

Division of Environmental Geosciences
AAPG
Hedberg Conference

Rational Science/Rational Policy
Data Compilations

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Kansas Geological Survey
Open-file Report

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Data and Charts

These charts and data were compiled to illustrate national and global consumption patterns for natural resources. Population data that impact resource utilization patterns are included. Together, these data compilations comprise a look at past, current, and projected earth resource natural usage.

1. Metals Worksheet
2. U. S. Consumption - Aluminum
3. U. S. Consumption - Copper
4. U. S. Consumption - Lead
5. U. S. Consumption - Nickel
6. U. S. Consumption - Tin
7. U. S. Consumption - Zinc
8. U. S. Consumption - Energy in Quads
9. Global Consumption - Aluminum
10. Global Consumption - Copper
11. Global Consumption - Lead
12. Global Consumption - Mercury
13. Global Consumption - Nickel
14. Global Consumption - Silver
15. Global Consumption - Tin
16. Global Consumption - Zinc
17. Global Consumption - Energy by source
18. Global Oil Consumption projection
19. Global Population
20. U. S. Population, Log.
21. U. S. Population, Arith.
22. Regional Population Growth Rates
23. Economic limits to resources extraction graphic
24. Restricted Public Land Access table
25. Percent public land restricted from mineral access
26. Fisheries production, gross
27. Fisheries consumption, net
28. Timber production, etc.
29. Agricultural Exports, imports
30. Agricultural Product Value
31. Percent Farm Value of consumer costs
32. Farm acres and number of farms
33. U.S. non-metallic minerals worksheet
34. U. S. salt and sulfur consumption
35. U. S. sand and gravel and crushed stone consumption
36. Greenland ice core temperature chart
37. List of major U.S.environmental laws

(For data sources, see next page)

Data Sources

Charts 1-7, 9-16:

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Charts 26-32:

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Charts 33-35:

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Chart 36:

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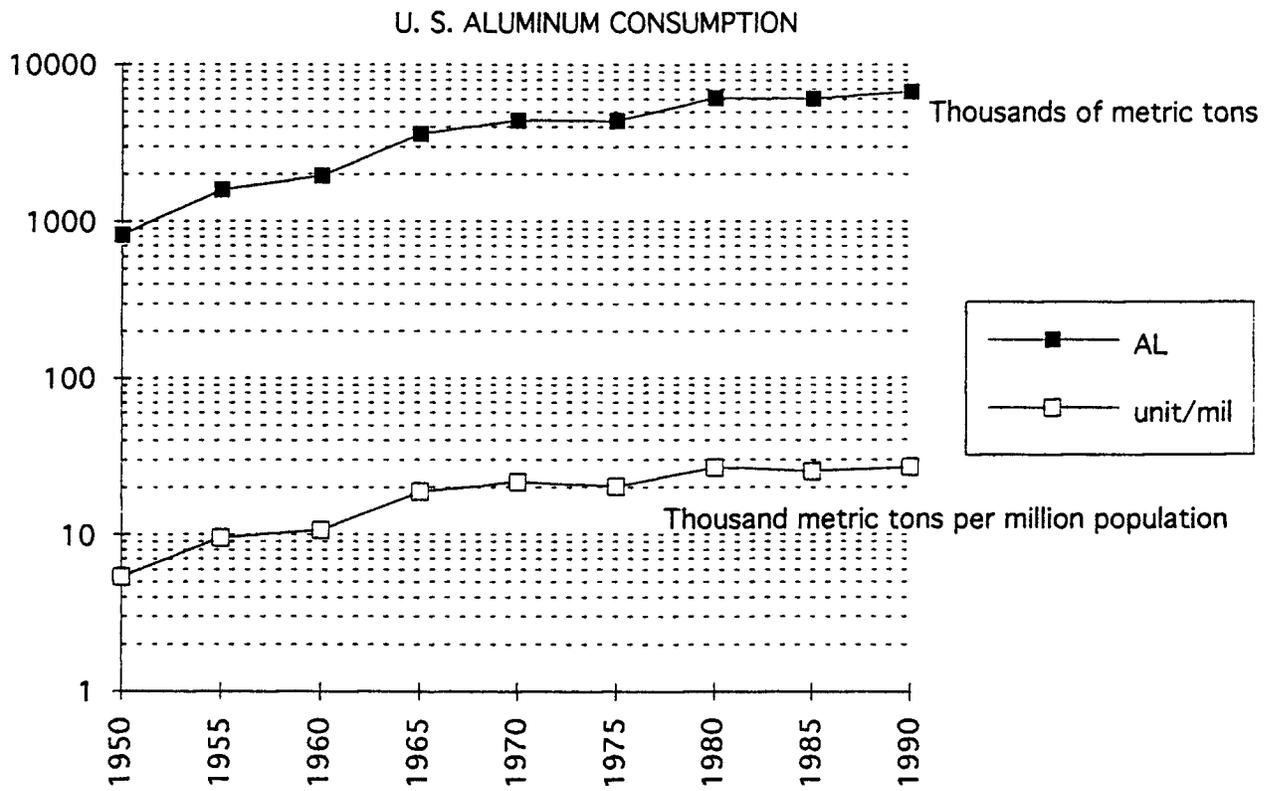
METALS WRKSHT

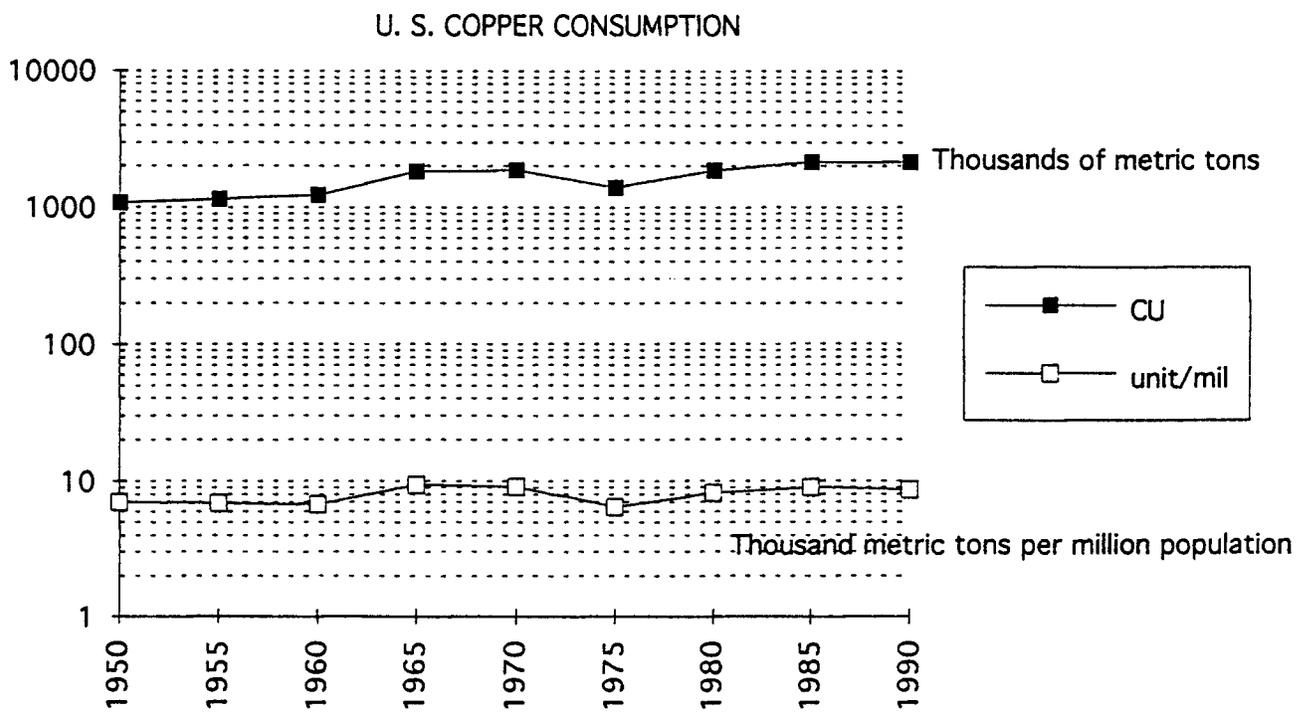
GLOBAL

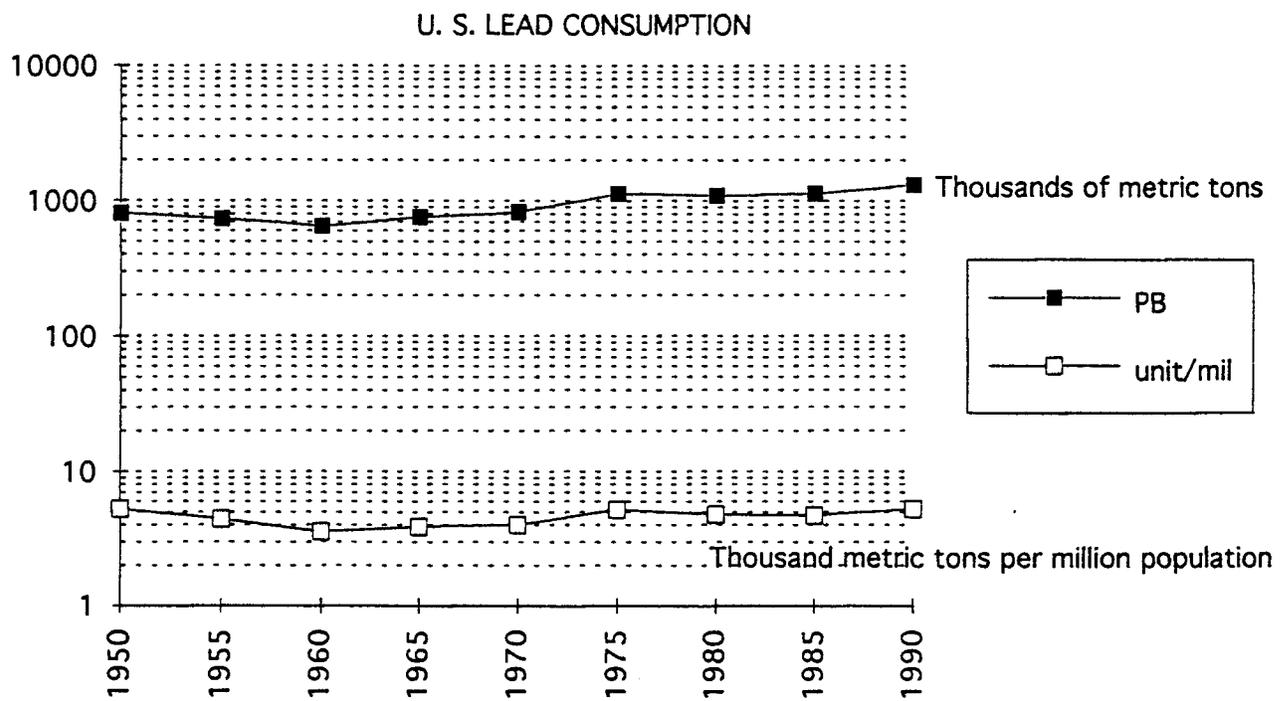
year	thousand metric tons consumption												prod	
	AL	unt/mil	PB	unt/mil	CU	unt/mil	ZN	unt/mil	SN	unt/mil	NI	unt/mil		HG
1900	6	0.004	871	0.536	499	0.307	479	0.295	80	0.0492	7.6	0.0047		0
1925	181	0.087	1510	0.7246	1395	0.669	1135	0.545	149	0.0715	37	0.0178		0
1950	1583	0.622	1878	0.7382	2412	0.948	2075	0.816	170	0.0668	158	0.0621	4937	1.9406
1955	3095	1.114	2262	0.814	3054	1.099	2693	0.969	175	0.063	207	0.0745	6402	2.3037
1960	5157	1.697	2633	0.8667	4756	1.566	3072	1.011	201	0.0662	293	0.0964	9425	3.1024
1965	8351	2.497	3179	0.9504	6127	1.832	4054	1.212	223	0.0667	429	0.1283	9513	2.8439
1970	12503	3.375	3806	1.0273	7291	1.968	5042	1.361	226	0.061	576	0.1555	10181	2.7479
1975	14577	3.568	4719	1.1549	7452	1.824	5028	1.231	216	0.0529	577	0.1412	9092	2.2252
1980	19715	4.423	5329	1.1956	9365	2.101	6291	1.411	221	0.0496	706	0.1584	6818	1.5297
1985	21284	4.381	5429	1.1175	9860	2.03	6500	1.338	214	0.0441	771	0.1587	6307	1.2983
1990	25255	4.769	5609	1.0591	10821	2.043	6979	1.318	233	0.044	850	0.1605	5156	0.9736
2000														

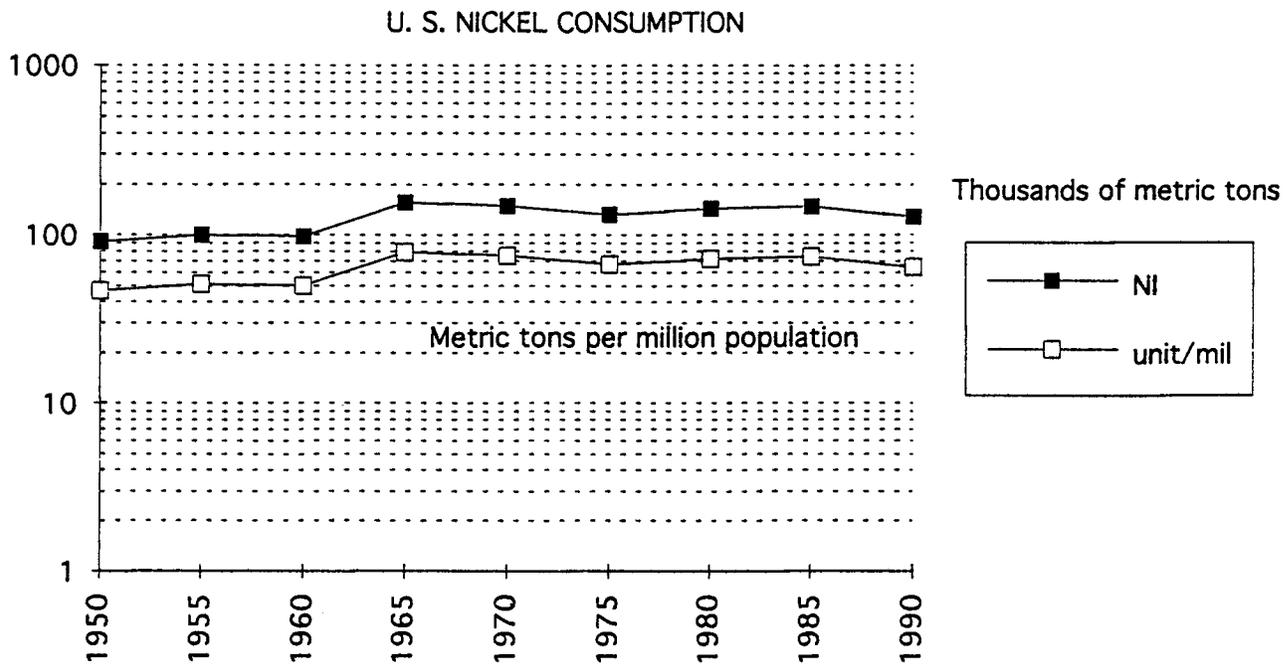
UNITED STATES

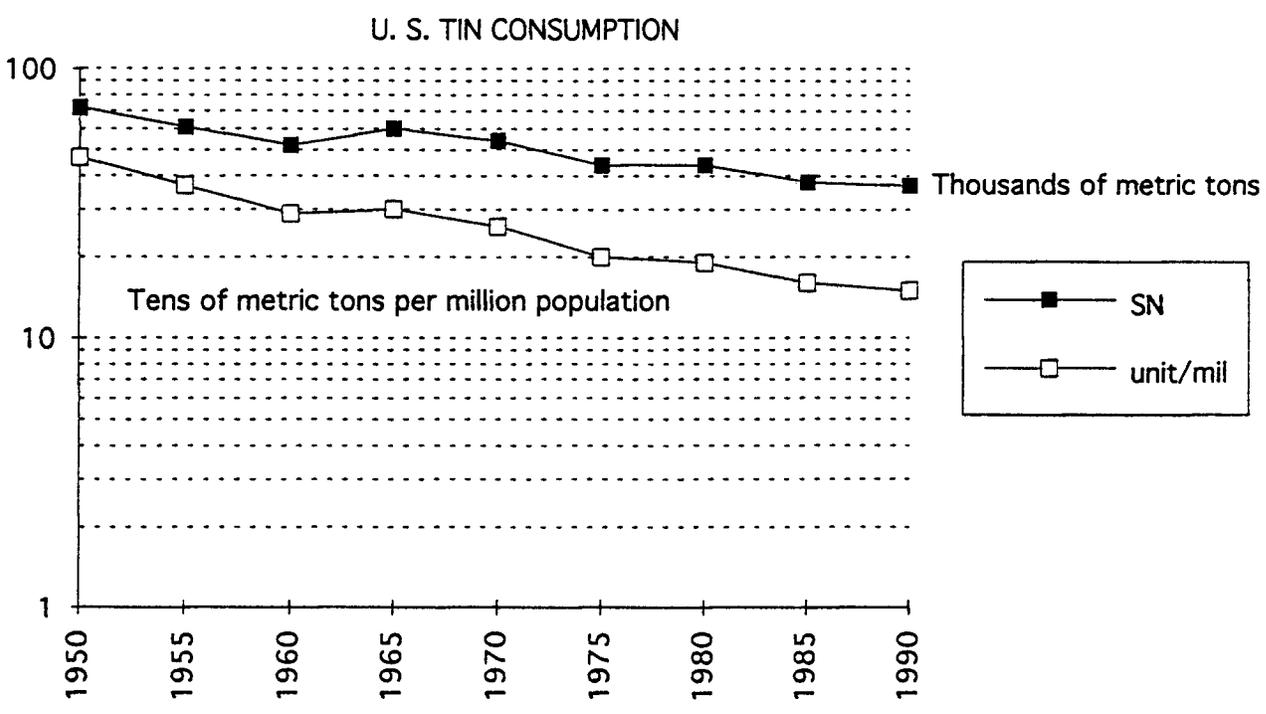
year	thousand metric tons consumption												
	AL	unt/mil	PB	unt/mil	CU	unt/mil	ZN	unt/mil	SN	unt/mil	NI	unt/mil	POP.,mm
1900													
1925													
1950	823	5.414	803	5.2829	1073	7.059	915	6.02	72	0.4737	91	0.5987	152
1955	1582	9.53	735	4.4277	1144	6.892	1013	6.102	61	0.3675	100	0.6024	166
1960	1943	10.73	647	3.5746	1225	6.768	790	4.365	52	0.2873	98	0.5414	181
1965	3626	18.69	754	3.8866	1819	9.376	1221	6.294	60	0.3093	156	0.8041	194
1970	4425	21.59	826	4.0293	1860	9.073	1074	5.239	54	0.2634	149	0.7268	205
1975	4386	20.31	1123	5.1991	1397	6.468	839	3.884	44	0.2037	133	0.6157	216
1980	6101	26.76	1094	4.7982	1868	8.193	879	3.855	44	0.193	143	0.6272	228
1985	6044	25.39	1124	4.7227	2144	9.008	961	4.038	38	0.1597	148	0.6218	238
1990	6718	26.87	1312	5.248	2152	8.608	997	3.988	37	0.148	128	0.512	250



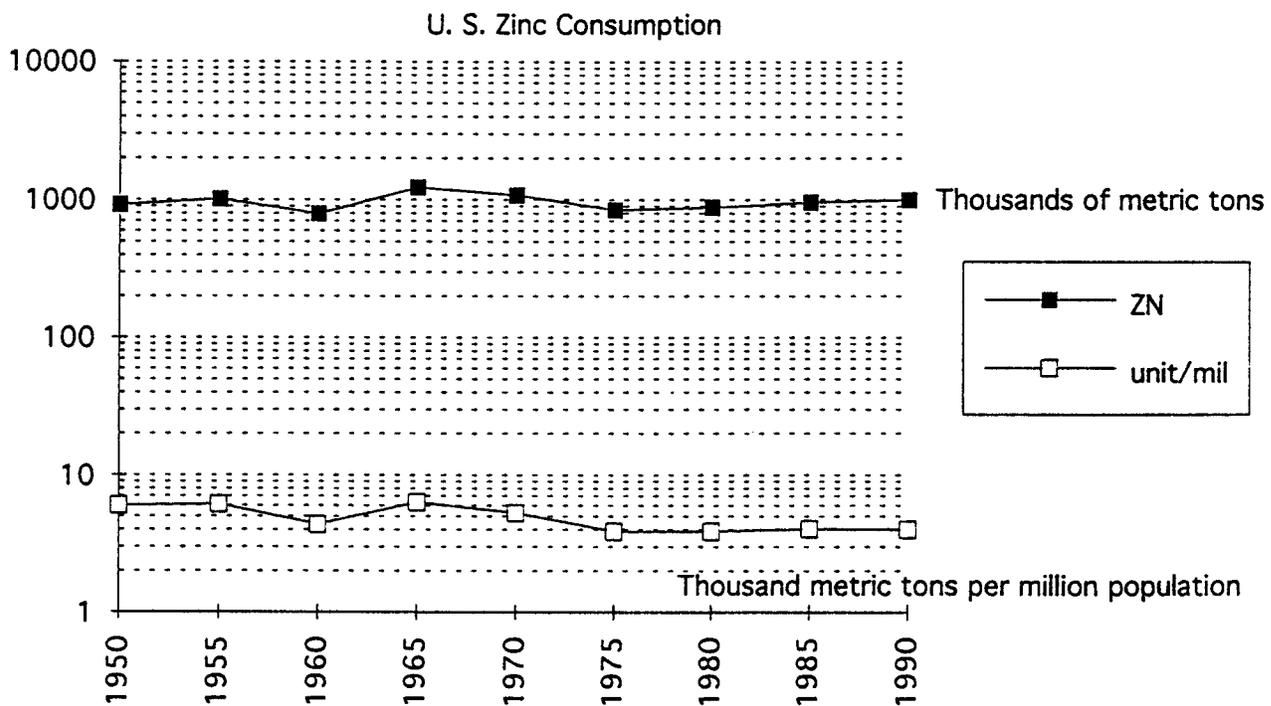






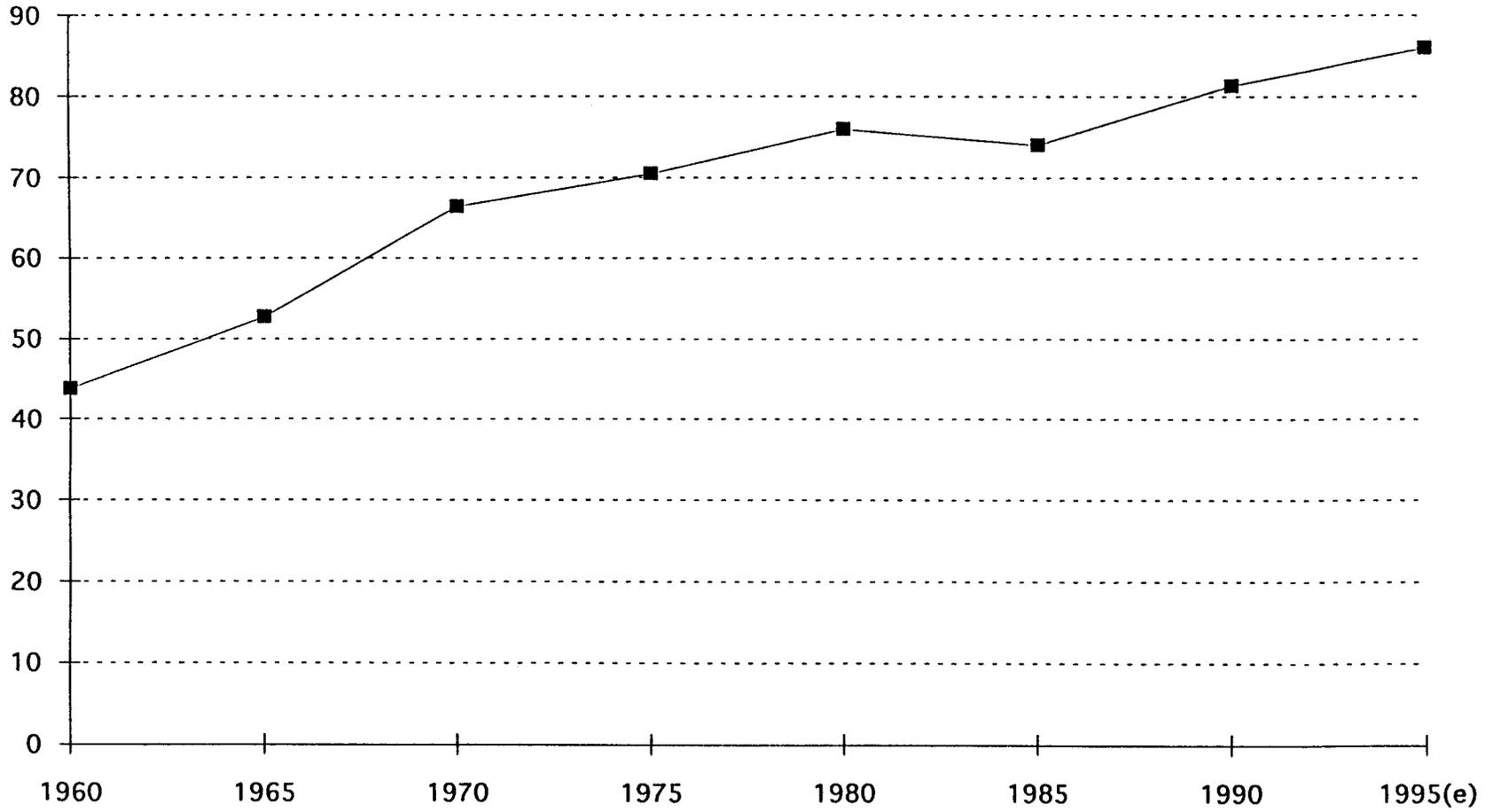


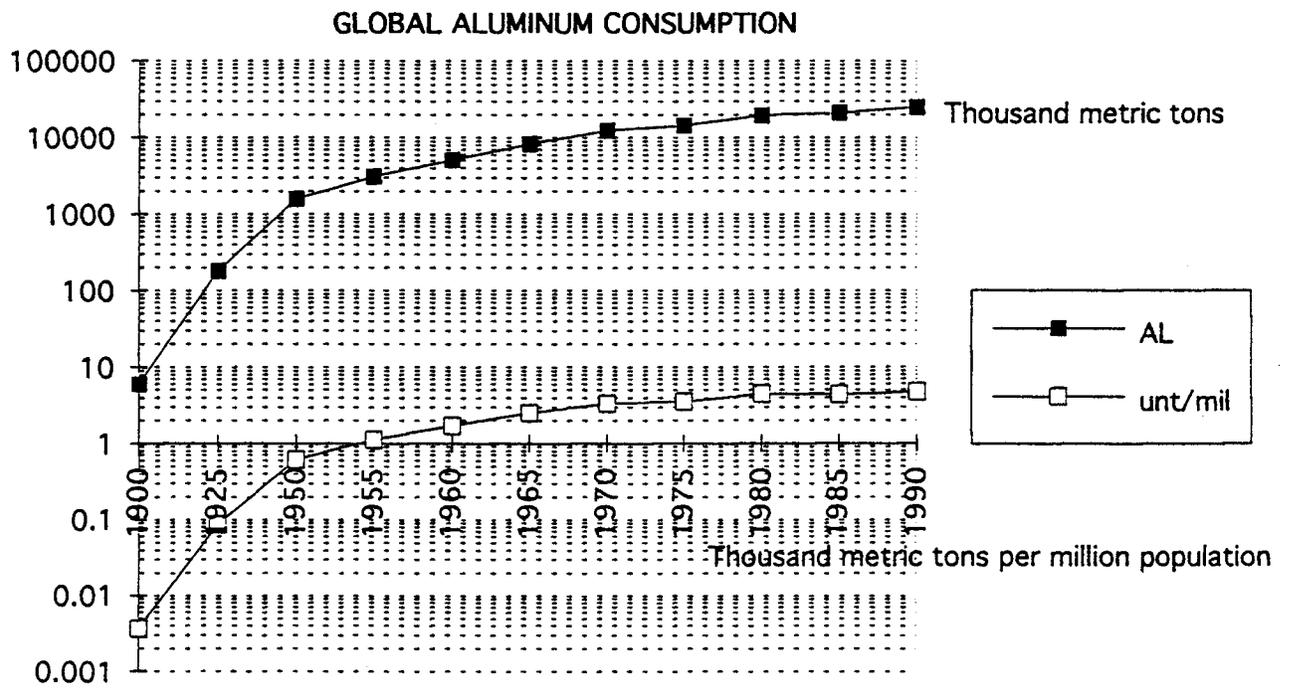
U.S. ZINC CONSUMPTION CHART



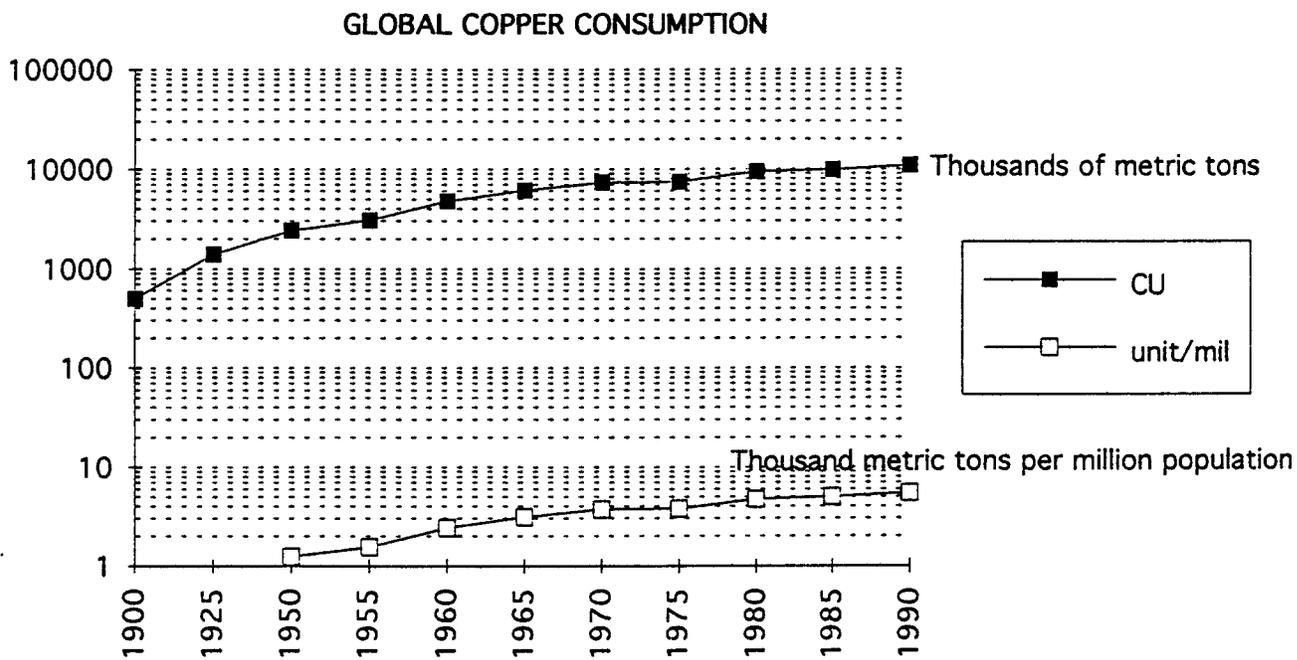
US ENERGY CONSUMPTN CHART

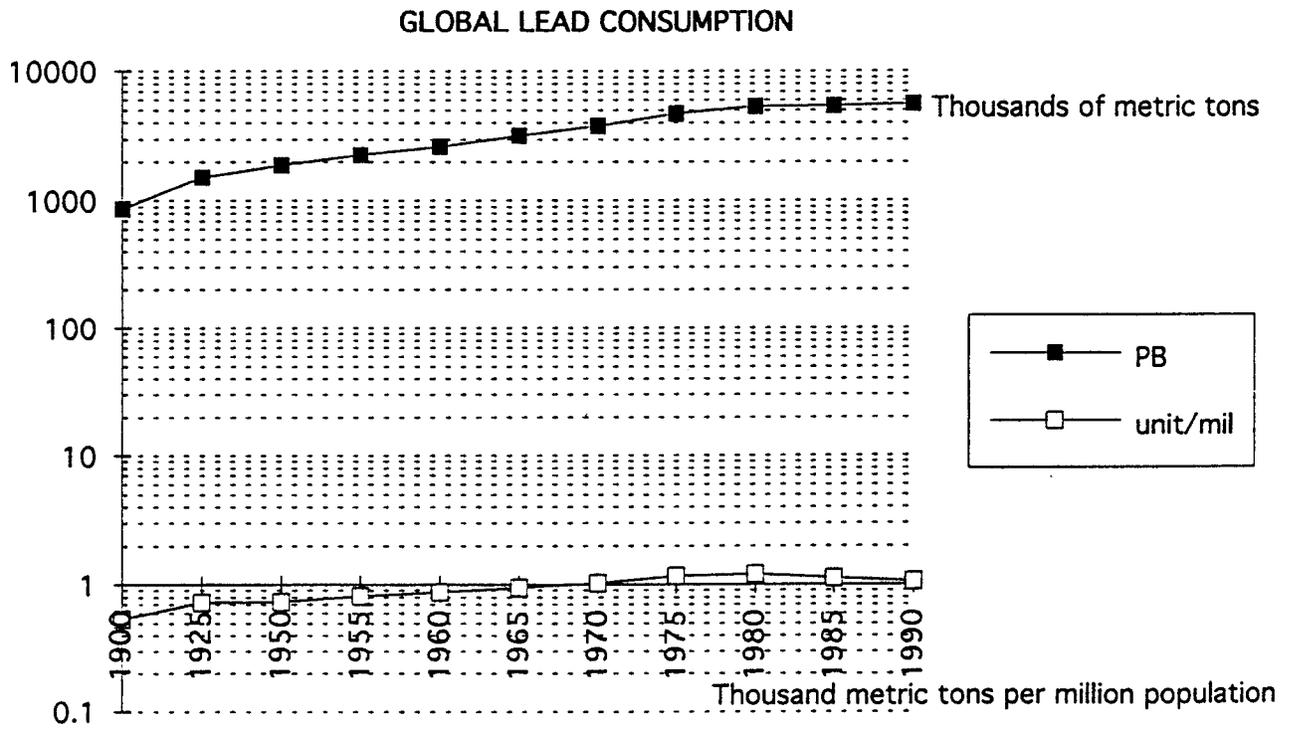
United States Energy Consumption in Quads

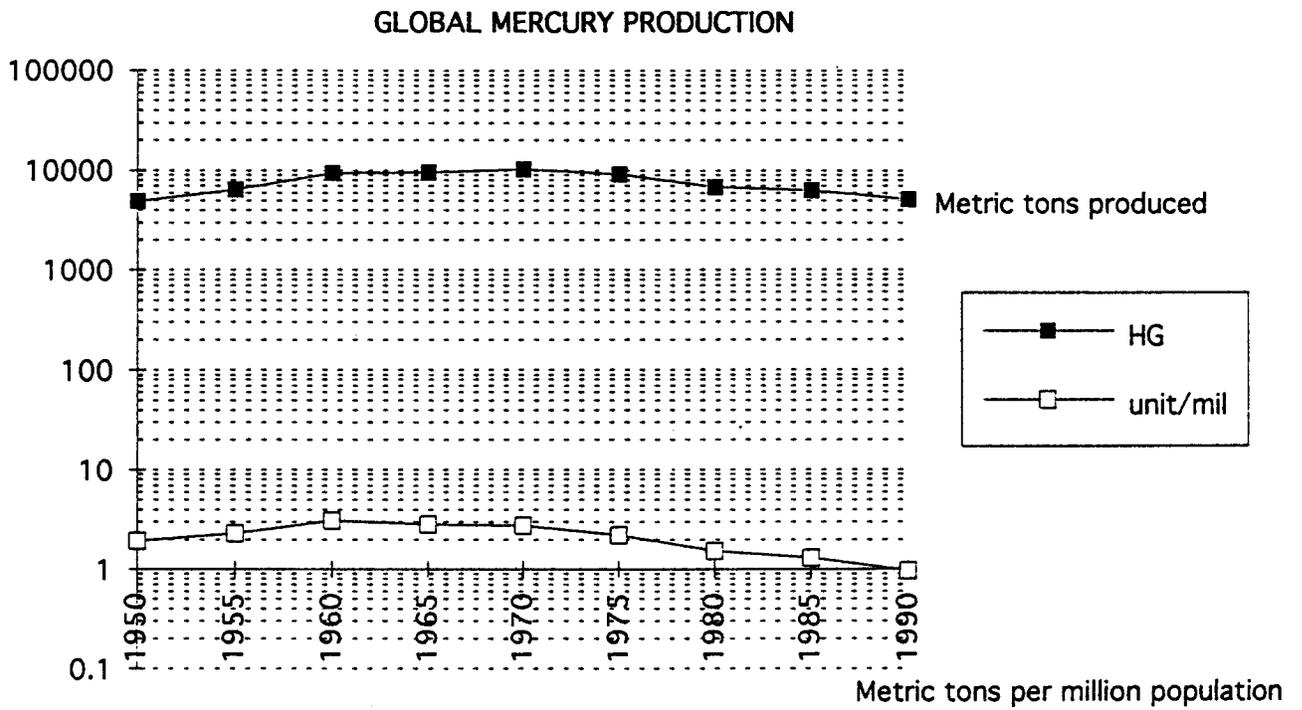


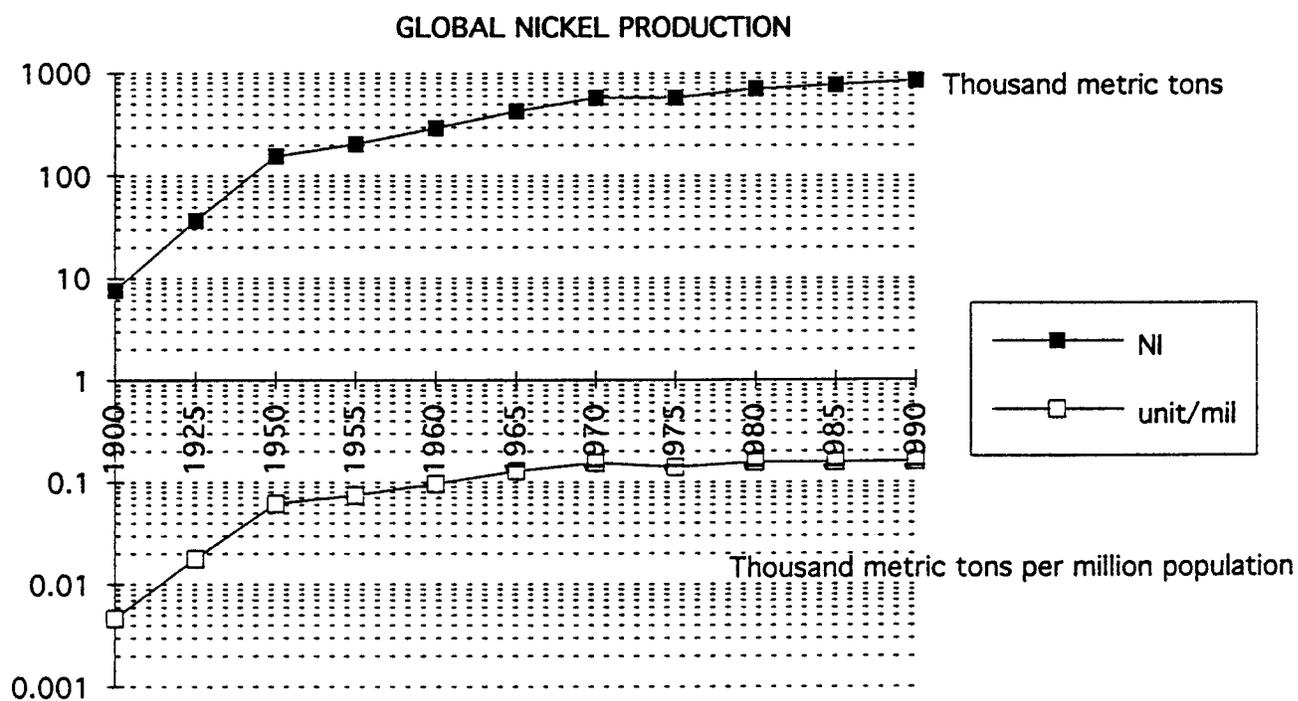


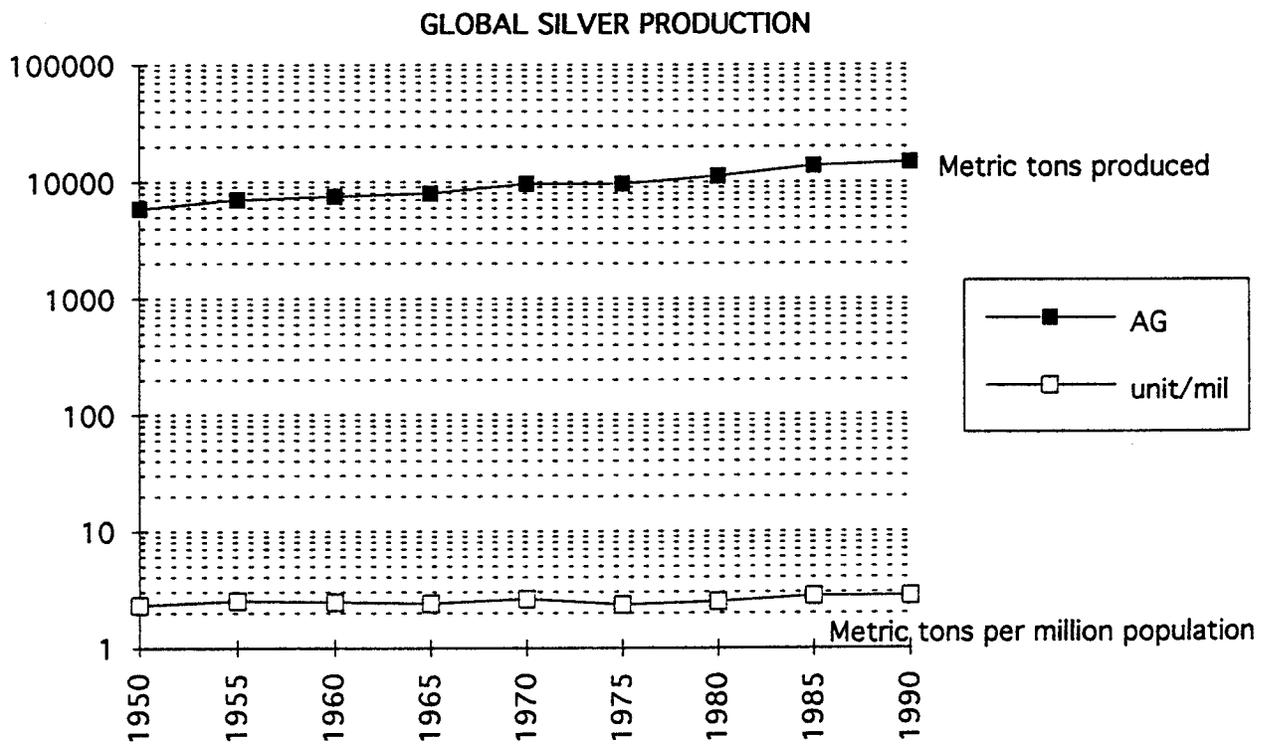
GLOBAL COPPER CONSUMPTION CHART

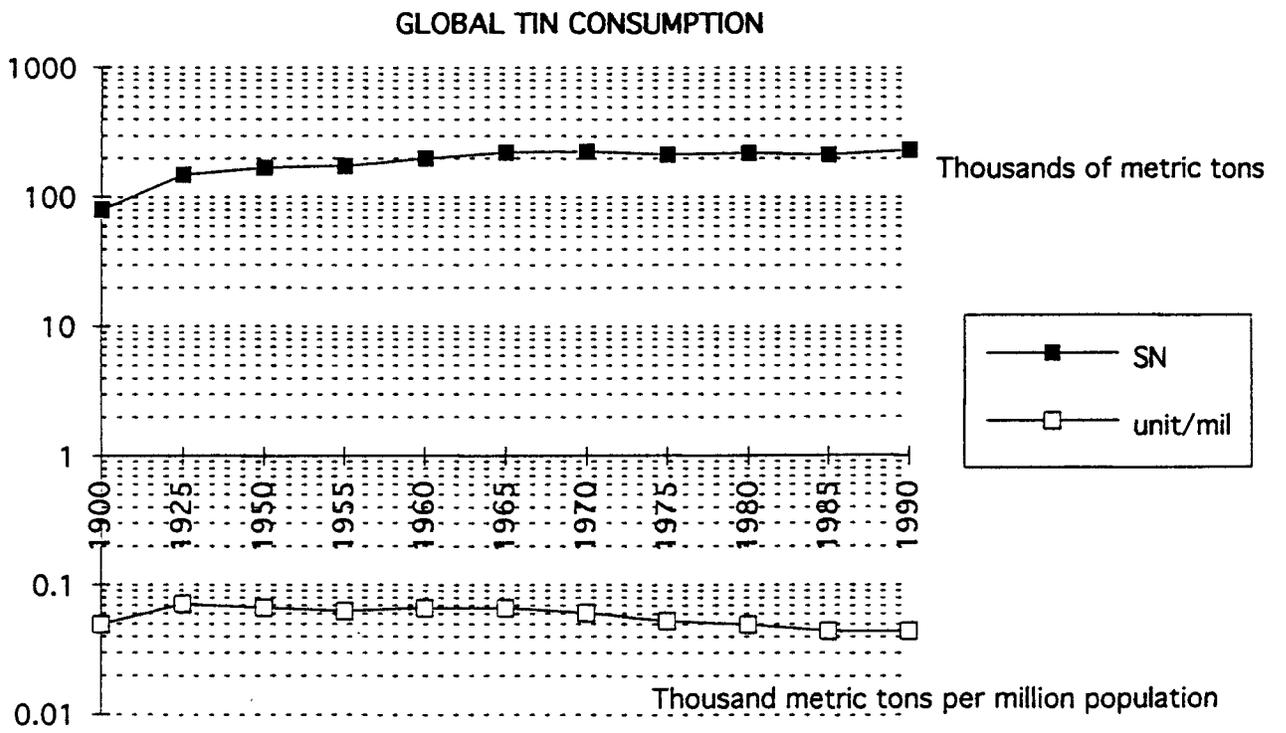


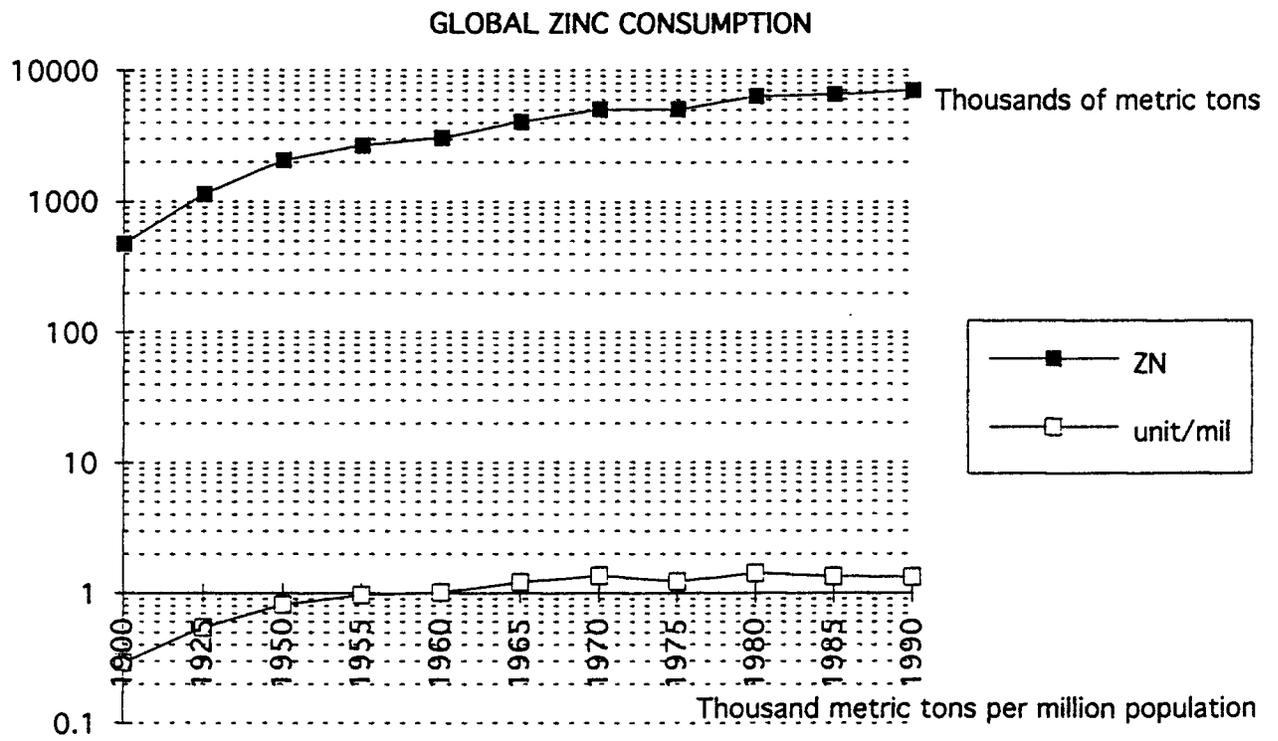




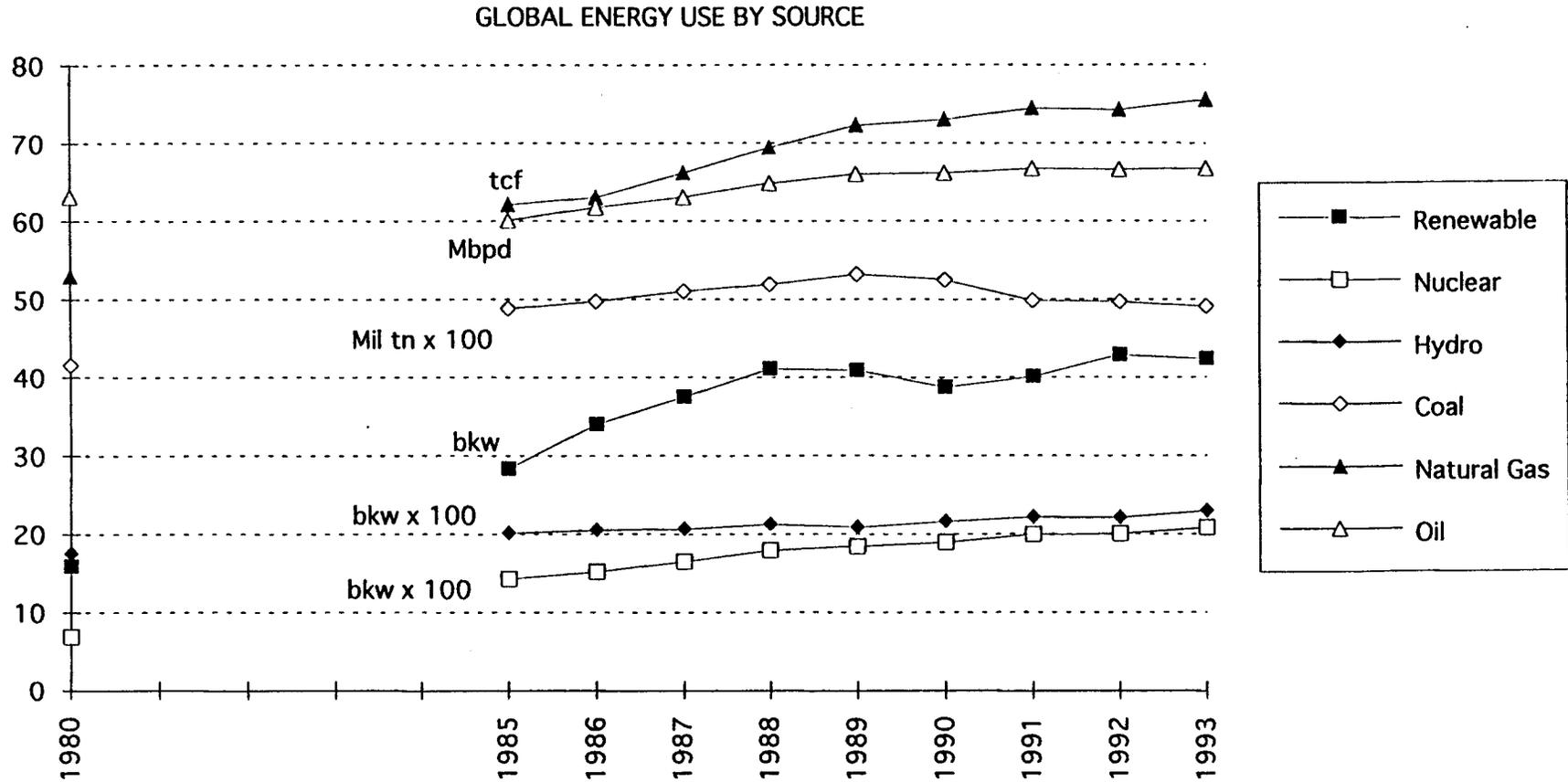






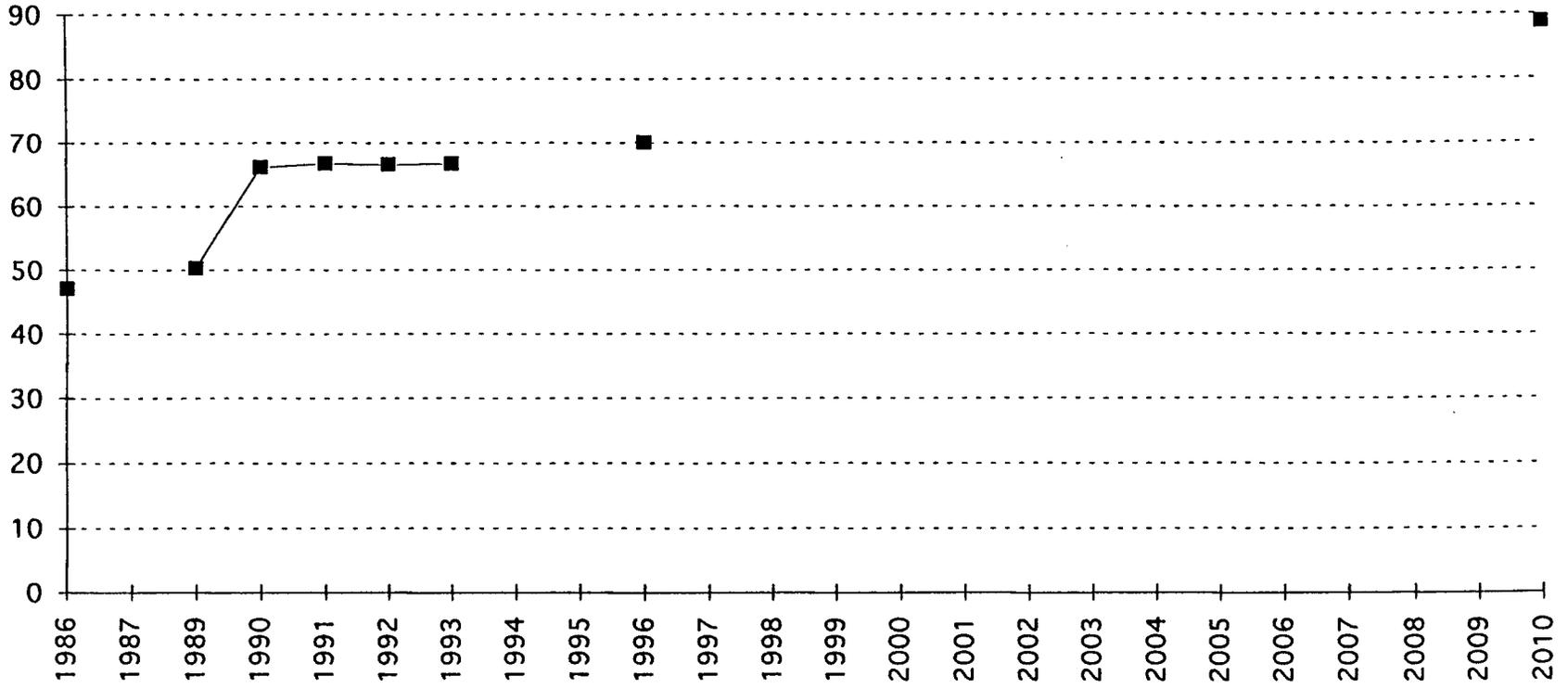


Global energy use by source

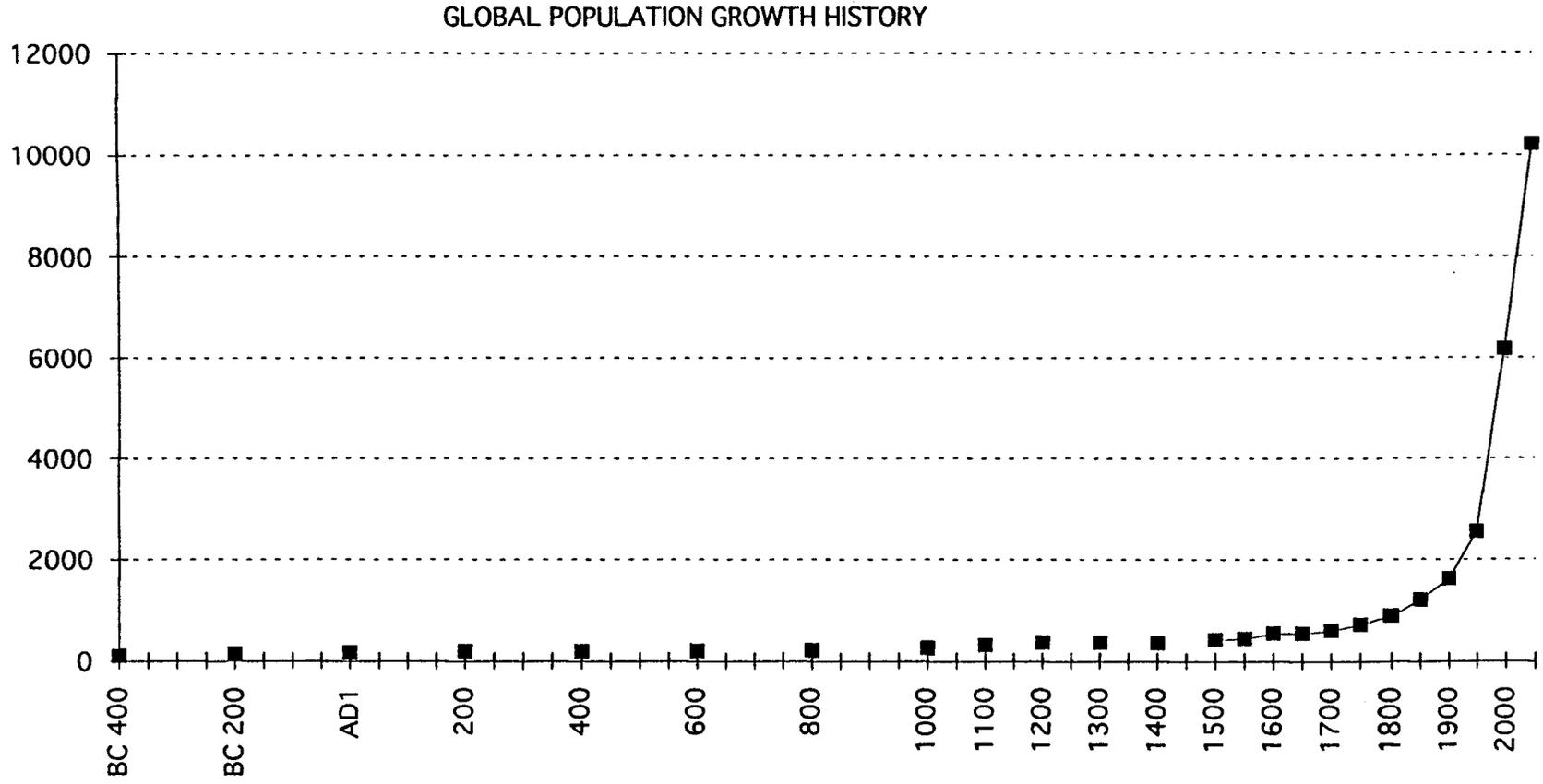


Global Oil Consumption

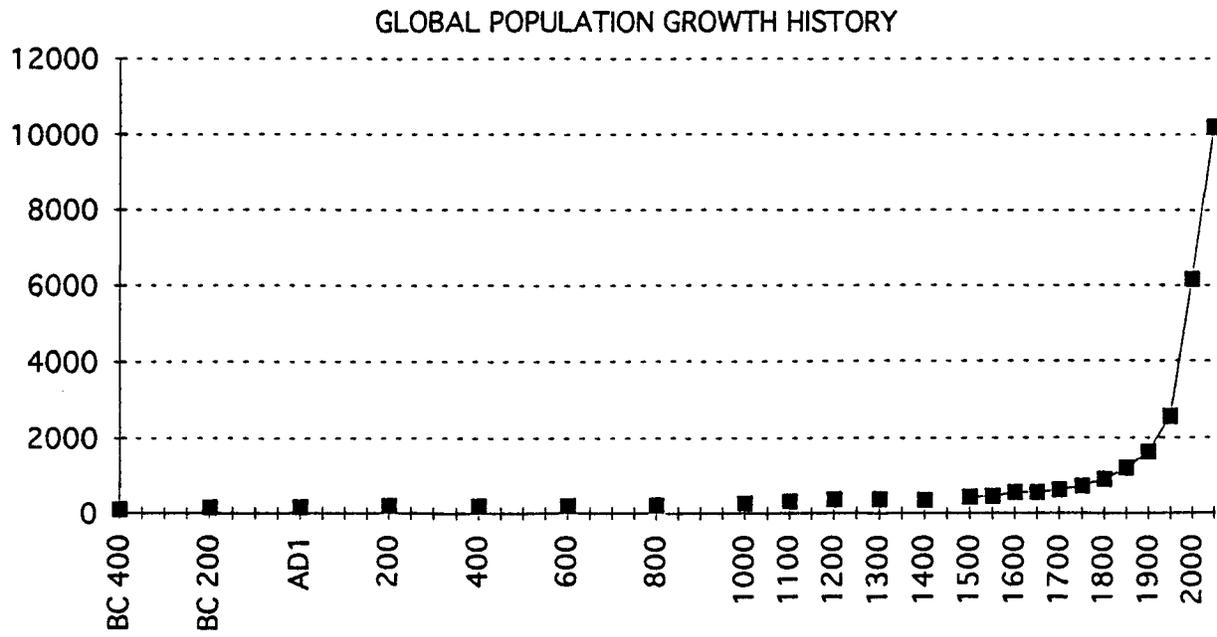
Global Oil Consumption Projection
Mil.BPD



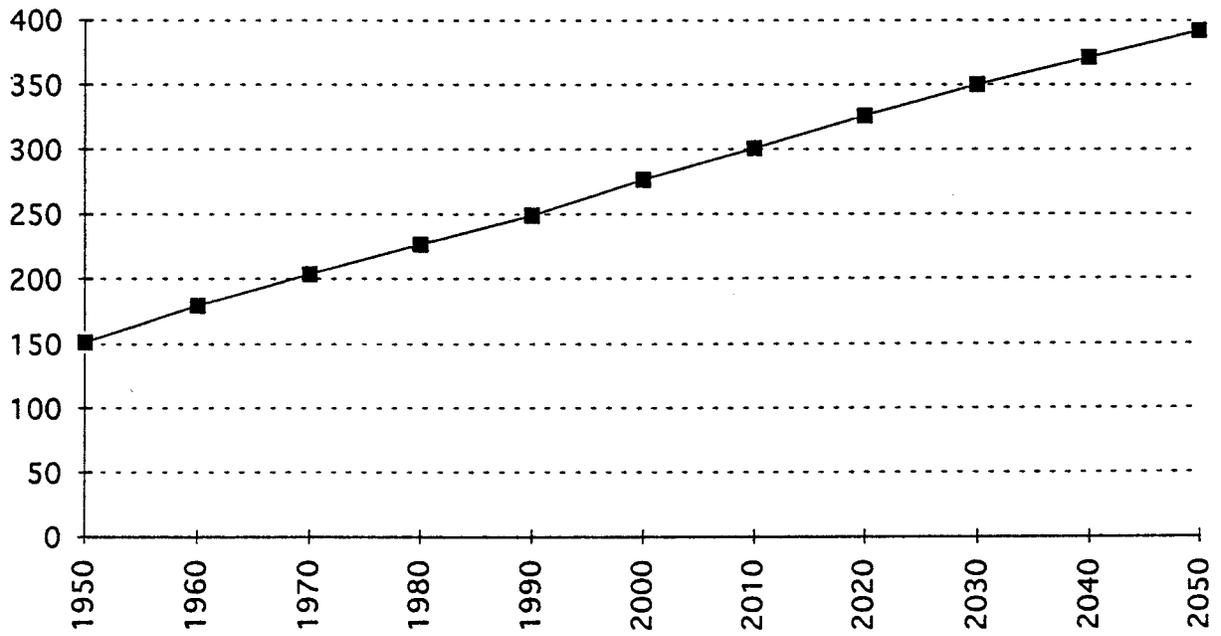
GLOBAL POP. TREND, HIST. CHART



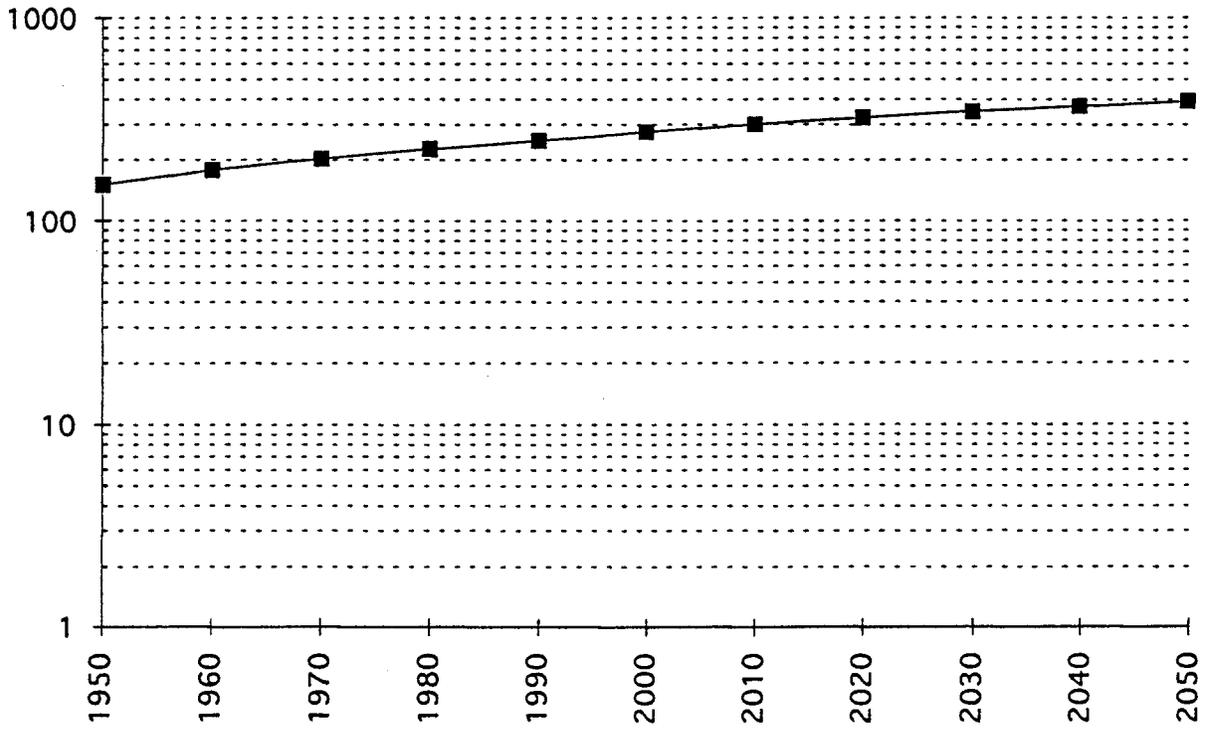
GLOBAL POP. TREND, HIST. CHART



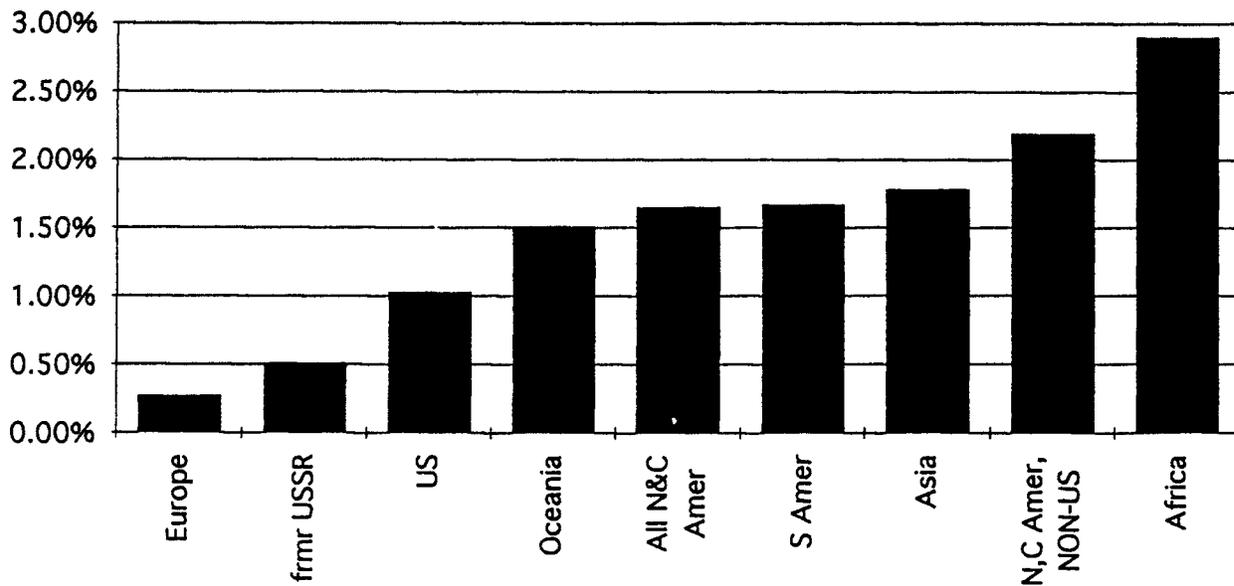
U. S. population, millions

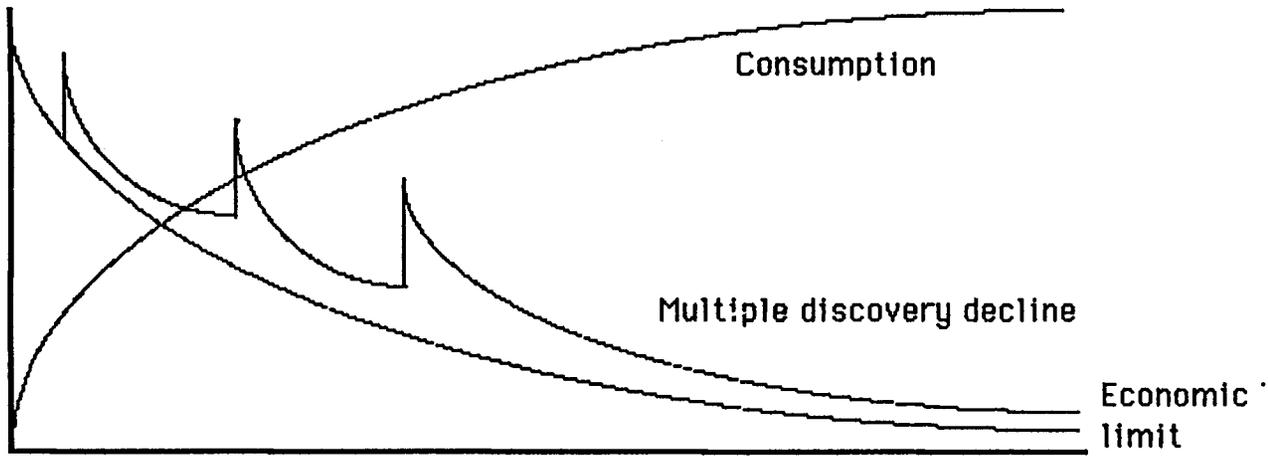
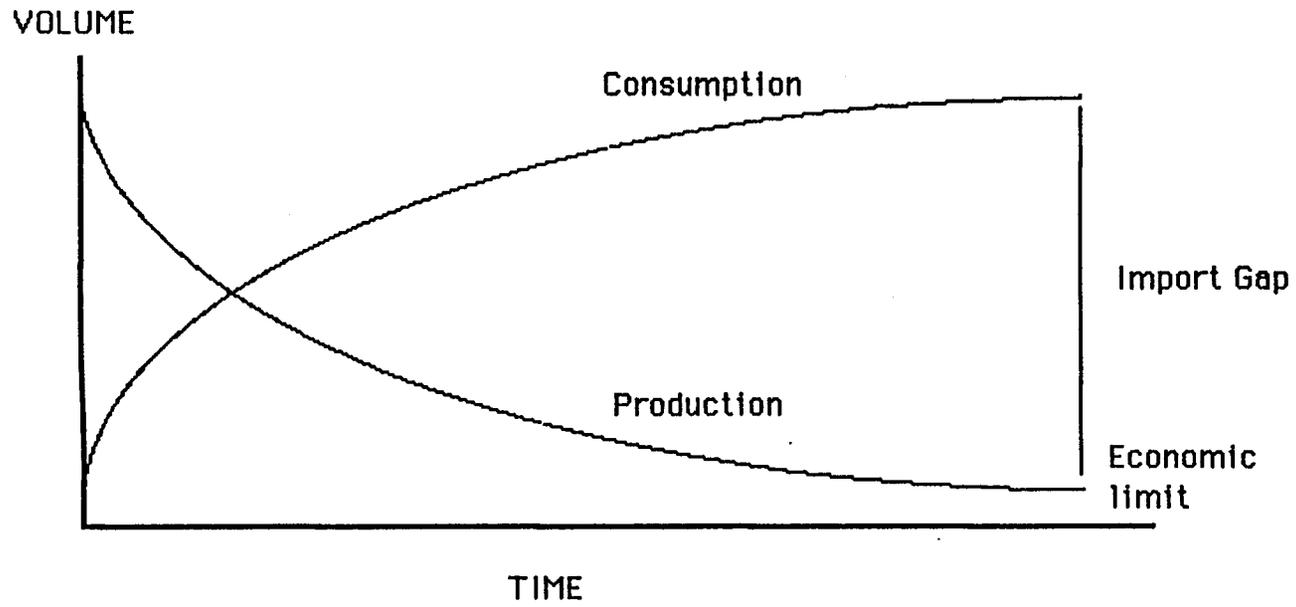


U. S. POPULATION, MILLIONS



1990-95 regional population growth rate



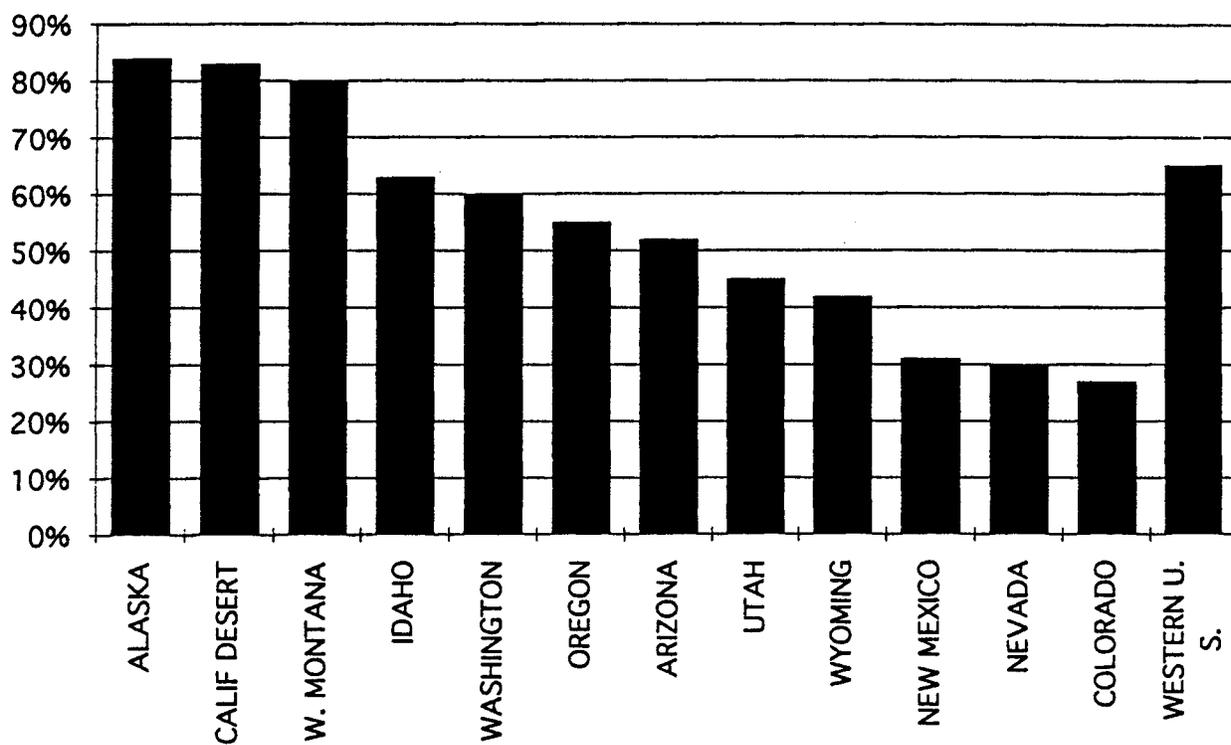


RSTRCTD MINERAL ACCESS TABLE

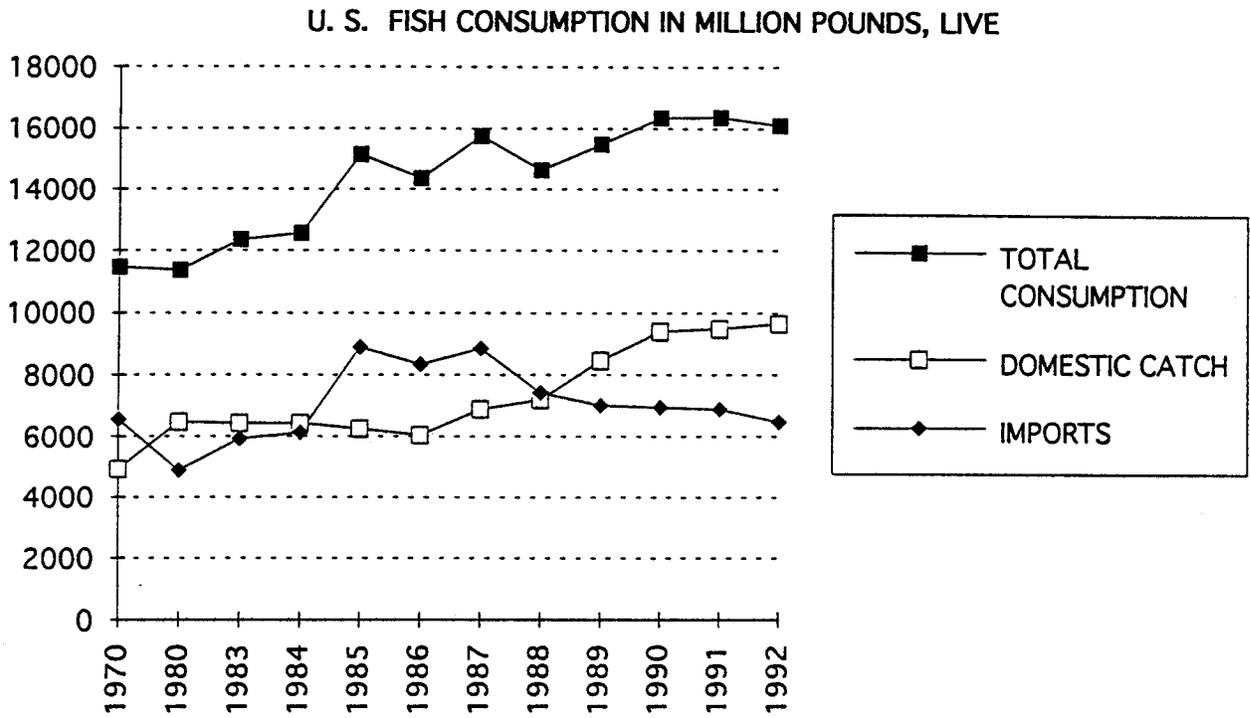
Withdrawals of Locatable Federal Minerals

STATE	(IN THOUSANDS OF ACRES)			TOTAL FED LANDS	% RSTRCTD	SEVERELY RESTRICTED			
	AVAILABLE	LEGAL	WITHDRAWN: MNGMNT			LEGAL	%	MNGMNT	%
ALASKA	30931	216516	N/A	257757	84%	208783	81%	N/A	N/A
ARIZONA	16482	9924	5518	31924	52%	9900	31%	2368	7%
CALIF DESERT	3223	6502	9078	18803	83%	5806	31%	7126	38%
COLORADO	18020	4476	2243	24739	27%	4476	18%	2243	9%
IDAHO	13023	8675	13069	34767	63%	7160	21%	5165	15%
W. MONTANA	4447	7379	9540	21886	80%	7302	33%	5413	25%
NEVADA	42483	9454	8240	60668	30%	9849	16%	5792	10%
NEW MEXICO	22153	6089	4069	32688	31%	6066	19%	1919	6%
OREGON	2914	3484	39	6437	55%	3484	54%	39	1%
UTAH	19750	7582	8477	35810	45%	7382	21%	3534	10%
WASHINGTON	5040	3829	3900	12769	60%	3732	29%	3228	25%
WYOMING	22583	9315	1754	38621	42%	9185	24%	1337	3%
TOTALS	201048.8	293225	65927	576869	65%	283125	49%	38164	12%

PERCENT PUBLIC LAND WITH RESTRICTED MINERAL ACCESS

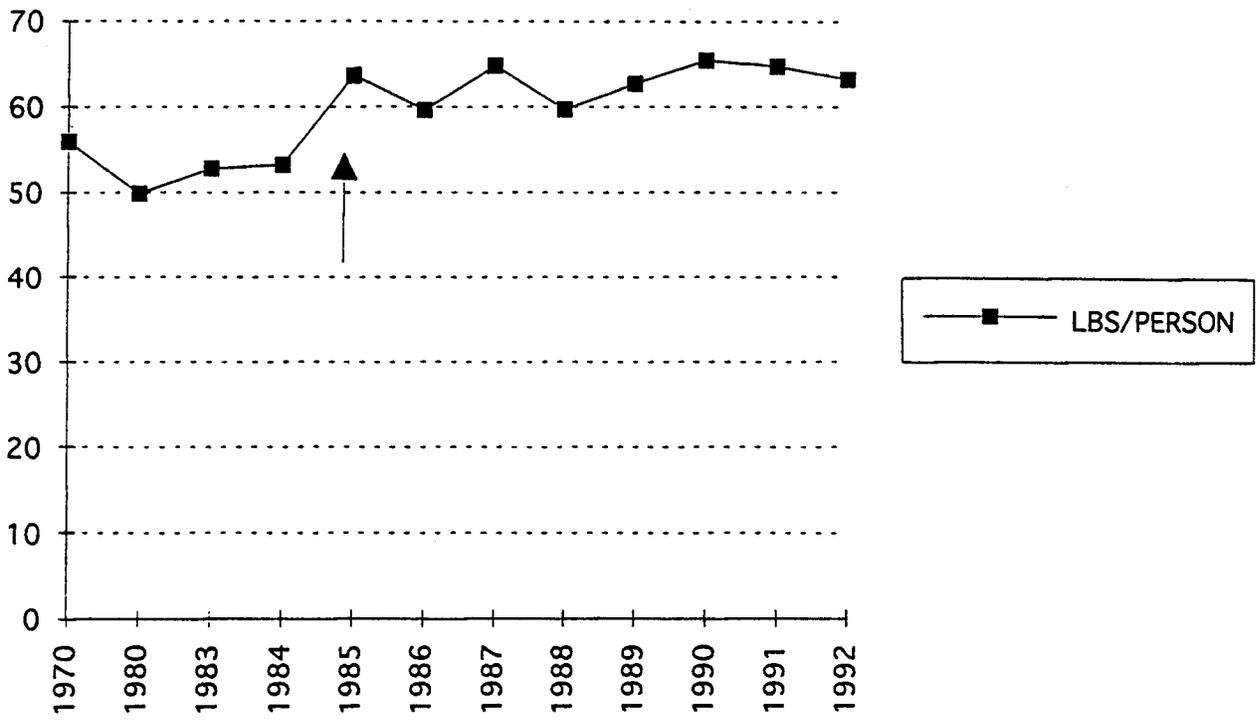


FISH CNSMPTN, U.S. GROSS HART

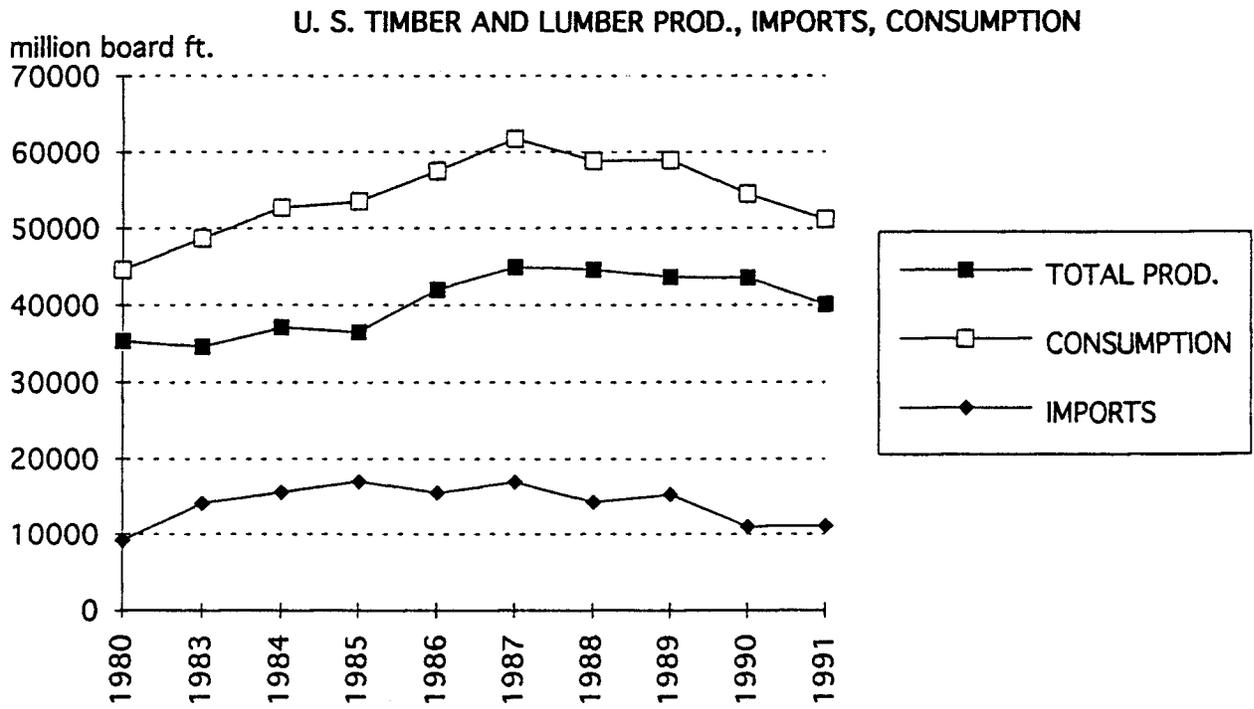


US NET FISH CONSUMPTION CHART

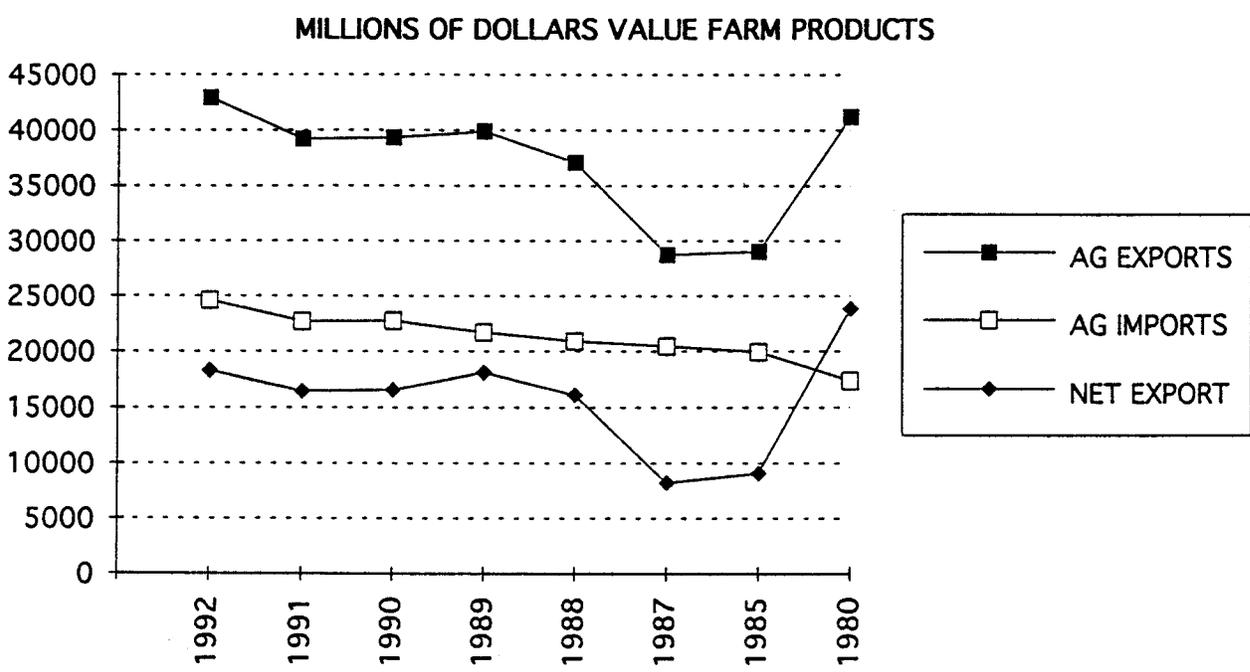
U. S. FISH CONSUMPTION PER PERSON



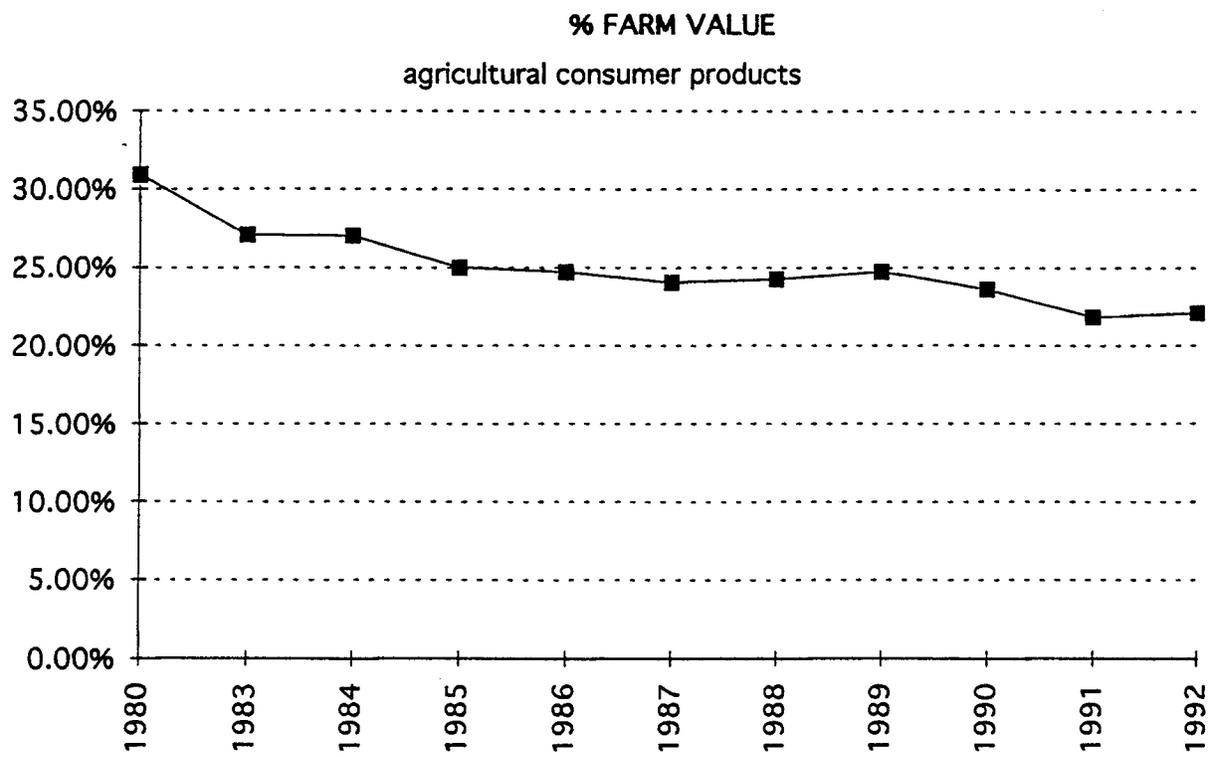
TIMBER CHART



EXPORT/IMPORT AG CHART

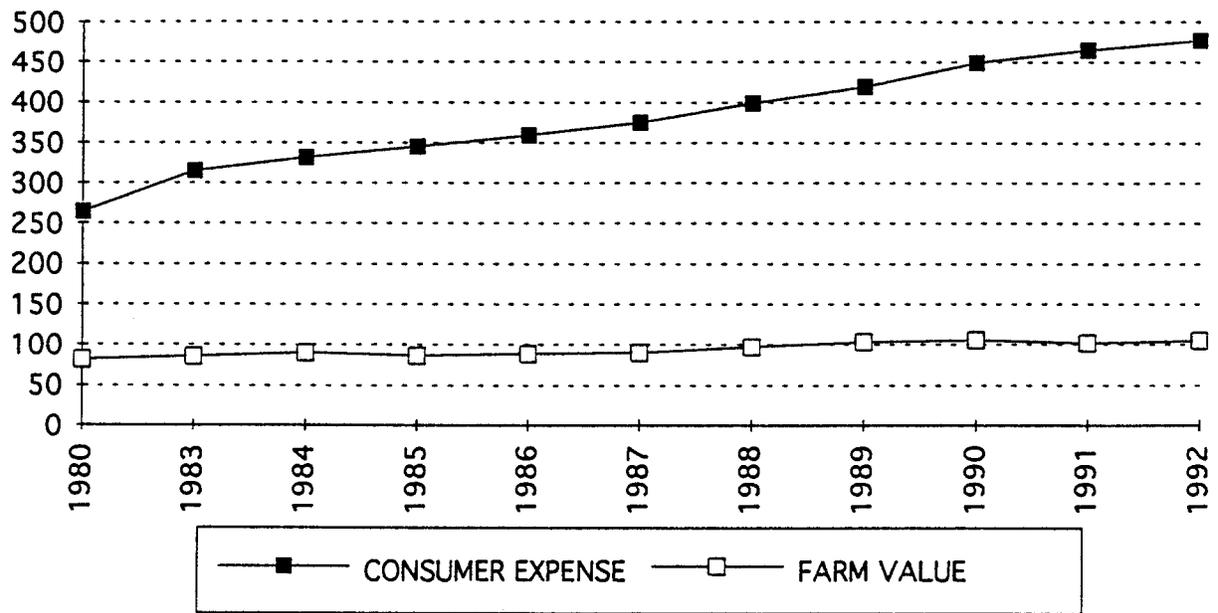


% farm value chart

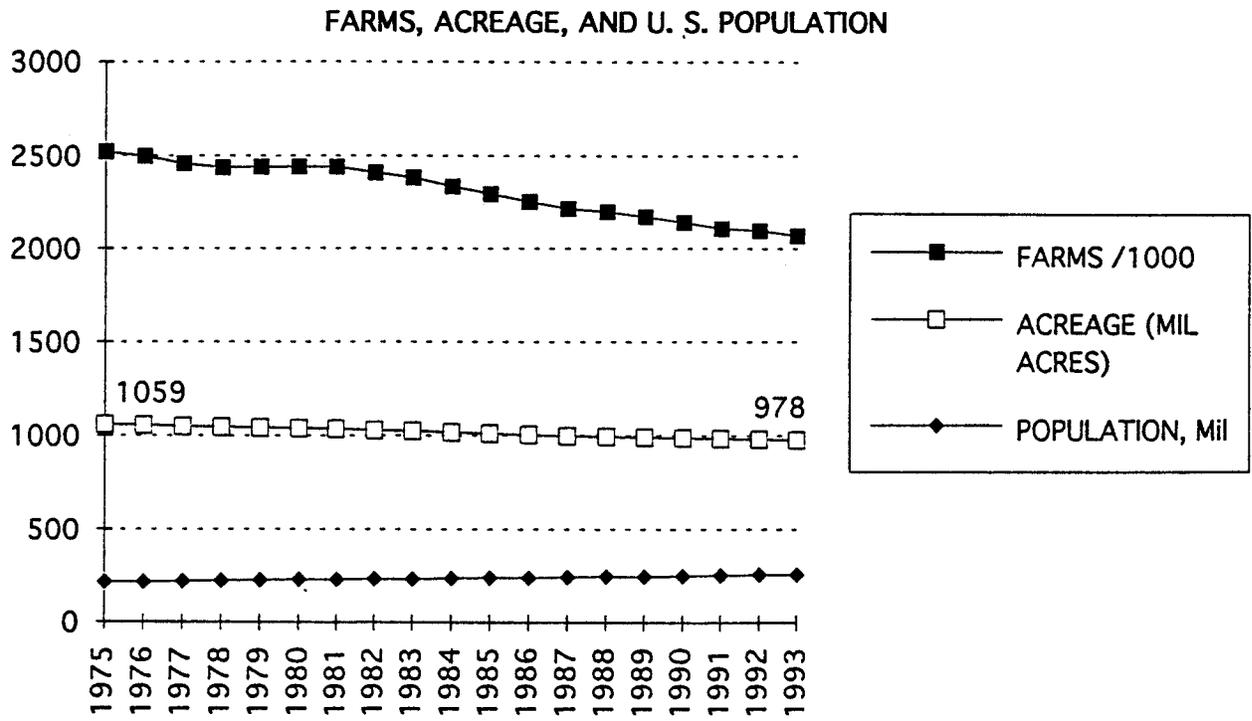


Billions of dollars

U. S. Consumer Food Cost vs. Farm Value



FARMS, ACRES, US POP. CHART



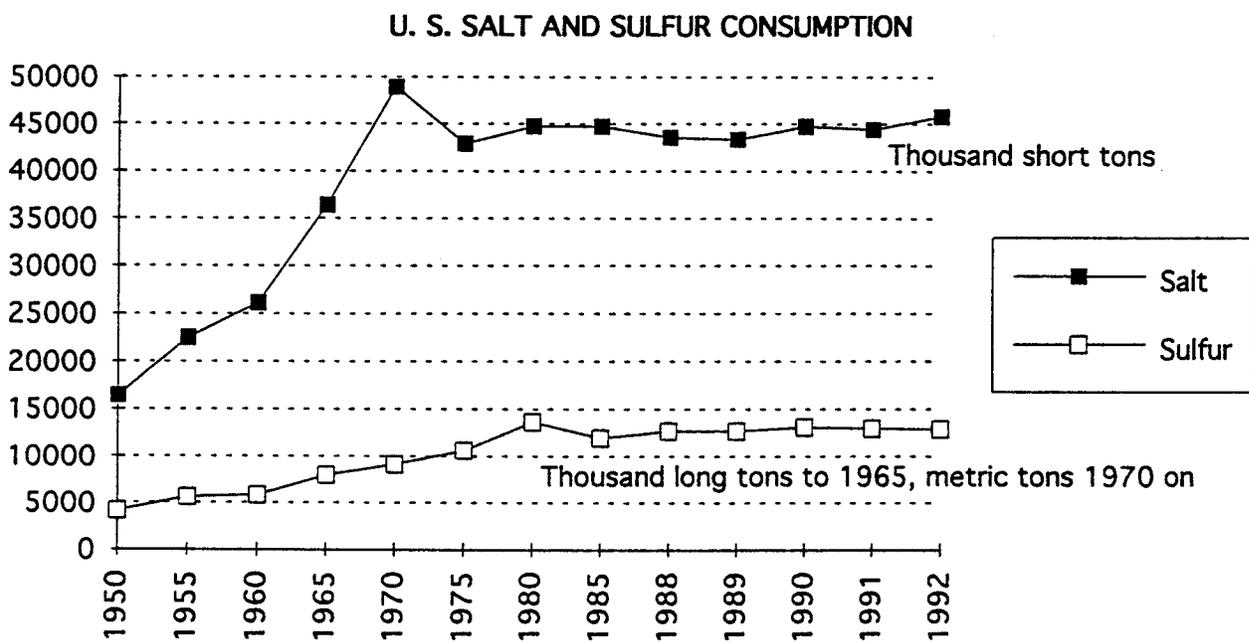
U.S. non-metallics wrksht

U.S. non-metallic minerals consumption (U.S. Bureau of Mines Data)
thousand short tons

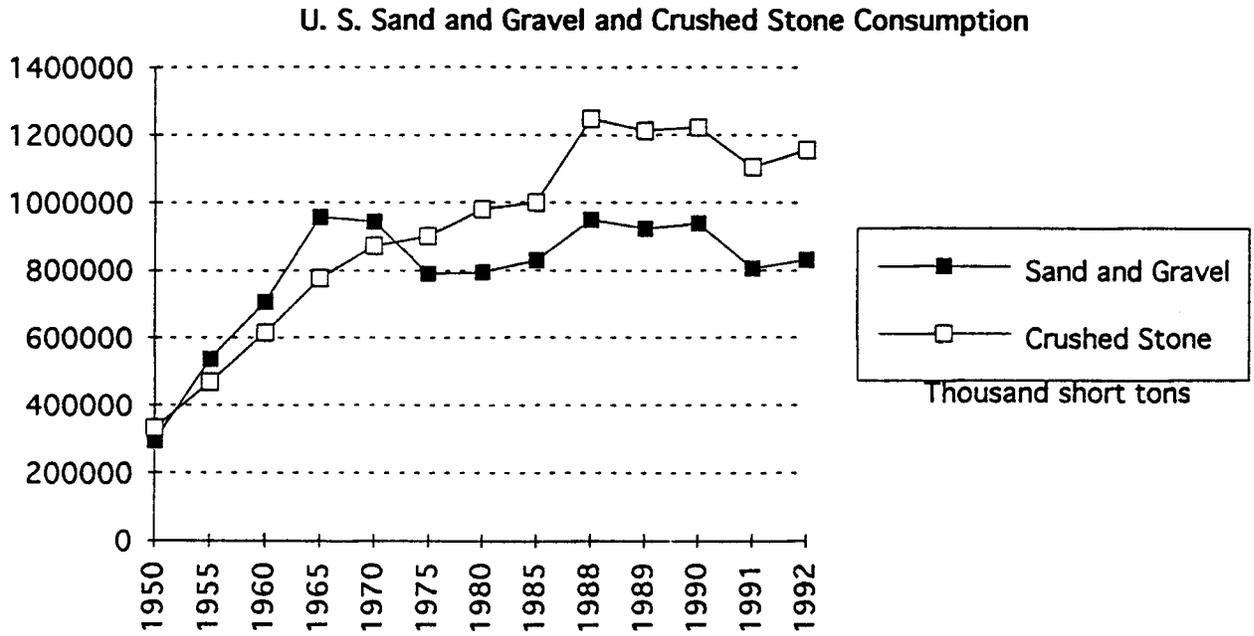
Salt		Sulfur	
1950	16447	1950	4158 thou. long tons
1955	22483	1955	5612
1960	26114	1960	5859
1965	36409	1965	7958
1970	48917	1970	9132 thou. metric tons
1975	42913	1975	10603
1980	44784	1980	13635
1985	44787	1985	11968
1988	43530	1988	12712
1989	43373	1989	12685
1990	44775	1990	13056
1991	44437	1991	12932
1992	45800	1992	12900

thousand short tons Sand and Gravel		thousand short tons Crushed Stone	
1950	295040	1950	332117
1955	536243	1955	468141
1960	707254	1960	614771
1965	957422	1965	777669
1970	943941	1970	872947
1975	789436	1975	901490
1980	794610	1980	980305
1985	829530	1985	1000800
1988	950249	1988	1250000
1989	923780	1989	1213000
1990	939195	1990	1222000
1991	804680	1991	1107000
1992	830690	1992	1158000

US Salt and Sulfur Chart



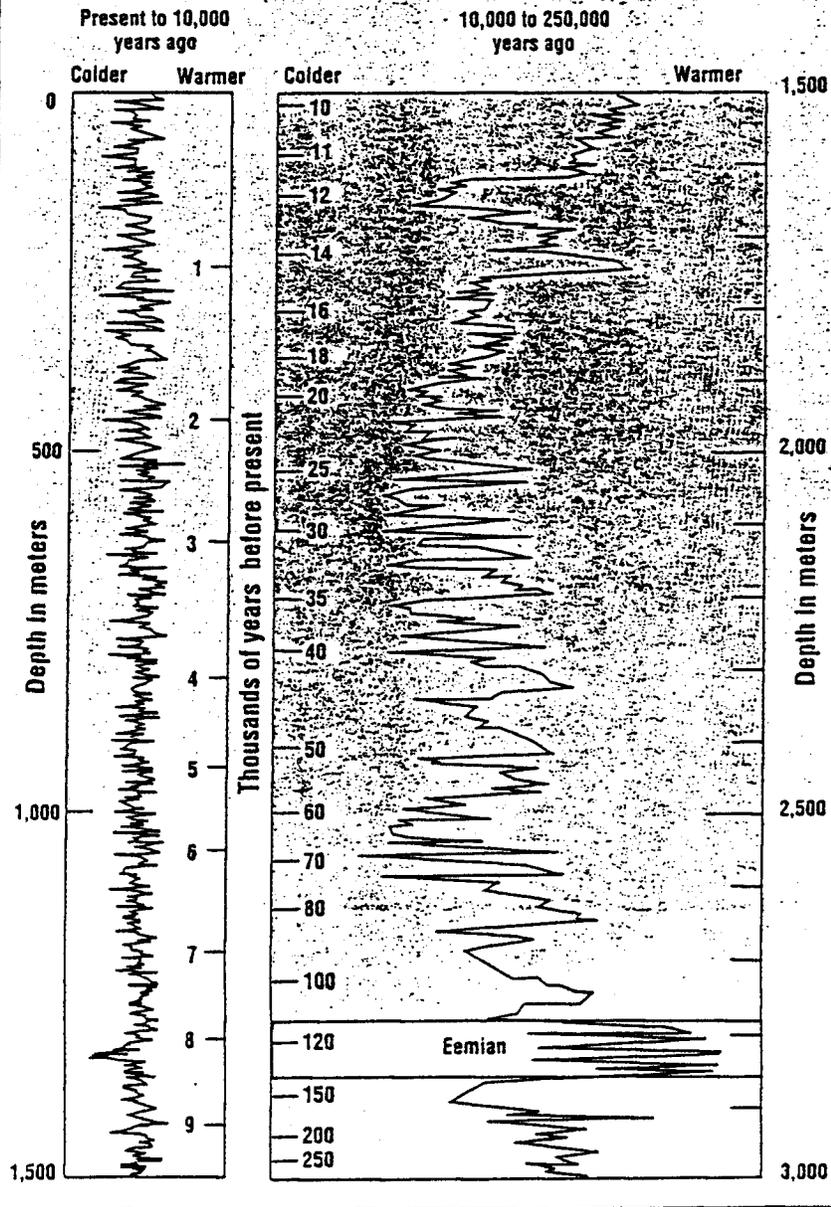
US Sand,Stone chart



Greenland Ice Core Temperature Chart (EARTH)

The Climatic Seesaw

The Holocene, the warm interglacial we've enjoyed for the last 8,000 to 10,000 years, was preceded by 250,000 years of much more abrupt and violent climatic swings. These graphs show how temperatures have risen and fallen during these two periods. The blue portions of the larger graph indicate periods that were colder than the present. The green portions of the graph indicate periods that were warmer than the present. During the Eemian interglacial, generally warm conditions gave way suddenly to cool on several occasions.



EARTH Lee Van de Visse Source: Nature

Major U. S. Environmental Laws

Clean Air Act (1955, 1967, 1970, 1977, 1990) P.L. 90-148 42 U.S.C.

Clean Water Act (1948, 1972 [PL 92-500], 1987, also PL 101-380 Oil Pollution Act of 1990, and PL 101-596 Great Lakes Critical Programs of 1990) P.L. 92-500 33 U.S.C.

Resource Conservation and Recovery Act (1970, 1976, 1984) P.L. 94-580 42 U.S.C. (**RCRA**)

Comprehensive Environmental Response, Compensation, and Liability Act of 1980. (1980, 1986 [PL 99-499], 1992) P. L. 96-510 42 U.S.C. (**CERCLA**)

Safe Drinking Water Act (1974, 1986, 1988) P. L. 93-523 42 U.S.C.

Toxic Substances Control Act (1976) P.L. 94-469 15 U.S.C.

Federal Insecticide, Fungicide, and Rodenticide Act (1972, 1988) P.L. 92-516 7 U.S.C.

Emergency Planning and Community Right to Know Act (1986) P.L. 99-499 42 U.S.C.

National Environmental Policy Act (1970, 1975) P.L. 91-190 42 U.S.C. (**NEPA**)

Endangered Species Act (1973, 1988) P.L. 93-205 16 U.S.C. (**ESA**)