

## 3. FUTURE TRENDS

What changes to the Wellington environment are likely to have an impact on the management of weeds and animal pests?

### **Climate**

Latest research indicates that climate change is not a question of if our environment will become warmer, but by how much. We have to consider what the impacts will be, both positive and negative. Change is anticipated to be gradual, giving time to plan ahead.

While it is considered that the warming climate is unlikely to cause any rapid mass extinction, it will allow the impact of those factors that have already caused the decline in our natural heritage to become more pronounced.

Less rainfall and more drying winds are likely to have the greatest effect on environments that are already subject to droughts. Forests on warm lowland sites are more likely to be affected than forests on cooler sites. Fragmented forests and environments on the country's east coast are more likely to be affected.

Habitat loss and fragmentation, and the spread of weeds and pest animals will become more significant. Seed sources will be lost and birds will be unable to survive through loss of food and increased predation. Weeds will have more opportunities to invade where indigenous species struggle and cannot compete. More extreme weather events will contribute to catastrophic vegetation loss in the form of slips and washouts. Denuded areas are prime sites for invasion by weeds.

Not all the impacts will be negative. Warmer temperatures may induce more frequent fruiting in some of our indigenous species, with follow-on effects for those species of wildlife that are dependent on that fruit or seed. But increased fruiting may also benefit pest animal species too. Rats may have an increased food supply, but stoat and cat numbers may also increase, putting additional pressure on indigenous wildlife.

### **Urban expansion**

Urban expansion not only has the potential to destroy habitat and fragment what remains, but it introduces the greatest source of weeds and some pest animals into areas that have previously been only lightly affected.

Garden escapes and the dumping of garden waste in road reserve and open space areas are probably the biggest source of weeds. Roads and railways are also prime sources of infestation.

Domestic cats are brought in to previously low-cat or cat-free areas, with the potential for new feral populations to establish. The impact of cats, both feral and domestic, is

not widely understood, but recent studies indicate that domestic cats present a significantly underestimated threat to wildlife.

Rats and mice are associated with human habitation and the ready availability of food sources.

### **Land use**

Land use can have a big positive or negative influence on pests. Land uses that disturb or alter the environment have the potential to open up new areas to invasion by weeds. Limiting the level and manner of disturbance and requiring such things as prompt rehabilitation or replanting can minimise weed invasion. Alternatively, programmes such as revegetation plantings can reduce the incidence of weeds on a long-term basis.

Erosion creates bare areas that are at risk of invasion by weed species. It also results in the loss of valuable topsoil, causing a changed nutrient environment.

### **Fire**

Fire is an ever-present risk for flora and fauna that have developed largely in its absence. Recovery from fire is generally slow, the plants not commonly adapted to rapid recovery as plants in fire prone regions such as Australia.

The clearance of much of the land around the city has allowed weed species such as gorse to invade. Whilst providing an excellent nurse crop for young native plant species, gorse presents a high level of fire risk and fires have occurred at Sinclair Head, south of Makara beach and on the Wellington Town Belt above Government House. However, Wellington has been relatively free of major fires in recent years, allowing regeneration to make good progress and less fire-prone species to start to dominate.

Many new areas added to the open space asset in recent years are in the early stages of regeneration and will require protection from fire for many years. Prevention of fires in open space areas is of considerable importance, and is the most effective way to protect regenerating bush.