

**Locating potential red squirrel (*Sciurus vulgaris*) habitat in Kielder Forest,
Northumbeland with Quickbird imagery
and object-oriented classification**

Cristina García^{1*}, Genevieve Patenaude¹ and Juan Suarez²

*Corresponding Author: crisluni@yahoo.com.mx

¹School of Geosciences,
University of Edinburgh,
Drummond Street
Edinburgh, Scotland, UK
EH8 9XP

² Forest Research
Northern Research Station
Roslin, Midlothian
Scotland, UK
EH25 9SY

A GIS model has been developed to identify potential red squirrel habitat in Kielder forest, England where a total of 13,000ha of woodland were analysed. Each forest sub-compartment was defined in terms of its tree species and age. Quickbird imagery was used to locate habitats from tree species classification using an object-oriented classification method implemented in eCognition software. A habitat suitability index (HSI) was used to categorise the potential of classified habitats for the red squirrel. The model was moreover tested to assess the impact of forest management practices on squirrel population. We argue that this model should not be used as the only management tool but as a decision support tool to predict habitats in other forestry commission woodlands for which similar remote sensing databases are available to design red squirrel reserves.