

## V. Eight Tenets of Precaution: Commentary on the Wingspread

By Jeff Howard

The core of the recent Wingspread statement on precaution is contained in its two final paragraphs, which define the Precautionary Principle and describe its application. In these paragraphs, we find three explicit tenets of precaution (presented here in slightly altered form):

- 1. When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and-effect relationships are not fully established scientifically.
- 2. The proponent of a technological activity, rather than the public, bears the burden of proof.
- 3. Precaution must be an open, democratic process involving all affected parties and examination of the full range of social and technological alternatives.

A number of precaution advocates have warned against allowing the Principle to become captive to non-precautionary thinking and policies. **Barrett and Raffensperger (1998)**, for example, caution that non-precautionary policies may come to be disguised behind a "precautionary gloss." I submit that to reduce this risk the Precautionary Principle must embody at least five additional tenets, which I will briefly sketch.

First, it is important to acknowledge that in environmental affairs, cause-and-effect relationships that are "fully established" scientifically are the exception rather than the rule. And as I point out elsewhere (**Howard 1997a, 1997b**), fully establishing such relationships almost always means waiting so long as to effectively preclude precautionary action. Moreover, it is important to acknowledge that "threats of harm to human health or the environment" do not stem merely from discrete activities. If we are

to effectively address rampant environmental degradation, it is crucial that we address not just its proximate but its root causes, not just individual technological activities but systems of technological activity. If precaution is to address systemic stresses and impacts, we must exercise precaution systematically. This leads us to the fourth and fifth tenets:

- 4. Precaution must become the default mode of all technological decision making. One of our priorities must be stemming the tide of ongoing environmental impacts driven by non-precautionary decision making in the past:
- 5. A precautionary policy regarding future impacts demands that even the most fundamental of past technological decisions be subject to reexamination and reform.

The final three tenets (6-8) I will illustrate by reference to one of the most well-known proposals for precaution, a proposed ban on most uses of chlorine as an industrial feedstock.

Chlorine-ban proposals, advocated by the International Joint Commission, Greenpeace, the American Public Health Association, and numerous grassroots organizations, are based in part on the insight that chemical decision making cannot rationally or sustainably proceed on a chemical by-chemical basis:

So many discrete synthetic substances are in play (in air, water, soil and the tissues of the human and nonhuman biota) that it is irrational for scientific and bureaucratic evaluation to focus primarily on individual chemicals. The alternative framework requires a shift in the unit of analysis -- investigation and regulation of entire chemical classes, in this case the chlorinated substances. The crucial issue here is recognizing and accepting responsibility for the linkage between the scale of assault on the environment and the scale of decision making:

- 6. Precaution requires that the primary mode of regulation and regulatory science be shifted to the macro scale.

Closely related is the issue of how much additional scientific information we must acquire in order to undertake rational, systematic, macro-scale precautionary regulation. The crucial issue is whether the scientific data we need is yet to be generated, written up, peer reviewed, and published -or is already sitting on the library shelf. Proposals for a chlorine ban assert that, although we lack detailed knowledge of the specific behaviors and impacts of most individual chlorinated substances, we know enough about the general characteristics and environmental behaviors of chlorinated chemicals to warrant sweeping action against the entire class. The underlying assertion is that if scientific data at one scale (e.g., individual chemical congeners) are insufficient to allow informed precautionary action, we are obligated to employ data available at a larger scale (e.g., chemical classes). Hence:

- 7. In precautionary assessment of environmental impacts, knowledge of broad patterns trumps ignorance of detail.

Even with a commitment to macro-scale regulation based on our knowledge of broad patterns of environmental impacts, the regulatory agenda would too often be shifted out of its default mode -- precaution -- unless we simultaneously undertake another kind of pattern-making as well. It is essential for society to formulate and adhere to broad (and admittedly socially constructed) ecological principles, in the form of "principles of society-in-nature." Proposals for a chlorine ban are based, in part, on such a principle: Nature does not circulate large quantities of organochlorine substances in the global ecosphere, so human society, which is embedded in Nature, ought not do so. In a more general form:

- 8. Precaution demands that human society identify, and accommodate itself to, broad patterns in ecological processes.

The Precautionary Principle has proven attractive because it points out, and promises to correct, some of the fundamental flaws in society's conception of rational technological development. To reduce the Principle's vulnerability to half measures and semantic abuses -- non-precautionary policies disguised beneath a "precautionary gloss" -- we must formulate the Principle in a way that deepens and extends its critique and the alternative path it envisions. I propose these additional tenets (4-8) as essential components of a more thorough critique and a more comprehensive vision of what it means for environmental policy to be precautionary.

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## References

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