

# Europe's Mercury Strategy and Phase Out of Amalgam in Sweden

*by Michael Bender*

*Mercury Policy Project/  
Ban Mercury Working Group*

*Ban Mercury Working Group*

[www.mercurypolicy.org](http://www.mercurypolicy.org)

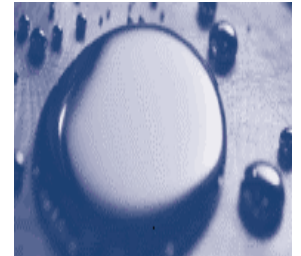
*and Elena Lymberidi*

*European Environmental Bureau  
Zero Mercury Campaign*

[www.zeromercury.org](http://www.zeromercury.org)

*Baltimore, MD*

*June 10, 2006*



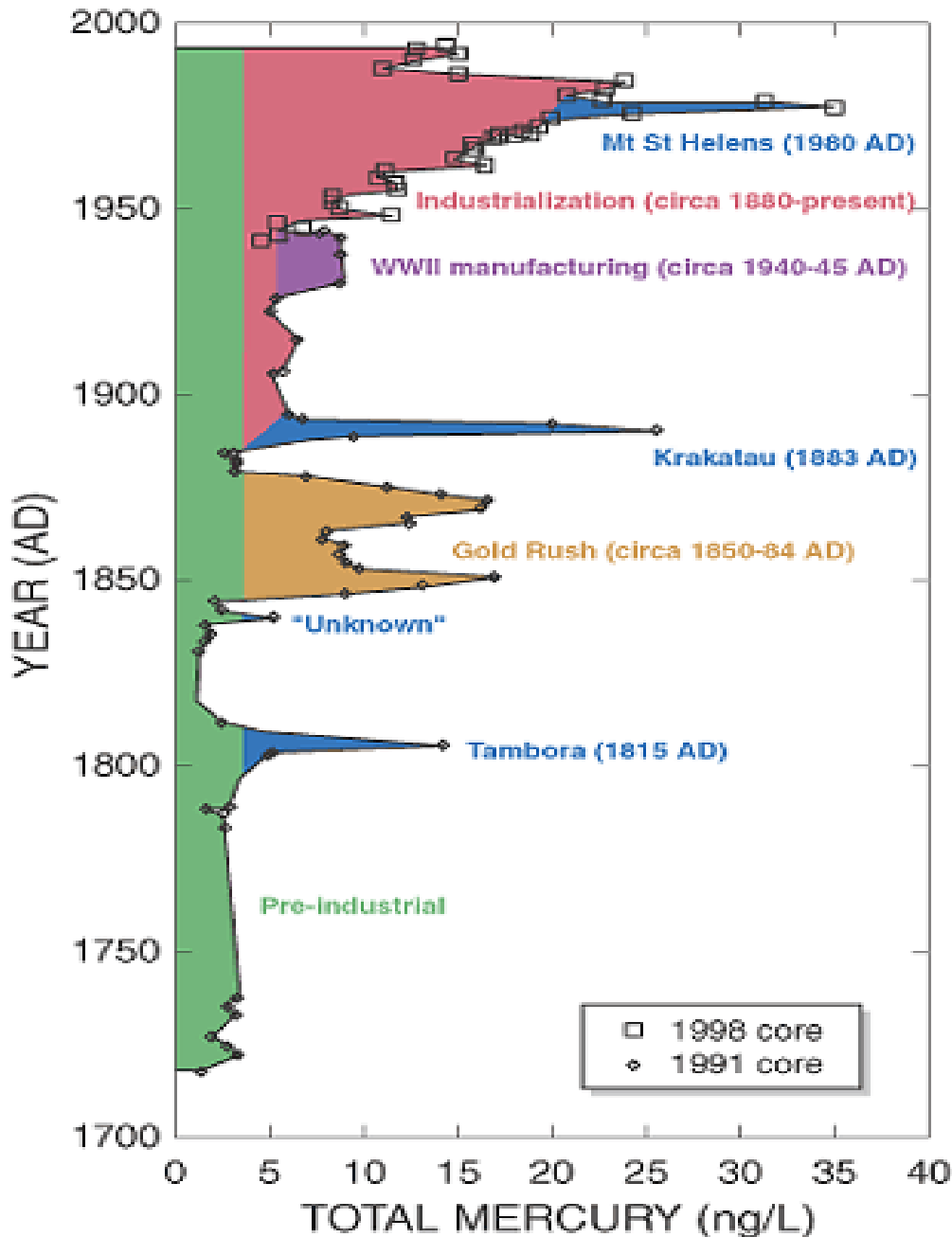
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# ***Mercury Pollution: A Global Problem Warranting Local, International Solutions***



- Three-fold global Hg increase over past 150 years
- Mercury threatens people through global, local fish supply and other sources





Amount of atmospheric mercury deposited at Fremont glacier (Wyoming) over the last 270 years.

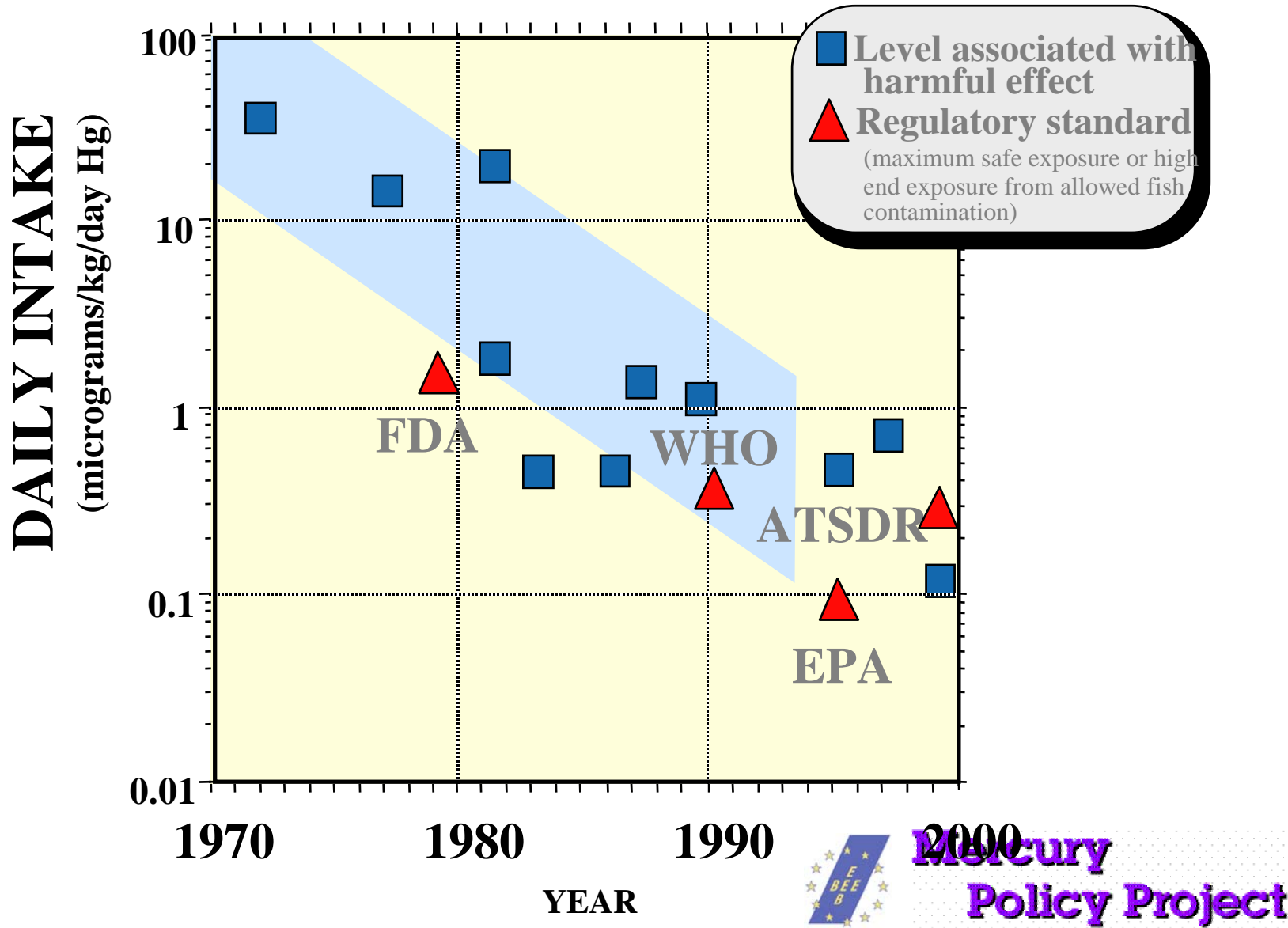


# ***Strategy—Main Objectives***

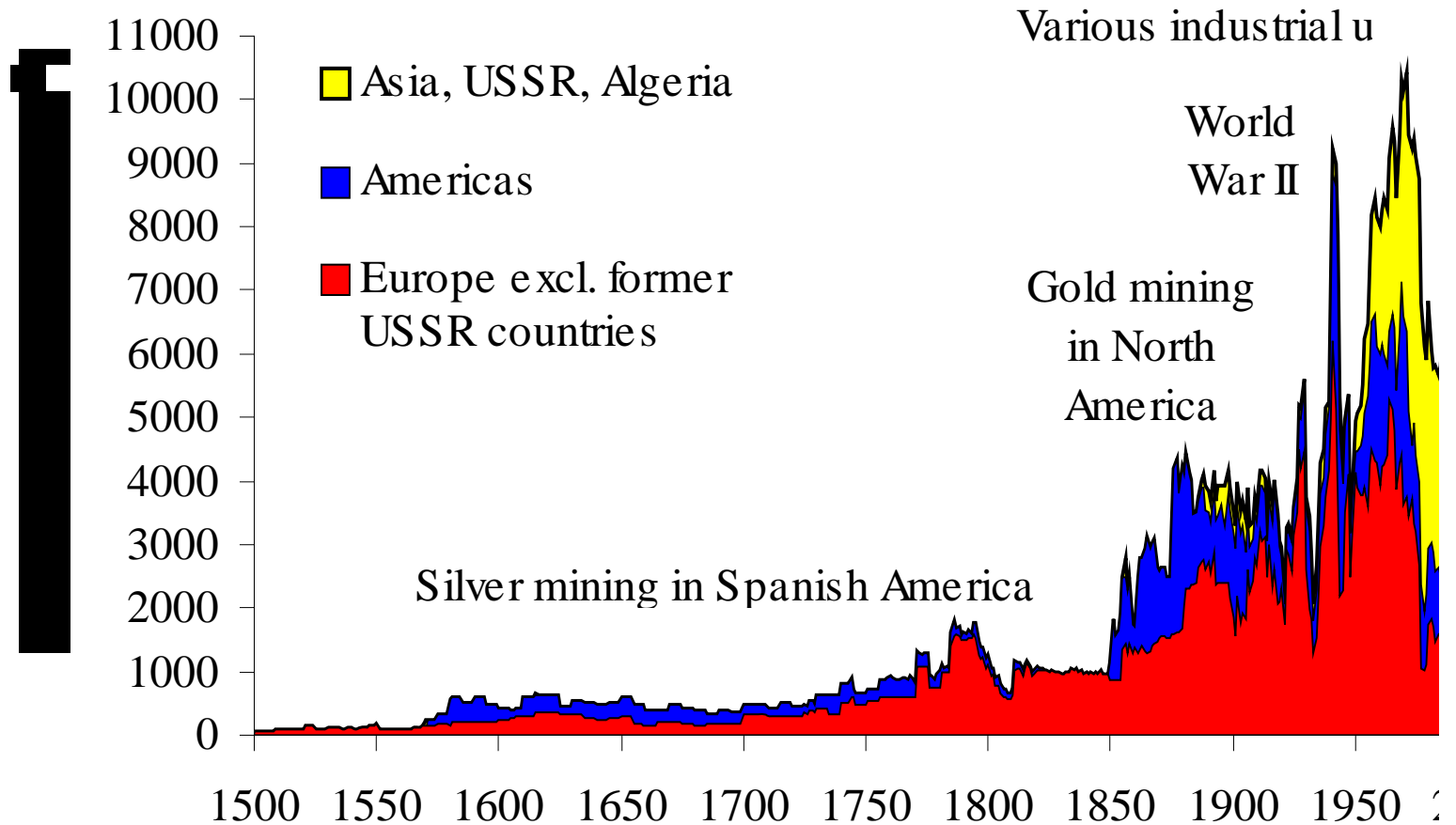
- **Reducing supply** *(e.g. Hg mining)* **and demand** *(e.g. restricting mercury use in products)*
- **Retiring mercury surpluses** *(Fate of surplus mercury from the chlor-alkali industry)*
- **Reducing Emissions** *(Coal combustion, Cremation)*
- **Reducing exposure**
- **Set stage for international action**



# Mercury's Declining Margins of Safety as Risks Become Better Known



# Global, Historical Production of Primary Mercury



**and the European contribution.**

(Hylander & Meili, 2002. *Sci. Total Environ.*)

# Mercury Production From Mining

Country/region	Primary (virgin) Hg			Secondary Hg*
	2000	2002	2003	By-product Hg (2000)
Algeria	240	307	~250	
China	200	??	0	
Finland				45
Peru				48
Spain	236	727	745	??
Russia/Siberia		incl. in Kyrgyzstan	incl. in Kyrgyzstan	50
Kyrgyzstan	554	~530	~530	
Tadjikistan	40	incl. in Kyrgyzstan	incl. in Kyrgyzstan	
Other		50	50	> 415
<b>Totals</b>	<b>1270</b>	<b>~1700</b>	<b>est.1600</b>	<b>&gt; 560</b>

**Note:** “??” indicates no estimate available.

\* Secondary mercury production indicated here is believed to be a significant underestimate.

Source: Maxson, March 2004.



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# Within the EU, Spanish MAYASA Mine, Largest in the World



Selling offices in Spain, UK, Peru, India, and the Philippines



Close to areas where Hg use in artisanal mining and industry



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# Mercury (Hg) in ASM Gold Mining

- Miners use Hg to amalgamate gold
- Hg use 1000 tons/year
- 50% Hg from Europe & North America
- 10-15 million miners in 50 countries, with 100 million dependents
- Results in much pollution & exposure
- About half of miners intoxicated w/mercury



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# Proposed EU Mercury Export Ban

- EU exports about 1,000 tons mercury/year
- Nearly 1/3<sup>rd</sup> of global supply
- Disproportionately sent to developing countries
- European Commission strategy proposes EU Hg export ban by 2011



•NGOs still pushing for 2008 export ban



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# Retiring Surplus Mercury

- Many EU mercury-cell chlor alkali plants will close soon
- Over 10,000 tons will be banned from export, must be retired
- Legal proposal-framework is drafted by the Commission
- Voluntary agreement with industry to store mercury considered



Spanish Miner Floating on Mercury



# ***Stocks of Hg (Tons) Used in EU***

	<b>Sweden</b>		<b>EU + EFTA</b>
<b>Usage</b>	<b>1992</b>	<b>2002</b>	<b>2002</b>
<u>Chlor-alkali factories</u>	400	400	<u>12 000 - 15 000</u>
Teeth	40-60	30-50	1 300 - 2 200 *
Electrical app. & instr.	10-30	3-5	430 - 1 300 *
Thermometers	5-10	2.5-5	215 - 430 *
Dry and button cells	3-5	-	-
Laboratory chemicals	2-4	1	90 - 180 *
Fluorescent tubes	~0.6	1	~60 *
<b>Sum</b>	<b>460-500</b>	<b>438-462</b>	<b><u>14 095 - 19 170</u></b>

# Proposal to Restrict Hg/Products

- Non-EE measuring equipment  
(**EC Proposal:** *Mercury may not be placed on the market:*

(1) *in fever thermometers*

(2) *in other measuring devices intended for sale to the general public (e.g. manometers, barometers, sphygmomanometers, thermometers other than fever thermometers)*

- Electr(on)ic medical measuring/control equipment (thermostats, switches/relays)

- Dental amalgams



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# Potential New Measures for Reducing Hg/Air Emissions:

- Controls for small-scale combustion installations
- See study: [http://europa.eu.int/com/m/environment/chemicals/mercury/pdf/sci\\_final\\_report.pdf](http://europa.eu.int/com/m/environment/chemicals/mercury/pdf/sci_final_report.pdf)
- Cremation (UK-controls required on large units by 2012)



# Other Elements of Strategy

- Review of effects of applying current legislation (IPPC, LCP, waste re:amalgam)
- Further investigation and advice on dietary exposure
- Research
- Further study remaining uses, including dental mercury
- Support and promote global action (funding related projects to developing countries, PIC, TFHM (LRTAP), UNEP, UNIDO, etc.)



# Sweden's Amalgam Phase Out Part of a Broader Effort

- Swedish KEMI report recommended general mercury ban in 2004
- Also recommends export ban
- Recognizes need for time-limited mercury use exemptions
- Need to harmonize w/EC legislation
- Among ban recommendations is dental amalgam

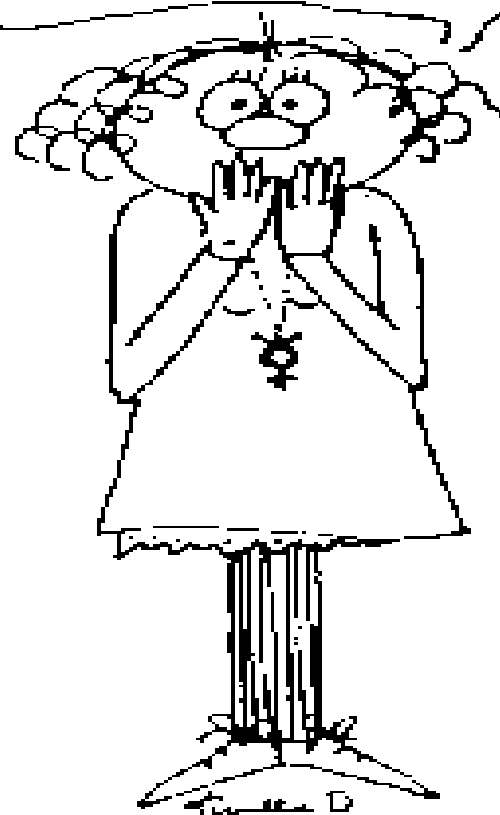




# Sweden's Phase-out of Amalgam

- Strong grounds for banning amalgam for environmental reasons
- From health perspective, need to apply precautionary approach
- Alternatives available to meet needs
- 95% of placements today are mercury-free, due to insurance preference

With all the mercury in my mouth I must be an environmental hazard!



# Mercury Pollution: A Global Problem in need of Local & International Solutions

- EU strategy calls for both domestic & international actions, agreements
- EU leading world toward mercury phase out, export bans & storage of mercury
- Sweden amalgam phase out proves mercury not needed
- EU supports a global binding legal instrument on mercury



Mercury Fountain in Barcelona



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