Harvesting declining hardwoods in french public forests

International Hardwood Conference 2022

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Summary

- Definitions
- Declining volumes of all hardwood species since 2017
- Geographical distribution
- Oak
- Beech
- Other hardwoods
- Essences of the recovery plan
- Prospects…

Definitions

- Definition of a forest health monitoring indicator
- 2017: base year in a "normal" climatic context
- Cumulative volumes over 12 rolling months

$$ES = \frac{PA}{PN+PA}$$

- ES : declining monitoring indicator
- PA : declining woods volumes (m3)
- PN : healthy woods volumes (m3)

		Situation de crise ?
PLAINE MONTAGNE	Vol. cumulé produits accidentels[1] < 10 % récolte normale Vol. cumulé produits accidentels[1] < 25 % récolte normale	**NON SITUATION DE VIGILANCE COURANTE**
PLAINE MONTAGNE	10 % récolte normale < Vol. cumulé PA[1] < 20 % récolte normale 25 % récolte normale < Vol. cumulé PA[1] < 50 % récolte normale	**NON SITUATION DE VIGILANCE ACCRUE (GESTION COURANTE)**
PLAINE MONTAGNE	Vol. cumulé produits accidentels[1] > 20 % récolte normale Vol. cumulé produits accidentels[1] > 50 % récolte normale	**OUI**

Les seuils ci-dessus peuvent être affinés localement par consensus au sein de la cellule de crise : par exemple, en moyenne montagne, il est possible de retenir un seuil intermédiaire de l'ordre de 30 % (cas de la crise Scolytes sur Épicéa commun dans le nord-est en 2018-2020).

- Implementation of crisis management with a common frame of reference for all French foresters

Declining volumes of all hardwood species since 2017

The volumes of hardwood species without health problems have been falling since 2017 :

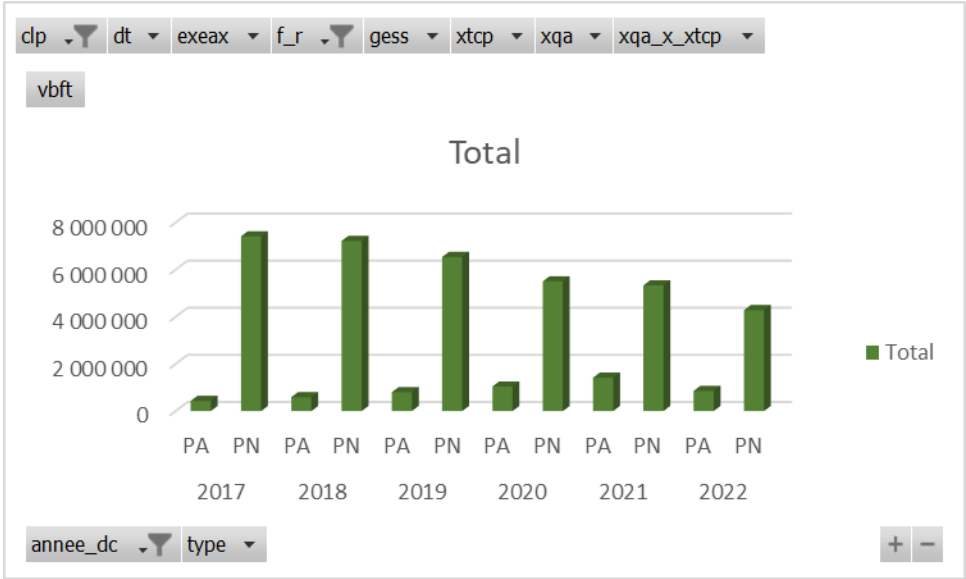
- From 7.8 Mm3 to 6.6 Mm3 between 2017 and 2021

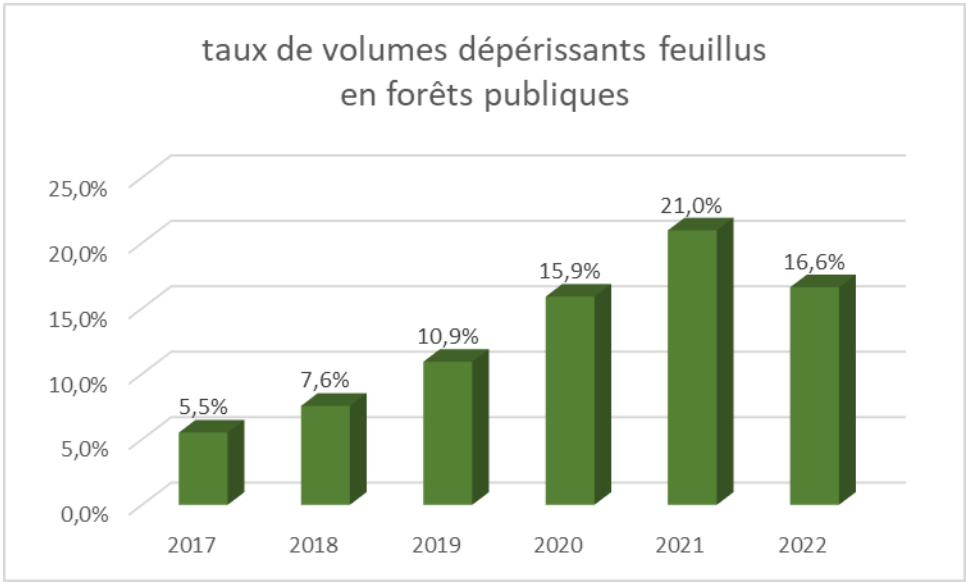
The hardwood sanitary products increase :

- 432 855 m3 en 2017 et 1 415 184 m3 en 2021

The declining monitoring indicator is increasing

- 5% in a normal year; more than 20% in 2021
- The trends are similar in state forests and community forests with a higher attack rate in 2021 for these (23.4%) and a little lower for state forest (17.3%)

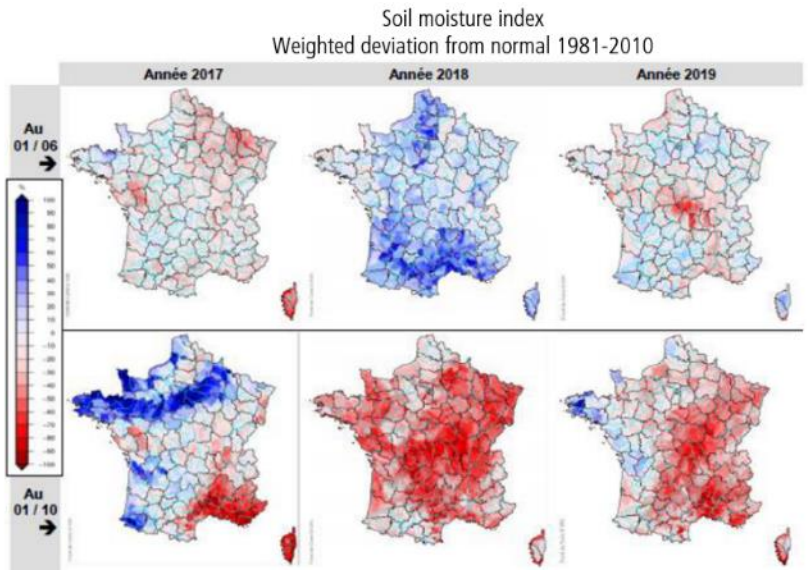


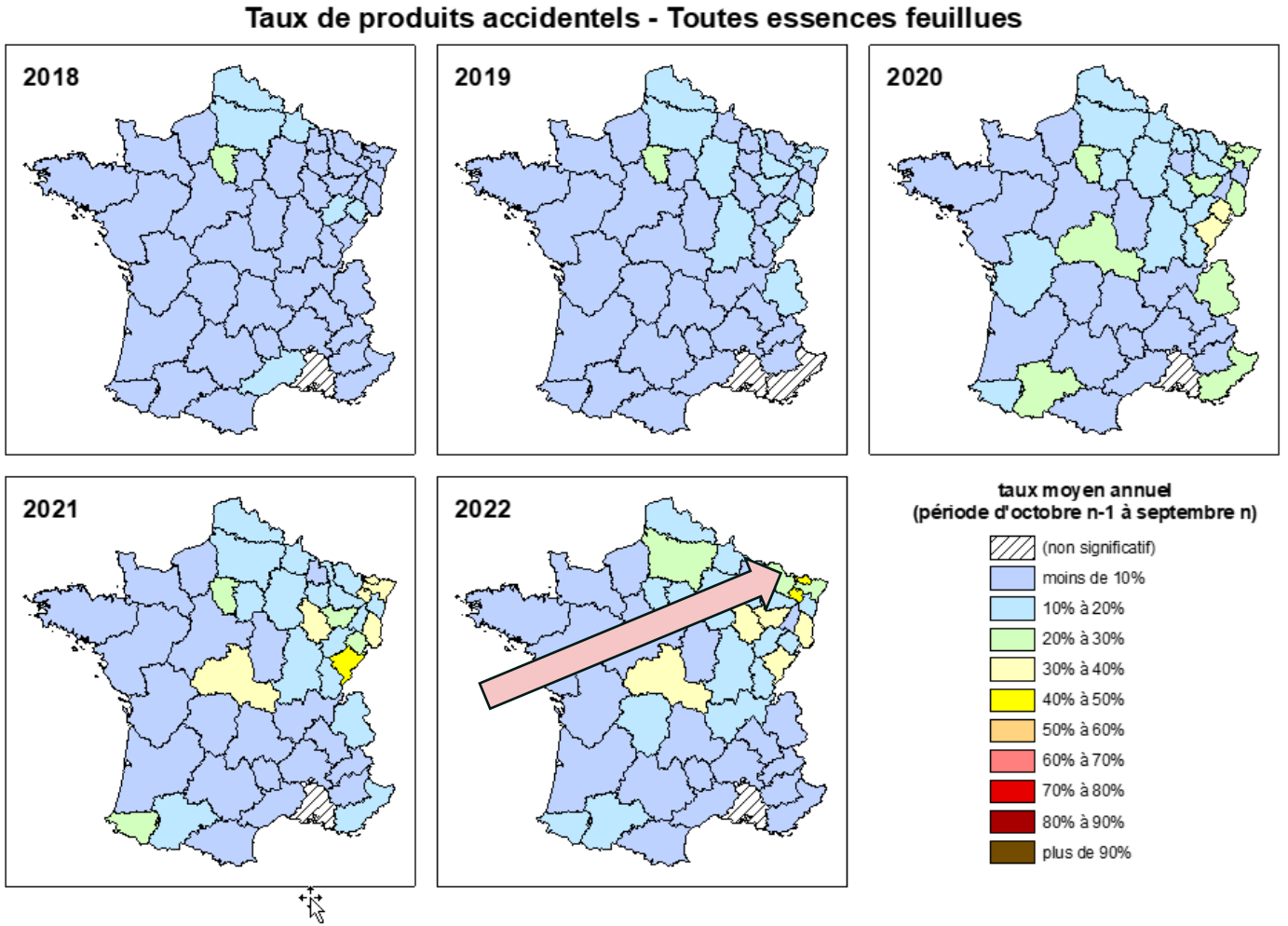


Geographical distribution

Unequal distribution by french department

- The harvest of declining hardwoods has spread across the territory since the beginning of 2018
- The decline axis is rather South-West-North-East
- The level of decline is intensifying in certain departments





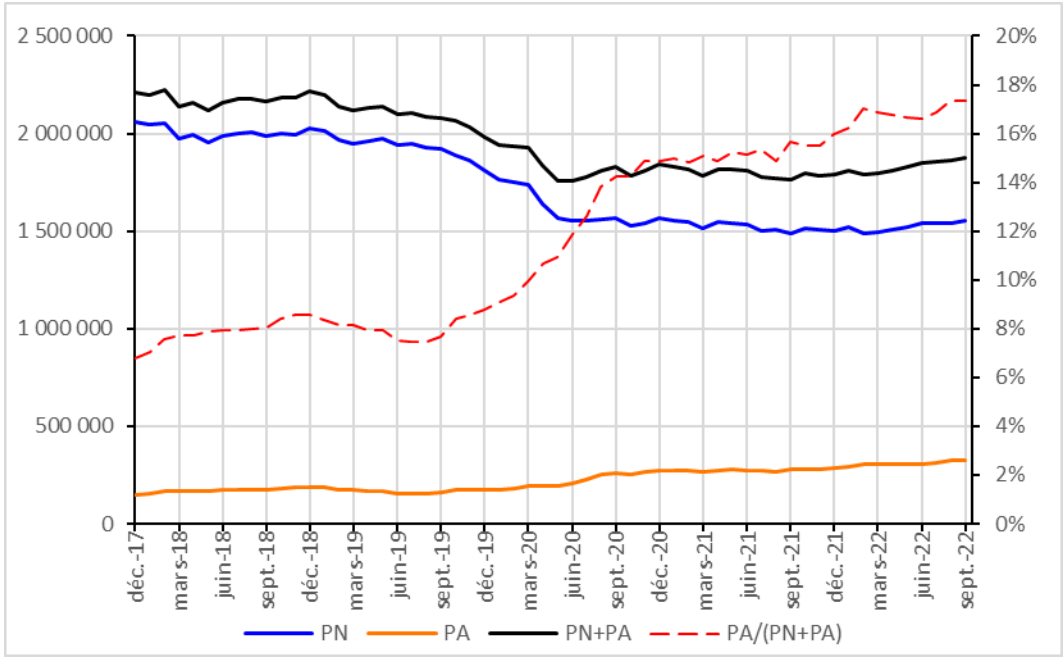
Oak

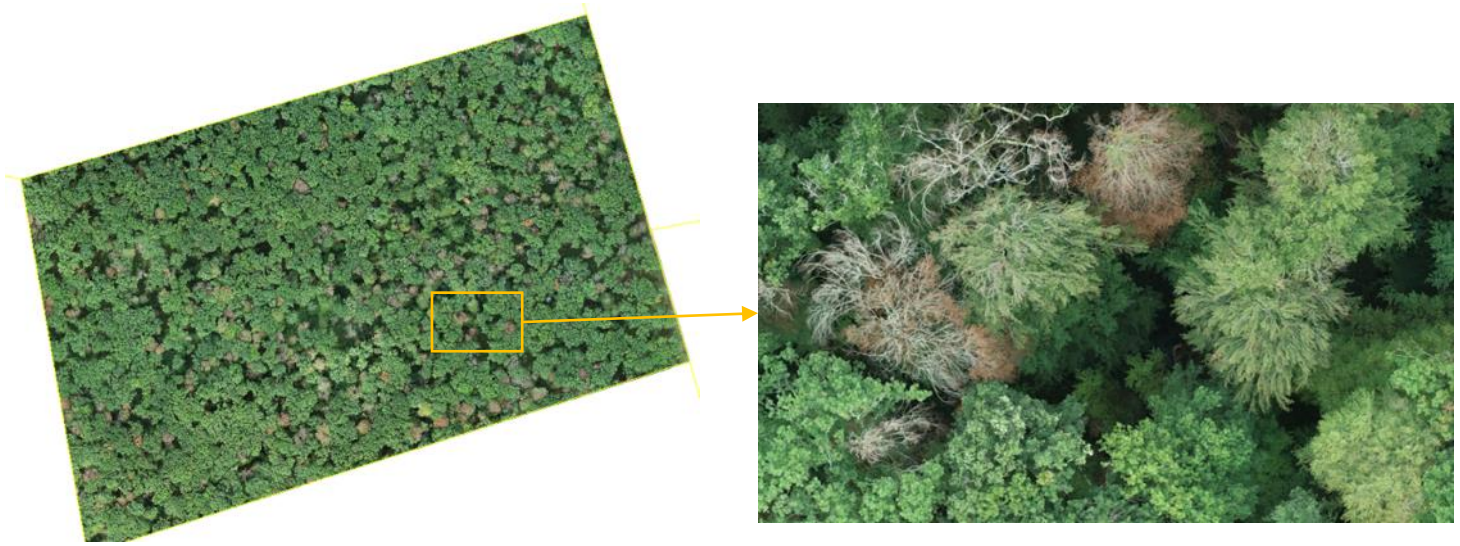
The total volume of designated oaks has been decreasing since 2017 in public forests :

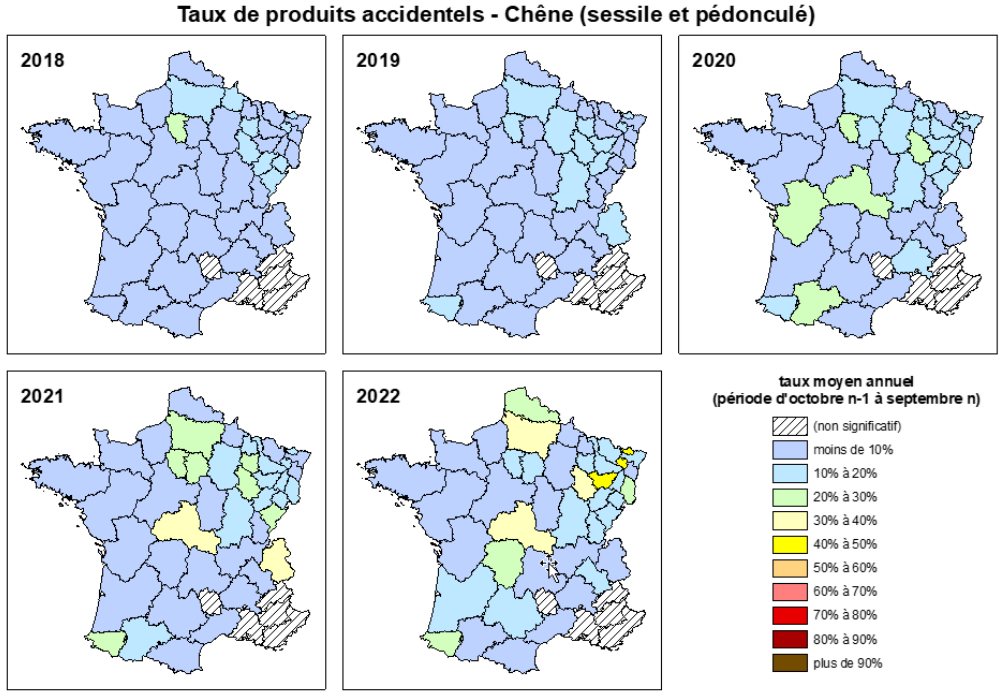
- from 2.1 Mm3 at the end of 2017 to 1.8 Mm3 in October 2022

The volume of dying oaks has been increasing since this period :

- Increase from 170,000 m3 to 330,000 m3
- The decline rate is up sharply: 7% at the end of 2017 to 17% in October 2022
- 2023 ???







Oak

Harvesting strategy and consequences on wood quality

- Harvest condaned trees
- Maintain Economic Value
- Adaptation of qualitative classification norm

Qualité	A	B1	B plot	B2	BC	C1	C2	D
Arbre sec, piqûre	X	X	X	X	X	X	X*	admis

Sessile oak noted A
= healthy reference tree

Degraded sessile oak

Very degraded sessile oak

Oak

Research program to identify signs of degradation before tree decline

- Use of several criteria (sound, pheromone, sawdust color, etc.) to identify the insect and assess the deterioration of the wood
- Assess the impact of attacks

Program objectives

- Protect the available resource
- Limit risk-taking for our customers when purchasing
- Identify exogenous factors that can promote oak decline

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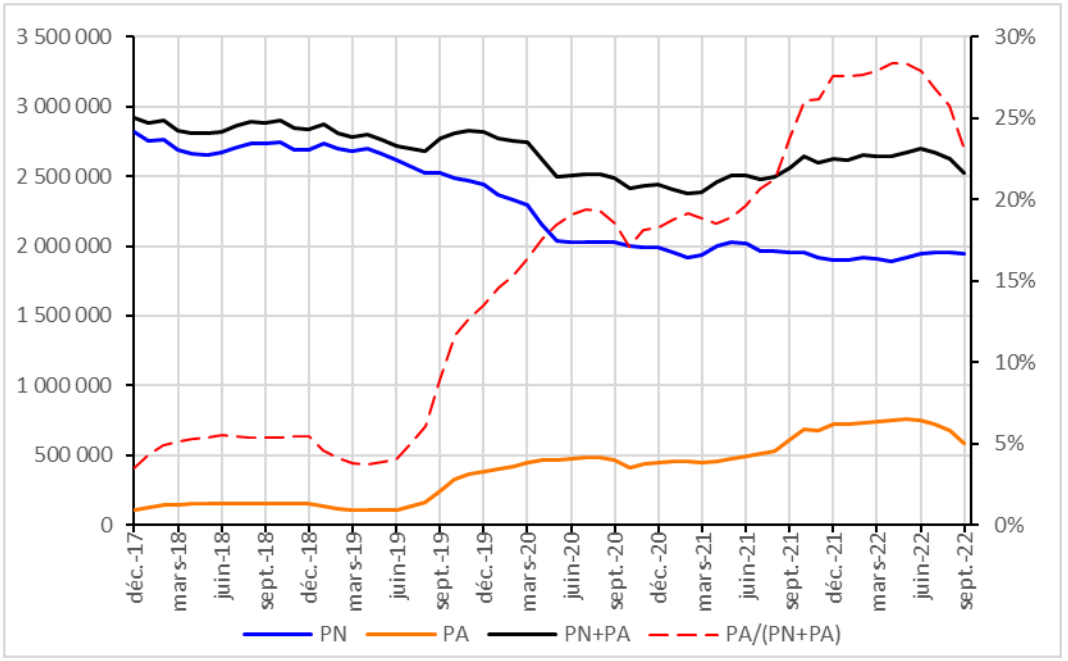
Beech

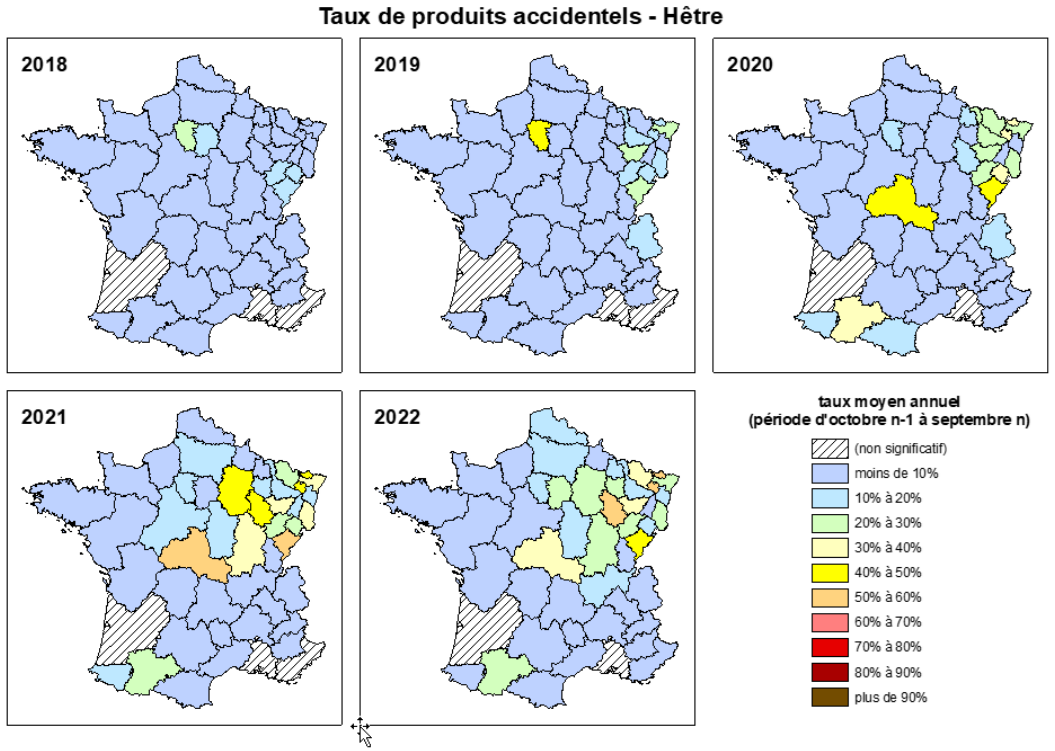
The total volume of designated beech has been decreasing since 2017 in public forests :

- from 2.9 Mm3 at the end of 2017 to 2,5 Mm3 in October 2022

The volume of declining beech has been increasing since this period :

- Increase from 155,000 m3 to 580,000 m3
- The decline rate is up sharply: 4% at the end of 2017 to 27% at the end of 2021 and 17% in October 2022
- 2023 ???





Beech

Harvesting strategy and consequences on wood quality

- Harvest condaned trees
- Maintain Economic Value
- Adaptation of qualitative classification norm

	Déficit foliaire < 25 %	25 % < Déficit foliaire < 75 %	Déficit foliaire > 75 %
Aucun suintement cortical			
Rares suintements corticaux			
Nombreux suintements corticaux			

Pas de vigilance Vigilance à renforcer Vigilance forte

Other hardwoods

Species in question: ash, chestnut tree, hornbeam, other hardwoods

The volume of these dying hardwoods has increased since the beginning of the drought episode:

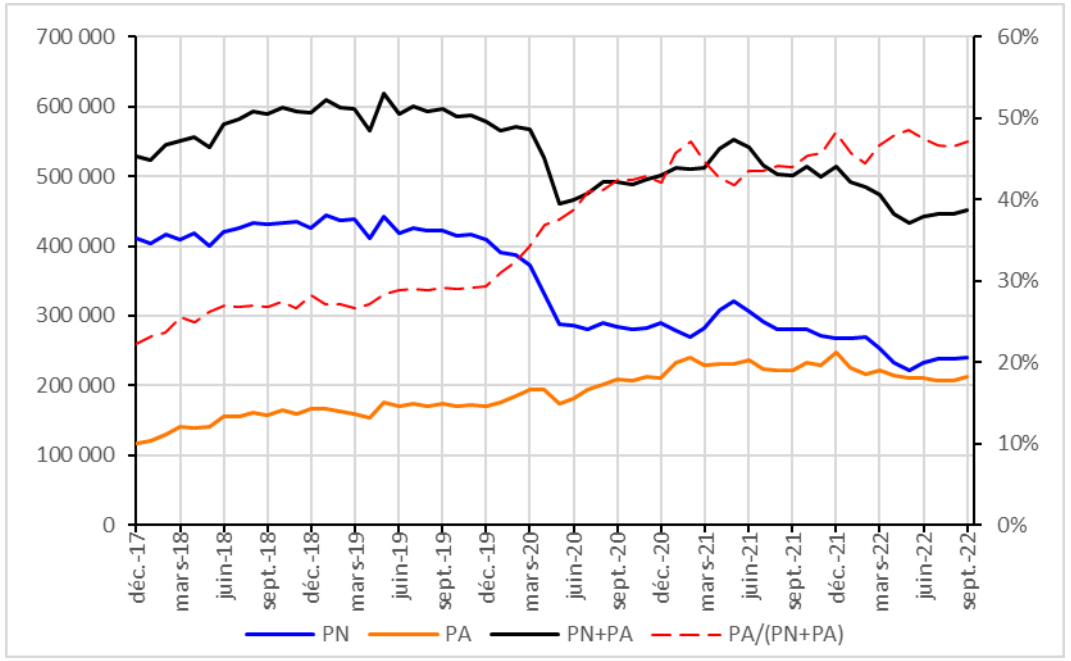
- 283 000 m3 de PA en 2018
- 602 000 m3 de PA en 2022

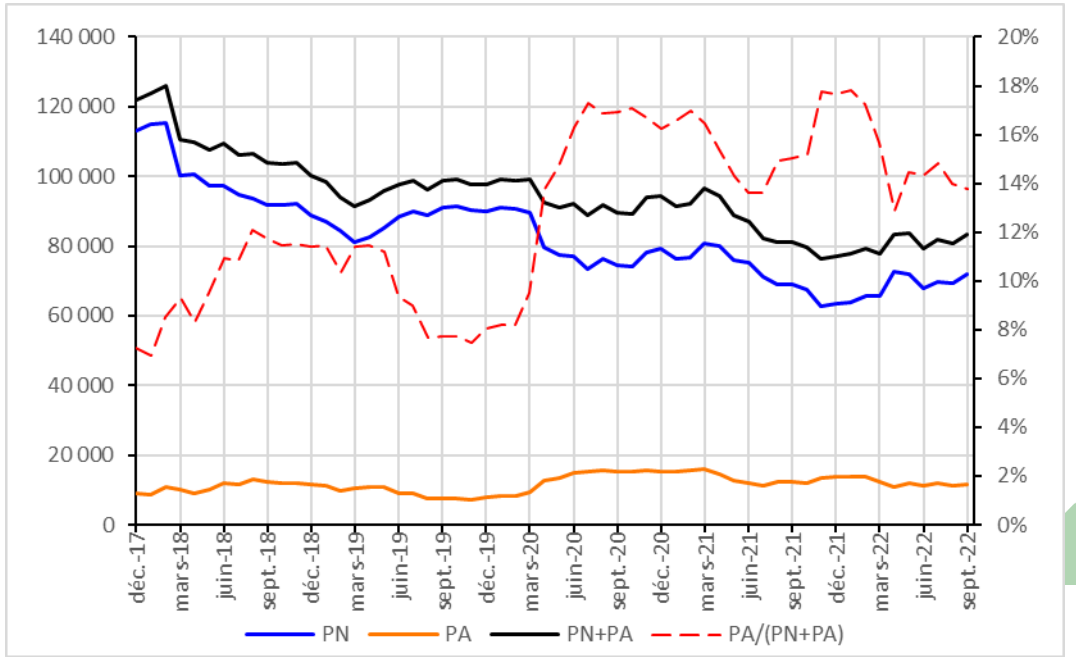
No species escapes the continuous upward trend of dieback except the chestnut tree whose PA level has remained "stable" since mid-2020

La maladie de l'encre, très visible sur les châtaigniers qui ont perdu leurs feuilles
© Séverine Rouet / ONF

chestnut tree

ash





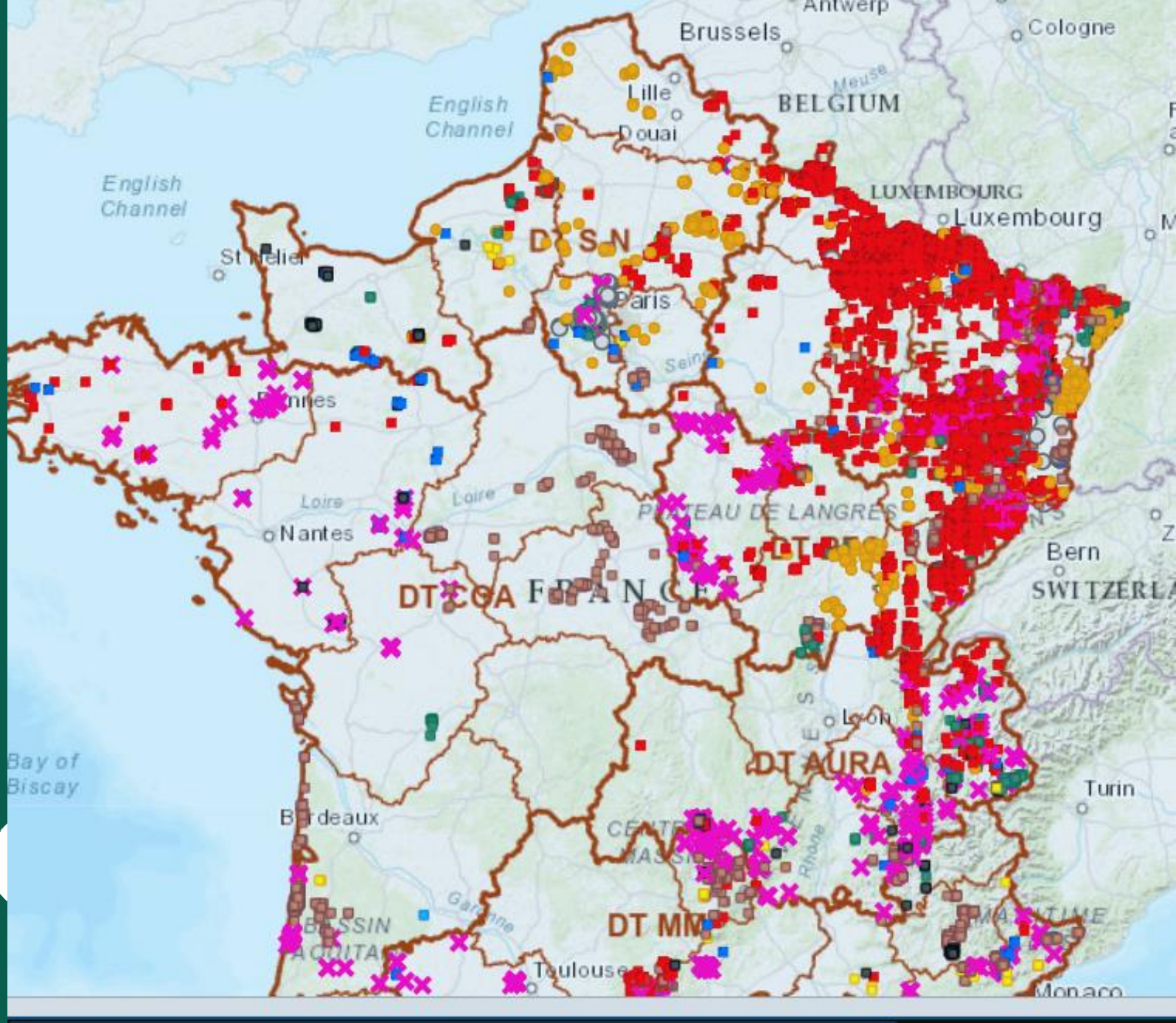
Disaster areas

More than 49,000 ha considered to be restored in public forest

Overall perimeter affected by these disasters of 160,000 ha, more particularly located in the East

Target species that give priority to mixtures of speciesPar plantation

- by suitable planting
- By natural regeneration enrichment
- argeted reconstructions with as many hardwoods as softwoods
- Among hardwoods, predominance of oak



Répartition des relevés par sinistre à l'origine du besoin de reconstitution

Prospects

- Cautious total harvests in hardwoods
- Guidelines adapted to different contexts with designation criteria for decline trees
- Ensure stand stability over time
- Ensure natural renewal as much as possible and as long as the station and climatic diagnosis allows it
- Introduce new species or new provenances to increase the resilience of forests
- Decline wood will become the norm, the wood sector must adapt to it

Légende : Plantation de chêne sessile et de chêne pubescent plus résistant à la chaleur
Où ? Forêt domaniale de Moyeuvre (57)
Auteur : DE VREYER Elodie / ONF

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Merci pour votre attention.