

A tool for the selection of tree species (CARAVANE & IKSMAPS)

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The forester commits himself to long-term directions with each management decision. The challenge around these decisions is today exacerbated by the context of climate change and by the uncertainty weighing on the different scenarios of possible climate change. The choice of a tree species to favor among the species in place or to be implanted during a renewal or an enrichment constitutes a central element in his decision. To guide this choice, the forester must have information on the potential of these species, their requirements, their flexibility and their vulnerability to the impacts of climate change both in the short and long term. A tree species must, in fact, both withstand the current climate and be adapted to an imperfectly known future climate.

The online help tool for the choice of forest species allows the improvement of the knowledge of species, their requirements and their specific behavior in the face of possible changes in the climate. The tool is in the form of a website. It is composed of a set of organized and up-to-date technical and knowledge elements, to help forest decision-makers in the choice of species to favor, plant or experiment in the context of climate change. Each element of information is associated with a degree of reliability or a representation of the uncertainties. Knowledge gaps are also highlighted. The site thus makes it possible to limit errors in introduction and planting as much as possible. It also allows the manager to have elements available to make a decision with full knowledge of the facts at a given moment.

This tool combines a documentary approach on the autoecological and climatic requirements of 140 species present or not on French soil, with a modeling approach that projects the evolution of climate compatibility areas of species at different time scales and for different CPR trajectories. For the documentary approach, the site relies on the work carried out by the NOMADES and CARAVANES projects where the species sheets are grouped

into an interactive catalog and broken down into 37 criteria (including silviculture, autecology, services, biotic and abiotic risks). For the modeling approach, the site builds on the results of the IKSMAPS project which consisted of developing the components of a sylvoclimatic service to project the evolution of the climatic compatibility zone of the species according to scenarios of climate change. It is based on the IKS model.

Three major user experiences/trajectories are identified on the site. They correspond to practical questions of entry and reflect the types of possible uses of the site:

- Improving my knowledge of forest species
- Assessing climate evolution
- Putting the right species in the right place