Table A1: Informal VOI

Year	Authors	Title	Subfield*	System	Spatial Scale	Time Scale**	Objective	Actions	Model***	Uncertainty	Optimization	VOI****
1999	A. Balmford and K. J. Gaston	Why biodiversity surveys are good value	Spatial conservation planning	Country-wide reserve networks	20,000 - 10,000,000 km² (whole countries)	> 10yrs	Establish a representative reserve system	Choose among candidate areas to include in reserve system	Assumption that selection rule criteria (intact vegetation, results of biodiversity surveys) predict success of reserve selected	Represented as the information differential between simple selection rules and detailed biodiversity survey data	Unspecified complementarity-based spatial prioritization algorithm	>5%
2008	H. S. Grantham, A. Moilanen, K. A. Wilson, R. L. Pressey, T. G. Rebelo and H. P. Possingham	Diminishing return on investment for biodiversity data in conservation planning	Spatial conservation planning	Proteaceous flora of the Fynbos biome, South Africa	81,000 km²	10yrs	Maximally represent and retain proteaceous plant distributions in a reserve network	Choose among candidate areas to include in reserve system	Maximum entropy species distribution models of protea species in combination with simulation of vegetation loss and protection over time	Random subsets of complete dataset with sample-sizes ranging from, n = 100 (high uncertainty) to n = 44,000 (low uncertainty) And with the additional information provided by a habitat map.	Maximum gain and minimum loss greedy algorithms with convex square root benefit function (Zonation)	2-24%
2009	H. S. Grantham, K. A. Wilson, A. Moilanen, T. Rebelo and H. P. Possingham	Delaying conservation actions for improved knowledge: how long should we wait?	Spatial conservation planning	Proteaceous flora of the Fynbos biome, South Africa	81,000 km²	1-10yrs	Maximally represent and retain proteaceous plant distributions in a reserve network	Choose among candidate areas to include in reserve system	Maximum entropy species distribution models of protea species in combination with simulation of vegetation loss and protection over time	Similar to Grantham etal 2008, except instead random subsets, data was subsetted cumulatively through time	Maximum gain and minimum loss greedy algorithms with convex square root benefit function (Zonation)	<10%
2010	A. L. Moore and M. A. McCarthy	On Valuing Information in Adaptive-Management Models	Ecosystem restoration	Revegetation of Merri Creek Corridor, Melbourne, Australia	400 km² (Merri Creek Catchment)	20yrs	Maximise the area of successful revegetation over 20yrs/Maximise the number of 5-year periods in which there are at least 3ha of successful revegetation over 20yrs	Allocating resources between planting at high (4000 plants/ha) or low (2000 plants/ha) density	The success of applying either action is stochastic and occurs with some probability unique to each.	The probabilities that taking each action will be successful expressed as beta random variables	Stochastic dynamic programming	-
2011	D. M. Stoms, J. Kreitler and F. W. Davis	The power of information for targeting cost-effective conservation investments in multifunctional farmlands	Spatial conservation planning	Farmland of the California Central Valley	6300 km² (Sacramento and San Joaquin Counties)	>1yrs	Maximise total benefits of Purchase of Development Rights program	Choose among candidate farms on which to purchase conservation easements	Benefits, Loss and Costs models predicting the payoff of an conservation easements scheme	Different data quality from datasets including, benefits only to benefits and costs and benefits, costs and losses. And minimal, basic, moderate and full information content	Rank farms by cost effectiveness and purchase until budget exhausted	<2000%
2011	P. W. J. Baxter and H. P. Possingham	Optimizing search strategies for invasive pests: learn before you leap	Invasive species control	Red imported fire ant (*Solenopsis invicta*) invasion of Australia	300 km² (initial size of infestation)	0.5 - 20yrs	Minimize density of Red imported fire ants	Choose which sites to search at and eradicate ants and choose whether to not search and just improve map of invasion	Logistic invasive spread model	Searchers are uncertain as to which sites within the invaded region are occupied according to maps of different quality	Stochastic dynamic programming	-
2013	V. Hermoso, M. J. Kennard and Simon Linke	Data Acquisition for Conservation Assessments: Is the Effort Worth It?	Spatial conservation planning	Freshwater fish distribution of northern Australia	1,200,000 km²	>10yrs	Minimize cost of set of planning units that protects at least 10% of each species distribution	Choose among candidate areas to include in reserve system	Species distribution models (MARS)	Different data quantities 15 to 85% subsets of full dataset	Spatial prioritisation algorithm (Marxan)	<230%
2013	R. K. Runting, K. A. Wilson and J. R. Rhodes	Does more mean less? The value of information for conservation planning under sea level rise	Spatial conservation planning	Coastal wetland communities of south-east Queensland, Australia.	600 km²	100yrs	Maximize the conservation value of purchased planning units	Choose among candidate areas to include in reserve system	Coastal impact model/Sea level rise projection	Combinations of coarse vs fine scale elevation data and a simple vs complex impact model forms a gradient of uncertain predictions	Maximum gain greedy algorithm with core area benefit function (Zonation)	0-300%
2014	K. Perhans, R. G. Haight and L. Gustafsson	The value of information in conservation planning: Selecting retention trees for lichen conservation	Timber harvest management	Silvicultural dynamics of Swedish Boreal Forests	0.2 km²	>4yrs	Maximise the richness of lichen species and maximise the representation and richness of lichen species of conservation concern on retained aspen	Select among candidate aspen trees to retain	Generalised linear models predicting biodiversity value of lichens on retained trees based on tree attributes	4 different datasets used to produce selection criteria of varying uncertainty	Integer linear programming / selecting top ranked trees	-
2015	V. Hermoso, M. J. Kennard and S. Linke	Evaluating the costs and benefits of systematic data acquisition for conservation assessments	Spatial conservation planning	Freshwater fish distribution of northern Australia	1,200,000 km²	>10yrs	Minimize cost of set of planning units that protects at least 10 or 25 or 50% of each species distribution	Choose among candidate areas to include in reserve system	Species distribution models (MARS)	Systematic vs random sampling strategy	Spatial prioritisation algorithm (Marxan)	-
2015	J. Lehtomäki, S. Tuominen, T. Toivonen and A. Leinonen	What Data to Use for Forest Conservation Planning? A Comparison of Coarse Open and Detailed Proprietary Forest Inventory Data in Finland	Spatial conservation planning	Managed boreal forest of southeastern Finland	14,000 km²	>4yrs	Maximise the representation of the spatial plan at minimal cost	Choose among candidate areas to include in reserve system	Expert elicited model relating biomass to ecological features of conservation value	Coarse vs fine scaled forest inventory datasets	Maximum gain greedy algorithm with additive benefit function (Zonation)	-
2016	T. Mazor, M. Beger, J. McGowan and H. P. Possingham and S. Kark	The value of migration information for conservation prioritization of sea turtles in the Mediterranean	Spatial conservation planning	Loggerhead turtle (*Caretta caretta*) migration in the Mediterranean Sea	2,500,000 km²	>1yr	Establish a reserve system that represents the entire life-cycle of migrating turtles at minimum cost	Choose among candidate areas to include in reserve system	Assumption that the datasets use represent the migration patterns of the turtles	Four different data-types of decreasing uncertainty: broad distribution, habitat types, mark-recapture data, telemetry data	Spatial prioritisation algorithm (Marxan)	-
2016	H. Nygård, S. Oinonen, H. A. Hällfors, M. Lehtiniemi, E. Rantajärvi and L. Uusitalo	Price vs. Value of Marine Monitoring	Ecosystem management	Finnish marine biodiversity	10,000 km²	6yrs	Maximize the benefit of the program of measures	No management, intermediate management, strict management	-	Three scenarios: No information, indicative information, good information	-	50-151 million euro
2016	V. J. Tulloch, C. J. Klein, S. D. Jupiter, A. I. T. Tulloch, C, Roelfsema and H. P. Possingham	Trade-offs between data resolution, accuracy, and cost when choosing information to plan reserves for coral reef ecosystems	Spatial conservation planning	Kubulau District, Fiji, Fishery	260 km²	>1yr	Minimize the cost of representing 30% of the distribution of biodiversity features	Choose among candidate areas to include in reserve system	Assumption that various datasets represent the biodiversity value of the reserve system	Coarse and fine-scale input data	Spatial prioritisation algorithm (Marxan / MarProb)	-

* Some case studies may fit within multiple subfields, in such cases they have been allocated to the subfield with which they share the most features.

** The time scale over which decision making occurs. Where indicated, the approximate amount of time from implementation to performance measuring. In case studies that compare the performance of different sized or different quality datasets the time scale indicates the length of time to collect the data and to implement any decision.

*** By model we mean the method used to convert the uncertain information into a prediction about the value of taking a given action

**** Expressed as the proportional gain in performance when making the decision with new information rather than without