Appendix A – Charting the Impacts

The change in climate, ecosystem response and resultant community-felt impacts were initially drawn up as a flow chart, by season. These findings were translated into tabular form.

Food production

1.	Increased air temperature, extreme conditions and lower summer rainfall leading to ***fire risk to crops and buildings*** (summer, fall)
2.	Increased air temperature leading to ***crop disease*** (fall)
3.	Late frost, reduced summer precipitation, increased air temperatures, increased maximum temperatures, decreased winter snowfall, increased severe rain storms leading to ***reduced farm productivity, crop failure*** (fall, winter, spring, summer)
4.	Increased air temperature, decreased winter snowfall but increased rainfall leading to ***soil damage and erosion*** (winter, spring, summer)
5.	Increased growing degree days leading to ***successful crop varieties, more produce*** (spring, summer)
6.	Increased occurrence in intense rain / snow storms and increased winter precipitation leading to transportation disruptions, road closures and **produce shortages** (winter)
7.	Increased frost free days, increased growing degree days, increased spring precipitation, heavy rain on unfrozen ground, increased air temperatures and seasonally late lightening storms leading to ***higher farm costs / land contamination*** (spring, summer, fall, winter)
8.	Increased air temperature leading to ***livestock mortality*** (summer)

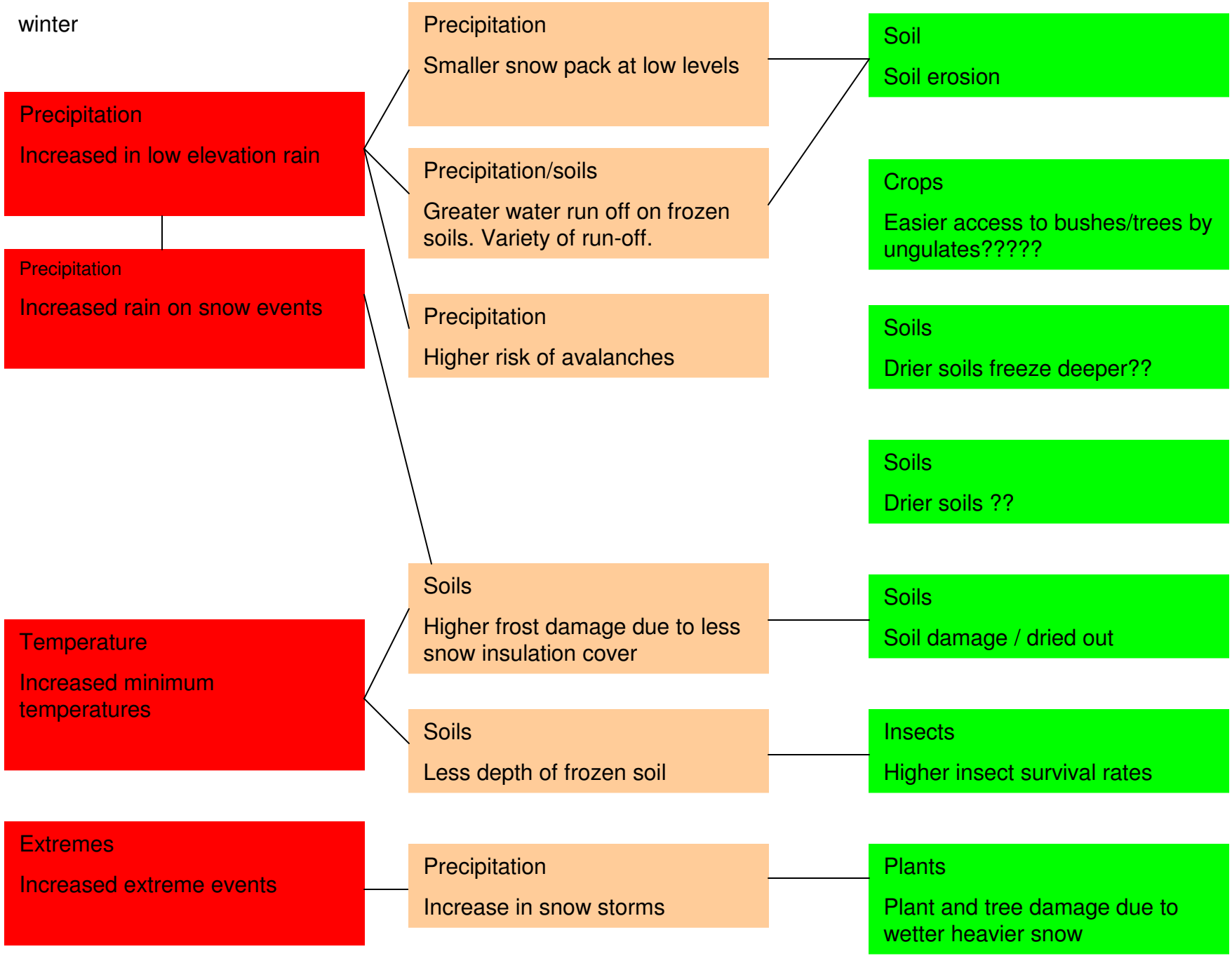
Water Supply and Quality

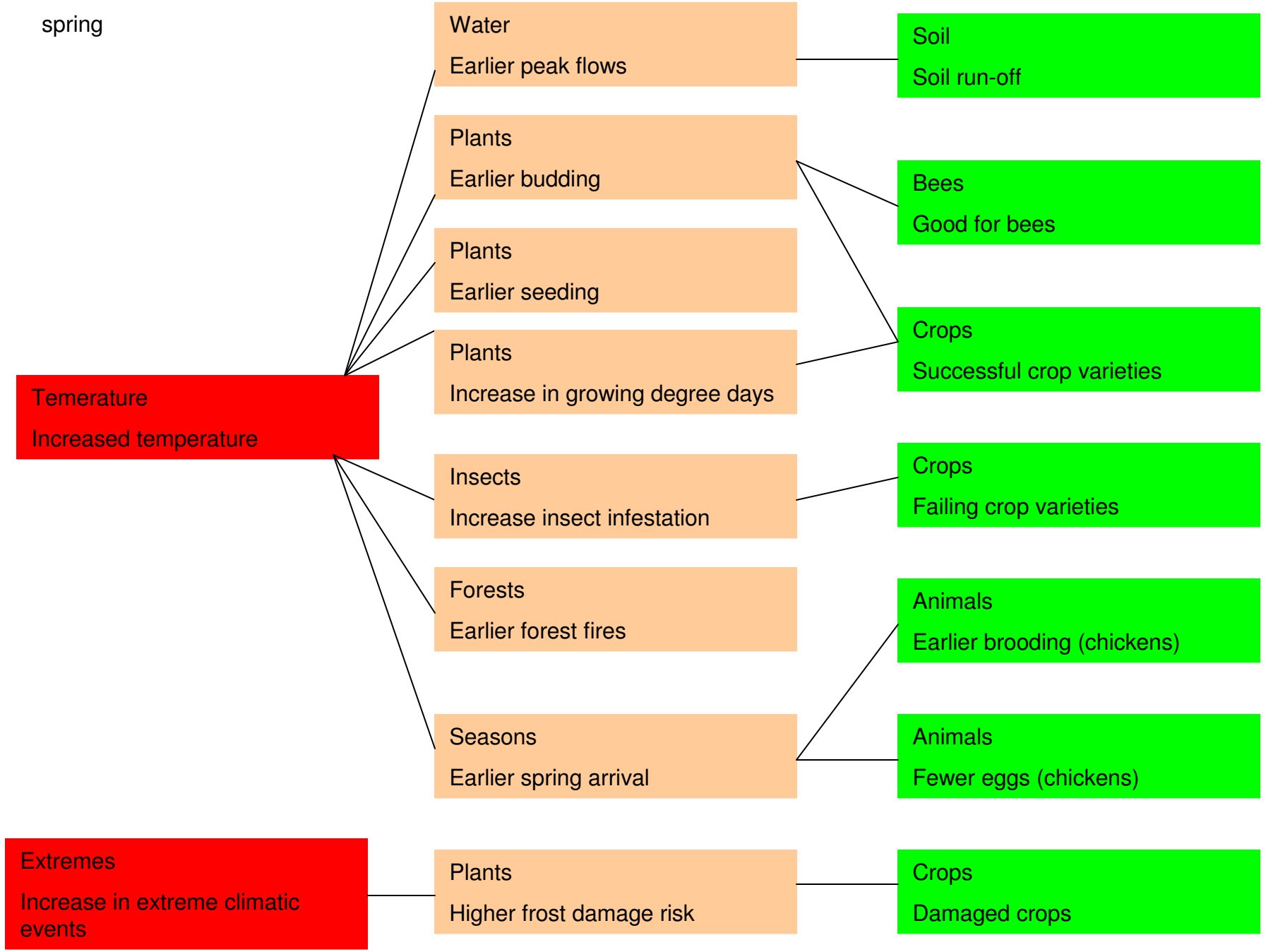
1.	Increase in air temperature, and reduced snowfall lead to ***water supply in wells and reservoir storage being affected*** (spring)
2.	Reduced spring snowfall, higher air temperature, increased growing degree days, and longer periods of little or no precipitation lead to ***demand exceeding supply*** (spring, summer, fall)
3.	Higher air temperatures and Increased extreme events lead to ***potential increase in watershed damage*** *(*fall, winter, spring)
4.	Warmer air temperatures, increased occurrence of wind storms and intense rain events lead to ***water contamination / higher water treatment costs*** (summer, winter)
5.	Extreme rainfall events, increased occurrence of wind storms and increased snow storm frequency lead to ***water supply interruption*** *(*spring, summer, winter)
6.	Decreased winter snowfall and extreme cold events lead to **water infrastructure damage (frozen water pipes)** (late fall, early winter)

Kaslo & Area D Climate Change Impacts on Agriculture Provision – INITIAL DRAFT

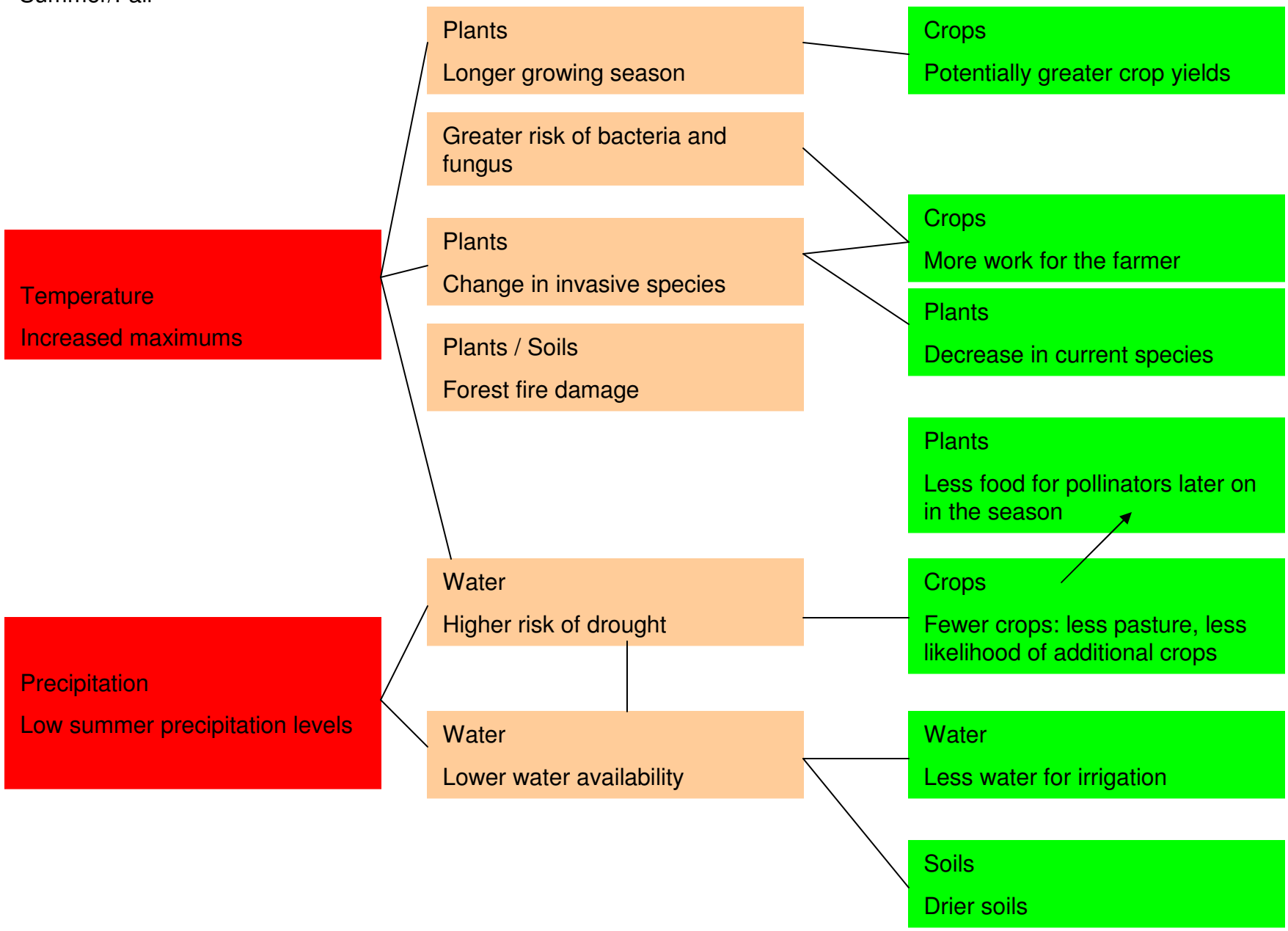
March 19, 2010

CLIMATE → **ECOSYSTEM RESPONSE** → **IMPACTS**


winter
Precipitation
Increased in low elevation rain
Precipitation
Increased rain on snow events
Temperature
Increased minimum temperatures
Extremes
Increased extreme events
Precipitation
Smaller snow pack at low levels
Precipitation/soils
Greater water run off on frozen soils. Variety of run-off.
Precipitation
Higher risk of avalanches
Soils
Higher frost damage due to less snow insulation cover
Soils
Less depth of frozen soil
Precipitation
Increase in snow storms
Soil
Soil erosion
Crops
Easier access to bushes/trees by ungulates?????
Soils
Drier soils freeze deeper??
Soils
Drier soils ??
Soils
Soil damage / dried out
Insects
Higher insect survival rates
Plants
Plant and tree damage due to wetter heavier snow


spring
Water
Earlier peak flows
Soil
Soil run-off
Plants
Earlier budding
Bees
Good for bees
Plants
Earlier seeding
Plants
Increase in growing degree days
Crops
Successful crop varieties
Temerature
Increased temperature
Insects
Increase insect infestation
Crops
Failing crop varieties
Forests
Earlier forest fires
Animals
Earlier brooding (chickens)
Seasons
Earlier spring arrival
Animals
Fewer eggs (chickens)
Extremes
Increase in extreme climatic events
Plants
Higher frost damage risk
Crops
Damaged crops

Summer/Fall


Temperature
Increased maximums
Precipitation
Low summer precipitation levels
Plants
Longer growing season
Greater risk of bacteria and fungus
Plants
Change in invasive species
Plants / Soils
Forest fire damage
Water
Higher risk of drought
Water
Lower water availability
Crops
Potentially greater crop yields
Crops
More work for the farmer
Plants
Decrease in current species
Plants
Less food for pollinators later on in the season
Crops
Fewer crops: less pasture, less likelihood of additional crops
Water
Less water for irrigation
Soils
Drier soils

Questions:
Potential strategy
water collecting tanks for storage
Greenhouses are part of a solution

Concern
what about the impact on the natural world

Questions
Do we need to go to greenhouses or can we grow all outside?
What do we need to do to become self sufficient in food?
Do composting rates increase, adding nutrients to the soil? Not winter – spring/summer/fall
How will frozen soil depth change due to less snow cover/insulation? More overall? Less?
Will cloud cover change?
Will the soils really be drier over winter?
Do we include greenhouse impacts? Artificial climates….
Will spring arriving earlier affect the rate of chickens laying eggs?
Will GMOs and insecticides be brought in to the impacts?
Need - Where are the seed variety trials? Need info on seed availability and sourcing. CBT database.
Early pollinators may not be good for bees – no flowering.
Need – plant suitability for the region. What impact CC on worldwide seed availability?
How can we easily adapt to variations over years?
Plan for worst case scenario
Will our soil become more acidic (more water, anaerobic fermentation due to increase temp)

Kaslo & Area D Climate Change Impacts on Water Provision

– INITIAL DRAFT

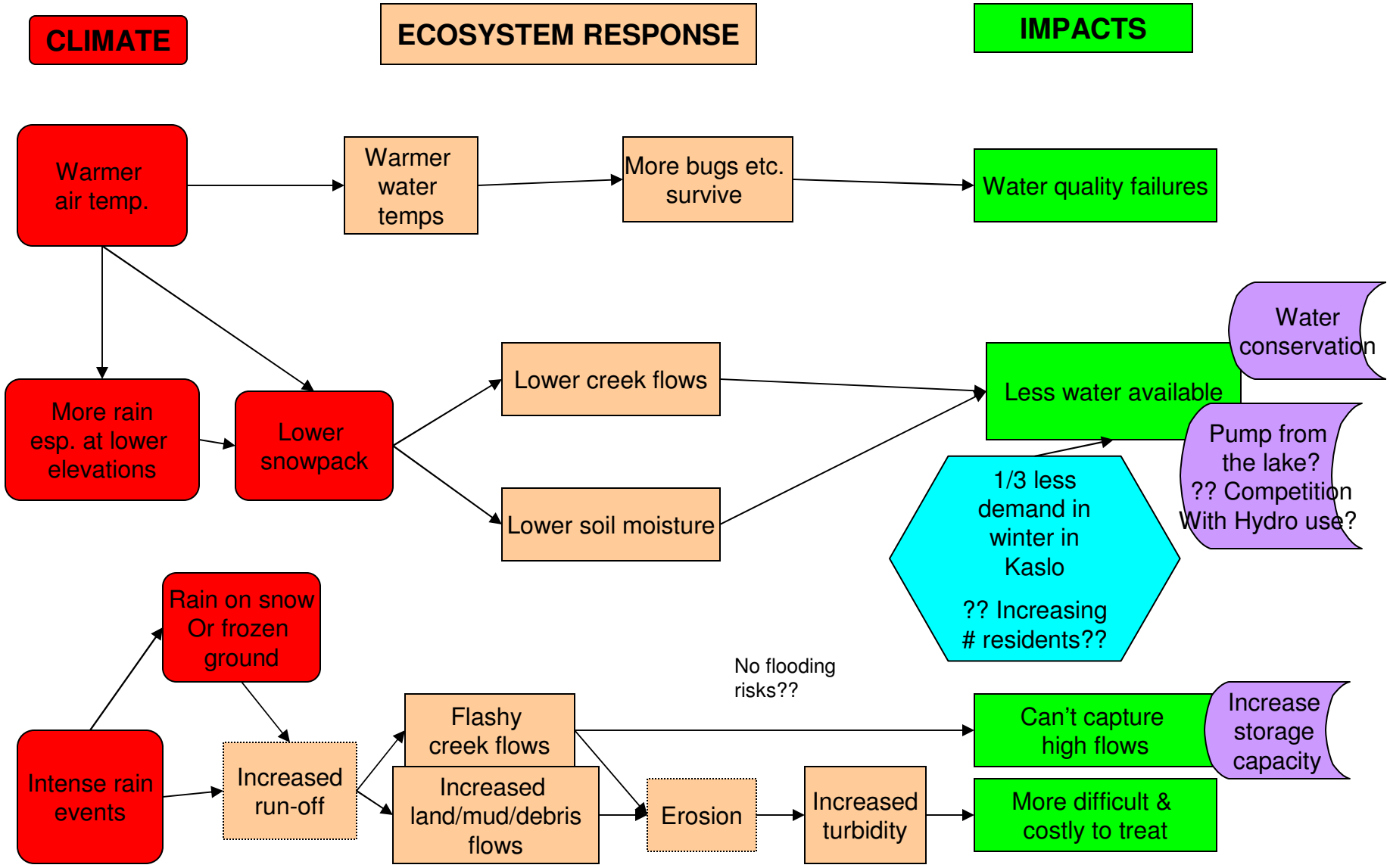
March 19, 2010

Ground water

- Status/shortages unknown
- Ask well drillers
- As surface water supplies decline and there are more conflicts amongst users, some may turn to wells which will increase groundwater use with possible impacts
- Do changes in lake levels impact on shallow wells beside lakes?

Kaslo & Area D Climate Change Impacts on Water Provision

WINTER (Dec. – Feb.)



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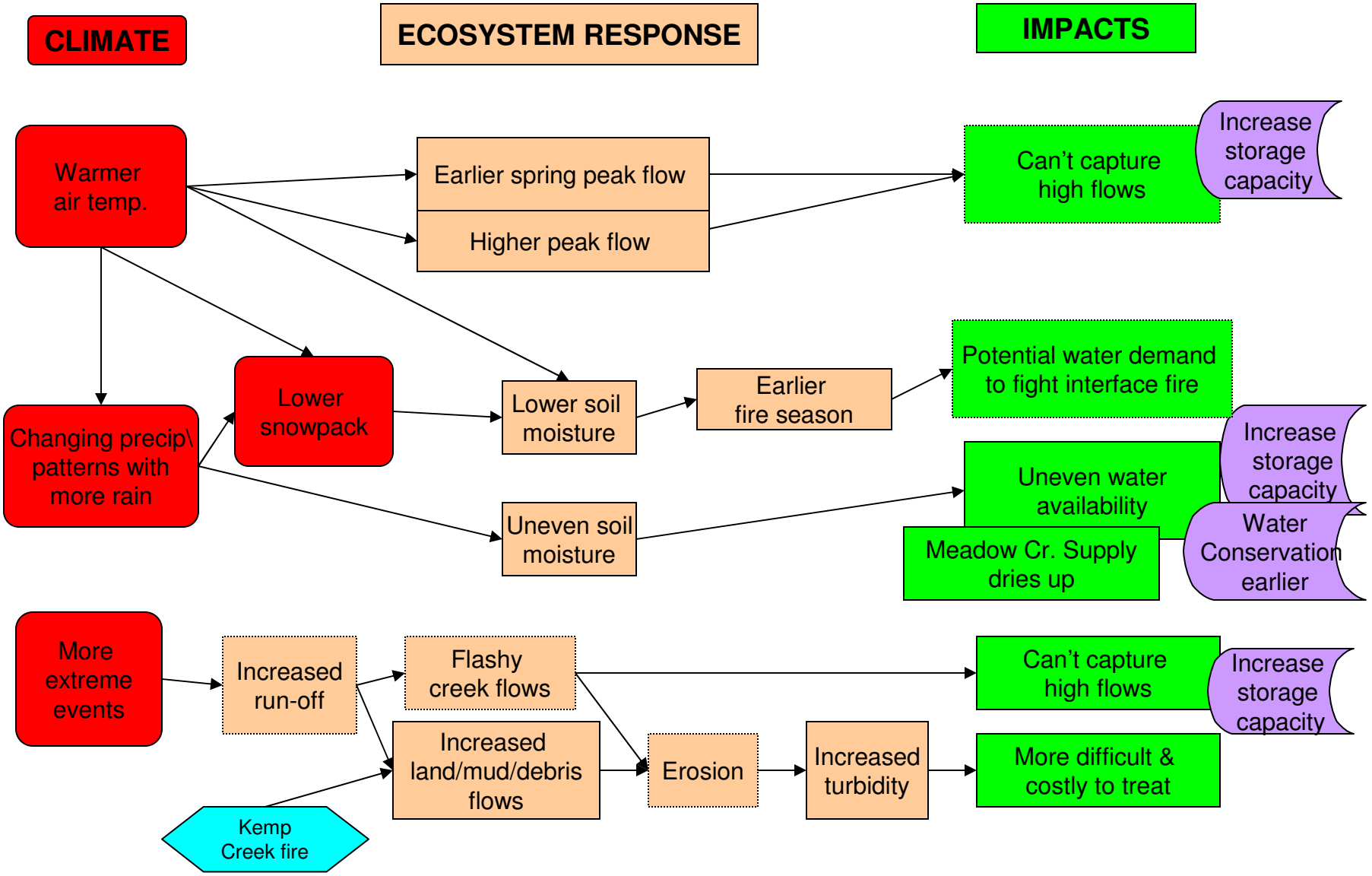
SPRING (March - May)



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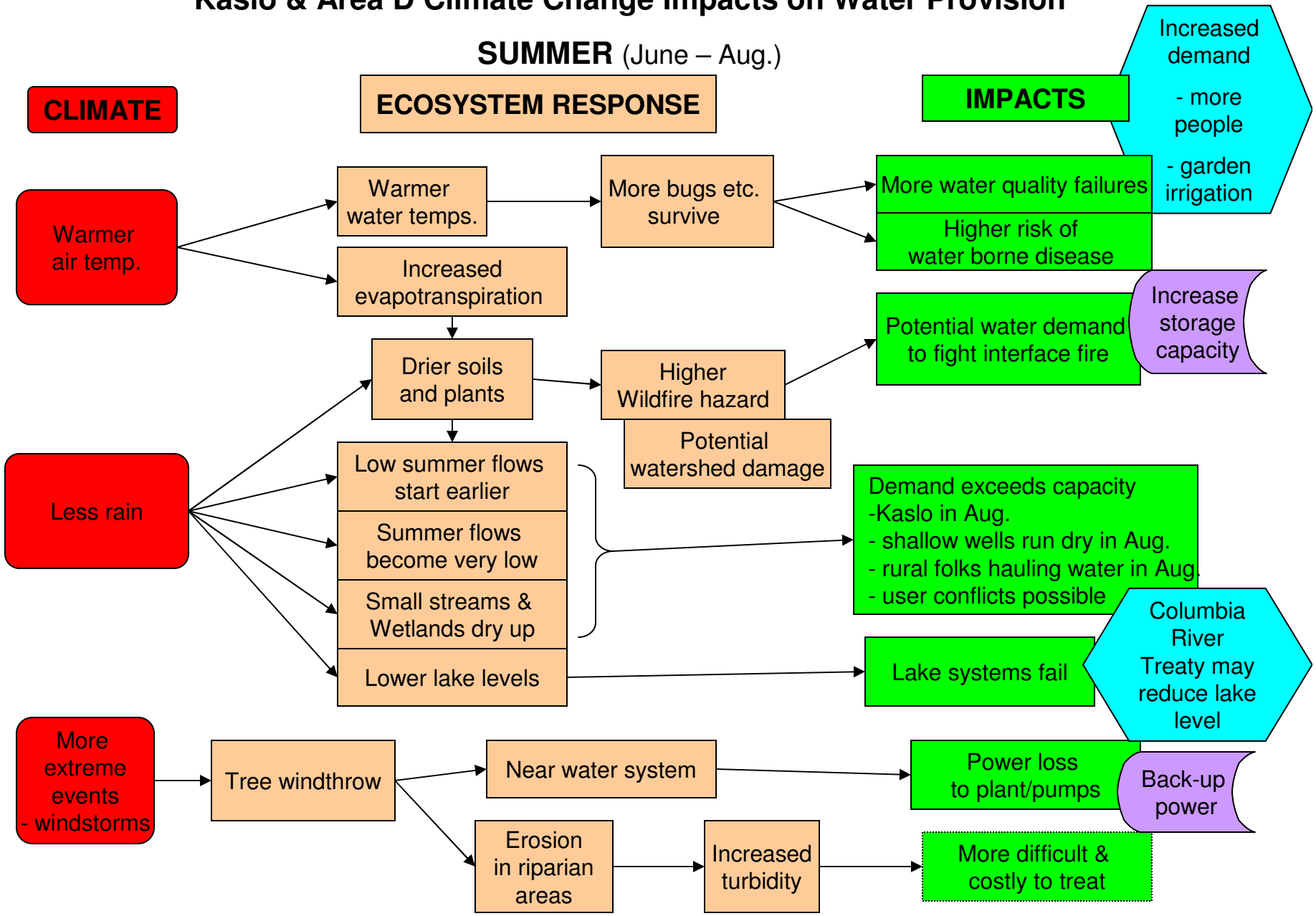
SUMMER (June – Aug.)



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FALL (Sept. – Nov.)