

FUTURE NEW ZEALAND: POSSIBLE IMPACTS OF CLIMATE CHANGE ON THE DAIRY SECTOR

As the 21st century advances, the climate of New Zealand is likely to become more sub-tropical in the north, wetter and windier in the west, with a milder, more temperate climate developing in cooler and southern regions of the country. This will provide a combination of threats and opportunities to the New Zealand agricultural sector.

Possible impacts and opportunities include:

DROUGHT AND WATER RESOURCES

Drought frequency and severity could increase in regions that are now drought-prone. Regions most likely to be affected are eastern Northland, Hauraki Plains, eastern Bay of Plenty, and eastern New Zealand from Gisborne to Otago. Pressure on water resources is likely to increase in these drought-prone areas.

Increased incidence of drought, and possible increasing frequency of westerly winds, will heighten the risk of fires in rural areas, particularly in areas prone to strong north-westerly conditions, such as Canterbury.

INTENSE RAINFALL

All regions of New Zealand can expect greater flooding and erosion risk with any intensification and increased frequency of rainfall events. Low-lying coastal land will be more prone to storm surges and flooding.

INSECT, PLANT PESTS, AND BIOSECURITY

Increased problems with insect pests are likely. Recent experiences in Northland with tropical grass webworm and crickets in Hawke's Bay, are indicative of what could occur more often with climate change. The spread of insect pests such as the clover weevil and clover flea could be accelerated with warmer average conditions.

Higher temperatures will likely increase the number of pest plants in the north of New Zealand and encourage southward spread of some species. This is already occurring in some species, although it could be due in part to natural acclimatisation. Nevertheless, higher temperatures will increasingly be an influence.

TEMPERATE PASTURE

Temperate pasture responses are likely to vary throughout New Zealand. Warmer and wetter average conditions could lead to yield increases in western regions of the lower North Island, in the West Coast, and parts of Otago and Southland. Yield response may be positive in northern regions, but higher temperatures could become increasingly limiting, along with increased predominance of sub-tropical grasses.

SUB-TROPICAL GRASSES

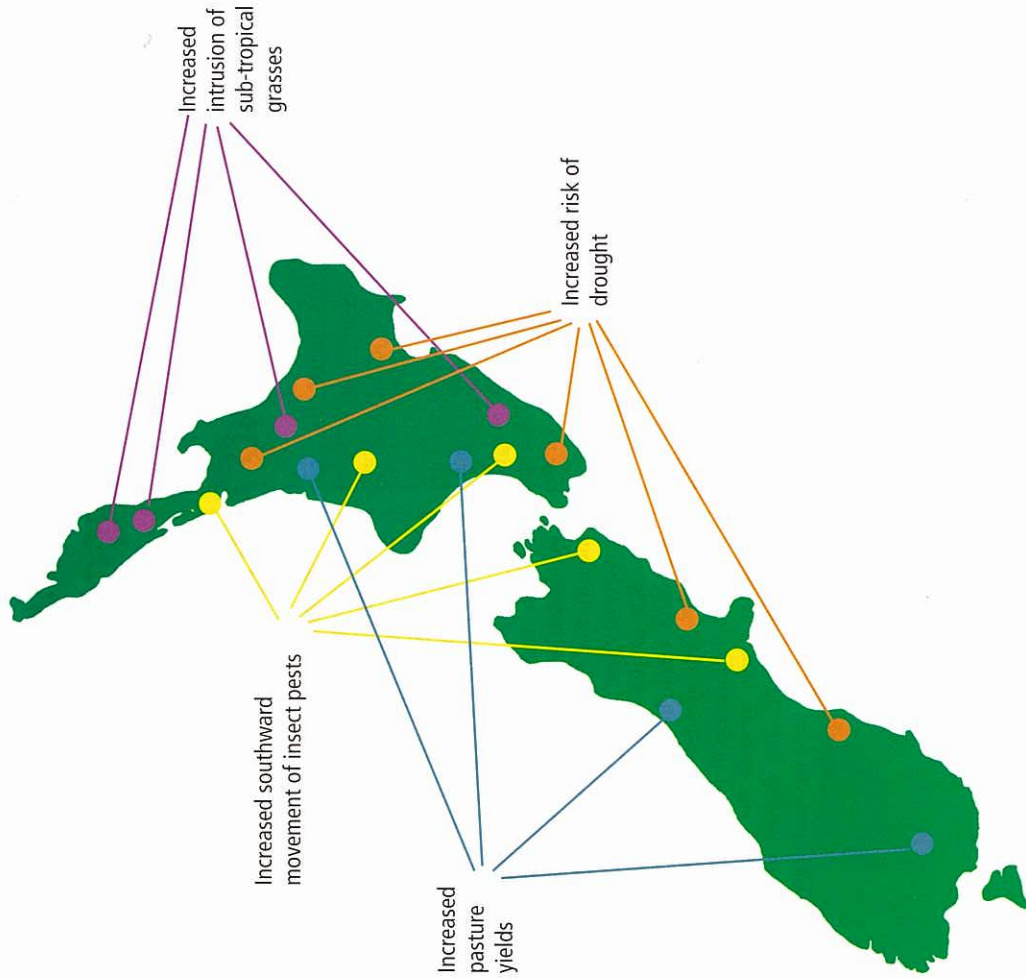
Sub-tropical grasses such as kikuyu and paspalum are already widespread in the North Island and will become more so. They may become significant invaders of the South Island over time. This would have a greater negative impact on dairy producers than sheep and beef producers, because of the high dependency of dairying on maximising pasture utilisation.

ANIMAL HEALTH

Animal health effects, particularly in northern and eastern New Zealand, could include increased heat stress on dairy cattle. Most of the North Island and warmer regions of the South Island could experience an increased incidence of diseases such as facial eczema. A warmer wetter climate in western parts of New Zealand will increase problems with internal parasites. In cooler and southern regions of the country, stock will benefit from warmer winters with less stress on stock and better reproduction rates.

CROPS

In general, conditions will become increasingly suitable for maize production in the North Island, with greater opportunities in Canterbury over



time. There could be yield and quality benefits to some of the temperate grains in the South Island with hotter, drier conditions. Wetter conditions could increase disease problems in some northern regions and in the west. In eastern regions, crop production may be constrained by limitations on the availability of water at certain times of the year.

INFRASTRUCTURE

Changes in the seasonality and/or frequency of high intensity rainfall events will potentially have consequences for farm infrastructure in all regions. This includes land drainage, flood protection, community water schemes, culverts and bridges, erosion control, farm dams, water reticulation and irrigation.