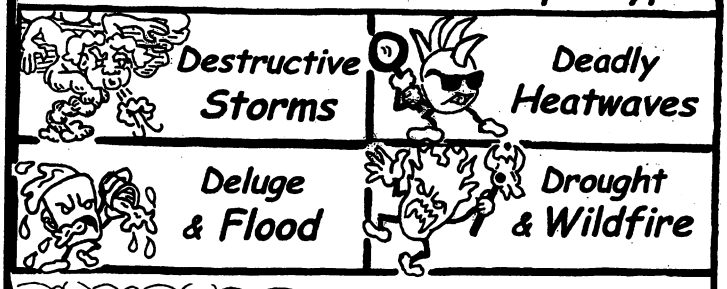
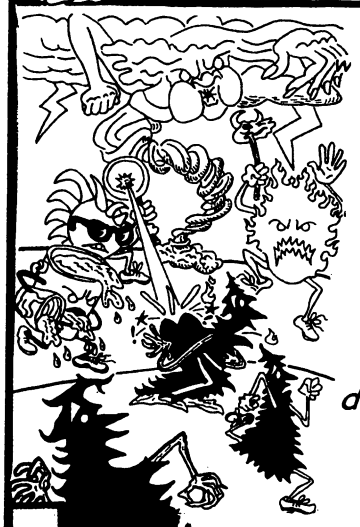
Four Forcemen of the Climate Apocalypse





Global Warming's coming destructive windstorms will create vast landscapes of forest debris providing abundant fuel for wildfire. Then, heat-waves decrease fuel moisture. Expect more lightning storms.

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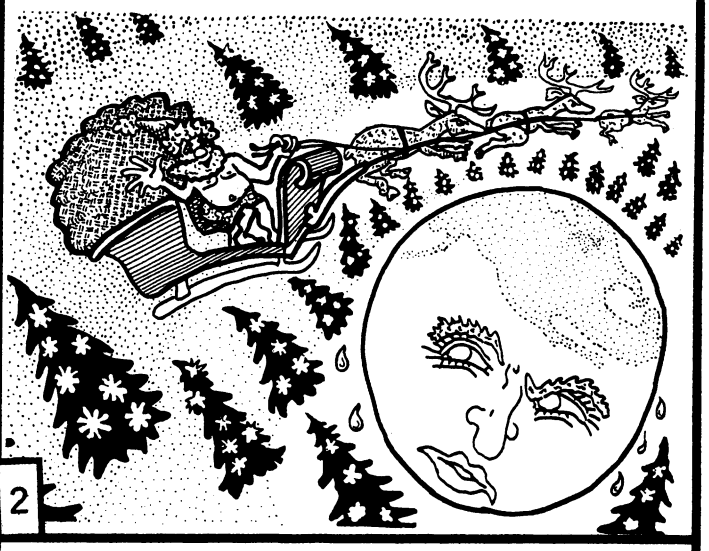
Increased concentrations of atmospheric carbon dioxide (CO_2) since the Industrial Revolution adds 1 Watt of heat energy (a Christmas tree light bulb) to each square meter of Earth's surface.



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One way this tremendous increase in atmospheric energy will manifest involves more frequent and severe destructive windstorms such as hurricanes, derechos, tornadoes, microbursts, gales, and gusts.

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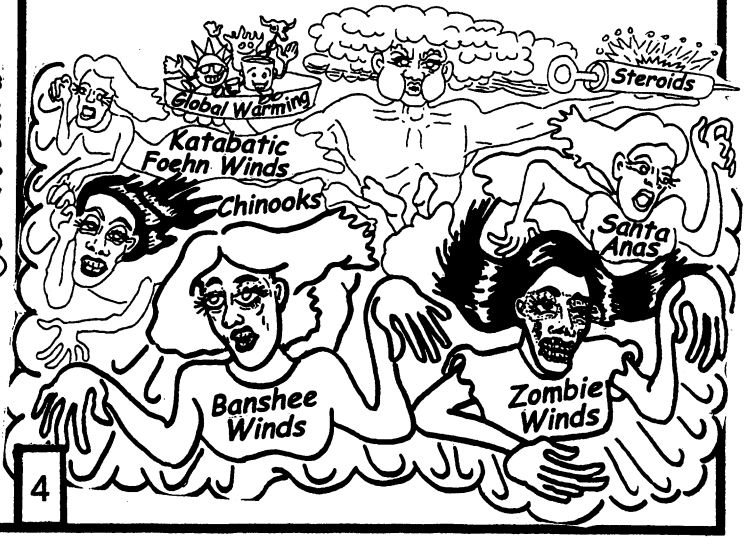
Even usually benign seasonal winds and squalls provoked by geophysical features such as Foehn or Katabatic winds (regionally known as Chinooks, East Winds, and Santa Anas) will more frequently bring destructive gusts.



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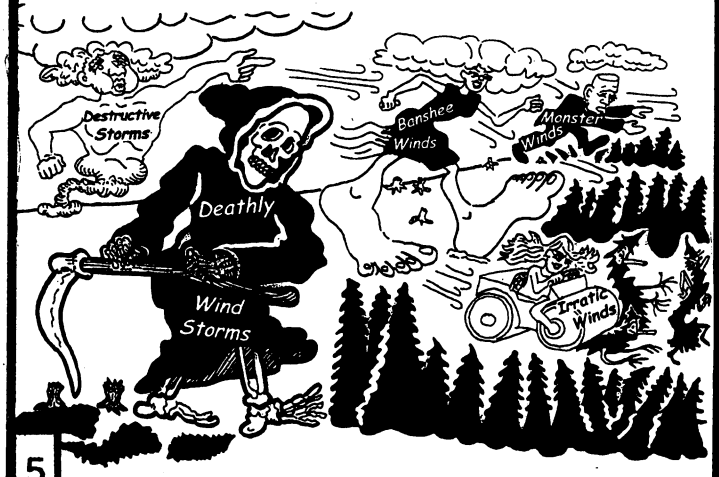
These super-stimulated wind events will tumble broken trees, brush, and branches across vast swaths of wildlands. Uncompacted, amply aerated by its vertical structure, now stochastic ignitions summon great landscape fires.



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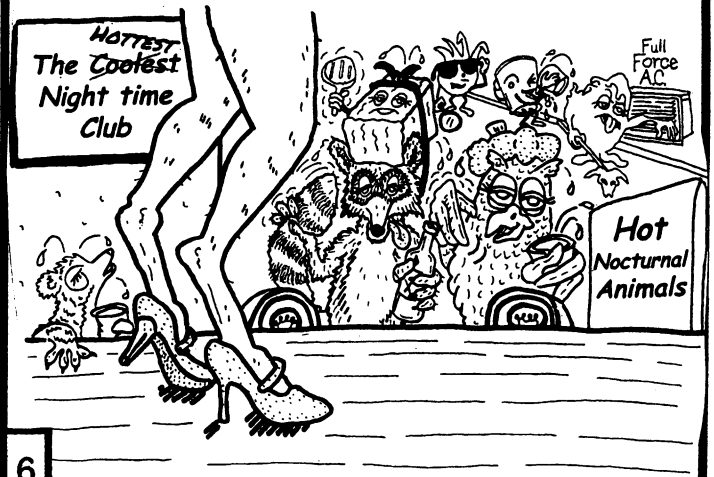
Global Warming also favors higher nighttime temperatures and accelerates rapid dry-out of fuels. This dried duff and debris now provide abundant fuel for turbulent, intense, and severe wildfire.



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Also, increased atmospheric heat energy can create more evaporation and rapid plant growth-related transpiration. Consequently, the skies will hold more moisture.

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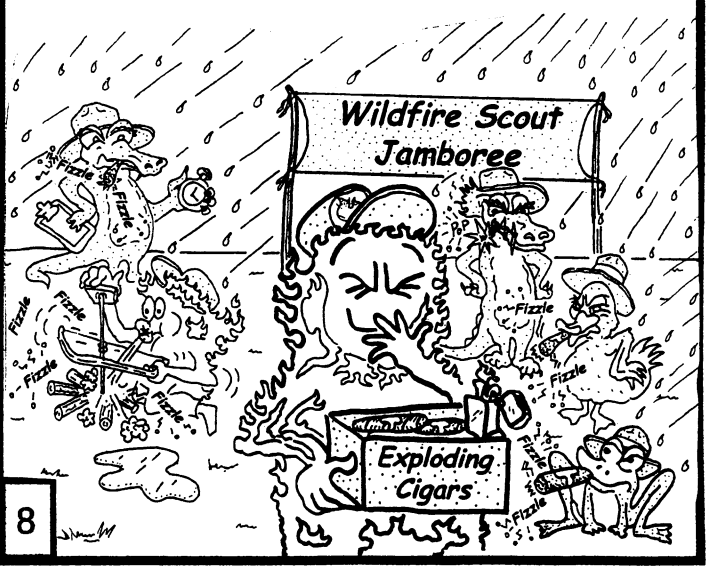
During some times, increased humidity and rainfall will suppress wildfire ignition and expansion because high moisture content makes fuel unavailable.



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However, increased rainfall leads to luxuriant growth of grass and brush. When this plant stem and straw dries out, they make excellent flashy fuel.

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Severe heatwaves cause normally low-intensity fires to transform carbon sinks to carbon sources. Large branches, trunks, stumps, and usually moist duff and peat now hemorrhage their centuries-old atmospheric carbon.

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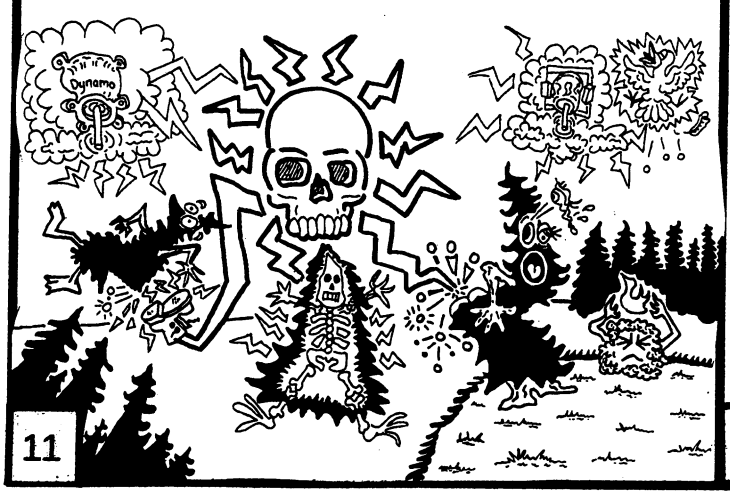
Enhanced atmospheric energy will also create more frequent, intense, and severe lightning storms that increase wildfire ignition and can be sustained by abundant, dry wildland fuel.



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Whether ignition leads to extreme wildfire depends upon weather. Fuel moisture and wind remain the primary drivers of wildfire. The presence of abundant fuel matters little when fuels linger moist.

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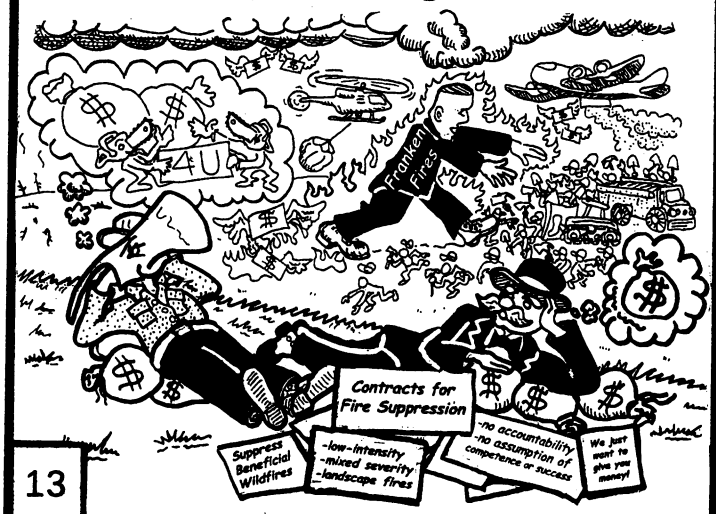
Because Global Warming changes wildland conditions, land managers should abandon actions prone to failure. These include squandering money and resources on fire suppression and military-styled battles against large wildfires.



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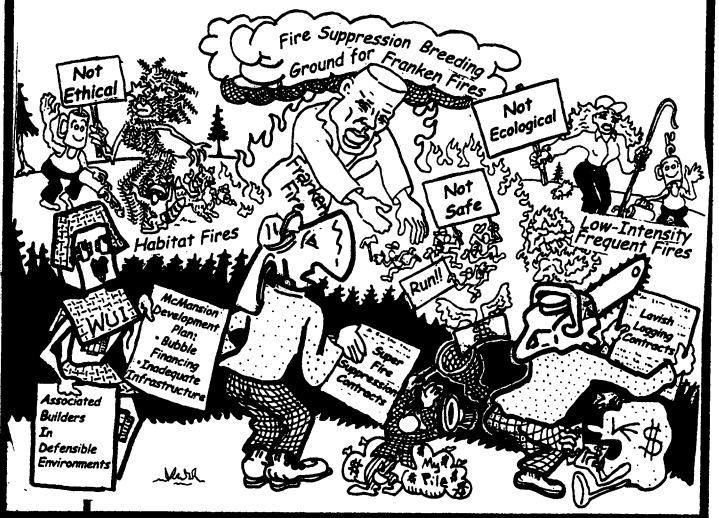
Flawed decisions can exacerbate dangerous conditions. Decisions that many considered safe in the past now face heightened scrutiny due to evolving standards of safety, ethics, and ecology during this Global Warming era.



Small wildfire suppression also invites criticism. Better tactics feature natural "fire use." Wildfires provide ecological services. They consume excessive fuel, release nutrients, promote species diversity, hold carbon on site, and enhance soil carbon sequestration.

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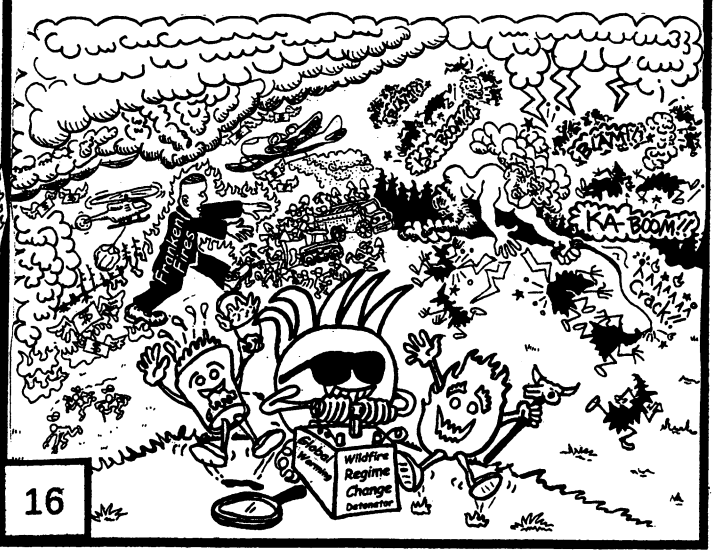
Analyses agree that weather puts out large wildfires. Wasting money and resources on fighting extreme wildfires remains a catastrophic bungle. Once small wildfires emerge to be large fires, firefighting efforts have limited effect.



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Using modeling, monitoring, and common firefighting tactics such as hand lines and burning out, wildfires can be shepherded to where they will do the most good while restraining their intensity and severity.

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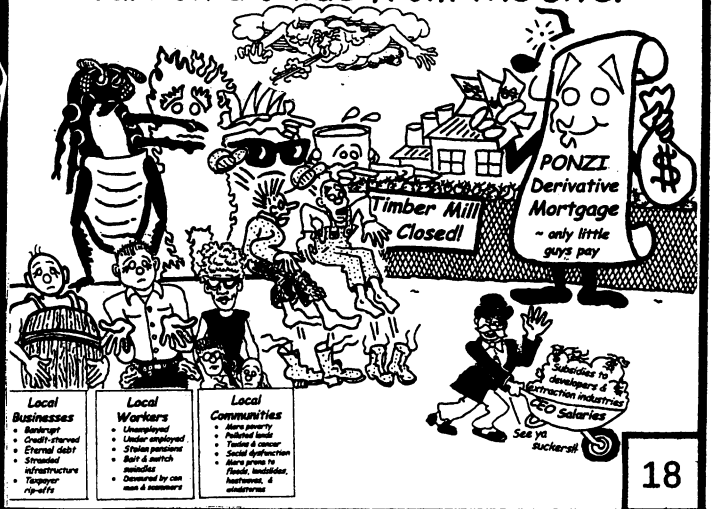
Million dollar firefighting campaigns often justify salvage logging and conversion to plantations. Studies suggest salvage logging wastes taxpayer money, rarely benefits local economies, damages soil, delays ecosystem recovery, & hemorrhages carbon dioxide from the site.



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Uniform conifer plantations offer limited benefits for wildlife. Thinning or salvage logging can convert resilient forests, naturally heterogeneous and diverse, into homogenous stands and plantations lacking diversity and resilience.

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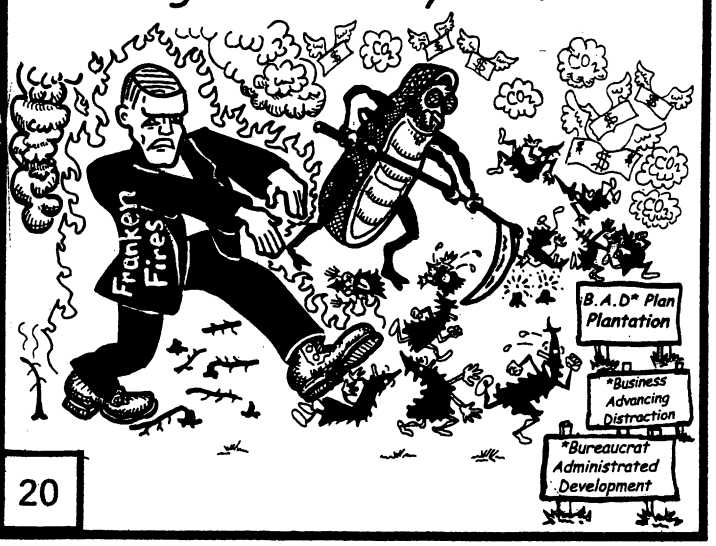
They homogenize complex soil microbial ecology, diminish nutrient cycling, and increase carbon dioxide emissions. Plantations display little resilience to disturbances and can be vaporized during low intensity wildfires.



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Mechanical treatments such as logging and thinning can make sense if conducted adjacent to residences, especially if followed by prescribed fire. Homeowners or insurance companies can bankroll such thinning and prescribed fire through small premium increases.

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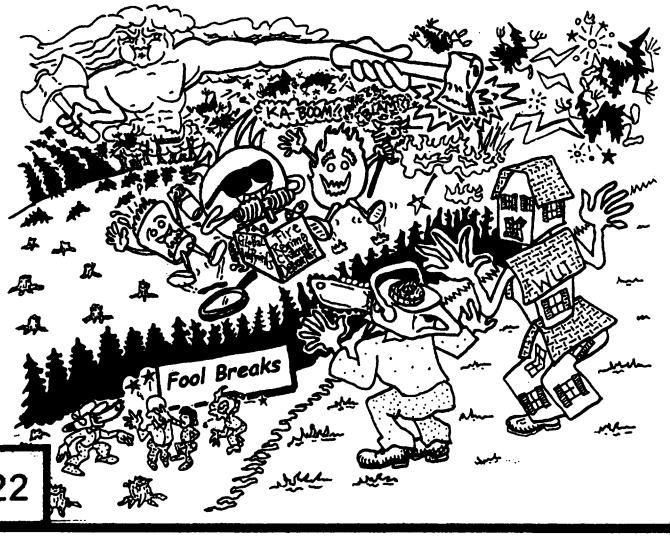
Remote logging and "fuel breaks" make no sense as responses to changed wildland conditions due to Global Warming. Mechanical treatments remain expensive, limited in scope, and prone to delays and default. They can only treat relatively small areas compared to the extent needed.



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Global Warming increases frequency, intensity, distribution, abundance, duration, and severity of extreme wildfire. Destructive windstorms create abundant fuel. Deluges grow lush grass and brush. Heatwaves and warmer nights rapidly dry out fuel. Lightning storms ignite fires that expand into extreme wildfires.

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Natural fire use and prescribed fire remain the only inexpensive and viable responses. Through coherent policies, savvy strategies, and tenacious tactics, wildfires can enhance ecological services such as clean water, wildlife habitat, and carbon sequestration.

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