



### General information

<b>Description</b>	Wind damage risk model for forests in France incorporated in an Excel spreadsheet
<b>Geographical area</b>	France, with a special focus on Nouvelle-Aquitaine
<b>Group of tree species</b>	<i>Pinus pinaster</i>
<b>Date</b>	March 2017
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<b>Contact e-mail</b>	<a href="mailto:barry.gardiner@efi.int">barry.gardiner@efi.int</a>
<b>Tool type</b>	Model
<b>Tool format</b>	Integrated software
<b>Language</b>	English
<b>Risk management plans to which the tools can be added</b>	Plan tempête pour la filière forêt-bois
<b>Risk management plans link</b>	<a href="https://plurifor.efi.int/wp-content/uploads/WP2/plans/Storm-plan_FR.pdf">https://plurifor.efi.int/wp-content/uploads/WP2/plans/Storm-plan_FR.pdf</a>
<b>This tool is...</b>	<input checked="" type="checkbox"/> an improved tool
<b>Original tool of which this one is an improvement</b>	Hale, S., Nicoll, B., Gardiner, B., (2015) ForestGALES - A wind risk decision support tool for forest management in Britain: User Manual, Version 2.5. Forestry Commission, Edinburgh, UK <a href="https://www.forestry.gov.uk/forestgales">https://www.forestry.gov.uk/forestgales</a>

### Topic

<b>Risk</b>	Storm
<b>Risk component</b>	<input type="checkbox"/> hazard <input type="checkbox"/> impact <input checked="" type="checkbox"/> vulnerability
<b>Risk area</b>	Risk assessment
<b>Risk phase</b>	Prevention
<b>Risk phase (alternative terms)</b>	Preparedness
<b>Level</b>	Regional
<b>Sendai priorities</b>	<input checked="" type="checkbox"/> Priority 1: Understanding disaster risk <input type="checkbox"/> Priority 2: Strengthening disaster risk governance to manage disaster risk <input type="checkbox"/> Priority 3: Investing in disaster risk reduction for resilience <input type="checkbox"/> Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction
<b>Contribution to Sendai targets</b>	<input type="checkbox"/> Reduce global disaster mortality <input type="checkbox"/> Reduce the number of affected people <input checked="" type="checkbox"/> Reduce the direct disaster economic loss <input type="checkbox"/> Reduce disaster damage to critical infrastructure <input type="checkbox"/> Increase the number of national and local disaster risk reduction strategies <input type="checkbox"/> Enhance international cooperation to developing countries <input checked="" type="checkbox"/> Increase availability of and access to multi-hazard early warning systems and disaster risk information and assessment



### Description and analysis

#### Summary

This tool is a version of the stand-alone computer model ForêtTempête incorporated in Excel to allow easy incorporation with existing and new growth tables for *Pinus pinaster*. It allows calculation of the vulnerability and risk of damage to forest stands from storms as a function of age, stand management, and location

#### Place in national/regional policy

At present it is not integrated in regional policy. The purpose was to develop a simple to use tool that could be easily connected to forest growth tables.

#### Goals and achievements

This is exactly the same tool as ForêtTempête but included in Excel. Currently it only has growth tables for maritime pine but in fact any growth table for the species included in the stand-alone version of ForêtTempête can be added.

#### Stakeholders involved

A seminar was given to forest representatives from the regional body responsible for forestry (DRAAF), representatives of forestry owners and managers (CRPF), and representatives responsible for forest health (CAISSE PHYTO FORÊT) to introduce the tool.

#### Implementation stage

Tool is being revised based on feedback from the seminar and further experience. It will then be made available to any interested parties. At this stage there is no immediate plan to incorporate this version of the model directly into official planning systems but to provide a simple and easy use tool within a commonly used software (Excel) to make it as user-friendly as possible.

#### State of technical knowledge

The tool represents our best current understanding of calculating wind risk to forests and is state-of-the-art for forest risk calculation in France.

#### Regulatory and/or socio-economic contexts

At present little regulatory context but potentially important socio-economic benefits by helping forest managers and owners to make silvicultural decisions to mitigate the risk of wind damage

### Impacts of the tool

To date very little impact because the tool has not been widely adopted. Efforts will be made to increase the impact by improving the implementation in Excel and organising further workshops.

### Implementation requirements and durability

#### Description of the implementation steps

1. Underlying model development (ForêtTempête)
2. Incorporation of model functions in Excel
3. Workshop with key stakeholders
4. Revision of Excel implementation based on stakeholder feedback (in progress)
5. Model available to download (not yet implemented)

#### Governance

- EFI PFF will be responsible for continued development, improvement and availability
- EFI PFF will be responsible for implementation and training in France

#### Regulatory framework

The tool is advisory only to assist forest managers. There is no regulatory framework at present.



#### Human resources requirements

Good collaboration between EFI and the main stakeholder groups will allow long-term implementation beyond the end of the project. For successful implementation it will require further one/two day workshops. Such workshops should be organised once or twice a year in Nouvelle-Aquitaine. In addition some form of short help manual is also required.

#### Financial requirements

Low level of financial requirement for basic installation because the tool is freely available and can be added to Excel for anyone with access to Excel. However, for a fully effective implementation it will be necessary to make the incorporation in Excel more clear, to organise better cell protection to avoid users overwriting active cells and to provide a short help manual.

#### Technical requirements

Can run on any computer with Excel. Could also run on Excel online

#### Priorities identified for successful implementation of the tool (political, technical, human, financial...)

The priorities are promotion of the tool within the forestry sector in Nouvelle-Aquitaine, and updating of the model to interface and ease of use. There is also a need for the forest authorities to encourage use of such a tool within the region.

In addition there is software called "BERT", which allows Excel to call R functions directly. This would be a way to access all the detailed functions already created in R rather than having all the functions written in Excel and would be a better way to ensure model was kept up to date.

#### Challenges or risk factors (legal, financial, safety...) expected during the implementation and solutions proposed

The main challenge is to change the way that forest managers and owners evaluate risk. For a rare (but important) hazard like storms it is difficult to persuade people to utilise such tools. In addition the role of forestry associations in promoting the tool is very important because of the large number of small-scale private forest owners in the region.

#### Additional and non-formal experiences to help the implementation of good practice

This tool was designed to be used by people familiar with Excel but who are not comfortable with installing and learning how to use a stand-alone software.

### SWOT analysis

Strengths	Weaknesses
<p>Scientifically based and tested tool for evaluating storm risk</p> <p>Familiar to most computer users because of experience of most computer users with Excel</p>	<p>Model is not integrated in the current management systems used in the region</p> <p>Currently only incorporates <i>Pinus pinaster</i> growth tables and other species growth tables need to be incorporated.</p>
Opportunities	Threats
<p>Possible to reduce the financial impact of storms on forestry in Nouvelle-Aquitaine.</p> <p>Allows foresters to evaluate the impact of different species choice and management options</p>	<p>Difficulties in persuading people to use the tool because of inherent reluctance to add additional work to busy jobs.</p>

### Lessons learnt

#### Evaluation process, if exists (internal or external)

Verbal feedback from participants at the first seminar demonstrating the tool. Ongoing evaluation by developer to improve performance and easy of use within Excel.


**Assessment of results (quantitative and qualitative) and comparison with main goals**

Tool meets the original goals but needs improvement in order to make it easier to use

**Negative aspects identified**

Interface within Excel needs improvement and a short Help Manual in French is required.

**Unexpected consequences (short- / mid- / long-term) and corrective measures implemented**

None so far

**Access to complete tool**

<b>Files</b>	ForetTempeteinExcel.xlsx
<b>Web links</b>	<a href="https://www.dropbox.com/s/1237b6kuikwgj40/ForetTempeteinExcel.xlsx?dl=0">https://www.dropbox.com/s/1237b6kuikwgj40/ForetTempeteinExcel.xlsx?dl=0</a>