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Arboriculture Research Note 73

Issued by the Arboricultural Advisory & Information Service

TREATMENT OF STORM-DAMAGED TREES

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Summary

Gale damage to trees may leave them in a dangerous condition. It is important to make damaged trees safe as soon as possible, but immediate severe pruning may encourage the development of decay.

The immediate need for safety

There are two main safety hazards which may need to be dealt with on trees which are gale-damaged but still standing:

1. Cracked or snapped trunks and branches – including ‘hung-up’ branches – which could fall.
2. Weakened roots which may provide insufficient anchorage for the tree.

Irrespective of the type of damage, the degree of hazard is highly dependent on the location of the tree. For example, a woodland tree far from any public right of way will have a much lower hazard rating than one next to a highway.

The immediate priority for the safety of people and property is the detection and removal of any parts of the tree which are hanging or partly fractured, split or otherwise seriously weakened.

The immediate need for the tree

Decay will often develop in the wounds caused by branches breaking. The eventual extent of any such decay may be increased if large wounds close to the main stem are created during removal of damaged branches. To help reduce the extent of any future decay, stubs should be left for one year – other considerations permitting – and then cut back to the natural limit of dieback, usually a junction with another branch of the main stem. (A central column of decay is likely to develop in the main stem if two or more substantial branches are completely removed at about the same time). Never cut back so severely as to create a flush cut (see Arboriculture Research Note 48). The socket of a torn-out branch should be tidied up by removing splintered wood and loose bark, but the wound should not be enlarged. Proprietary

wound paints must not be expected to prevent decay but a thin coating will encourage callus formation and reduce the risk of cambial dieback and cankering. It may also have cosmetic value. Biological control may be worth considering.

Restoration of uprooted trees

Many uprooted trees appear healthy and it may seem desirable to right them. This is practicable for very small trees provided that any soil compaction or waterlogging is first alleviated. The trees should be supported as described in Arboriculture Research Note 40.

The righting of large trees is not generally recommended. In cases where there is a special need to attempt this, it would be necessary to reduce the tree's wind resistance by very heavy pruning even pollarding. Additionally a righted tree would require a very substantial artificial support system in any situation where the risk of further failure could be a hazard to people or property. Even then, the vigorous and dense regrowth which can follow such pruning might eventually present a resistance to wind even greater than that of the original crown. The root regrowth of an old tree will not always provide anchorage in proportion to crown regrowth. It is therefore likely that further pruning will have to be carried out in future years and that the support system will have to be maintained or even reinforced.

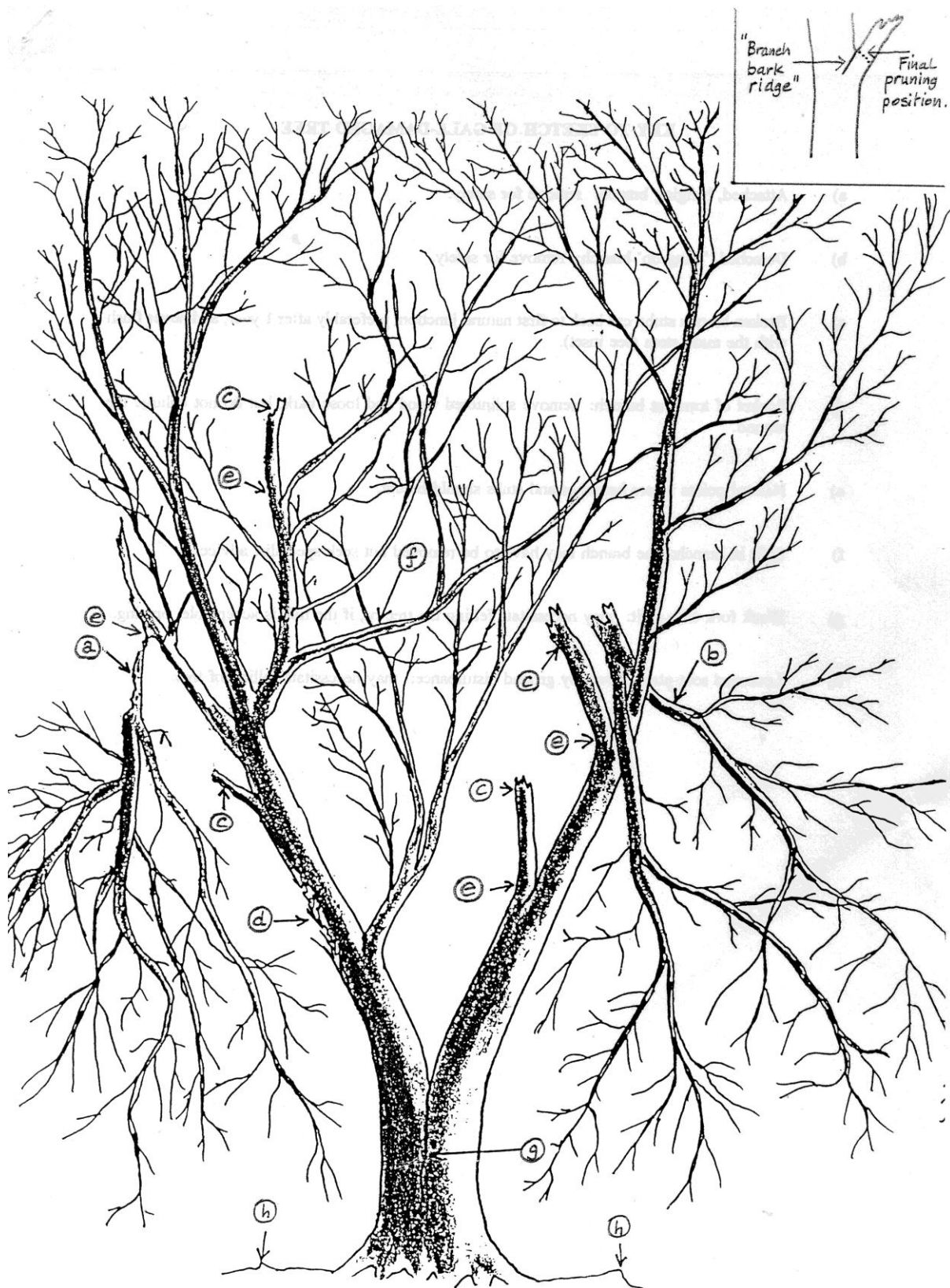
When upturned trees are cleared away, action must be taken to avoid injury to people from unstable root plates which can fall back even months after cutting. Root plates may be left *in situ* for conservation purposes (see Research Information Note 136), but they must be propped or stabilised by the retention of a sufficient length of trunk to counterbalance their weight. Otherwise, they should be returned to the hole or removed from site.

Cautionary Notes

- ❖ Inspection of damaged trees requires expert knowledge – seek specialist advice.
- ❖ The use of chainsaws is potentially extremely dangerous and should be attempted only by trained fully equipped operators.
- ❖ Tree climbing can be very hazardous, especially where the trees contain damaged branches, and should be attempted only by trained, fully equipped operators.
- ❖ Windblown trees can be dangerous or may become so during clearance work. In any such work the requirements of Forest Industry Safety Guide FSC15 “Chainsaw clearance of windblow” should be observed.
- ❖ Special care is needed when cutting the fallen tree from its stump. The trunk is frequently under great mechanical strain, and the severed stump can spring back with considerable violence.

Conservation note

Dead and decayed wood are very important wildlife habitats and, where practicable, some fallen and decayed wood should be left on the ground.



KEY TO SKETCH OF GALE-DAMAGED TREE

- a) Attached hanging branch: remove for safety

- b) Detached, 'hung-up' branch: remove for safety
- c) Broken branch stub: cut back to first natural junction, preferably after 1 year, and never flush with the main stem (see inset).
- d) Socket of torn-out branch: remove splintered wood and loose bark, but do not enlarge the wound.
- e) Natural points where branches and stubs should be cut.
- f) Split in branch: the branch may have to be removed but seek specialist advice.
- g) Weak fork with split: may necessitate felling the tree or, if the risk is acceptable, bracing
- h) Loosened root-plate shown by ground disturbance: may necessitate felling of tree.

Published by:

February 1990

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Revised with minor amendments October 2012

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