

Nursery Survey

2023

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Great Britain

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Scotland

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The research agency of the
Forestry Commission

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The Agency aims to support and enhance forestry and its role in sustainable development by providing innovative, high quality scientific research, data, technical support and consultancy services.

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Introduction

This publication provides estimates of sales of improved nursery stock by nurseries in Great Britain each planting year (October to September). The data cover sales of Sitka spruce and Scots pine to public and private sector clients in Scotland. Sales of these species in Great Britain are also reported.

The data in this release have been obtained from a voluntary survey of nursery businesses in Great Britain, run on behalf of Scottish Forestry, to monitor the level of improved nursery stock.

“Improved nursery stock” refers to genetically improved Sitka spruce and Scots pine stock raised from seed of seed orchard origin and by vegetative propagation of parent material derived from controlled crosses. These trees are predicted to grow faster and produce better timber than unimproved stock.

Data for the planting year October 2021 to September 2022 are published for the first time in this release. Historical data, showing sales from 2005/06 onwards, can be found in the supplementary spreadsheet. Data for Scotland for earlier years have been revised. For further details, see Revisions section and [Forest Research’s revisions policy](#).

Key findings

The key findings are:

- A total of 46.4 million plants (91%) derived from improved nursery stock were sold to Scotland in 2021/22.
- Of all sales in Great Britain in 2021/22, 56.2 million plants (92%) were derived from improved nursery stock, a decrease of 20% (or 11.4 million plants) compared with the previous year. This decrease represents a return to sales seen in earlier years, particularly since 2016/17.

Improved nursery stock

Improved nursery stock is defined as follows:

Species	Definition
Sitka spruce: Seedlings	Seed orchard material that falls in the tested category under the UK Forest Reproductive Material Regulations. This material will have superior performance for growth rate and stem form relative to untested material.
Sitka spruce: VP	Vegetatively propagated tested 'family mixture' material (either half or full sib families). This material is derived from controlled cross-pollination and then multiplied using vegetative propagation. This stock has significant genetic gains for both quality and quantity traits.
Scots pine	Seed orchard material that falls in the tested category under the EU Forest Reproductive Material Regulations. This material will have superior performance for growth rate and stem form relative to untested material.

Sales of nursery stock to Scotland

An estimated total of 50.9 million Sitka spruce and Scots pine plants were sold to Scotland in 2021/22 (Table 1), comprising 42.1 million Sitka spruce plants and 8.8 million Scots pine plants. This represents a 23% decrease in sales of Sitka spruce and a 15% increase in sales of Scots pine from the previous year.

A total of 46.4 million plants (91%) derived from improved nursery stock were sold to Scotland in 2021/22, a decrease of 19% compared with 2020/21 (Table 2). This follows a 19% increase in sales of improved nursery stock sold to Scotland in 2020/21.

Table 1: Summary table, Scotland, 2021/22

	Total stock sold in 2021/22 (million plants)	Improved stock sold in 2021/22 (million plants)	Proportion improved (%)
Sitka spruce: Seedlings	38.1	38.0	100
Sitka spruce: VP	4.0	4.0	100
Sitka spruce: Total	42.1	41.9	100
Scots pine: Seedlings	8.8	4.5	51
Total	50.9	46.4	91

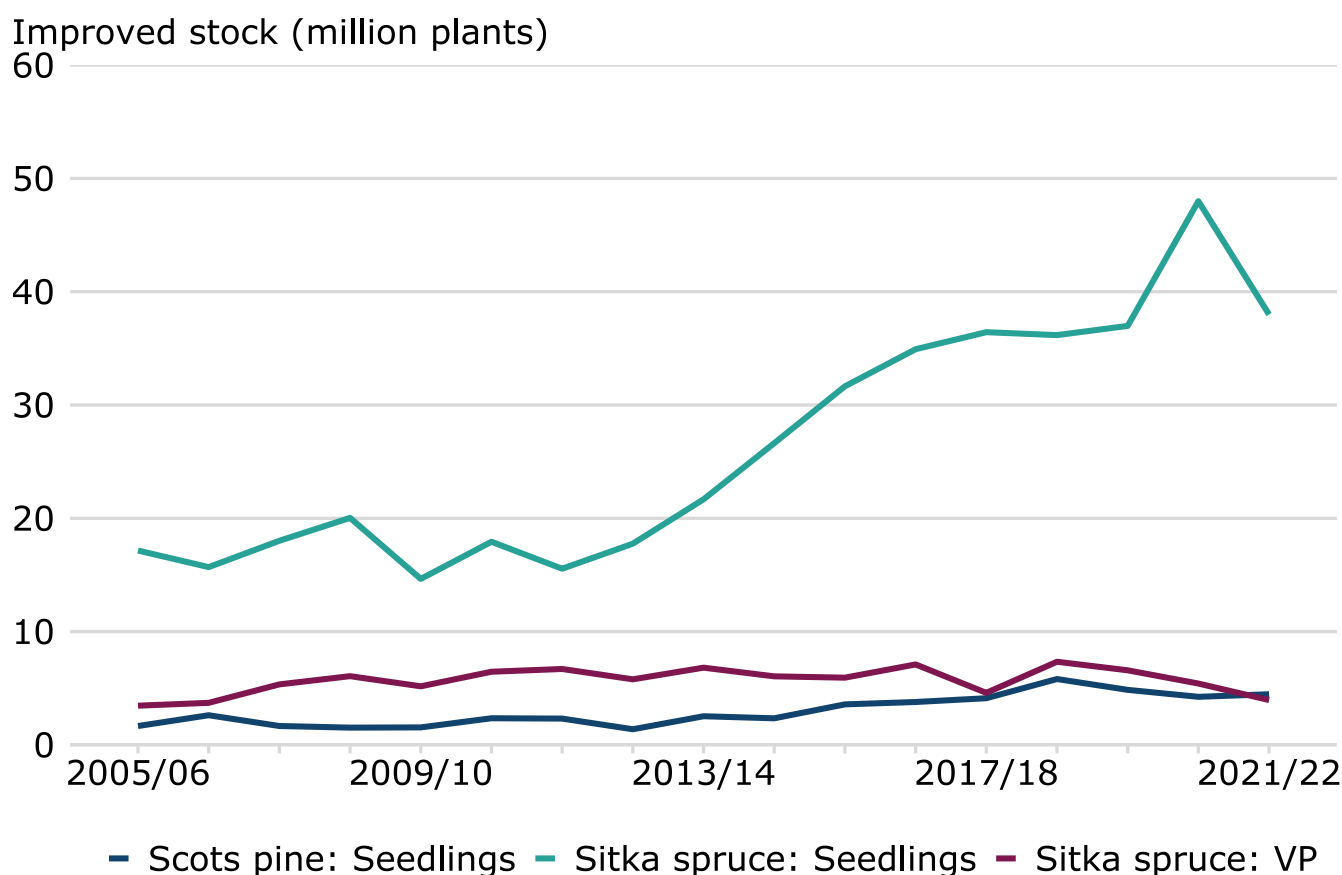
Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine in each of the years shown in the table.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.

Figure 1 presents the sales of improved nursery stock to Scotland from 2005/06 to 2021/22 (planting seasons). The chart shows little change in Scots pine seedlings and Sitka spruce VP over time but an increase in Sitka spruce seedlings since 2011/12.

Figure 1: Sales of improved stock, Scotland, 2005/06 to 2020/21



Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.
4. Historic data have been revised. For more information, see the Revisions section in Annex.

Table 2: Sales of improved nursery stock (million plants), Scotland, 2005/06 to 2021/22

Planting year	Sitka spruce: Seedlings	Sitka spruce: VP	Sitka spruce: Total	Scots pine: Seedlings	Total
2005/06	17.2	3.5	20.6	1.7	22.3
2006/07	15.7	3.7	19.4	2.6	22.0
2007/08	18.0	5.3	23.4	1.7	25.0
2008/09	20.0	6.1	26.1	1.5	27.6
2009/10	14.7	5.2	19.8	1.5	21.4
2010/11	17.9	6.5	24.4	2.3	26.7
2011/12	15.5	6.7	22.2	2.3	24.6
2012/13	17.8	5.8	23.5	1.4	24.9
2013/14	21.7	6.8	28.5	2.5	31.0
2014/15	26.6	6.0	32.7	2.3	35.0
2015/16	31.6	5.9	37.6	3.6	41.2
2016/17	34.9	7.1	42.0	3.8	45.7
2017/18	36.4	4.6	41.0	4.1	45.1
2018/19	36.2	7.3	43.5	5.8	49.3
2019/20	37.0	6.6	43.6	4.9	48.4
2020/21	48.0	5.4	53.4	4.2	57.6
2021/22	38.0	4.0	41.9	4.5	46.4

Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine in each of the years shown in the table.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.
4. Historic data have been revised. For more information, see the Revisions section in Annex.

Sales of nursery stock in Great Britain

An estimated 61.0 million Sitka spruce and Scots pine plants were sold in Great Britain in 2021/22 (Table 3), comprising 50.6 million Sitka spruce plants and 10.4 million Scots pine plants. This represents a decrease of 22% in sales of Sitka spruce and an increase of 12% in sales of Scots pine from the previous year.

A total of 56.2 million plants (92% of all sales) in 2021/22 were derived from improved nursery stock – a decrease of 17% in total improved nursery stock sold compared with 2020/21.

The previous planting year (2020/21) saw a 21% increase in sales of improved nursery stock in Great Britain due to greater demand, particularly from the private sector. This year's 17% decrease represents a return to earlier years (Table 4).

Table 3: Summary table, Great Britain, 2021/22

	Total stock sold in 2021/22 (million plants)	Improved stock sold in 2021/22 (million plants)	Proportion improved (%)
Sitka spruce: Seedlings	46.2	45.9	99
Sitka spruce: VP	4.5	4.5	100
Sitka spruce: Total	50.6	50.4	100
Scots pine: Seedlings	10.4	5.8	56
Total	61.0	56.2	92

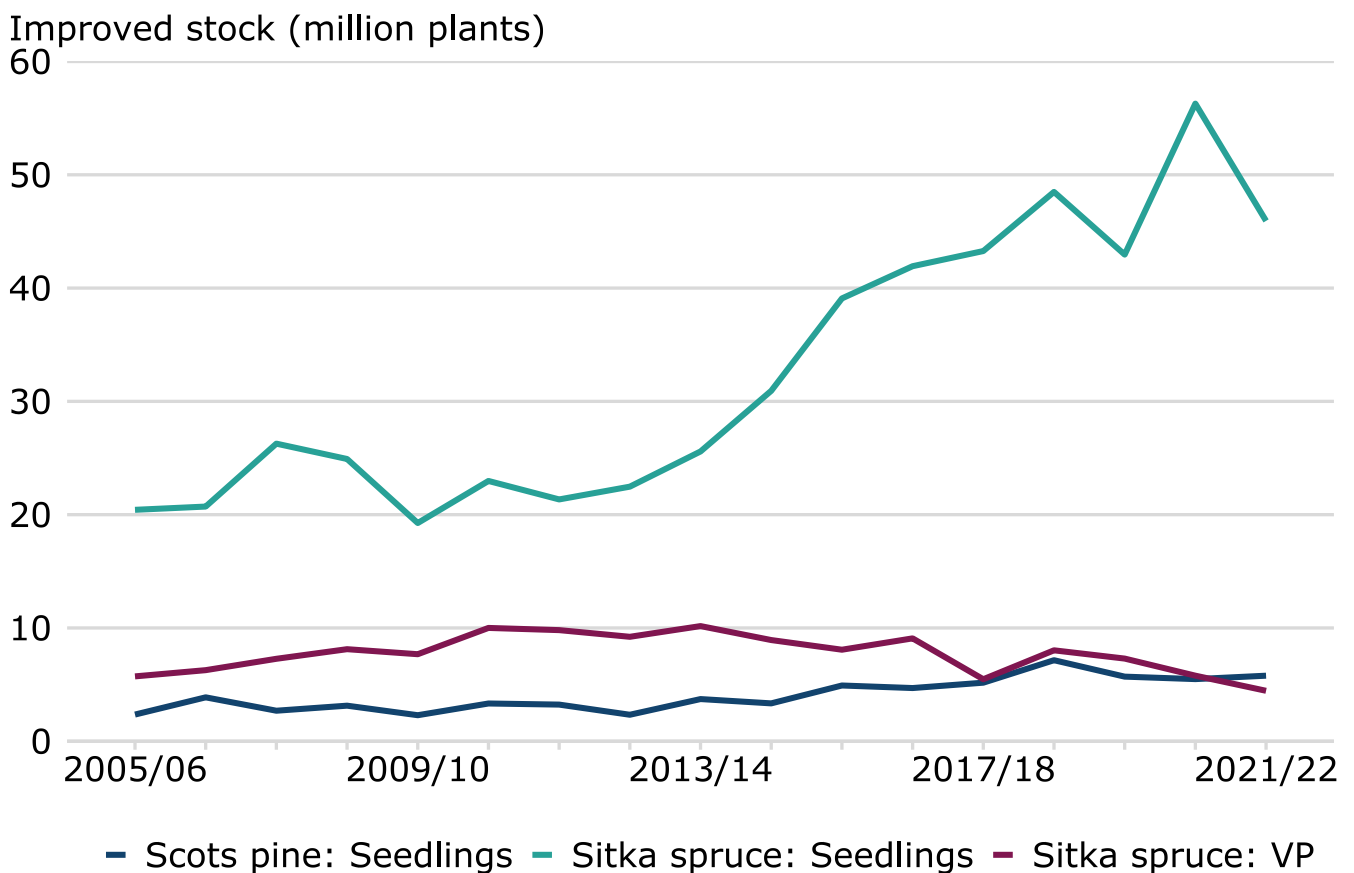
Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.

Figure 2 shows the total sales for all Great Britain of improved stock. Since the 2005/06 planting season, sales of improved Sitka spruce seedlings have more than doubled. In contrast, sales of improved Sitka spruce VP and improved Scots pine seedlings have both remained relatively constant throughout.

Figure 2: Sales of improved nursery stock, Great Britain, 2005/06 to 2021/22



Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.

Table 4: Sales of improved nursery stock, Great Britain, 2005/06 to 2021/22

Planting year	Sitka spruce: Seedlings	Sitka spruce: VP	Sitka spruce: Total	Scots pine: Seedlings	Total
2005/06	20.4	5.7	26.2	2.4	28.5
2006/07	20.7	6.3	27.0	3.9	30.9
2007/08	26.3	7.3	33.5	2.7	36.2
2008/09	24.9	8.1	33.0	3.1	36.2
2009/10	19.3	7.7	26.9	2.3	29.2
2010/11	23.0	10.0	33.0	3.3	36.3
2011/12	21.3	9.8	31.2	3.2	34.4
2012/13	22.5	9.2	31.7	2.3	34.0
2013/14	25.6	10.2	35.7	3.7	39.5
2014/15	30.9	8.9	39.9	3.3	43.2
2015/16	39.1	8.1	47.2	4.9	52.1
2016/17	41.9	9.1	51.0	4.7	55.7
2017/18	43.3	5.5	48.7	5.2	53.9
2018/19	48.5	8.0	56.5	7.2	63.7
2019/20	43.0	7.3	50.3	5.7	56.0
2020/21	56.3	5.8	62.1	5.5	67.6
2021/22	45.9	4.5	50.4	5.8	56.2

Source: Forest Research.

Note:

1. Results for respondents only. This is estimated to account for around 90 to 95% of all sales of Sitka spruce and Scots pine.
2. VP = vegetative propagation.
3. Years are planting years, running from October to September.

Annex

Introduction

This annex provides background information on the nursery survey statistics presented in this release. It covers the data sources and methodology used to produce the statistics, information on quality measures and on any revisions to historic data and links to further information.

Glossary

Conifers

Trees with needles and cones, such as spruce, pine and larch.

Great Britain (GB)

England, Scotland and Wales.

Improved nursery stock

Genetically improved Sitka spruce and Scots pine stock raised from seed of seed orchard origin and by vegetative propagation of parent material derived from controlled crosses. Further detailed information is provided on page 4 of this release.

Planting year

Twelve month period running from October to September.

Scots pine

Species of coniferous tree, native to Great Britain.

Seed orchard

Orchard where trees are grown for seed production rather than timber.

Seedling

Young tree grown from seed, prior to being transplanted or planted out in the forest.

Sitka spruce

Species of coniferous tree, not native to Great Britain.

Vegetative propagation (VP)

Reproduction by cuttings, layering or grafting and not involving fertilisation.

Data sources and methodology

The figures in this release have been obtained from a voluntary survey of nursery businesses in Great Britain, run on behalf of Scottish Forestry. The survey was set up to monitor the level of use of improved nursery stock in Scotland annually.

The results relate to respondents only; no estimates have been made for non-respondents to the survey or for businesses not covered by the survey. It is estimated that the respondents in 2012/13 have accounted for around 90% of all sales of Sitka spruce and Scots pine, whilst respondents in other years have accounted for around 95% of total sales.

Quality

For the 2021/22 survey, questionnaires were issued to a total of 13 nurseries (including one Forestry England and one Forestry and Land Scotland nursery). A total of 13 responses were received, giving a response rate of 100%.

Further information on the quality of our statistics can be found in our [quality report](#).

Revisions

Figures for the planting year 2021/22 are published for the first time in this release. Figures for Scotland for earlier years (2006, 2008, 2012, 2014, 2015, 2016 and 2018) have been revised to correct for inconsistencies in the data. This correction has resulted in revisions of less than 1% in magnitude.

Our [revisions policy](#) sets out how revisions and errors to Forest Research statistics are dealt with.

Further information

The assistance of the Confederation of Forest Industries (Confor) and the nursery trade in the running of this survey and the provision of data are gratefully acknowledged.

Figures in tables have been independently rounded, so may not add to the totals shown.

Release schedule

Future release dates to be confirmed.

Official Statistics

This is an Official Statistics publication. For more information about Official Statistics see the [UK Statistics Authority](#).

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