What are Chemical Action Plans and how can they help you?

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PBTs

- Persistent- they remain in the environment for a long time
- Bioaccumulative- they build up in organisms and in the food chain
- Toxic- they are harmful to the health of humans and/or other species. Children are especially vulnerable.

Why are PBTs a priority?

- Travel long distances and cross media
- Span the boundaries of programs, geography and generations.
- Traditional single-media approaches are less than the full solution.

Typical chemical release

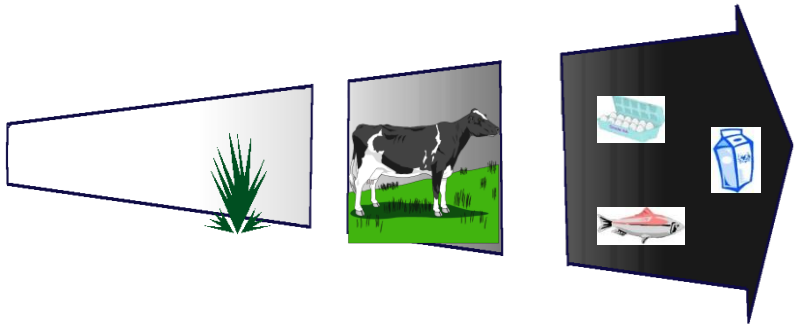
Sources

Degradation and Dispersal

Environment

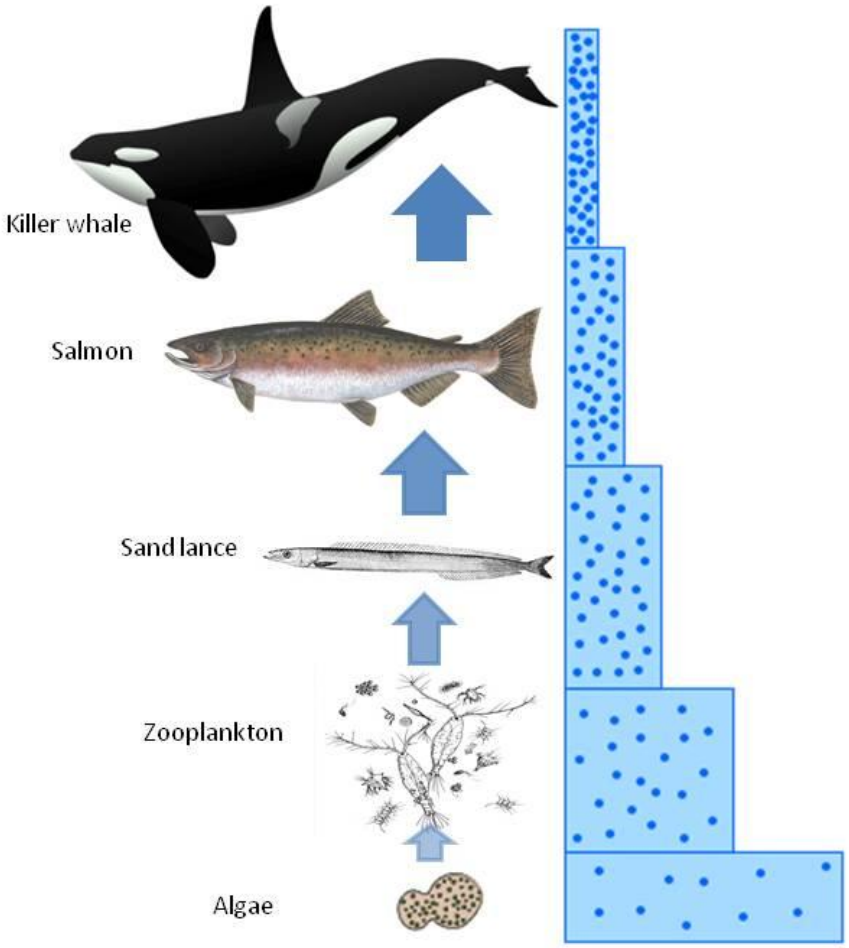
PBT chemical release

Sources



Increasing Concentrations

Aquatic biomagnification



2006 PBT Rule (173-333 WAC)

- Goal is to reduce and phase-out PBT uses, releases, and exposures in Washington
- List of the 'worst of the worst' toxic substances.
  - 27 individual PBTs and groups on list
- Procedures for developing Chemical Action Plans (CAPs)

What is a CAP?

Plan that identifies, characterizes, and evaluates uses and releases of a PBT and recommends actions to protect human health and the environment

- Mercury CAP published 2003
- PBDEs CAP published 2006
- Lead CAP published 2009
- PAHs CAP expected 2011
- PFOS CAP expected 2013

What's in a CAP?

- Health effects
  - Human
  - Wildlife
- Chemistry
- Environment
- All sources
- Laws and Regulations
- Policy Options
  - costs
- Recommendations
  - Agency actions
  - New laws
  - Education
  - Partners

Lead Health Effects

- Death
- Brain development
- Early aging of the brain
- Behavior and crime
- Liver damage
- Heart damage
- Hypertension
- Reproductive effects
- Stroke
- Immune system

No known safe level of lead

Universal Health Effects of Lead

Albatross

Person

Many Sources of Lead Exposure

Plumbing

Air

Soil

Paint chips/dust

Daily intake of lead
Eat or breathe

Food

Occupational and Take Home

Consumer Products

Legacy Lead in Soil
Area Wide Soil Contamination in WA

Historic Use	Estimated acres
Smelters	489,000
Pesticides	188,000
Gasoline	Unknown

Consumer Products

- Toys
- Jewelry
- Food, nutritional supplements and traditional remedies
- Cosmetics
- Art supplies
- Vinyl products

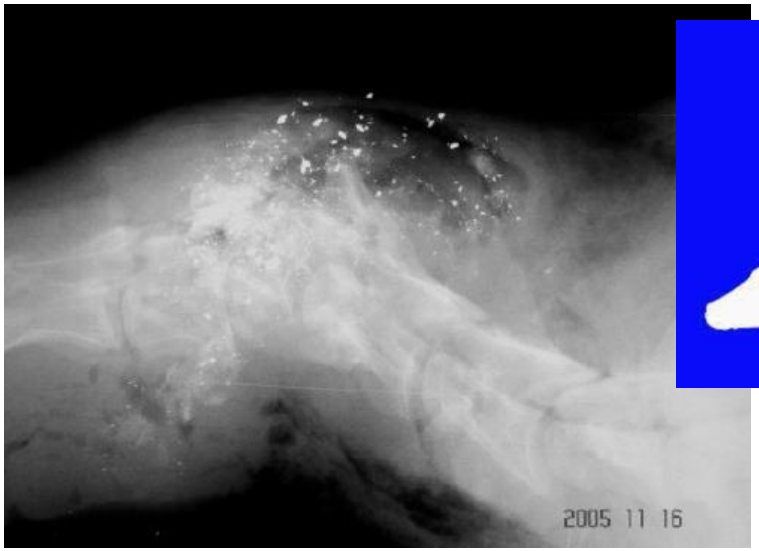
- Fishing, shooting, hunting
- Solder
- Plumbing
- Metal Alloys (brass, etc)
- Automotive Batteries
- Weights
- Leaded fuel
- Specialty glass
- Specialty paint

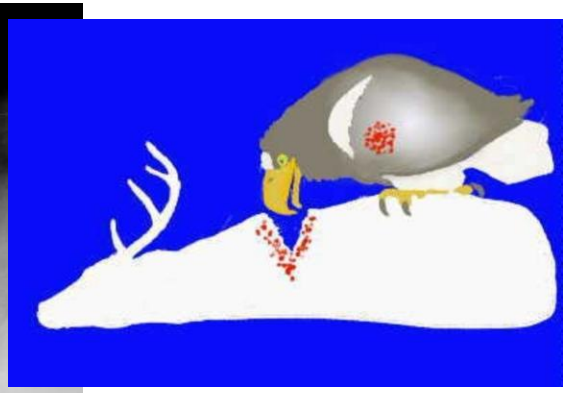
Hobbies

- Specialty glass
- Specialty paint and glaze
  - Art supplies
- Jewelry making
- Furniture refinishing
- Solder
- Plumbing
- Weights
- Leaded fuel

Hobbies

- Fishing
- Shooting
- Hunting





Major Sources of Occupational Lead Exposure

- Construction
  - Home renovation
  - demolition
- Maintenance
  - Steel bridges
  - Welding, cutting, soldering
- Manufacturing
  - Batteries
  - Ammunition
  - Fishing weights
  - Electronics
  - Specialty glass
- Shooting Ranges

Lead CAP Main Recommendations- Children and Paint

- Education and outreach

- Require remediation in rental homes if it is a confirmed source of an elevated blood lead level.

- Require lead assessments in pre-1960 rental homes.

Summary of other recommendations

- Increase childhood blood lead screening and testing
- Encourage more assessment in homes, schools and childcares
- Harmonize and update occupational lead regulations
- Work with stakeholders to reduce lead in products, and increase recycling
- Continue environmental monitoring and clean ups

Challenges

- Costs
- Many people believe lead is no longer a problem.
- Most effects of lead exposure are visible at the population level, but not at the individual clinical level.
- Connection to lead for hunting and fishing.
- Lack of specific Washington data on the number of highly exposed children and the sources of their lead exposure.

Actions since 2009 Lead CAP

- Legislation
  - Commerce got delegation from EPA for the new rule on lead-safe renovation
  - Ban on lead sale and installation of lead wheel weights

- State agency actions
  - review the cleanup levels for lead in soil
  - metals project focusing on lead, mercury and cadmium through our pollution prevention planning
  - Fish & Wildlife banned the use of lead fishing tackle in 13 loon nesting lakes
  - DOH emphasis on Healthy Homes, education and outreach

- Continued challenges
  - Lead-based paint is the largest exposure source for children.
  - Widespread use of lead in products.

Actions Since 2003 Mercury CAP

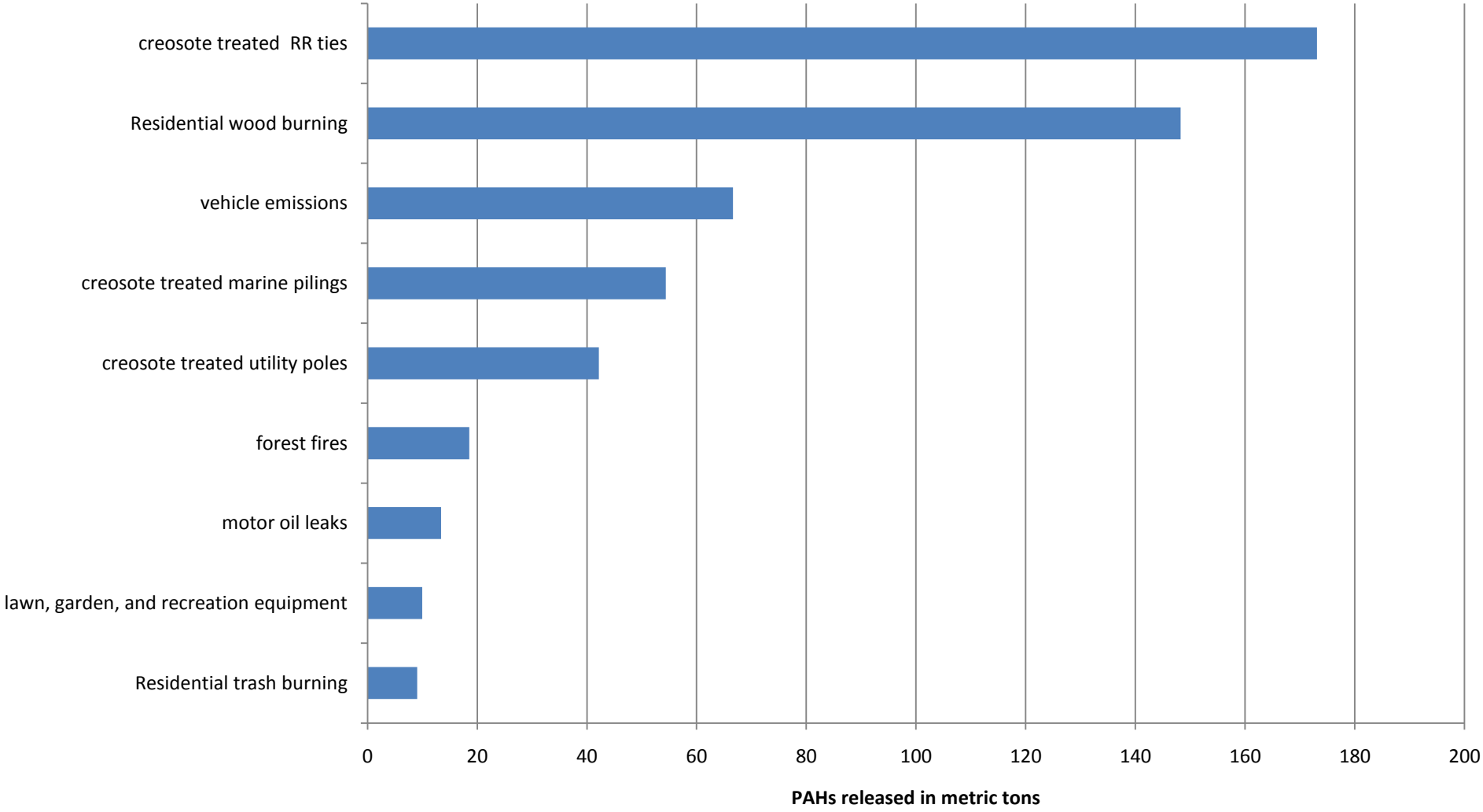
- Legislation
  - 2003 Mercury Education and Reduction Act (RCW 70.95M) banned some uses- thermometers, novelties, etc.
  - 2010 Mercury lamp recycling and product stewardship
- State agency actions
  - Collection and proper disposal of more than 14,000 pounds of mercury
  - Lowered the detection limit for mercury in water discharge permits
  - An agreement with dentists to collect mercury amalgam waste
- Continued challenges
  - Air deposition from inside and outside the state
  - Continued presence of mercury in the environment, especially in fish

Actions Since 2006 PBDE CAP

- 2007 legislation
  - Banned specific flame retardants in some uses- residential upholstered furniture, computers, etc.
- EPA worked with industry on a voluntary phase out by 2012.

- Continued Challenges
  - Safer alternatives
  - Continued presence of PBDEs in the environment

PAH CAP (in preparation)
Major Sources



Reducing Toxic Threats

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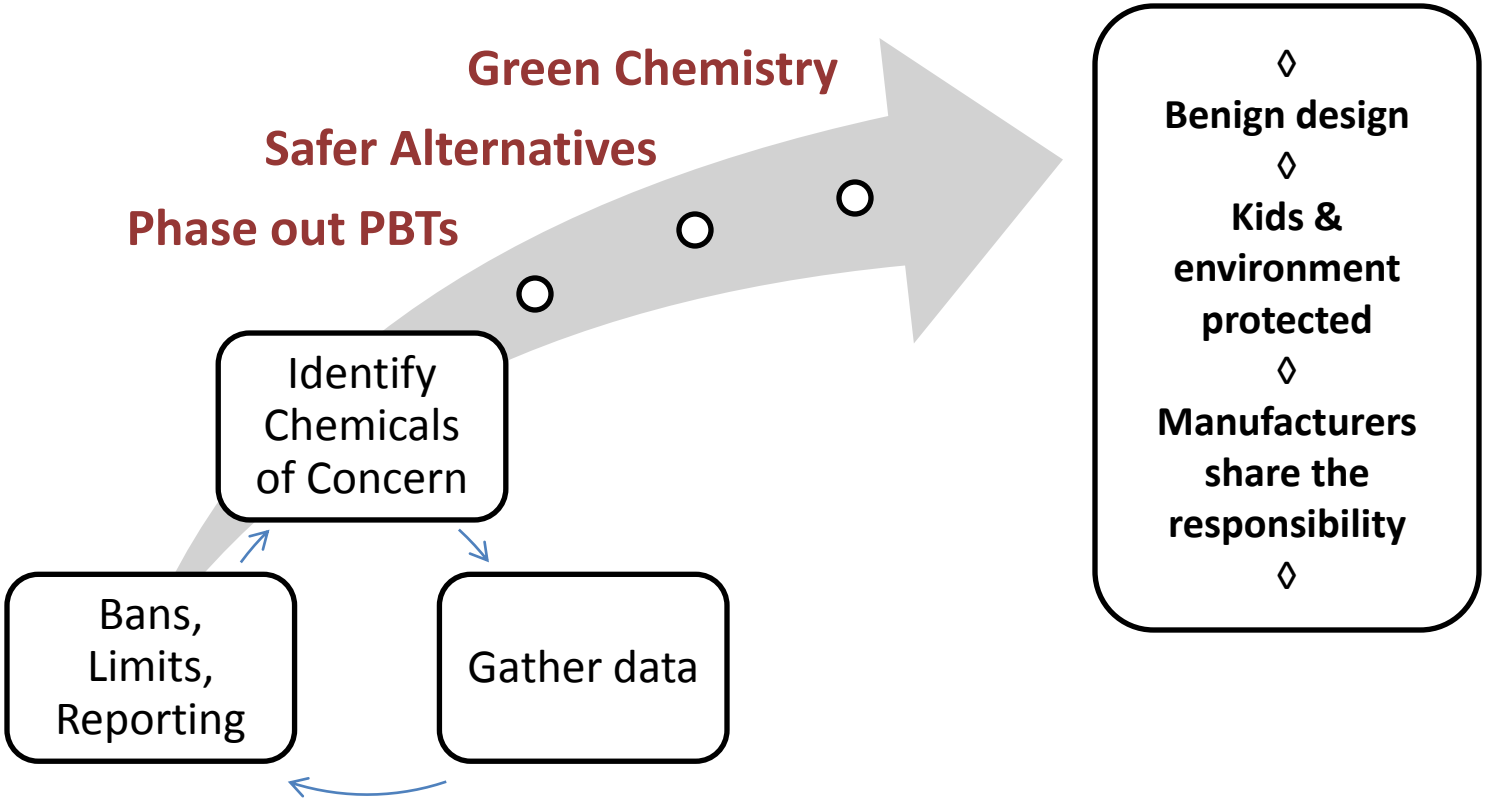
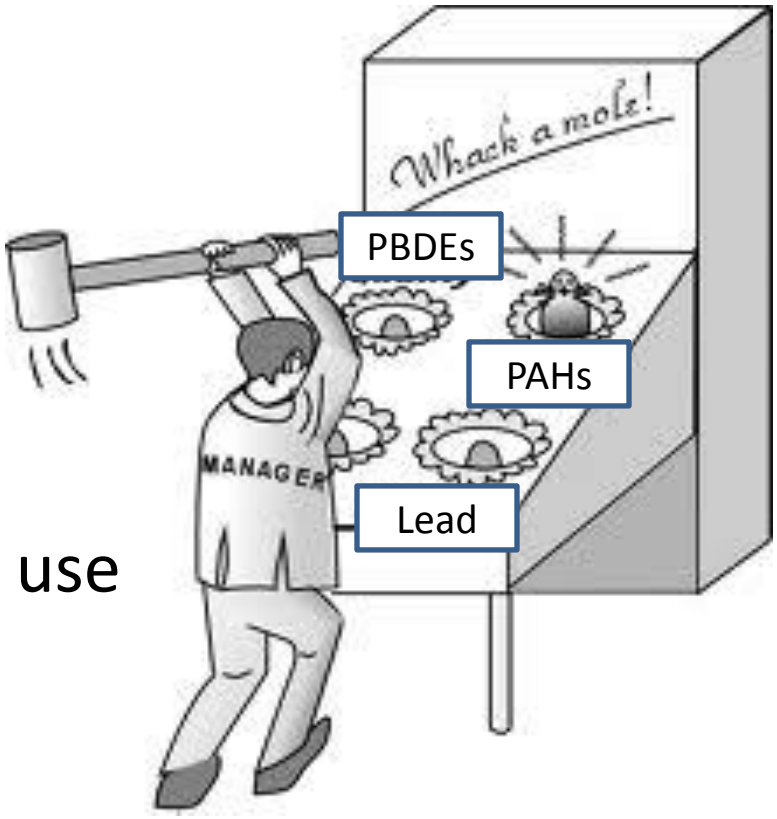
Prevention as the smartest, cheapest, and healthiest approach.



Future Steps for Chemical Policy

- Change current whack-a-mole approach
  - Specific chemical
  - Specific product(s)
- Manufacturers to share responsibility
- Federal reform
  - Review chemicals before use



For Additional Information

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Ecology PBT Web Page:
http://www.ecy.wa.gov/programs/swfa/pbt/

Ecology Lead CAP Web Page:
http://www.ecy.wa.gov/programs/swfa/pbt/lead.html

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