11 Fishes from elsewhere

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INTRODUCTION

If European colonists could return today, they would discover that Australian rivers now harbour many familiar fishes to supplement their rations. Rather than antipodean natives, they would find common carp (*Cyprinus carpio*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), goldfish (*Carassius auratus*) and redfin perch (*Perca fluviatilis*). They might question, now as then, the relative values of native fishes and those introduced from the Old World. Were these wise imports? Were some misguided choices, and what were the consequences of their introduction? Australian rivers have been transformed in the past two centuries, and the alien fishes are both agents and symptoms of change. The title for this chapter could apply to native species introduced outside their natural ranges or to species from other parts of the world. It could also refer to different genetic stocks of a native species introduced to another part of a drainage system, beyond a waterfall or other barrier.

In 200 years, technologies, trade and transportation have breached barriers that once isolated the freshwater biotas of catchments and continents. The study of biological invasions has become a theme in ecology, responding to trends towards globalisation and biological homogenisation of floras and faunas (Vermeij 1996; Strayer *et al.* 2006; Davis 2009). Extinctions and declining genetic diversity are associated threats (Moyle and Light 1996; Rahel 2002). Among the least-controlled and least-reversible of these changes are introductions of non-indigenous species (Strayer 2010).

This chapter considers the nature of freshwater fishes brought to Australia from elsewhere, how they have become established in the wild, and the effects they have had on native fishes and riverine ecosystems. It also considers the nature and effects of invasive species, exemplified by alien and translocated fishes, the pest status of several alien fishes and the positive and negative values attributed to some of these species.

A GLOBAL ISSUE IN AUSTRALIA

Global biodiversity is in decline (Butchardt 2010) and alien fishes are agents of change because they reduce native fish populations, degrade habitats, compromise gene pools and introduce diseases and parasites (Corfield *et al.* 2008). In North America, there have been 314 transplants of native fishes and 116 established alien species (Strayer 2010). In Europe, there have been 58 transplants and 95 alien species (Butchardt