Table A2. Comparison of Approaches by Iwasa *et al.* and Tanaka *et al.*

Approach		Y. Iwasa *et al.*	Y. Tanaka *et al.*
Basic model	Author	Y. Iwasa *et al.*	R. Lande
	Growth	Logistic growth, $r_s X(1 - X/K)$ (suitable for the high-density population)	Exponential growth, $r_i X$ + threshold, K (suitable for the low-density population)
	Environmental variation	Stratonovich-calculus	Ito-calculus ($r_i = r_s + v/2$ and $v = s_e^2$)
Approximate equation of mean extinction time (T)		$\log T = (1/CV^2) \log K + C$, where $CV^2 = s_e^2/2r_s$ and C is terms independent of K	$\log T = (2s - 1) \log K + D$, where $s = r_i/v$ and D is terms independent of K
Assumptions for approximate Eqs.		Cf. Hakoyama and Iwasa 2000	Cf. Tanaka and Nakanishi 2000
Risk in terms of mean extinction time		$\Delta \log T$	$\Delta T/T$
r and K under chemical stress		$r_s \rightarrow r_s'$ (= $r_s - d$), $K \rightarrow K'$ (= $K - K d / r_s$)	$r_i \rightarrow r_i'$, K does not change.
$\Delta \log T$ due to chemical exposure		$\Delta \log T(d) = - d \log T(d = 0) / r_s$	$\Delta \log T \approx 2 \Delta s \log \overline{K}$
Effect of chemicals		r_s' is derived from Leslie Matrix (life table) which includes the effect of toxic chemicals	r_i' is derived from Leslie Matrix (life table) which includes the effect of toxic chemicals
Approximate Equation for estimating the effect of chemicals		$d = r_s - r_s' = r_{max} g(x/a)^b$	$r_i(x) = r_i(0) [1 - (x/\alpha)^2]$ $\log \alpha = c + b \log\{LC50\}$, b=0.843, c=1.562
Habitat loss ($\Delta K / K$) which is equivalent to MET Risk		$\Delta \log T \approx (1/CV^2) \Delta \log K$	$\Delta \log K \approx \Delta s \log \overline{K} / (\overline{s} + \Delta s - 0.5)$
Example of ($\Delta K / K$)		Herring gull (*Larus argentatus*) in Long island, NY. sparrowhawk (*Accipiter nisus*) in Eastern England, Japanese crucian carp (Carassius auratus subsp.) in Lake Biwa	*Daphnia*

See the text for abbreviations.