EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES PROJECT DEVELOPMENT PHASE

SPRINT 1

|  |  |
| --- | --- |
| Date | 03.11.2022 |
| Team ID | PNT2022TMID07051 |
| Project Name | Emerging Methods for Early Detection Of Forest Fires |
| Team Lead | Dharani |
| Team Members | Logavarshini  Arthi  Anisha Singh |

# In [4]:

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np **import** pandas **as** pd **import** seaborn **as** sns

**from** sklearn **import** metrics

**from** sklearn.metrics **import** classification\_report,confusion\_matrix

In [5]:

**import** warnings warnings**.**filterwarnings(action**=**"ignore")

**%matplotlib** inline

sns**.**set\_style('darkgrid') pd**.**set\_option("display.max\_rows",1000) pd**.**set\_option("display.max\_columns",1000)

# In [6]:

fires **=** pd**.**read\_csv(r"C:\Users\dhine\Downloads\forestfires.csv\forestfires.csv")

*#show the first 15 instance of dataset*

fires**.**head(15)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Out[6]: | **X** | **Y** | **month** | **day** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** | **rain** | **area** |
| **0** | 7 | 5 | mar | fri | 86.2 | 26.2 | 94.3 | 5.1 | 8.2 | 51 | 6.7 | 0.0 | 0.0 |
| **1** | 7 | 4 | oct | tue | 90.6 | 35.4 | 669.1 | 6.7 | 18.0 | 33 | 0.9 | 0.0 | 0.0 |
| **2** | 7 | 4 | oct | sat | 90.6 | 43.7 | 686.9 | 6.7 | 14.6 | 33 | 1.3 | 0.0 | 0.0 |
| **3** | 8 | 6 | mar | fri | 91.7 | 33.3 | 77.5 | 9.0 | 8.3 | 97 | 4.0 | 0.2 | 0.0 |
| **4** | 8 | 6 | mar | sun | 89.3 | 51.3 | 102.2 | 9.6 | 11.4 | 99 | 1.8 | 0.0 | 0.0 |
| **5** | 8 | 6 | aug | sun | 92.3 | 85.3 | 488.0 | 14.7 | 22.2 | 29 | 5.4 | 0.0 | 0.0 |
| **6** | 8 | 6 | aug | mon | 92.3 | 88.9 | 495.6 | 8.5 | 24.1 | 27 | 3.1 | 0.0 | 0.0 |
| **7** | 8 | 6 | aug | mon | 91.5 | 145.4 | 608.2 | 10.7 | 8.0 | 86 | 2.2 | 0.0 | 0.0 |
| **8** | 8 | 6 | sep | tue | 91.0 | 129.5 | 692.6 | 7.0 | 13.1 | 63 | 5.4 | 0.0 | 0.0 |
| **9** | 7 | 5 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 22.8 | 40 | 4.0 | 0.0 | 0.0 |
| **10** | 7 | 5 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 17.8 | 51 | 7.2 | 0.0 | 0.0 |
| **11** | 7 | 5 | sep | sat | 92.8 | 73.2 | 713.0 | 22.6 | 19.3 | 38 | 4.0 | 0.0 | 0.0 |
| **12** | 6 | 5 | aug | fri | 63.5 | 70.8 | 665.3 | 0.8 | 17.0 | 72 | 6.7 | 0.0 | 0.0 |
| **13** | 6 | 5 | sep | mon | 90.9 | 126.5 | 686.5 | 7.0 | 21.3 | 42 | 2.2 | 0.0 | 0.0 |
| **14** | 6 | 5 | sep | wed | 92.9 | 133.3 | 699.6 | 9.2 | 26.4 | 21 | 4.5 | 0.0 | 0.0 |

In [7]:

# Out[7]:

In [8]:

*#show the last 10 instances of dataset*

fires**.**tail(15)

# (517, 13)

fires**.**shape

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Out[8]: | **X** | **Y** | **month** | **day** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** | **rain** | **area** |
| **502** | 4 | 4 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 20.7 | 69 | 4.9 | 0.4 | 0.00 |
| **503** | 2 | 4 | aug | wed | 94.5 | 139.4 | 689.1 | 20.0 | 29.2 | 30 | 4.9 | 0.0 | 1.95 |
| **504** | 4 | 3 | aug | wed | 94.5 | 139.4 | 689.1 | 20.0 | 28.9 | 29 | 4.9 | 0.0 | 49.59 |
| **505** | 1 | 2 | aug | thu | 91.0 | 163.2 | 744.4 | 10.1 | 26.7 | 35 | 1.8 | 0.0 | 5.80 |
| **506** | 1 | 2 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 18.5 | 73 | 8.5 | 0.0 | 0.00 |
| **507** | 2 | 4 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 25.9 | 41 | 3.6 | 0.0 | 0.00 |
| **508** | 1 | 2 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 25.9 | 41 | 3.6 | 0.0 | 0.00 |
| **509** | 5 | 4 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 21.1 | 71 | 7.6 | 1.4 | 2.17 |
| **510** | 6 | 5 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 18.2 | 62 | 5.4 | 0.0 | 0.43 |
| **511** | 8 | 6 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 27.8 | 35 | 2.7 | 0.0 | 0.00 |
| **512** | 4 | 3 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 27.8 | 32 | 2.7 | 0.0 | 6.44 |
| **513** | 2 | 4 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 21.9 | 71 | 5.8 | 0.0 | 54.29 |
| **514** | 7 | 4 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 21.2 | 70 | 6.7 | 0.0 | 11.16 |
| **515** | 1 | 4 | aug | sat | 94.4 | 146.0 | 614.7 | 11.3 | 25.6 | 42 | 4.0 | 0.0 | 0.00 |
| **516** | 6 | 3 | nov | tue | 79.5 | 3.0 | 106.7 | 1.1 | 11.8 | 31 | 4.5 | 0.0 | 0.00 |

In [9]:

fires**.**info()

# <class 'pandas.core.frame.DataFrame'> RangeIndex: 517 entries, 0 to 516 Data columns (total 13 columns):

# Column Non-Null Count Dtype

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 |  | X |  | 517 | non-null |  | int64 |
| 1 |  | Y |  | 517 | non-null |  | int64 |
| 2 |  | month |  | 517 | non-null |  | object |
| 3 |  | day |  | 517 | non-null |  | object |
| 4 |  | FFMC |  | 517 | non-null |  | float64 |
| 5 |  | DMC |  | 517 | non-null |  | float64 |
| 6 |  | DC |  | 517 | non-null |  | float64 |
| 7 |  | ISI |  | 517 | non-null |  | float64 |
| 8 |  | temp |  | 517 | non-null |  | float64 |
| 9 |  | RH |  | 517 | non-null |  | int64 |
| 10 |  | wind |  | 517 | non-null |  | float64 |
| 11 |  | rain |  | 517 | non-null |  | float64 |
| 12 |  | area |  | 517 | non-null |  | float64 |

# dtypes: float64(8), int64(3), object(2) memory usage: 52.6+ KB

In [10]:

*#generate descriptive statistics of each attribute*

fires**.**describe()**.**T

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Out[10]: | **count** | **mean** | **std** | **min** | **25%** | **50%** | **75%** | **max** |
| **X** | 517.0 | 4.669246 | 2.313778 | 1.0 | 3.0 | 4.00 | 7.00 | 9.00 |
| **Y** | 517.0 | 4.299807 | 1.229900 | 2.0 | 4.0 | 4.00 | 5.00 | 9.00 |
| **FFMC** | 517.0 | 90.644681 | 5.520111 | 18.7 | 90.2 | 91.60 | 92.90 | 96.20 |

**DMC** 517.0 110.872340 64.046482 1.1 68.6 108.30 142.40 291.30

**DC** 517.0 547.940039 248.066192 7.9 437.7 664.20 713.90 860.60

**ISI** 517.0 9.021663 4.559477 0.0 6.5 8.40 10.80 56.10

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **temp** | 517.0 | 18.889168 | 5.806625 | 2.2 | 15.5 | 19.30 | 22.80 | 33.30 |

**RH** 517.0 44.288201 16.317469 15.0 33.0 42.00 53.00 100.00

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **wind** | 517.0 | 4.017602 | 1.791653 | 0.4 | 2.7 | 4.00 | 4.90 | 9.40 |

**rain** 517.0 0.021663 0.295959 0.0 0.0 0.00 0.00 6.40

**area** 517.0 12.847292 63.655818 0.0 0.0 0.52 6.57 1090.84

# In [11]:

fires['area']**.**values[fires['area']**.**values **>**0] **=** 1

*#renaming the area attribute to output for clear understanding* fires **=** fires**.**rename(columns**=**{'area': 'output'}) fires**.**head(10)

Out[11]:

# In [12]:

fires**.**corr()

**X Y month day FFMC DMC DC ISI temp RH wind rain output 0** 7 5 mar fri 86.2 26.2 94.3 5.1 8.2 51 6.7 0.0 0.0

**1** 7 4 oct tue 90.6 35.4 669.1 6.7 18.0 33 0.9 0.0 0.0

**2** 7 4 oct sat 90.6 43.7 686.9 6.7 14.6 33 1.3 0.0 0.0

**3** 8 6 mar fri 91.7 33.3 77.5 9.0 8.3 97 4.0 0.2 0.0

**4** 8 6 mar sun 89.3 51.3 102.2 9.6 11.4 99 1.8 0.0 0.0

**5** 8 6 aug sun 92.3 85.3 488.0 14.7 22.2 29 5.4 0.0 0.0

**6** 8 6 aug mon 92.3 88.9 495.6 8.5 24.1 27 3.1 0.0 0.0

**7** 8 6 aug mon 91.5 145.4 608.2 10.7 8.0 86 2.2 0.0 0.0

**8** 8 6 sep tue 91.0 129.5 692.6 7.0 13.1 63 5.4 0.0 0.0

**9** 7 5 sep sat 92.5 88.0 698.6 7.1 22.8 40 4.0 0.0 0.0

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Out[12]: | **X** | **Y** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** |  |
| **X** 1.000000 | | 0.539548 | -0.021039 | -0.048384 | -0.085916 | 0.006210 | -0.051258 | 0.085223 | 0.018798 | 0.065 |
| **Y** 0.539548 | | 1.000000 | -0.046308 | 0.007782 | -0.101178 | -0.024488 | -0.024103 | 0.062221 | -0.020341 | 0.033 |
| **FFMC** -0.021039 | | -0.046308 | 1.000000 | 0.382619 | 0.330512 | 0.531805 | 0.431532 | -0.300995 | -0.028485 | 0.056 |
| **DMC** -0.048384 | | 0.007782 | 0.382619 | 1.000000 | 0.682192 | 0.305128 | 0.469594 | 0.073795 | -0.105342 | 0.074 |
| **DC** -0.085916 | | -0.101178 | 0.330512 | 0.682192 | 1.000000 | 0.229154 | 0.496208 | -0.039192 | -0.203466 | 0.035 |
| **ISI** 0.006210 | | -0.024488 | 0.531805 | 0.305128 | 0.229154 | 1.000000 | 0.394287 | -0.132517 | 0.106826 | 0.067 |
| **temp** -0.051258 | | -0.024103 | 0.431532 | 0.469594 | 0.496208 | 0.394287 | 1.000000 | -0.527390 | -0.227116 | 0.069 |
| **RH** 0.085223 | | 0.062221 | -0.300995 | 0.073795 | -0.039192 | -0.132517 | -0.527390 | 1.000000 | 0.069410 | 0.099 |
| **wind** 0.018798 | | -0.020341 | -0.028485 | -0.105342 | -0.203466 | 0.106826 | -0.227116 | 0.069410 | 1.000000 | 0.061 |
| **rain** 0.065387 | | 0.033234 | 0.056702 | 0.074790 | 0.035861 | 0.067668 | 0.069491 | 0.099751 | 0.061119 | 1.000 |
| **output** 0.062491 | | 0.056892 | 0.073823 | 0.062672 | 0.096724 | 0.035663 | 0.076047 | -0.035587 | 0.055702 | 0.025 |

# In [15]:

numerical\_feature **=** fires**.**describe(include**=**["int", "float"])**.**columns

*# Print it in list type ..*

print(list(numerical\_feature))

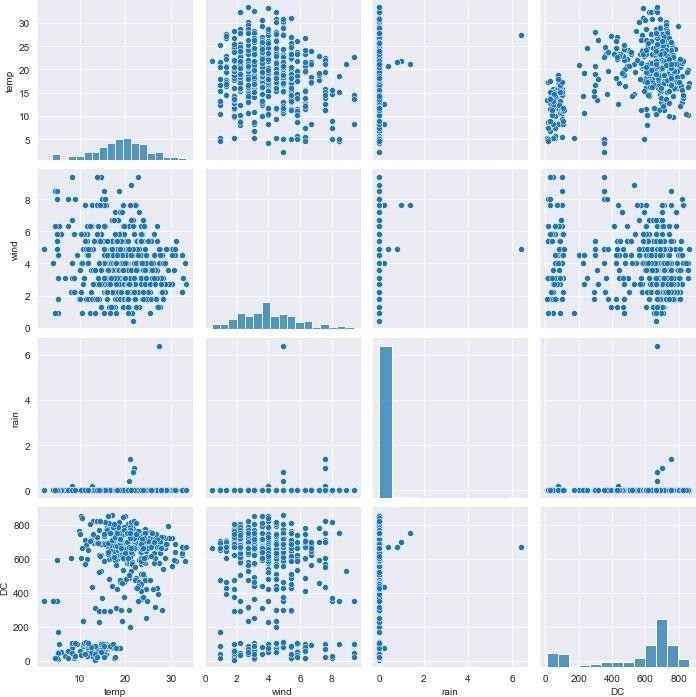
['X', 'Y', 'FFMC', 'DMC', 'DC', 'ISI', 'temp', 'RH', 'wind', 'rain', 'output']

# In [16]:

sns**.**set\_style('darkgrid')

*# Find the relation # plt.subplot(fires)*

sns**.**pairplot(fires[["temp", "wind", "rain","DC"]]) plt**.**show()



In [17]:

**for** idx, col **in** enumerate(numerical\_feature, 1): plt**.**figure(figsize**=**(5,5))

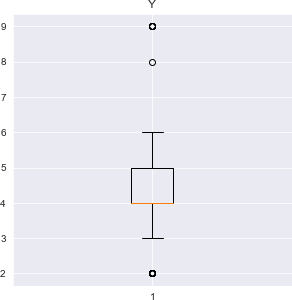
*# plt.subplot(len(numerical\_feature) // 2, 3, idx)*

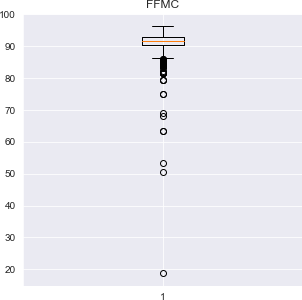
plt**.**boxplot(fires[col])

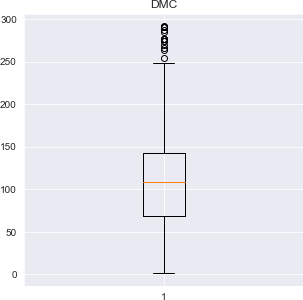
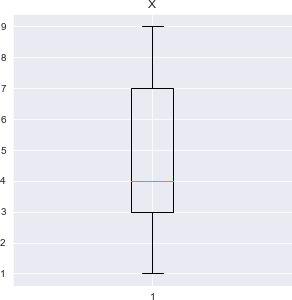
plt**.**title(col)

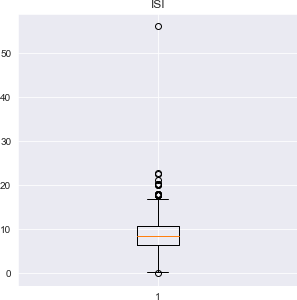
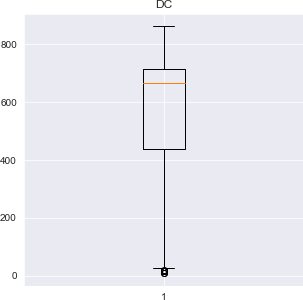
*# plt.hist(fires[col])*

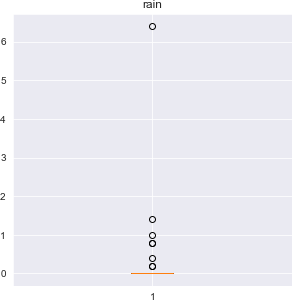
plt**.**tight\_layout() plt**.**show(plt)

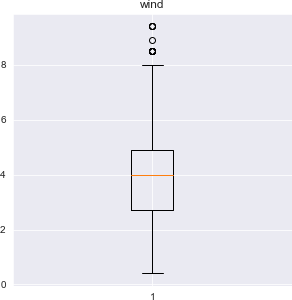
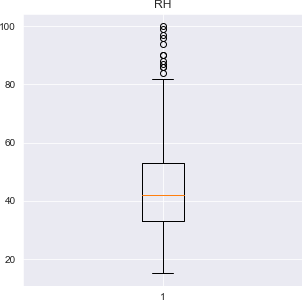


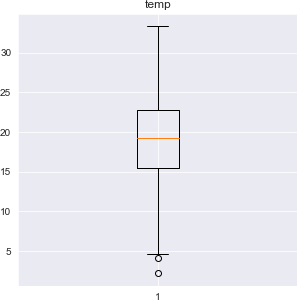


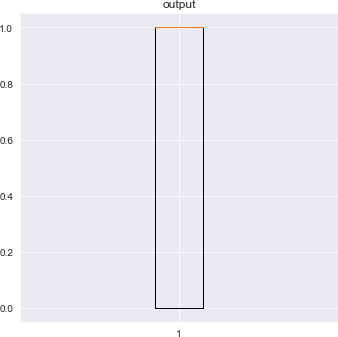








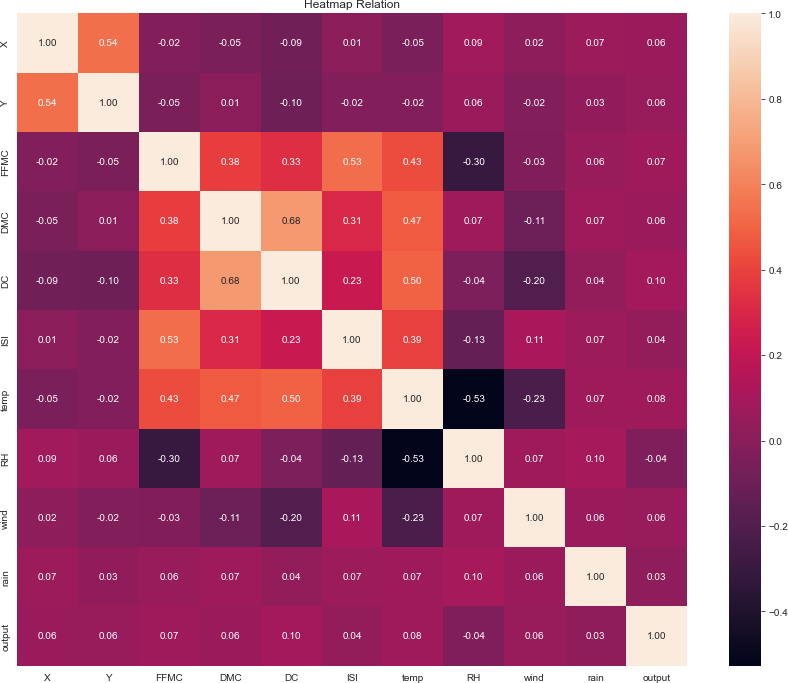
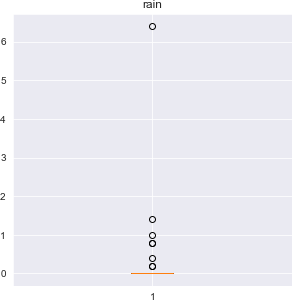




# In [18]:

plt**.**figure(figsize**=**(15, 12)) plt**.**title("Heatmap Relation")

sns**.**heatmap(fires[numerical\_feature]**.**corr(), annot**=True**, fmt**=**'.2f');



In [19]:

highest\_rain **=** fires**.**sort\_values(by**=**'rain', ascending**=False**)[['month', 'day', 'rain']]**.**head() highest\_rain

|  |  |  |  |
| --- | --- | --- | --- |
| Out[19]: | **month** | **day** | **rain** |
| **499** | aug | tue | 6.4 |
| **509** | aug | fri | 1.4 |
| **243** | aug | sun | 1.0 |
| **500** | aug | tue | 0.8 |
| **501** | aug | tue | 0.8 |

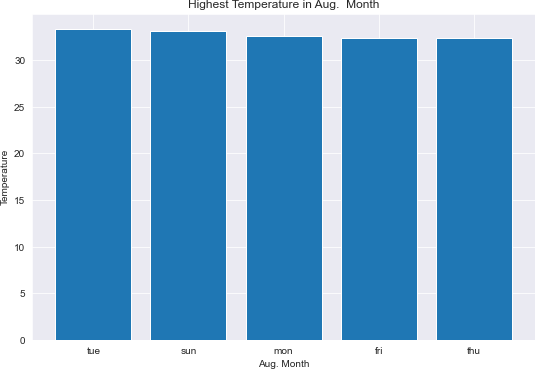
# In [20]:

highest\_temp **=** fires**.**sort\_values(by**=**'temp', ascending**=False**)[['month', 'day', 'temp']]**.**head() plt**.**figure(figsize**=**(9, 6))

plt**.**title("Highest Temperature in Aug. Month") plt**.**bar(highest\_temp['day'], highest\_temp['temp'])

plt**.**xlabel("Day") plt**.**xlabel("Aug. Month")

plt**.**ylabel("Temperature") plt**.**show()



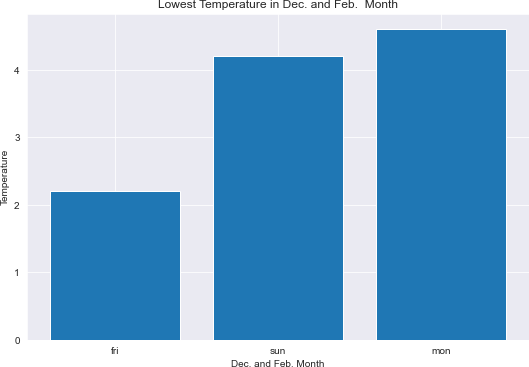
In [21]:

lowest\_temp **=** fires**.**sort\_values(by**=**'temp', ascending**=True**)[['month', 'day', 'temp']]**.**head() plt**.**figure(figsize**=**(9, 6))

plt**.**title("Lowest Temperature in Dec. and Feb. Month") plt**.**bar(lowest\_temp['day'], lowest\_temp['temp'])

plt**.**xlabel("Day") plt**.**xlabel("Dec. and Feb. Month")

plt**.**ylabel("Temperature") plt**.**show()



# In [22]:

fires

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Out[22]: | **X** | **Y** | **month** | **day** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** | **rain** | **output** |
| **0** | 7 | 5 | mar | fri | 86.2 | 26.2 | 94.3 | 5.1 | 8.2 | 51 | 6.7 | 0.0 | 0.0 |
| **1** | 7 | 4 | oct | tue | 90.6 | 35.4 | 669.1 | 6.7 | 18.0 | 33 | 0.9 | 0.0 | 0.0 |
| **2** | 7 | 4 | oct | sat | 90.6 | 43.7 | 686.9 | 6.7 | 14.6 | 33 | 1.3 | 0.0 | 0.0 |
| **3** | 8 | 6 | mar | fri | 91.7 | 33.3 | 77.5 | 9.0 | 8.3 | 97 | 4.0 | 0.2 | 0.0 |
| **4** | 8 | 6 | mar | sun | 89.3 | 51.3 | 102.2 | 9.6 | 11.4 | 99 | 1.8 | 0.0 | 0.0 |
| **5** | 8 | 6 | aug | sun | 92.3 | 85.3 | 488.0 | 14.7 | 22.2 | 29 | 5.4 | 0.0 | 0.0 |
| **6** | 8 | 6 | aug | mon | 92.3 | 88.9 | 495.6 | 8.5 | 24.1 | 27 | 3.1 | 0.0 | 0.0 |
| **7** | 8 | 6 | aug | mon | 91.5 | 145.4 | 608.2 | 10.7 | 8.0 | 86 | 2.2 | 0.0 | 0.0 |
| **8** | 8 | 6 | sep | tue | 91.0 | 129.5 | 692.6 | 7.0 | 13.1 | 63 | 5.4 | 0.0 | 0.0 |
| **9** | 7 | 5 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 22.8 | 40 | 4.0 | 0.0 | 0.0 |
| **10** | 7 | 5 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 17.8 | 51 | 7.2 | 0.0 | 0.0 |
| **11** | 7 | 5 | sep | sat | 92.8 | 73.2 | 713.0 | 22.6 | 19.3 | 38 | 4.0 | 0.0 | 0.0 |
| **12** | 6 | 5 | aug | fri | 63.5 | 70.8 | 665.3 | 0.8 | 17.0 | 72 | 6.7 | 0.0 | 0.0 |
| **13** | 6 | 5 | sep | mon | 90.9 | 126.5 | 686.5 | 7.0 | 21.3 | 42 | 2.2 | 0.0 | 0.0 |
| **14** | 6 | 5 | sep | wed | 92.9 | 133.3 | 699.6 | 9.2 | 26.4 | 21 | 4.5 | 0.0 | 0.0 |
| **15** | 6 | 5 | sep | fri | 93.3 | 141.2 | 713.9 | 13.9 | 22.9 | 44 | 5.4 | 0.0 | 0.0 |
| **16** | 5 | 5 | mar | sat | 91.7 | 35.8 | 80.8 | 7.8 | 15.1 | 27 | 5.4 | 0.0 | 0.0 |
| **17** | 8 | 5 | oct | mon | 84.9 | 32.8 | 664.2 | 3.0 | 16.7 | 47 | 4.9 | 0.0 | 0.0 |
| **18** | 6 | 4 | mar | wed | 89.2 | 27.9 | 70.8 | 6.3 | 15.9 | 35 | 4.0 | 0.0 | 0.0 |
| **19** | 6 | 4 | apr | sat | 86.3 | 27.4 | 97.1 | 5.1 | 9.3 | 44 | 4.5 | 0.0 | 0.0 |
| **20** | 6 | 4 | sep | tue | 91.0 | 129.5 | 692.6 | 7.0 | 18.3 | 40 | 2.7 | 0.0 | 0.0 |
| **21** | 5 | 4 | sep | mon | 91.8 | 78.5 | 724.3 | 9.2 | 19.1 | 38 | 2.7 | 0.0 | 0.0 |
| **22** | 7 | 4 | jun | sun | 94.3 | 96.3 | 200.0 | 56.1 | 21.0 | 44 | 4.5 | 0.0 | 0.0 |
| **23** | 7 | 4 | aug | sat | 90.2 | 110.9 | 537.4 | 6.2 | 19.5 | 43 | 5.8 | 0.0 | 0.0 |
| **24** | 7 | 4 | aug | sat | 93.5 | 139.4 | 594.2 | 20.3 | 23.7 | 32 | 5.8 | 0.0 | 0.0 |
| **25** | 7 | 4 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 16.3 | 60 | 5.4 | 0.0 | 0.0 |
| **26** | 7 | 4 | sep | fri | 92.4 | 117.9 | 668.0 | 12.2 | 19.0 | 34 | 5.8 | 0.0 | 0.0 |
| **27** | 7 | 4 | sep | mon | 90.9 | 126.5 | 686.5 | 7.0 | 19.4 | 48 | 1.3 | 0.0 | 0.0 |
| **28** | 6 | 3 | sep | sat | 93.4 | 145.4 | 721.4 | 8.1 | 30.2 | 24 | 2.7 | 0.0 | 0.0 |
| **29** | 6 | 3 | sep | sun | 93.5 | 149.3 | 728.6 | 8.1 | 22.8 | 39 | 3.6 | 0.0 | 0.0 |
| **30** | 6 | 3 | sep | fri | 94.3 | 85.1 | 692.3 | 15.9 | 25.4 | 24 | 3.6 | 0.0 | 0.0 |
| **31** | 6 | 3 | sep | mon | 88.6 | 91.8 | 709.9 | 7.1 | 11.2 | 78 | 7.6 | 0.0 | 0.0 |
| **32** | 6 | 3 | sep | fri | 88.6 | 69.7 | 706.8 | 5.8 | 20.6 | 37 | 1.8 | 0.0 | 0.0 |
| **33** | 6 | 3 | sep | sun | 91.7 | 75.6 | 718.3 | 7.8 | 17.7 | 39 | 3.6 | 0.0 | 0.0 |
| **34** | 6 | 3 | sep | mon | 91.8 | 78.5 | 724.3 | 9.2 | 21.2 | 32 | 2.7 | 0.0 | 0.0 |
| **35** | 6 | 3 | sep | tue | 90.3 | 80.7 | 730.2 | 6.3 | 18.2 | 62 | 4.5 | 0.0 | 0.0 |
| **36** | 6 | 3 | oct | tue | 90.6 | 35.4 | 669.1 | 6.7 | 21.7 | 24 | 4.5 | 0.0 | 0.0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | **Y** | **month** | **day** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** | **rain** | **output** |
| **37** 7 | 4 | oct | fri | 90.0 | 41.5 | 682.6 | 8.7 | 11.3 | 60 | 5.4 | 0.0 | 0.0 |
| **38** 7 | 3 | oct | sat | 90.6 | 43.7 | 686.9 | 6.7 | 17.8 | 27 | 4.0 | 0.0 | 0.0 |
| **39** 4 | 4 | mar | tue | 88.1 | 25.7 | 67.6 | 3.8 | 14.1 | 43 | 2.7 | 0.0 | 0.0 |
| **40** 4 | 4 | jul | tue | 79.5 | 60.6 | 366.7 | 1.5 | 23.3 | 37 | 3.1 | 0.0 | 0.0 |
| **41** 4 | 4 | aug | sat | 90.2 | 96.9 | 624.2 | 8.9 | 18.4 | 42 | 6.7 | 0.0 | 0.0 |
| **42** 4 | 4 | aug | tue | 94.8 | 108.3 | 647.1 | 17.0 | 16.6 | 54 | 5.4 | 0.0 | 0.0 |
| **43** 4 | 4 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 19.6 | 48 | 2.7 | 0.0 | 0.0 |
| **44** 4 | 4 | sep | wed | 90.1 | 82.9 | 735.7 | 6.2 | 12.9 | 74 | 4.9 | 0.0 | 0.0 |
| **45** 5 | 6 | sep | wed | 94.3 | 85.1 | 692.3 | 15.9 | 25.9 | 24 | 4.0 | 0.0 | 0.0 |
| **46** 5 | 6 | sep | mon | 90.9 | 126.5 | 686.5 | 7.0 | 14.7 | 70 | 3.6 | 0.0 | 0.0 |
| **47** 6 | 6 | jul | mon | 94.2 | 62.3 | 442.9 | 11.0 | 23.0 | 36 | 3.1 | 0.0 | 0.0 |
| **48** 4 | 4 | mar | mon | 87.2 | 23.9 | 64.7 | 4.1 | 11.8 | 35 | 1.8 | 0.0 | 0.0 |
| **49** 4 | 4 | mar | mon | 87.6 | 52.2 | 103.8 | 5.0 | 11.0 | 46 | 5.8 | 0.0 | 0.0 |
| **50** 4 | 4 | sep | thu | 92.9 | 137.0 | 706.4 | 9.2 | 20.8 | 17 | 1.3 | 0.0 | 0.0 |
| **51** 4 | 3 | aug | sun | 90.2 | 99.6 | 631.2 | 6.3 | 21.5 | 34 | 2.2 | 0.0 | 0.0 |
| **52** 4 | 3 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 20.4 | 42 | 4.9 | 0.0 | 0.0 |
| **53** 4 | 3 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 20.4 | 42 | 4.9 | 0.0 | 0.0 |
| **54** 4 | 3 | aug | thu | 91.7 | 114.3 | 661.3 | 6.3 | 17.6 | 45 | 3.6 | 0.0 | 0.0 |
| **55** 4 | 3 | sep | thu | 92.9 | 137.0 | 706.4 | 9.2 | 27.7 | 24 | 2.2 | 0.0 | 0.0 |
| **56** 4 | 3 | sep | tue | 90.3 | 80.7 | 730.2 | 6.3 | 17.8 | 63 | 4.9 | 0.0 | 0.0 |
| **57** 4 | 3 | oct | sun | 92.6 | 46.5 | 691.8 | 8.8 | 13.8 | 50 | 2.7 | 0.0 | 0.0 |
| **58** 2 | 2 | feb | mon | 84.0 | 9.3 | 34.0 | 2.1 | 13.9 | 40 | 5.4 | 0.0 | 0.0 |
| **59** 2 | 2 | feb | fri | 86.6 | 13.2 | 43.0 | 5.3 | 12.3 | 51 | 0.9 | 0.0 | 0.0 |
| **60** 2 | 2 | mar | sun | 89.3 | 51.3 | 102.2 | 9.6 | 11.5 | 39 | 5.8 | 0.0 | 0.0 |
| **61** 2 | 2 | mar | sun | 89.3 | 51.3 | 102.2 | 9.6 | 5.5 | 59 | 6.3 | 0.0 | 0.0 |
| **62** 2 | 2 | aug | thu | 93.0 | 75.3 | 466.6 | 7.7 | 18.8 | 35 | 4.9 | 0.0 | 0.0 |
| **63** 2 | 2 | aug | sun | 90.2 | 99.6 | 631.2 | 6.3 | 20.8 | 33 | 2.7 | 0.0 | 0.0 |
| **64** 2 | 2 | aug | mon | 91.1 | 103.2 | 638.8 | 5.8 | 23.1 | 31 | 3.1 | 0.0 | 0.0 |
| **65** 2 | 2 | aug | thu | 91.7 | 114.3 | 661.3 | 6.3 | 18.6 | 44 | 4.5 | 0.0 | 0.0 |
| **66** 2 | 2 | sep | fri | 92.4 | 117.9 | 668.0 | 12.2 | 23.0 | 37 | 4.5 | 0.0 | 0.0 |
| **67** 2 | 2 | sep | fri | 92.4 | 117.9 | 668.0 | 12.2 | 19.6 | 33 | 5.4 | 0.0 | 0.0 |
| **68** 2 | 2 | sep | fri | 92.4 | 117.9 | 668.0 | 12.2 | 19.6 | 33 | 6.3 | 0.0 | 0.0 |
| **69** 4 | 5 | mar | fri | 91.7 | 33.3 | 77.5 | 9.0 | 17.2 | 26 | 4.5 | 0.0 | 0.0 |
| **70** 4 | 5 | mar | fri | 91.2 | 48.3 | 97.8 | 12.5 | 15.8 | 27 | 7.6 | 0.0 | 0.0 |
| **71** 4 | 5 | sep | fri | 94.3 | 85.1 | 692.3 | 15.9 | 17.7 | 37 | 3.6 | 0.0 | 0.0 |
| **72** 5 | 4 | mar | fri | 91.7 | 33.3 | 77.5 | 9.0 | 15.6 | 25 | 6.3 | 0.0 | 0.0 |
| **73** 5 | 4 | aug | tue | 88.8 | 147.3 | 614.5 | 9.0 | 17.3 | 43 | 4.5 | 0.0 | 0.0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **74** | 5 | 4 | sep | fri | 93.3 | 141.2 | 713.9 | 13.9 | 27.6 | 30 | 1.3 | 0.0 | 0.0 |
| **75** | 9 | 9 | feb | thu | 84.2 | 6.8 | 26.6 | 7.7 | 6.7 | 79 | 3.1 | 0.0 | 0.0 |
| **76** | 9 | 9 | feb | fri | 86.6 | 13.2 | 43.0 | 5.3 | 15.7 | 43 | 3.1 | 0.0 | 0.0 |
| **77** | 1 | 3 | mar | mon | 87.6 | 52.2 | 103.8 | 5.0 | 8.3 | 72 | 3.1 | 0.0 | 0.0 |
| **78** | 1 | 2 | aug | fri | 90.1 | 108.0 | 529.8 | 12.5 | 14.7 | 66 | 2.7 | 0.0 | 0.0 |
| **79** | 1 | 2 | aug | tue | 91.0 | 121.2 | 561.6 | 7.0 | 21.6 | 19 | 6.7 | 0.0 | 0.0 |
| **80** | 1 | 2 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 19.5 | 39 | 6.3 | 0.0 | 0.0 |
| **81** | 1 | 2 | aug | sun | 90.2 | 99.6 | 631.2 | 6.3 | 17.9 | 44 | 2.2 | 0.0 | 0.0 |
| **82** | 1 | 2 | aug | tue | 94.8 | 108.3 | 647.1 | 17.0 | 18.6 | 51 | 4.5 | 0.0 | 0.0 |
| **83** | 1 | 2 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 16.6 | 47 | 0.9 | 0.0 | 0.0 |
| **84** | 1 | 2 | aug | thu | 91.7 | 114.3 | 661.3 | 6.3 | 20.2 | 45 | 3.6 | 0.0 | 0.0 |
| **85** | 1 | 2 | sep | thu | 92.9 | 137.0 | 706.4 | 9.2 | 21.5 | 15 | 0.9 | 0.0 | 0.0 |
| **86** | 1 | 2 | sep | thu | 92.9 | 137.0 | 706.4 | 9.2 | 25.4 | 27 | 2.2 | 0.0 | 0.0 |
| **87** | 1 | 2 | sep | thu | 92.9 | 137.0 | 706.4 | 9.2 | 22.4 | 34 | 2.2 | 0.0 | 0.0 |
| **88** | 1 | 2 | sep | sun | 93.5 | 149.3 | 728.6 | 8.1 | 25.3 | 36 | 3.6 | 0.0 | 0.0 |
| **89** | 6 | 5 | mar | sat | 91.7 | 35.8 | 80.8 | 7.8 | 17.4 | 25 | 4.9 | 0.0 | 0.0 |
| **90** | 6 | 5 | aug | sat | 90.2 | 96.9 | 624.2 | 8.9 | 14.7 | 59 | 5.8 | 0.0 | 0.0 |
| **91** | 8 | 6 | mar | fri | 91.7 | 35.8 | 80.8 | 7.8 | 17.4 | 24 | 5.4 | 0.0 | 0.0 |
| **92** | 8 | 6 | aug | sun | 92.3 | 85.3 | 488.0 | 14.7 | 20.8 | 32 | 6.3 | 0.0 | 0.0 |
| **93** | 8 | 6 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 18.2 | 43 | 4.9 | 0.0 | 0.0 |
| **94** | 8 | 6 | aug | mon | 91.1 | 103.2 | 638.8 | 5.8 | 23.4 | 22 | 2.7 | 0.0 | 0.0 |
| **95** | 4 | 4 | sep | sun | 89.7 | 90.0 | 704.4 | 4.8 | 17.8 | 64 | 1.3 | 0.0 | 0.0 |
| **96** | 3 | 4 | feb | sat | 83.9 | 8.0 | 30.2 | 2.6 | 12.7 | 48 | 1.8 | 0.0 | 0.0 |
| **97** | 3 | 4 | mar | sat | 69.0 | 2.4 | 15.5 | 0.7 | 17.4 | 24 | 5.4 | 0.0 | 0.0 |
| **98** | 3 | 4 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 11.6 | 87 | 4.5 | 0.0 | 0.0 |
| **99** | 3 | 4 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 19.8 | 39 | 5.4 | 0.0 | 0.0 |
| **100** | 3 | 4 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 19.8 | 39 | 5.4 | 0.0 | 0.0 |
| **101** | 3 | 4 | aug | tue | 88.8 | 147.3 | 614.5 | 9.0 | 14.4 | 66 | 5.4 | 0.0 | 0.0 |
| **102** | 2 | 4 | aug | tue | 94.8 | 108.3 | 647.1 | 17.0 | 20.1 | 40 | 4.0 | 0.0 | 0.0 |
| **103** | 2 | 4 | sep | sat | 92.5 | 121.1 | 674.4 | 8.6 | 24.1 | 29 | 4.5 | 0.0 | 0.0 |
| **104** | 2 | 4 | jan | sat | 82.1 | 3.7 | 9.3 | 2.9 | 5.3 | 78 | 3.1 | 0.0 | 0.0 |
| **105** | 4 | 5 | mar | fri | 85.9 | 19.5 | 57.3 | 2.8 | 12.7 | 52 | 6.3 | 0.0 | 0.0 |
| **106** | 4 | 5 | mar | thu | 91.4 | 30.7 | 74.3 | 7.5 | 18.2 | 29 | 3.1 | 0.0 | 0.0 |
| **107** | 4 | 5 | aug | sun | 90.2 | 99.6 | 631.2 | 6.3 | 21.4 | 33 | 3.1 | 0.0 | 0.0 |
| **108** | 4 | 5 | sep | sat | 92.5 | 88.0 | 698.6 | 7.1 | 20.3 | 45 | 3.1 | 0.0 | 0.0 |
| **109** | 4 | 5 | sep | mon | 88.6 | 91.8 | 709.9 | 7.1 | 17.4 | 56 | 5.4 | 0.0 | 0.0 |
| **110** | 4 | 4 | mar | fri | 85.9 | 19.5 | 57.3 | 2.8 | 13.7 | 43 | 5.8 | 0.0 | 0.0 |

## X Y month day FFMC DMC DC ISI temp RH wind rain output

**111** 3 4 mar fri 91.7 33.3 77.5 9.0 18.8 18 4.5 0.0 0.0

**112** 3 4 sep sun 89.7 90.0 704.4 4.8 22.8 39 3.6 0.0 0.0

**113** 3 4 sep mon 91.8 78.5 724.3 9.2 18.9 35 2.7 0.0 0.0

**114** 3 4 mar tue 88.1 25.7 67.6 3.8 15.8 27 7.6 0.0 0.0

**115** 3 5 mar tue 88.1 25.7 67.6 3.8 15.5 27 6.3 0.0 0.0

**116** 3 4 mar sat 91.7 35.8 80.8 7.8 11.6 30 6.3 0.0 0.0

**117** 3 4 mar sat 91.7 35.8 80.8 7.8 15.2 27 4.9 0.0 0.0

**118** 3 4 mar mon 90.1 39.7 86.6 6.2 10.6 30 4.0 0.0 0.0

**119** 3 4 aug thu 93.0 75.3 466.6 7.7 19.6 36 3.1 0.0 0.0

**120** 3 4 aug mon 91.5 145.4 608.2 10.7 10.3 74 2.2 0.0 0.0

**121** 3 4 aug mon 91.5 145.4 608.2 10.7 17.1 43 5.4 0.0 0.0

**122** 3 4 sep sun 92.4 124.1 680.7 8.5 22.5 42 5.4 0.0 0.0

**123** 3 4 sep tue 84.4 73.4 671.9 3.2 17.9 45 3.1 0.0 0.0

**124** 3 4 sep fri 94.3 85.1 692.3 15.9 19.8 50 5.4 0.0 0.0

**125** 3 4 oct sun 92.6 46.5 691.8 8.8 20.6 24 5.4 0.0 0.0

**126** 3 5 mar mon 87.6 52.2 103.8 5.0 9.0 49 2.2 0.0 0.0

**127** 3 5 sep fri 93.5 149.3 728.6 8.1 17.2 43 3.1 0.0 0.0

**128** 3 5 oct wed 91.4 37.9 673.8 5.2 15.9 46 3.6 0.0 0.0

**129** 2 5 oct sun 92.6 46.5 691.8 8.8 15.4 35 0.9 0.0 0.0

**130** 4 6 feb sat 68.2 21.5 87.2 0.8 15.4 40 2.7 0.0 0.0

**131** 4 6 mar mon 87.2 23.9 64.7 4.1 14.0 39 3.1 0.0 0.0

**132** 4 6 mar sun 89.3 51.3 102.2 9.6 10.6 46 4.9 0.0 0.0

**133** 4 6 sep thu 93.7 80.9 685.2 17.9 17.6 42 3.1 0.0 0.0

**134** 3 5 mar tue 88.1 25.7 67.6 3.8 14.9 38 2.7 0.0 0.0

**135** 3 5 aug sat 93.5 139.4 594.2 20.3 17.6 52 5.8 0.0 0.0

**136** 3 6 sep sun 92.4 124.1 680.7 8.5 17.2 58 1.3 0.0 0.0

**137** 3 6 sep mon 90.9 126.5 686.5 7.0 15.6 66 3.1 0.0 0.0

**138** 9 9 jul tue 85.8 48.3 313.4 3.9 18.0 42 2.7 0.0 1.0

**139** 1 4 sep tue 91.0 129.5 692.6 7.0 21.7 38 2.2 0.0 1.0

**140** 2 5 sep mon 90.9 126.5 686.5 7.0 21.9 39 1.8 0.0 1.0

**141** 1 2 aug wed 95.5 99.9 513.3 13.2 23.3 31 4.5 0.0 1.0

**142** 8 6 aug fri 90.1 108.0 529.8 12.5 21.2 51 8.9 0.0 1.0

**143** 1 2 jul sat 90.0 51.3 296.3 8.7 16.6 53 5.4 0.0 1.0

**144** 2 5 aug wed 95.5 99.9 513.3 13.2 23.8 32 5.4 0.0 1.0

**145** 6 5 aug thu 95.2 131.7 578.8 10.4 27.4 22 4.0 0.0 1.0

**146** 5 4 mar mon 90.1 39.7 86.6 6.2 13.2 40 5.4 0.0 1.0

**147** 8 3 sep tue 84.4 73.4 671.9 3.2 24.2 28 3.6 0.0 1.0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **148** | 2 | 2 | aug | tue | 94.8 | 108.3 | 647.1 | 17.0 | 17.4 | 43 | 6.7 | 0.0 | 1.0 |
| **149** | 8 | 6 | sep | thu | 93.7 | 80.9 | 685.2 | 17.9 | 23.7 | 25 | 4.5 | 0.0 | 1.0 |
| **150** | 6 | 5 | jun | fri | 92.5 | 56.4 | 433.3 | 7.1 | 23.2 | 39 | 5.4 | 0.0 | 1.0 |
| **151** | 9 | 9 | jul | sun | 90.1 | 68.6 | 355.2 | 7.2 | 24.8 | 29 | 2.2 | 0.0 | 1.0 |
| **152** | 3 | 4 | jul | sat | 90.1 | 51.2 | 424.1 | 6.2 | 24.6 | 43 | 1.8 | 0.0 | 1.0 |
| **153** | 5 | 4 | sep | fri | 94.3 | 85.1 | 692.3 | 15.9 | 20.1 | 47 | 4.9 | 0.0 | 1.0 |
| **154** | 1 | 5 | sep | sat | 93.4 | 145.4 | 721.4 | 8.1 | 29.6 | 27 | 2.7 | 0.0 | 1.0 |
| **155** | 7 | 4 | aug | sun | 94.8 | 108.3 | 647.1 | 17.0 | 16.4 | 47 | 1.3 | 0.0 | 1.0 |
| **156** | 2 | 4 | sep | sat | 93.4 | 145.4 | 721.4 | 8.1 | 28.6 | 27 | 2.2 | 0.0 | 1.0 |
| **157** | 2 | 2 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 18.4 | 45 | 3.6 | 0.0 | 1.0 |
| **158** | 2 | 4 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 20.5 | 35 | 4.0 | 0.0 | 1.0 |
| **159** | 7 | 4 | sep | fri | 92.4 | 117.9 | 668.0 | 12.2 | 19.0 | 34 | 5.8 | 0.0 | 1.0 |
| **160** | 7 | 4 | mar | mon | 90.1 | 39.7 | 86.6 | 6.2 | 16.1 | 29 | 3.1 | 0.0 | 1.0 |
| **161** | 6 | 4 | aug | thu | 95.2 | 131.7 | 578.8 | 10.4 | 20.3 | 41 | 4.0 | 0.0 | 1.0 |
| **162** | 6 | 3 | mar | sat | 90.6 | 50.1 | 100.4 | 7.8 | 15.2 | 31 | 8.5 | 0.0 | 1.0 |
| **163** | 8 | 6 | sep | sat | 92.5 | 121.1 | 674.4 | 8.6 | 17.8 | 56 | 1.8 | 0.0 | 1.0 |
| **164** | 8 | 5 | sep | sun | 89.7 | 90.0 | 704.4 | 4.8 | 17.8 | 67 | 2.2 | 0.0 | 1.0 |
| **165** | 6 | 5 | mar | thu | 84.9 | 18.2 | 55.0 | 3.0 | 5.3 | 70 | 4.5 | 0.0 | 1.0 |
| **166** | 6 | 5 | aug | wed | 92.1 | 111.2 | 654.1 | 9.6 | 16.6 | 47 | 0.9 | 0.0 | 1.0 |
| **167** | 6 | 5 | aug | wed | 96.0 | 127.1 | 570.5 | 16.5 | 23.4 | 33 | 4.5 | 0.0 | 1.0 |
| **168** | 6 | 5 | mar | fri | 91.2 | 48.3 | 97.8 | 12.5 | 14.6 | 26 | 9.4 | 0.0 | 1.0 |
| **169** | 8 | 6 | aug | thu | 95.2 | 131.7 | 578.8 | 10.4 | 20.7 | 45 | 2.2 | 0.0 | 1.0 |
| **170** | 5 | 4 | sep | wed | 92.9 | 133.3 | 699.6 | 9.2 | 21.9 | 35 | 1.8 | 0.0 | 1.0 |
| **171** | 8 | 6 | aug | wed | 85.6 | 90.4 | 609.6 | 6.6 | 17.4 | 50 | 4.0 | 0.0 | 1.0 |
| **172** | 7 | 4 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 20.1 | 39 | 5.4 | 0.0 | 1.0 |
| **173** | 4 | 4 | sep | mon | 90.9 | 126.5 | 686.5 | 7.0 | 17.7 | 39 | 2.2 | 0.0 | 1.0 |
| **174** | 1 | 4 | aug | sat | 90.2 | 96.9 | 624.2 | 8.9 | 14.2 | 53 | 1.8 | 0.0 | 1.0 |
| **175** | 1 | 4 | aug | sat | 90.2 | 96.9 | 624.2 | 8.9 | 20.3 | 39 | 4.9 | 0.0 | 1.0 |
| **176** | 6 | 5 | apr | thu | 81.5 | 9.1 | 55.2 | 2.7 | 5.8 | 54 | 5.8 | 0.0 | 1.0 |
| **177** | 2 | 5 | aug | sun | 90.2 | 99.6 | 631.2 | 6.3 | 19.2 | 44 | 2.7 | 0.0 | 1.0 |
| **178** | 2 | 5 | sep | wed | 90.1 | 82.9 | 735.7 | 6.2 | 18.3 | 45 | 2.2 | 0.0 | 1.0 |
| **179** | 8 | 6 | aug | tue | 88.8 | 147.3 | 614.5 | 9.0 | 14.4 | 66 | 5.4 | 0.0 | 1.0 |
| **180** | 1 | 3 | sep | sun | 92.4 | 124.1 | 680.7 | 8.5 | 23.9 | 32 | 6.7 | 0.0 | 1.0 |
| **181** | 8 | 6 | oct | mon | 84.9 | 32.8 | 664.2 | 3.0 | 19.1 | 32 | 4.0 | 0.0 | 1.0 |
| **182** | 5 | 4 | feb | sun | 86.8 | 15.6 | 48.3 | 3.9 | 12.4 | 53 | 2.2 | 0.0 | 1.0 |
| **183** | 7 | 4 | oct | mon | 91.7 | 48.5 | 696.1 | 11.1 | 16.8 | 45 | 4.5 | 0.0 | 1.0 |
| **184** | 8 | 6 | aug | fri | 93.9 | 135.7 | 586.7 | 15.1 | 20.8 | 34 | 4.9 | 0.0 | 1.0 |

## X Y month day FFMC DMC DC ISI temp RH wind rain output

**185** 2 5 sep tue 91.0 129.5 692.6 7.0 17.6 46 3.1 0.0 1.0

**186** 8 6 mar sun 89.3 51.3 102.2 9.6 11.5 39 5.8 0.0 1.0

**187** 1 5 sep mon 90.9 126.5 686.5 7.0 21.0 42 2.2 0.0 1.0

**188** 6 4 mar sat 90.8 41.9 89.4 7.9 13.3 42 0.9 0.0 1.0

**189** 7 4 mar sun 90.7 44.0 92.4 5.5 11.5 60 4.0 0.0 1.0

**190** 6 5 mar fri 91.2 48.3 97.8 12.5 11.7 33 4.0 0.0 1.0

**191** 2 5 aug thu 95.2 131.7 578.8 10.4 24.2 28 2.7 0.0 1.0

**192** 2 2 aug tue 94.8 108.3 647.1 17.0 24.6 22 4.5 0.0 1.0

**193** 4 5 sep wed 92.9 133.3 699.6 9.2 24.3 25 4.0 0.0 1.0

**194** 2 2 aug tue 94.8 108.3 647.1 17.0 24.6 22 4.5 0.0 1.0

**195** 2 5 aug fri 93.9 135.7 586.7 15.1 23.5 36 5.4 0.0 1.0

**196** 6 5 apr thu 81.5 9.1 55.2 2.7 5.8 54 5.8 0.0 1.0

**197** 4 5 sep thu 92.9 137.0 706.4 9.2 21.5 15 0.9 0.0 1.0

**198** 3 4 sep tue 91.0 129.5 692.6 7.0 13.9 59 6.3 0.0 1.0

**199** 2 4 sep mon 63.5 70.8 665.3 0.8 22.6 38 3.6 0.0 1.0

**200** 1 5 sep tue 91.0 129.5 692.6 7.0 21.6 33 2.2 0.0 1.0

**201** 6 5 mar sun 90.1 37.6 83.7 7.2 12.4 54 3.6 0.0 1.0

**202** 7 4 feb sun 83.9 8.7 32.1 2.1 8.8 68 2.2 0.0 1.0

**203** 8 6 oct wed 91.4 37.9 673.8 5.2 20.2 37 2.7 0.0 1.0

**204** 5 6 mar sat 90.6 50.1 100.4 7.8 15.1 64 4.0 0.0 1.0

**205** 4 5 sep thu 92.9 137.0 706.4 9.2 22.1 34 1.8 0.0 1.0

**206** 2 2 aug sat 93.5 139.4 594.2 20.3 22.9 31 7.2 0.0 1.0

**207** 7 5 sep tue 91.0 129.5 692.6 7.0 20.7 37 2.2 0.0 1.0

**208** 6 5 sep fri 92.4 117.9 668.0 12.2 19.6 33 6.3 0.0 1.0

**209** 8 3 sep thu 93.7 80.9 685.2 17.9 23.2 26 4.9 0.0 1.0

**210** 4 4 oct sat 90.6 43.7 686.9 6.7 18.4 25 3.1 0.0 1.0

**211** 7 4 aug sat 93.5 139.4 594.2 20.3 5.1 96 5.8 0.0 1.0

**212** 7 4 sep fri 94.3 85.1 692.3 15.9 20.1 47 4.9 0.0 1.0

**213** 7 3 mar mon 87.6 52.2 103.8 5.0 11.0 46 5.8 0.0 1.0

**214** 4 4 mar sat 91.7 35.8 80.8 7.8 17.0 27 4.9 0.0 1.0

**215** 4 4 mar sat 91.7 35.8 80.8 7.8 17.0 27 4.9 0.0 1.0

**216** 4 4 sep sun 92.4 124.1 680.7 8.5 16.9 60 1.3 0.0 1.0

**217** 1 3 sep mon 88.6 91.8 709.9 7.1 12.4 73 6.3 0.0 1.0

**218** 4 5 sep wed 92.9 133.3 699.6 9.2 19.4 19 1.3 0.0 1.0

**219** 6 5 mar mon 90.1 39.7 86.6 6.2 15.2 27 3.1 0.0 1.0

**220** 8 6 aug sun 90.2 99.6 631.2 6.3 16.2 59 3.1 0.0 1.0

**221** 3 4 sep fri 93.3 141.2 713.9 13.9 18.6 49 3.6 0.0 1.0

## X Y month day FFMC DMC DC ISI temp RH wind rain output

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **222** | 4 | 3 | mar | mon | 87.6 | 52.2 | 103.8 | 5.0 | 11.0 | 46 | 5.8 | 0.0 | 1.0 |
| **223** | 2 | 2 | jul | fri | 88.3 | 150.3 | 309.9 | 6.8 | 13.4 | 79 | 3.6 | 0.0 | 1.0 |
| **224** | 7 | 4 | sep | wed | 90.1 | 82.9 | 735.7 | 6.2 | 15.4 | 57 | 4.5 | 0.0 | 1.0 |
| **225** | 4 | 4 | sep | sun | 93.5 | 149.3 | 728.6 | 8.1 | 22.9 | 39 | 4.9 | 0.0 | 1.0 |
| **226** | 7 | 5 | oct | mon | 91.7 | 48.5 | 696.1 | 11.1 | 16.1 | 44 | 4.0 | 0.0 | 1.0 |
| **227** | 8 | 6 | aug | sat | 92.2 | 81.8 | 480.8 | 11.9 | 20.1 | 34 | 4.5 | 0.0 | 1.0 |
| **228** | 4 | 6 | sep | sun | 93.5 | 149.3 | 728.6 | 8.1 | 28.3 | 26 | 3.1 | 0.0 | 1.0 |
| **229** | 8 | 6 | aug | sat | 92.2 | 81.8 | 480.8 | 11.9 | 16.4 | 43 | 4.0 | 0.0 | 1.0 |
| **230** | 4 | 4 | sep | wed | 92.9 | 133.3 | 699.6 | 9.2 | 26.4 | 21 | 4.5 | 0.0 | 1.0 |
| **231** | 1 | 5 | sep | sun | 93.5 | 149.3 | 728.6 | 8.1 | 27.8 | 27 | 3.1 | 0.0 | 1.0 |
| **232** | 6 | 4 | sep | tue | 91.0 | 129.5 | 692.6 | 7.0 | 18.7 | 43 | 2.7 | 0.0 | 1.0 |
| **233** | 9 | 4 | sep | tue | 84.4 | 73.4 | 671.9 | 3.2 | 24.3 | 36 | 3.1 | 0.0 | 1.0 |
| **234** | 4 | 5 | sep | sat | 92.5 | 121.1 | 674.4 | 8.6 | 17.7 | 25 | 3.1 | 0.0 | 1.0 |
| **235** | 8 | 6 | aug | sun | 91.4 | 142.4 | 601.4 | 10.6 | 19.6 | 41 | 5.8 | 0.0 | 1.0 |
| **236** | 2 | 2 | sep | sat | 92.5 | 121.1 | 674.4 | 8.6 | 18.2 | 46 | 1.8 | 0.0 | 1.0 |
| **237** | 1 | 2 | sep | tue | 91.0 | 129.5 | 692.6 | 7.0 | 18.8 | 40 | 2.2 | 0.0 | 1.0 |
| **238** | 6 | 5 | sep | sat | 92.5 | 121.1 | 674.4 | 8.6 | 25.1 | 27 | 4.0 | 0.0 | 1.0 |
| **239** | 7 | 5 | apr | sun | 81.9 | 3.0 | 7.9 | 3.5 | 13.4 | 75 | 1.8 | 0.0 | 0.0 |
| **240** | 6 | 3 | apr | wed | 88.0 | 17.2 | 43.5 | 3.8 | 15.2 | 51 | 2.7 | 0.0 | 0.0 |
| **241** | 4 | 4 | apr | fri | 83.0 | 23.3 | 85.3 | 2.3 | 16.7 | 20 | 3.1 | 0.0 | 0.0 |
| **242** | 2 | 4 | aug | sun | 94.2 | 122.3 | 589.9 | 12.9 | 15.4 | 66 | 4.0 | 0.0 | 1.0 |
| **243** | 7 | 4 | aug | sun | 91.8 | 175.1 | 700.7 | 13.8 | 21.9 | 73 | 7.6 | 1.0 | 0.0 |
| **244** | 2 | 4 | aug | sun | 91.8 | 175.1 | 700.7 | 13.8 | 22.4 | 54 | 7.6 | 0.0 | 1.0 |
| **245** | 3 | 4 | aug | sun | 91.8 | 175.1 | 700.7 | 13.8 | 26.8 | 38 | 6.3 | 0.0 | 1.0 |
| **246** | 5 | 4 | aug | sun | 91.8 | 175.1 | 700.7 | 13.8 | 25.7 | 39 | 5.4 | 0.0 | 1.0 |
| **247** | 2 | 4 | aug | wed | 92.2 | 91.6 | 503.6 | 9.6 | 20.7 | 70 | 2.2 | 0.0 | 1.0 |
| **248** | 8 | 6 | aug | wed | 93.1 | 157.3 | 666.7 | 13.5 | 28.7 | 28 | 2.7 | 0.0 | 0.0 |
| **249** | 3 | 4 | aug | wed | 93.1 | 157.3 | 666.7 | 13.5 | 21.7 | 40 | 0.4 | 0.0 | 1.0 |
| **250** | 8 | 5 | aug | wed | 93.1 | 157.3 | 666.7 | 13.5 | 26.8 | 25 | 3.1 | 0.0 | 1.0 |
| **251** | 8 | 5 | aug | wed | 93.1 | 157.3 | 666.7 | 13.5 | 24.0 | 36 | 3.1 | 0.0 | 1.0 |
| **252** | 6 | 5 | aug | wed | 93.1 | 157.3 | 666.7 | 13.5 | 22.1 | 37 | 3.6 | 0.0 | 1.0 |
| **253** | 7 | 4 | aug | thu | 91.9 | 109.2 | 565.5 | 8.0 | 21.4 | 38 | 2.7 | 0.0 | 1.0 |
| **254** | 6 | 3 | aug | thu | 91.6 | 138.1 | 621.7 | 6.3 | 18.9 | 41 | 3.1 | 0.0 | 1.0 |
| **255** | 2 | 5 | aug | thu | 87.5 | 77.0 | 694.8 | 5.0 | 22.3 | 46 | 4.0 | 0.0 | 0.0 |
| **256** | 8 | 6 | aug | sat | 94.2 | 117.2 | 581.1 | 11.0 | 23.9 | 41 | 2.2 | 0.0 | 1.0 |
| **257** | 4 | 3 | aug | sat | 94.2 | 117.2 | 581.1 | 11.0 | 21.4 | 44 | 2.7 | 0.0 | 1.0 |
| **258** | 3 | 4 | aug | sat | 91.8 | 170.9 | 692.3 | 13.7 | 20.6 | 59 | 0.9 | 0.0 | 0.0 |

**X Y month day FFMC DMC DC ISI temp RH wind rain output**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **259** | 7 | 4 | aug | sat | 91.8 | 170.9 | 692.3 | 13.7 | 23.7 | 40 | 1.8 | 0.0 | 1.0 |
| **260** | 2 | 4 | aug | mon | 93.6 | 97.9 | 542.0 | 14.4 | 28.3 | 32 | 4.0 | 0.0 | 1.0 |
| **261** | 3 | 4 | aug | fri | 91.6 | 112.4 | 573.0 | 8.9 | 11.2 | 84 | 7.6 | 0.0 | 1.0 |
| **262** | 2 | 4 | aug | fri | 91.6 | 112.4 | 573.0 | 8.9 | 21.4 | 42 | 3.1 | 0.0 | 1.0 |
| **263** | 6 | 3 | aug | fri | 91.1 | 141.1 | 629.1 | 7.1 | 19.3 | 39 | 3.6 | 0.0 | 1.0 |
| **264** | 4 | 4 | aug | fri | 94.3 | 167.6 | 684.4 | 13.0 | 21.8 | 53 | 3.1 | 0.0 | 1.0 |
| **265** | 4 | 4 | aug | tue | 93.7 | 102.2 | 550.3 | 14.6 | 22.1 | 54 | 7.6 | 0.0 | 1.0 |
| **266** | 6 | 5 | aug | tue | 94.3 | 131.7 | 607.1 | 22.7 | 19.4 | 55 | 4.0 | 0.0 | 1.0 |
| **267** | 2 | 2 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 23.7 | 24 | 3.1 | 0.0 | 0.0 |
| **268** | 3 | 4 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 21.0 | 32 | 3.1 | 0.0 | 0.0 |
| **269** | 4 | 4 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 19.1 | 53 | 2.7 | 0.0 | 1.0 |
| **270** | 2 | 2 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 21.8 | 56 | 3.1 | 0.0 | 1.0 |
| **271** | 8 | 6 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 20.1 | 58 | 4.5 | 0.0 | 1.0 |
| **272** | 2 | 5 | aug | tue | 92.1 | 152.6 | 658.2 | 14.3 | 20.2 | 47 | 4.0 | 0.0 | 1.0 |
| **273** | 4 | 6 | dec | sun | 84.4 | 27.2 | 353.5 | 6.8 | 4.8 | 57 | 8.5 | 0.0 | 1.0 |
| **274** | 8 | 6 | dec | wed | 84.0 | 27.8 | 354.6 | 5.3 | 5.1 | 61 | 8.0 | 0.0 | 1.0 |
| **275** | 4 | 6 | dec | thu | 84.6 | 26.4 | 352.0 | 2.0 | 5.1 | 61 | 4.9 | 0.0 | 1.0 |
| **276** | 4 | 4 | dec | mon | 85.4 | 25.4 | 349.7 | 2.6 | 4.6 | 21 | 8.5 | 0.0 | 1.0 |
| **277** | 3 | 4 | dec | mon | 85.4 | 25.4 | 349.7 | 2.6 | 4.6 | 21 | 8.5 | 0.0 | 1.0 |
| **278** | 4 | 4 | dec | mon | 85.4 | 25.4 | 349.7 | 2.6 | 4.6 | 21 | 8.5 | 0.0 | 1.0 |
| **279** | 4 | 4 | dec | mon | 85.4 | 25.4 | 349.7 | 2.6 | 4.6 | 21 | 8.5 | 0.0 | 1.0 |
| **280** | 4 | 6 | dec | fri | 84.7 | 26.7 | 352.6 | 4.1 | 2.2 | 59 | 4.9 | 0.0 | 1.0 |
| **281** | 6 | 5 | dec | tue | 85.4 | 25.4 | 349.7 | 2.6 | 5.1 | 24 | 8.5 | 0.0 | 1.0 |
| **282** | 6 | 3 | feb | sun | 84.9 | 27.5 | 353.5 | 3.4 | 4.2 | 51 | 4.0 | 0.0 | 0.0 |
| **283** | 3 | 4 | feb | wed | 86.9 | 6.6 | 18.7 | 3.2 | 8.8 | 35 | 3.1 | 0.0 | 1.0 |
| **284** | 5 | 4 | feb | fri | 85.2 | 4.9 | 15.8 | 6.3 | 7.5 | 46 | 8.0 | 0.0 | 1.0 |
| **285** | 2 | 5 | jul | sun | 93.9 | 169.7 | 411.8 | 12.3 | 23.4 | 40 | 6.3 | 0.0 | 0.0 |
| **286** | 7 | 6 | jul | wed | 91.2 | 183.1 | 437.7 | 12.5 | 12.6 | 90 | 7.6 | 0.2 | 0.0 |
| **287** | 7 | 4 | jul | sat | 91.6 | 104.2 | 474.9 | 9.0 | 22.1 | 49 | 2.7 | 0.0 | 0.0 |
| **288** | 7 | 4 | jul | sat | 91.6 | 104.2 | 474.9 | 9.0 | 24.2 | 32 | 1.8 | 0.0 | 0.0 |
| **289** | 7 | 4 | jul | sat | 91.6 | 104.2 | 474.9 | 9.0 | 24.3 | 30 | 1.8 | 0.0 | 0.0 |
| **290** | 2 | 5 | jul | sat | 91.6 | 104.2 | 474.9 | 9.0 | 18.7 | 53 | 1.8 | 0.0 | 0.0 |
| **291** | 9 | 4 | jul | sat | 91.6 | 104.2 | 474.9 | 9.0 | 25.3 | 39 | 0.9 | 0.0 | 1.0 |
| **292** | 4 | 5 | jul | fri | 91.6 | 100.2 | 466.3 | 6.3 | 22.9 | 40 | 1.3 | 0.0 | 1.0 |
| **293** | 7 | 6 | jul | tue | 93.1 | 180.4 | 430.8 | 11.0 | 26.9 | 28 | 5.4 | 0.0 | 1.0 |
| **294** | 8 | 6 | jul | tue | 92.3 | 88.8 | 440.9 | 8.5 | 17.1 | 67 | 3.6 | 0.0 | 1.0 |
| **295** | 7 | 5 | jun | sun | 93.1 | 180.4 | 430.8 | 11.0 | 22.2 | 48 | 1.3 | 0.0 | 0.0 |

## X Y month day FFMC DMC DC ISI temp RH wind rain output

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **296** | 6 | 4 | jun | sun | 90.4 | 89.5 | 290.8 | 6.4 | 14.3 | 46 | 1.8 | 0.0 | 1.0 |
| **297** | 8 | 6 | jun | sun | 90.4 | 89.5 | 290.8 | 6.4 | 15.4 | 45 | 2.2 | 0.0 | 0.0 |
| **298** | 8 | 6 | jun | wed | 91.2 | 147.8 | 377.2 | 12.7 | 19.6 | 43 | 4.9 | 0.0 | 0.0 |
| **299** | 6 | 5 | jun | sat | 53.4 | 71.0 | 233.8 | 0.4 | 10.6 | 90 | 2.7 | 0.0 | 0.0 |
| **300** | 6 | 5 | jun | mon | 90.4 | 93.3 | 298.1 | 7.5 | 20.7 | 25 | 4.9 | 0.0 | 0.0 |
| **301** | 6 | 5 | jun | mon | 90.4 | 93.3 | 298.1 | 7.5 | 19.1 | 39 | 5.4 | 0.0 | 1.0 |
| **302** | 3 | 6 | jun | fri | 91.1 | 94.1 | 232.1 | 7.1 | 19.2 | 38 | 4.5 | 0.0 | 0.0 |
| **303** | 3 | 6 | jun | fri | 91.1 | 94.1 | 232.1 | 7.1 | 19.2 | 38 | 4.5 | 0.0 | 0.0 |
| **304** | 6 | 5 | may | sat | 85.1 | 28.0 | 113.8 | 3.5 | 11.3 | 94 | 4.9 | 0.0 | 0.0 |
| **305** | 1 | 4 | sep | sun | 89.6 | 84.1 | 714.3 | 5.7 | 19.0 | 52 | 2.2 | 0.0 | 0.0 |
| **306** | 7 | 4 | sep | sun | 89.6 | 84.1 | 714.3 | 5.7 | 17.1 | 53 | 5.4 | 0.0 | 1.0 |
| **307** | 3 | 4 | sep | sun | 89.6 | 84.1 | 714.3 | 5.7 | 23.8 | 35 | 3.6 | 0.0 | 1.0 |
| **308** | 2 | 4 | sep | sun | 92.4 | 105.8 | 758.1 | 9.9 | 16.0 | 45 | 1.8 | 0.0 | 0.0 |
| **309** | 2 | 4 | sep | sun | 92.4 | 105.8 | 758.1 | 9.9 | 24.9 | 27 | 2.2 | 0.0 | 0.0 |
| **310** | 7 | 4 | sep | sun | 92.4 | 105.8 | 758.1 | 9.9 | 25.3 | 27 | 2.7 | 0.0 | 0.0 |
| **311** | 6 | 3 | sep | sun | 92.4 | 105.8 | 758.1 | 9.9 | 24.8 | 28 | 1.8 | 0.0 | 1.0 |
| **312** | 2 | 4 | sep | sun | 50.4 | 46.2 | 706.6 | 0.4 | 12.2 | 78 | 6.3 | 0.0 | 0.0 |
| **313** | 6 | 5 | sep | wed | 92.6 | 115.4 | 777.1 | 8.8 | 24.3 | 27 | 4.9 | 0.0 | 0.0 |
| **314** | 4 | 4 | sep | wed | 92.6 | 115.4 | 777.1 | 8.8 | 19.7 | 41 | 1.8 | 0.0 | 1.0 |
| **315** | 3 | 4 | sep | wed | 91.2 | 134.7 | 817.5 | 7.2 | 18.5 | 30 | 2.7 | 0.0 | 0.0 |
| **316** | 4 | 5 | sep | thu | 92.4 | 96.2 | 739.4 | 8.6 | 18.6 | 24 | 5.8 | 0.0 | 0.0 |
| **317** | 4 | 4 | sep | thu | 92.4 | 96.2 | 739.4 | 8.6 | 19.2 | 24 | 4.9 | 0.0 | 1.0 |
| **318** | 6 | 5 | sep | thu | 92.8 | 119.0 | 783.5 | 7.5 | 21.6 | 27 | 2.2 | 0.0 | 0.0 |
| **319** | 5 | 4 | sep | thu | 92.8 | 119.0 | 783.5 | 7.5 | 21.6 | 28 | 6.3 | 0.0 | 1.0 |
| **320** | 6 | 3 | sep | thu | 92.8 | 119.0 | 783.5 | 7.5 | 18.9 | 34 | 7.2 | 0.0 | 1.0 |
| **321** | 1 | 4 | sep | thu | 92.8 | 119.0 | 783.5 | 7.5 | 16.8 | 28 | 4.0 | 0.0 | 1.0 |
| **322** | 6 | 5 | sep | thu | 92.8 | 119.0 | 783.5 | 7.5 | 16.8 | 28 | 4.0 | 0.0 | 1.0 |
| **323** | 3 | 5 | sep | thu | 90.7 | 136.9 | 822.8 | 6.8 | 12.9 | 39 | 2.7 | 0.0 | 1.0 |
| **324** | 6 | 5 | sep | thu | 88.1 | 53.3 | 726.9 | 5.4 | 13.7 | 56 | 1.8 | 0.0 | 1.0 |
| **325** | 1 | 4 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 24.2 | 27 | 3.1 | 0.0 | 0.0 |
| **326** | 5 | 4 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 24.1 | 27 | 3.1 | 0.0 | 0.0 |
| **327** | 6 | 5 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 21.2 | 32 | 2.2 | 0.0 | 0.0 |
| **328** | 6 | 5 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 19.7 | 35 | 1.8 | 0.0 | 0.0 |
| **329** | 4 | 3 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 23.5 | 27 | 4.0 | 0.0 | 1.0 |
| **330** | 3 | 3 | sep | sat | 92.2 | 102.3 | 751.5 | 8.4 | 24.2 | 27 | 3.1 | 0.0 | 1.0 |
| **331** | 7 | 4 | sep | sat | 91.2 | 124.4 | 795.3 | 8.5 | 21.5 | 28 | 4.5 | 0.0 | 1.0 |
| **332** | 4 | 4 | sep | sat | 91.2 | 124.4 | 795.3 | 8.5 | 17.1 | 41 | 2.2 | 0.0 | 1.0 |

**X Y month day FFMC DMC DC ISI temp RH wind rain output**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **333** | 1 | 4 | sep | mon | 92.1 | 87.7 | 721.1 | 9.5 | 18.1 | 54 | 3.1 | 0.0 | 1.0 |
| **334** | 2 | 3 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 18.0 | 51 | 5.4 | 0.0 | 0.0 |
| **335** | 4 | 3 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 9.8 | 86 | 1.8 | 0.0 | 0.0 |
| **336** | 7 | 4 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 19.3 | 44 | 2.2 | 0.0 | 0.0 |
| **337** | 6 | 3 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 23.0 | 34 | 2.2 | 0.0 | 1.0 |
| **338** | 8 | 6 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 22.7 | 35 | 2.2 | 0.0 | 1.0 |
| **339** | 2 | 4 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 20.4 | 41 | 1.8 | 0.0 | 1.0 |
| **340** | 2 | 5 | sep | mon | 91.6 | 108.4 | 764.0 | 6.2 | 19.3 | 44 | 2.2 | 0.0 | 1.0 |
| **341** | 8 | 6 | sep | mon | 91.9 | 111.7 | 770.3 | 6.5 | 15.7 | 51 | 2.2 | 0.0 | 0.0 |
| **342** | 6 | 3 | sep | mon | 91.5 | 130.1 | 807.1 | 7.5 | 20.6 | 37 | 1.8 | 0.0 | 0.0 |
| **343** | 8 | 6 | sep | mon | 91.5 | 130.1 | 807.1 | 7.5 | 15.9 | 51 | 4.5 | 0.0 | 1.0 |
| **344** | 6 | 3 | sep | mon | 91.5 | 130.1 | 807.1 | 7.5 | 12.2 | 66 | 4.9 | 0.0 | 1.0 |
| **345** | 2 | 2 | sep | mon | 91.5 | 130.1 | 807.1 | 7.5 | 16.8 | 43 | 3.1 | 0.0 | 1.0 |
| **346** | 1 | 4 | sep | mon | 91.5 | 130.1 | 807.1 | 7.5 | 21.3 | 35 | 2.2 | 0.0 | 1.0 |
| **347** | 5 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 10.1 | 75 | 3.6 | 0.0 | 0.0 |
| **348** | 3 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 17.4 | 57 | 4.5 | 0.0 | 0.0 |
| **349** | 5 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 12.8 | 64 | 3.6 | 0.0 | 1.0 |
| **350** | 5 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 10.1 | 75 | 3.6 | 0.0 | 1.0 |
| **351** | 4 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 15.4 | 53 | 6.3 | 0.0 | 1.0 |
| **352** | 7 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 20.6 | 43 | 3.6 | 0.0 | 1.0 |
| **353** | 7 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 19.8 | 47 | 2.7 | 0.0 | 1.0 |
| **354** | 7 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 18.7 | 50 | 2.2 | 0.0 | 1.0 |
| **355** | 4 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 20.8 | 35 | 4.9 | 0.0 | 1.0 |
| **356** | 4 | 4 | sep | fri | 92.1 | 99.0 | 745.3 | 9.6 | 20.8 | 35 | 4.9 | 0.0 | 1.0 |
| **357** | 6 | 3 | sep | fri | 92.5 | 122.0 | 789.7 | 10.2 | 15.9 | 55 | 3.6 | 0.0 | 0.0 |
| **358** | 6 | 3 | sep | fri | 92.5 | 122.0 | 789.7 | 10.2 | 19.7 | 39 | 2.7 | 0.0 | 0.0 |
| **359** | 1 | 4 | sep | fri | 92.5 | 122.0 | 789.7 | 10.2 | 21.1 | 39 | 2.2 | 0.0 | 1.0 |
| **360** | 6 | 5 | sep | fri | 92.5 | 122.0 | 789.7 | 10.2 | 18.4 | 42 | 2.2 | 0.0 | 1.0 |
| **361** | 4 | 3 | sep | fri | 92.5 | 122.0 | 789.7 | 10.2 | 17.3 | 45 | 4.0 | 0.0 | 1.0 |
| **362** | 7 | 4 | sep | fri | 88.2 | 55.2 | 732.3 | 11.6 | 15.2 | 64 | 3.1 | 0.0 | 1.0 |
| **363** | 4 | 3 | sep | tue | 91.9 | 111.7 | 770.3 | 6.5 | 15.9 | 53 | 2.2 | 0.0 | 1.0 |
| **364** | 6 | 5 | sep | tue | 91.9 | 111.7 | 770.3 | 6.5 | 21.1 | 35 | 2.7 | 0.0 | 1.0 |
| **365** | 6 | 5 | sep | tue | 91.9 | 111.7 | 770.3 | 6.5 | 19.6 | 45 | 3.1 | 0.0 | 1.0 |
| **366** | 4 | 5 | sep | tue | 91.1 | 132.3 | 812.1 | 12.5 | 15.9 | 38 | 5.4 | 0.0 | 1.0 |
| **367** | 4 | 5 | sep | tue | 91.1 | 132.3 | 812.1 | 12.5 | 16.4 | 27 | 3.6 | 0.0 | 0.0 |
| **368** | 6 | 5 | sep | sat | 91.2 | 94.3 | 744.4 | 8.4 | 16.8 | 47 | 4.9 | 0.0 | 1.0 |
| **369** | 4 | 5 | sep | sun | 91.0 | 276.3 | 825.1 | 7.1 | 13.8 | 77 | 7.6 | 0.0 | 0.0 |

## X Y month day FFMC DMC DC ISI temp RH wwinidndrairnaionutpoutput

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **370** | 7 | 4 | sep | sun | 91.0 | 276.3 | 825.1 | 7.1 | 13.8 | 77 | 7.6 | 0.0 | 1.0 |
| **371** | 3 | 4 | jul | wed | 91.9 | 133.6 | 520.5 | 8.0 | 14.2 | 58 | 4.0 | 0.0 | 0.0 |
| **372** | 4 | 5 | aug | sun | 92.0 | 203.2 | 664.5 | 8.1 | 10.4 | 75 | 0.9 | 0.0 | 0.0 |
| **373** | 5 | 4 | aug | thu | 94.8 | 222.4 | 698.6 | 13.9 | 20.3 | 42 | 2.7 | 0.0 | 0.0 |
| **374** | 6 | 5 | sep | fri | 90.3 | 290.0 | 855.3 | 7.4 | 10.3 | 78 | 4.0 | 0.0 | 1.0 |
| **375** | 6 | 5 | sep | sat | 91.2 | 94.3 | 744.4 | 8.4 | 15.4 | 57 | 4.9 | 0.0 | 1.0 |
| **376** | 8 | 6 | aug | mon | 92.1 | 207.0 | 672.6 | 8.2 | 21.1 | 54 | 2.2 | 0.0 | 0.0 |
| **377** | 2 | 2 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 21.9 | 42 | 2.2 | 0.0 | 1.0 |
| **378** | 6 | 5 | mar | thu | 90.9 | 18.9 | 30.6 | 8.0 | 8.7 | 51 | 5.8 | 0.0 | 0.0 |
| **379** | 4 | 5 | jan | sun | 18.7 | 1.1 | 171.4 | 0.0 | 5.2 | 100 | 0.9 | 0.0 | 0.0 |
| **380** | 5 | 4 | jul | wed | 93.7 | 101.3 | 458.8 | 11.9 | 19.3 | 39 | 7.2 | 0.0 | 1.0 |
| **381** | 8 | 6 | aug | thu | 90.7 | 194.1 | 643.0 | 6.8 | 16.2 | 63 | 2.7 | 0.0 | 1.0 |
| **382** | 8 | 6 | aug | wed | 95.2 | 217.7 | 690.0 | 18.0 | 28.2 | 29 | 1.8 | 0.0 | 1.0 |
| **383** | 9 | 6 | aug | thu | 91.6 | 248.4 | 753.8 | 6.3 | 20.5 | 58 | 2.7 | 0.0 | 1.0 |
| **384** | 8 | 4 | aug | sat | 91.6 | 273.8 | 819.1 | 7.7 | 21.3 | 44 | 4.5 | 0.0 | 1.0 |
| **385** | 2 | 4 | aug | sun | 91.6 | 181.3 | 613.0 | 7.6 | 20.9 | 50 | 2.2 | 0.0 | 1.0 |
| **386** | 3 | 4 | sep | sun | 90.5 | 96.7 | 750.5 | 11.4 | 20.6 | 55 | 5.4 | 0.0 | 1.0 |
| **387** | 5 | 5 | mar | thu | 90.9 | 18.9 | 30.6 | 8.0 | 11.6 | 48 | 5.4 | 0.0 | 0.0 |
| **388** | 6 | 4 | aug | fri | 94.8 | 227.0 | 706.7 | 12.0 | 23.3 | 34 | 3.1 | 0.0 | 1.0 |
| **389** | 7 | 4 | aug | fri | 94.8 | 227.0 | 706.7 | 12.0 | 23.3 | 34 | 3.1 | 0.0 | 0.0 |
| **390** | 7 | 4 | feb | mon | 84.7 | 9.5 | 58.3 | 4.1 | 7.5 | 71 | 6.3 | 0.0 | 1.0 |
| **391** | 8 | 6 | sep | fri | 91.1 | 91.3 | 738.1 | 7.2 | 20.7 | 46 | 2.7 | 0.0 | 1.0 |
| **392** | 1 | 3 | sep | sun | 91.0 | 276.3 | 825.1 | 7.1 | 21.9 | 43 | 4.0 | 0.0 | 1.0 |
| **393** | 2 | 4 | mar | tue | 93.4 | 15.0 | 25.6 | 11.4 | 15.2 | 19 | 7.6 | 0.0 | 0.0 |
| **394** | 6 | 5 | feb | mon | 84.1 | 4.6 | 46.7 | 2.2 | 5.3 | 68 | 1.8 | 0.0 | 0.0 |
| **395** | 4 | 5 | feb | sun | 85.0 | 9.0 | 56.9 | 3.5 | 10.1 | 62 | 1.8 | 0.0 | 1.0 |
| **396** | 4 | 3 | sep | sun | 90.5 | 96.7 | 750.5 | 11.4 | 20.4 | 55 | 4.9 | 0.0 | 1.0 |
| **397** | 5 | 6 | aug | sun | 91.6 | 181.3 | 613.0 | 7.6 | 24.3 | 33 | 3.6 | 0.0 | 1.0 |
| **398** | 1 | 2 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 25.9 | 32 | 3.1 | 0.0 | 0.0 |
| **399** | 9 | 5 | jun | wed | 93.3 | 49.5 | 297.7 | 14.0 | 28.0 | 34 | 4.5 | 0.0 | 0.0 |
| **400** | 9 | 5 | jun | wed | 93.3 | 49.5 | 297.7 | 14.0 | 28.0 | 34 | 4.5 | 0.0 | 1.0 |
| **401** | 3 | 4 | sep | thu | 91.1 | 88.2 | 731.7 | 8.3 | 22.8 | 46 | 4.0 | 0.0 | 1.0 |
| **402** | 9 | 9 | aug | fri | 94.8 | 227.0 | 706.7 | 12.0 | 25.0 | 36 | 4.0 | 0.0 | 0.0 |
| **403** | 8 | 6 | aug | thu | 90.7 | 194.1 | 643.0 | 6.8 | 21.3 | 41 | 3.6 | 0.0 | 0.0 |
| **404** | 2 | 4 | sep | wed | 87.9 | 84.8 | 725.1 | 3.7 | 21.8 | 34 | 2.2 | 0.0 | 1.0 |
| **405** | 2 | 2 | aug | tue | 94.6 | 212.1 | 680.9 | 9.5 | 27.9 | 27 | 2.2 | 0.0 | 0.0 |
| **406** | 6 | 5 | sep | sat | 87.1 | 291.3 | 860.6 | 4.0 | 17.0 | 67 | 4.9 | 0.0 | 1.0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **407** | 4 | 5 | feb | sat | 84.7 | 8.2 | 55.0 | 2.9 | 14.2 | 46 | 4.0 | 0.0 | 0.0 |
| **408** | 4 | 3 | sep | fri | 90.3 | 290.0 | 855.3 | 7.4 | 19.9 | 44 | 3.1 | 0.0 | 1.0 |
| **409** | 1 | 4 | jul | tue | 92.3 | 96.2 | 450.2 | 12.1 | 23.4 | 31 | 5.4 | 0.0 | 0.0 |
| **410** | 6 | 3 | feb | fri | 84.1 | 7.3 | 52.8 | 2.7 | 14.7 | 42 | 2.7 | 0.0 | 0.0 |
| **411** | 7 | 4 | feb | fri | 84.6 | 3.2 | 43.6 | 3.3 | 8.2 | 53 | 9.4 | 0.0 | 1.0 |
| **412** | 9 | 4 | jul | mon | 92.3 | 92.1 | 442.1 | 9.8 | 22.8 | 27 | 4.5 | 0.0 | 1.0 |
| **413** | 7 | 5 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 26.4 | 33 | 3.6 | 0.0 | 0.0 |
| **414** | 5 | 4 | aug | sun | 93.6 | 235.1 | 723.1 | 10.1 | 24.1 | 50 | 4.0 | 0.0 | 0.0 |
| **415** | 8 | 6 | aug | thu | 94.8 | 222.4 | 698.6 | 13.9 | 27.5 | 27 | 4.9 | 0.0 | 1.0 |
| **416** | 6 | 3 | jul | tue | 92.7 | 164.1 | 575.8 | 8.9 | 26.3 | 39 | 3.1 | 0.0 | 1.0 |
| **417** | 6 | 5 | mar | wed | 93.4 | 17.3 | 28.3 | 9.9 | 13.8 | 24 | 5.8 | 0.0 | 0.0 |
| **418** | 2 | 4 | aug | sun | 92.0 | 203.2 | 664.5 | 8.1 | 24.9 | 42 | 5.4 | 0.0 | 1.0 |
| **419** | 2 | 5 | aug | sun | 91.6 | 181.3 | 613.0 | 7.6 | 24.8 | 36 | 4.0 | 0.0 | 1.0 |
| **420** | 8 | 8 | aug | wed | 91.7 | 191.4 | 635.9 | 7.8 | 26.2 | 36 | 4.5 | 0.0 | 1.0 |
| **421** | 2 | 4 | aug | wed | 95.2 | 217.7 | 690.0 | 18.0 | 30.8 | 19 | 4.5 | 0.0 | 0.0 |
| **422** | 8 | 6 | jul | sun | 88.9 | 263.1 | 795.9 | 5.2 | 29.3 | 27 | 3.6 | 0.0 | 1.0 |
| **423** | 1 | 3 | sep | sat | 91.2 | 94.3 | 744.4 | 8.4 | 22.3 | 48 | 4.0 | 0.0 | 1.0 |
| **424** | 8 | 6 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 26.9 | 31 | 3.6 | 0.0 | 1.0 |
| **425** | 2 | 2 | aug | thu | 91.6 | 248.4 | 753.8 | 6.3 | 20.4 | 56 | 2.2 | 0.0 | 0.0 |
| **426** | 8 | 6 | aug | thu | 91.6 | 248.4 | 753.8 | 6.3 | 20.4 | 56 | 2.2 | 0.0 | 0.0 |
| **427** | 2 | 4 | aug | mon | 92.1 | 207.0 | 672.6 | 8.2 | 27.9 | 33 | 2.2 | 0.0 | 1.0 |
| **428** | 1 | 3 | aug | thu | 94.8 | 222.4 | 698.6 | 13.9 | 26.2 | 34 | 5.8 | 0.0 | 0.0 |
| **429** | 3 | 4 | aug | sun | 91.6 | 181.3 | 613.0 | 7.6 | 24.6 | 44 | 4.0 | 0.0 | 1.0 |
| **430** | 7 | 4 | sep | thu | 89.7 | 287.2 | 849.3 | 6.8 | 19.4 | 45 | 3.6 | 0.0 | 0.0 |
| **431** | 1 | 3 | aug | sat | 92.1 | 178.0 | 605.3 | 9.6 | 23.3 | 40 | 4.0 | 0.0 | 1.0 |
| **432** | 8 | 6 | aug | thu | 94.8 | 222.4 | 698.6 | 13.9 | 23.9 | 38 | 6.7 | 0.0 | 0.0 |
| **433** | 2 | 4 | aug | sun | 93.6 | 235.1 | 723.1 | 10.1 | 20.9 | 66 | 4.9 | 0.0 | 1.0 |
| **434** | 1 | 4 | aug | fri | 90.6 | 269.8 | 811.2 | 5.5 | 22.2 | 45 | 3.6 | 0.0 | 0.0 |
| **435** | 2 | 5 | jul | sat | 90.8 | 84.7 | 376.6 | 5.6 | 23.8 | 51 | 1.8 | 0.0 | 0.0 |
| **436** | 8 | 6 | aug | mon | 92.1 | 207.0 | 672.6 | 8.2 | 26.8 | 35 | 1.3 | 0.0 | 1.0 |
| **437** | 8 | 6 | aug | sat | 89.4 | 253.6 | 768.4 | 9.7 | 14.2 | 73 | 2.7 | 0.0 | 0.0 |
| **438** | 2 | 5 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 23.6 | 53 | 4.0 | 0.0 | 1.0 |
| **439** | 1 | 3 | sep | fri | 91.1 | 91.3 | 738.1 | 7.2 | 19.1 | 46 | 2.2 | 0.0 | 1.0 |
| **440** | 5 | 4 | sep | fri | 90.3 | 290.0 | 855.3 | 7.4 | 16.2 | 58 | 3.6 | 0.0 | 0.0 |
| **441** | 8 | 6 | aug | mon | 92.1 | 207.0 | 672.6 | 8.2 | 25.5 | 29 | 1.8 | 0.0 | 1.0 |
| **442** | 6 | 5 | apr | mon | 87.9 | 24.9 | 41.6 | 3.7 | 10.9 | 64 | 3.1 | 0.0 | 1.0 |
| **443** | 1 | 2 | jul | fri | 90.7 | 80.9 | 368.3 | 16.8 | 14.8 | 78 | 8.0 | 0.0 | 0.0 |

**X Y month day FFMC DMC DC ISI temp RH wwinidndrairnaionutpoutput**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **444** | 2 | 5 | sep | fri | 90.3 | 290.0 | 855.3 | 7.4 | 16.2 | 58 | 3.6 | 0.0 | 1.0 |
| **445** | 5 | 5 | aug | sun | 94.0 | 47.9 | 100.7 | 10.7 | 17.3 | 80 | 4.5 | 0.0 | 0.0 |
| **446** | 6 | 5 | aug | sun | 92.0 | 203.2 | 664.5 | 8.1 | 19.1 | 70 | 2.2 | 0.0 | 0.0 |
| **447** | 3 | 4 | mar | wed | 93.4 | 17.3 | 28.3 | 9.9 | 8.9 | 35 | 8.0 | 0.0 | 0.0 |
| **448** | 7 | 4 | sep | wed | 89.7 | 284.9 | 844.0 | 10.1 | 10.5 | 77 | 4.0 | 0.0 | 0.0 |
| **449** | 7 | 4 | aug | sun | 91.6 | 181.3 | 613.0 | 7.6 | 19.3 | 61 | 4.9 | 0.0 | 0.0 |
| **450** | 4 | 5 | aug | wed | 95.2 | 217.7 | 690.0 | 18.0 | 23.4 | 49 | 5.4 | 0.0 | 1.0 |
| **451** | 1 | 4 | aug | fri | 90.5 | 196.8 | 649.9 | 16.3 | 11.8 | 88 | 4.9 | 0.0 | 1.0 |
| **452** | 7 | 4 | aug | mon | 91.5 | 238.2 | 730.6 | 7.5 | 17.7 | 65 | 4.0 | 0.0 | 0.0 |
| **453** | 4 | 5 | aug | thu | 89.4 | 266.2 | 803.3 | 5.6 | 17.4 | 54 | 3.1 | 0.0 | 0.0 |
| **454** | 3 | 4 | aug | thu | 91.6 | 248.4 | 753.8 | 6.3 | 16.8 | 56 | 3.1 | 0.0 | 0.0 |
| **455** | 3 | 4 | jul | mon | 94.6 | 160.0 | 567.2 | 16.7 | 17.9 | 48 | 2.7 | 0.0 | 0.0 |
| **456** | 2 | 4 | aug | thu | 91.6 | 248.4 | 753.8 | 6.3 | 16.6 | 59 | 2.7 | 0.0 | 0.0 |
| **457** | 1 | 4 | aug | wed | 91.7 | 191.4 | 635.9 | 7.8 | 19.9 | 50 | 4.0 | 0.0 | 1.0 |
| **458** | 8 | 6 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 18.9 | 64 | 4.9 | 0.0 | 1.0 |
| **459** | 7 | 4 | aug | sat | 91.6 | 273.8 | 819.1 | 7.7 | 15.5 | 72 | 8.0 | 0.0 | 1.0 |
| **460** | 2 | 5 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 18.9 | 64 | 4.9 | 0.0 | 0.0 |
| **461** | 8 | 6 | aug | sat | 93.7 | 231.1 | 715.1 | 8.4 | 18.9 | 64 | 4.9 | 0.0 | 0.0 |
| **462** | 1 | 4 | sep | sun | 91.0 | 276.3 | 825.1 | 7.1 | 14.5 | 76 | 7.6 | 0.0 | 1.0 |
| **463** | 6 | 5 | feb | tue | 75.1 | 4.4 | 16.2 | 1.9 | 4.6 | 82 | 6.3 | 0.0 | 1.0 |
| **464** | 6 | 4 | feb | tue | 75.1 | 4.4 | 16.2 | 1.9 | 5.1 | 77 | 5.4 | 0.0 | 1.0 |
| **465** | 2 | 2 | feb | sat | 79.5 | 3.6 | 15.3 | 1.8 | 4.6 | 59 | 0.9 | 0.0 | 1.0 |
| **466** | 6 | 5 | mar | mon | 87.2 | 15.1 | 36.9 | 7.1 | 10.2 | 45 | 5.8 | 0.0 | 1.0 |
| **467** | 3 | 4 | mar | wed | 90.2 | 18.5 | 41.1 | 7.3 | 11.2 | 41 | 5.4 | 0.0 | 1.0 |
| **468** | 6 | 5 | mar | thu | 91.3 | 20.6 | 43.5 | 8.5 | 13.3 | 27 | 3.6 | 0.0 | 1.0 |
| **469** | 6 | 3 | apr | sun | 91.0 | 14.6 | 25.6 | 12.3 | 13.7 | 33 | 9.4 | 0.0 | 1.0 |
| **470** | 5 | 4 | apr | sun | 91.0 | 14.6 | 25.6 | 12.3 | 17.6 | 27 | 5.8 | 0.0 | 0.0 |
| **471** | 4 | 3 | may | fri | 89.6 | 25.4 | 73.7 | 5.7 | 18.0 | 40 | 4.0 | 0.0 | 1.0 |
| **472** | 8 | 3 | jun | mon | 88.2 | 96.2 | 229.0 | 4.7 | 14.3 | 79 | 4.0 | 0.0 | 1.0 |
| **473** | 9 | 4 | jun | sat | 90.5 | 61.1 | 252.6 | 9.4 | 24.5 | 50 | 3.1 | 0.0 | 1.0 |
| **474** | 4 | 3 | jun | thu | 93.0 | 103.8 | 316.7 | 10.8 | 26.4 | 35 | 2.7 | 0.0 | 1.0 |
| **475** | 2 | 5 | jun | thu | 93.7 | 121.7 | 350.2 | 18.0 | 22.7 | 40 | 9.4 | 0.0 | 1.0 |
| **476** | 4 | 3 | jul | thu | 93.5 | 85.3 | 395.0 | 9.9 | 27.2 | 28 | 1.3 | 0.0 | 1.0 |
| **477** | 4 | 3 | jul | sun | 93.7 | 101.3 | 423.4 | 14.7 | 26.1 | 45 | 4.0 | 0.0 | 1.0 |
| **478** | 7 | 4 | jul | sun | 93.7 | 101.3 | 423.4 | 14.7 | 18.2 | 82 | 4.5 | 0.0 | 1.0 |
| **479** | 7 | 4 | jul | mon | 89.2 | 103.9 | 431.6 | 6.4 | 22.6 | 57 | 4.9 | 0.0 | 1.0 |
| **480** | 9 | 9 | jul | thu | 93.2 | 114.4 | 560.0 | 9.5 | 30.2 | 25 | 4.5 | 0.0 | 1.0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **X** | **Y** | **month** | **day** | **FFMC** | **DMC** | **DC** | **ISI** | **temp** | **RH** | **wind** | **rain** | **output** |
| **481** 4 | 3 | jul | thu | 93.2 | 114.4 | 560.0 | 9.5 | 30.2 | 22 | 4.9 | 0.0 | 0.0 |
| **482** 3 | 4 | aug | sun | 94.9 | 130.3 | 587.1 | 14.1 | 23.4 | 40 | 5.8 | 0.0 | 1.0 |
| **483** 8 | 6 | aug | sun | 94.9 | 130.3 | 587.1 | 14.1 | 31.0 | 27 | 5.4 | 0.0 | 0.0 |
| **484** 2 | 5 | aug | sun | 94.9 | 130.3 | 587.1 | 14.1 | 33.1 | 25 | 4.0 | 0.0 | 1.0 |
| **485** 2 | 4 | aug | mon | 95.0 | 135.5 | 596.3 | 21.3 | 30.6 | 28 | 3.6 | 0.0 | 1.0 |
| **486** 5 | 4 | aug | tue | 95.1 | 141.3 | 605.8 | 17.7 | 24.1 | 43 | 6.3 | 0.0 | 1.0 |
| **487** 5 | 4 | aug | tue | 95.1 | 141.3 | 605.8 | 17.7 | 26.4 | 34 | 3.6 | 0.0 | 1.0 |
| **488** 4 | 4 | aug | tue | 95.1 | 141.3 | 605.8 | 17.7 | 19.4 | 71 | 7.6 | 0.0 | 1.0 |
| **489** 4 | 4 | aug | wed | 95.1 | 141.3 | 605.8 | 17.7 | 20.6 | 58 | 1.3 | 0.0 | 0.0 |
| **490** 4 | 4 | aug | wed | 95.1 | 141.3 | 605.8 | 17.7 | 28.7 | 33 | 4.0 | 0.0 | 0.0 |
| **491** 4 | 4 | aug | thu | 95.8 | 152.0 | 624.1 | 13.8 | 32.4 | 21 | 4.5 | 0.0 | 0.0 |
| **492** 1 | 3 | aug | fri | 95.9 | 158.0 | 633.6 | 11.3 | 32.4 | 27 | 2.2 | 0.0 | 0.0 |
| **493** 1 | 3 | aug | fri | 95.9 | 158.0 | 633.6 | 11.3 | 27.5 | 29 | 4.5 | 0.0 | 1.0 |
| **494** 6 | 6 | aug | sat | 96.0 | 164.0 | 643.0 | 14.0 | 30.8 | 30 | 4.9 | 0.0 | 1.0 |
| **495** 6 | 6 | aug | mon | 96.2 | 175.5 | 661.8 | 16.8 | 23.9 | 42 | 2.2 | 0.0 | 0.0 |
| **496** 4 | 5 | aug | mon | 96.2 | 175.5 | 661.8 | 16.8 | 32.6 | 26 | 3.1 | 0.0 | 1.0 |
| **497** 3 | 4 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 32.3 | 27 | 2.2 | 0.0 | 1.0 |
| **498** 6 | 5 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 33.3 | 26 | 2.7 | 0.0 | 1.0 |
| **499** 7 | 5 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 27.3 | 63 | 4.9 | 6.4 | 1.0 |
| **500** 8 | 6 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 21.6 | 65 | 4.9 | 0.8 | 0.0 |
| **501** 7 | 5 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 21.6 | 65 | 4.9 | 0.8 | 0.0 |
| **502** 4 | 4 | aug | tue | 96.1 | 181.1 | 671.2 | 14.3 | 20.7 | 69 | 4.9 | 0.4 | 0.0 |
| **503** 2 | 4 | aug | wed | 94.5 | 139.4 | 689.1 | 20.0 | 29.2 | 30 | 4.9 | 0.0 | 1.0 |
| **504** 4 | 3 | aug | wed | 94.5 | 139.4 | 689.1 | 20.0 | 28.9 | 29 | 4.9 | 0.0 | 1.0 |
| **505** 1 | 2 | aug | thu | 91.0 | 163.2 | 744.4 | 10.1 | 26.7 | 35 | 1.8 | 0.0 | 1.0 |
| **506** 1 | 2 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 18.5 | 73 | 8.5 | 0.0 | 0.0 |
| **507** 2 | 4 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 25.9 | 41 | 3.6 | 0.0 | 0.0 |
| **508** 1 | 2 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 25.9 | 41 | 3.6 | 0.0 | 0.0 |
| **509** 5 | 4 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 21.1 | 71 | 7.6 | 1.4 | 1.0 |
| **510** 6 | 5 | aug | fri | 91.0 | 166.9 | 752.6 | 7.1 | 18.2 | 62 | 5.4 | 0.0 | 1.0 |
| **511** 8 | 6 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 27.8 | 35 | 2.7 | 0.0 | 0.0 |
| **512** 4 | 3 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 27.8 | 32 | 2.7 | 0.0 | 1.0 |
| **513** 2 | 4 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 21.9 | 71 | 5.8 | 0.0 | 1.0 |
| **514** 7 | 4 | aug | sun | 81.6 | 56.7 | 665.6 | 1.9 | 21.2 | 70 | 6.7 | 0.0 | 1.0 |
| **515** 1 | 4 | aug | sat | 94.4 | 146.0 | 614.7 | 11.3 | 25.6 | 42 | 4.0 | 0.0 | 0.0 |
| **516** 6 | 3 | nov | tue | 79.5 | 3.0 | 106.7 | 1.1 | 11.8 | 31 | 4.5 | 0.0 | 0.0 |
| In [ ]: |  |  |  |  |  |  |  |  |  |  |  |  |

In [1]:

**import** keras

**from** keras.preprocessing.image **import** ImageDataGenerator

In [2]:

*#Define the parameters/arguments for ImageDataGenerator class*

train\_datagen**=**ImageDataGenerator(rescale**=**1.**/**255,shear\_range**=**0.2,rotation\_range**=**180,zoom\_range

test\_datagen**=**ImageDataGenerator(rescale**=**1.**/**255)

In [3]:

*#Applying ImageDataGenerator functionality to trainset*

x\_train**=**train\_datagen**.**flow\_from\_directory(r'C:\Users\dhine\Downloads\archive\Dataset\Dataset\

target\_size**=**(128,128),batch\_size**=**32, class\_mode**=**'binary')

Found 436 images belonging to 2 classes.

In [4]:

*#Applying ImageDataGenerator functionality to testset*

x\_test**=**test\_datagen**.**flow\_from\_directory(r'C:\Users\dhine\Downloads\archive\Dataset\Dataset\te

target\_size**=**(128,128),batch\_size**=**32, class\_mode**=**'binary')

Found 121 images belonging to 2 classes.

In [5]:

*#importmodelbuilding libraries*

*#Todefine Linearinitialisation import Sequential*

**from** keras.models **import** Sequential

*#To add layers import Dense*

**from** keras.layers **import** Dense

*#Tocreate Convolutionkernelimport Convolution2D*

**from** keras.layers **import** Convolution2D

*#import Maxpooling layer*

**from** keras.layers **import** MaxPooling2D

*#import flatten layer*

**from** keras.layers **import** Flatten **import**

warnings warnings**.**filterwarnings('ignore')

In [7]:

*#initializing the model*

model**=**Sequential()

In [8]:

*#add convolutional layer* model**.**add(Convolution2D(32,(3,3),input\_shape**=**(128,128,3),activation**=**'relu')) *#add maxpooling layer*

model**.**add(MaxPooling2D(pool\_size**=**(2,2)))

*#add flatten layer*

model**.**add(Flatten())

In [9]:

*#add hidden layer* model**.**add(Dense(150,activation**=**'relu')) *#add output layer* model**.**add(Dense(1,activation**=**'sigmoid'))

In [10]:

*#configure the learning process*

model**.**compile(loss**=**'binary\_crossentropy',optimizer**=**"adam",metrics**=**["accuracy"])

In [11]:

*#Training the model*

model**.**fit\_generator(x\_train,steps\_per\_epoch**=**14,epochs**=**10,validation\_data**=**x\_test,validation\_st

Epoch 1/10

14/14 [==============================] - 84s 6s/step - loss: 4.2334 - accuracy: 0.5619 - val\_

loss: 1.3686 - val\_accuracy: 0.5950Epoch 2/10

14/14 [==============================] - 74s 5s/step - loss: 0.5689 - accuracy: 0.7362 - val\_

loss: 0.2423 - val\_accuracy: 0.8926Epoch 3/10

14/14 [==============================] - 123s 9s/step - loss: 0.2231 - accuracy: 0.9197 - val

\_loss: 0.1323 - val\_accuracy: 0.9669Epoch 4/10

14/14 [==============================] - 75s 5s/step - loss: 0.2170 - accuracy: 0.9128 - val\_

loss: 0.1082 - val\_accuracy: 0.9669Epoch 5/10

14/14 [==============================] - 129s 10s/step - loss: 0.1918 - accuracy: 0.9151 - va

l\_loss: 0.1145 - val\_accuracy: 0.9669Epoch 6/10

14/14 [==============================] - 111s 8s/step - loss: 0.1938 - accuracy: 0.9037 - val

\_loss: 0.1030 - val\_accuracy: 0.9669

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Epoch 14/14 | 7/10 [==========================  ====] | - 88s | 6s/step | - loss: | 0.1756 | - accuracy: | 0.9312 | - val\_ |
| loss: Epoch | 0.0831 - val\_accuracy: 0.97528/10 |  |  |  |  |  |  |  |
| 14/14  loss: Epoch 14/14 | [==========================  ====]  0.1073 - val\_accuracy: 0.96699/10 [==========================  ====] | - 86s  - 77s | 6s/step  6s/step | * loss: * loss: | 0.1564  0.1480 | * accuracy: * accuracy: | 0.9404  0.9427 | * val\_ * val\_ |
| loss: Epoch 14/14 | 0.0754 - val\_accuracy: 0.983510/10 [==========================  ====] | - 81s | 6s/step | - loss: | 0.1641 | - accuracy: | 0.9289 | - val\_ |
| loss: | 0.0601 - val\_accuracy: 0.9835 |  |  |  |  |  |  |  |

Out[11]:

In [12]:

model**.**save("forest1.h5")

<keras.callbacks.History at 0x2546507bf10>

In [13]:

*#import load\_model from keras.model***from** keras.models **import** load\_model *#import image class from keras*

**from** tensorflow.keras.preprocessing **import** image

*#import numpy* **import** numpy **as** np *#import cv2* **import**

In [15]:

*#load the saved model*

model **=** load\_model("forest1.h5")

In [16]:

img**=**image**.**load\_img(r'C:\Users\dhine\Downloads\archive\Dataset\Dataset\test\_set\with fire\skynx**=**image**.**img\_to\_array(img) res **=** cv2**.**resize(x, dsize**=**(128, 128), interpolation**=**cv2**.**INTER\_CUBIC)

*#expand the image shape*

x**=**np**.**expand\_dims(res,axis**=**0)

In [17]:

pred**=**model**.**predict(x)

1/1 [==============================] - 5s 5s/step

pred