

Tab. S1 - ROC and MPE values of the 252 LRM grouped in 6 monthly models and seven coverages in Mexican highlands (median values to make Fig. 4a and 4b)

6 LRM grouped: CWS-CN-DEP, CWS-CN-SPEI, CWS-SPEI, AWS-CN-DEP, AWS-CN-SPEI and AWS-SPEI.

7 coverages: oak forest, oyamel forest, pine forest, shrubs, juniper forest, tropical deciduous forest and grassland.

ND = No Data

| Model | | ROC - training period | | | MPE - training period | | | MPE - validation period | | |
|----------|---------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-------------------------|---------|-------|
| | | Median | Maximum | Mimum | Median | Maximum | Mimum | Median | Maximum | Mimum |
| GENERAL | CWS-CN-DEP | 0.695 | 0.909 | 0.514 | 0.767 | 0.917 | 0.573 | 0.967 | 1.000 | 0.500 |
| | CWS-CN-SPEI | 0.702 | 0.929 | 0.506 | 0.707 | 0.821 | 0.604 | 0.946 | 1.000 | 0.500 |
| | CWS-SPEI | 0.734 | 0.950 | 0.569 | 0.741 | 0.857 | 0.579 | 1.000 | 1.000 | 0.235 |
| | AWS-CN-DEP | 0.651 | 0.925 | 0.556 | 0.707 | 0.875 | 0.610 | 0.934 | 1.000 | 0.125 |
| | AWS-CN-SPEI | 0.652 | 0.893 | 0.396 | 0.741 | 0.875 | 0.649 | 1.000 | 1.000 | 0.500 |
| | AWS-SPEI | 0.757 | 0.933 | 0.572 | 0.795 | 0.882 | 0.657 | 1.000 | 1.000 | 0.375 |
| JANUARY | CWS-CN-DEP | 0.717 | 0.846 | 0.641 | 0.767 | 0.814 | 0.632 | ND | ND | ND |
| | CWS-CN-SPEI | 0.702 | 0.906 | 0.636 | 0.684 | 0.810 | 0.653 | 1.000 | 1.000 | 0.500 |
| | CWS-SPEI | 0.742 | 0.844 | 0.592 | 0.684 | 0.814 | 0.579 | ND | ND | ND |
| | AWS-CN-DEP | 0.584 | 0.837 | 0.556 | 0.703 | 0.810 | 0.684 | ND | ND | ND |
| | AWS-CN-SPEI | 0.704 | 0.893 | 0.587 | 0.740 | 0.875 | 0.711 | ND | ND | ND |
| | AWS-SPEI | 0.643 | 0.821 | 0.572 | 0.734 | 0.875 | 0.657 | ND | ND | ND |
| FEBRUARY | CWS-CN-DEP | 0.695 | 0.844 | 0.630 | 0.778 | 0.814 | 0.632 | 1.000 | 1.000 | 0.500 |
| | CWS-CN-SPEI | 0.685 | 0.906 | 0.649 | 0.742 | 0.810 | 0.684 | 1.000 | 1.000 | 0.600 |
| | CWS-SPEI | 0.734 | 0.844 | 0.622 | 0.793 | 0.856 | 0.684 | ND | ND | ND |
| | AWS-CN-DEP | 0.809 | 0.925 | 0.556 | 0.810 | 0.875 | 0.703 | 0.723 | 1.000 | 0.125 |
| | AWS-CN-SPEI | 0.742 | 0.893 | 0.606 | 0.750 | 0.875 | 0.714 | 1.000 | 1.000 | 0.800 |
| | AWS-SPEI | 0.821 | 0.933 | 0.590 | 0.833 | 0.882 | 0.733 | 0.938 | 1.000 | 0.800 |
| MARCH | CWS-CN-DEP | 0.694 | 0.844 | 0.514 | 0.722 | 0.814 | 0.573 | 0.889 | 1.000 | 0.500 |
| | CWS-CN-SPEI | 0.685 | 0.906 | 0.558 | 0.699 | 0.810 | 0.604 | 0.944 | 1.000 | 0.500 |
| | CWS-SPEI | 0.651 | 0.844 | 0.583 | 0.684 | 0.814 | 0.646 | 0.944 | 1.000 | 0.857 |
| | AWS-CN-DEP | 0.683 | 0.837 | 0.556 | 0.703 | 0.810 | 0.698 | 1.000 | 1.000 | 0.500 |
| | AWS-CN-SPEI | 0.606 | 0.893 | 0.479 | 0.714 | 0.875 | 0.649 | 1.000 | 1.000 | 0.857 |
| | AWS-SPEI | 0.751 | 0.826 | 0.590 | 0.778 | 0.875 | 0.688 | 1.000 | 1.000 | 0.945 |
| APRIL | CWS-CN-DEP | 0.684 | 0.909 | 0.534 | 0.769 | 0.857 | 0.641 | 0.883 | 1.000 | 0.727 |
| | CWS-CN-SPEI | 0.748 | 0.906 | 0.555 | 0.714 | 0.821 | 0.618 | 0.933 | 1.000 | 0.667 |
| | CWS-SPEI | 0.671 | 0.950 | 0.569 | 0.769 | 0.857 | 0.623 | 0.902 | 1.000 | 0.770 |
| | AWS-CN-DEP | 0.626 | 0.905 | 0.556 | 0.703 | 0.833 | 0.610 | 0.892 | 1.000 | 0.500 |
| | AWS-CN-SPEI | 0.618 | 0.893 | 0.484 | 0.714 | 0.875 | 0.660 | 1.000 | 1.000 | 0.500 |
| | AWS-SPEI | 0.678 | 0.877 | 0.578 | 0.733 | 0.875 | 0.660 | 0.923 | 1.000 | 0.500 |
| MAY | CWS-CN-DEP | 0.675 | 0.857 | 0.557 | 0.749 | 0.917 | 0.692 | 0.750 | 1.000 | 0.500 |
| | CWS-CN-SPEI | 0.778 | 0.929 | 0.537 | 0.684 | 0.810 | 0.653 | 0.625 | 1.000 | 0.500 |
| | CWS-SPEI | 0.733 | 0.844 | 0.592 | 0.738 | 0.833 | 0.684 | 0.625 | 1.000 | 0.235 |
| | AWS-CN-DEP | 0.693 | 0.837 | 0.556 | 0.785 | 0.810 | 0.677 | 0.688 | 1.000 | 0.588 |
| | AWS-CN-SPEI | 0.655 | 0.893 | 0.396 | 0.742 | 0.875 | 0.714 | 0.824 | 1.000 | 0.625 |
| | AWS-SPEI | 0.762 | 0.824 | 0.590 | 0.802 | 0.875 | 0.733 | 0.750 | 1.000 | 0.375 |
| JUNE | CWS-CN-DEP | 0.695 | 0.844 | 0.585 | 0.767 | 0.814 | 0.632 | ND | ND | ND |
| | CWS-CN-SPEI | 0.702 | 0.906 | 0.506 | 0.689 | 0.810 | 0.653 | ND | ND | ND |
| | CWS-SPEI | 0.742 | 0.844 | 0.616 | 0.740 | 0.814 | 0.647 | ND | ND | ND |
| | AWS-CN-DEP | 0.637 | 0.875 | 0.556 | 0.711 | 0.810 | 0.684 | ND | ND | ND |
| | AWS-CN-SPEI | 0.704 | 0.893 | 0.587 | 0.740 | 0.875 | 0.711 | ND | ND | ND |
| | AWS-SPEI | 0.643 | 0.821 | 0.572 | 0.810 | 0.875 | 0.657 | ND | ND | ND |
| COVERAGE | Oak forest | 0.651 | 0.846 | 0.396 | 0.714 | 0.839 | 0.630 | 0.933 | 1.000 | 0.125 |
| | Oyamel forest | 0.742 | 0.925 | 0.507 | 0.778 | 0.917 | 0.667 | 1.000 | 1.000 | 0.500 |
| | Pine forest | 0.606 | 0.875 | 0.506 | 0.691 | 0.882 | 0.573 | 0.945 | 1.000 | 0.235 |
| | Shrubs | 0.725 | 0.906 | 0.556 | 0.776 | 0.810 | 0.703 | ND | ND | ND |
| | Juniper forest | 0.806 | 0.950 | 0.685 | 0.714 | 0.857 | 0.632 | ND | ND | ND |
| | Tropical deciduous forest | 0.760 | 0.909 | 0.556 | 0.814 | 0.875 | 0.692 | ND | ND | ND |
| | Grassland | 0.641 | 0.933 | 0.484 | 0.698 | 0.875 | 0.604 | 1.000 | 1.000 | 0.500 |

Tab. S2 - ROC and MPE values of the 252 monthly LRM in Mexican highlands.

Considering 6 months, 7 vegetation coverages, three dynamic variables for fuel dryness (CN-DEP, SPEI and CN-SPEI) and two data sources (AWS and CWS). C is the monthly fires proportion in the vegetation coverage. MPE_T is MPE in training period and MPE_V is MPE in validation period. The coefficient C in totals is the sum of the fires proportion in the vegetation coverages. ROC, MPE_T and MPE_V in totals are the sum of the products of fire coefficients (C) and ROC, MPE_T and MPE_V, respectively, in the vegetation coverages.

| CWS - CN - DEP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|------------|-------|------------------|------------------|---------------|-------|------------------|------------------|-------------|-------|------------------|------------------|--------|-------|------------------|------------------|----------------|-------|------------------|------------------|---------------------------|-------|------------------|------------------|-----------|-------|------------------|------------------|--------------|--------------|------------------|------------------|
| | Oak forest | | | | Oyamel forest | | | | Pine forest | | | | Shrubs | | | | Juniper forest | | | | Tropical deciduous forest | | | | Grassland | | | | Totals | | | |
| | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V |
| January | 0.272 | 0.846 | 0.778 | 1.000 | 0.023 | 0.717 | 0.767 | | 0.543 | 0.667 | 0.632 | 1.000 | 0.000 | 0.844 | 0.810 | 1.000 | 0.004 | 0.695 | 0.632 | | 0.019 | 0.726 | 0.814 | | 0.139 | 0.641 | 0.659 | 1.000 | 1.000 | 0.714 | 0.682 | 1.000 |
| February | 0.250 | 0.652 | 0.724 | 0.500 | 0.022 | 0.723 | 0.778 | 1.000 | 0.395 | 0.691 | 0.794 | 0.737 | 0.002 | 0.844 | 0.810 | 1.000 | 0.002 | 0.695 | 0.632 | | 0.022 | 0.726 | 0.814 | | 0.308 | 0.630 | 0.742 | 1.000 | 1.000 | 0.664 | 0.760 | 0.847 |
| March | 0.274 | 0.629 | 0.804 | 0.500 | 0.026 | 0.694 | 0.722 | 1.000 | 0.475 | 0.514 | 0.573 | 0.889 | 0.001 | 0.844 | 0.810 | | 0.001 | 0.695 | 0.632 | 1.000 | 0.025 | 0.726 | 0.814 | | 0.198 | 0.689 | 0.625 | 0.858 | 1.000 | 0.591 | 0.657 | 0.849 |
| April | 0.290 | 0.594 | 0.697 | 0.933 | 0.020 | 0.687 | 0.769 | 0.833 | 0.543 | 0.534 | 0.661 | 0.727 | 0.002 | 0.844 | 0.810 | | 0.002 | 0.875 | 0.857 | | 0.021 | 0.909 | 0.833 | | 0.123 | 0.657 | 0.641 | 1.000 | 1.000 | 0.578 | 0.675 | 0.873 |
| May | 0.277 | 0.667 | 0.707 | 1.000 | 0.011 | 0.778 | 0.917 | 0.500 | 0.503 | 0.557 | 0.749 | 0.706 | 0.001 | 0.844 | 0.810 | | 0.002 | 0.857 | 0.778 | | 0.039 | 0.583 | 0.692 | 1.000 | 0.168 | 0.675 | 0.738 | 0.750 | 1.000 | 0.612 | 0.735 | 0.791 |
| June | 0.367 | 0.635 | 0.657 | | 0.014 | 0.717 | 0.767 | | 0.446 | 0.585 | 0.778 | 0.797 | 0.000 | 0.844 | 0.810 | | 0.002 | 0.695 | 0.632 | | 0.026 | 0.726 | 0.814 | | 0.145 | 0.641 | 0.659 | | 1.000 | 0.617 | 0.717 | |

| CWS - CN - SPEI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|------------|-------|------------------|------------------|---------------|-------|------------------|------------------|-------------|-------|------------------|------------------|--------|-------|------------------|------------------|----------------|-------|------------------|------------------|---------------------------|-------|------------------|------------------|-----------|-------|------------------|------------------|--------------|--------------|------------------|------------------|
| | Oak forest | | | | Oyamel forest | | | | Pine forest | | | | Shrubs | | | | Juniper forest | | | | Tropical deciduous forest | | | | Grassland | | | | Totals | | | |
| | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V |
| January | 0.272 | 0.815 | 0.667 | | 0.023 | 0.702 | 0.758 | | 0.543 | 0.676 | 0.684 | 0.500 | 0.000 | 0.906 | 0.810 | 1.000 | 0.004 | 0.685 | 0.684 | | 0.019 | 0.748 | 0.721 | | 0.139 | 0.636 | 0.653 | 1.000 | 0.286 | 0.710 | 0.677 | 0.833 |
| February | 0.250 | 0.649 | 0.724 | 1.000 | 0.022 | 0.723 | 0.778 | 0.600 | 0.395 | 0.674 | 0.794 | 0.947 | 0.002 | 0.906 | 0.810 | 1.000 | 0.002 | 0.685 | 0.684 | | 0.022 | 0.748 | 0.721 | | 0.308 | 0.649 | 0.742 | 1.000 | 0.571 | 0.663 | 0.758 | 0.909 |
| March | 0.274 | 0.614 | 0.699 | 0.500 | 0.026 | 0.702 | 0.722 | 1.000 | 0.475 | 0.558 | 0.609 | 0.944 | 0.001 | 0.906 | 0.810 | | 0.001 | 0.685 | 0.684 | 1.000 | 0.025 | 0.748 | 0.721 | | 0.198 | 0.666 | 0.604 | 0.857 | 0.571 | 0.604 | 0.639 | 0.860 |
| April | 0.290 | 0.598 | 0.630 | 0.933 | 0.020 | 0.770 | 0.821 | 0.667 | 0.543 | 0.555 | 0.618 | 0.909 | 0.002 | 0.906 | 0.810 | | 0.002 | 0.850 | 0.714 | | 0.021 | 0.748 | 0.721 | 1.000 | 0.123 | 0.658 | 0.641 | 1.000 | 0.571 | 0.590 | 0.631 | 0.902 |
| May | 0.277 | 0.645 | 0.662 | 0.625 | 0.011 | 0.778 | 0.758 | 1.000 | 0.503 | 0.537 | 0.659 | 0.765 | 0.001 | 0.906 | 0.810 | | 0.002 | 0.929 | 0.684 | | 0.039 | 0.783 | 0.692 | 0.500 | 0.168 | 0.665 | 0.653 | 0.500 | 0.857 | 0.602 | 0.661 | 0.678 |
| June | 0.367 | 0.707 | 0.657 | | 0.014 | 0.702 | 0.758 | | 0.446 | 0.506 | 0.689 | 0.977 | 0.000 | 0.906 | 0.810 | | 0.002 | 0.685 | 0.684 | | 0.026 | 0.748 | 0.721 | | 0.145 | 0.636 | 0.653 | | 0.286 | 0.608 | 0.674 | |

| CWS - SPEI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|------------|-------|------------------|------------------|---------------|-------|------------------|------------------|-------------|-------|------------------|------------------|--------|-------|------------------|------------------|----------------|-------|------------------|------------------|---------------------------|-------|------------------|------------------|-----------|-------|------------------|------------------|--------------|--------------|------------------|------------------|
| | Oak forest | | | | Oyamel forest | | | | Pine forest | | | | Shrubs | | | | Juniper forest | | | | Tropical deciduous forest | | | | Grassland | | | | Totals | | | |
| | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V |
| January | 0.272 | 0.815 | 0.667 | | 0.023 | 0.692 | 0.740 | | 0.543 | 0.592 | 0.579 | 1.000 | 0.000 | 0.844 | 0.810 | 1.000 | 0.004 | 0.742 | 0.684 | | 0.019 | 0.760 | 0.814 | | 0.139 | 0.616 | 0.647 | 1.000 | 1.000 | 0.662 | 0.621 | 1.000 |
| February | 0.250 | 0.622 | 0.793 | 1.000 | 0.022 | 0.734 | 0.778 | 1.000 | 0.395 | 0.697 | 0.856 | 1.000 | 0.002 | 0.844 | 0.810 | 1.000 | 0.002 | 0.742 | 0.684 | | 0.022 | 0.760 | 0.814 | | 0.308 | 0.641 | 0.742 | 1.000 | 1.000 | 0.663 | 0.802 | 1.000 |
| March | 0.274 | 0.636 | 0.804 | 0.875 | 0.026 | 0.651 | 0.671 | 1.000 | 0.475 | 0.583 | 0.651 | 0.944 | 0.001 | 0.844 | 0.810 | | 0.001 | 0.742 | 0.684 | 1.000 | 0.025 | 0.760 | 0.814 | | 0.198 | 0.633 | 0.646 | 0.857 | 1.000 | 0.614 | 0.697 | 0.935 |
| April | 0.290 | 0.648 | 0.659 | 1.000 | 0.020 | 0.667 | 0.769 | 0.834 | 0.543 | 0.569 | 0.623 | 0.970 | 0.002 | 0.844 | 0.810 | | 0.002 | 0.950 | 0.857 | | 0.021 | 0.773 | 0.833 | | 0.123 | 0.671 | 0.692 | 0.770 | 1.000 | 0.612 | 0.650 | 0.894 |
| May | 0.277 | 0.634 | 0.690 | 0.625 | 0.011 | 0.810 | 0.833 | 1.000 | 0.503 | 0.592 | 0.776 | 0.235 | 0.001 | 0.844 | 0.810 | | 0.002 | 0.742 | 0.684 | | 0.039 | 0.733 | 0.692 | 1.000 | 0.168 | 0.681 | 0.738 | 0.500 | 1.000 | 0.627 | 0.743 | 0.672 |
| June | 0.367 | 0.745 | 0.714 | | 0.014 | 0.692 | 0.740 | | 0.446 | 0.643 | 0.778 | | 0.000 | 0.844 | 0.810 | | 0.002 | 0.742 | 0.684 | | 0.026 | 0.760 | 0.814 | | 0.145 | 0.616 | 0.647 | | 1.000 | 0.680 | 0.736 | |

| AWS - CN - DEP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|------------|-------|------------------|------------------|---------------|-------|------------------|------------------|-------------|-------|------------------|------------------|--------|-------|------------------|------------------|----------------|-------|------------------|------------------|---------------------------|-------|------------------|------------------|-----------|-------|------------------|------------------|--------------|--------------|------------------|------------------|
| | Oak forest | | | | Oyamel forest | | | | Pine forest | | | | Shrubs | | | | Juniper forest | | | | Tropical deciduous forest | | | | Grassland | | | | Totals | | | |
| | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V |
| January | 0.272 | 0.637 | 0.684 | 1.000 | 0.010 | 0.748 | 0.793 | | 0.514 | 0.561 | 0.692 | 1.000 | 0.000 | 0.556 | 0.703 | | 0.010 | 0.837 | 0.810 | | 0.068 | 0.556 | 0.703 | | 0.126 | 0.584 | 0.711 | 1.000 | 1.000 | 0.589 | 0.695 | 1.000 |
| February | 0.233 | 0.696 | 0.778 | 0.125 | 0.019 | 0.925 | 0.833 | 0.600 | 0.415 | 0.809 | 0.843 | 1.000 | 0.003 | 0.556 | 0.703 | | 0.002 | 0.837 | 0.810 | | 0.011 | 0.556 | 0.703 | | 0.318 | 0.826 | 0.875 | 0.846 | 1.000 | 0.787 | 0.836 | 0.643 |
| March | 0.257 | 0.683 | 0.787 | 0.500 | 0.017 | 0.822 | 0.778 | 1.000 | 0.497 | 0.625 | 0.701 | 1.000 | 0.001 | 0.556 | 0.703 | | 0.002 | 0.837 | 0.810 | | 0.017 | 0.556 | 0.703 | | 0.209 | 0.746 | 0.698 | 1.000 | 1.000 | 0.668 | 0.724 | 0.875 |
| April | 0.298 | 0.628 | 0.635 | 0.934 | 0.016 | 0.892 | 0.833 | 0.500 | 0.516 | 0.563 | 0.610 | 0.849 | 0.002 | 0.556 | 0.703 | | 0.002 | 0.905 | 0.800 | | 0.021 | 0.556 | 0.703 | | 0.145 | 0.626 | 0.698 | 1.000 | 1.000 | 0.597 | 0.636 | 0.821 |
| May | 0.279 | 0.693 | 0.800 | 0.625 | 0.008 | 0.748 | 0.793 | 1.000 | 0.532 | 0.664 | 0.785 | 0.588 | 0.002 | 0.556 | 0.703 | | 0.001 | 0.837 | 0.810 | | 0.012 | 0.556 | 0.703 | | 0.166 | 0.798 | 0.677 | 0.750 | 1.000 | 0.694 | 0.770 | 0.741 |
| June | 0.451 | 0.637 | 0.684 | | 0.015 | 0.748 | 0.793 | | 0.387 | 0.875 | 0.800 | | 0.000 | 0.556 | 0.703 | | 0.000 | 0.837 | 0.810 | | 0.051 | 0.556 | 0.703 | | 0.095 | 0.584 | 0.711 | | 1.000 | 0.722 | 0.734 | |

| AWS - CN - SPEI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|------------|-------|------------------|------------------|---------------|-------|------------------|------------------|-------------|-------|------------------|------------------|--------|-------|------------------|------------------|----------------|-------|------------------|------------------|---------------------------|-------|------------------|------------------|-----------|-------|------------------|------------------|--------------|--------------|------------------|------------------|
| | Oak forest | | | | Oyamel forest | | | | Pine forest | | | | Shrubs | | | | Juniper forest | | | | Tropical deciduous forest | | | | Grassland | | | | Totals | | | |
| | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V | C | ROC | MPE _T | MPE _V |
| January | 0.272 | 0.704 | 0.711 | 1.000 | 0.010 | 0.742 | 0.793 | | 0.514 | 0.606 | 0.740 | 1.000 | 0.000 | 0.606 | 0.742 | | 0.010 | 0.796 | 0.714 | | 0.068 | 0.893 | 0.875 | | 0.126 | 0.587 | 0.711 | 1.000 | 1.000 | 0.653 | 0.738 | 1.000 |
| February | 0.233 | 0.783 | 0.778 | 1.000 | 0.019 | 0.742 | 0.793 | 0.800 | 0.415 | 0.606 | 0.740 | 1.000 | 0.003 | 0.606 | 0.742 | | 0.002 | 0.796 | 0.714 | | 0.011 | 0.893 | 0.875 | | 0.318 | 0.616 | 0.750 | 1.000 | 1.000 | 0.656 | 0.754 | 0.950 |
| March | 0.257 | 0.479 | 0.760 | 1.000 | 0.017 | 0.648 | 0.704 | 1.000 | 0.497 | 0.509 | 0.649 | 0.945 | 0.001 | 0.606 | 0.742 | | 0.002 | 0.796 | 0.714 | 1.000 | 0.017 | 0.893 | 0.875 | | 0.209 | 0.600 | 0.660 | 0.857 | 1.000 | 0.530 | 0.685 | 0.960 |
| April | 0.298 | 0.716 | 0.714 | 1.000 | 0.016 | 0.507 | 0.667 | 0.500 | 0.516 | 0.618 | 0.661 | 1.000 | 0.002 | 0.606 | 0.742 | | 0.002 | 0.857 | 0.800 | | 0.021 | 0.893 | 0.875 | 1.000 | 0.145 | 0.484 | 0.660 | 0.923 | 1.000 | 0.632 | 0.682 | 0.885 |
| May | 0.279 | 0.396 | 0.733 | 0.625 | 0.008 | 0.742 | 0.793 | 1.000 | 0.532 | 0.606 | 0.740 | 0.824 | 0.002 | 0.606 | 0.742 | | 0.001 | 0.796 | 0.714 | | 0.012 | 0.893 | 0.875 | 1.000 | 0.166 | 0.655 | 0.742 | 0.750 | 1.000 | 0.650 | 0.740 | 0.840 |
| June | 0.451 | 0.704 | 0.711 | | 0.015 | 0.742 | 0.793 | | 0.387 | 0.606 | 0.740 | | 0.000 | 0.606 | 0.742 | | 0.000 | 0.796 | 0.714 | | 0.051 | 0.893 | 0.875 | | 0.095 | | | | | | | |

Tab. S3 - Coefficients of the 252 LRM for daily forest fire prediction in Mexican highlands

Cov1 is oak forest, Cov2 is oyamel forest, Cov3 is pine forest, Cov4 is shrubs, Cov5 is juniper forest, Cov6 is tropical deciduous forest and Cov7 is grassland. Drought index is CN-DEP, CN-SPEI or SPEI, β_0 is the regression constant (independent term) and β_k the weighting factor of the independent variable. Eq. (1) and Eq. (2) should be used to construct the prediction model for each month and each coverage.

$$P = \frac{1}{1 + e^{-z}} \dots\dots\dots \text{Eq. (1)}$$

$$z = \beta_0 + \beta_1 x_1 + \dots + \beta_n x_n \dots\dots\dots \text{Eq. (2)}$$

| | Explanatory variables | January | | | | | | | February | | | | | | | March | | | | | | | April | | | | | | | May | | | | | | | June | | | | | | | | |
|-------------------|-----------------------|----------------------|--------|-------|--------|--------|--------|--------|----------|--------|--------|--------|--------|--------|-------|--------|-------|--------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|---------|------|--------|--------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|---------|--------|-----|
| | | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | Cov1 | Cov2 | Cov3 | Cov4 | Cov5 | Cov6 | Cov7 | | |
| CWS | CN-DEP | Independent B_0 | 107.4 | 102.6 | 169.2 | -0.3 | 113.4 | 102.6 | 358.7 | 3E+03 | 2E+04 | 1E+03 | -275.3 | 113.5 | 102.6 | 89.4 | 2.3 | 5.8 | 0.9 | 102.6 | -1E+03 | -422.2 | 2.9 | 2.6 | 1E+03 | 0.9 | -242.1 | 988.2 | 105.3 | 5.6 | 0.0 | -0.3 | 0.9 | 2E+03 | 155.2 | 264.9 | 1.8 | 3.6 | 230.7 | 8.2 | -0.3 | 102.6 | 102.6 | 2411.3 | |
| | | Drought index B_1 | -104.8 | 0.0 | -168.1 | -0.6 | -215.9 | 0.0 | 0.0 | -3E+03 | -180.6 | -1E+03 | 0.0 | 17.8 | 0.0 | -84.9 | -0.7 | -3.0 | -0.4 | 0.0 | 734.7 | 189.6 | -2.3 | -0.6 | -1E+03 | 0.2 | 37.2 | -780.1 | -106.6 | -1.1 | -0.4 | 4.0 | 0.1 | -3E+02 | 0.0 | -150.9 | -0.3 | 0.4 | -139.3 | -0.5 | -0.6 | 0.0 | -205.1 | -615.6 | |
| | | Distance Roads B_2 | 99.5 | 0.0 | 101.8 | 101.5 | 0.0 | 0.0 | -1E+03 | 0.0 | -45.6 | 101.3 | 169.2 | 0.0 | 0.0 | -0.3 | 100.9 | 0.8 | -0.4 | 0.0 | 0.0 | 0.0 | -103.3 | -0.4 | 57.5 | 0.8 | 0.0 | -149.7 | 0.0 | 0.0 | 0.1 | -1.9 | 0.3 | 0.0 | 100.5 | 102.2 | -104.3 | 0.0 | 123.1 | 0.0 | 101.5 | 0.0 | 0.0 | 0.0 | |
| | | Orientation B_3 | -4.2 | 0.0 | -0.3 | -1.5 | 0.0 | 0.0 | -682.3 | -0.9 | -0.5 | -1.4 | 377.8 | -227.6 | 0.0 | 0.5 | -0.8 | 0.6 | 0.0 | 0.0 | 264.0 | 42.6 | 0.8 | -0.7 | 0.4 | -0.2 | 77.1 | -0.6 | 7.5 | -1.3 | -0.5 | -4.1 | 0.0 | -264.6 | -2.3 | 0.5 | 0.7 | -1.3 | -91.1 | 0.1 | -1.5 | 0.0 | 0.0 | -1E+03 | |
| | | Slope B_4 | 0.0 | 0.0 | -1.0 | 6.7 | 0.0 | 0.0 | -17.9 | -0.9 | -2E+04 | -1.4 | 0.0 | 0.0 | 0.0 | -2.1 | -0.1 | -0.5 | 0.4 | 0.0 | 0.0 | 92.7 | 0.9 | -0.2 | -4.2 | -0.2 | 475.6 | -204.6 | -2.5 | -2.3 | 0.1 | 2.0 | 0.6 | -1E+03 | -135.1 | -112.6 | -1.9 | -1.5 | 15.9 | -6.4 | 6.7 | 0.0 | 0.0 | -71.6 | |
| | Wind B_5 | 2.7 | 0.0 | 2.6 | -12.8 | 0.0 | 0.0 | 613.0 | 4.7 | 1.8 | -1.4 | 0.0 | -32.5 | 0.0 | -6.1 | 1.7 | -7.4 | 0.1 | 0.0 | 2E+03 | 859.4 | -4.8 | -2.5 | -7.3 | 0.9 | -884.7 | -11.5 | 13.1 | -1.5 | 9.2 | 3.7 | 0.6 | 0.0 | -93.1 | -4.4 | 6.2 | -0.3 | -349.4 | 0.0 | -12.8 | 0.0 | 0.0 | -4E+03 | | |
| | CN-SPEI | Independent B_0 | 3.3 | 102.6 | 1.5 | -0.8 | -98.1 | 102.6 | 551.5 | 1.5 | 2E+04 | 4.5 | -275.3 | 85.2 | 102.6 | 4.8 | 1.7 | 2.7 | 0.7 | 102.6 | -3E+03 | 240.4 | 1.0 | 2.1 | 7.3 | 1.1 | -193.0 | 201.1 | -124.4 | 4.7 | -0.3 | 0.1 | 1.0 | 907.5 | 180.0 | 131.0 | 1.7 | 3.0 | 414.0 | 8.3 | -0.8 | 102.6 | 6E+03 | -234.5 | |
| | | Drought index B_1 | -266.2 | 0.0 | 56.1 | 4.8 | 0.0 | 0.0 | -5E+04 | -7.6 | -3.7 | -3.1 | 0.0 | 0.0 | 0.0 | -1.4 | 0.5 | 2.1 | -0.4 | 0.0 | 1E+03 | 1E+03 | -1.4 | -0.4 | 2.2 | -0.5 | -45.6 | 3.2 | -532.2 | -0.7 | 0.4 | -4.3 | -0.1 | -79.5 | -6.1 | 25.2 | -0.6 | 41.5 | -389.7 | 12.9 | 4.8 | 0.0 | 0.0 | 7155.1 | |
| | | Distance Roads B_2 | 99.0 | 0.0 | 101.7 | 102.1 | 0.0 | 0.0 | -1470.3 | 0.0 | -18.0 | 101.7 | 169.2 | 0.0 | 0.0 | -0.3 | 100.9 | 1.2 | -0.5 | 0.0 | 0.0 | 0.0 | -103.7 | -0.5 | 101.0 | 0.7 | 0.0 | -147.9 | 0.0 | 0.0 | 0.1 | -1.1 | 0.3 | 0.0 | 94.8 | 95.9 | -104.3 | 0.0 | -6.2 | 0.0 | 102.1 | 0.0 | 0.0 | 0.0 | |
| | | Orientation B_3 | -3.6 | 0.0 | -0.1 | -1.7 | 301.5 | 0.0 | -1047.3 | -0.9 | 0.1 | -1.4 | 377.8 | -227.6 | 0.0 | 0.5 | -0.8 | 0.2 | 0.0 | 0.0 | 7E+03 | -394.0 | 1.0 | -0.8 | 0.1 | -0.2 | 103.1 | -0.5 | 171.4 | -1.3 | -0.5 | 0.0 | 0.0 | -17.3 | -4.6 | 0.1 | 0.8 | -1.0 | -206.1 | 0.2 | -1.7 | 0.0 | -6E+03 | -23.5 | |
| | | Slope B_4 | 0.0 | 0.0 | -1.2 | 6.2 | 0.0 | 0.0 | 62.6 | -0.3 | -2E+04 | -1.1 | 0.0 | 46.1 | 0.0 | -2.0 | -0.2 | -0.4 | 0.3 | 0.0 | 0.0 | 40.1 | 1.0 | -0.2 | -4.8 | -0.3 | 451.5 | -198.8 | 53.4 | -2.4 | 0.1 | 1.5 | 0.7 | 0.0 | -135.3 | -132.6 | -2.1 | -1.4 | 9.9 | -7.2 | 6.2 | 0.0 | 0.0 | -213.1 | |
| | Wind B_5 | 1.2 | 0.0 | 2.1 | -13.1 | -343.6 | 0.0 | 812.7 | 4.5 | 1.6 | -2.6 | 0.0 | -32.5 | 0.0 | -6.9 | 1.7 | -7.0 | -0.1 | 0.0 | 1E+04 | 309.2 | -5.4 | -2.0 | -7.6 | 1.7 | -978.2 | -9.7 | 996.5 | -0.7 | 9.0 | 8.9 | 0.5 | -4311.5 | -190.1 | 8.9 | 6.4 | -0.7 | -802.1 | 0.1 | -13.1 | 0.0 | 0.0 | 2764.6 | | |
| | SPEI | Independent B_0 | 3.3 | 102.6 | 1.4 | -1.3 | -98.1 | 102.6 | 290.6 | 1.7 | 2E+04 | 6.5 | -275.3 | 85.2 | 102.6 | 5.6 | 1.8 | 3.3 | 0.9 | 102.6 | -3E+03 | 2E+03 | 0.9 | 2.9 | 7.2 | 1.4 | -133.3 | 218.0 | -1.0 | 4.4 | -0.3 | 1.8 | 0.4 | 932.4 | 2E+04 | 102.9 | 1.4 | 2.5 | 257.6 | 8.1 | -1.3 | 102.6 | 607.8 | -177.2 | |
| | | Drought index B_1 | -29.3 | 0.0 | -9.3 | -0.8 | 0.0 | 0.0 | 2E+03 | -3.8 | -5.3 | -7.6 | 0.0 | 0.0 | 0.0 | -4.5 | -0.5 | -2.5 | -1.4 | 0.0 | 2E+03 | -2E+03 | -0.1 | -2.3 | -0.3 | -0.9 | -152.5 | -7.8 | 4.6 | 1.2 | 0.3 | -5.8 | 1.5 | -64.2 | -2743.1 | -0.3 | 1.1 | 4.8 | -376.3 | -2.9 | -0.8 | 0.0 | -1325.5 | 539.7 | |
| | | Distance Roads B_2 | 99.1 | 0.0 | 101.7 | 101.3 | 0.0 | 0.0 | -542.9 | 0.0 | -18.0 | 101.6 | 169.2 | 0.0 | 0.0 | -0.2 | 100.9 | 1.2 | -0.5 | 0.0 | 0.0 | 0.0 | -103.5 | -0.7 | 100.7 | 0.7 | 0.0 | -151.3 | 0.0 | 0.0 | 0.1 | -1.7 | 0.2 | 0.0 | -1483.6 | 101.8 | -103.9 | 0.0 | 332.7 | 0.0 | 101.3 | 0.0 | 0.0 | 0.0 | |
| Orientation B_3 | | -3.6 | 0.0 | -0.3 | -1.2 | 301.5 | 0.0 | -392.5 | -0.8 | 0.0 | -1.4 | 377.8 | -227.6 | 0.0 | 0.6 | -0.8 | 0.6 | 0.0 | 0.0 | 605.8 | -1E+03 | 0.8 | -0.7 | 0.2 | -0.1 | 39.8 | -0.2 | 6.1 | -1.3 | -0.5 | -0.7 | 0.1 | -17.8 | 565.8 | 0.6 | 0.7 | -1.3 | -94.2 | 0.1 | -1.2 | 0.0 | 0.0 | -223.7 | | |
| Slope B_4 | | 0.0 | 0.0 | -1.0 | 6.8 | 0.0 | 0.0 | -118.8 | -0.8 | -2E+04 | -1.9 | 0.0 | 46.1 | 0.0 | -2.4 | -0.2 | -0.6 | 0.4 | 0.0 | 0.0 | -3E+03 | 0.8 | 0.0 | -4.3 | -0.2 | 366.6 | -207.3 | 1.4 | -2.7 | 0.1 | 1.6 | 0.6 | 0.0 | -5192.1 | -102.4 | -2.1 | -0.6 | -3.6 | -5.8 | 6.8 | 0.0 | 0.0 | -141.4 | | |
| Wind B_5 | 1.1 | 0.0 | 2.3 | -11.2 | -343.6 | 0.0 | 289.5 | 4.8 | 2.2 | -4.8 | 0.0 | -32.5 | 0.0 | -7.2 | 1.9 | -6.5 | 0.0 | 0.0 | 7E+03 | 1E+04 | -4.9 | -3.5 | -6.7 | 0.8 | -631.5 | -26.9 | -7.5 | -1.5 | 8.9 | 11.8 | 1.3 | -4E+03 | -7E+04 | 0.6 | 6.6 | -1.0 | -374.5 | -0.9 | -11.2 | 0.0 | 0.0 | 3173.8 | | | |
| AWS | CN-DEP | Independent B_0 | 102.6 | 102.6 | -33.4 | -66.8 | -102.6 | 102.6 | 102.6 | 3.8 | 2E+04 | 3E+06 | 102.6 | 102.6 | 102.6 | 5E+04 | -1.8 | 496.0 | 1.9 | 102.6 | -2E+03 | 2E+03 | 598.0 | 2.5 | 272.4 | 1.4 | 2E+03 | 212.4 | -3991.5 | 7.1 | -2.6 | 431.1 | -1.0 | 102.6 | 102.6 | 102.6 | 12.0 | 912.1 | 102.6 | 112.9 | -66.8 | -77.0 | 102.6 | 102.6 | |
| | | Drought index B_1 | 0.0 | 0.0 | -377.1 | 80.8 | 0.0 | 0.0 | 0.0 | 0.0 | 953.4 | -146.3 | 0.0 | 0.0 | 0.0 | -158.6 | 1.1 | -492.8 | -1.4 | 0.0 | 1E+03 | -1E+03 | -596.2 | -1.1 | 2.0 | -0.4 | 1E+03 | 0.0 | -4E+03 | -3.9 | -0.9 | 245.2 | 0.1 | 0.0 | 0.0 | 0.0 | 1.4 | 560.0 | 0.0 | -101.5 | 80.8 | 291.4 | 0.0 | 0.0 | |
| | | Distance Roads B_2 | 0.0 | 0.0 | -254.4 | 17.5 | 0.0 | 0.0 | -205.1 | 0.0 | 0.0 | -1E+06 | 0.0 | 0.0 | 0.0 | 31.7 | 100.9 | 101.3 | -0.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.7 | 100.4 | 1.2 | 0.0 | -151.4 | 0.0 | 0.0 | 100.7 | 0.0 | -0.2 | 0.0 | 0.0 | 0.0 | 0.0 | -102.2 | 0.0 | 0.0 | 0.0 | 17.5 | -151.5 | 0.0 | 0.0 |
| | | Orientation B_3 | 0.0 | 0.0 | 134.8 | -50.4 | 0.0 | 0.0 | 0.0 | -1.6 | 5.9 | 1.4 | 0.0 | 0.0 | 0.0 | 0.9 | -0.2 | 0.5 | 0.1 | 0.0 | 265.7 | -657.1 | 1.0 | -0.8 | 3.9 | -0.5 | -2E+03 | -2.2 | 13.6 | -0.8 | -0.5 | -262.5 | -0.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -221.9 | 0.0 | 7.2 | -50.4 | -0.4 | 0.0 | 0.0 |
| | | Slope B_4 | 0.0 | 0.0 | 226.4 | 348.5 | 0.0 | 0.0 | 0.0 | -2.3 | -2E+04 | -3E+06 | 0.0 | 0.0 | 0.0 | -5E+04 | 1.8 | 0.7 | 0.1 | 0.0 | 0.0 | -395.0 | 0.2 | 0.0 | -269.1 | 0.4 | -2E+03 | -206.3 | 8E+03 | -1.6 | 1.3 | 88.6 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | -3.1 | 57.6 | 0.0 | -8.9 | 348.5 | -211.4 | 0.0 | 0.0 |
| | Wind B_5 | 0.0 | 0.0 | 526.7 | -815.2 | 0.0 | 0.0 | 0.0 | 3.8 | -18.1 | -5.6 | 0.0 | 0.0 | 0.0 | 2.7 | 4.5 | -11.6 | 1.9 | 0.0 | 2E+03 | 0.0 | -7.3 | -1.0 | -31.7 | -0.8 | 2E+03 | -18.7 | 32.9 | 0.9 | 21.8 | -2E+03 | 13.4 | 0.0 | 0.0 | 0.0 | -43.5 | -4E+03 | 0.0 | -31.6 | -815.2 | -6.9 | 0.0 | 0.0 | | |
| | CN-SPEI | Independent B_0 | 102.6 | 102.6 | 594.4 | -114.6 | -102.6 | 102.6 | 102.6 | 5.3 | 1E+05 | 4E+06 | 102.6 | 102.6 | 102.6 | 6E+04 | -1.1 | 3.8 | 0.5 | 102.6 | -1E+03 | -485.6 | 1.2 | 1.9 | 277.8 | 1.3 | -209.5 | 216.8 | -529.2 | 3.5 | -2.8 | 439.8 | -1.0 | 102.6 | 102.6 | 102.6 | 13.6 | 257.3 | 102.6 | 196.8 | -114.6 | 210.3 | 102.6 | 102.6 | |
| | | Drought index B_1 | 0.0 | 0.0 | 1E+04 | -140.3 | 0.0 | 0.0 | 0.0 | -7.9 | 1E+03 | -10.8 | 0.0 | 0.0 | 0.0 | -17.5 | 0.2 | -8.6 | -3.4 | 0.0 | 2E+04 | 1E+03 | -1.1 | -2.6 | -0.2 | -2.0 | -391.1 | -0.1 | 445.4 | -0.4 | 6.7 | -1E+03 | -7.7 | 0.0 | 0.0 | 0.0 | -1.2 | -9E+03 | 0.0 | -3E+05 | -140.3 | -1.1 | 0.0 | 0.0 | |
| | | Distance Roads B_2 | 0.0 | 0.0 | 18.1 | -2.8 | 0.0 | 0.0 | -205.1 | 0.0 | 0.0 | -1E+06 | 0.0 | 0.0 | 0.0 | 30.2 | 100.9 | 101.6 | -0.9 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9 | 100.6 | 1.4 | 0.0 | -152.3 | 0.0 | 0.0 | 100.6 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | -102.4 | 0.0 | 0.0 | 0.0 | -2.8 | -149.7 | 0.0 | 0.0 | |
| | | Orientation B_3 | 0.0 | 0.0 | 98.8 | -43.7 | 0.0 | 0.0 | 0.0 | -1.6 | 292.0 | 1.7 | 0.0 | 0.0 | 0.0 | 2.4 | -0.2 | 0.5 | 0.2 | 0.0 | 615.8 | 42.4 | 0.7 | -0.7 | 3.1 | -0.4 | 63.4 | -2.2 | 233.1 | -0.8 | -0.6 | -131.8 | -0.2 | 0.0 | 0.0 | 0.0 | -0.8 | -370.6 | 0.0 | 274.7 | -43.7 | 0.8 | 0.0 | 0.0 | |
| | | Slope B_4 | 0.0 | 0.0 | -779.1 | 512.6 | 0.0 | 0.0 | 0.0 | -1.8 | -1E+05 | -4E+06 | 0.0 | 0.0 | 0.0 | -6E+04 | 2.1 | 0.8 | 0.2 | 0.0 | 0.0 | 535.0 | 0.8 | 0.0 | -272.5 | 0.5 | 449.6 | -210.7 | 841.0 | -1.8 | 0.8 | -224.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | -3.3 | 150.3 | 0.0 | -180.6 | 512.6 | -209.2 | 0.0 | 0.0 |
| | Wind B_5 | 0.0 | 0.0 | 573.9 | -839.0 | 0.0 | 0.0 | 0.0 | 1.0 | -393.3 | -12.3 | 0.0 | 0.0 | 0.0 | -1.7 | 4.4 | -12.0 | 2.0 | 0.0 | 4E+03 | 0.0 | -5.1 | -0.5 | -30.8 | -0.2 | -652.2 | -18.4 | -2E+03 | 0.8 | 21.5 | -6.1 | 14.4 | 0. | | | | | | | | | | | | |