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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | | **CLASSIC** | **INFERNO** | **LPJ-GUESS-SIMFIRE-BLAZE** | **LPJ-GUESS-SPITFIRE** | **ORCHIDEE-MICT-SPITFIRE** | **SSiB4/TRIFFID** | **VISIT** |
| **Fire Model** | | CLASSIC | INFERNO | SIMFIRE | SPITFIRE | SPITFIRE | Li | After 51 |
| **Land / Vegetation** | | CLASSIC | JULES | LPJ-GUESS | LPJ-GUESS | ORCHIDEE | SSiB | VISIT |
| **Dynamic Veg** | **Physiology** | Yes | Yes, via TRIFFID | Yes | Yes | Yes | Yes, via TRIFFID | Yes |
| **LAI** | Yes | Yes, via TRIFFID | Yes | Yes | Yes | Yes | Yes |
| **Bio-geography** | No | Yes, via TRIFFID | Yes | Yes | Yes | Yes | No |
| **Nitrogen Cycle** | | Yes | Yes | Yes | Yes | No | Yes | Yes, but C-N coupling is limited |
| **No. PFTs** | | 9 | 13 | 17 | 17 | 19 | 7 | 33 (biome types) |
| **No. Soil Layers** | | 20 | 4 | 2 | 2 | 11 | 3 | 2 |
| **Fuel** | | Vegetation and litter | Vegetation & top soil layer as proxy for litter | Vegetation, litter | Litter | Vegetation and litter | Vegetation and litter | Litter |
| **Ignitions** | **Natural** | Prescribed lightning | Prescribed lightning | SIMFIRE describes annual BA + fire-climatology -> daily BA used as Fire-Probability | Prescribed lightning | Prescribed lightning | Prescribed lightning | Probabilistic based on fuel wetness |
| **Anthropogenic** | Prescribed population density | Prescribed Population density | SIMFIRE includes suppression by humans | Prescribed population density | Prescribed population density | Prescribed population density | No |
| **Suppression** | | Prescribed population density | Crops, population density | Crops (100%), prescribed population density (Hyde3.1) | Crops, population density | Prescribed population density, crops | Prescribed population density and GDP | Low fuel load |
| **Spread** | | Wind speed and soil moisture | None | Daily BA (no explicit spread) | Rothermel equations including wind speed, tree fraction, grass fraction, fuel moisture, fuel load and characteristics | wind speed, tree fraction, grass fraction, fuel moisture, fuel load | Wind speed and soil moisture | None |
| **Model inputs** | | SW & LW radiation, precipitation, air temperature, specific humidity, wind speed, atmospheric pressure, population density, lightning | SW & LW radiation, precipitation, air temperature, specific humidity, wind speed, population density, lightning | SW radiation, precipitation, air temperature (mean, min, max), relative humidity, wind speed | SW radiation, precipitation, air temperature, specific humidity, wind speed, atmospheric pressure, population density, lightning | SW & LW radiation, precipitation, air temperature, specific humidity, wind speed, atmospheric pressure, PFT map, population density | SW & LW radiation, precipitation, air temperature, specific humidity, wind speed, atmospheric pressure, population density, and GDP, peat map, land cover change | Air temperature, precipitation, air vapor pressure, cloudiness, wind |
| **Resolution** | | 1 deg | 0.5 deg | 0.5 deg | 0.5 deg | 0.5 deg | 0.5 deg | 0.5 deg |
| **References** | | 52 | 53–55 | 48,56,57 | 48,56,58,59 | 60,61 | 62–65 | 66 |