Integrated
Aboriculture
Solutions Ltd

ENVIRONMENTAL POLICY
2019

CONTENTS

i. Introduction
ii. Environmental Policy Statement

1. Ecological Impact Assessment and Mitigation Measures
   1.1. Branch pruning/ removal
   1.2. Felling Operations
   1.3. Hedgerow pruning/ felling
   1.4. Wood Chipping
   1.5. Use of Toxic Materials

2. Social/ Economic Impacts and Mitigation Measures
   2.1. Noise
   2.2. Aesthetic (Visual) Impacts
   2.3. Agricultural Impacts
   2.4. Local History and Distinctiveness
   2.5. Land use Impacts

3. Physical Impacts

4. Sustainability Impacts
   4.1. Fossil Fuels Use

4.2. Waste Minimisation
4.3. Recycling
4.4. Energy Consumption
4.5. Environmental Responsibility
4.6. Delivery of Environmental Information
4.7. Environmental Legislation
4.8. Environmental Risk Assessment

i. Introduction

Integrated Arboriculture Solutions Ltd accepts and understands that every element of its operations has an impact on the environment, both directly and indirectly.

These effects can be categorised into distinct sections, each of which is covered separately within the text of the policy.

Integrated Arboriculture Solutions Ltd understands that all of the impacts described will have a cumulative impact on the environment and that each is interrelated, but has chosen to categorise the impacts as follows in order to make the policy easier to understand and interpret.

- Ecological Impacts
- Physical Impacts
- Social / Economic Impacts
- Sustainability Impacts

The policy has been written to mirror the process of Environmental Impact Assessment, but is not intended to be a complete example of such an assessment.

Each section will describe the main areas and causes of environmental impact and will include details of the mitigation measures employed by Integrated Arboriculture Solutions Ltd in order to minimise the effect of its operations.

Signed: Date:

Print:. Position:

ii. ENVIRONMENTAL POLICY STATEMENT

Integrated Arboriculture Solutions Ltd is an arboricultural services business. Its main business activities are vegetation management within the Utility sector, Parks and Recreational grounds maintenance for Local Authorities and domestic tree surgery.

Its aim is to minimise any adverse environmental impacts through its commitment to good environmental practices.

Integrated Arboriculture Solutions Ltd endeavours to protect and conserve the environment through the regular monitoring and review of its activities.

Integrated Arboriculture Solutions Ltd endeavours to:

- Ensure all operations meet the industries best practice and comply with relevant legislation and statutory environmental requirements.
- Develop and maintain systems of work to minimise any adverse impact to the environment in partnership with its customers and suppliers.
- Educate its staff on the environmental impact their actions may have and what their responsibilities are to the wider environment.
- Vigorously control, avoid and prevent any pollution in all of its activities by maintaining all plant and machinery to a high standard and ensuring operatives are qualified and responsible in their duties.
- Maintain environmental best practice through monthly briefings/ bulletins to its entire staff.

Integrated Arboriculture Solutions Ltd is committed to ensuring its business activities have a positive effect on the environment and endeavours to maintain and improve on the success of its environmental performance within the arboricultural industry.

1. Ecological Impact Assessment and Mitigation Measures

Any arboricultural activity will have an ecological impact, both within the immediate environment and in a wider sense.

The purpose of this section is to illustrate the depth to which Integrated Arboriculture Solutions Ltd has investigated these impacts, how we currently mitigate against them and intend to further increase the effectiveness of mitigation measures in the future.

This section will be sub-divided into the various areas of our operations, to include descriptions of the associated impacts, the 'knock on' effect of those impacts and the methods by which we intend to minimise or compensate for them.

1.1. Branch pruning / removal

When branches of trees are pruned or removed, there is an immediate direct effect on the ecology of the tree. The most obvious effect is the physical effect on the tree, which can, where large branches are removed, lead to localised and general growth stress within the tree.

The removal of branches also creates an open wound, which may result in the subsequent infection of the tree by disease causing pathogens such as bacterial material, fungal spores and viruses.

Where large branches are removed, there is a sudden redistribution of structural stress loadings within the tree structure, meaning that as the tree has grown, it will have grown in particular structural patterns to accommodate the weight of the branch.

When that weight is removed, the stress pattern is abruptly altered and this can lead to structural damage of the tree.

All of the above effects can be effectively minimised by the use of correct pruning techniques. Integrated Arboriculture Solutions Ltd ensures that all its employees engaged in pruning operations are fully conversant with such methods and employ them wherever practicable.

Post-work auditing will establish the use of such techniques and where they are found to be lacking, appropriate work will be conducted on the tree to correct and minimise any negative impacts subsequently caused.

As well as the direct effect on the tree itself, branch removal also entails the destruction or severe disturbance of local microhabitats.
There are many taxonomic groups, especially macro and micro invertebrates whose population is localised to small areas within a branch, if the branch to be removed is significant in scale and particularly if it is isolated (i.e. a single tree, not part of a woodland situation) then there will be a measurable loss of those species within the local environment.

There are also species and species assemblages, which, whilst not directly in contact with the branches of the tree, nonetheless are dependant on them for the viability of the population.

For example, large, heavy leaved species such as *Quercus robur* and *Aesculus hippocastanum* provide considerable shelter from sunlight, rainfall, winds and temperature extremes.

This creates a microclimate within their area of effect that creates ecological niches capable of exploitation by a number of species, which would be unable to establish viable populations were the effects of that branch not present.

Therefore, by removing or pruning branches, arboricultural operations may inadvertently sufficiently compromise species assemblages, communities and populations to effectively eradicate them from the locally affected area.

In order to mitigate against such effects, Integrated Arboriculture Solutions Ltd will seek to reduce the extent of pruning works to as large a degree as possible whilst meeting the requirements of the contract.

An example of this would be leaving lower branches intact (which are not liable to affect the power lines) in order to maintain the microclimates occurring beneath the tree and within the branch structure.

1.2. Felling Operations

The removal of an entire tree has obvious implications for the local ecosystem. Research has shown that woodland ecosystems are heavily dependant on habitat continuity in order to thrive.

Removal of trees from within such areas can lead to habitat fragmentation, whereby the spaces between trees within a woodland habitat become so large that bridging them becomes impossible for a number of species.
This is of particular relevance to micro and macro invertebrate species, the population dynamics of which dictate the requirement for neighbouring trees into which the population can spread.

Mature trees are also frequently utilised by Bats as roost sites. The Wildlife and Countryside Act 1981 protects all Bat species within the United Kingdom. Under the regulations of this act, it is an offence to disturb a Bat or a roost site.

If Bats are found to be roosting in a tree, or evidence of Bats is found in a tree, it is a legal obligation to inform English Nature prior to any works, in order that they can advise on how to minimise the impact on the population or suggest mitigation measures, no work can continue until the required measures have been put in place and approved by English Nature.

Trees provide habitat and shelter for a wide variety of animal, fungi and plant species, especially in terms of the ground beneath them.

Studies have shown that tree species such as *Taxus baccata* can produce a microclimate beneath their branches that may be sufficiently warm that frost is prevented from forming beneath them.

Trees also create shade from sunlight, preventing the soil from drying out. This enables plant species such as *Hyacinthoides non-scripta* to germinate due to their requirement for continually damp soil.

This species is also subject to protection under Schedule 13 (Schedule 8) of the Wildlife and Countryside Act 1981, therefore, any disturbance or damage to either the plants or their habitat is an offence under this law.

This adds to the cumulative ecological effect of whole tree removal. Integrated Arboriculture Solutions Ltd therefore operates a policy that entire trees should only be felled where specifically required by the terms of the contract.

We also intend to investigate the potential for the translocation of *Hyacinthoides non-scripta* populations (where encountered) to similar local habitats and the establishment of Bat boxes where mature (and especially dead) trees have been removed.

Integrated Arboriculture Solutions Ltd also believes that, where possible, dead trees should be trimmed to a level sufficiently clear of the conductors, but the stems should remain *in-situ* to provide continued habitat for those species which utilise such niches.

1.3. Hedgerow pruning/ felling

Hedgerow habitats are vital ecological resources, particularly given the dramatic loss of woodland cover in the United Kingdom (5% land area covered by woodland in 2000).
Therefore, hedgerow habitats are often used by woodland species, particularly as 'natural corridors' between woodland habitats (this effect is yet to be determined scientifically)
The number of species supported by a hedgerow can be very significant, particularly in terms of small mammals, birds, invertebrates and plant species. Thus, any damage to hedgerows by pruning operations may have a significant adverse ecological impact.

Such impacts should be mitigated against wherever possible and Integrated Arboriculture Solutions Ltd has the philosophy that hedgerow trimming operations should be carried out only where expressly required by the contract and to an extent suitable to the terms of that contract only.

It is suggested that, where significant trimming or reduction is required, Hedgerows should be trimmed and professionally laid by qualified and experienced craftsmen to ensure the continued viability and health of the hedgerow.

1.4. Wood Chipping

Whilst the use of wood chippers, as a means of brash disposal is a necessary component of arboricultural work, they nevertheless have some ecological impacts, which must be taken into account when establishing the overall environmental impact of Integrated Arboriculture Solutions Ltd.

Chipping material onto the ground has a direct impact on the local ecosystem. By blocking light and by the process of decomposition, vegetative material beneath the woodchip will die off, creating areas of decomposing material that plants cannot penetrate and which prevent invertebrates from crossing, thus isolating small pockets of populations and leading to habitat fragmentation.

Chippings can also 'drift' against the stems of trees and bushes and cause localised damage, in some circumstances, resulting in an effect similar to 'ring barking' whereby the outer layers of stem tissue are damaged sufficiently to prevent the plant from effectively transporting nutrients and water throughout its system of branches and leaves.

Chippings can also accidentally enter watercourses, which causes several problems. The primary problem caused is that the accumulated woodchip can effectively 'block' drainage ditches, brooks and streams, resulting in localised flooding and the resultant destruction of marginal habitats.

A secondary problem caused by the input of wood chippings into watercourses is that they can cause a process known as eutrophication. This process occurs when organic material within a watercourse begins to decompose. The decomposition process releases large amounts of nutrients (phosphates/nitrates/potassium) into the water, which encourages bacterial and algal 'blooms' (population explosions).

These population explosions make excessive demands on the dissolved oxygen in the water, leading to a loss in oxygen availability to aquatic organisms.
The 'blooms' also increase the turbidity levels in the water, thus eliminating much of the sunlight that would otherwise reach submerged macrophyte communities, which form a staple food and shelter resource for other aquatic organisms.

The result is water, which becomes stagnant and deoxygenated, which further exacerbates the problem, as the bacterial organisms that contribute to eutrophication are capable of anaerobic respiration. This means, that in eutrophic waters, the only organisms able to survive are those that contribute to the continuation of eutrophic conditions.

Due to these impacts, Integrated Arboriculture Solutions Ltd only uses woodchippers where there is no alternative. The preferred method employed by Integrated Arboriculture Solutions Ltd is to create habitat stacks with the brash and thereby create more habitat structure and diversity with none of the impacts of chipping operations.

1.5. Use of toxic materials

During the course of operations, Integrated Arboriculture Solutions Ltd is required to use materials (such as unleaded petrol) which, if released into the environment by spillage, can cause an ecotoxicological effect, that is, the content of the material may have a negative impact on the immediate and wider ecosystem.

The principal materials used by Integrated Arboriculture Solutions Ltd, which may have such effects, are:

- Unleaded petrol – Used to fuel chainsaws
- Red Diesel – Used to fuel woodchippers
- Hydraulic Oil – Used to power hydraulic equipment on woodchippers
- Lubricating Oil – Used to lubricate saw chains
- Stump Killer – Poison used to kill stumps to prevent regrowth

There is a risk of spillage of all these materials, both on site and at base when filling, transporting or using the materials.

The effect of the materials, when exposed to the environment is that they have an immediate toxic effect on plants, as the porous structure of leaves and stems absorbs the material which then causes damage to the cells and tissues of the plants.

These plants are then consumed by herbivorous animals, which 'inherit' the toxins (as they are not readily biodegradable), which causes death and illness.

Those herbivorous animals may then be eaten by carnivorous animals, which are then poisoned by the accumulated toxins in the tissues of the prey.

When the carnivorous animal dies, animals and bacteria, which again absorb the toxins accumulated in the carcass, decompose it and the toxins are returned into the environment as the carcass is broken down.

When plants grow in the soil, they accumulate the toxins as their root systems absorb water and nutrients from the soil and thus the cycle begins again.

This cyclical process will perpetuate until the toxins are eventually dispersed sufficiently to no longer present toxic effects. In the case of the materials mentioned, this process may take many years before the impact of the initial spillage ceases.

There are also similar effects that can occur in watercourses should the materials enter them. Aquatic ecosystems are far more sensitive to pollutants and toxins than terrestrial systems, so the effects can be more significant and prolonged.

It should be noted that there is also a cumulative effect, whereby the combination of relatively innocuous substances in the environment produces a toxic effect greater than that produced by the materials separately.

In order to minimise these impacts, Integrated Arboriculture Solutions Ltd operates stringent guidelines on how and when such material should be used and transported.

- All materials must be carried in designated containers and all attempts made to prevent spillage.

- All staff to be trained in the use of spill kits, which will be carried in each vehicle to minimise the impact of any spillage.

- Containers of toxic material should be carried over the shortest distance possible, with secured lids and in an upright position

- Where possible, biodegradable alternatives will be used, for example, Integrated Arboriculture Solutions Ltd uses ONLY biodegradable lubricating oil.

- All vehicles contain environmental data sheets about the materials they carry, including details of possible effects and instructions concerning actions following a spillage.

- All personnel are acquainted with the contact information for the Environment Agency in order to report any incidents.

- A record of all incidents and spillages is kept and maintained in order to establish areas which require closer attention / training.

- Environmental awareness training will be given to all staff and sub-contractors during induction, backed up by regular environmental update training.

- Integrated Arboriculture Solutions Ltd will continuously investigate the potential for new, more ecologically sympathetic materials, which will be employed where available.

- Where there is a viable, non-toxic alternative, Integrated Arboriculture Solutions Ltd will use that alternative as a matter of policy.

- Sub-contractors will be contractually obliged to adopt the Integrated Arboriculture Solutions Ltd environmental policy and standards.

2. Social / Economic Impacts and Mitigation Measures

It is important to recognise that the operations conducted by Integrated Arboriculture Solutions Ltd will have impacts on the social and economic environment.

These effects can be broadly categorised into the following sections:

- Noise
- Aesthetic (Visual) Impacts
- Agricultural Impacts
- Local History and Distinctiveness
- Land Use Impacts

Each of these will be described in turn and the mitigation measures employed by Integrated Arboriculture Solutions Ltd will be shown.

2.1. Noise

The use of chainsaws and wood chipping machinery produces considerable levels of noise disturbance.
This noise disturbance can adversely affect the local environment in a number of ways.

Where operations are conducted near to residential housing, the resulting noise can be construed by some residents as being a noise nuisance and adversely affect their quality of life.

According to the Environmental Protection Act 1990 (Part 3, Paragraph 79, Subsection 1 (g))

"Noise emitted from premises so as to be prejudicial to health or a nuisance"

This means that noise produced by Integrated Arboriculture Solutions Ltd on-site may be determined to be a 'statutory nuisance' in terms of the law. This is important as the Act states that (Sub-section 7)

"Premises" includes land and, subject to subsection (12) below, any vessel

Meaning that the noise caused by operations may be construed as a 'Statutory Nuisance'

However, such classification is unlikely under the Act, as a 'statutory nuisance' is required to be a continuous state of affairs. It is unlikely that operations conducted by Integrated Arboriculture Solutions Ltd be continuous for more than 8 hours in any 24-hour period.

It is important that Integrated Arboriculture Solutions Ltd does recognise that the noise produced may be regarded as a nuisance, if not in law, by those persons affected.

High noise levels do not only affect human populations. Much of the operational work conducted by Integrated Arboriculture Solutions Ltd occurs in rural locations, sufficiently distant from residential areas so as not to be heard.

However, the noise levels will have an impact upon agricultural livestock and wildlife within the vicinity.

Integrated Arboriculture Solutions Ltd operates the policy that where operations are to be conducted, the landowner responsible is informed that noise (especially from wood chippers) will be produced and ascertains from that landowner if any special requirements are needed (such as time to remove livestock from the vicinity) or to arrange for brash to be stacked rather than chipped.

Impacts upon wildlife are difficult to measure and mitigate against, but it is probable that such noise will provide 'disturbance' to wildlife and potential damage to some wildlife with particularly sensitive aural faculties (such as small mammals).

In terms of noise impacts overall, Integrated Arboriculture Solutions Ltd operates to compulsory guidelines as outlined below. Failure to follow these guidelines (as determined by site audits or complaints from residents) will result in an internal investigation.

- All equipment and plant to be turned off when not in use
- Landowners and residents to be informed and made aware of potential noise
- Equipment and plant to be used only where required
- Wood chippers to be turned to 'idle' between loads to reduce noise whilst in use
- Vehicle engines should be switched off upon arrival at the final destination

Integrated Arboriculture Solutions Ltd is proactive in this area and uses noise levels as one of the criteria for selection of equipment and plant.

2.2. Aesthetic (Visual) Impacts

Integrated Arboriculture Solutions Ltd is aware that its operations may result in an impact upon the visual environment.

The nature of the contract requires substantial alterations in local vegetation patterns; thus, it is possible that those alterations may be construed as being negative impacts.

The reduction and felling of trees and hedgerows may have a substantial effect in this regard, resulting in a perpetual (due to the requirement to maintain clearances) alteration in the visual landscape character.

This applies also to where trees are removed which provide a visual screening effect for residential areas, for example, there may be a belt of trees which visually screens an industrial area, water treatment works or similar establishment. When this is removed to obtain clearance, that effect is removed, thereby having an impact.

Integrated Arboriculture Solutions Ltd is limited in its mitigation of such impacts by the requirements of the contract specification, but where possible, will attempt to minimise the most apparent effects by careful scrutiny of which areas of vegetation can be left as a screen whilst not compromising the requirements of the contract.

2.3. Agricultural Impacts

Although prior permission for works to be conducted is always determined before work commences, Integrated Arboriculture Solutions Ltd accepts that there may be some negative impacts upon agricultural practices.

These can principally be divided into 3 sections:

- Livestock Impacts
- Arable Impacts
- Access Impacts

As has been stated, Integrated Arboriculture Solutions Ltd realises that operations may have an effect on livestock by virtue of the noise levels generated which may cause distress and behavioural problems amongst livestock (such as stampeding)
There are also impacts generated by the presence of unfamiliar personnel ad machinery and the deposition of brash and woodchip.
It is possible that livestock, if allowed access to brash or woodchip, will consume that material and become ill.
This is particularly important where trees such as *Salix spp* and *Taxus spp* are cut, as both are toxic to livestock if consumed.
Horses are particularly susceptible, but there are incidents recorded of the death of cattle due to the ingestion of plant material.

It is important therefore that all Integrated Arboriculture Solutions Ltd staff and sub contractors follow the guidelines set down for livestock control shown below.

- Where livestock are present in neighbouring fields, all access gates should be closed after access has been obtained to ensure livestock cannot enter the field where work is taking place.

- Where livestock are in the field of work, all efforts should be made to dispose of brash in such a manner so as to be inaccessible to livestock.

- All landowners should be made aware of the operations and arrangements made concerning livestock welfare, the landowners wishes take precedence in this matter and should be adhered to (this information will be obtained when obtaining permission)

- All plant and equipment should be turned off when not in use.

- Equipment, plant and associated material should be stored where not accessible to livestock, it may be necessary to establish a ‘livestock watchman’ to ‘shoo’ livestock away from such areas.

- When cutting species such as *Salix spp* and especially *Taxus spp*, every effort should be made to remove the cut material from site. Where this is not possible, all arisings should be disposed of in such a manner that livestock cannot access them.

Arable Impacts are also inevitable in many circumstances, as the requirements of the contract dictate that fields must be traversed in order to access the area of work.

The principal impacts upon arable agriculture are as follows:

- Damage to soils and crops by vehicles
- Damage to standing crops by removal of shelterbelts
- Damage to crops by felling / pruning

Vehicles crossing fields can cause damage by compacting soils. Specialised agricultural vehicle operated on wide, low-pressure tyres that minimise this impact, but this is not practicable for road going vehicles.

Compaction occurs where soil is 'squeezed' when weight is placed upon it. This compaction removes the air spaces from within the soil and thus removes oxygen from it vital for soil living organisms.

The compacted soil also loses much of its drainage capacity, which leads to flooding and water logging. It is possible that in severe cases of compaction, the top of the soil may be waterlogged, but in the root zone of crops and grass, the soil may be too dry, as water cannot penetrate the soil structure.

This effect is particularly evident on heavy clay soils.

Vehicles can also damage crops, by crushing and flattening, meaning that harvesting is not possible and the damaged area represents a loss to the farmer.

Therefore, Integrated Arboriculture Solutions Ltd operates the following mandatory guidelines in relation to vehicle use on arable land:

- Vehicular access to the work area should be arranged and agreed by the landowner when permission is obtained.

- Where the permission slip is not specific, vehicles should always travel at the edges (headlands) of fields where crops are not grown.

- Where there is no headland, attempts should be made to follow the tracks made by agricultural vehicles

- Where this is not possible, access to the work area should be made on foot

- If ground conditions are wet, the work should, if possible, be conducted at a later date when the ground has dried out

- Vehicles should always be operated in a manner which reduces wheel spin (use of the highest gear possible at the slowest speed possible)

Crops, particularly tall crops such as Oilseed Rape, Barley and Wheat can be damaged when shelterbelts of trees are removed. Such shelterbelts shield the crops from the effects of the wind.
When such belts are removed, the effects of the wind can flatten and damage the crops.

Therefore, Integrated Arboriculture Solutions Ltd will attempt to retain the integrity of such shelterbelts wherever possible within the remit of the contract. The following guidelines are established for Integrated Arboriculture Solutions Ltd staff and sub-contractors:

- Where shelterbelts are installed to protect crops, trees should be reduced but not removed (where possible whilst complying with contract specifications)

- Smaller trees and bushes within the work area but not within 3m of the lines should be retained to provide some wind protection

Where pruning and felling operations take place, the resulting material can damage crops by falling onto them.
This also leaves remnant material in the field that may damage or compromise harvesting operations.

In order to mitigate against the impact of such operations on crops, Integrated Arboriculture Solutions Ltd operates the following guidelines:

- Felling operations should, where practicable, be operated so that the tree falls away from the crops

- Where branches are to be removed, they should be dropped away from the crops

- All material should be retrieved from the field wherever possible

2.4. Local History and Distinctiveness

In some circumstances, trees and vegetation, which require removal or pruning, have special significance to the local community.

Trees may have significance for the following reasons:

- Folklore
- Commemoration (death and events)
- Distinctiveness
- Age

Whilst it is generally not known whether a tree has any special local significance, it is important to acknowledge that an impact on the local environment may occur when clearance operations are undertaken.

Where trees have been planted as commemorations, this will generally be made apparent when obtaining permission for works.

Where such trees require trimming, landowners are often reluctant to allow such work to take place. Therefore, in these circumstances, it is important to reach a compromise whereby the needs of the contract can be met whilst retaining the integrity of the tree involved.

There are occasions when this is not possible, in these circumstances, Integrated Arboriculture Solutions Ltd will refer the landowner to the employer in order to achieve some measure of compromise.

Integrated Arboriculture Solutions Ltd accepts that there may be impacts of this nature caused by its operations and will attempt, where possible, to take such information (where known) into account whilst maintaining the technical requirements of the contract.

2.5. Land Use Impacts

The rural landscape is subject to many and various land uses which may at times be impacted upon by the operations conducted by Integrated Arboriculture Solutions Ltd.

Woodland areas and shelterbelts are especially valuable for rearing game birds and used as recreational game shooting areas.

Disturbance of these areas can have a detrimental impact on the game population of such woodlands, encouraging them to leave the area, thus reducing the attractiveness of the area for shooting.

Woodlands, shelterbelts and wooded areas are also often used by walkers, ornithologists and other interested parties and operations carried out can have a detrimental impact either directly (through noise and disturbance) and indirectly (vegetation removal).

However, Integrated Arboriculture Solutions Ltd has limited scope for mitigation of these impacts. Due to the ephemeral nature of such uses, it is not always apparent, or evident, that such activities occur.

Integrated Arboriculture Solutions Ltd therefore takes the standpoint that when a landowner is consulted regarding obtaining permission for works, it is the responsibility of that landowner to make Integrated Arboriculture Solutions Ltd aware of any such activity and suggest means by which impacts upon it can be minimised.

Such mitigation often takes the form of conducting works at specified times of the year or in specific ways (i.e., brash to be stacked in habitat stacks) and it is therefore important to obtain such information from the landowner prior to works.

Integrated Arboriculture Solutions Ltd therefore can only mitigate against such impacts by insisting that the specification for work given on permission slips is followed exactly at all times.

3. Physical Impacts

Integrated Arboriculture Solutions Ltd acknowledges that its operations will have a range of impacts upon the physical environment.

These impacts can effectively be categorised thus:

- Soil Compaction
- Direct Erosion
- Indirect Erosion

The impacts of soil compaction have already been discussed within this policy, as have the mitigation measures employed by Integrated Arboriculture Solutions Ltd to minimise those effects.

Direct erosion can occur when vehicles and equipment traverse sensitive landscapes. This is particularly important where operations are conducted on sandy or silty soils, which can break away beneath equipment and vehicles.
This direct erosion can result in the deposition of materials and soils in watercourses, causing flooding and eutrophication.

Indirect erosion can occur in two principal ways:

- Formation of erosion gullies
- Tree removal

Erosion gullies are formed on steep ground, where wheel ruts formed by the passage of vehicles act as conduits for water flowing down such ground.
The cumulative effect of the water flowing down these gullies over time is that they become deeper and wider until they acquire steep banks that collapse, thus depositing material elsewhere, particularly in watercourses.
This also affects the drainage patterns of affected land, meaning that rainfall, instead of dispersing gradually throughout the soil, is quickly dissipated by the erosion gullies, thus compromising the ability of vegetation to uptake sufficient water and nutrients.

Integrated Arboriculture Solutions therefore insists that the following guidelines are followed at all times to avoid the formation of erosion gullies:

- Steep gradients should be approached by taking a ‘zig-zag’ course across the gradient.

- Vehicles should be operated so as to minimise wheel spin

- Where the ground is particularly wet or muddy, measures should be taken to avoid damage to the underlying ground (for example, using winches or sand ladders)

Where trees are felled and their roots killed using poison, this eventually leads to the decomposition of the root system.

In some areas, particularly on steep banks, the root systems act as effective reinforcements, which hold the soil together.
This is particularly evident on the banks of rivers and streams.

When the root systems decompose, the reinforcement effect is removed, leading to potential land slips and erosion, which is a particular issue with regard to watercourses and drainage systems.

Therefore, Integrated Arboriculture Solutions Ltd operates the policy that, wherever possible, root systems and trees, which are providing this function, should be retained. Where feasible, coppicing such trees will create sufficient clearance to comply with the contract, whilst retaining the integrity of the soil.

Where this is not possible and erosion seems likely and extensive, Integrated Arboriculture Solutions Ltd suggests, where appropriate and feasible, the use of erosion control netting, which is a fabric system which can be pegged onto steep banks to prevent erosion and land slippage.

Obviously, this mitigation measure has an attached cost element, which must be subject to a cost-benefit analysis before implementation.

4. Sustainability Impacts

These systems (and this section of policy) are concerned with the sustainability of all operational activities conducted by Integrated Arboriculture Solutions Ltd.

The areas of investigation are:

- Fossil fuel use
- Waste minimisation
- Recycling
- Energy consumption

4.1. Fossil Fuel Use

Integrated Arboriculture Solutions Ltd directly uses fossil fuels in the course of its operations in the following areas:

- Fuel for vehicles
- Fuel for chainsaws
- Fuel for wood chippers
- Hydraulic oil
- Engine oil

At present, minimisation of the use of such material is limited by technology availability, but Integrated Arboriculture Solutions Ltd does make the following guidelines mandatory for all staff.

- Chainsaws should use unleaded fuel in order to achieve minimal atmospheric pollution and reduce the toxicity of spillages.
- Where new chainsaws are required, those with catalytic converters should be chosen where practicable.
- Vehicles should, where possible, be selected using fuel economy and emissions as judgement criteria.
- Vehicles should be driven in a manner to reduce fuel consumption
- Discarded oils should be disposed of using recycling facilities where available
- Wood chippers should be operated at full throttle only when directly chipping brash
- Vehicles, equipment and plant should be turned off whenever not in use

4.2. Waste Minimisation

As with any company or organisation, Integrated Arboriculture Solutions Ltd produces waste materials as a result of its operations.

The following list indicates the nature of the waste material produced by Integrated Arboriculture Solutions Ltd.

- Paper
- Card (Packaging)
- Plastic (Packaging)
- Oils (when changed)
- Glass (bottles)
- Metal (Packaging and discarded equipment)

In order to minimise the amount of waste produced by Integrated Arboriculture Solutions, the following guidelines have been established:

- Where possible, employees should bring their own meals to work, to avoid generating large quantities of litter from the consumption of commercial products
- Where possible, Integrated Arboriculture Solutions Ltd will re-use envelopes and packaging materials in order to minimise waste.

- Paper used in the office will be utilised in the most efficient manner possible, notepads will consist of wipeable surfaces on which to write to minimise wasted paper.

- Integrated Arboriculture Solutions Ltd will continue to investigate the use of recycled paper and card throughout its operation.

- Electronic communications are used where possible to reduce the amount of waste produced.

- Integrated Arboriculture Solutions Ltd will attempt to source material from suppliers who themselves operate a stringent waste management policy.

- All recyclable material should be collected for correct disposal *(Ref: section 4.3)*

4.3. Recycling

All paper and card is collected together by Integrated Arboriculture Solutions Ltd and deposited in a paper bank for recycling purposes.

Plastic packaging is, where possible, recycled via the local Borough Council collection scheme. However, this collection limits the kinds of plastic that can be recycled. Integrated Arboriculture Solutions Ltd will continue to investigate alternative recycling options for these materials. Sub-contractors are required to establish similar schemes where possible.

Oils when collected (during oil changes) are taken to collection points for such material, to be recycled by specialist facilities. It is recognised that such facilities are not widespread, but sub-contractors are required to investigate the recycling potential for these materials/

Glass and Metal are collected separately and distributed to dedicated collection stations (glass and metal banks) from which it is collected and recycled by a private company on behalf of the local Borough Council.

4.4. Delivery of Environmental Information

Each team leader is issued with a copy of the Environmental policy as a matter of routine. Copies of the policy are also placed in each vehicle and copies are available to all staff on request.

Integrated Arboriculture Solutions Ltd has taken steps to ensure that the main points of the policy are indicated where applicable, by the use of signs and information bulletins.

Any changes or alterations to the Environmental Policy will be relayed to the staff by means of Environmental Briefings, backed up with addendum notices distributed to all staff, indicating any potential changes in working practice.

Integrated Arboriculture Solutions Ltd will conduct routine Environmental audits of all staff, teams and sub-contractors, records of which will be archived to ensure compliance and to assess areas of improvement or failure.

If any member of staff or any sub-contractor breaches the Environmental Policy, that person will be subject to an internal inquiry.

Should the person be deemed to be negligent by that inquiry, they will receive a written caution concerning the particulars of the inquiry.

If that person breaches the Policy again, another inquiry will be held. Should that inquiry yield a finding of wilful negligence, the person involved will be subject to further disciplinary action, including the potential for immediate termination of employment.

4.5. Environmental Legislation

The following list covers the major pieces of Environmental Legislation with which Integrated Arboriculture Solutions Ltd has to comply and which were taken into account in the formation of the Environmental Policy.

The Wildlife and Countryside Act 1981 (Including all amendments and modifications)

The Conservation (Natural Habitats & c.) Regulations 1994

EC Directive 92/43/EEC (Habitats Directive)

Environmental Protection Act 1990

Wild Mammals (Protection) Act 1996

Tree Preservation Orders (Local Authorities)

Countryside and Rights of Way Act 2000

The Wildlife and Countryside (Definitive Maps and Statements) Regulations 1993

The Wildlife and Countryside (Sites of Special Scientific Interest) Regulations 2002

Protection of Badgers Act 1991

The Environment Act 1995

There are numerous parliamentary amendments, statutory instruments and orders that also affect the work conducted by Integrated Arboriculture Solutions, but the majority are sub-clauses and attachments to the Acts listed above.

The above list is not, nor intended to be, an exhaustive list of UK or EU environmental legislation.

4.6. Environmental Risk Assessment

There is no requirement for individual teams to conduct on-site environmental risk assessments, although Integrated Arboriculture Solutions Ltd does suggest that team leaders should take account of environmental conditions.

The reason that Integrated Arboriculture Solutions Ltd does not require such risk assessments is that the purpose of the policy was to create an exhaustive environmental impact assessment and associated guidelines that all personnel are required to comply with.

Environmental audits will be routinely carried out by the Utility Coordinator to ensure that the guidelines of the policy are adhered to and to establish a record of environmental achievements and incidents, which can then be used to monitor future environmental progression.