# Indicators and trends climate change



# Monitoring climate change adaptation

Scotland's centre of expertise connecting climate change research and policy

Indicator name					Version	
NF6 Number of uses & users of the Ecological Site Classification (ESC) decision support tool					27/03/16	
Indicator type:	Risk/o	pportunity	Impact /		Action	
					X	
SCCAP Theme SCCAP Object		ve	CCRA r	isk/opport	unity	
Natural Environment		N3: Sustain and benefits, goods that the natural provides	and services	Cross-c	utting	

#### At a glance

- The ESC decision support tool provides guidance on appropriate tree species selection
- It matches site characteristics to ecological requirements of individual tree species and woodland communities
- ESC incorporates climate change projections for 2050 and 2080
- Use of ESC is promoted by Forest Research, the Forestry Commission and private sector in climate change adaptation guidance
- The indicator monitors the number of registered users and number of actual uses

Latest Figure			Trend
Year	Number of uses	Number of active users	Increasing (2008 – 2012)
2012	1012	240	

#### Why is this indicator important?

The Ecological Site Classification Decision Support System (ESC-DSS) is a PC-based system developed by Forest Research. It aims to guide forest managers in deciding the most appropriate species to plant, given site and soil characteristics. It does this by matching key site factors with the ecological requirements of different tree species and woodland communities (as defined in the National Vegetation Classification (NVC) for Great Britain). It can indicate the suitability of over 50 species to a site and soil type. ESC-DSS is promoted to forest managers by Forestry Commission and Forest Research in their climate change adaptation guidance and training activities.

Since mid-2008 ESC has incorporated future climate change projections. The current version, ESC 3.0, incorporates projections for the 2050 and 2080 low and high scenarios of UKCIP02 to allow users to incorporate future suitability into planting decisions.

These data show the number of registered users and the number of uses of the web based ESC-DSS software as recorded by Forest Research.

#### **Related indicators:**

NF1 Proportion of major timber species on Scotland's National Forest Estate planted in areas likely to be climatically suitable in 2050 (Sitka spruce and Scots pine)

#### What is happening now?

In 2012 ESC had 1012 uses, 240 active users and 151 new users registering.

#### What has happened in the past?

The number of uses of ESC-DSS in Great Britain has steadily increased from 131 uses in 2009 to 1012 in 2012 (Table 1). The number of new users registering has also steadily increased as has the total number of on-going active users.

**Table 1** Use of ESC – Great Britain figures.

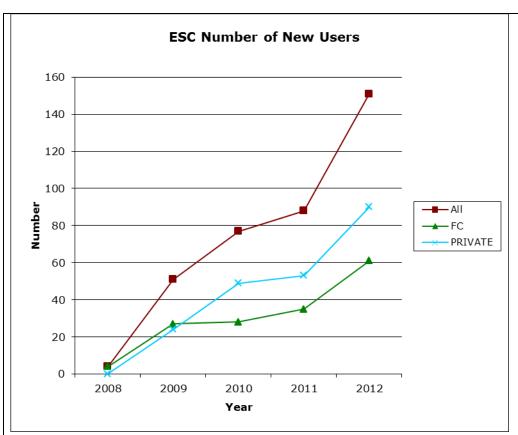
	ESC Decision Support Tool Use (Annual Figures)				
Year	Number of New Users	Number of Active Users	Number of uses (log ins)		
2008	4	4	7		
2009	51	53	131		
2010	77	109	375		
2011	88	153	578		
2012	151	240	1012		

## What is projected to happen in the future?

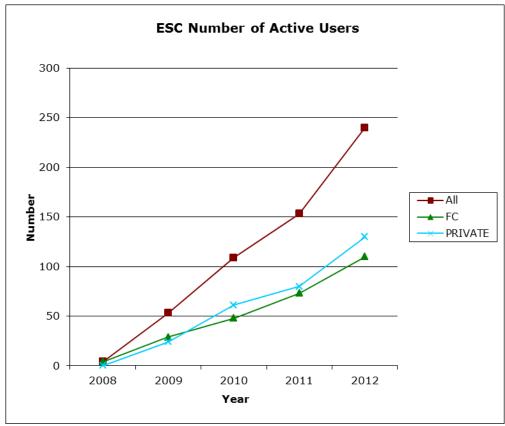
ESC is being promoted through Forestry Commission Scotland and Forest Research climate change adaptation guidance and training, as well as through private sector organisations such as the Institute of Chartered Foresters. It is expected that the number of uses and users will therefore continue to steadily increase.

#### Patterns of change

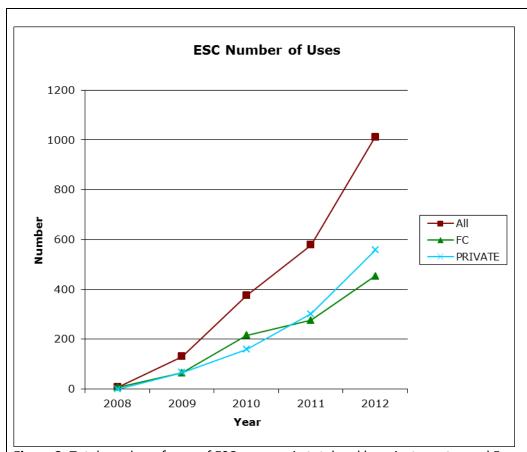
The graphs below illustrate how use of ESC has been increasing in both the private forest sector and the Forestry Commission (FC).



**Figure 1:** Number of New Users of ESC in total and split by private sector and Forestry Commission users -Great Britain figures.



**Figure 2:** Number of Active Users of ESC in total and split by private sector and Forestry Commission users -Great Britain figures.



**Figure 3:** Total number of uses of ESC per year in total and by private sector and Forestry Commission users -Great Britain figures.

### Interpretation of indicator trends

ESC is being promoted through Forestry Commission, Forest Research and private sector climate change adaptation guidance and training.

#### Limitations

This indicator uses figures for Great Britain rather than for Scotland because it is not possible to distinguish Scottish users from other users in Great Britain. It is hoped in the future the registration process will be adjusted so as to allow a Scottish level analysis of use.

ESC is available on CD as well as on-line via the Forest Research web site. The figures presented therefore under-represent the total use of ESC-DSS in Great Britain.



## **Further information**

www.forestry.gov.uk/esc

# Acknowledgements

This indicator was produced by Forest Research (Kate Beauchamp, Stephen Bathgate).

# Appendix One: Indicator metadata and methodology

**Table 1: Indicator metadata** 

	Metadata
Title of the indicator	Number of uses & users of the Ecological Site Classification (ESC) decision support tool (DSS).
Indicator contact: Organisation or individual/s responsible for the indicator	Ruth Monfries, RBGE
Indicator data source	DSS registered users data set (EMIS_USERS.csv, FOREST_DSS_AUDIT.csv)
<b>Data link:</b> URL for retrieving the indicator primary indicator data.	N/A. Contact Forest Research.

#### Table 2: Indicator data

	Indicator data
<b>Temporal coverage:</b> Start and end dates, identifying any significant data gaps.	Continuous since 2008
Frequency of updates: Planned or potential updates	Continuous
<b>Spatial coverage:</b> Maximum area for which data is available	Scotland.
Uncertainties: Uncertainty issues arising from e.g. data collection, aggregation of data, data gaps	Classification of users into user groups completed by Forest Research.
Spatial resolution: Scale/unit for which data is collected	Per user
<b>Categorical resolution</b> : Potential for disaggregation of data into categories	User groups
<b>Data accessibility:</b> Restrictions on usage, relevant terms & conditions	No restrictions. At request from Forest Research.

## **Table 3 Contributing data sources**

# **Contributing data sources**

Data sets used to create the indicator data, the organisation responsible for them and any URLs which provide access to the data.

DSS registered users data set (EMIS\_USERS.csv, FOREST\_DSS\_AUDIT.csv)

#### **Table 4 Indicator methodology**

#### **Indicator methodology**

The methodology used to create the indicator data

Collated records of users who register and go on to use the ESC-DSS tool via the Forest Research website. Users of ESC-DSS since 2009 were identified from the dataset. Private sector and Forestry Commission users were identified from registration information; research and educational users were excluded.

Numbers of new users per year were identified from the registration date/date of first use.

Numbers of uses per year were calculated from ESC-DSS use (log in) records. The number of active users was calculated by the number of unique users logging in per year.