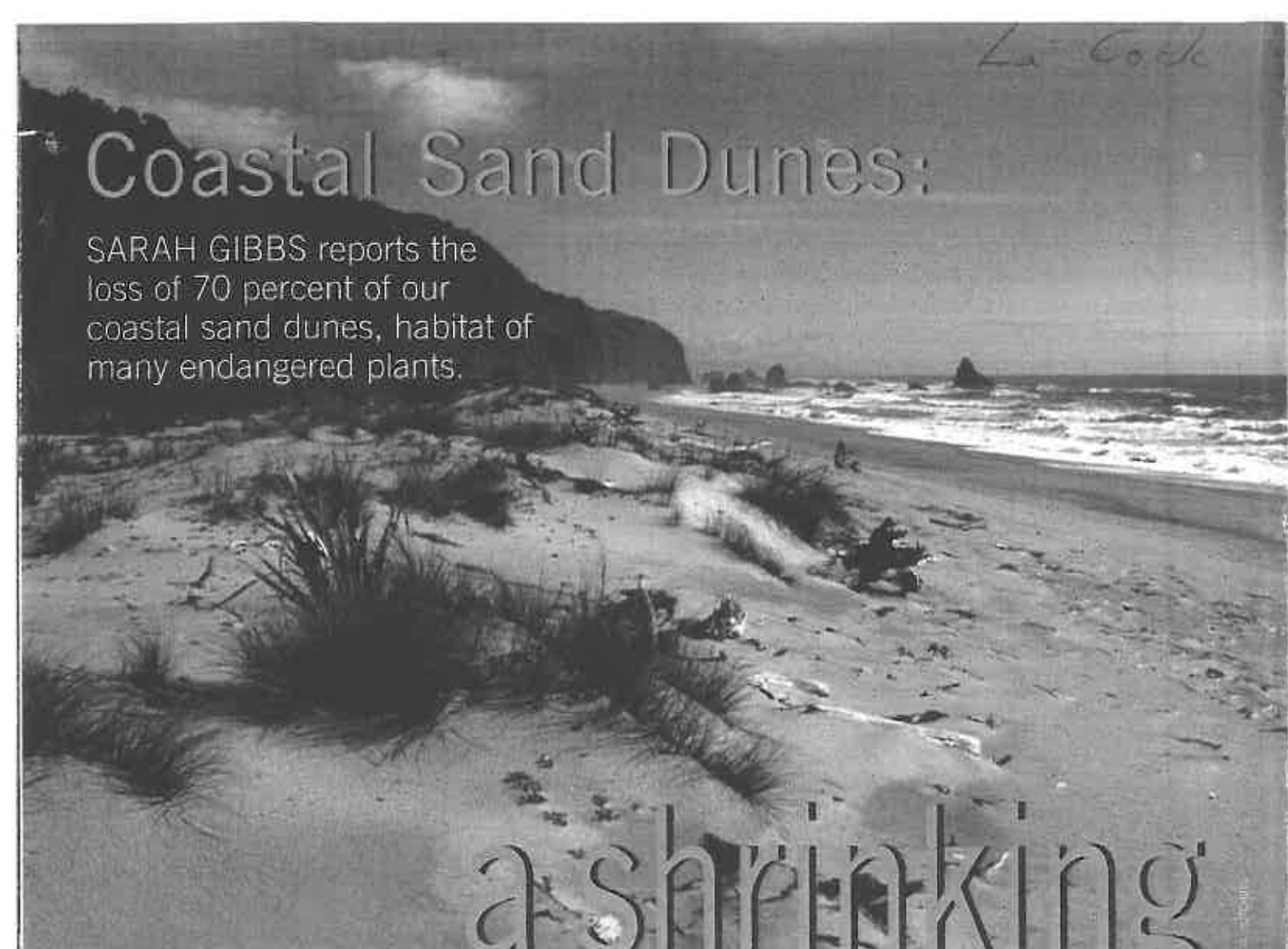


Coastal Sand Dunes:

SARAH GIBBS reports the loss of 70 percent of our coastal sand dunes, habitat of many endangered plants.



a shrinking

Coastal sand dune habitats are becoming increasingly rare. New Zealand has lost over 70 percent of its coastal sand dunes in the last 80 years. Few of the remaining areas are in anything resembling a natural state. Remaining sand dune areas are often still under threat from development, weeds and human disturbance.

Coastal sand dunes create iconic New Zealand landscapes but they are becoming increasingly rare. Sand dunes are home to more of New Zealand's endangered plant species than most other habitats.

The perpetually changing nature of these areas, and the resulting variety of habitats, is a key reason for this. The other is that many dune species have highly specialised habitat requirements.

As new dunes form along the shore, the dunes behind them are colonised by plants. In the process of colonising areas, each species contributes slightly

to modifying the dunes into a new habitat type. Thus each new coloniser stabilises the dunes enough for some new species to establish and, eventually, replace them.

Many of our native sand dune plants are so well adapted to changing conditions that they can only colonise newly exposed areas. It is vital that we conserve the remaining areas of coastal sand dune habitats as dynamic systems if we are to retain this part of our natural and cultural heritage.

In the last 80 years alone, we have lost a massive 70 percent of our coastal sand dune ecosystems. Now, most of the remaining dunes bear little resemblance

Botanist Colin Ogle (left) leads a trip through coastal dune country near Wanganui at the November 2001 Forest and Bird Council meeting. With him is Rotorua branch chair Chris Ecroyd, himself a professional botanist.



SARAH GIBBS



The critically endangered sand gentian, *Sebaea ovata*, is now only found in two sites within New Zealand. It only survives in habitat within newly-formed dune hollows behind frontal dunes. In the Wanganui area special scrapes behind the dune have been established so this plant may survive.



A native sun orchid, (*Thelymitra* sp.) in the sandhills at Whitiau Scientific Reserve near Wanganui.

to their original native condition. Most of them are biologically impoverished and barren, compared with their original state.

Dune modification began in many areas when coastal dune forests were burned off during Maori settlement. Clearance of coastal dune forests accelerated with European settlement.

The establishment of European farming techniques, which saw the introduction of livestock to coastal dunes, had huge impacts on ecosystems. Trampling and grazing of native sand-binding grasses led to widespread and serious erosion in the late 1800s and early 1900s. With their natural vegetative cover destroyed, sand dunes frequently migrated inland.

The threat of shifting sand to established farmland led to further modification of coastal dunes — sand dune areas were

'stabilised' with lupins, pines, marram and other exotic species.

Since the 1950s, coastal subdivision and development has had the most significant impact. Many large dune systems have been almost completely covered with housing. Even frontal sand dunes have been bulldozed to allow for better coastal views.

The replacement of native dune vegetation by exotic weeds, many escaped from gardens, has further modified sand dune ecosystems and reduced their native biodiversity.

Tighter land use regulations and a growing recognition of issues such as the spread of garden weeds has led in recent years to a reduction in these threats. At the same time, however, an increasingly mobile population has meant that human recreational activities have become a

significant and growing threat to the remaining dunes. On many east coast beaches, the density of foot traffic alone has destabilised and, in severe cases, destroyed frontal dunes. On the west coast, the rapidly growing number of people wanting to drive off-road vehicles through this coastal country is the single biggest threat to dunes and dune-living species — plants, insects and birds.

Unmodified coastal dunes are now considered to be as rare, and possibly more threatened, than wetland ecosystems. Their survival, and that of the species that live within them, is dependent on our actions.

— SARAH GIBBS is Forest and Bird's northern conservation officer.

Moving sand dunes smother shrubs.

