

## **Job Aid 5. Fire Occurrence Data for Analysis in FireFamilyPlus**

The FireFamilyPlus (FFP) application allows users to assess and display information relating to historical wildland fires via its View Fires table and Fire Summary graph (and its accompanying Graph Data report). For a seasonal Statistics Graph, users can configure Overlays and Graph Options to include a specific year's fires atop the line tracing its trends in weather observations or fire danger outputs. Most significantly, the Fire Analysis applies statistical correlation of historical fires with the weather or fire danger measures on those days to identify key Fire Business Thresholds for situational awareness and decision support when similar conditions arise in the future. To use any of these features, however, users must first acquire historical fire occurrence data and then import it into FFP.

With the large [table on page 3](#), this Job Aid identifies commonly used sources for the various agencies' historical wildland fire occurrence data, as of February 2024. The table describes workflows used to acquire data from those sources and then import them into FFP. While efforts continue to retire legacy fire reporting applications and consolidate final fire report data into fewer repositories, there are still several possible data sources to consider. Soon, a single application – the Interagency Fire Occurrence Reporting Modules (InFORM) – should fulfill most users' needs as a single source for interagency fire occurrence data for FFP, whereupon this Job Aid will be updated (and simplified!) accordingly.

Currently, sources for historical fire occurrence data differ depending on the fire management agency (e.g., BLM, USFS, or a state organization) and when those fires occurred. Unfortunately, users who seek to analyze a relatively lengthy but fresh fire occurrence dataset – for example, the 10- or 20-year period ending with 2023 – will probably have to merge information acquired from two or more data sources. For some agencies, this inconvenience will be eliminated when InFORM's efforts to migrate historical fire data ranging back to at least 1992 are completed. These efforts are underway and should be completed before the fall of 2024.

While InFORM has become the primary source of contemporary fire occurrence data for FFP for all five federal fire management agencies and several state-level agencies, the current version of FFP (v5; March 23, 2023 build) only imports fires from 2020 and later using the built-in GACC (InFORM) import feature. InFORM datasets with records from 2019 and earlier can still be used for FFP, but those files will have to be imported using FFP's Generic Fire Import feature. An upcoming version of FFP will remove the restriction, to allow pre-2020 fires to be imported directly from an InFORM data file.

### **Status of Federal Agency Final Fire Report Applications and Data Sources**

The source/availability of historical fire occurrence data is tied to the applications used by the agencies for their final fire reports. Starting in 2020, four of the federal fire management agencies switched to InFORM, and all five major agencies now use InFORM for fire reporting. Migration of historical fire report data, going back to 1992, from the agencies' legacy applications is underway and should be completed by fall of 2024. To avoid duplicating records in InFORM, the interagency Fire Program Analysis fire-occurrence database ([FOD; 6<sup>th</sup> edition](#);

1992-2020) provides the guide for the legacy records migrated to InFORM – if the FOD designated a federal agency’s fire report to represent a fire involving multiple jurisdictions or responding agencies, then that record from the agency’s legacy fire reporting application will be (or already has been) migrated to InFORM. Legacy records rejected by the FOD will likewise be excluded from InFORM or otherwise flagged in InFORM as a subordinate (spliced root) record.

Federal Agency	Currently Using		Legacy-Era		Status of Migration of Legacy Historical Records
	App.	Started	App.	Status	
USFS	InFORM	CY2020	FireStat	Retired	FireStat data (CY1992-CY2019) is ready for migration to InFORM (completion expected in March 2024).
BIA			WFMI	Retired	WFMI data (CY1992-CY2019) was migrated to InFORM in Fall 2023, but verification is ongoing, and some additional clean-up is expected.
BLM					
NPS					
FWS		FY2024	FMIS	Retirement process underway	Migration of FMIS data (CY1992-CY2020) to InFORM is imminent (completion expected in February 2024). Migration of CY2021-FY2023 data will follow, and FMIS will be formally decommissioned by Fall 2024.

## State Agencies - Fire Occurrence Data Sources

Historical wildland fire occurrence for state agencies comes from multiple sources and in different formats, depending on the final fire reporting application used by any particular agency. Ongoing and expanding efforts to incorporate state agency data into InFORM will significantly improve the availability/accessibility of the states’ fire occurrence data for analysis in FFP and other purposes.

Historically, there have been few options beyond acquiring data directly from the state agencies themselves. There are CAL FIRE datasets currently available on the stagnant [Fire/Weather ftp site](#), but they only have data through 2014. The [FAMWeb Data Warehouse \(COGNOS\)](#) hosts fire occurrence data in the National Association of State Foresters (NASF) format for numerous states. Several states have now switched to using InFORM for final fire reporting, and their data can be acquired as described in the large [table on page 3](#). As described [here](#), state fire occurrence records in the NASF format can be bulk-uploaded to InFORM, to add to InFORM’s historical records (i.e. prior to 2020) or to contribute contemporary records for states that are not using InFORM directly for fire reporting. Indeed, numerous state agencies have begun bulk-uploading fire occurrence records annually to InFORM. To account for otherwise “missing” historical fire occurrence on lands protected by state-level agencies or even local (e.g. city/county/VFD) units, the remainder of FOD records may be added to InFORM in 2024 (decision is pending).

Fire occurrence data acquired directly from state agencies/units can be imported into FFP using the Custom Agency and Generic Fire Import features (see S491 [Job Aid 10](#) – Import Custom Fire Data).

Group	Agency	Years	Data Source	Instructions/Notes	File Format	FFP Import Via	Future Considerations
1a	USFS	CY2020 to present	<a href="#">InFORM Inspector (requires log-in)</a>	All 5 federal agencies and some state agencies now use InFORM for final fire reporting. Certain other states add fire occurrence records to InFORM via annual Bulk Uploads. To generate a download dataset in InFORM Inspector, reset to clear any existing filters. Zoom map to area of interest, then select desired records using Custom or Basic Filter criteria (incident category, discovery date range, jurisdictional and/or protecting unit, etc). Download to save csv file to local drive.	Incidents_*.csv	GACC (InFORM CSV)	FFP's (v5, build 3/23/2023) built-in InFORM CSV import utility will only retain records from CY2020 and later. To import pre-2020 InFORM data into FFP, see <b>Group 2</b> .
	BIA						
	BLM						
	NPS						
1b	FWS	FY2024 to present					
1c	Several States	CY2020 to present					
2	BIA	CY1992-CY2019	<a href="#">InFORM Inspector (requires log-in)</a>	Acquire data from InFORM Inspector as described above, then follow the tipsheet posted at the bottom of the <a href="#">InFORM Hub webpage</a> , using a VBA macro in Excel to further prepare the dataset. Save the modified Excel file as csv. Then follow <b>S491 Job Aid 10</b> to create a custom agency in FFP and use the Generic Import utility.		Custom Agency (Generic Import)	Once a newer version of FFP is released that allows pre-2020 InFORM data to be directly imported, then the import process described for <b>Group 1</b> can be used.
	BLM						
	NPS						
3	USFS	CY2019 and earlier	<a href="#">FAMWeb Data Warehouse (COGNOS)</a>	Follow the menu path/steps below: Team Content > FAMWEB Data Warehouse > Fire Data > Fire Data Extract > NFMAS PCHA - PCHA Historical Analysis (formerly KCFAST) > select Region/Forest (leave Region blank in upper table) > select years > Finish > save file to local drive Rename suffix for downloaded file from .csv to .raw	NFMAS PCHA*.raw (renamed from .csv)	USFS (RAW Files)	USFS data for CY1992-CY2019 will be available in InFORM by April 2024. Once complete, this pre-2020 InFORM data can be imported into FFP per <b>Group 2</b> .
4	FWS	FY2023 and earlier	FWS Regional Fire Planners (temporary)	While the migration of FMIS historical data to InFORM is underway, FWS Regional Fire Planners have access to offline datasets and can create datasets for specific requests.	PCHAFFP*.txt	DOI Agencies (WFMI Import)	FWS data will be migrated from FMIS to InFORM in 2 stages: CY1992-CY2020, then CY2021-FY2023. Once complete, the pre-2020 InFORM data can be imported into FFP per <b>Group 2</b> .
5	All (Feds, States, & local units)	CY1992-CY2020	<a href="#">FOD (6th ed.)</a>	As the most comprehensive interagency fire occurrence dataset available, the FOD can be used in lieu of the sources above for fires from 1992 to 2020. Similar to the process described for <b>Group 2</b> , there is another tipsheet posted on the <a href="#">InFORM Hub webpage</a> that describes how to extract FOD records using Power Query Editor and then apply a VBA macro in Excel. Follow <b>S491 Job Aid 10</b> to import the resultant data file into FFP.	*.csv	Custom Agency (Generic Import)	Using FOD data in addition to sources above will result in numerous duplicate records. Avoid this by using InFORM for fires from 2020 or later, and the FOD for fires from 2019 or earlier. Eventually <u>all</u> FOD records may be added to InFORM (decision pending).

## Alternate Data Sources

In addition to the data sources identified in the large table above, following are alternative sources for fire analysis data for FFP:

- Via its [Open Data](#) library of geospatial datasets, the ArcGIS Online (AGOL) NIFC Organization offers layers for both historical and current year fires. With some GIS manipulation, these layers can yield datasets that can be imported into FFP; however, some records may be missing fire cause or size data that is essential for an effective analysis in FFP.
- The Fire Danger Rating Area (FDRA) web mapping application (also hosted in the AGOL NIFC Org) that is used for the S-591 course and Fire Danger Operation Plan workshops now includes the FOD 6<sup>th</sup> edition records. With this application, users can assign the FOD's historical (interagency) fires to their respective FDRAs and then, using the Custom Agency and Generic Fire Import features described in [S491 Job Aid 10](#), add these fires to FFP.
- Rather than using historical fire occurrence records for analysis in FFP to identify Fire Business Thresholds and other correlations to weather and fire danger measures, some users have opted to instead use data derived from satellite-based thermal anomaly sensors that indicate wildfire ignitions, growth, and burn intensity. Data may be available from multiple sources, including NASA's Fire Information for Resource Management System (FIRMS) [download archive for MODIS and VIIRS](#) active fire/hotspot detections. No tipsheet has been developed for this process yet.