

Risk Assessment and Impact Assessment: A perspective from Victoria, Australia

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If you haven't seen it, have a look at [Stephen Fry's and Hugh Lawrie's hardware shop sketch](#).

Customer Fry is going through his list of requirements such as grollings, frotting pencils (felching pens being out of stock) and a spill-trunion and shopkeeper Lawrie (after clarifying whether the spill-trunion should be bevelled or otherwise) lifts the items from the relevant shelf. It's a celebration of jargon.



Subject matter experts love their jargon. Professions, hobbies, pastimes have their own words that have no utility outside that construct. You can exclude, or at least baffle, outsiders with terms that they don't understand. But it gets more confusing when a word that is allocated a meaning that is specific to a particular context also serves another purpose (or range of purposes) outside that context.

Impact assessment as a discipline has its own modest share of jargon. We talk of screening, scoping, review, and of impacts with meanings that are quite specific in the impact assessment context. A discussion about any of those aspects depends for its usefulness on the participants having the same understanding of the key word in the context of the discussion. As a birder as well as an impact assessor, I can move effortlessly between the very different notions of "scoping" a distant bird and "scoping" an impact statement.

"Risk" is commonly mentioned in the context of impact assessment. In Victoria's *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*, in fact, "risk" appears 31 times [\[1\]](#). Confusion can arise because the word is used in subtly different ways at different points in the document. So, what are these different nuances that "risk" is meant to convey?

There is the notion of a “risk-based approach”, *to ensure that required assessment, including the extent of investigations, is proportionate to the risk [sorry!] of adverse effects.* There is a definition of “potential effects” as including *potential changes or risks to environmental assets.* There is risk as the potential for an adverse effect, as a product of likelihood and magnitude, which in turn brings in the concept of uncertainty. And there is “risk to [human] health”, in a discussion about hazards. One recent Victorian Environment Effects Statement (EES) included a chapter on “Hazard and risk”, relating specifically to dangers on human health and well-being, including due to a potential catastrophic event such as an explosion.

Most proponents preparing EESs in Victoria undertake some form of environmental risk assessment. This is valuable provided it contributes to an enhanced understanding of potential environmental effects, because that is the explicit focus of the Environment Effects Act – the potential for significant effects on the environment [\[2\]](#). However, while “impacts” and “effects” can be regarded as jurisdictional synonyms, the discipline of environmental impact assessment is not characterised by the same elements as environmental risk assessment.

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Impact assessment is about identifying and characterising potential impacts on the environment (which in Victoria is defined in the Ministerial guidelines as including social, economic, and other elements of human surroundings, not just the biophysical environment). Those impacts might be unavoidable in the context of the project if it proceeds – for example, loss of native vegetation from the footprint of the pit for a proposed quarry. Vegetation loss is therefore an impact that can be addressed with certainty – if the project proceeds, the vegetation will be removed. But what of the migratory wildlife that might not be present at the time of clearing, or the apex predator for which the site represents part of its home range? How do we characterise the potential for an adverse effect on those values? What of the groundwater dependent ecosystem a little distance away, which might or might not be at risk due to groundwater drawdown as the pit is deepened and dewatering creates a cone of depression in the water table? Aren’t those risks rather than impacts?

An impact is no less an impact for being uncertain. The referral criteria in Victoria’s Ministerial guidelines (setting out thresholds for referral of projects for the Minister’s decision on the need or otherwise for an EES – screening, in a word) without exception refer to “potential” effects. The fact that an effect might or might not be realised does not make it any less an effect to be considered or assessed. Environmental impacts or effects that are attended with some level of uncertainty are not, therefore, environmental “risks” rather than “effects”. The uncertainty factor might influence choices about ways to mitigate or to manage the effect if it eventuates, or to the degree that it eventuates, but it is the effect that demands assessment.

Environmental risk assessment can be useful in allocating priority and resources for investigating potential effects. In Victoria, relatively few projects are subject to assessment through a requirement for an EES, and those projects commonly raise concerns about potential effects on multiple environmental assets. But even then, it is likely that there are priority issues



and issues less likely to be strongly material to the assessment. A proposed wind farm in a remote rural location may have potentially significant effects on biodiversity or landscape values, but is unlikely to be approved or refused on air quality grounds. By undertaking a preliminary environmental risk assessment, the proponent team can put some objective shape around a basis for identifying the issues most likely to be influential in the assessment outcome.

Investigations of potential impacts arising from priority “environmental risks” will generate new information which was not available at the time of the initial risk assessment. This might lead to a conclusion that the priority for further investigation is lower than first thought, for example if field studies reveal that habitat for a particular threatened species of concern does not exist in the project area. If new information leads to revised conclusions about the relative level of environmental risk, that could better inform decisions about the effort to be deployed into subsequent or continuing environmental investigations.

The level of impact arising from an identified risk might be reduced by applying or committing to targeted mitigation measures. The potential impact on a threatened aquatic species might be mitigated by preventative measures to stop wastewater from a project entering aquatic habitat or by treatment of wastewater to remove contaminants of concern before it enters the waterway. In risk terms, the first measure would reduce the likelihood and the second would reduce the consequence. Contingency plans can provide for mitigation measures to be implemented if monitoring indicates that an impact which was identified as possible but uncertain in the assessment is found to be occurring.

To some extent, perhaps, the “impact” vs “risk” argument might be semantic. But as practitioners in a field into which many of our stakeholders might stray only occasionally, we can save a lot of tension and a lot of time by using language consistently to avoid cross-purpose arguments. Our discipline is impact assessment. Disciplined use of terms, especially those that can convey multiple meanings in different contexts, is a worthwhile investment in clarity and effective communication with proponents, stakeholders, regulators, and colleagues.

Footnotes

[1] By contrast, “impact” appears eight times and “effect” appears 203 times. The document comprises 31 pages.

[2] Dating as it does from the first decade of environmental impact assessment, Victoria’s legislation adopted the word “effects”, whereas almost all environmental impact assessment legislation provides for the assessment of environmental impacts, and a Victorian EES corresponds closely with the concept broadly referred to as an “EIS” in other jurisdictions.