



## **Platforms & Statements on Precaution**

Wingspread Statement on the Precautionary Principle (1998)

Copenhagen Chemicals Charter (2000)

Icicle Creek Statement on Ecosystems (2001)

Lowell Statement on Science & the Precautionary Principle (2001)

Alliance for a Healthy Tomorrow Core Values & Plan (2002)

BE SAFE Platform on Precaution (2003)

The Louisville Charter for Safer Chemicals (2005)

*This statement was drafted and finalized at a conference convened by the Science and Environmental Health Network at the Wingspread Conference Center, Racine, Wisconsin, in January 1998. The 32 authors of the statement are listed beneath the statement.*

## **Wingspread Statement on the Precautionary Principle**

The release and use of toxic substances, resource exploitation, and physical alterations of the environment have had substantial unintended consequences on human health and the environment. Some of these concerns are high rates of learning deficiencies, asthma, cancer, birth defects and species extinctions; along with global climate change, stratospheric ozone depletion; and worldwide contamination with toxic substances and nuclear materials.

We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to adequately protect human health and the environment, as well as the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists and other individuals must adopt a precautionary approach to all human endeavors.

Therefore it is necessary to implement the Precautionary Principle: Where an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public bears the burden of proof.

The process of applying the Precautionary Principle must be open, informed and democratic, and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.

### Wingspread Conference Participants

*(Affiliations noted for identification purposes only.)*

Dr. Nicholas Ashford, Massachusetts Institute of Technology

Katherine Barrett, Univ. of British Columbia

Anita Bernstein, Chicago-Kent College of Law

Dr. Robert Costanza, University of Maryland

Pat Costner, Greenpeace

Dr. Carl Cranor, Univ. of California, Riverside

Dr. Peter deFur, Virginia Commonwealth Univ. Gordon Durnil, attorney

Dr. Kenneth Geiser, Toxics Use Reduction Institute, Univ. of Mass., Lowell

Dr. Andrew Jordan, Centre for Social and Economic Research on the Global

Environment, Univ. Of East Anglia, United Kingdom

Andrew King, United Steelworkers of America, Canadian Office, Toronto, Canada  
Dr. Frederick Kirschenmann, farmer  
Stephen Lester, Center for Health, Environment and Justice  
Sue Maret, Union Institute  
Dr. Michael M'Gonigle, University of Victoria, British Columbia, Canada  
Dr. Peter Montague, Environmental Research Foundation  
Dr. John Peterson Myers, W. Alton Jones Foundation  
Dr. Mary O'Brien, environmental consultant  
Dr. David Ozonoff, Boston University  
Carolyn Raffensperger, Science and Environmental Health Network  
Dr. Philip Regal, University of Minnesota  
Hon. Pamela Resor, Massachusetts House of Representatives  
Florence Robinson, Louisiana Environmental Network  
Dr. Ted Schettler, Physicians for Social Responsibility  
Ted Smith, Silicon Valley Toxics Coalition  
Dr. Klaus-Richard Sperling, Alfred-Wegener- Institut, Hamburg, Germany  
Dr. Sandra Steingraber, author  
Diane Takvorian, Environmental Health Coalition  
Joel Tickner, University of Mass., Lowell  
Dr. Konrad von Moltke, Dartmouth College  
Dr. Bo Wahlstrom, KEMI (National Chemical Inspectorate), Sweden  
Jackie Warledo, Indigenous Environmental Network

*[www.sehn.org](http://www.sehn.org)*

*This 2000 Charter presented five demands for a new European chemical policy at the "Chemicals Under the Spotlight" international conference held in Copenhagen. It outlines the key precautionary-based principles which organizations wanted to see in a European chemical policy.*

## **Copenhagen Chemicals Charter**

We, the signing organizations, propose the following five demands for the future European Union chemicals policy.

### **The 5 key demands for a better EU chemicals policy.**

**1**

**A full right to know – including what chemicals are present in products.**

**2**

**A deadline by which all chemicals on the market must have had their safety independently assessed. All uses of a chemical should be approved and should be demonstrated to be safe beyond reasonable doubt.**

**3**

**A phase out of persistent or bioaccumulative chemicals.**

**4**

**A requirement to substitute less safe chemicals with safer alternatives.**

**5**

**A commitment to stop all releases to the environment of hazardous substances by 2020**

Organizations and individuals supporting the five demands includes: European Environmental Bureau (EEB), The European Consumers' Organisation (BEUC), The Danish Consumer Council, The Danish Society for the Conservation of Nature and The Danish Ecological Council.

## **A full right to know – including what chemicals are present in products**

The public has a right to know how and where hazardous chemicals are used and what chemicals are present in products, including their packaging, information on what we know and what we don't know about these chemicals. This information will help individuals to make informed personal choices about which products they wish to buy. Today, such information is generally not available because of the serious lack of data on chemicals and their effects on human health and the environment. As a consumer it is not possible to get exact information on what chemicals are used in which products. Consequently it is often impossible to make informed choices and avoid products containing chemicals that are suspected of causing harm to our health and/or the environment.

Full right to know, however, also means that as citizens in democratic countries we have the right to know how decisions are made and be certain that all interests are balanced. Today, the chemicals industry has an extensive and unjustifiable influence on EU chemicals policy compared to other stakeholders. Due to lack of resources, consumer and environmental organizations are not able to participate in the decision-making process on equal terms with industry.

### *Data is needed on chemicals*

In order to provide citizens and consumers with information on chemicals it is necessary to promote data gathering on chemicals. In general, data is missing on most chemicals on the European market. Over 100,000 chemicals were registered in the European Inventory of Existing Commercial Substances (EINECS) in 1981. The current estimate of marketed chemicals varies from 20,000 to as many as 70,000 (Danish Board of Technology, 1996). The effects of the man-made chemicals that surround us in our daily lives are by and large unknown. Most chemicals have never been assessed in terms of their harmful effects on health and environment. It has been estimated that for more than 85% of the 2,500 High Production Volume Chemicals (i.e. substances used in volumes greater than 1,000 tonnes per producer/importer per year) little or nothing is known (Allanou et Al., 1999) and it is likely that the situation for chemicals produced in lower volumes is worse.

Currently chemical substances are generally tested and classified one by one, based on available data only. If available data do not allow a judgement as to whether or not a substance should be classified as dangerous, no obligation exists for producers and importers of existing substances (i.e. substances already on the market before 1981, which is about 99% of all substances) to generate new data. Data gathering on all relevant chemicals must be promoted in order to provide information for consumers, as well as for authorities, scientists and downstream users of chemicals and chemical products.

### *Speed up data gathering - make use of modelled data*

Making use of modelled or predicted data could be a partial solution to the global lack of data on chemicals. If no experimental data are available, the properties of chemicals can sometimes be predicted by comparative studies of chemicals belonging to the same structural groups. These studies could be more or less simple comparisons based on "common knowledge" among chemists about closely related chemicals (group classification). They could also be more complicated calculations based on models derived from databases with data on large numbers of chemicals. These calculations are based on the so-called QSAR- model. QSAR means: Quantitative Structure-Activity Relationship. The chemical industry, particularly the pharmaceutical industry, already applies QSAR screenings for many different purposes, and some authorities have also used QSAR for predicting properties of non-assessed chemicals. In fact, numerous relevant QSAR-results already exist for nonassessed chemicals, and many of these data predict that non-assessed chemicals *would* be classified dangerous if they were assessed.

Not every chemical can be tested by QSAR. It mainly works for single organic substances, and not all effects can be modelled. However, it is possible to compute a range of effects such as persistence, ability to bioaccumulate, toxicity to fish and ability to cause cancer with a quite high degree of certainty for up to 50 – 60,000 organic chemicals. In the absence of experimental data, these chemicals should be classified according to their predicted values. Moreover, efforts should be made to predict the effects of chemicals that do not fit into the QSAR models by grouping chemicals and comparing structural relationships. In doing so chemicals should generally be classified as the most dangerous of the tested substances in their group. These exercises may cause some chemicals to be over-classified, but in consideration of consumers and the environment, industry should be able to prove these chemicals safe beyond reasonable doubt. In this respect such an approach may be seen as a partial reversal of the burden of proof.

It is important to note, however, that predictions can only be used to identify possible hazards, and not to draw the conclusion that no hazard exists. Moreover, the use of QSAR should not cause a delay in the production of experimental data. In addition, it is necessary to improve the current self-classification system, under which about 4,000 chemicals have been classified and labelled by the importer or producer under his/her own responsibility. If all available quality controlled QSAR data were made publicly accessible, producers would be encouraged to improve their self-classifications on the basis of these data and thereby more data would be generated.

### *Public access to information on chemicals*

We are exposed to hazardous chemicals via many different sources. One very influential source is pollution. The general public is often unaware of industrial pollution, and therefore cannot demand specific actions to reduce exposure. In the US however, where releases from point sources are being measured and published in the so-called Toxic Release Inventories (TRI's), such actions have led to reduction of emissions. . The Toxic Release Inventories are publicly available databases of information on

releases and transfers of toxic chemicals from manufacturing facilities, and their primary function is to inform communities, citizens, employees and industry of potential chemical releases and environmental waste generated by facilities in their community.

Modeled on the USA's Toxic Release Inventories, the EU has recently decided to create a harmonised EU register of pollution from major industrial plants: "The European Pollutant Emission Register" (EPER) in the hope that this will lower industrial pollution in Europe. NGOs have welcomed this initiative, but want it to cover a sufficiently wide range of chemicals. However, local sources of pollution are not the only way in which we are exposed to pollution. Increasingly, we are exposed to man-made and possibly hazardous chemicals through the products we buy, eat and wear. In the last decades the focus on environmental problems has partly shifted from a main focus on point sources, wastewater discharges and toxic smoke to a more integrated approach looking at diffuse emission through the whole lifecycle of products containing hazardous substances. The new EU chemicals policy must also ensure that hazardous substances are not present in every-day products, or have to at least give consumers the possibility to make informed choices about the products they buy, including their packaging. Today a limited number of products on the European market have their chemical content on potentially hazardous substances independently checked. These are the eco-labelled products with e.g. the European flower, the Nordic Swan or the German Blue Angel. Eco-labelled products comply with requirements regarding their chemical content, agreed by all stakeholders including environmental NGOs and therefore choosing ecolabelled products is a way of avoiding hazardous chemicals.

There are several ways of providing better information to the general public as well as downstream commercial users of chemicals. One way for the authorities to provide information on hazardous chemicals and promote the substitution of hazardous chemicals is to publish a so-called Observation list or a list of Undesirable substances as a signal to industry and users. So far Norway, Denmark and Sweden have published such lists. The so-called Product Registers also make it possible for the authorities to offer a collection of information on chemical substances to users and industry. The aim of Product Registers is to collect, register and inform about chemical substances contained in products that are being imported, produced or used. Product Registers can be a tool within the framework of an Integrated Product Policy and can contribute to increased awareness of product related pollution. The forthcoming EU chemicals policy must ensure that the relevant information on hazardous substances, which are being discharged to the environment or contained in products, is generated and is available to the public. To that end, the use of the internet incorporating different levels of information, stating the uncertainties and providing also for alternative solutions and products, can be a very useful tool. .

#### *Transparent decisions – public participation*

As it was mentioned earlier, in the new chemicals policy, transparent decisions and public participation need to be ensured. Changes in legislation and administration should guarantee balanced and active participation of all stakeholders including the environment and consumer NGOs at all levels of the decision making process.

Furthermore, transparency in procedures, decisions and in a continuous and comprehensive communication between producers, citizens, scientists, regulators and policy makers, is a prerequisite for the public to participate and make informed choices.

*To sum up, the new EU chemicals policy should include efforts to assure the public's right to know what chemicals are present in the products we buy, including their packaging. Today we are in the unsatisfying situation that little or nothing is known on the effects of more than 85% of the 2,500 high production volume chemicals and it is likely that the situation for chemicals produced in lower volumes is worse. The EU chemicals policy should speed up data gathering and one way of doing this is to make use of modeled data. Data on chemicals must be generated and must be accessible to consumers, authorities and downstream users of chemicals. Information on chemicals can also be provided, via Toxic Release Inventories, better labeling of products, product registers, lists of undesirable substances and searchable internet pages.*

## 2

**A deadline by which all chemicals on the market must have had their safety independently assessed. All uses of a chemical should be approved and should be demonstrated to be safe beyond reasonable doubt**

In the latest years reports from the US Environment Protection Agency (EPA) and the European Chemicals Bureau, ECB, have stated that only 14 % of all substances used in the greatest quantities had the minimum set of safety testing. For many high volume chemicals data are lacking all together (Swedish Ministry of Environment, 2000). The lack of data on chemicals is a fundamental flaw in the current EU system.

Various initiatives for providing data on chemicals have been taken. The US environmental authorities have initiated a programme that aims to provide data for 2800 high production volume chemicals before 2004. Industry is responsible for the data gathering. The International Council of Chemicals Associations (ICCA) has taken an initiative to provide data for about 1000 substances before 2005. And in addition the European Chemicals Industry Council (CEFIC) has agreed to contribute to a voluntary initiative to provide hazard assessments of the data being published. Industry's voluntary commitments to provide data and hazard assessments on chemicals are welcomed. However, the protection of consumers and the environment in the EU should not rely solely on voluntary schemes. A better approach would be to set up legally binding deadlines implying that all chemicals not assessed by the deadline will be removed from the market until a proper assessment is in place. The question is, for how long should we accept non-assessed chemicals on the market and how much time should we offer the chemicals industries to get the assessments done? A reasonable deadline could be the year 2005 for all HPV chemicals and 2010 for chemicals produced in lower volumes. Moreover, data requirements for existing substances must be the same as for new substances. Consumers who buy the chemical must be able to



have the same information about the products no matter how long the products have been on the market

#### *Approval schemes*

Today most chemicals are regulated via a “negative list system”. Substances are marketed freely unless authorities impose a ban or certain restrictions. Currently pharmaceuticals, pesticides, biocides and food additives must be approved before they can be placed on the market. In the new chemicals policy a number of additional product groups should be marketed subject to approval schemes. Approvals should generally be given for specific time periods and specific uses only. The first targets should be products of concern for which substitution by more environment and consumer friendly substances is already possible (e.g. detergents, fragrances, cosmetics, paints, plastics and varnishes). Approval schemes require many resources within the administrative system, and these schemes as such may not also guarantee that no hazardous chemicals are marketed. On the contrary, the schemes may have the effect of justifying the use of hazardous substances. However, one positive consequence of the current approval schemes is that the total number of marketed chemicals in each product group can be reduced considerably, even by a factor of 10, without restricting the users'/consumers' freedom of choice between different chemical 'options' (Bro-Rasmussen, 1999).

Moreover, adequate data on both hazards and production volumes should be a precondition for authorising chemicals, and effective approval schemes will make the application of both the principle of precaution and the principle of substitution feasible when products are evaluated. (The principle of substitution has already been included in the Biocides Directive, where comparative assessments must be performed to establish which chemicals are best for any purpose). The new chemicals strategy should include efforts to design flexible and effective authorisation bodies with adequate resources allocated to the relevant authorities. In doing so, it is important to limit the transition period. The backlog will not be solved automatically unless a deadline is set, by which all chemicals must be reviewed by the authorising bodies.

*To sum up, we cannot continue to accept the fact that most of the chemicals on the European market are non-assessed. A reasonable deadline could be the year 2005 for hazard assessments of all HPV chemicals and 2010 for chemicals produced in lower volumes. Moreover, the EU chemicals policy should include a gradual expansion of the approval scheme approach.*

### **3**

#### **A phase out of persistent or bioaccumulative chemicals**

Persistent and bioaccumulative chemicals are of special concern, as these chemicals remain in the environment and organisms for a long time. Persistent chemicals are long-living, stable chemicals in the environment in the sense that they degrade slowly. A persistent substance is thus highly resistant to the various processes in the environment, which would lead to degradation of other less resistant substances. A

substance is bioaccumulative if it is readily available for uptake by other living organisms, but is only slowly metabolised or otherwise eliminated. The substance can thereby be accumulated in organisms in higher concentrations than in their environment or food.

Persistent and bioaccumulative chemicals are still in routine use all over the planet and increasingly found in human bodies. A recent report from the World Wildlife Fund shows that over 350 of these chemicals can now be found in the human body (WWF-UK, 1999). When it comes to persistent and bioaccumulative chemicals – and chemicals in general – it must be kept in mind that some parts of the human population are far more susceptible to chemical exposures, including developing foetuses, babies, children and those with certain genetic variants. The current situation in which more and more persistent and bioaccumulative chemicals are being found in human beings and animals all over the world is unacceptable. A phase-out of all persistent and bioaccumulative chemicals would reduce the continued contamination of our bodies and our environment.

A main objective of the new EU chemicals strategy should be to aim for no emissions, discharges and losses to the environment with regard to dangerous substances. In line with the precautionary principle, all substances that are supplied to the general public or released to the natural or working environment should be inherently safe beyond reasonable doubt. In these cases focus should always be on hazard reduction rather than exposure control. In closed systems or where the properties of certain substances are an essential function in a specific application, it maybe reasonable, in some cases, to accept the use of certain dangerous chemicals. However, even closed systems have weaknesses.

For instance the group of hazardous chemicals called PCBs (Polychlorinated Biphenyls) have generally been used in “closed” systems, but they are widespread in the environment today. The new strategy should ensure that persistent and bioaccumulative substances are not released to the environment. Likewise, skin sensitizers, CMRs (Carcinogenic, Mutagenic, toxic to Reproduction) and other substances that are hazardous to human health should not be found in consumer products. These substances should be subject to total or partial bans based on existing knowledge of their properties. Chemicals to be regulated in this manner could be selected by setting up general cut-off criteria for persistence, ability to bioaccumulate and relevant adverse toxic effects. Here, experience can be drawn from the ongoing OSPAR DYNAMEC process of selecting chemicals, which are to be regulated according to the OSPAR Convention, as well as from current developments in the national chemicals policies of the Netherlands and Sweden, where such efforts are already in progress.

*To sum up, the new strategy in line with the precautionary principle, should ensure that chemicals with high persistence or bioaccumulative effects should not be released to the environment, unless their properties are an essential function in a specific application. or Likewise, skin sensitizers, CMRs and other substances that are hazardous to human health should not be found in consumer products.*

## **A requirement to substitute less safe chemicals with safer alternatives**

The global consumption of industrially produced chemicals has skyrocketed over the past decades. In 1930 the production of organic chemicals was approximately 1 million tons a year. Today it is about 400 million tons a year (EEA and UNEP, 1998). Europe is the largest producer of chemicals worldwide, accounting for about one third of the world's production. If current trends and policies continue, there could be a growth of 30% to 50% in chemicals output for most of the EU countries by 2010 as a result of increasing economic activity, including road transport and agricultural production (EEA, 1999).

A first step on the way to a sustainable use of chemicals could be to reduce the production of hazardous chemicals, something which can also inspire chemicals producers to search for alternative substances and substitute with less hazardous substances. The Western European chemicals production has been growing roughly in line with GDP until 1993 when it began to grow faster. [Figure shows that the hazardous chemicals' share of GDP has been rising in the period of 1990-97. European production and import of "dangerous chemicals/ chemicals of concern" compared to total chemicals production and GDP. (EEA, 999). To see figure, go to [www.besafenet.com/ppc/docs/toxic\\_chemicals/chemical\\_regulation/CH\\_COPEN.pdf](http://www.besafenet.com/ppc/docs/toxic_chemicals/chemical_regulation/CH_COPEN.pdf)]

In the new EU chemicals policy, a requirement should be to make use of the principle of substitution, which aims to substitute less safe chemicals with safer alternatives. It is important that once a less harmful substance or material has been acknowledged, the old substance or material is no longer allowed. Today, industry is under no obligation to use the safest available chemicals. The list of "undesirable substances" mentioned under bullet point 1 can also be a tool to avoid use of the most hazardous chemicals. The new chemicals strategy should devise new ways of integrating the substitution principle into practical legislation and administration. Practically this can be done by using approval schemes for specific product groups e.g. detergents, through an Integrated Product Policy and when providing public information, but it is still very important that producers and importers introduce in their everyday practises the principle of substitution.

*To sum up, the new EU chemicals policy should include efforts to make use of the principle of substitution. Today industry is not required to use the safest chemicals available and the new EU chemicals policy should make sure that the safest possible chemicals – or techniques – are used.*

## 5

### **A commitment to stop all releases to the environment of hazardous substances by 2020**

The chemicals policy of the EU should enable Member States to comply with international conventions. However, the “Generation target” – an important international obligation – has not been incorporated into the chemicals policy at the EU level although this is a prerequisite for its success. The “Generation target” is a commitment to stop all releases of hazardous substances by the year 2020 and it was agreed on at the 4th North Sea Conference of Ministers in 1995 in Esbjerg:

*“The Ministers agree that the objective is to ensure a sustainable, sound and healthy North Sea ecosystem. The guiding principle for achieving this objective is the precautionary principle. This implies the prevention of pollution of the North Sea by continuously reducing discharges, emissions and losses of hazardous substances thereby moving towards the target of their cessation within one generation (25 years) with the ultimate aim of concentrations in the environment near background values for naturally occurring substances and close to zero concentrations for manmade synthetic substances”.*

In 1998 the generation target was also included in the OSPAR convention of the North Atlantic. In order to determine exactly which substances are “hazardous substances” and how to set priorities for their handling, a “dynamic selection and prioritisation mechanism” (DYNAMEC) has been initiated under OSPAR. The DYNAMEC procedure is an automated selection process, which uses previously agreed criteria on persistence, toxicity and ability to bioaccumulate. Unfortunately the DYNAMEC procedure is not legally binding and currently the DYNAMEC concept is not reflected in EU policy. In 1997 the Swedish government stated that the objective of the Swedish environmental policy is a non-toxic environment –thereby in line with the above generation goal. To achieve the environmental quality objective of a non-toxic environment, the Swedish government issues the following guidelines on chemicals policy:

1. New products introduced onto the market should be largely free from:
  - Man-made organic substances that are persistent and liable to bioaccumulate, and from substances that give rise to such substances;
  - Man-made substances that are carcinogenic, mutagenic and endocrine-disruptive – including those which have adverse effects on the reproductive system; and
  - Mercury, cadmium, lead and their compounds.
2. Metals should be used in such a way that they are not released into the environment to a degree that causes harm to the environment or human health
3. Man-made organic substances that are persistent and bioaccumulative can occur in production processes only if the producer can show that health and the environment will not be harmed.

In June 2000, the generation target was included in the EU's water framework directive.

*To sum up, the new EU chemicals policy should include efforts to enable Member States to comply with international conventions. The generation target must be incorporated into EU chemicals policy and supported by the new EU chemicals policy.*

### **References:**

Allanou et Al., 1999: Public available data on EU high Production Volume Chemicals. European Chemicals Bureau, Ispra Italy.

Bro-Rasmussen, F. 1999: Precautionary Principle and chemicals legislation. Going beyond present practices. Lecture at EEB chemicals workshop, Brussels. December 4th, 1999.

Chemical Awareness, newsletter. [www.fbr.dk/chemaware](http://www.fbr.dk/chemaware)

Danish Board of Technology, 1996: The non-assessed chemicals in the EU. Report and recommendations from an interdisciplinary group of Danish experts. Report No. 5/96, Danish Board of Technology, Copenhagen

Danish Ecological Council, Danish Consumer Council, The Danish Society for the Conservation of Nature, The European Environmental Bureau, The European Consumers' Organisation, 2000: Chemicals under the Spotlight – from Awareness to Action. Copenhagen. [www.ecocouncil.dk](http://www.ecocouncil.dk)

EEA (European Environmental Agency) and UNEP (United Nations Environment Programme), 1998: Chemicals in Europe, Low Doses, High Stakes? Annual message 2 on the state of Europe's environment.

EEA, 1999: Environment in the European Union at the turn of the century, Environmental Assessment Report no. 2

European Commission, 2000: Eurobarometer 51.1

Swedish Committee on New Guidelines on Chemicals Policy, 2000: Non-Hazardous products – proposals for implementation of new guidelines on chemicals policy, SOU 2000:53.

WWF-UK, 1999: Chemical trespass: a toxic legacy.

[www.besafenet.com/ppc/docs/toxic\\_chemicals/chemical\\_regulation/CH\\_COPEN.pdf](http://www.besafenet.com/ppc/docs/toxic_chemicals/chemical_regulation/CH_COPEN.pdf)

*This statement was drafted at a meeting of ecologists and wildlife and conservation biologists and activists, convened by the Science and Environmental Health Network in May 2001 at the Icicle Creek Music Center in Leavenworth, Washington. The final version was approved by participants, listed at the end, in December 2001.*

## **Icicle Creek Statement on the Precautionary Principle & Ecosystems**

Human society in the twenty-first century bears a large responsibility to the Earth and its living systems. Our goal is to bring human activities into harmony with nature so that the Earth may continue to support all species with natural abundance and diversity.

We acknowledge our kinship with nature and our dependence on robust, vibrant, ecosystems. We acknowledge there are limits to our ability to understand or control the natural world of which we are part.

We acknowledge that for millennia, human activities have caused significant changes in our environment. However, the magnitude of changes in recent decades, especially the destruction of habitats, species, and ecosystem functioning, is unprecedented in human history and signals accelerating decline in many living systems. We recognize our obligation to protect and restore, where possible, the health and integrity of ecosystems.

As a modest but urgent step toward restoring a respectful, viable relationship between humans and the rest of nature, we advocate the precautionary principle as a primary guide:

When an activity or condition raises credible threats of harm to ecosystems, precautionary measures should be taken, even if cause-and-effect relationships are not fully established.

The precautionary principle obliges us to:

**Observe.** We must be alert to early manifestations of both harm and recovery through careful observation, rigorous science, and the eyes of a vigilant public.

**Foresee.** We must increase and exercise our abilities to predict harmful and beneficial consequences of human activities undertaken for all purposes. This includes applying scientific understanding of the character and functioning of ecosystems as well as the wisdom of long human experience and diverse cultural knowledge.

**Act.** With awareness comes the responsibility to foster recovery and health and to avoid harm.

Precautionary action related to ecosystems includes, broadly:

**Care.** Adopting forms of activity that are harmonious with the health and integrity of ecosystems represents our commitment to the thriving of future generations of humans and other species.

**Creativity.** We must learn to ask, habitually, whether harmful activities are necessary and to seek less destructive, more graceful ways of fulfilling human needs for survival and well-being.

**Courage.** When it becomes clear that business-as-usual is resulting in irrevocable harm, we must have the courage to make major changes. According to the circumstances, great restraint or bold experimentation may be necessary.

**Restraint.** Among the choices we must consider in any circumstance is to curtail exploitive human activity, restore natural processes and let nature heal itself.

**Restoration.** When possible, we must undertake the restoration of damaged ecosystems, acknowledging that such activities require care and foresight, and sometimes risk harm. We must proceed on the basis of our best knowledge and aim for long-term restoration success rather than short-term convenience or profit.

**Participation.** Decisions regarding ecosystem health and restoration must be reached through open, informed, and democratic processes that consider potentially affected parties, including, in absentia, future generations of humans and other species.

**Flexibility.** Because ecosystems are more complex than we can know, our relationship with nature must be a conversation. We must conduct all activities with both humility and courage, studying effects and making appropriate adaptations.

*Institutional affiliations are for identification purposes only.*

Kristen Blann, Conservation Biology Graduate Program, Univ.of Minnesota-St. Paul

Len Broberg, Environmental Studies Program, University of Montana

Karen Cairns, nurse/public health and environmental educator

Kim Crumbo, Grand Canyon Wildlands Council

Paul Dayton, Scripps Institution of Oceanography, California

Michael Earle, Green Group in the European Parliament, Belgium

Tim Gerrodette, Southwest Fisheries Science Center, California

Louis Guillette Jr., Zoology Department, University of Florida

Eric Higgs, School of Environmental Studies, University of Victoria, Canada

Marion Hourdequin, Duke University

Terrie Klinger, University of Washington

Gretchen Lambert, University of Washington Fridays Harbor Laboratory

Peter Landres, Aldo Leopold Wilderness Research Institute, Montana

Jim Lichatowich, salmon consultant and author

Kent Loftin, civil engineer consulting on water resources

Nancy Myers, Science and Environmental Health Network

Cara Nelson, College of Forest Resources, University of Washington

Joshua O'Brien, Ecology and Evolution graduate program, Univ. of California, Davis  
Mary O'Brien, Science and Environmental Health Network  
Makoto Omori, Makoto Omori, Akajima Marine Science Laboratory, Japan  
Stephen Packard, National Audubon Society  
Vivian Parker, Resource Policy Analyst, California Indian Basketweavers Association  
Carolyn Raffensperger, Science and Environmental Health Network  
Ted Schettler, Science and Environmental Health Network  
Boyce Thorne-Miller, Ocean Advocates, Maryland  
Martin Willison, Dalhousie University, Nova Scotia

*[www.sehn.org](http://www.sehn.org)*



*This statement was endorsed by over 200 scientists at, the International Summit on Science & the Precautionary Principle, convened by the Lowell Center for Sustainable Production, University of Massachusetts Lowell in September 2001.*

## **Lowell Statement on Science & the Precautionary Principle**

Growing awareness of the potentially vast scale of human impacts on planetary health has led to a recognition of the need to change the ways in which environmental protection decisions are made, and the ways that scientific knowledge informs those decisions. As scientists and other professionals committed to improving global health, we therefore call for the recognition of the precautionary principle as a key component of environmental and health policy decision-making, particularly when complex and uncertain threats must be addressed.

We reaffirm the 1998 Wingspread Statement on the Precautionary Principle and believe that effective implementation of this principle requires the following elements:

- upholding the basic right of each individual (and future generations) to a healthy, life-sustaining environment as called for in the United Nations Declaration on Human Rights;
- action on early warnings, when there is credible evidence that harm is occurring or likely to occur, even if the exact nature and magnitude of the harm are not fully understood;
- identification, evaluation and implementation of the safest feasible approaches to meeting social needs;
- placing responsibility on originators of potentially dangerous activities to thoroughly study and minimize risks, and to evaluate and choose the safest alternatives to meet a particular need, with independent review; and
- application of transparent and inclusive decision-making processes that increase the participation of all stakeholders and communities, particularly those potentially affected by a policy choice.

We believe that effective application of the precautionary principle requires interdisciplinary scientific research, as well as explicitness about the uncertainties involved in this research and its findings. Precautionary decision-making is consistent with "sound science" because of the large areas of uncertainty and even ignorance that persist in our understanding of complex biological systems, in the interconnectedness of organisms, and in the potential for interactive and cumulative impacts of multiple hazards. Because of these uncertainties, science will sometimes be incapable of providing clear and certain answers to important questions about potential environmental hazards. In these instances, policy decisions must be made on the basis of sound judgment, open discussion, and other public values, in addition to whatever scientific information is available. We believe that waiting for incontrovertible scientific evidence of harm before preventive action is taken can increase the risk of costly

mistakes that can cause serious and irreversible harm not only to ecosystem and human health and well-being, but also to the economy.

Some of the ways that scientific information is currently applied in formulating policy can work against the ability to take precautionary action, for example by misrepresenting limitations in the state of scientific knowledge. Decision-makers frequently look for high levels of proof of causal links between a technology and a risk before acting, so that their decisions will be protected from accusations of being arbitrary. But often, high levels of proof cannot be achieved, and are not likely to be forthcoming in the foreseeable future. A more complete and open presentation from scientists on the current limitations in understanding of environmental risks will encourage the acceptance on the part of government decision-makers and the public of the idea that precautionary action is a prudent and effective strategy when potential risks are large and uncertainties are large as well.

It is not only the communication between scientists and policy makers, however, which needs improvement. We believe that there are ways in which the current methods of scientific inquiry may also retard precautionary action. For example, research frequently focuses on narrow, quantifiable aspects of problems, thus inadvertently excluding from consideration potential interactions among different components of the complex biologic systems of which humans are a part. The compartmentalization of scientific knowledge further impedes the ability of science to detect and investigate early warnings and develop options for preventing harm when far-reaching health and environmental risks are involved. Unfortunately, limitations in scientific tools and in the ability to quantify causal relationships are often misinterpreted by government decision-makers, scientists, and proponents of hazardous activities as evidence of safety. However, not knowing whether an action is harmful is not the same thing as knowing that it is safe. We contend that effective implementation of the precautionary principle demands improved scientific methods, and a new interface between science and policy that stresses the continuous updating of knowledge as well as improved communication of risk, certainty, and uncertainty. With these objectives in mind, we call for a reevaluation of scientific research agendas, funding priorities, science education, and science policy.

The ultimate goals of this effort would include:

- a more effective linkage between research on hazards and expanded research on prevention and restoration;
- increased use of interdisciplinary approaches to science and policy, including better integration of qualitative and quantitative data;
- innovative research methods for analyzing the cumulative and interactive effects of various hazards to which ecosystems and people are exposed; for examining impacts on populations and systems; and for analyzing the impacts of hazards on vulnerable subpopulations and disproportionately affected communities;
- systems for continuous monitoring and surveillance to avoid unintended consequences of actions, and to identify early warnings of risks; and
- more comprehensive techniques for analyzing and communicating potential hazards and uncertainties (what is known, not known, and can be known).

We understand that human activities cannot be risk-free. However, we contend that society has not realized the full potential of science and policy to prevent damage to ecosystems and health while ensuring progress towards a healthier and economically sustainable future. The goal of precaution is to prevent harm, not to prevent progress. We believe that applying precautionary policies can foster innovation in better materials, safer products, and alternative production processes.

We urge governments to adopt the precautionary principle in environmental and health decision-making under uncertainty when there are potential risks, as well as to take timely preventive and restorative actions in cases where damage has been demonstrated. The elements of decision-making processes incorporating the precautionary principle, as outlined above, represent necessary aspects of sound, rational processes for preventing negative impacts of human activities on human and ecosystem health. This approach shares the core values and preventive traditions of medicine and public health

Signed by over 200 Scientists.

To view list of scientists and for more information, go to  
*<http://www.sustainableproduction.org/precaution/>*

*The Alliance for a Healthy Tomorrow (AHT) is a coalition of citizens, scientists, health professionals, workers, and educators in Massachusetts seeking preventive action on toxic hazards. In 2002, AHT outlined its Core Values, including Precautionary Action, and developed a Plan for Healthy Tomorrow based on their beliefs that protection of our health must become the first priority of government policy and that that each of us has a right to an environment that sustains health and life, not one that harms it.*

## **Alliance for a Healthy Tomorrow Core Values**

### **Choice, Progress & Innovation**

We understand that the world cannot be "risk-free," but we know that there are safer alternatives to many toxic technologies and products in use today. Industrial progress has brought us many advantages, but we can go further and create progress toward a healthier environment.

We want to create better choices. The use of the preventative approach that we propose will spark a search for better materials, safer products, and alternative processes, and will thus foster innovation. The approach is aimed at preventing harm, not progress. It should be used proactively to help reach social goals and make progress toward a healthier tomorrow. If we work together to set our goals, it is possible to say "no" to the things that don't fit those goals, and "yes" to the things that do.

### **Rigorous Science**

Science is central to this approach—it will require the use of more rigorous, interdisciplinary science to examine complex living systems and establish an "early warning system" to identify potential hazards. Scientists need to be more explicit about what is known and not known and develop advanced methods to analyze alternatives.

### **Responsibility**

We all have the responsibility to look at what we do and strive to make sure that our actions do not harm others or our shared environment. Businesses and consumers must seek out the safest alternatives to meet human needs.

### **Democracy**

A democracy is based on open and informed decision-making processes that put public goals and values above private gain. We call for government to establish democratic decision-making processes to choose the safest alternatives. These processes must be insulated from special interest interference. In an uncertain world, politicians, corporations and scientists should not be making all the decisions about what risks are acceptable to society, a community or a child.

### **Precautionary Action & Foresight**

The approach advocated by the Alliance for a Healthy Tomorrow is called the "Precautionary Principle" by many advocates. It is being implemented in other countries and cited in international environmental treaties. Rather than asking how much damage

to a baby is acceptable, or how much pollution can be assimilated by an ocean or a forest, a precautionary approach asks how much can be avoided. It's preventive medicine for the environment—and by extension, for humans. It tells us to prevent pollution and poisoning, rather than trying to clean up the mess afterward

## **Plan for a Healthy Tomorrow**

Protection of health must be the first priority of government agencies. The government should be pro-active to prevent harm before it occurs.

We must:

### **Act on Early Warnings**

The government has a duty to act to prevent harm when there is credible evidence that harm is occurring or is likely to occur—even when the exact nature and magnitude of the harm is not proven.

### **Choose and Create the Safest Alternatives**

Government decision-making processes must evaluate a full range of alternatives, and must require the safest feasible alternative. Government should support innovation and promote technologies, materials and solutions that create a healthier environment. We must protect and involve impacted workers and communities during the transition to safest alternatives.

### **Not Assume Safety**

Manufacturers have a responsibility to show that they are using the safest alternative to meet a specific need. The potential for harm should be thoroughly studied before a new chemical or technology is used, rather than assuming it is harmless until proven otherwise. Research on the impacts of chemicals and technologies should be conducted or verified by independent third parties.

### **Base Decisions on Science & Democracy**

Government decisions should be based on independent scientific information and meaningful citizen participation. They must place a higher priority on protecting health and the environment than on the economic interests of a particular industry. The decision-making process should represent public values, protect the rights of potential victims, and be insulated from interference by narrow, special interests.

*[www.healthytomorrow.org](http://www.healthytomorrow.org)*

*Hundreds of groups and individuals have endorsed the BE SAFE Platform on Precaution since it was developed in 2003 by a coalition of 200 national, state and local environmental groups in the BE SAFE network organized by the Center for Health, Environment & Justice. The BE SAFE campaign is a nationwide initiative to build support for the precautionary approach to address environmental and public health hazards.*

## **BE SAFE Platform on Precaution**

In the 21st century, we envision a world in which our food, water and air are clean, and our children grow up healthy and thrive. Everyone needs a protected, safe community and workplace, and natural environment to enjoy. We can make this world vision a reality. The tools we bring to this work are prevention, safety, responsibility and democracy.

Our goal is to prevent pollution and environmental destruction before it happens. We support this precautionary approach because it is preventive medicine for our environment and health.

It makes sense to:

- Prevent pollution and make polluters, not taxpayers, pay and assume responsibility for the damage they cause;
- Protect our children from chemical and radioactive exposures to avoid illness and suffering;
- Promote use of safe, renewable, non-toxic technologies;
- Provide a natural environment we can all enjoy with clean air, swimmable, fishable water and stewardship for our national forests.

*We choose a “better safe than sorry” approach motivated by caution and prevention. We endorse the common-sense approach outlined in the four principles listed below.*

## **Precautionary Principles**

### **HEED EARLY WARNINGS**

Government and industry have a duty to prevent harm, when there is credible evidence that harm is occurring or is likely to occur—even when the exact nature and full magnitude of harm is not yet proven.

### **PUT SAFETY FIRST**

Industry and government have a responsibility to thoroughly study the potential for harm from a new chemical or technology before it is used—rather than assume it is harmless until proven otherwise. We need to ensure it is safe now, or we will be sorry later. Research on impacts to workers and the public needs to be confirmed by independent third parties.

## **EXERCISE DEMOCRACY**

Precautionary decisions place the highest priority on protecting health and the environment, and help develop cleaner technologies and industries with effective safeguards and enforcement. Government and industry decisions should be based on meaningful citizen input and mutual respect (the golden rule), with the highest regard for those whose health may be affected and for our irreplaceable natural resources—not for those with financial interests. Uncompromised science should inform public policy.

## **CHOOSE THE SAFEST SOLUTION**

Decision-making by government, industry and individuals must include an evaluation of alternatives, and the choice of the safest, technically feasible solutions. We support innovation and promotion of technologies and solutions that create a healthy environment and economy, and protect our natural resources.

*[www.besafenet.com](http://www.besafenet.com)*

*This 2005 Charter is by groups in the national Coming Clean collaborative. It presents six principles to reform U.S. chemical laws and regulatory system. The draft charter was crafted at a 2004 national meeting in Louisville, Kentucky, which has eleven industrial facilities releasing millions of pounds per year of toxic air emissions.*

## **Louisville Charter for Safer Chemicals**

Fundamental reform to current chemical laws is necessary to protect children, workers, communities, and the environment. We must shift market and government actions to protect health and the natural systems that support us. As a priority, we must act to phase out the most dangerous chemicals, develop safer alternatives, protect high-risk communities, and ensure that those responsible for creating hazardous chemicals bear the full costs of correcting damages to our health and the environment.

By designing new, safer chemicals, products, and production systems we will protect people's health and create healthy, sustainable jobs. Some leading companies are already on this path. They are creating safe products and new jobs by using clean, innovative technologies. But transforming entire markets will require policy change. A first step to creating a safe and healthy global environment is a major reform of our nation's chemicals policy. Any reform must:

### **Require Safer Substitutes and Solutions**

Seek to eliminate the use and emissions of hazardous chemicals by altering production processes, substituting safer chemicals, redesigning products and systems, rewarding innovation and re-examining product function. Safer substitution includes an obligation on the part of the public and private sectors to invest in research and development of sustainable chemicals, products, materials and processes.

### **Phase Out Persistent, Bioaccumulative, or Highly Toxic Chemicals**

Prioritize for elimination chemicals that are slow to degrade, accumulate in our bodies or living organisms, or are highly hazardous to humans or the environment. Ensure that chemicals eliminated in the United States are not exported to other countries.

### **Give the Public and Workers the Full Right-to-Know and Participate**

Provide meaningful involvement for the public and workers in decisions on chemicals. Disclose chemicals and materials, list quantities of chemicals produced, used, released, and exported, and provide public/worker access to chemical hazard, use and exposure information.

### **Act on Early Warnings**

Act with foresight. Prevent harm from new or existing chemicals when credible evidence of harm exists, even when some uncertainty remains regarding the exact nature and magnitude of the harm.

### **Require Comprehensive Safety Data for All Chemicals**

For a chemical to remain on or be placed on the market manufacturers must provide publicly available safety information about that chemical. The information must be



sufficient to permit a reasonable evaluation of the safety of the chemical for human health and the environment, including hazard, use and exposure information. This is the principle of “No Data, No Market.”

### **Take Immediate Action to Protect Communities and Workers**

When communities and workers are exposed to levels of chemicals that pose a health hazard, immediate action is necessary to eliminate these exposures. We must ensure that no population is disproportionately burdened by chemicals.

Dates must be set for implementing each of these reforms. Together these changes are a first step towards reforming a 30-year old chemical management system that fails to protect public health and the environment. By implementing the Louisville Charter and committing to the innovation of safer chemicals and processes, governments and corporations will be leading the way toward a healthier economy and a healthier society.

*[www.louisvillecharter.org](http://www.louisvillecharter.org)*