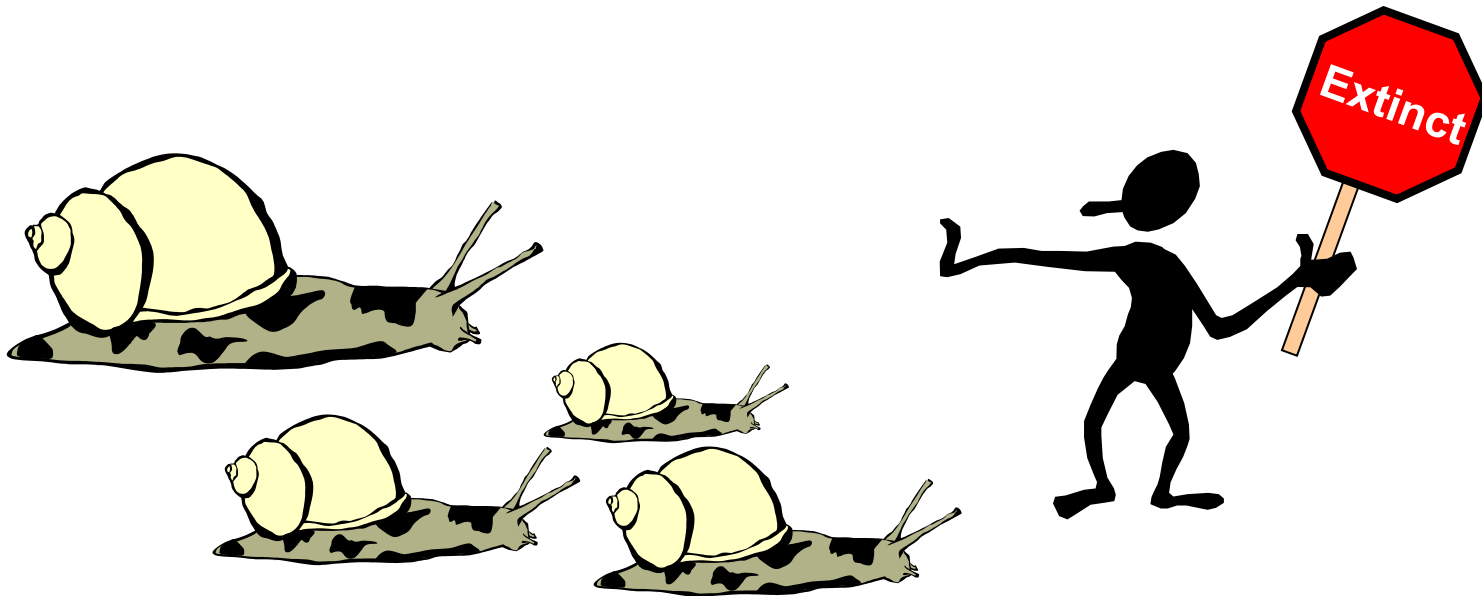




Red List Criteria: Criteria C, D and E

Criterion C

Small population size and continuing decline



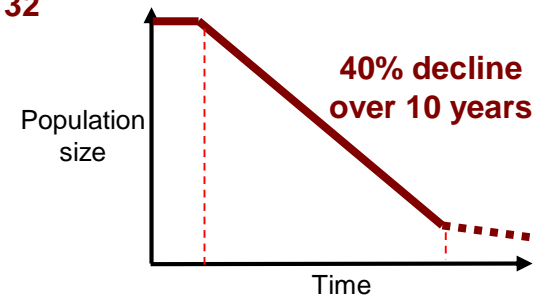


Criterion C

Small estimated population size and continuing decline

C1: estimated decline in a specific time period

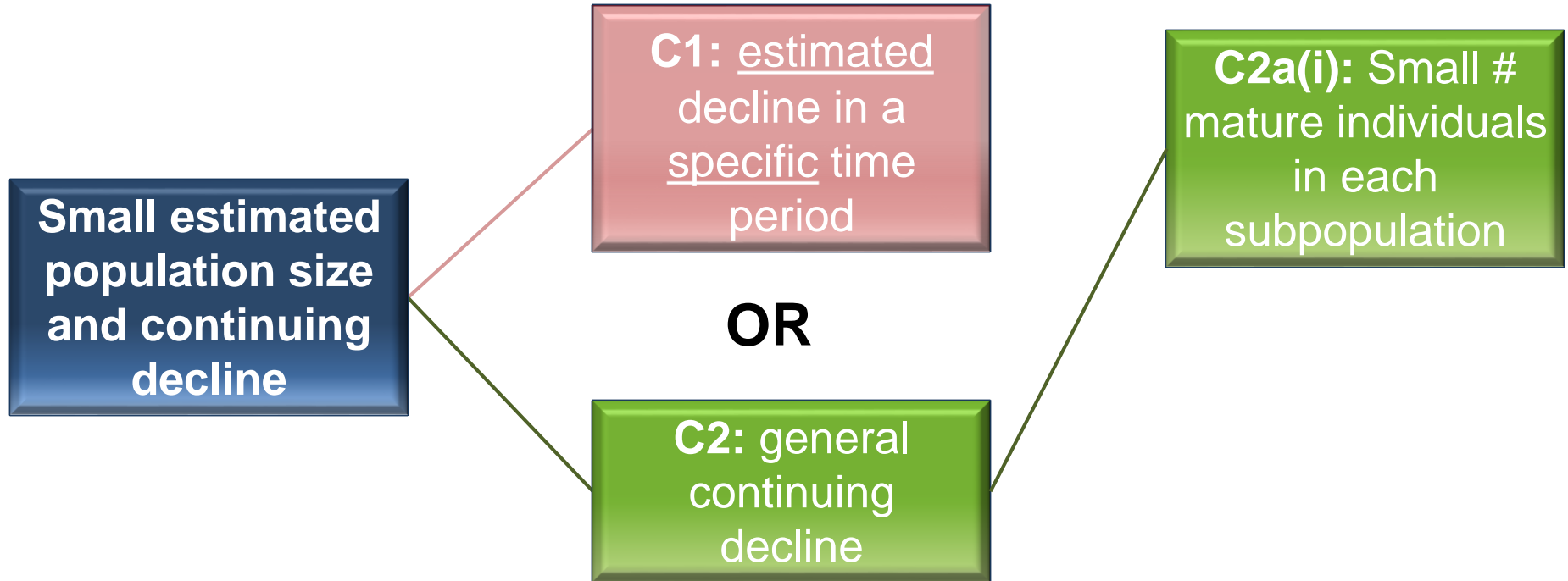
- 10 years ago: population size = 32
- This year: population size = 19
- Decline is continuing





Criterion C

Criteria C, D and E



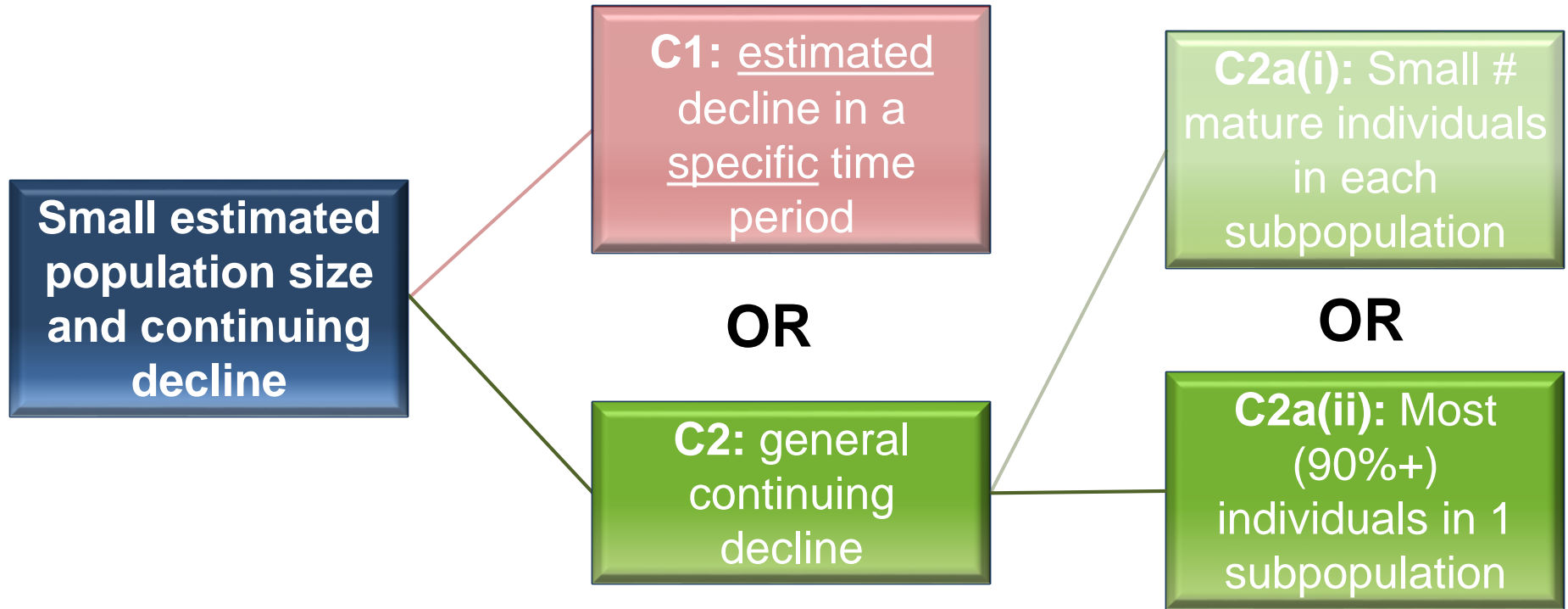
Declining, but % decline unknown

Subpopulation	Mature Individuals
1	7
2	6
3	5
4	1



Criterion C

Criteria C, D and E

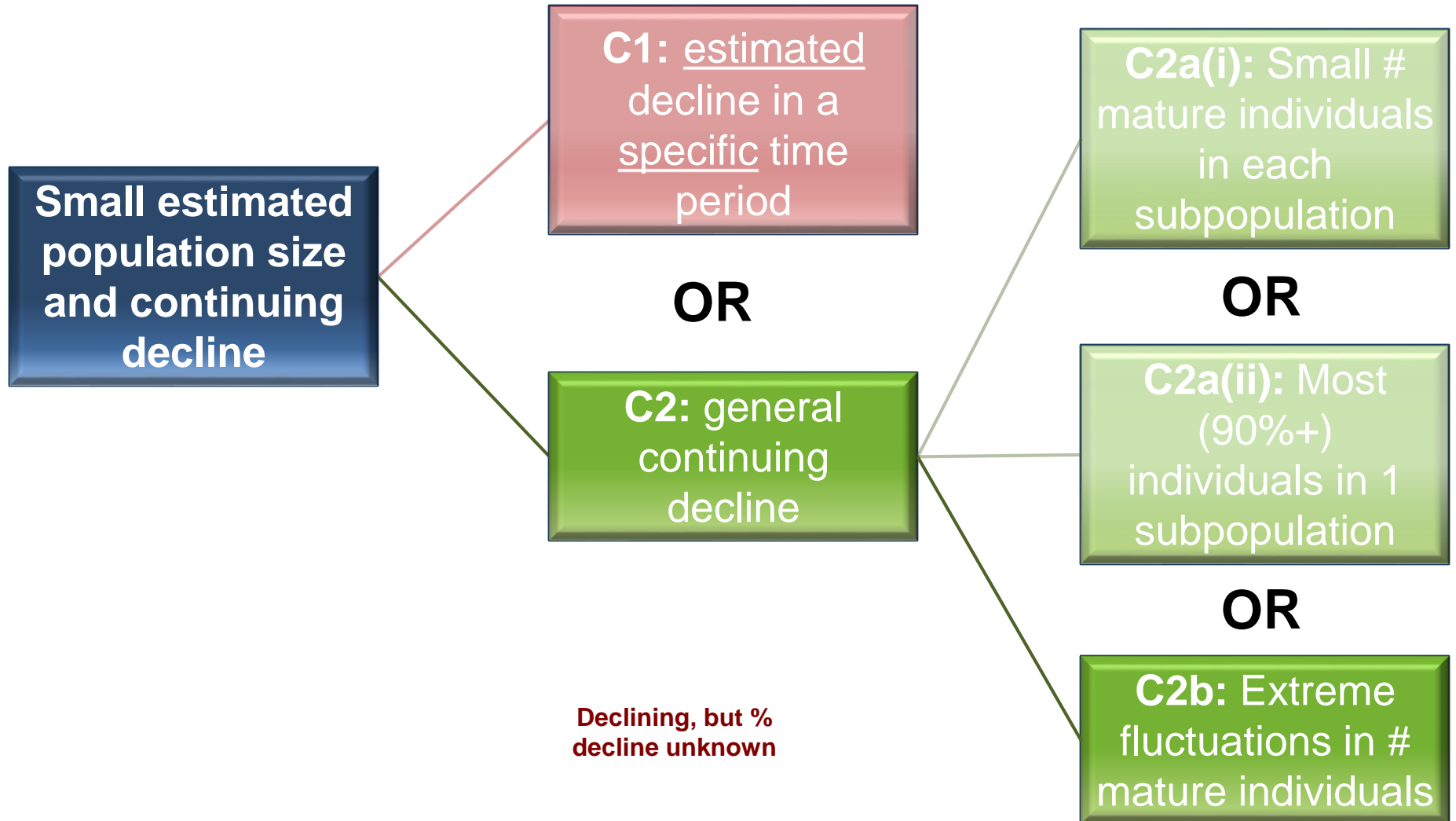


Declining, but % decline unknown



Criterion C

Criteria C, D and E



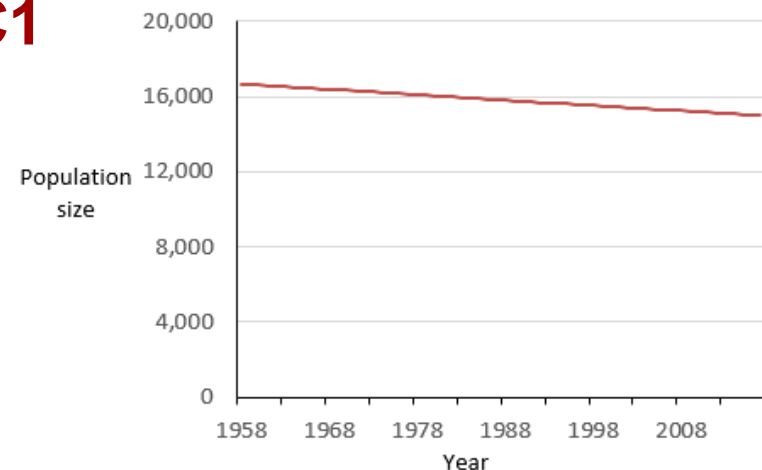
C. Small population size and decline			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%
(b) Extreme fluctuations in the number of mature individuals			

Near Threatened (NT) and Criterion C :

Close to qualifying for Vulnerable

- Continuing decline in population size.
- Current population size estimate = 15,000. **Nearly meets VU C**
- Generation length = 20 years.
- Estimated 10% decline over the last 60 years. **subcriterion C1**

**Near Threatened
(nearly meets VU C1)**



Near Threatened (NT) and Criterion C :

Close to qualifying for Vulnerable

- Current population size estimate = 15,000 → **Nearly meets VU C**
- Continuing decline in population size at an unknown rate.
- There is only one population (no separate subpopulations) → **subcriterion C2a(ii)**

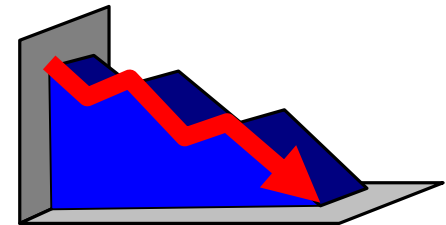
Near Threatened
(nearly meets VU C2a(ii))

Criterion C points to remember:

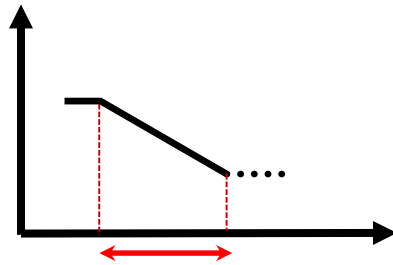


To use criterion C, an **estimate** of the population size is needed...

... and there also needs to be evidence of continuing decline in population size



Criterion C points to remember:



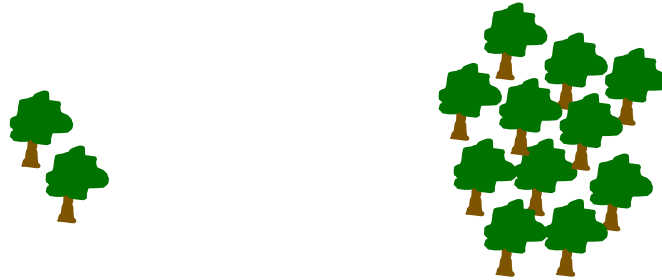
1, 2 or 3 generations?
or
3, 5 or 10 years?

To use subcriterion C1, you need to know the generation length...

... and you also need data to be able to estimate the rate of decline.

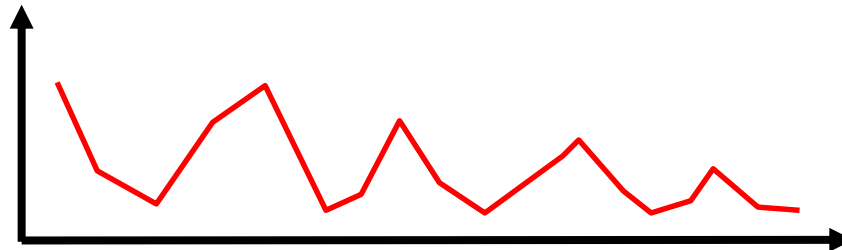
Species 1				
Past census data gathered every 2 yrs		Reduction rate over next 30 yrs	Estimated future population s	
Year	Population size		Year	Population size
1970	10,000	33%	2002	6,160
1972	10,000	38%	2004	5,680
1974	10,000	43%	2006	5,260
1976	10,000	47%	2008	4,900
1978	10,000	51%	2010	4,600
1980	10,000	54%	2012	4,600
1982	9,940	56%	2014	4,180
1984	9,820	57%	2016	4,060
1986	9,640	58%	2018	4,000
1988	9,400	57%	2020	4,000
1990	9,100	56%	2022	4,000
1992	8,740	54%	2024	4,000
1994	8,320	52%	2026	4,000
1996	7,840	49%	2028	4,000
1998	7,300	45%	2030	4,000
2000	6,700	40%	2032	4,000

Criterion C points to remember:



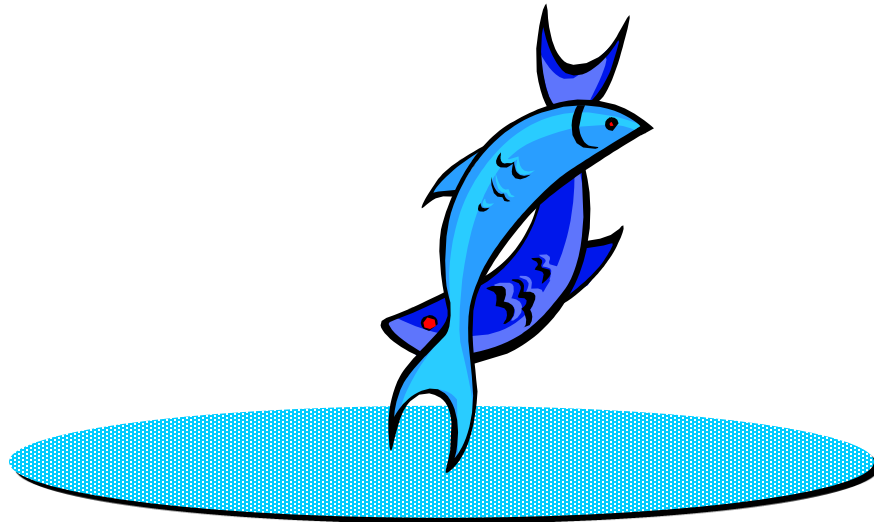
For subcriterion C2, continuing decline can be at an unknown rate, but you also need information about the population structure for C2a ...

... or extreme fluctuations for C2b



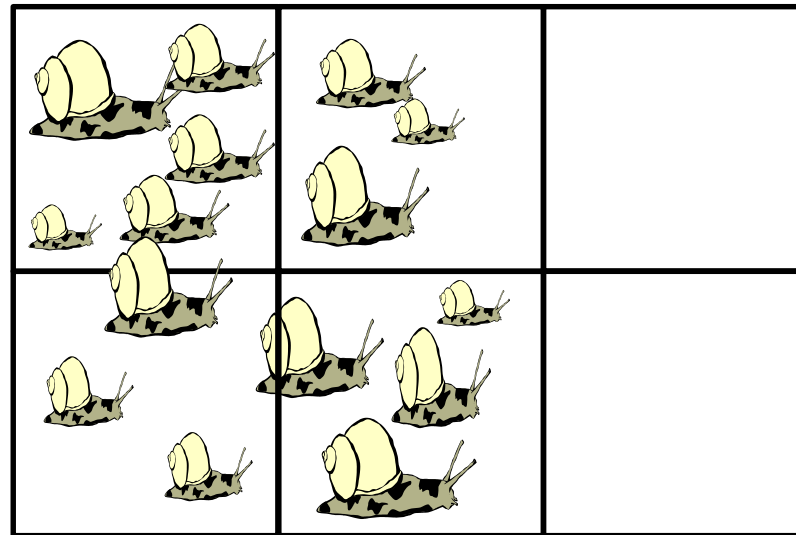
Criterion D

Very small or restricted population



Based on

D and D1 : VERY small population size



OR

VU D2 : VERY restricted AOO or few locations AND plausible serious threat

D. Very small or restricted population

	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	D1. < 1,000
D2. <i>Only applies to the VU category</i> Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	D2. typically: AOO < 20 km ² or number of locations ≤ 5

VU D2: Must have a plausible threat that could drive the species into Critically Endangered or Extinct within a very short time (e.g., within 1 or 2 generations after the threatening event occurs)

Criterion D example: a freshwater fish

- A small freshwater fish species with a generation length of 4 years.
- Restricted to one lake on a small off-shore island.
- The entire lake fits within four 2x2 km grid cells.
- No current threats affecting the population.
- Within the last 10 years, two predatory fish species have been introduced to a lake in a separate river system on the same island, and to a lake on a neighbouring island.
- Within 3 years after these introductions, a native species (closely related to the species being assessed) has become extinct from those lakes.



**Vulnerable
(VU D2)**

Criterion D example: a freshwater fish

- A small freshwater fish species with a generation length of 4 years.
- Restricted to one lake on a small off-shore island.
- The entire lake fits within four 2x2 km grid cells.
- The island, and all neighbouring islands, are all very well protected. So, there are no current threats, and no potential future threats that are likely to affect this species.



Least Concern

Near Threatened (NT) and Criterion D :

Close to qualifying for Vulnerable

- Current population size estimate = 1,500. → **Nearly meets VU D1**
- No current or future threats identified.
- Population currently stable.

**Near Threatened
(nearly meets VU D1)**

Near Threatened (NT) and Criterion D :

Close to qualifying for Vulnerable

- Current population size is a very uncertain estimate of 2,000.
- It is possible that the population size is actually closer to 1,000.



**Nearly meets
VU D1**

**Near Threatened
(nearly meets VU D1)**

Near Threatened (NT) and Criterion D :

Close to qualifying for Vulnerable

- Species occurs in only 3 sites.
- AOO = 12 km²
- No current threats affecting the population.
- Potential threat exists, but is likely to rapidly push the species into Endangered.

**Nearly meets
VU D2**

**Near Threatened
(nearly meets VU D2)**

Criterion D points to remember:

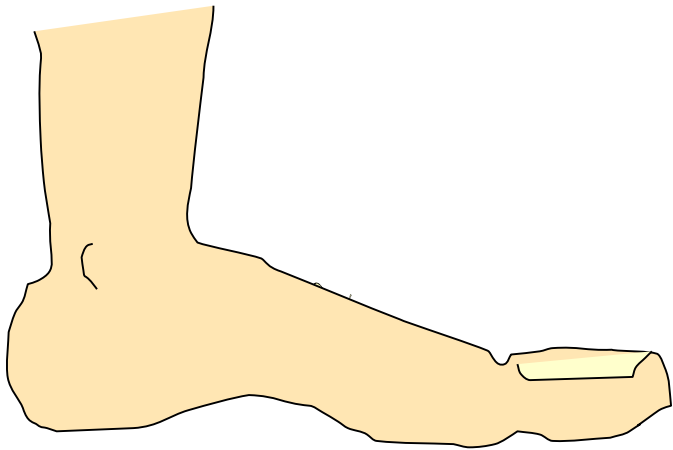


To use criterion D (or subcriterion D1), an estimate of the population size is needed.

D1 & D2  Vulnerable category only

Criterion D points to remember:

For D2, there must be a serious plausible threat to the population and this must be stated in the assessment.



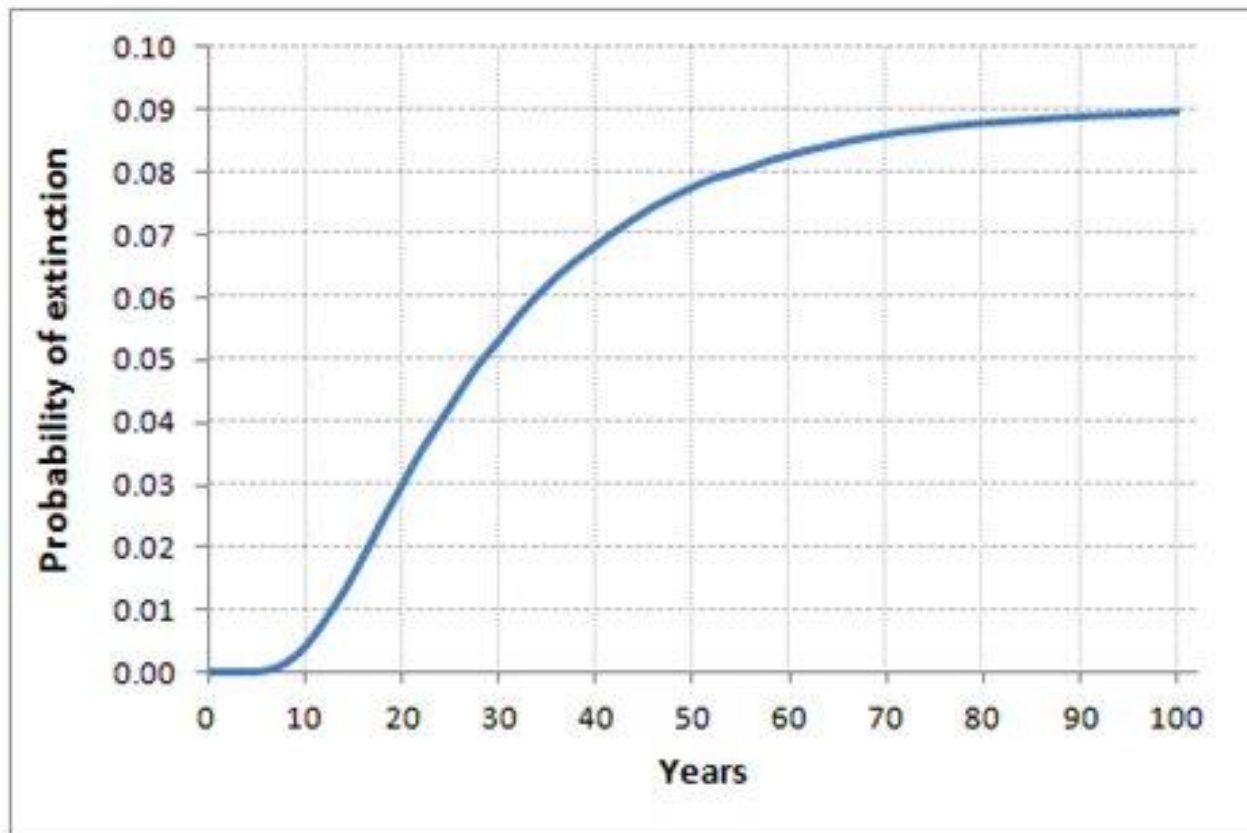
D2. typically:

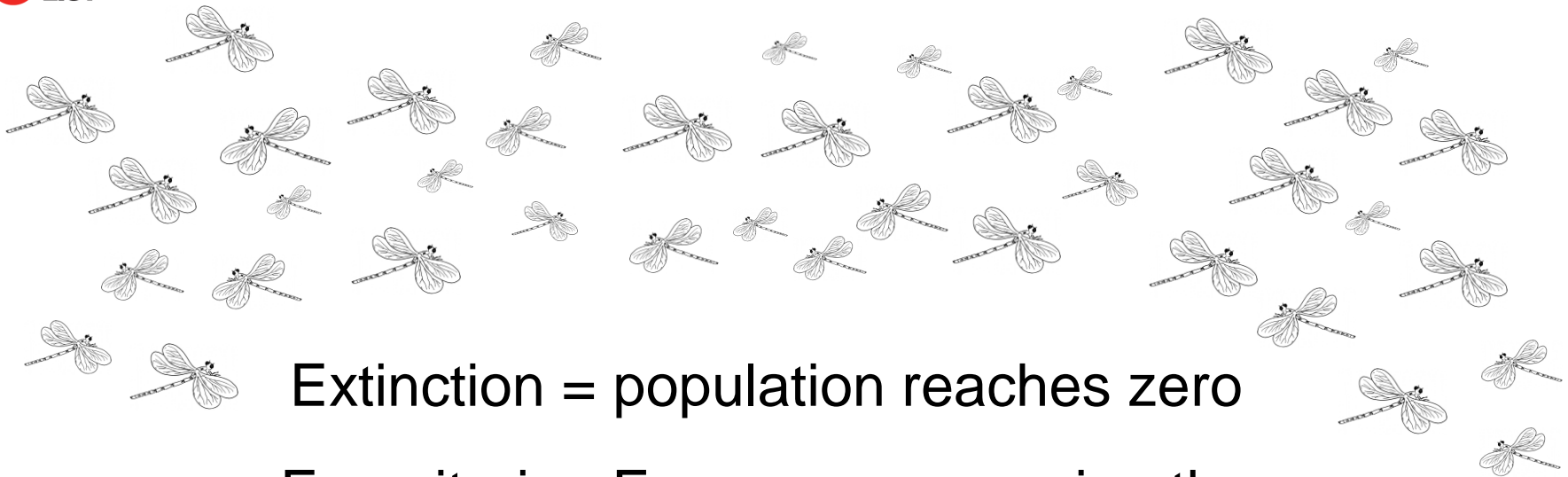
AOO <20 km² or
number of locations ≤ 5

For D2, the thresholds noted in the criteria are examples only.

Criterion E

Quantitative analysis





Extinction = population reaches zero

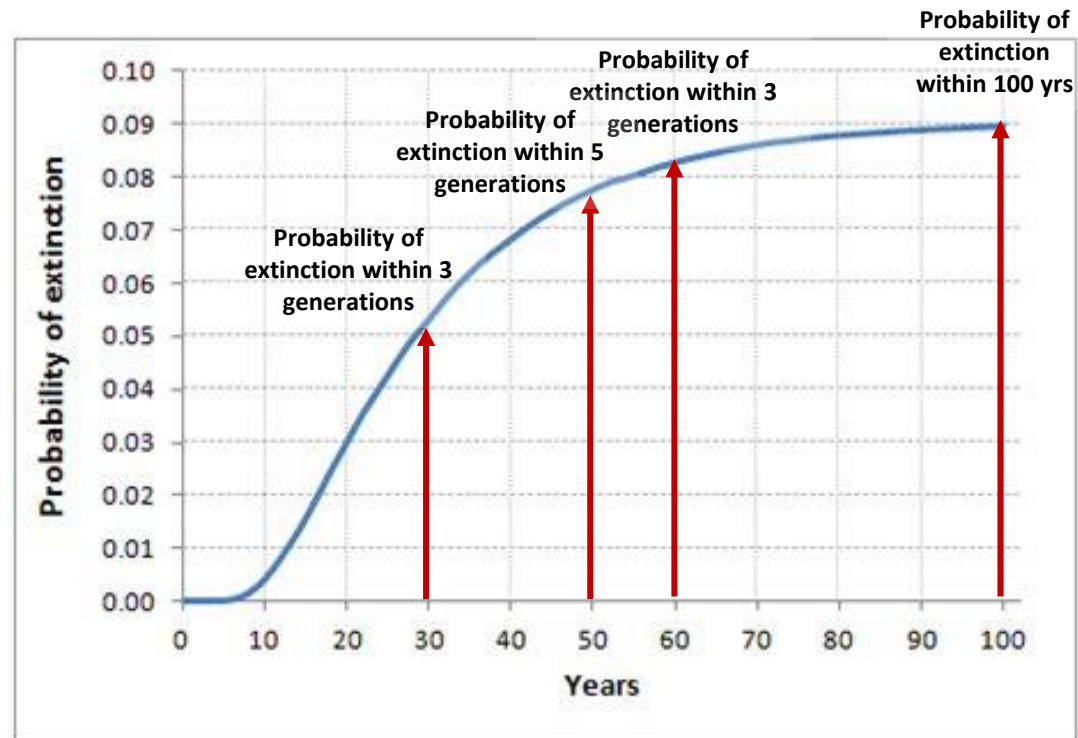
For criterion E, we are measuring the **probability** of extinction

E. Quantitative Analysis

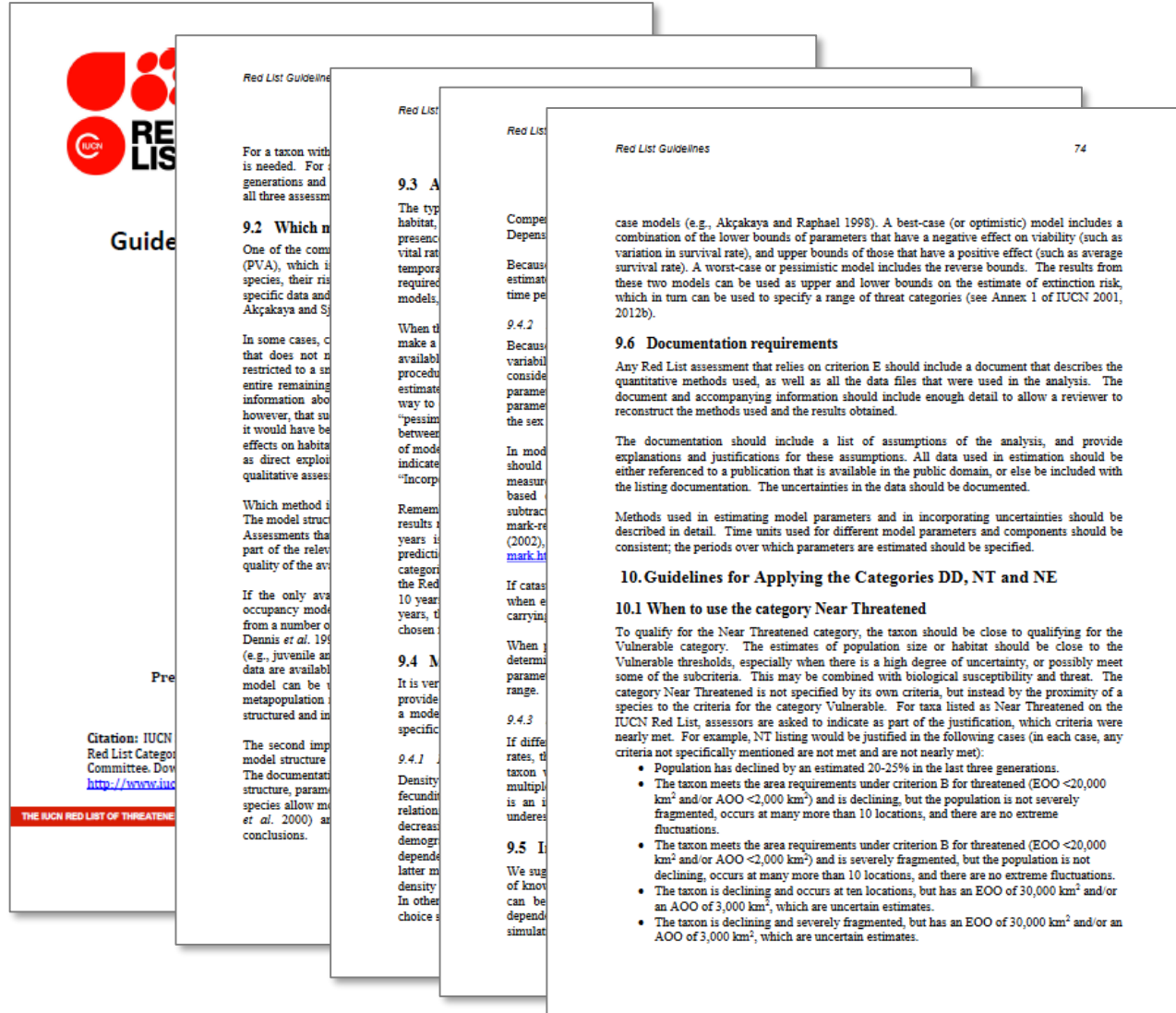
	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

The time periods you need to use will depend on the generation length of the species:

- Generation length ≥ 34 years, do one assessment (100 years).
- Generation length 20-33 years, do two assessments (3 generations and 100 years).
- Generation length < 20 years, do three assessments (3 generations or 10 years, 5 generations or 20 years, and 100 years).



Quantitative Analysis



Red List Guidelines

For a taxon with is needed. For generations and all three assessm

9.2 Which n
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9.6 Documentation requirements
Any Red List assessment that relies on criterion E should include a document that describes the quantitative methods used, as well as all the data files that were used in the analysis. The document and accompanying information should include enough detail to allow a reviewer to reconstruct the methods used and the results obtained.

The documentation should include a list of assumptions of the analysis, and provide explanations and justifications for these assumptions. All data used in estimation should be either referenced to a publication that is available in the public domain, or else be included with the listing documentation. The uncertainties in the data should be documented.

Methods used in estimating model parameters and in incorporating uncertainties should be described in detail. Time units used for different model parameters and components should be consistent; the periods over which parameters are estimated should be specified.

10. Guidelines for Applying the Categories DD, NT and NE

10.1 When to use the category Near Threatened
To qualify for the Near Threatened category, the taxon should be close to qualifying for the Vulnerable category. The estimates of population size or habitat should be close to the Vulnerable thresholds, especially when there is a high degree of uncertainty, or possibly meet some of the subcriteria. This may be combined with biological susceptibility and threat. The category Near Threatened is not specified by its own criteria, but instead by the proximity of a species to the criteria for the category Vulnerable. For taxa listed as Near Threatened on the IUCN Red List, assessors are asked to indicate as part of the justification, which criteria were nearly met. For example, NT listing would be justified in the following cases (in each case, any criteria not specifically mentioned are not met and are not nearly met).

- Population has declined by an estimated 20-25% in the last three generations.
- The taxon meets the area requirements under criterion B for threatened (EOO <20,000 km² and/or AOO <2,000 km²) and is declining, but the population is not severely fragmented, occurs at many more than 10 locations, and there are no extreme fluctuations.
- The taxon meets the area requirements under criterion B for threatened (EOO <20,000 km² and/or AOO <2,000 km²) and is severely fragmented, but the population is not declining, occurs at many more than 10 locations, and there are no extreme fluctuations.
- The taxon is declining and occurs at ten locations, but has an EOO of 30,000 km² and/or an AOO of 3,000 km², which are uncertain estimates.
- The taxon is declining and severely fragmented, but has an EOO of 30,000 km² and/or an AOO of 3,000 km², which are uncertain estimates.

Citation: IUCN Red List Category Committee. Download <http://www.iucn.org>

THE IUCN RED LIST OF THREATENED SPECIES

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Criteria C, D and E exercise: Case Study

(20 minutes)

1. Select one person in your group to be the reporter.
2. Reporters: use the flip chart to record the group's assessment. You will also present the group's discussion to the rest of the participants.
3. Read through the case study provided.
4. As a group, discuss the information that relates to **criteria C, D & E** and assess the species using only this criterion.
5. Make full use of the resources available to help you (including asking the facilitators for advice!)