

# Deer Impact on Woodlands Survey

Purbeck

Dorset

2016 Survey

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## Appendix I-Langton Westwood Raw Data

## Appendix II- Studland Raw Data

## References

### Introduction:

The use of impact surveys is to measure and to monitor the current levels of impact on a particular site. (Deer Initiative-Woodland Impact Survey.,nd) Survey techniques are those based on Dr A. Cooke's work: that gathering a broad description of the overall impact in a given area is sensitive enough to gather accurate data from and is a good indicator of deer activity. (Deer Initiative-Woodland Impact Survey.,nd)

To carry out impact surveys a general knowledge of deer behavior, diet and movement is recommended, to be able to carry out the surveys to the highest extent. (Deer Initiative-Woodland Impact Survey.,nd) Signs and indicators such as browse line, bite marks, racks, slots, dung, couches, bark stripping and fraying should all be recorded. (Deer Initiative-Woodland Impact Survey.,nd) Surveyor should know the difference between rabbit and deer signs. (Deer Initiative-Woodland Impact Survey.,nd) Not all of the signs will be visible all year round. (Deer Initiative-Woodland Impact Survey.,nd) It is important to keep record of what season the survey is taken place in, spring is the

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suggest time. (Deer Initiative-Woodland Impact Survey.,nd) This being that most signs are prevalent and there is more activity. (Deer Initiative-Woodland Impact Survey.,nd) Autumn, before the leaves begin to fall there is enough vegetation to survey, the ground may be hard from the summer making slots and racks difficult to identify. (Deer Initiative-Woodland Impact Survey.,nd) For consistency, surveys should be taken place during the same season each survey. (Deer Initiative-Woodland Impact Survey.,nd)

With larger woodlands using a serpentine pattern to travel through woods provides gathering a broad amount of data in sufficient time. (Deer Initiative-Woodland Impact Survey.,nd) GPS marking stopping spots, allows the same route to be followed the following time. (Deer Initiative-Woodland Impact Survey.,nd) Knowing the history of the woodland, gives insight to the level of activity that would be represented in the woodland. (Deer Initiative-Woodland Impact Survey.,nd) Thus gives way to scoring the woodland based on indicators. (Deer Initiative-Woodland Impact Survey.,nd) Deer activity scores do tend to go along with impact scores and allow for conclusions to be drawn about the species and their impact on the area. (Deer Initiative-Woodland Impact Survey.,nd) Deer activity score represents the activity over time and allows to plan out likely future impact levels in an area. (Deer Initiative-Woodland Impact Survey.,nd) Impact score is an indicator of impact and whether or not controlling impact is a management objective. (Deer Initiative-Woodland Impact Survey.,nd)

## King's wood woods

### Introduction

King's wood is an ancient semi-natural broadleaved woodland on the north side of the Purbeck ridge, lies on a moderate to steep north facing slope. Dominated by ash and sycamore coppice with an area of lime trees it was last coppiced in World War II. There is a mixed understory of saplings and dogs mercury, as within most of the purbeck region there is a small heard of Sika deer *Cervus Nippon* that live in these woods (refer to the 2013 deer impact survey). Visitation by humans usually cause deer to flee with large numbers causing deer to seek dense cover or even leave home ranges, and can contribute to poor condition with deer leaving preferred areas for areas that provide more cover but have less food

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available, human activity can become tolerated in areas if it is regular and predictable (Borkowski, 2001).

Method

Kings wood was divided up in to 8 sections, in each of these sections, a transect was walked along and any signs of deer or grazing was recorded such as dung found which was in sections of 6, deer seen or heard, and browse line levels. Each sign of deer was recorded on a recording form using a running tally.

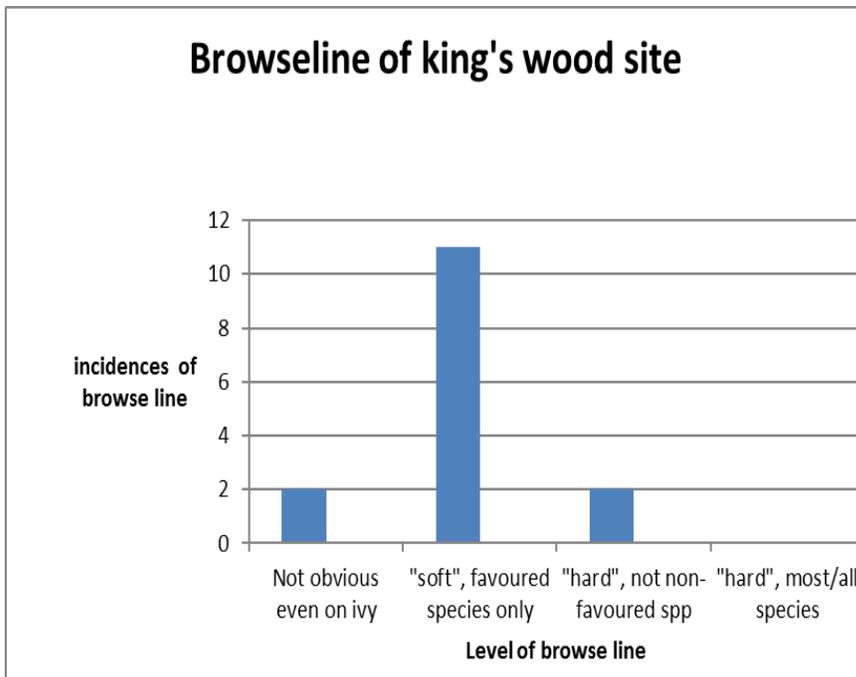
For further details on what counts as a deer sign and the methodology please refer to the 2013 deer impact study.

Results:

There were 24 deer seen, and 43 counts of dung. With no evidence of couches, scrapes or wallows found. There were 31 slots found in total and 26 different racks found. Racks were divided into two categories racks in wood and racks at the edge of woods, most of these racks were frequently used and located within the wooded area

Table 1: table of the use of racks for kings wood both racks inside of the wood and on the boundaries to neighboring fields

Racks	rarely used	lightly used	frequently used	heavily used
In wood	0	4	11	6
Edge	1	2	1	1



There were 8 incidences of bark stripping noted and 11 instances of broken stems.

The browse line in general was a soft browse line with favored species being eaten mostly though there was some variation in the browse line as you move throughout king's wood depending on the area

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being surveyed see figure 1.

Coppicing and seedlings were hardly browsed with 9 instances of the coppice 11-33% browsed and 2 instances of the coppice 0-10% browsed most of the coppicing seemed to reach maturity with some levels of browsing still. Seedlings of hazel, hawthorn and holly were found hazel was the most browsed with 50% browsing, and holly and hawthorn had no to little browsing on the found saplings. Bramble had mixed results with wisps in most areas of light but in other areas the bramble was hardly grazed with large patches reaching a height expected for the level of sunlight.

A few plant species were found to be grazed with the lower leaves of nettle being stripped with moderate impact and a few ragwort plants were also found to have been grazed to some impact.

Conclusion:

Some areas of the trees were covered in moss which could explain the lack of bark stripping, as well as it being out of season for many obvious activity signs, as this survey was conducted during the summer which is out of peak times for deer activity. The upper slope site was widely exposed with small areas of brackish border, nearest to the fence line it also borders on to a busy footpath from the purbeck ridge walk way so deer would be unlikely to go there due to the high mostly irregular levels of human disturbance potentially explaining why there was such high levels of bramble present in this area which is not present in the majority of the king's wood site. While 24 individuals were seen it is likely that there is not actually this level of individuals due to the length of the survey taking 3 hours at least and the flighty nature of deer it is likely that at least some individuals were seen multiple times or some that were missed all together. Another potential factor that maybe limiting either the survey or the sign levels is the steepness of the slope that most of the king's wood sight is on this makes the sight difficult to navigate compared to many other sites so areas on the transect were missed simply because they were difficult to access it is also likely that deer may not browse those areas due to the ground being slightly unstable underfoot at times. Overall there seems to be a high level of deer activity level to that of the 2013 survey but the impact that these deer are having seems to have lowered and is now only a moderate impact with saplings and coppicing being able to regenerate and reach mature levels in the majority of cases.

Report done by: Emily Ford

## Wilderness

### Introduction

The overall aim of the survey was to assess the impact that sika deer populations had on an area of woodland known as the wilderness – which is located in Dorset. The data collected would allow reserve managers an insight of the ecology, along with any detrimental impact deer were having. This would assist with making important managerial decisions on both the conservation of local deer and other species including plants.

## Survey

### Method

On the 9th of August 2016, at roughly 11 a.m. in sunny weather conditions, group 2 (composed of David Stanley, David Taylor, Miriam Treadway and Alice Todd) spent 1 hour assessing the wilderness site for any signs of deer impact. The method used was to cover the whole site representatively and note in a tally chart any observations of deer populations.

These signs were only noted if fresh/recent and included slots (deer tracks), racks (deer 'highways'), couches (areas of flattened vegetation), browselines, broken twigs, stripped bark, dung piles and actual deer sightings. The tally chart was then entered into a Microsoft excel document.

### Results

The main results from the habitat assessment show that three piles of deer dung (recent) were spotted throughout the site. The frequency of rack use differentiated, with seven racks showing signs of light use and four showing frequent use – therefore, 63% of deer racks were only used on an irregular basis.

The browseline was generally soft and only present on favoured plant species (some ivy showed zero evidence of browsing). The majority of tree saplings seen also came into the 'little to no signs of grazing' category. This includes holly, birch and oak. No couches, deer sightings or recent bark stripping were reported.

### Discussion

From the results above, we can make several conclusions about the level of deer activity in the wilderness. For example, only three piles of deer dung were in a fresh condition, with most piles in a state of disintegration. This suggests that although there is a presence of sika deer, it is very low. Other evidence from the results also supports this. Altogether, only 11 racks could be identified, however, seven of those were only used lightly on an irregular basis, meaning we can infer that deer moving through the forest is not a regular occurrence.

Furthermore, the fact that browsing was only evident on species favoured by sika deer shows that a high browsing pressure has not driven populations to feed upon species that are not favoured. In fact, the pressure was so low that ivy, a highly preferred food, showed no signs of predation by mammals.

Overall, deer numbers in this tract was very low. This is important to know for when taking steps to ensure that over-grazing from deer is not damaging the ecosystem as a whole. Therefore, as there is little use by the deer in the wilderness (albeit some), conservation resources used to combat over-grazing should be prioritised in other areas where the browseline is more distinct and on non-favoured plants at the detriment of other species.

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However, you could argue that the method of the survey may not have been representative of the entire forest due to human error, or that some signs may not have been registered.

Conclusion

To conclude, the data collected through observation methods reveals that the wilderness site only has very little impact from deer populations and is not used frequently. Therefore, the wilderness is a low priority area when controlling deer populations in order to avoid extensive grazing damage to local ecosystems.

Report done by: David Stanley

Wood Heath, Wood Marsh, Pipley Heath

## Survey

### Introduction:

On the 5th of August, 2016, we carried out Sika Deer surveys over an 8km stretch of woodland within the Studland area. The habitats we worked in were flat, lowland mixed deciduous woodland with commonly found species of trees such as Hazel, Birch, and Holly. The canopy cover was low hanging with an abundance of matured coppice and occasional occurrences of fauna covering the ground.

To determine the Deer impact of the woodland we collected evidence such as deer droppings, racks, slots, and bark stripping. This methodology was adopted from “The Deer Initiative- Woodland Impact Survey” which provided an informative approach to deer surveying techniques.

### Methods:

The only method we did not carry out was the 10- 20 random 5x5 quadrats which provides more specific information to deer impacts.

### Results and Discussion:

#### Site- Wood Heath

The first site we surveyed had a clear, open heath space of land which showed many signs of deer presence. These findings were most likely because Sika Deer are an edge of woodland species and this was the closest open space from the Studland Bay car park and tourist information site. The woodland gave evidence to movement of deer within the vicinity, however there was little grazing of saplings and soft browsing of low hanging coppice. We heard and spotted 2 deer in this woodland which backed our findings of deer populations in the Wood Heath woodland.

#### Site- Wood Marsh

This site gave clear signs of deer evidence, due to the soft ground there was identifiable slots and racks and following these we spotted another Sika Deer in this woodland. We found Holly trees which had been browsed harder than the previous site. So from this information we assumed that the deer had allocated themselves to this area as people were less likely to disturb it and the marsh was dry enough that the deer could continue to forage.

#### Site- Piplely Heath

The final site, Piplely Heath showed the least number of deer activity, we did find can be assumed to be footpaths but might also be racks used by the deer. We found eight patches of deer dung across the whole site but across each of the three sites we didn't find any recent bark stripping or couches.

### Conclusion:

From the site survey we evaluated that there was a low/medium deer impact within the woodland. Comparing this to the 2012/2013 deer survey, the impact score was rated High in Studland so there has been a substantial change to the results in the past few years. survey even stated that there was

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a reduction in the amount of ground flora species, however in our first and second site we frequently came across uneaten ground species. This is a highly positive outcome, with the use of fencing around developing coppice and surveys, the woodlands impacted by Sika Deer are regenerating and improving.

Report done by: Archie Neale

## Survey

## 12 acre and 3-acre

### Introduction:

On Friday the 5th of August we conducted a survey of the 12 acre and 3-acre area of wood in the Studland area. The survey took place in a lowland mixed deciduous woodland with many characteristic tree species such as Birch, Holly, Hazel and a few Oak and Ash trees. The site had limited lower canopy species but did contain hawthorn, bramble and ground ivy. When the survey was last carried out in 2012/13 the deer impact was thought to be at a medium to high level.

### Methods:

The survey aimed to give a better understanding of the amount of deer activity and the impact of this activity within the surveyed woodlands. To achieve this, we were given a basic introduction in identifying woodland species and shown the common signs of deer presence within a woodland. We were also given a Methodology document "The Deer Initiative- Woodland Impact Survey" which gave a detailed description of the common signs of deer presence and their favoured species. However, we did not carry out the 10- 20 random 5x5 quadrat in which species and deer damage is assessed.

### Results:

From the survey carried out at the site we concluded that there was a low/ medium deer impact within the woodland, with the most common deer species being Sika. The results of the survey can be seen in the attached file.

### Discussion:

When the survey was previously carried out at the same site in 2012/13 the deer impact score was rated as high with it being noted in the National Trust, Deer Monitoring Evaluation 2013 Survey that the high number of deer where "preventing canopy tree regeneration by browsing new growth." The deer where also noted, in this document, for reducing the amount of ground flora through there "browsing and trampling of characteristic ground flora species." However, from the data we collected there was a clear reduction in the activity and impact of the deer species within 12 and 3 acre wood. This was evident due to the presence of some new shoots of a canopy species which had no signs of grazing. Furthermore, the low deer activity would suggest a reduction in the amount of trampling and

## Survey

so should enable more of the ground flora species expected in the woodland to increase in abundance.

### Conclusion:

To conclude the management of the 12 and 3 acre wood aimed at reducing the amount of and impact of deer within the wood has been successful. However, if the woodland is still only starting to regenerate and so could easily revert back to the previous state of little canopy regeneration and little ground flora if the management was to be reduced. Therefore, I feel that the current management should be maintained for the foreseeable future.

Report done by: Sam

## Pipley woodland

### Introduction:

On August 5, 2016, Pipley woods was surveyed for levels of deer impact and deer activity. A team consisting of four people carried out the survey. Pipley woods is a woodland that is comprised of 3 different compartments: Pipley Enclosure, Pipley Wood and Aspen Wood. The 2013 survey listed Pipley Woodland as a low activity score and moderate impact score, this trend was prevalent in the present survey. Each compartment exhibited a low activity score. Pipley Enclosure and Pipley wood exhibited a medium impact score. Aspen Wood had the least impact, this could be due to the small size and different vegetation. Pipley woodland consisted of Holly, Willow, Ash, Hazel, and Birch. Grasses such as Rush (*Juncus* sp.) and Common bent were found throughout all sites. Bracken was abundant as well as bramble (which was in small shoots and not that grazed). Aspen woods different from the other two concessions due to that fact Aspen is prevalent. Browseline was soft for the entire woods.

### Methods:

Started surveying in late morning/early afternoon. Each team had multiple maps of the area, one being an aerial map and the other being a vegetation map. Deer activity and impact assessment sheets contained deer activity: deer seen, dung (in piles of 6 or more), couches, scrapes, wallows, racks (in and edge wood). Impact: bark removal or breakage, browseline, browsing, and grazing. Walking in a serpentine pattern through the compartments, provided a route in which more ground could be covered and for the most amount of data to be collected in limited amount of time. Stopping at various points throughout the walk gave time for analysis of the area and a chance to see deer.

## Survey

Methods followed The National Trust, Deer Monitoring Evaluation 2013 survey, differing where 5x5m quadrates did not place during this survey.

### Results:

Each compartment of Piplely wood exhibited low activity, due to the low amount of racks and a moderate impact score due to the score of the indicators. There were moderate amounts of browsing throughout all compartments and a soft browseline. Favorable species were feed, did see copious amounts of bramble and bramble shoots that showed no signs of grazing.

### Discussion:

Due to the time of season which the surveyed took place, many indicators were non visible or hard to recognize. Surveying in the spring would have provided a better opportunity to gather more accurate data. Falling in line with the Deer Impact Survey of 2012-2013, the current survey also showed signs of low activity and moderate impact. Spent around an hour in each compartment and covered as much ground as possible for the time allotted. There was a main path that went through the entirety of Piplely Woods, which adds human impact and reason for low activity scores.

### Conclusion:

To conclude, Piplely woods, Aspen Woods and Piplely enclosure all exhibited low activity and moderate impact. There was no change on impact and activity scoring from the 2012-2013 survey.

Report done by: Miriam Treadway

## Warren wood

### Introduction:

Warren Wood was surveyed on the 08/08/16 with a team of three surveying it. The method used was that of the 2013 national trust deer survey as shown.(2013) with the exception of the quadrats which were not completed as per instructions.

The majority of the site was coppiced and surrounded by a deer fence to keep out the Sika deer. This limited access to that are of the woodland. This could be a reason that the activity was so limited as the majority of the site is taken up by the coppiced area leaving the only free woodland areas being the ones next to trails and paths commonly used by tourists and visitors.

### Results:

The site showed very little activity of deer inside the woodland with few rarely used racks and slots in evidence. The browse line was very obviously soft with only few favoured species showing signs of browsing. These species were also only browsed lightly and they're very large swaths of said vegetation being left untouched as well. There was evidence that favoured species were even browsed very lightly which is a clear indication of very little deer activity.

### Discussion:

The coppiced area surrounded by the deer fence meant that it was unable to be survey effectively and only observation from the outside of the perimeter was an option. This surveying technique was not

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ideal but the best available option. From what was observed there was no signs of deer activity or signs of browsing present from what was seen through the deer fence.

This shows that the deer fence at first glance has been an effective method of controlling the sika deers grazing habits inside the coppiced area.

### Conclusion:

The overall assessment of Warren wood was that, Sika deer had a very low impact on the site. With a downward trend in relation to the last 2013 survey. This shows that the coppice fence is working as an effective prevention method, though this could be down to the time of year that the survey was done and with the possibility that the deer are less active in the area in certain times of year.

Report done by: David Taylor

## Langton Westwood

### Introduction:

Langton Westwood consists of three compartments Langton Westwood North, Central valley and Langton Westwood South making up a total area of 14.62ha. It is situated in the middle of the isle of Purbeck in Dorset, and is surrounded by agricultural fields and buildings. The center of Langton Westwood is at 50.61508°N -2.01327°E (dd.ddddd°) and has an elevation of 59.5 meters. The woodland has a number of bridle paths, which appear to be lightly used adding to disturbance by humans.

### Site description:

Langton Westwood is an ancient woodland indicated by such species present like Wood Sorrel and Butchers-Broom. There are a variety of species found throughout Langton Westwood for example past coppicing of Hazel, Ash and field maple which were present throughout Langton Westwood South. While mature Oak and some Sycamore can be found in the Central Valley, which provided shading from the tree canopy resulting in low light in the valley. There are also a large quantity of new shoots found on the ground, from Sycamore, Holly and Hazel. Two New areas of coppicing are present however large fences are providing protection from grazers.

## Survey

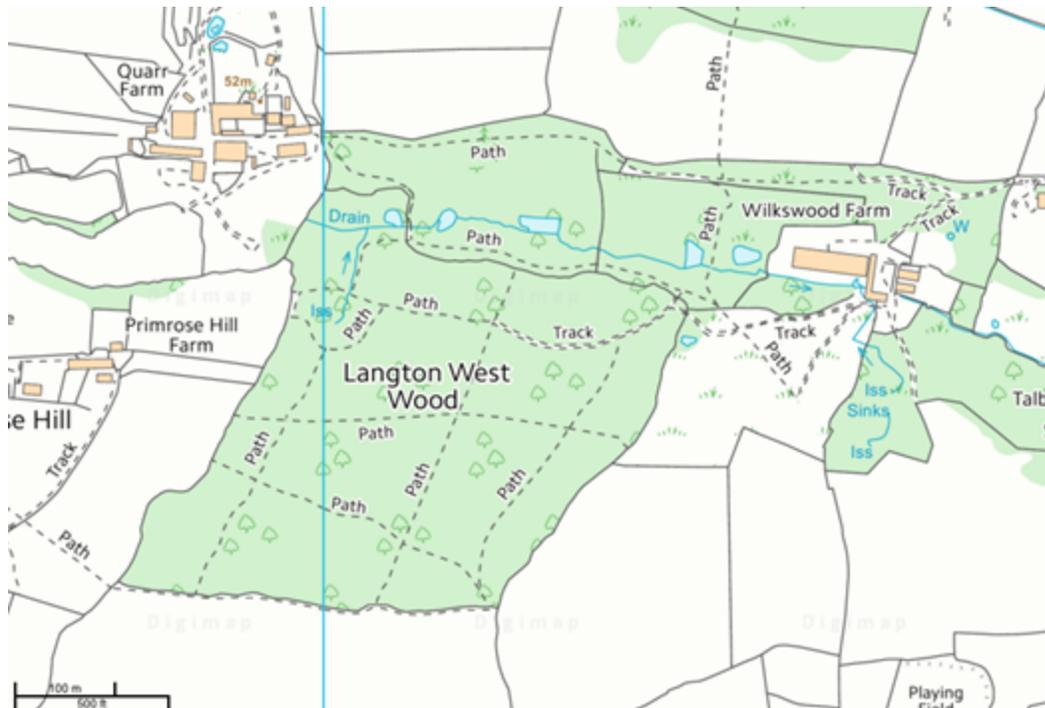


Figure 1: Digimap image of Langton Westwood and the surrounding area (Edina 2016).

### Methodology:

Our methodology required walking a transect from one side of the site to another in a zigzag pattern and repeating until the whole area had been covered. Throughout the survey time any signs of Deer activity or impact; such as grazing and racks were tallied.

The method used to carry out the assessment was originally based on Dr A. Cooke (Cooke 2009) and adopted by the Deer Initiative. This is also the standard method we used in our assessment, however some alterations were made such the exclusion of a 5x5 meter quadrat at our stopping points, instead any signs of Deer activity of impact was recorded in the area. Further information on the methodology can be found in the National Trust's Deer Monitoring Evaluation (2013).

### Results:

## Survey

Table 1: Tally of Deer activity and impacts observed surveying Langton Westwood on 09/08/2016.

Activity Score (N-L-M-H)					
Deer Seen	2	L			
Dung	16	M			
Wallows	1	L			
Racks (In woods)		Rarely used	Lightly used	Frequently used	Heavily used
M	3	3	2	0	
Racks (On edge of wood)		Rarely used	Lightly used	Frequently used	Heavily used
used M	2	2	2	0	
Impacts	Score (N-L-M-H)				
Bark stripping	1	L			
Brows Line	Not obvious even on Ivy		Soft, favored species only		Hard, favored species
Hard, most/all species	5	4			
Tree seedlings/ saplings	No/little browsing, all heights present		<50% browsed, some		
>50cm	>50% browsed or none/few	>50cm	>75% browsed or none/few	>30 cm	
Browsing (woody shoots eaten)	Sycamore		1	1	0
Hazel	5	0	0	0	
Holly	2	2	0	0	
Ash	2	0	0	0	
Brambles	large areas at expected height, little browsing, no browseline		large patches to expected height, some browsing		
wisps/most<50cm, most/all browsed	most<1.2m, most or all browsed				
	6	4	0	0	
Grazing (Flora eaten)	Plant species	None or little impact	Some impact	Moderate impact	
High impact					

## Survey

Common Bent	1	0	0	0
Hawthorn	3	0	0	0
Butchers-Broom	1	0	0	0
Dogswood	1	0	0	0

Activity Score = Low – Moderate

Impact Score = Low

Table 2: Results from the National Trust Deer Evaluation 2013, and background information on Langton Westwood

Site	Area (ha)	Designation	Activity score	Impact score	Impact score change 2012-2013
Langton Westwood	14.62	SNAW; SNCI	Low - Moderate	Low - Moderate	Decreasing

Table 1 is the observed activity and impacts present at Langton Westwood, two Deer were spotted a stag and hind, which is a low count for the transect length of 4km. While 16 clusters (6 pellets) of dung were recorded showing signs of moderate activity. Only one wallow was observed, and neither racks on the edge of the woodland or within were heavily used only frequently or less. No scrapes or couches were found (see appendix), giving the observed activity an overall score of Low – Moderate.

There weren't any high impacts from the Deer's presence. However the two greatest signs found were from the brows line, which had a soft line in four locations and no or little browsing in five. As well as browsing on brambles, with six sites showing little or no browsing, and four sites having some browsing impact (table 1). The overall impact score is Low.

In 2013 the National Trust carried out a Deer evaluation on Langton Westwood recording low – moderate for both activity and impact, this had decreased from 2012 (table 2).

#### Discussion:

The total survey of Langton Westwood took two hours fifteen minutes and came to a total of four kilometers. Throughout the survey time only signs of low – moderate activity was observed and low impact, which has decreased since 2013's recording of a low – moderate impact.

One possible reasoning for the decrease recorded in impact could potentially be the time of year the survey was undertaken. Normally a Deer survey would be carried out in the autumn or spring when Deer signs are at their clearest, for example spring is the first preferred choice, as slots are normally highly visible as the ground can be soft and wet, while grazing is clear on new shoots. Autumn is the second choice before the leaves fall once again due to the obvious signs, however a dry

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summer will harden the ground reducing visible slots (The Deer Initiative 2010). Our survey was carried out in a period of dry weather on the 9th of August 2016, so visible signs may be less than the true number due to weather and natural factors.

Another possible reason for the decrease and higher levels of racks present within of the woodland could be the presence of human disturbance. Agricultural buildings and fields surround Langton Westwood (Figure 1). The large presence of agriculture would result in anthropogenic disturbance potentially leading to a reduction in deer present and more deer activity present in the center of the woodland where disturbance was minimal. Sika Deer (*Cervus nippon*) and Roe Deer (*Capreolus capreolus*) are more likely to be the most common Deer species present in Langton Westwood, with the latter showing behavioral plasticity by adapting to agricultural fields, such as the ones surrounding Langton Westwood (Hewison et al 2001). However Both *Cervus nippon* and *Capreolus capreolus* do change their behavior and avoid confrontation with humans, resulting in high disturbance areas less favorable to these common species (McCullough et al 2008, Hewison et al 2001).

A possibility for the reduction in impact however not in activity could be an alteration in the behavior of the deer present, resulting in the same number of deer passing through the woodland, however spending fewer time grazing and bark stripping before moving on.

Conclusion:

The data gathered at Langton Westwood on the Impacts and activity present clearly shows a reduction in the impact the deer have caused from Low-moderate to low, however the same result was recorded in activity from the previous survey in 2013. Due to the woodlands isolated location, and surroundings it appears human disturbance would play a part in altering the behavior and abundance of deer present, however without further information on the footfall of walkers in the area and the quantity of agricultural activity present it can not be ruled out or be decided as the only ruling factor.

Report done by: Alex Harvey

Survey

Studland wood

## Survey

Introduction:

Deer monitoring surveys are carried out on deer like Sika Deer (*Cervus Nippon*) as it allows an in depth insight into how the deer are impacting certain woodlands like Studland woods, and the level of damage that is being caused. After leaving a three year period of not doing a deer monitoring survey on a list of woodlands, in August 2016 a survey was conducted on 9 woodlands.

The main focus of woodland in this report is on Studland woods, which is located next to a very popular tourist attraction.

## Survey

Site description:

Studland woods is a site of special scientific interest (SSSI) that sits in a 3.38 (ha) and consists of small areas of healthy semi-natural broadleaved woodland. The main areas of woodland however, consist of damaged vegetation (due to human impact in the woods) and old dying trees. The strong volume of deceased and old vegetation shows that the woodland is ancient. This is also indicated by ancient woodland species like Butchers-Broom (*Ruscus aculeatus*) which is found throughout the compartments of Studland wood. Some species such as Holly (*Ilex aquifolium*) still thrive in the woodland along with other species like Dogwood (*Cornus*). The North compartments of woodland are highly dominated by common ivy (*Hedera helix*) on the ground, and to the point where ivy has exceeded its natural boundary. In the south compartments the woodland floor changes to leaf litter and dead vegetation rather than ivy dominating the floor.

Methods:

In order to conduct the deer activity and impact assessment survey correctly, the methods conducted by the National Trust (2013) were followed. On the recording sheet the data is recorded using tallies as a means of measure. The survey involved walking a transect line from one end of the woodland to the other end, ensuring that all of the woodland was covered. This was done by doing the survey in a meandering motion. For more information on the methods, refer to the Deer Monitoring Evaluation by the National Trust 2013.

Results:

After conducting the survey, the initial results exhibit that having looked at the signs of deer, the activity observed on deer and the impacts caused by the deer throughout Studland woods, the woodland has had minimal affect by the Sika Deer. Comparing this to 2013 survey the 2016 results display that the impact and activity score is low-low with no change from 2013 (Table 1).

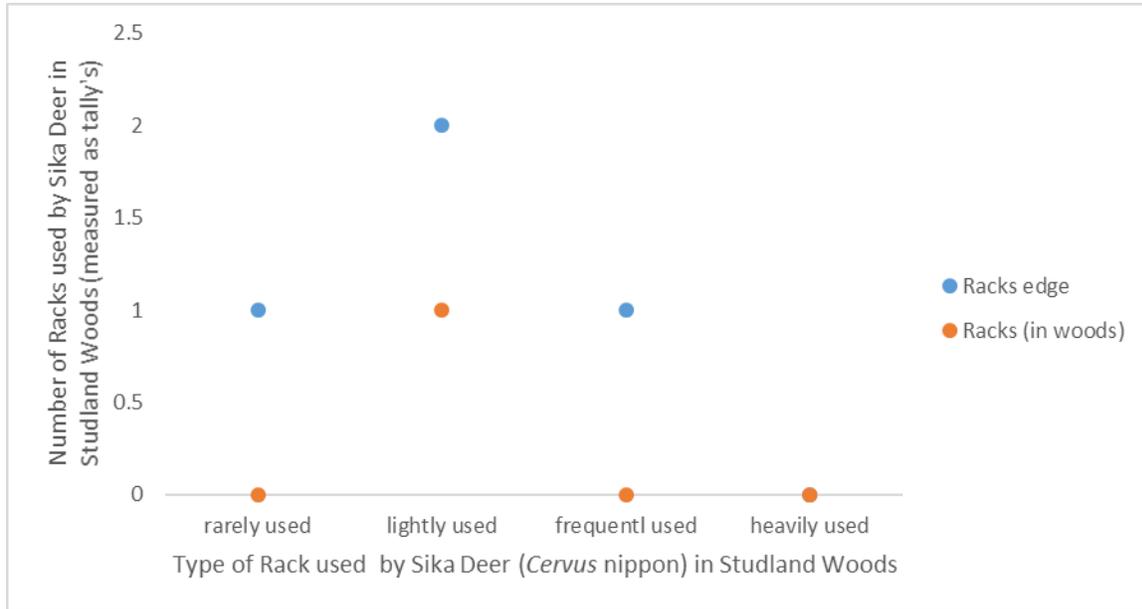
Table 1: Woodland activity and impact results for Studland wood compared with 2013 Deer Monitoring evaluation results (Amended: Personal Collection 2016)

Area	Woodland Name	Area (ha)	Designation	Activity score	Impact score	Impact score change (2016)	Key
Studland and Godlingston		Studland Wood 3.38	SSSI	Low	Low	No change in impact =	

Survey

In table 2, an interesting result occurred, where the majority of racks were found alongside the edge of the woodland, peaking at 2 racks lightly used, compared to within the woodland where the most racks found was 1 lightly used. Overall out of a total of 5 racks found 4 of them were on the edge and only 1 was located in the centre of the woodland.

Table 2: Results of the number of Racks both in Studland woods and on the Edge of Studland Woods counted (Personal Collection 2016).



Appendix one shows the raw data collected on Studland woods.

Discussion:

The results show a prominent pattern with *Cervus nippon* and Studland woods. In table 2 the results conclude that the majority of racks is located on the edge of the woodland rather than in the main part of the woodland. One reason for this could be due to the high disturbance in the woodland caused by human activity. The disturbance is distributed within the centre of the woodland, where vegetation has been cut back. Therefore due to the disturbance and the location of the woodland (by popular tourist attraction), it appears that *Cervus nippon* have been forced to the edge of the woodland, where they feel less vulnerable, as Sika Deer will change their routine in accordance to the level of disturbance (Bestpractiseguide. Org 2016).

## Survey

Another reason for the racks being highest on the edge of the woodland is because of the vegetation. Human activity within the woodland has created areas of bare ground with no vegetation.

On the other hand the North part of the woodland is highly dominated by ground ivy (Appendix 1) which suggests that the deer have had a minimal impact in the woodland (table 1), otherwise the vegetation would have been gnawed. Table 1 also indicates that the reason why the deer activity and impact is low-low is due to the time of year the survey was conducted. It was performed in August which isn't the best month to do a deer survey in as the deer have already stocked up on the fresh shoots in spring and are in the interlude stage before rutting season begins. Therefore some of the deer signs such as bark stripping will hardly be present in August, along with seeing Deer especially Stags as August is when they are at peak condition and become less visible. Whereas in 2013 the survey was done in Spring time where the Sika Deer will be active and the vegetation will be consumed (Bestpracticiseguide. Org 2016). Finally figure 2 shows that in August not much deer activity occurs, which may explain why hardly any deer were seen, nor faeces etc.

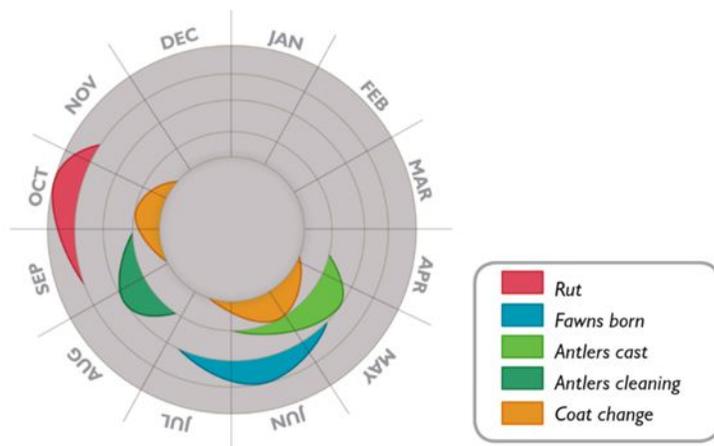


Figure 2: The type of deer activity carried out throughout each month of the year (The Deer initiative 2008).

### Conclusion:

In conclusion the Deer activity and impact assessment on Studland woods, 2016 indicates that the site has a low impact activity and damaged caused by deer. This is similar to the survey that was conducted in 2013 by the National Trust where after evaluation, the site was deemed low-low on both activity and impacts with no changes.

Survey

Report done by: Laure Hewett

### Conclusion:

To conclude, the 2016 deer impact survey did follow the trend that the 2012-2013 deer impact survey showed. Plans and management that were implemented from the 2012-2013 deer impact survey, such as the coppice fenced area in Warren woods showed to be working.

Survey

Appendix I:

**Deer activity and impact assessment August 2016**

Date:	<b>09/08/16</b>	Site:	<b>Langton Westwood</b>	Time spent:	<b>2 hrs 15 min</b>
Recorder	Langton westwood South and Central Valley = Sam, Laura and Alex Langton Westwood North = David. S, Alice, Miriam and David. T.			Distance walked(n	4,000
Activity score summary (circle):	Low to moderate		Impact score summary (circle):	Low	

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Survey

Deer and other browsing species present in this area:	Two Sika Deer spotted and rabbit dung.	Species causing most impact in this area:	Humans, and Sika Deer
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ACTIVITY					Score (N L M H)
Deer seen	2				L 1/km <sup>2</sup> -L, >10/km <sup>2</sup> -H
Dung	16				M 1/km <sup>2</sup> -L, >30/km <sup>2</sup> -H
Couches					N 1/km <sup>2</sup> -L, >10/km <sup>2</sup> -H
Scrapes					N 1/km <sup>2</sup> -L, >10/km <sup>2</sup> -H
Wallows	1				L 1/km <sup>2</sup> -L, >4/km <sup>2</sup> -H
Racks (in wood)	rarely used	lightly used	frequently used	heavily used	M
	3	3	2		
Racks (edge)	rarely used	lightly used	frequently used	heavily used	M
	2	2	2		

IMPACTS						Score (N L M H)
Bark removal or breakage	Fraying					N 1/km <sup>2</sup> -L, >20/km <sup>2</sup> -H
	Bark stripping	1				L 1/km <sup>2</sup> -L, >9/km <sup>2</sup> -H
	Broken stems					N 1/km <sup>2</sup> -L, >10/km <sup>2</sup> -H
Browseline		Not obvious even on ivy	"soft", favoured species only	"hard", not non-favoured spp	"hard", most/all species	
		5	4			
Browsing (Woody shoots eaten)	Coppice <2m (note species)	0-10% browsed, others reaching expected height	11-33% browsed, others reaching expected height	34-66% browsed, average height may be	67%+ browsed, height suppressed	
	Live basal shoots on coppice >2m or tree bole	0-10% browsed	11-33% browsed	34-66% browsed	67%+ browsed	
		1	1			
	Tree seedlings /saplings	no/little browsing, all heights present	<50% browsed, some >50cm	>50% browsed or none/few >50cm	>75% browsed or none/few >30 cm	
	Sycamore	1	1			
	Hazel	2				
	Holly	2	2			
	Ash	2				
Climbing Plants						
Ivy						
Honeysuckle						
Bramble (in open canopy if possible)		large areas at expected height, little browsing, no browseline	large patches to expected height, some browsing and /or browseline	most <1.2m, most or all browsed	wisps/most <50cm, most/all browsed	
		6	4	TALLY	TALLY	
Grazing (Flora eaten)	Plant Species (list)	none or little impact	some impact	moderate impact	high impact	
	Hazel	3				
	Cammon Bent	1				
	Hawthorn	3				
	Butchers-Broom	1				
	Dogwood	1				

Appendix II:

Survey

<b>Deer activity and impact assessment August 2016</b>					
Date:	08/08/2016	Site:	Studland Wood	Time spent:	1 hour 30mins
Recorder:	Laura, Alex and Sam			Distance walked(m):	1000m
Activity score summary (circle):	LOW			Impact score summary (circle):	LOW

Survey

Deer and other browsing species present in this area:		One Sika Deer, rabbit faeces present		Species causing most impact in this area:	Humans and Deer
<b>ACTIVITY</b>					
Deer seen		1		L <small>Score L = 10km x H</small>	
Dung		0		N <small>Score L = 20km x H</small>	
Couches		0		N <small>Score L = 10km x H</small>	
Scrapes		0		N <small>Score L = 10km x H</small>	
Wallows		0		N <small>Score L = 10km x H</small>	
Racks (in wood)		rarely used	lightly used	requently used	heavily used
		0	1	0	0
Racks (edge)		rarely used	lightly used	requently used	heavily used
		1	2	1	0
<b>IMPACTS</b>					
Bark removal or breakage	Fraying	0		N <small>Score L = 20km x H</small>	
	Bark stripping	0		N <small>Score L = 10km x H</small>	
	Broken stems	0		N <small>Score L = 10km x H</small>	
Browseline		Not obvious even on ivy	"soft", favoured species only	"hard", not non-favoured spp	"hard", most/all species
		1	0	0	0
Browsing (Woody shoots eaten)	Coppice < 2m (note species)	0-10% browsed, others reaching expected height	11-33% browsed, others reaching expected height	34-66% browsed, average height may be suppressed	67%+ browsed, height suppressed
		0	0	0	0
	Live basal shoots on coppice > 2m or tree bole	10% browsed	11-33% browsed	66% browsed	67%+ browsed
		0	0	0	0
	Tree seedlings /saplings	no/little browsing, all heights present	<50% browsed, some >50cm	>50% browsed or none/few >50cm	>75% browsed or none/few >30 cm
	Holly	1	0	0	0
	Climbing Plants				
	Ivy	2	0	0	0
Honeysuckle					
Bramble (in open canopy if possible)	large areas at expected height, little browsing, no browseline	large patches to expected height, some browsing and /or browseline	most < 1.2 m, most or all browsed	wisps/ most < 50cm, most/all browsed	
	0	0	0	0	
Grazing (Flora eaten)	Plant Species (list)	none or little impact	some impact	moderate impact	high impact
	Butcher's-Broom	2	0	0	0
	Dogwood	2	0	0	0

Survey

COMMENT S:						
<p>Other comments could include: Attachments such as maps; notes on start point/route/area covered/special features; notes on exclosures; browsing of usually unpalatable species or lack of browsing on palatable species; distribution of activity; changes in woodland structure/canopy/management since last survey; indications of trends; other relevant info.</p>						
<p>Weather on day and prior to survey: Warm, sunny intervals, bit of a strong breeze, 12mph winds NorthWest</p>						
<p>Habitat type: Woodland (old and mature)</p>						
<p>Other: High disturbance of humans</p>						
<p>Slots: 4</p>						
<p>No brambles were present</p>						
<p>Animal faeces maynot be visible due to the strong abundance of Ivy (not ground ivy) covering the woodland floor</p>						
<p>Southern part of studland wood had no presense of Ivy on the ground (instead the area was bare and stems hacked/chopped down).</p>						

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