Appendix 5 : Forest Types and Successional Pathways

Forest types are recurrent patterns of forest vegetation and soils that react similarly to disturbance and silvicultural treatment. Forest types correspond to ecoelements of the national land classification system. Vegetation is used as an indicator of difference in soil moisture and fertility. Using tree cover, ground vegetation and soil characteristics, accurate projection can be made on forest succession, productivity, wildlife habitat, operational concerns and silvicultural prescriptions including regeneration capability for each forest type.

In 1989 Meades and Moores published a field guide to the Damman Forest types of Newfoundland. They differentiated to the level of thirty-three forest types grouped under six major categories (additional detail on each available in Meades and Moores (1989)) which follow:

1. Balsam fir forest types (balsam fir is the climax tree species throughout most of insular Newfoundland, replaced naturally by black spruce only on extremely wet and on dry nutrient poor types).

2. Black spruce forest types (with deep raw humus layer of feathermoss).

3. Black spruce fen types (open black spruce forests with a lush understory of sedges, forbs and ferns. High in fertility but wet).

4. *Kalmia*-black spruce forest sites (open structure and nutrient poor soils over a wide range of moisture conditions).

5. Hardwood forest types. (With the exception of very unstable substrates, hardwoods do not form a stable forest type in Newfoundland. Birch and aspen because of their light seed can take over better sites where softwood regeneration has failed and form the stand for a couple of rotations until softwood overtakes the site).

6. Hardwood thickets and heath types. (These may be of varying stability and may take several rotations before going to softwoods. Heath can also be a stable type).

The balsam fir forest types of the Avalon are stable (i.e., regenerate to the previous stand type) following cutting, insect infestation and windthrow but after fire often go to spruce or hardwood forest types. Spruce types generally go to another spruce type following fire, but after cutting to a more open spruce type or heath in the absence of silvicultural

treatment. Tables and diagrams below from page 2.5 of Meades and Moores (1989) show the range of successional pathways for the various forest types under different types of disturbance.

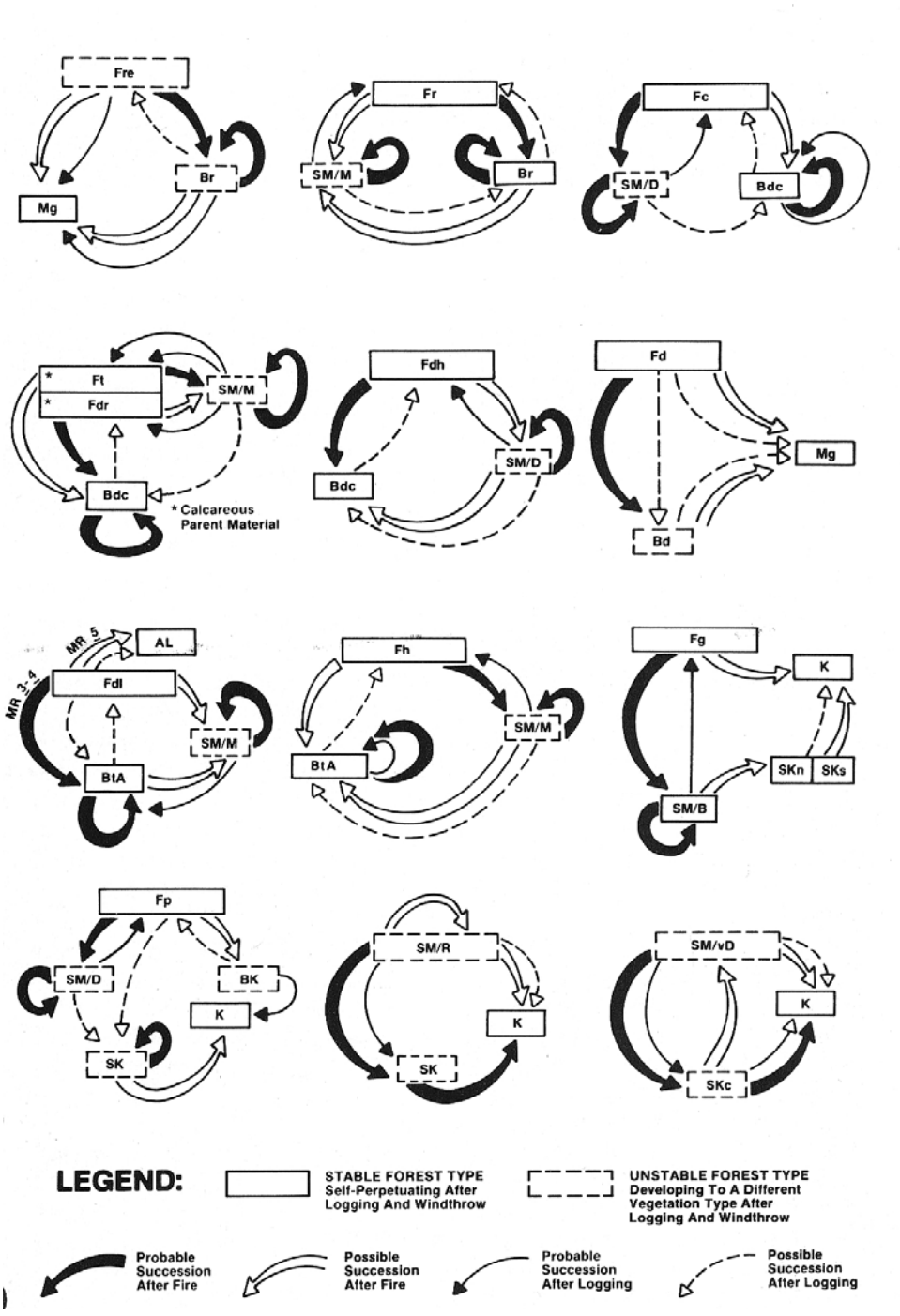

Figure 2. Successional Pathways after Disturbance