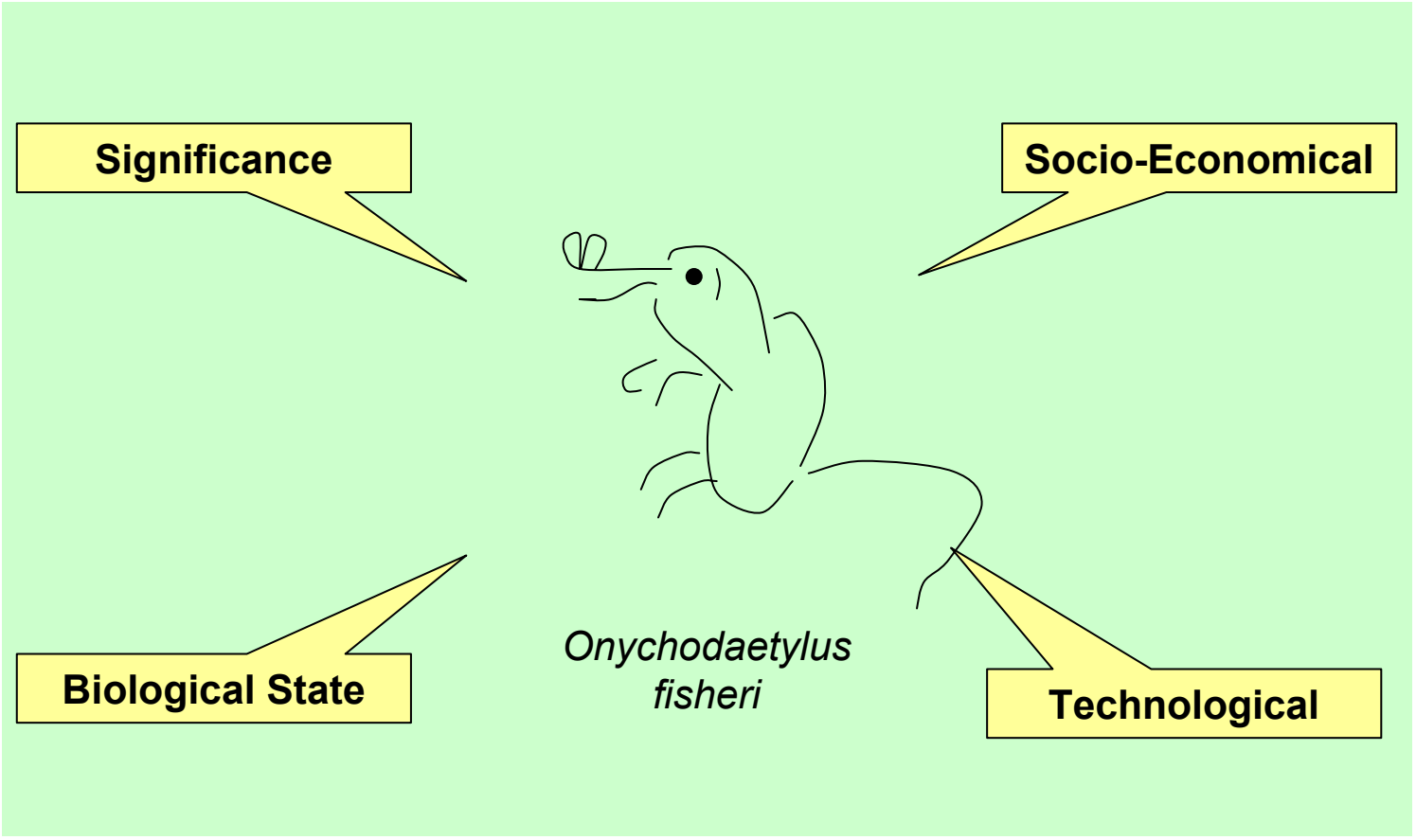
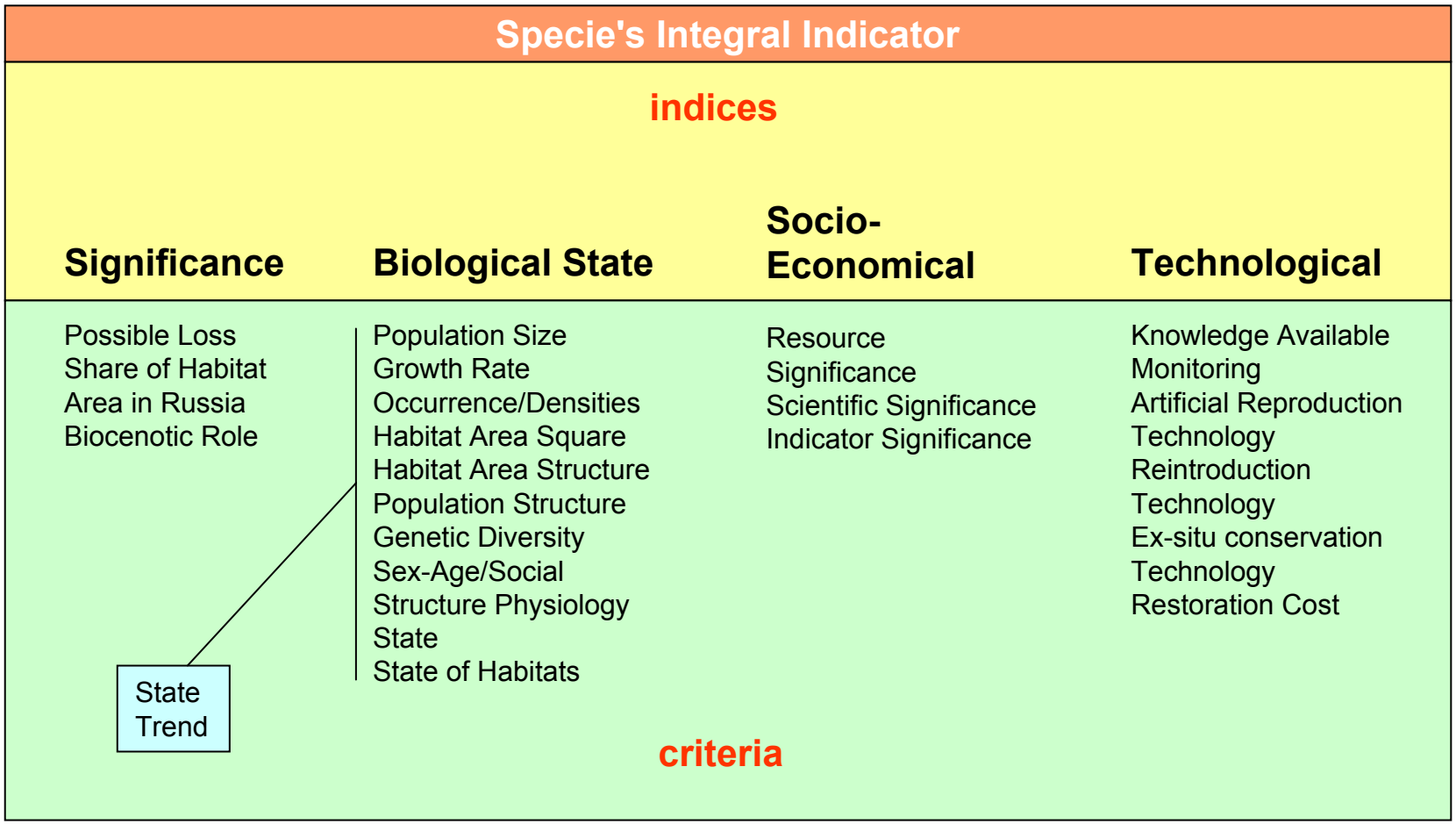
Each specie is described by criteria sets



Index is based on criteria sets

1	Any index I is a variable that contains all the necessary information on the species.
2	The specie's state is described by the set of criteria: $S = (k_1, k_2, \ldots, k_n)$.
3	The specie's index depends on specie's state: $I = f(S)$.
4	Here f is an algorithm that calculates the index I from its description X, the algorithm is based on: - Pareto slicing (classification) method, - expert estimations concordance method.

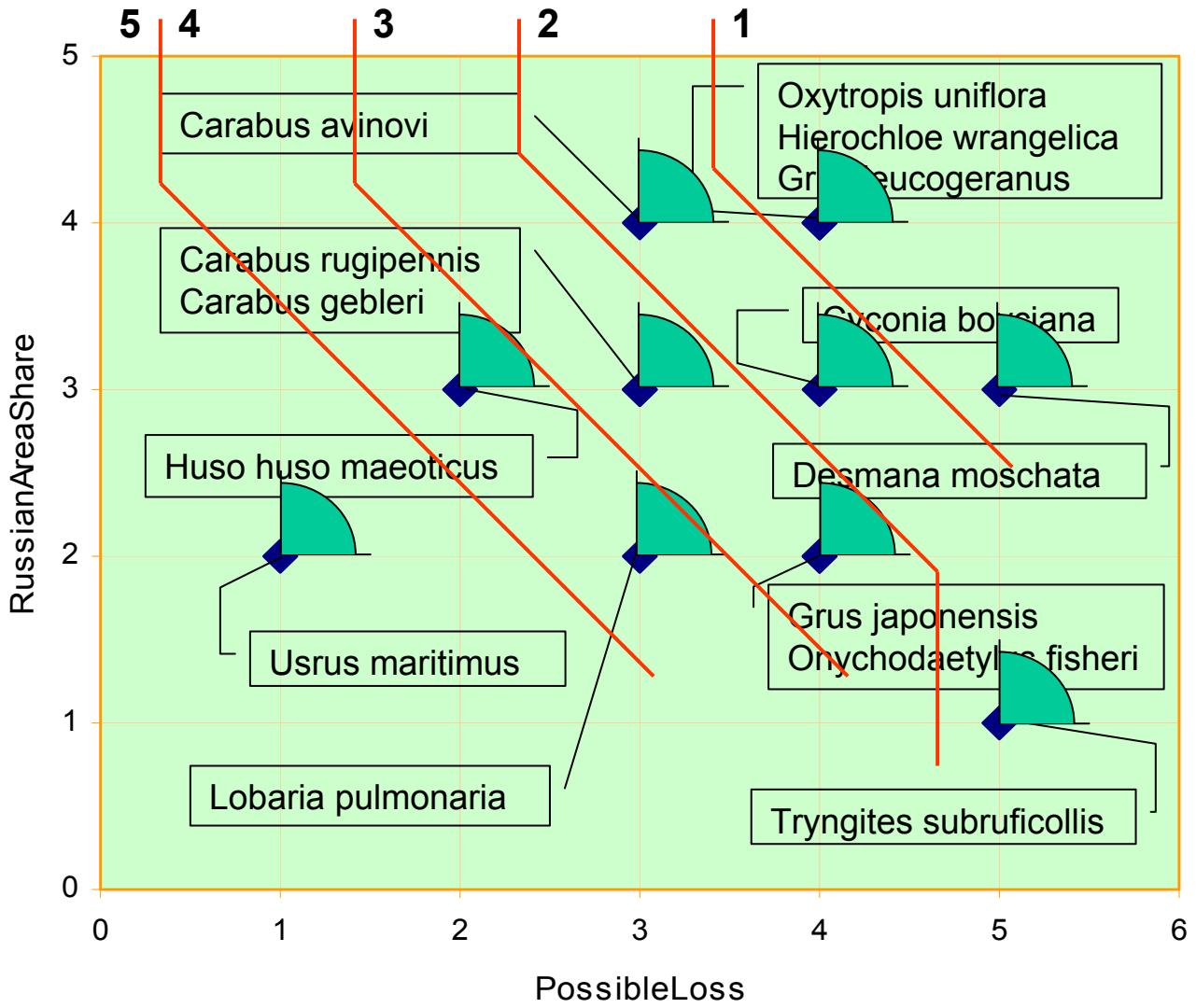
Three-level hierarchy of the indices



Categorical data (partial criteria) provided by the experts on the species features

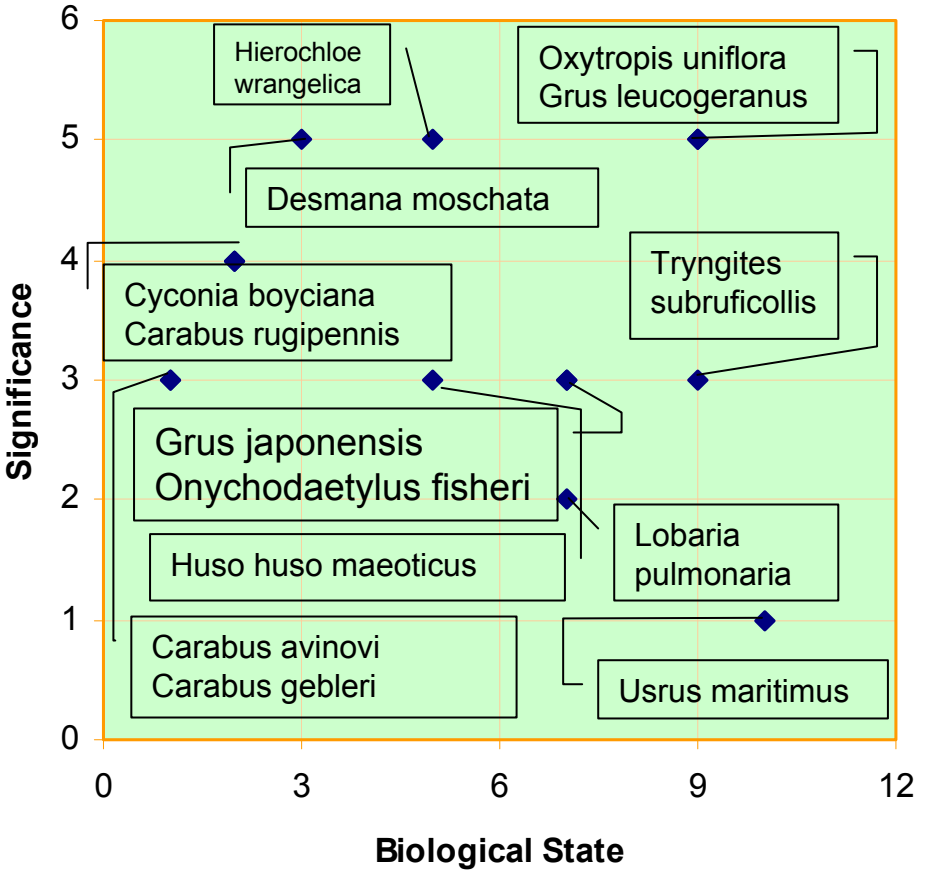
Species	*Carabus rugipennis*	*Carabus avinovi*	*Carabus gebleri*	*Lobaria pulmonaria*	*Oxytropis uniflora*	*Hierochloe wrangelica*	*Huso huso maeoticus*	*Onychodaetylus fisheri*	*Cyconia boyciana*	*Grus leucogeranus*	*Grus japonensis*	*Tryngites subruficollis*	*Desmana moschata*	*Usrus maritimus*
Significance for Biodiversity Conservation														
PossibleLoss	3	3	3	3	4	4	2	4	4	4	4	5	5	1
RussianAreaShare	3	4	3	2	4	4	3	2	3	4	2	1	3	2
BiocenoticRole	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Biological State														
PopulationSize	2	2	1	3	2	1	1	2	1	1	1	2	1	3
PopulationSizeTrend	2	2	2	2	3	3	2	3	1	3	3	4	2	4
GrowthRate	1	1	1	1	2	2	2	1	1	1	1	2	1	2
GrowthRateTrend	1	1	1	2	2	2	1	2	1	2	2	2	1	3
Occurence/Densites	2	2	1	2	3	3	1	1	2	2	2	2	2	3
Occurence/DensitesT	2	2	2	2	3	2	1	3	2	3	3	3	2	4
HabAreaSquare	2	2	1	3	1	1	1	2	1	1	1	1	2	3
HabAreaSquareTrend	2	2	2	2	3	2	1	2	2	3	3	3	2	3
HabAreaStructure	5	5	1	3	1	1	5	2	2	4	3	2	2	5
HabAreaStructureTre	3	3	2	1	2	2	2	2	1	3	2	2	1	3
PopulationStructure	1	1	1	2	1	1	2	2	1	2	2	2	1	1
PopulationStructureT	2	2	2	1	2	2	1	2	2	2	2	2	2	2
PhysiolState	3	3	3	3	3	3	3	3	3	3	2	3	3	3
PhysiolStateTrend	2	2	2	2	2	2	1	2	2	2	2	2	2	2
HabitatState	2	2	1	2	3	3	1	3	3	2	2	3	3	3

Index calculation using Pareto slicing technique



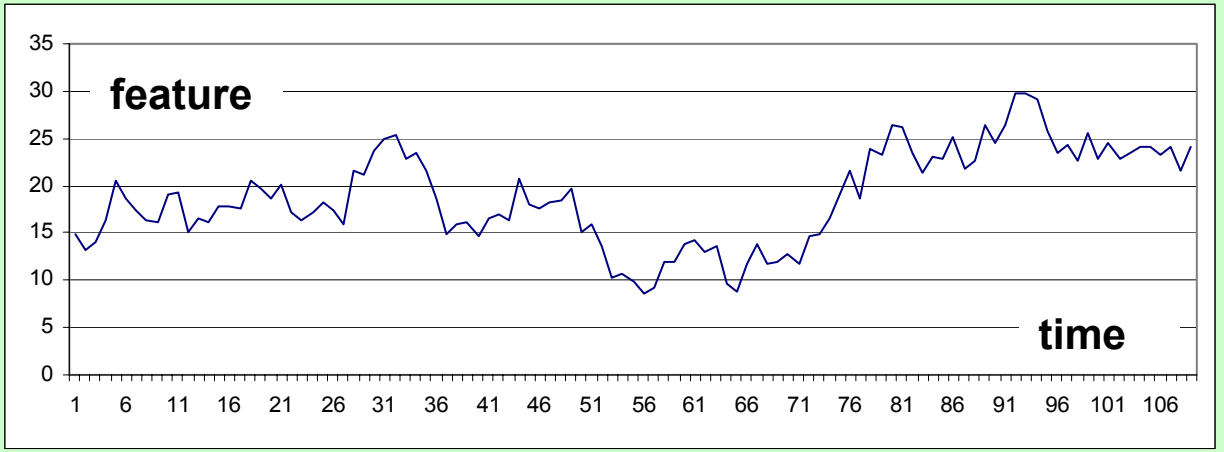
Two result indices: Significance and Biological State

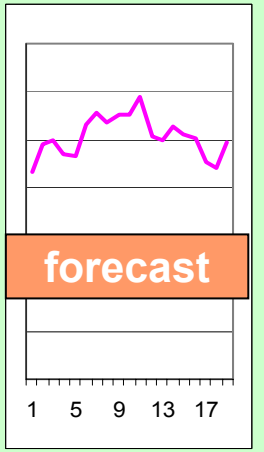
Species	Significance	Biological State
Carabus rugipennis	4	2
Carabus avinovi	3	1
Carabus gebleri	3	1
Lobaria pulmonaria	2	7
Oxytropis uniflora	5	9
Hierochloe wrangelica	5	5
Huso huso maeoticus	3	5
Onychodaetylus fisheri	3	7
Cyconia boyciana	4	2
Grus leucogeranus	5	9
Grus japonensis	3	7
Tryngites subruficollis	3	9
Desmana moschata	5	3
Usrus maritimus	1	10



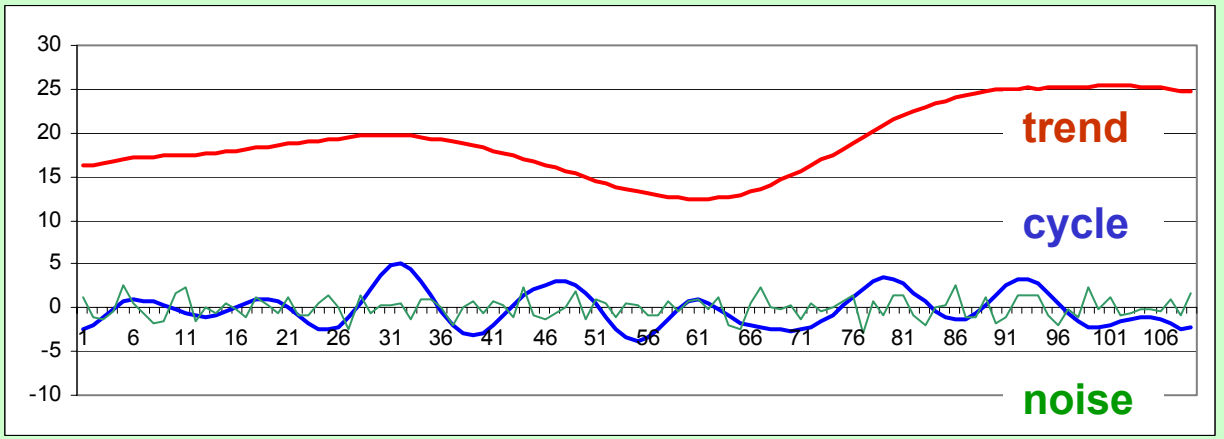
Forecasting of a species features using time-series analysis

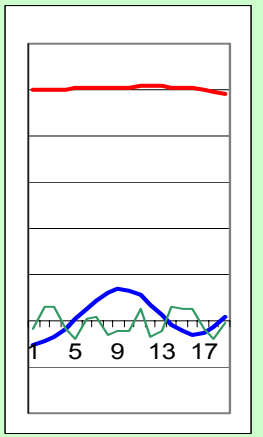
Life cycle of a species is described as time series of its features





The feature contains three components, that are: trend, cyclic, and noise





Decomposing the species life history to forecast the features development