Цитаты для Invasive species

Integrating Ecological and Evolutionary Theory

of Biological Invasions

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Generally, a species is considered invasive if it has significant ecological,

environmental or economic impacts in its novel range.

Because invasiveness is

a combined function of the invaded community and the invader, the changes

leading to greater success in the new range can be extrinsic changes in the

environment that favor the invading species, or they can be intrinsic to the

invading species.

Herein, we propose a metric to quantify the continuum from weak

invaders to strong invaders. Response ratios are used to compare the means

of experimental treatments (*X* E) and controls (*X*C), where *R*=*X*E/*X*C (Hedges

et al. 1999). If *R*>1, then the experimental treatment is larger than the control,

and if *R*<1, then the experimental treatment is smaller than the control.

For comparative research on biological invasions, the response ratio we propose

is the ratio of a measure of performance in the introduced range (*P*I)

to that in the native range (*P*N).

If *P*I and *P*N are

normally distributed, and *P*N is unlikely to be negative, then the log of the

response ratio (*L*) is approximately normally distributed (Hedges et al.

1999), making it a statistically tractable metric. Replicate measures of either

individual or population performance (e.g., average body size, fecundity,

seed set) are required to evaluate whether *R* differs significantly from 1 (or

*L* from zero) for a given species.

ГИптезы

Экологические гипотезы

Inherent superiority

Preadaptation/disturbance

*novel weapons hypothesis*

The *empty niche hypothesis* posits that invasive species are able to use

resources not used by native species, or use them more efficiently and thereby

create a new ecological niche in a community (Elton 1958).

This hypothesis is linked to the idea that species-rich communities are more difficult to invade than species-poor communities

In several respects, preadaptation, inherent superiority, and the empty

niche hypotheses are related. Each proposes that the invaded environment is

suitable for invasion from the outset, and that similarly, the invasive species

has the capability of invading that environment without any intrinsic ecological

or evolutionary changes being required.

*enemy release hypothesis*

*biotic resistance hypothesis*

the enemy release and the biotic

resistance hypotheses are fundamentally linked

Эволюционные гипотезы

*evolution of increased competitive ability* (EICA)

In addition, multiple introductions from different native origins, even if each imposes a strong bottleneck in population size, may enhance variation, particularly if there is significant genetic structure among populations in the native range. When

individuals from those populations cross in the new range, they can generate

introduced populations that can harbor greater genetic variation than is

found in any single population in the native range(Kolbe et al. 2004).

Abbott (1992) and Ellstrand and Schierenbeck (2000) highlighted the role

of *hybridization* between species and gene flow among distinct genotypes in

invasions, and proposed that it increases the invasiveness of exotic species

by generating genetic variation, evolutionary novelty or hybrid vigor (e.g.,

Vila and D’Antonio 1998).

Hybridization may initially reduce fitness (Arnold

et al. 2001), but a combination of selection and backcrossing may result in

individuals with higher fitness than is the case for the hybridizing parents

(Arnold and Hodges 1995; Arnold et al. 2001).Whether hybridization influences

the demographic success of introduced species is still under debate:

many invasive taxa are of hybrid origin (Ellstrand and Schierenbeck 2000),

but few data connect hybridization or outcrossing directly to changes that

would increase invasion success.

Thus, introduced taxa of hybrid origin may be able to invade areas that are unavailable to the parental species. !!! Важно! Это иожет объяснять почему гибридов ЕхТ больше в местах с пониженной соленостью.

Introduced species and invasive species это не одно и то же.