



Impact of forest fires on soil

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Forest fires in the world

- Fire counts is increasing these days
- About **19.8 million hectares** of forest are burned every year
- Human are responsible for 75% of all wildfires



Forest fires in Japan

- 1,200 forest fires occur annually
- Burned area of 700 hectares
- Damage value of 320 million yen
- Many of them are caused by human error

Nishinomiya forest fire



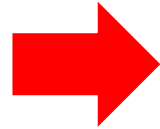
- Place : Ashikaga city
- Period : February to March 2021
- Area : 167 hectares
- Value : 32 million yen
- Cause : cigarette

Source: Ashikaga city tourism association

Observation



2 months after



6 months after

2 months after

The soil had turned black, and vegetation had been lost

6 months after

The soil was still black. However, Some vegetation had recovered

Soil pH and Electrical Conductivity

Soil pH

	Undamaged 1	Undamaged 2	Affected 1	Affected 2
2 months	4.3	4.1	6.1	5.6
6 months	5.4	4.6	5.5	4.8

About pH value . . .

The pH value of affected land increased 2 months after fire. However, after 6 months, the soil pH lowered to almost the same value in undamaged land.

Soil pH and Electrical Conductivity

Electrical Conductivity

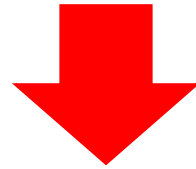
	Undamaged 1	Undamaged 2	Affected 1	Affected 2
2 months	140	80	220	310
6 months	40	60	110	170

About Electrical Conductivity . . .

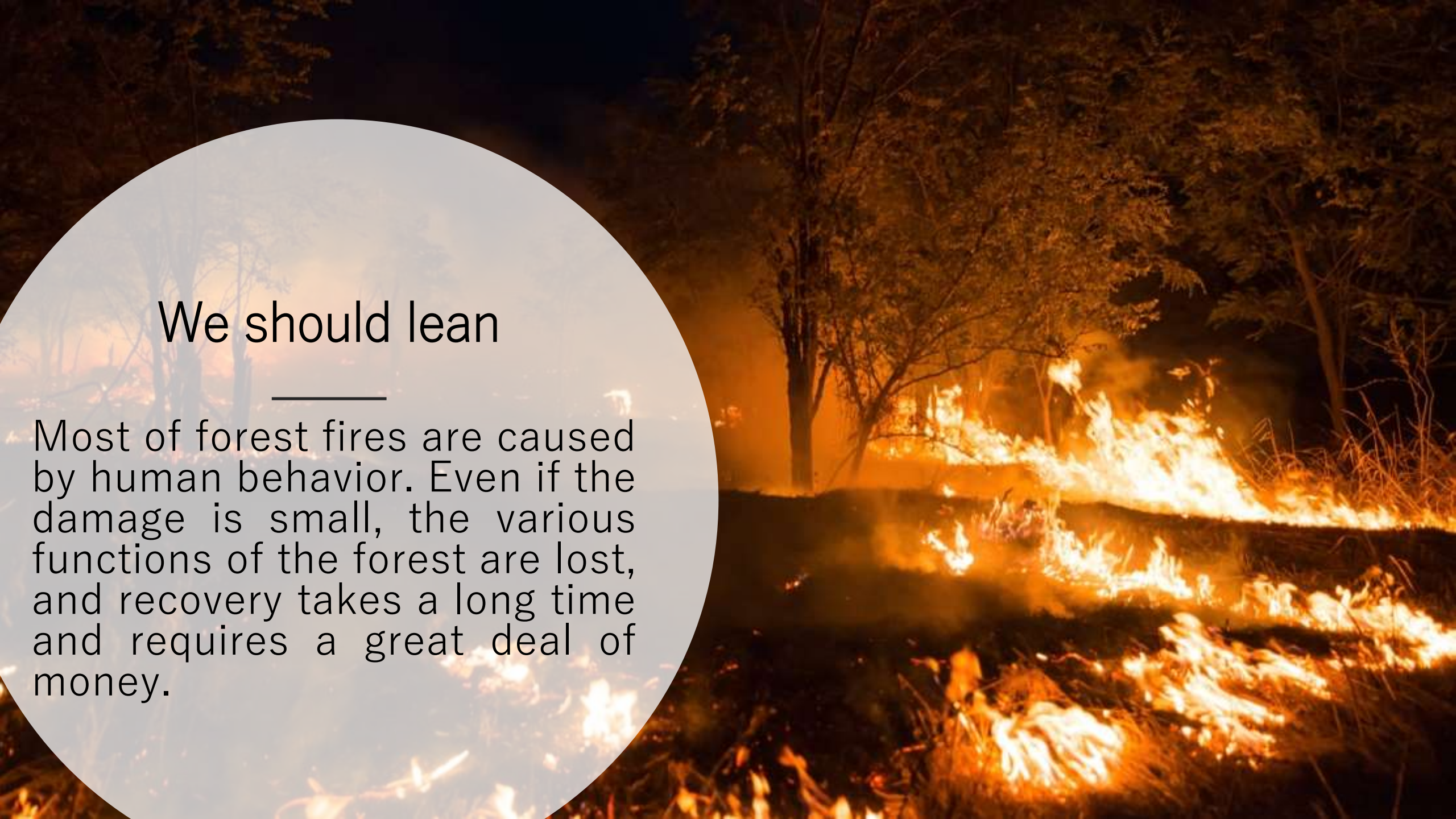
The value was much higher than undamaged soil after 2 months, but after 6 months, the value decreased dramatically. This indicates the fire weakened the ability to hold nutrients.

Conclusion

The forest fire investigated in this study **did not have a significant impact on soil** and it is on the way to recovery.



It is important **not to repeat the damage** until the forest has fully recovered again



We should lean

Most of forest fires are caused by human behavior. Even if the damage is small, the various functions of the forest are lost, and recovery takes a long time and requires a great deal of money.

Reference

Website

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Article

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Thank you for listening

