

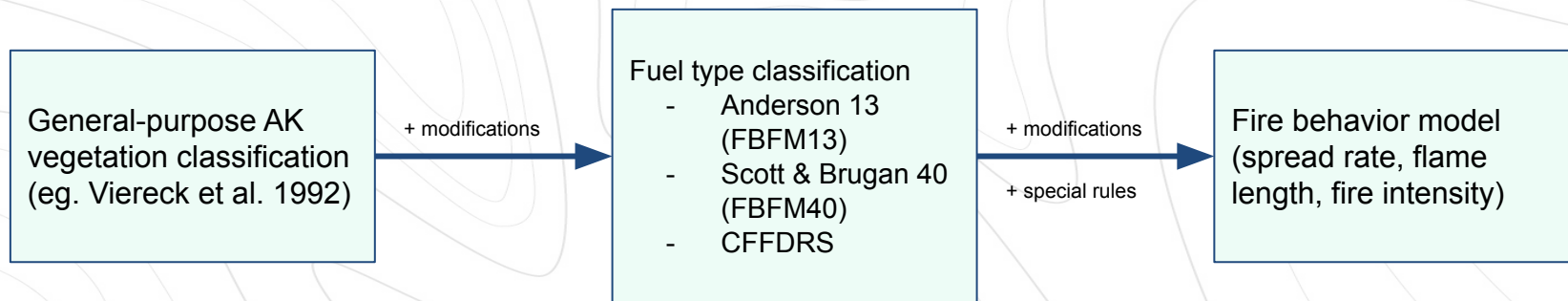
Flash Talk: Synthesis Paper on Fuel Cross-Walks

All-hands Meeting, Tuesday, February 8, 2022

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What is a crosswalk?

A crosswalk is a mapping from a **vegetation type** to a **fuel type**.
Remotely sensed vegetation types are then used to derive fuel type.
Fuel types are used in **fire behavior models**.



Crosswalk available in 2018
AK Fuels Guide (Barnes et
al.)

Conclusion: Crosswalk products aren't as straightforward as it may look. Example: Barnes et al. (2018)

Table 1. Crosswalk from Alaska Fuel Types to US fuel models and CANFBP fuel types.¹

Alaska Fuel Type Number	Alaska Fuel Type Name	FBFM 40	FBFM 13	CANFBP	Alternate Models (See text for usage)
21	Dwarf Tree Mountain Hemlock Scrub and Dwarf Tree Alpine Spruce Shrub	SH1	8	O-1a	
22	Dwarf Tree Black Spruce Scrub	GS1	9	C-1	C-2, GS2, SH5
23	Closed Tall Alder and Closed Tall Willow	TL2	8	D-1/D-2	TU1, SH2, M-1/2
24	Closed Tall Shrub Birch	SH3	9	M-1/M-2	SH2
25	Tall Shrub Swamp	Removed: Low, patchy occurrence, few examples			
26	Open Tall Alder and/or Willow	TU1	8	D-1/D-2	M-1, GS1
27	Open Tall Shrub Birch and Open Tall Shrub Birch – Willow	SH3	9	M-1/M-2	TU4, GS1
28	Closed Low Shrub Birch and Closed Low Shrub Birch – Willow and Closed Low Ericaceous Shrub	SH2	9	D-1/D-2	TU4
29	Closed Low Willow and Closed Low Alder – Willow	SH2	9	D-1/D-2	TU1, M-1
30	Open Low Mixed Shrub – Sedge Tussock Tundra and Open Low Mixed Shrub – Sedge Tussock Bog	GR4	1	O-1a/b	GR5, GS3, SH2
31	Open Low Mesic Shrub Birch – Ericaceous Shrub	GR2	5	O-1a/b	SH7
32	Open Low Shrub Birch – Ericaceous Shrub Bog and Open Low Shrub Birch – Willow	GS2	5	O-1a/b	
33	Open Low Willow and Open Low Sweetgale	SH1	8	O-1a	GR1
34	Open Low Alder and Open Low Alder – Willow	GS1	5	O-1a/b	SH2, FM1
35	Sagebrush – Grass and Grass – Juniper	GR1	8	O-1a/b	FM10

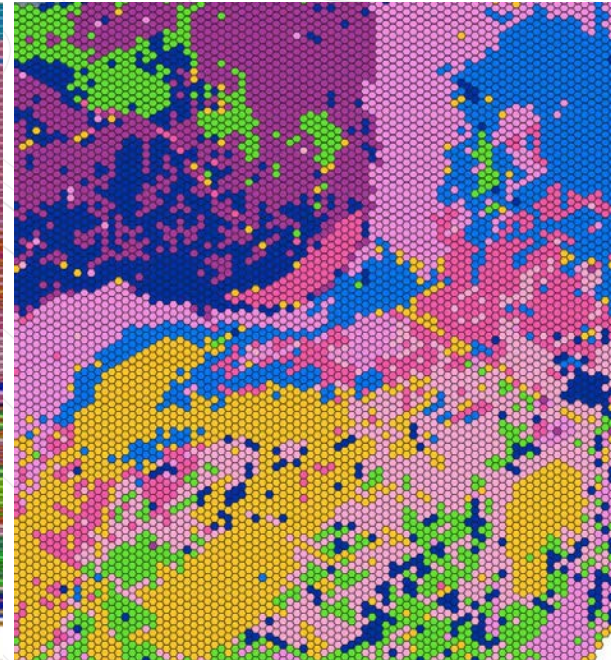
A simplified example

(Bonanza Creek Experimental Forest)

Viereck (1992)

Canadian Forest Fire Danger
Rating System - FBP

- Tussock Tundra
- Open White Spruce Forest
- Open Tall Alder
- Open Spruce/Paper Birch Forest
- Open Quaking Aspen/Spruce Forest
- Open Black Spruce Forest
- Closed White Spruce Forest
- Closed Spruce/Paper Birch/Aspen Forest
- Closed Quaking Aspen/White Spruce Forest
- Closed Quaking Aspen Forest
- Closed Paper Birch Forest
- Closed Black/White Spruce Forest
- Closed Black Spruce Forest
- Bluejoint/Shrub & Bluejoint Herb
- Wetlands
- Wet Sedge Meadows
- Closed Tall Shrub Birch/Willow Shrub
- Closed Tall Alder
- Bluejoint
- Post Harvest Bluejoint
- Shrub/Bare
- Black Spruce/Tamarack Forest
- Black Spruce Woodland with Tussocks
- Open Tall Shrub Birch Shrub



- C-1
- C-2
- C-3
- D-1/D-2
- M-1/M-2
- M-2
- O-1a/b

We collected input from fire managers

THANKS to Alison York (Alaska Fire Science Consortium) for organizing the meeting!

1. Suggestion: Use the ***National Vegetation Classification System*** for mapping vegetation. However, this classification system is under revision/update right now, unknown publication date
2. Fire managers and analysts would like a byproduct of vegetation map ***identifying conifer and hardwood***
3. Fire managers and analysts would like a byproduct of ***conifer and deciduous fraction in mixed vegetation***
4. A good ***spatial resolution is 30m*** and in ***vector format***. It should be useable in WFDSS (Wildfire Decision Support System from the USGS). WFDSS assists fire managers and analysts in making strategic and tactical decisions for fire incidents.
5. Other requests: ***lichen abundance; dead fuels***

⇒ **Produce 2, 3, and 4 from our vegetation map for the fire managers and provide them in a format that suits their needs.**

Though Barnes' team wanted to do a crosswalk between Alaska Vegetation Type and LANDFIRE classes they did not do it as the LANDFIRE classification was under revision that time.

The crosswalk between Alaska Vegetation Type and LANDFIRE did not float to the top as a priority for the managers. If we want to do that then we need a field vegetation person like Jennifer Barnes' (or someone from her team) to lead or co-lead this effort.