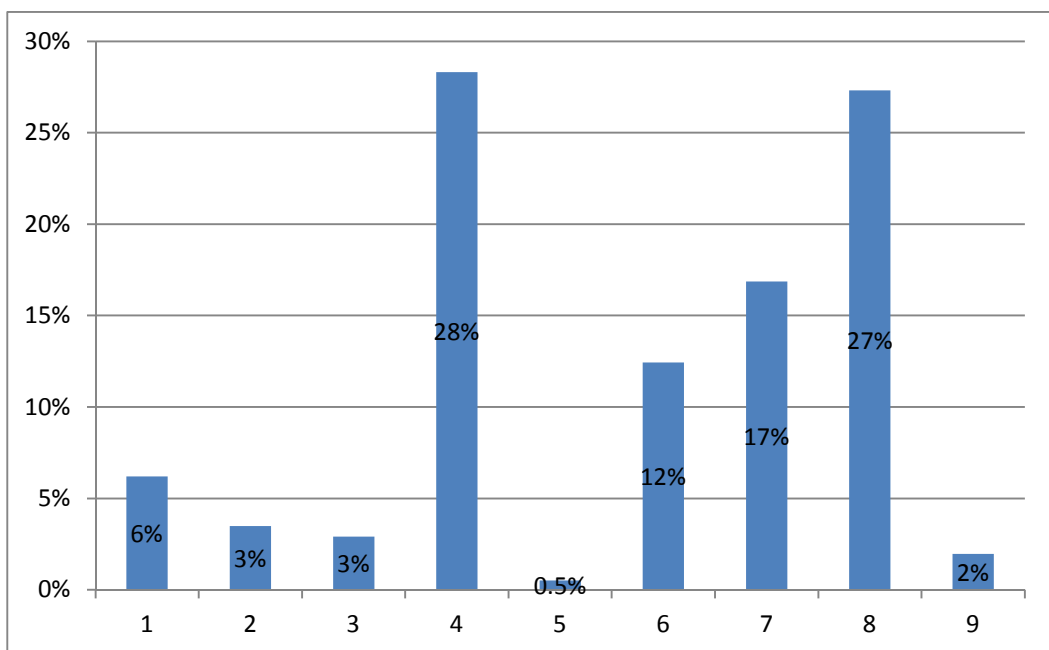
- Average annual timber production to March 2014: 571 m³ softwood; 57 m³ hardwood
- Timber production in year April 2014 to March 2015 following windblow: 990 m³ softwood; 86 m³ hardwood

Timber production assortment (9 year average)



Current stand composition:

6%	1. Ash / Spruce
3%	2. Beech / Mixed Broadleaves
3%	3. Larch dominated
28%	4. Locally Native Broadleaves
0.5%	5. Mixed Broadleaves
12%	6. Mixed broadleaves / Evergreen conifer
17%	7. Mixed conifers
27%	8. Norway Spruce
2%	9. Open Ground



Site Type

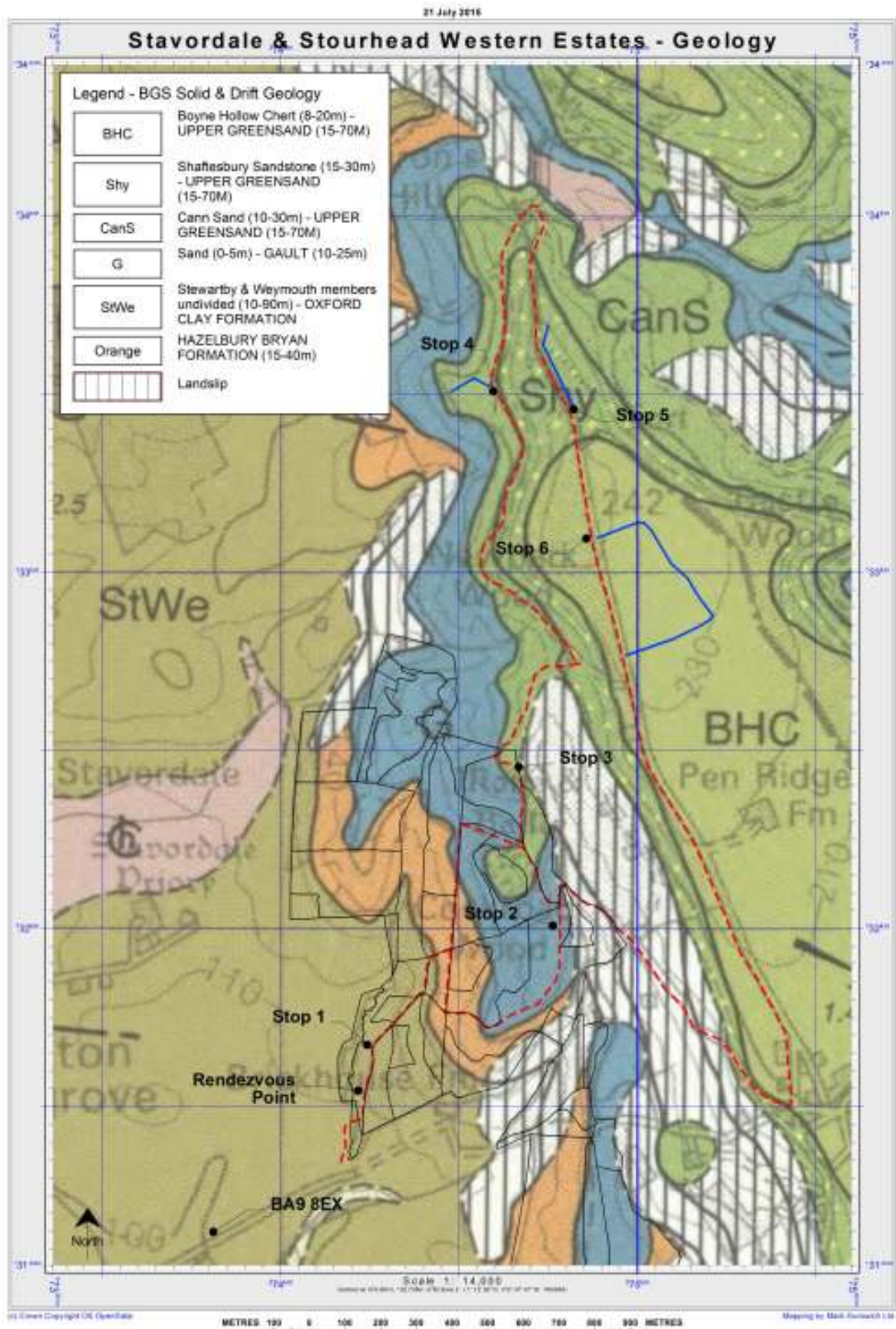
Precipitation: 954mm per annum (recorded 5km to north/east at 200m asl)

Elevation: 100 to 160m asl

Aspect: Generally westwards; North/south central plateau; Eastern side dips to shallow valley with issues (develop into tributaries to Rive Cale)

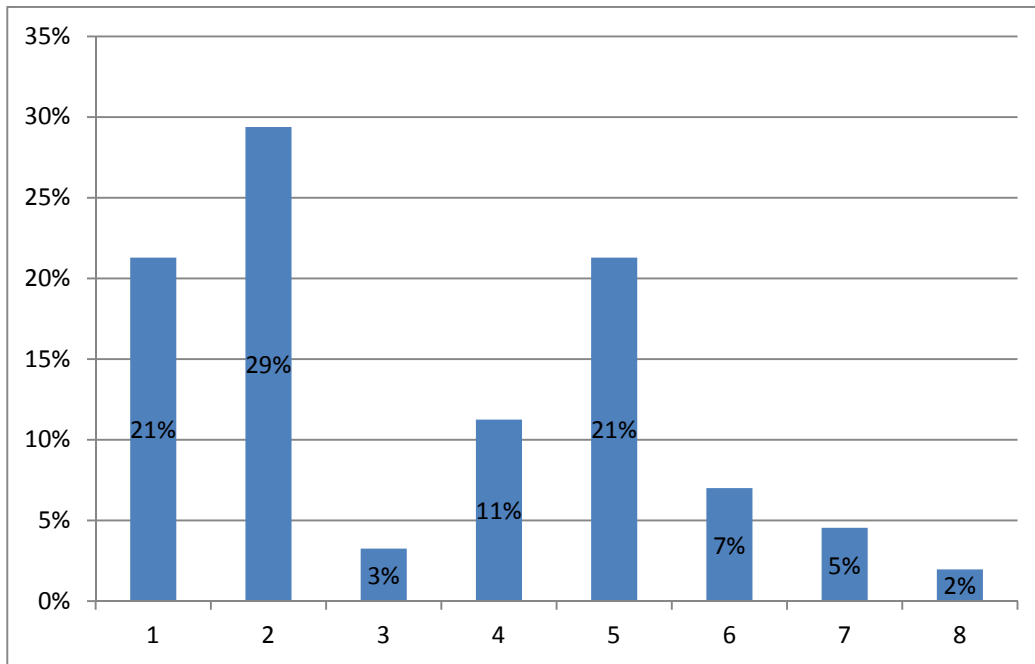
Geology (see map insert):

- Cretaceous Upper Greensand – BHC: Boyne Hallow Chert Member;
- Cretaceous Upper Greensand – CanS: Cann Sand Member;
- Cretaceous Clay – G: Gault Formation;
- Rotational Land Slippage – Upper Greensand over Clay;
- Jurassic Oxford Clay – Hz: Hazelbury Bryon Formation;
- Jurassic Clay – StWe: Stewartby Member & Weymouth Formation;





Working Circle Allocation




21%	1. Plantation on Ancient Site: Restoration by mosaic felling
29%	2. Conifer Dominated High Forest; Transform to Irregular
3%	3. Plantation on Ancient Site: Restoration by clear felling
11%	4. Plantation on Ancient Site: Restoration by thinning
21%	5. Locally Native broadleaved High Forest, Transform to Irregular
7%	6. Natural Areas; Limited intervention
5%	7. Mixed Broadleaved High Forest
2%	8. Maintain open conditions (>50%)





STOP 1 – COCKROAD WOOD (cpt. 4): Part of Stavordale Estate

Cpt details	Management history
<p>4h 0.53 ha.</p> <p>Jurassic Clay – StWe: Stewartby Member & Weymouth Formation;</p> <p>PAWS 95% b/l (POK,HB,WST,WCH,BWL) 5% conifer (DF,WRC,SF)</p> <p>Working Circle: Mixed Broadleaved Irregular High Forest</p> 	<p>P.1968 Norway spruce; Intruded birch; CAR in stream corridor;</p> <p>Thinning & Selection Felling in 2011; Restock gaps 2012; Storm damage Feb 2014; Clear damaged areas summer 2014; Restock winter 2014/15 – group planting</p> 
<p>4i 0.56 ha.</p> <p>Jurassic Clay – StWe: Stewartby Member & Weymouth Formation;</p> <p>PAWS 65% b/l (POK) 35% conifer (WRC)</p> <p>Working Circle: Mixed Broadleaved Irregular High Forest</p>	<p>P.1968 Norway spruce; Intruded ash & birch;</p> <p>Thinning & Selection Felling in 2011; Storm damage Feb 2014; Clear damaged areas summer 2014; Restock winter 2014/15 – band mixture</p>

STOP 2 – COCKROAD WOOD (cpt. 5): Part of Stavordale Estate

Cpt details	Management history
<p>The Lake 1.1 ha. (Surrounded by sub-cpt 5c)</p> <p>Rotational Land Slippage – Upper Greensand over Clay;</p> 	<p>P.1960 Norway spruce & Douglas fir;</p> <p>Lake creation 2009/10</p> <p>Persistent requirement to address wind blow in Douglas for on east side of Lake</p>
<p>5c(1) 0.25 ha (Within sub-cpt. 5c – 8.35 ha.)</p> <p>Cretaceous Clay – G: Gault Formation;</p> <p>PAWS 5% b/l (SC,BI) 95% conifer (DF,WRC,SF,NS,SS)</p> <p>Working Circle: Conifer dominated High Forest; Transform to Irregular</p> 	<p>P.1960 Norway spruce;</p> <p>Thinning in 2009; Thinning & Selection Felling in 2013; Storm damage Feb 2014; Clear damaged areas summer 2014; Restock winter 2014/15 – group planting</p> 



STOP 3 – COCKROAD WOOD (Cpt. 2a): Part of Stavordale Estate

Cpt details	Management history
<p>2a 4.23 ha.</p> <p>Cretaceous Upper Greensand – CanS: Cann Sand Member;</p> <p>PAWS P.1966 WH (NS, SF); Occasional SC coppice stool Gap restock details: 100% conifer (DF,WRC)</p> <p>Working Circle: Conifer Dominated High Forest; Transform to Irregular</p> 	<p>Even-aged P.1966 WH of low quality</p> <p>Thinning to obtain stability in 2008; Mosaic Felling in 2013; Restock gaps 2013/14; Beat-ups 2014/15</p> 


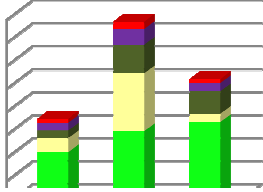
STOURHEAD (WESTERN) ESTATE

Forest area is 652 hectares – 470 hectares conifer (72%); 166 (26%) broadleaves; 2% water & open space. 25% is on Ancient Woodland Site, 5% of which is Ancient semi-natural. Annual sustainable production is 5100m³ (90% conifer), with a consistently high sawlog production (68%). There is a high recreational usage. FSC certified in accordance with UK Woodland Assurance Standard

STOP 4 – NEWPARK (Cpt. 405d): Part of Stourhead (Western) Estate

Cpt details	Management history
<p>405d part of 15.81 ha.</p> <p>Cretaceous Clay – G: Gault Formation;</p> <p>PAWS Planted 50% of site with POK (mosaic planting of 16 no. per group @ 1.8m centres); Natural regenerated 50% BI (mixed species)</p> <p>Working Circle: Coupe Shelterwood: Mainly broadleaved</p> 	<p>Dominated by Rhododendron; low quality birch & occasional WH & spruce (1960)</p> <p>Clearing of Rhododendron & Felling back to firm edge in 2007;</p> <p>Regenerate 2007/08; Follow-up spray of Rhododendron for 3-years</p> <p>Cleaning / respacing in 2012 & 2015</p> 

STOP 5 – CASTLE WOOD (Cpt. 203a): Part of Stourhead (Western) Estate

Cpt details	Management history
<p>203a part of 18.48 ha.</p> <p>Cretaceous Upper Greensand – CanS: Cann Sand Member;</p> <p>Stable sheltered site</p> <p>PLANTATION STATUS: RECENT Stand Element visited: P.1940 DF with natural regeneration & developing vertical structure;</p> <p>Working Circle: Selection Felling: Mainly Conifer</p> 	<p>Last Thinning & Selection Felling Inter 2010;</p> <p>Intervention objective: Removal of lo trees & Target Diameter Felling;</p> <p>Stocking in 2011: BA 32.6 m²/ha (whc Growing stock distribution as follows</p> 

STOP 6 – PEN RIDGE (Cpt. 601): Part of Stourhead (Western) Estate

Cpt details	Management history
<p>601 28.19 ha.</p> <p>Cretaceous Upper Greensand – BHC: Boyne Hallow Chert Member</p> <p>PLANTATION STATUS: RECENT</p> <p>P. 1991/2: BE, SYC, WCH P. 1998: SC; P. 2009 to present: MBL</p> <p>Working Circle: Selection/ Mosaic Felling: Mainly broadleaved</p> <p>Please see handout “<i>Establishment of broadleaved woodland on ex-agricultural ground</i>”</p>	<p>Site is ex-agricultural ground; Ground prior to planting;</p> <p>Original planting: Large plants established no protection; SC in tubes (replace fallen); More recently in mixed b/l in netted ;</p> <p>Applied a series of formative pruning interventions during last 15 years, an Respacing undertaken on western margin to natural infill of AH and BI;</p> <p>Since 2011, mosaic felling & restocking diverse range of minor forestry tree species</p> <p>Permanent extraction racks set up in 1st commercial thinning intervention underway (2015/16)</p>