TURKISH MEGAFIRES OF 2021 AND POST-FIRE RESTORATION OPPORTUNITIES BASED ON ECOSYSTEM RESILIENCE

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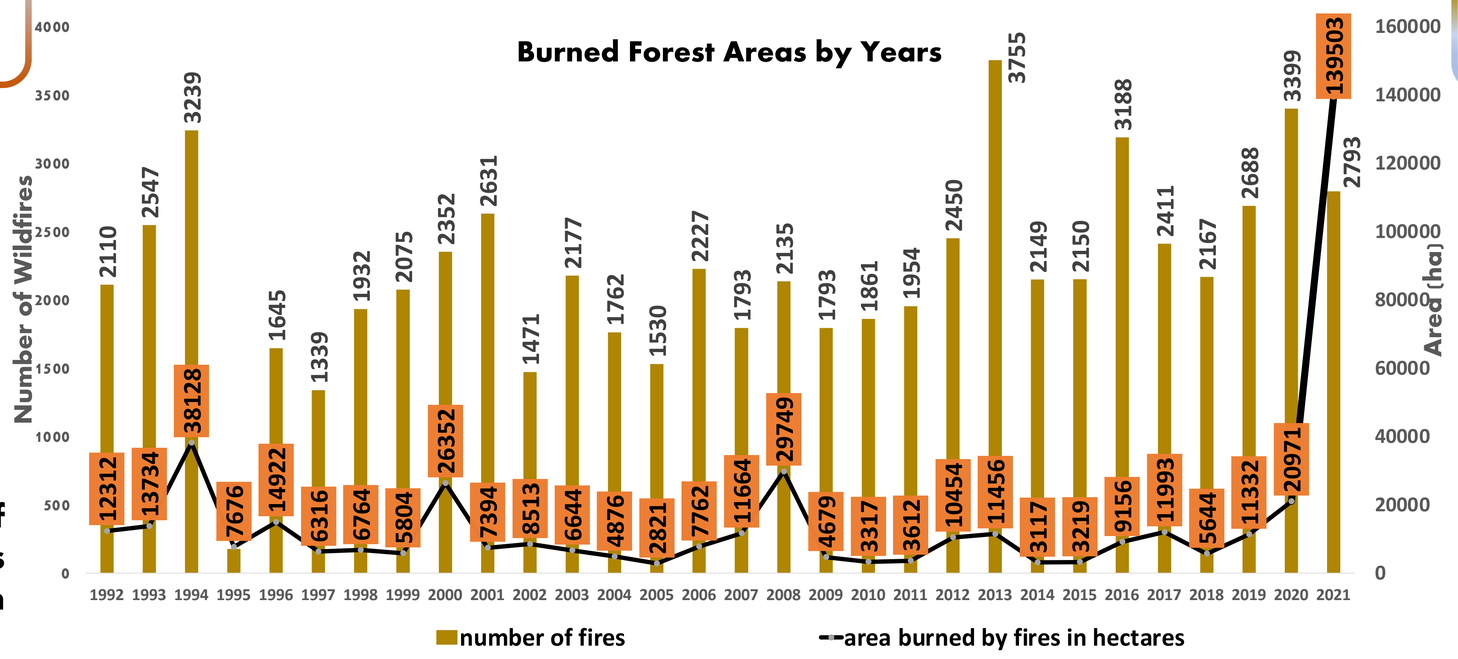
WILDFIRES HOTSPOT IN THE MEDITERRANEAN BASIN

A potentially vicious cycle of climate change and wildfire is emerging in Mediterranean Basin.

TURKEY: BURNED AREA IN THE LAST 30 YEARS



TURKEY MEGA WILDFIRES 2021

Turkey mega wildfire seasons have become more frequently and destructive, causing significant ecological, economic and social damage.

Ecosystem restoration has global priority for struggling with climate change and recovering human-caused degradation on ecosystems as acknowledged by the UN (ecosystem restoration decade of 2021-2030). In this respect, megafires of our era create new post-fire restoration opportunities based on ecosystem resilience and biodiversity to cope with the devastating effects of megafires and climate change in future.

NO TREATMENT + NATURAL RECOVERY

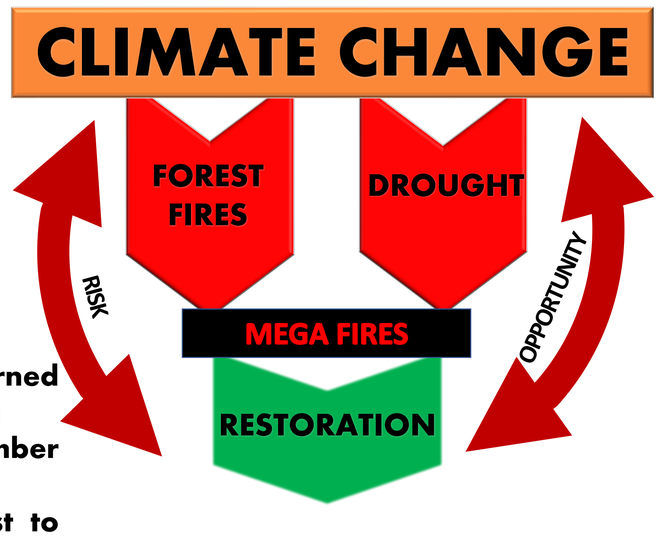
OPPORTUNITIES

- increase ecosystem resilience
- diversity and genetic variability
- fire stimulated flowering
- open habitats for plant/animals
- diversity of ecosystem functioning and services (pollination etc.)

RISKS

- economic lose of burned dead wood harvesting
- economic loses for timber production
- conversion from forest to shrubland

CLIMATE CHANGE



SALVAGE LOGGING + NATURAL REGENERATION (Seedling - Laying out branches)

OPPORTUNITIES

- natural resources protection
- increase ecosystem resilience
- diversity and genetic variability
- economic gain of burned dead wood harvesting
- generate habitat heterogeneity

RISKS

- economic loses for timber production

SALVAGE LOGGING + PLANTATION (Terracing/Ploughing)

OPPORTUNITIES

- plantation with multiple fire-resistant species may reduce fire danger after next fire
- economic gain for timber production by plantation harvesting
- controlled plantation growth
- economic gain of burned dead wood harvesting

RISKS

- increased possibility of catastrophic fires due to monoculture plantation
- re-plantation obligation after the next fire
- reduced adaptive capacity against fire
- loss of natural recovery capacity after the next fire
- reduction in biodiversity
- habitat loss/reduce adaptation for wildfires
- increase soil erosion
- fuel accumulation/fuel continuity
- constrains the pollination service
- reducing ecosystem resilience and services
- off-setting aboveground C sink by the loss of belowground C storage

Implementing different post-fire restoration approaches at the right place and time will provide an advantage in reducing climate change effects. Current megafires offer novel opportunities for ecosystem restoration to minimize risks for climate and fire regime changes. To do this, it is important to understand how the Mediterranean ecosystems have adapted to wildfires and natural post-fire recovery mechanisms work.

REPUBLIC OF TURKEY GENERAL DIRECTORATE OF FORESTRY

HACETTEPE UNIVERSITY

ÇUKUROVA UNIVERSITY

7th MEDITERRANEAN FOREST WEEK