Managing Dispatch Logic Revised 9/27/2011

The following White Papers provide additional detail about dispatch logic.

- [Understanding Dispatch Logic in the Initial Response Simulation (IRS) Module](#)

- [Understanding Smokejumper Deployment in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module](#)

- [Understanding Helicopter Use in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module](#)

- [Understanding Dozers, Tractor Plows, and Airboats in Fire Program Analysis Initial Response Simulation Module](#)

- [Understanding Fixed-Wing Aircraft Delivery of Water and/or Fire Retardant in the Initial Response Simulation (IRS) Module](#)

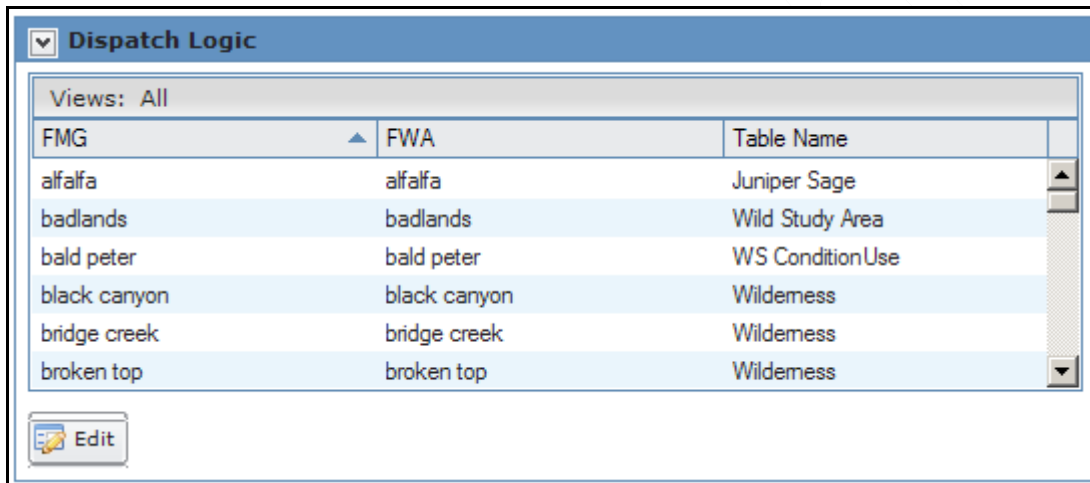## In This Chapter

This chapter discusses:
- [Dispatch Logic Overview](#)
- [Managing Dispatch Logic](#)
  - [Adding a New Dispatch Logic Table](#)
  - [Creating a New Dispatch Logic Table by Copying an Existing Dispatch Logic Table](#)
  - [Editing a Dispatch Logic Table](#)
  - [Deleting a Dispatch Logic Table](#)
  - [Associating an Existing Dispatch Logic Table with a Fire Workload Area (FWA)](#)

Dispatch Logic Table Overview

Dispatch logic tells the Initial Response Simulator (IRS) the maximum number and type of resources that can be sent to a fire within an FWA. FPUs may use same Dispatch Logic Table for one or more FWAs.

The Dispatch Logic screen is divided into three tables that allow you to manage dispatch logic values and associations for multiple Fire Workload Areas (FWAs).

You first see the Dispatch Logic table. After you create a new dispatch logic table, or copy an existing dispatch logic table, this is where you associate Dispatch Logic to a Fire Workload Area (FWA).

The New/Copy Table, directly below the Dispatch Logic table, allows you to create new dispatch logic or copy an existing dispatch logic table. See Adding a New Dispatch Logic Table and Creating a New Dispatch Logic Table by Copying an Existing Dispatch Table for further information.

Definitions

- **Source Table**: The table from which you want to copy information from existing dispatch logic tables. When you have not yet created a dispatch logic table, the Source Table drop-down list will be blank. It is not necessary to copy a table; one can be created from scratch.

- ***Table Name**: User entered name of the dispatch logic table.

- ***Index:** One of four NFDRS indices must be selected and used for establishing breakpoints: Burn Index (BI), Fire Intensity Level (FIL), Flame Length (FL), or Rate of Spread (ROS). A reasonable estimate of BI is calculated using the following equation: Flame Length * 10 = BI.

- ***Fire Dispatch Levels (FDL):** A 3-5 level system of fire behavior assessment based on a fire's characteristics that allows personnel to determine how many fire resources (by Type) can be dispatched when a fire starts. These are the fire management (business) thresholds used in many fire management plans or dispatch pre-attack plans that drive the number and type of resources needed to manage fires burning at different fire behavior levels in specific FWAs.

    Tips

    - Use current dispatch plans only for guidance. Expect to make changes from the FPU's actual dispatch plan as you calibrate the model.

    - The number of FDL's (with corresponding breakpoints) used for each dispatch logic table is three, four, or five. This allows the planner to create dispatch logic tables that match each agency's fire management or dispatch plans.

- A breakpoint of low with a Burning Index (BI) of 20 represents all fires with a BI less than or equal to 20.A breakpoint of moderate with a BI of 40 represents all fires with a BI greater then 20, but less than or equal to 40.

Select the correct table to edit the number of a resource type that will be sent to a fire at different dispatch levels.

Definitions

See column heading definitions under the New/Copy Table.

- **Breakpoints- Low, Moderate, High, Very High, Extreme:** The user-entered minimum and/or maximum value that defines the lower and upper limits of Fire Dispatch Levels (FDLs). The number of breakpoints used for each dispatch logic table depends on the number of FDLs; the user can set three, four, or five levels.

- FPA groups fire resource types in dispatch logic tables to allow Fire Planners to assign specific resource types and numbers to FWA's. By grouping some resource types into dispatch logic tables, the Initial Response Simulator (IRS) mimics the action dispatch would take when assigning resources to a fire in a specific FWA. Fire Resource types are grouped in a dispatch logic table such that the dispatch logic table associated with an FWA is applied using the correct number and type of resource. For example:

  - **Crew (CRW)**: The FPU might staff crews with several different Daily Staffing counts (2, 10, 20, etc.). IRS looks to the dispatch logic tables to find the crew dispatch location that provides the shortest arrival time associated with the FWA. When a crew with the shortest arrival time and insufficient production capabilities to control the fire is dispatched, Fire Planners can add additional crews (or other resource types) to the dispatch logic table to increase production capability.

  - **Helitack (HELI)**: The system treats helitack as a crew when calculating fireline production capability. FPA defines the number of people on the helitack crew by the number entered in the **Daily Staffing** field. Fire Planners must include a helicopter (HEL) in the dispatch logic table to transport the helitack crew. When entering data into **Input Data > Define Resources**, Fire Planners must set the desired number (**Daily Staffing**) of helitack crewmembers available for dispatch

at the appropriate dispatch locations. The smallest number of helitack the system will dispatch to a fire is a crew with a Daily Staffing of two. Refer to Understanding Helicopter Use in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module

- **Smokejumpers (SMJR)**: The system treats smokejumpers as a crew when calculating fireline production capability. FPA defines the number of smokejumpers available for dispatch by the number entered in the **Daily Staffing** field. When entering data in **Input Data > Define Resources**, Fire Planners must include a smokejumper aircraft (SJAC) and set the correct number of smokejumper crewmembers available for dispatch at the appropriate dispatch locations. The smallest number of smokejumpers the system will initially dispatch to a fire is two (two smokejumpers is defined as a stick). (refer to: WP Understanding Smokejumper Deployment in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module IR_035_WP)

> After completing a calibration run to understand the effects of your data settings, you may want to split large crews (Daily Staffing of 10 or 20) into squads (minimum Daily Staffing of 2) in order to achieve the intended IRS response to days with multiple fires. Fire resources that make aerial drops, such as ATT, SCP, SEATS, and Helicopters, require ground based fire resources on the fire prior to the drop producing fireline.

- **Engine (Engine)**: FPU agencies can use multiple engines of the same or differing types with different staffing and/or water capacity. The dispatch logic specifies the number of engines available for dispatch by FDL. Fire Planners need to assign enough engines with enough Daily Staffing and water capacity (i.e. line production capability) to meet the workload within an FWA.

FPA also groups other producer types typically managed at the national level and/or contract resources. These include

- Heavy Type 1 and 2 airtankers are managed as ATT, Single Engine Air Tankers (SEATS) and Scoopers (CL-215/415) as SCP,

- All helicopter models by type (e.g. Skycranes with Chinooks; Bell 206 with AStar) are managed as Helicopter,)

- Dozer types are managed as Dozer,

- Tractor Plow types are managed as Tractor-Plow, and

- Smokejumper aircraft are managed as SJAC.

The model uses a lookup data table for production rates for fire resources that produce fireline. The system defines National Type 1 hotshot crews with a Daily Staffing of 20 personnel.
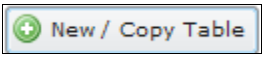
Managing Dispatch Logic

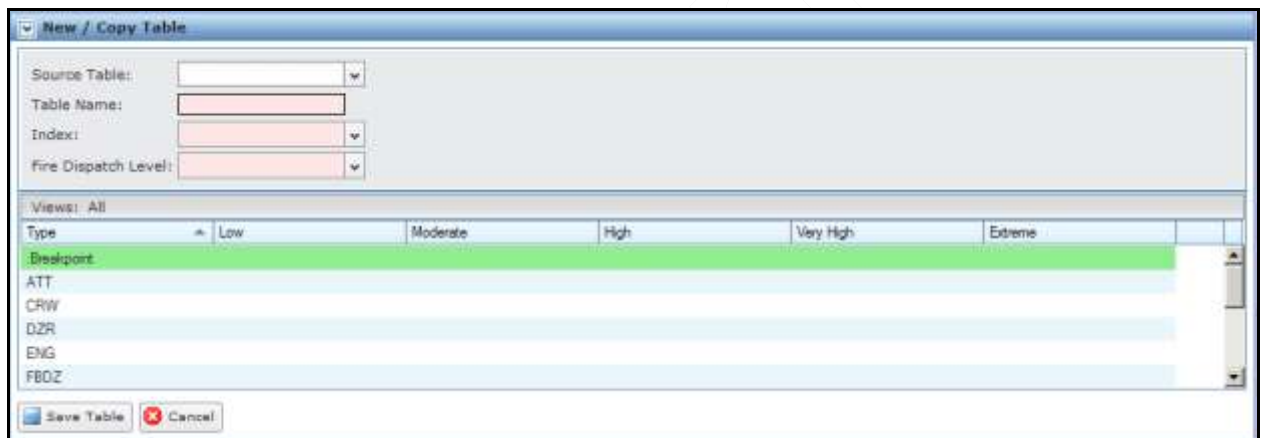## Adding a New Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic screen.

2. Click ▶ to open the Dispatch Logic and Dispatch Logic Tables box.

3. Click ⊕ New / Copy Table to create a new Dispatch Logic table.
   The New/Copy Table box displays.

   Leave the drop-down listempty; a value is not required for adding a new dispatch logic table.
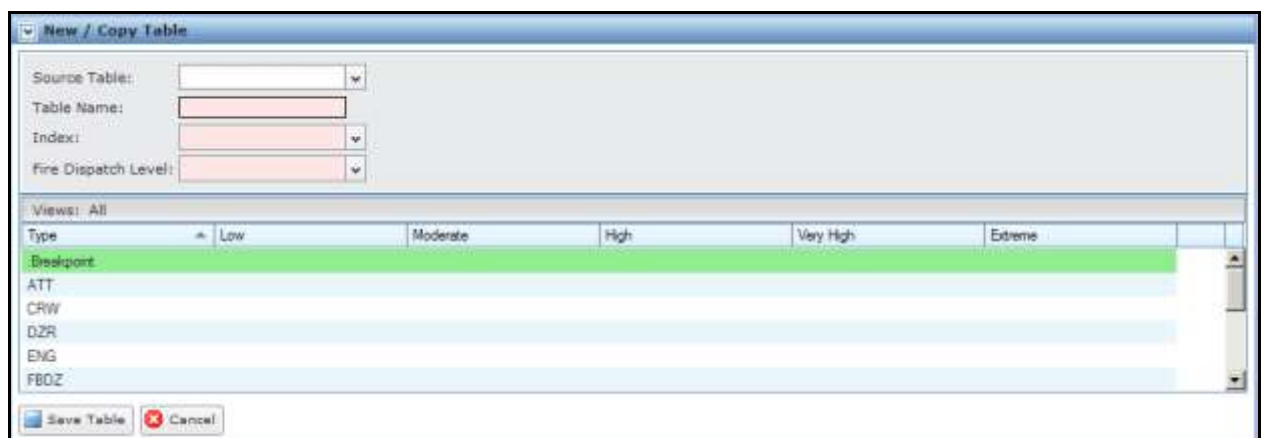
4. Enter a new Table Name.
   The new name may not exceed 50 alphanumeric characters.

5. Select the Index value from the drop-down list: BI (Burn Index), FIL, (Fire Intensity Level), FL (Flame Length), or ROS (Rate of Spread).

6. Select the number of Fire Dispatch Levels (FDL) from the drop-down list.

7. Set the breakpoint maximum value for each FDL: Low, Moderate, or High.

8. For each Producer Type, enter the number of resources that are available for dispatch at the Low, Moderate, High, etc., FDL.
   Use the scroll bar at the right to view additional Producer Types.

9. Click 🖫 Save Table to save the new dispatch logic table and update the database, or
   click ❌ Cancel to return to the Dispatch Logic Table. No database updates occur
   Users return to the Dispatch Logic Table.

Definitions

- **Type**: The Producer Type assigned to the Dispatch Logic table.
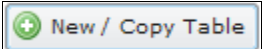
- **Low**: The number of resources for the Producer Type available for dispatch to a fire at the Low FDL.

- **Moderate**: The number of resources for the selected Producer Type available for dispatch to a fire at the Medium FDL.

- **High**: The number of resources for the selected Producer Type available for dispatch to a fire event at the High FDL.

- **Very High**: The number of resources for the selected Producer Type available for dispatch to a fire event at the Very High FDL.

- **Extreme**: The number of resources for the selected Producer Type available for dispatch to a fire event at the Extreme FDL.

Creating a New Dispatch Logic Table by Copying an Existing Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic screen.

2. Click ▶ to open the Dispatch Logic and Dispatch Logic Tables box.

3. Click 🟢 **New / Copy Table** to create a copy of a dispatch logic table.

   The New/Copy Table box displays.

   See Adding a New Dispatch Logic Table for field definitions
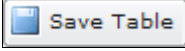
4. Select a Source Table name from the drop-down list.

   The Source Table is the existing table from which you plan to copy. FPA bases the new Dispatch Logic table on the selected Source Table.

5. Enter a new Table Name.

   The new name may not exceed 50 alphanumeric characters.

6. Accept the displayed Index, or select another Index from the drop-down list.

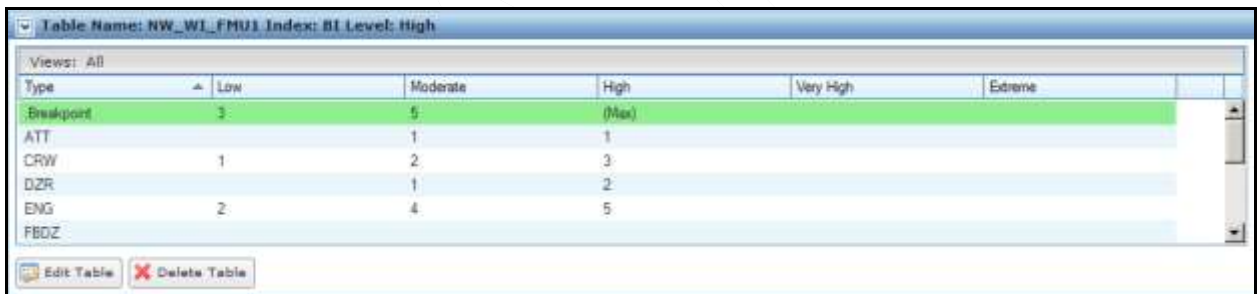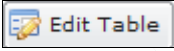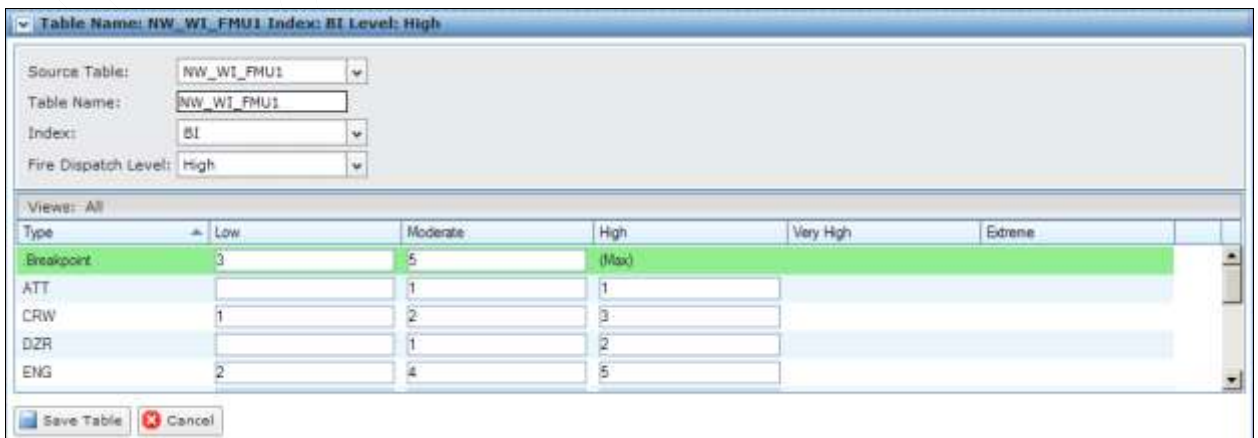7. Accept the displayed number of FDL's, or select a different number of FDL's from the drop-down list.

8. Accept the breakpoint maximum value for the FDL's, or establish new breakpoint maximum.

9. For each Producer Type, accept the number of resources that can be dispatched at the Low, Moderate, High, etc., FDL, or modify the number of Producer Types that can be dispatched for each FDL.

10. Click [Save Table] to save the new Dispatch Logic Table and update the database, or click [Cancel] to return to the Dispatch Logic box. No database updates occur.

    Users return to the Dispatch Logic Table.

Editing a Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

    Displays the Dispatch Logic screen.

2. Click [>] to open the Dispatch Logic and Dispatch Logic Tables box.

3. Under the Dispatch Logic Tables section, click the Table Name of the Dispatch Logic table you want to edit. The Dispatch Logic Table opens.

    See Adding a New Dispatch Logic Table for field definitions.

4. Click [Edit Table].

    Displays the Table Name edit dialog box.
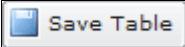
5. Accept the displayed Source Table name, or select another existing dispatch logic table from the drop-down list.

6. Accept the displayed Table Name, or enter a new Table Name.

   When there are edits to the dispatch logic Table Name and the table is already associated with an FWA, the system automatically updates the edited dispatch logic table to the modified name.

   When there is a name in the Source Table field, you must enter a new unique dispatch logic Table Name not exceeding 50 alphanumeric characters.

7. Accept the displayed Index, or select another Index from the drop-down list.

8. Accept the displayed number of FDL's or select a different number of FDL's from the drop-down list.

9. Accept the breakpoint maximum value for the FDL's, or type new breakpoint maximum.

10. For each Producer Type, accept the number of resources that can be dispatched at the Low, Moderate, High, etc., FDL, or modify the number of Producer Types that can be dispatched for each FDL.

   You can also use the TAB key to move between fields.

    New or modified values may not exceed 100 resources for each Producer Type for each FDL.

11. Click ▢ Save Table to save the new Dispatch Logic Table and update the database, or

    click ❎ Cancel to return to the Dispatch Logic Table. No database updates occur.

    Users return to the Dispatch Logic Table.

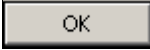## Deleting a Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic Tables box.

2. If closed, click 🔲 to open the Dispatch Logic Tables box.

3. Click 🔲 to open the Dispatch Logic table you want to delete.

4. Click ❌ Delete Table .

   The delete confirmation box displays.
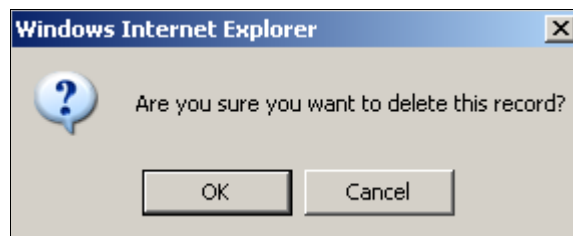
5. Click [OK] to delete the Dispatch Logic Table and update the database, or click [Cancel] to return to the Dispatch Logic Tables window. No database updates occur. Users return to the Dispatch Logic Tables box.

    If the deleted table is associated to an FWA, the association is removed and no resources will be dispatched to the FWA until another Dispatch Logic Table is associated to the FWA.
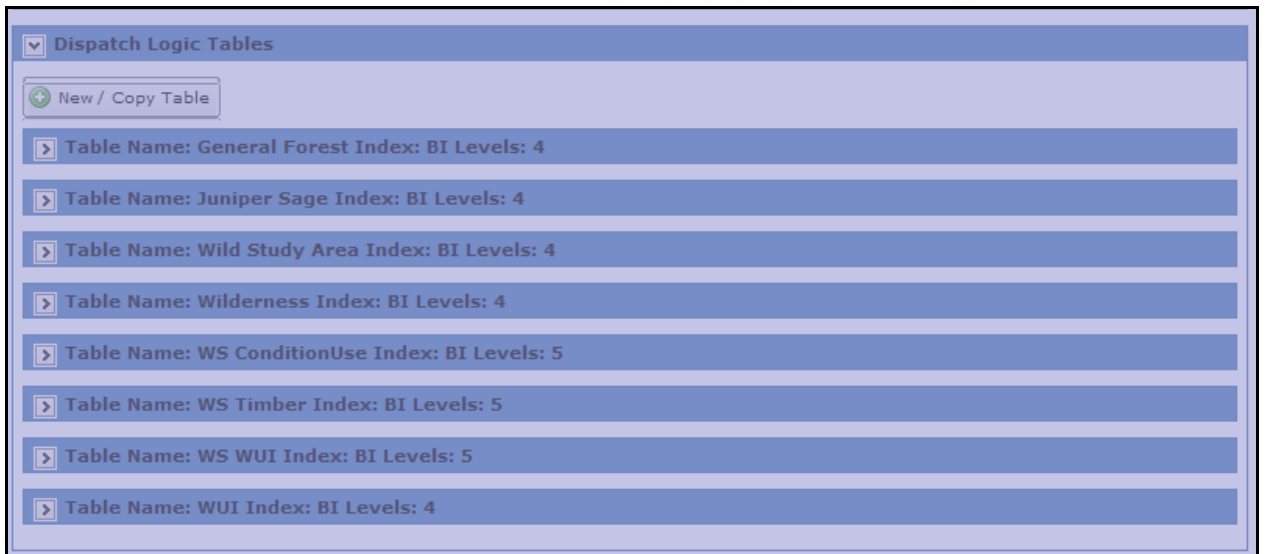
Associating an Existing Dispatch Logic Table with a Fire Workload Area (FWA)

1. Select **Input Data > FWAs > Dispatch Logic**.
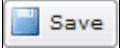
    Displays the Dispatch Logic table.

2. Click [Edit].

    Displays the Dispatch Logic edit box and grays out the Dispatch Logic Tables.

3. Select the appropriate dispatch logic Table Name from the drop-down list for each FWA.

4. Click [Save] to save the FWA dispatch logic table name associations and update the database, or click [Cancel] to cancel changes and return to the Dispatch Logic Table. No database updates occur.

Users return to the Dispatch Logic Table