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## Buying Back the Groundfish Fleet

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“Our challenge now is to minimize economic and social impacts on fishing communities while protecting and rebuilding groundfish stocks,” (then Commerce) Secretary Daley said. “This determination is the first step in the process of securing funds from Congress to assist fishermen who have been hit hard in the past several years.”

Scientists with the National Marine Fisheries Service, the Commerce Department agency charged with managing marine fish stocks, state the disaster is the result of undetermined, but probably natural, causes. The agency’s goal has been to manage the fishery conservatively in the face of scientific uncertainty, which has resulted in reduced quotas and revenues. Factors that may have contributed to the declines include changes in ocean conditions, low productivity, and five El Nino events since 1982.

----from a Department of Commerce news release announcing a fishery failure in West Coast groundfish. January, 2000.

There is no question that West Coast groundfish stocks are at historically low levels. Nor is there a question that stocks will be rebuilt from these levels. The Magnuson-Stevens Fishery Conservation and Management Act requires rebuilding and the prevention of overfishing. The Pacific Fishery Management Council is implementing rebuilding plans for several species and more are on the way. The question that remains to be answered is, how do we meet the challenge posed by Secretary Daley? How do we “...minimize economic and social impacts on fishing communities while protecting and rebuilding groundfish stocks”?

### **(1)What is wrong with West Coast groundfish?**

The Pacific Fishery Management Council, under the guidance of the National Marine Fisheries Service, sets annual fishing quotas designed to achieve optimum yield from the fishery. These quotas are determined by the amount of fish scientists believe are in the ocean and the fraction of the stock that is appropriate for harvest. Quotas are independent of the size of the fishing fleet. Currently, many quotas are very small because of the need

to rebuild some groundfish stocks. The PFMC also sets annual fishing regulations. Unlike quotas for total catch, fishing regulations depend critically on the number of vessels. When there are many vessels in the fleet, these regulations must be very restrictive to keep catches within annual quotas. When fishermen's actual catches are far below what they are capable of catching, the fishery is overcapitalized. Overcapitalization is a worldwide problem that occurs in many fisheries, but it is especially troublesome in West Coast groundfish today.

The Scientific and Statistical Committee of the Pacific Fishery Management Council (SSC) examined this problem in their report *Overcapitalization in the West Coast Groundfish Fishery: Background, Issues and Solutions*. They estimated that only 9%-12% of fixed gear vessels, 27%-41% of trawl vessels, and 6%-13% of open access vessels would be required to harvest the year 2000 groundfish quotas. (SSC, p. ES-6.) This means that about seventy percent of the fishing vessels in West Coast groundfish are redundant. This overcapitalization is the fundamental cause of many problems in the fishery. For example, because there are far too many vessels for the allowable harvest,

Fishing is unprofitable and earnings are depressed.  
The management process is contentious and expensive.  
Regulations cause waste of fish and other resources.  
There is a disaster for fishing communities.

After examining the effects of overcapitalization in the fishery, the SSC concluded unequivocally that, "**Overcapitalization is the single most serious problem facing the West Coast groundfish fishery.**" (SSC, p. 107, their emphasis.)

## **(2) How did this crisis in groundfish arise?**

During the 1960's and 1970's there was widespread optimism in the fishing community. Groundfish stocks were high, shrimp and salmon were abundant, and fishing was profitable. The Magnuson Fishery Conservation and Management Act, effective in 1976, promised to replace foreign factory trawlers with domestic harvesters. Government policy at that time at least reflected, and some would say even created, the optimism of the industry. Programs such as the Investment Tax Credit, Fishing Vessel Obligation Guarantee Fund, and Capital Construction Fund encouraged investment in fishing. Fishermen responded by dramatically increasing the number of boats in the West coast fleet during the late 1970's. Increasingly sophisticated technology made both existing and new vessels more efficient at harvesting fish. During the early 1980's shrimp and salmon declined, and many vessels shifted to the groundfish fishery. The Pacific Fishery Management Council began active management of the groundfish fishery during this time and imposed the first federal trip limits to ensure a year around fishery.

In normal times, the free entry common property fishery will expand to the point where individual vessel's are making normal economic profits. But the twenty years from the early 1980's to today have not been normal times in the Pacific ocean. Ocean conditions have been warmer than normal during this period and were unfavorable for the survival

of young groundfish and salmon. Low recruitment of groundfish went unnoticed for many years due to sparse fishery independent surveys and the multi-year class nature of the fishery. It was not until the mid 1990's that fishery scientists began to realize that groundfish stocks had been depleted to dangerously low levels. At the same time, the reauthorized Magnuson-Stevens Act required managers to act more conservatively in setting harvest quotas. Unexpected stock declines and legally mandated reductions in harvest rates have combined to result in the much lower landings allowed since 1998.

### **(3) What if we do nothing?**

The West Coast groundfish crisis results from a fishing fleet that has a harvest capacity far larger than the sustainable yield of our resources. This problem will not be resolved by increasing quotas. Recent evidence indicates that groundfish stocks have been much less productive than expected during the past twenty years. This unexpectedly low productivity is a major reason stock declines were not anticipated by fishery scientists. Low productivity also means rebuilding these stocks will take decades, not years. Even stocks that do not require rebuilding have been fished down from their original levels. Because only the sustainable yield will be harvested in the future, catches from healthy stocks will be smaller than were allowed during the fishing down process. In addition, management changes resulting from the reauthorized Magnuson-Stevens Act of 1996 require managers to set more conservative harvest rates for all stocks in the future. Together, these events mean the fishing community must adjust to current catches that are low, and future catches that will never again approach levels seen in the past.

If the groundfish crisis will not be resolved by increasing quotas, perhaps vessels will leave the fishery and the fleet will adjust on it's own to lower harvests. Given sufficient time (decades again, not years) some adjustment will undoubtedly occur. But fishing boats are generally useful only as fishing boats, and they end up fishing somewhere. When other fisheries, such as Salmon, shrimp, and sardines, have suffered declining harvests displaced vessels have entered the groundfish fishery. Today, groundfish itself is in a crisis. Because other fisheries are also overcapitalized, no other fishery can absorb excess groundfish vessels without adverse effects. Seeking enough income to survive, groundfish vessels have entered (or returned to) the shrimp, crab, and even the recently resurgent salmon fishery. This trend will continue, but since these fisheries are also fully subscribed additional vessels will exacerbate their capacity problems and lower average earnings for everyone. Moreover, these alternatives are inherently seasonal fisheries and only provide part time employment for vessels and crews. Many vessels will remain in the groundfish fishery, at least for part of the year, even as they are forced to operate at a reduced level.

The future for groundfish fishermen is bleak. Dividing small quotas among many vessels means vessels and crewmen will receive low earnings. With little money, maintenance will be deferred and vessels will slowly degrade. Accidents and sinkings will increase. Some vessel owners may go bankrupt, causing the vessel to be sold for a fraction of its former worth. The new owner, again finding few alternative uses for the vessel, will operate in the fishery at a lower level of debt. The original vessel owners may lose their

businesses and savings, but the vessel will remain in the fishery. Because aging fishing vessels are very specialized, depreciate slowly, and have few alternative uses, the SSC concluded, “**The problems associated with overcapacity will not be resolved by waiting for vessels to leave the fishery.**” (SSC, p. 107, their emphasis.) A laissez-faire policy will not solve problems caused by excess capacity in the groundfish fishery. If we do nothing, they will persist and will spill over into other fisheries on the West coast.

#### **(4) What can be done?**

Since capacity problems will not resolve themselves, the alternative is to take positive action to create a smaller fleet. The SSC examined various methods of capacity reduction and concluded that a combination of industry and government funding that purchased both vessels and permits would have the best chance of increasing economic efficiency and profitability, reducing groundfish discards and management costs, and minimizing spillover effects on other fisheries. (Table ES-3, p. 15, SSC) Trawl fishermen on the West coast have long supported a buyback program that would reduce capacity in the fishery. The current version is described by Peter Leipzig in *Pacific Groundfish Buy-Back Proposal and the Final Summary and Analysis*. This proposal would combine industry and government funding to buy both vessels and permits. It meets a number of important criteria. Industry funding is involved so industry has a stake in the success and efficiency of the program. Government funding must be involved so the program can be large enough to have the desired effect. Both vessels and permits are purchased so spillover effects are reduced. This program is the best available option for improving the West coast groundfish fishery.

#### **(5) How small must the fleet be?**

The key factor in determining the size of the fleet that should remain in the fishery is that the resulting fleet must be economically viable. This means that vessels must be profitable to operate and must provide reasonable wages for fishermen. Most of the problems associated with excess capacity are caused because current regulations make the fishery unprofitable for vessels and crews. Traditionally, fishery regulations have been designed to enhance conservation of fish stocks and have not been concerned with the economic viability of the fleet. Measures such as gear restrictions, time and area closures, bag or trip limits and size limits all make it more difficult to catch fish. No one would argue that these types of regulations are unnecessary. But, when they are carried too far, as frequently happens when the size of the fleet is ignored, these regulations begin to cause problems of their own. Attacks on fishery science, regulatory discards, excessively shortened seasons, gear bashing and allocation battles all result from regulations that reduce a fishing fleet to the point of unprofitability.

Criticisms of other fleet reduction or buyback programs have noted that those programs were ineffective at resolving the problems of excess capacity. Most, if not all, of these programs were ineffective because they failed to reduce the fleet sufficiently so that, after the reduction, the vessels remaining in the fishery were profitable. The Government Accounting Office notes that the New England groundfish buyback purchased about

4.5% of the vessels permitted to operate in the fishery, at a time when about half the vessels permitted in the fishery were essentially inactive. (GAO, p 8) Active vessels were hardly operating near their capacity because they were subject to strict trip limits and time and area closures. Given that excess capacity may have been 60% or more of the permitted vessels, it is not surprising that buying back 4.5% of them had little effect on the long term future of the New England fishery.

Worldwide, restoring fleet profitability has seldom been a major goal of buyback programs. They have often been intended as simply “transfer payments” or a form of “disaster assistance” that sent a relatively small amount of money to an afflicted group. (See the SSC discussion, p. 95) As such, they simply amounted to short-term subsidies and were never intended to be long-term solutions. The *Pacific Groundfish Buy-Back Proposal* is different. This *Proposal* would reduce the groundfish fleet by about 50%. (The actual goal is a range from 40%-65%. Leipzig, p.7.) This is not enough to eliminate all extra capacity in the fishery, as the SSC estimated the fleet would need to be reduced by 60% to 90% to achieve maximum economic efficiency. (SSC, p. 6.) But no one is arguing that the fleet ought to be managed for maximum efficiency. Maintaining a mix of gear types, vessel sizes, and homeports are all important goals in managing the fishery. The key point is that it is not necessary to achieve maximum efficiency, but restoring the fleet to some minimum level of profitability is necessary so that fishing is once again a viable long-term occupation and other benefits can be realized. At this time, a 50% reduction in the Pacific groundfish fleet will result in a viable fishery.

#### **(6) What are the benefits of a smaller fleet?**

A smaller fleet that is appropriate for the sustainable yield of groundfish resources will provide benefits for fishermen, for fishing communities, and for everyone concerned with the use and health of our ocean resources. Frequently, these benefits are difficult to estimate in monetary terms. But the direction of change in benefits is usually unambiguous and obvious. It is only the magnitude of the change that is in doubt. Where benefits can be quantified, however, they appear to be substantial.

A smaller fleet can be a profitable fleet. The economic health of a fishery does not depend solely on the quota for total catch. Equally important is the number of vessels and fishermen sharing in the catch. When quotas decline, and the fleet is unchanged, serious economic, social and management problems result. The key to solving these problems is to reduce the fleet to the point where it is once again profitable and desirable to engage in fishing. A profitable fleet will generate more income in the local community as fishermen’s spending stimulates the local economy. Ultimately, a profitable fleet generates more income, more jobs, and more taxes throughout the community.

A smaller fleet can be a more responsible fleet. If fishermen are to be stewards of the resources they depend on, they must have some assurance that they will be part of the fishery in the future and they must have the ability to make conservation sacrifices today. Creating a smaller, but profitable, fleet is an important step in fostering an attitude of stewardship among fishermen. If fishing is profitable, and tenure in the fishery is

assured, fishermen can afford investments in the future of the resource without committing economic suicide. A profitable fleet can contribute to management, research and monitoring expenses that help ensure the long-term sustainability of the resource. Even in today's situation, where fleet profits are non-existent, the groundfish fleet willingly sets aside a portion of every year's quota to fund a fishery survey. Placing more of this responsibility on fishermen will be impossible unless the fleet is reduced. A profitable fleet can also afford to conduct gear research designed to identify modifications that reduce undesirable bycatch. A profitable fleet can then afford to invest in new gear and employ it in a responsible manner that is minimally intrusive on the remainder of the ecosystem.

A smaller fleet will be a safer fleet. Coast Guard statistics indicate that fishing is the most dangerous occupation in the nation. There is no question that fishery regulations affect the safety of fishermen, as the most intense derby fisheries (where the effects of excess capacity are unfettered, such as various crab fisheries and Alaskan Halibut prior to the introduction of individual fisherman's quotas) are the most dangerous. Excess capacity also affects safety in other ways. Low earnings limit funds for maintenance and safety equipment. Small trip limits and short seasons force fishermen to work under weather conditions when they would rather be in port. Poor maintenance, bad weather, and a desperate need to fish is too often a deadly combination for fishermen.

A smaller fleet will be less expensive to manage. The current system results in a management process that is contentious, difficult and expensive. Faced with the prospects of continued low earnings or bankruptcy, fishermen form coalitions (frequently composed of similar gear types or vessel sizes) that attack one another, fishery science, and fishery managers. As these groups seek to maintain their income, the constant pressure to continue fishing sometimes leads managers to set quotas at levels that push, or exceed, the frontiers of fishery science. A smaller fleet, not continually threatened with bankruptcy and with some assurance of continuing in the fishery, will not have the same incentives to push for maximum quotas as today's desperately overcapitalized fleet. They will be able to afford more conservative, therefore less expensive, management measures without risking their own economic demise. Additional precautionary management measures, such as marine protected areas that threaten to reduce fishing grounds by twenty percent or more, will also be affordable for a smaller fleet.

A smaller fleet will have lower monitoring and enforcement costs. Regardless of the type of management measures employed, they must be enforced and monitored to ensure they have the desired effects. With an excessively large fleet management measures must be very restrictive and complex. Fishermen, when driven by fear of bankruptcy, push these restrictive measures to the limit. Consequently, violations are likely and enforcement costs are high. The same pressure that pushes managers to maintain high quotas also pushes fishery scientists to conduct ever more precise stock assessments. This leads to a complex and expensive data collection and analysis system. The National Marine Fisheries Service and the Pacific States Marine Fisheries Commission spent nearly six million dollars on these activities in 1999. (The three states and the Pacific Fishery Management Council spent additional money.) The National Marine Fisheries Service

reports that it would need nearly thirteen million additional dollars, just to satisfy its highest priority needs in responding to the current groundfish crisis. Of course, many of today's research needs result from the lack of investment in science and research during the past forty years, an investment that could have avoided the current crisis. Nonetheless, if granted, today's research and monitoring costs would be about twenty million dollars, nearly half the value of the non-whiting groundfish fishery.

A smaller fleet requires less social support from the community. The effects of declining incomes in rural areas are well documented, and fishermen are no different than people in other occupations. With lower incomes people rely more and more on the social safety net in their community. As seasons shorten and trip limits decline fishermen are unemployed more of the year, so they draw more unemployment compensation. If that runs out, they may rely on welfare and food stamps to survive. Rates of spousal abuse and alcoholism increase as families, marriages, and support networks are stressed to the breaking point. These negative effects can be avoided or reversed if the fleet is reduced so fishermen can maintain their income and savings as quotas decline. Consequently, the short term costs of decreasing the number of vessels and fishermen in the groundfish fishery will result in long term savings of money spent for social support. No agency totals the costs of social support for fishermen, but it can be substantial. In the year 2000 for example, the Federal government appropriated five million dollars to the states of California, Oregon, and Washington to mitigate the effects of the groundfish disaster. Without a permanent reduction in the groundfish fleet, however, this money will largely be spent for short term social support and will have little permanent impact on the future of the fishing community.

A smaller fleet will reduce bycatch. Fish discarded due to management regulations are a significant portion of bycatch in the groundfish fishery. Although we do not know the exact relationship between trip limits and discarded fish, we do know that as trip limits decline discards increase. According to the Pacific Fishery Management Council's figures (see my calculations in the Appendix to this document) the value of fish discarded for regulatory reasons may have exceeded four and one half million dollars in 2000. This is nearly ten percent of the value of fish landed! Clearly, a smaller fleet would allow larger trip limits to achieve the same quota target, therefore regulatory discards would decline. This would directly benefit everyone in the fishery. Fishermen could retain (and get paid for) fish they have already caught, processors would have more fish for their plants, consumers would have more fish in the market, and local communities would see an increase in income.

A smaller fleet will reduce waste of capital, labor, and other resources. The excess capital and labor embodied in an overcapitalized fleet represents a real cost to society. If some excess capacity were removed from the fishery, catches would remain the same and production would improve elsewhere. Every day an overcapitalized fleet continues to operate there is an ongoing waste of people's time and the resources (fuel, maintenance, etc.) consumed by the fleet.

A smaller fleet will reduce environmental impacts. Although the evidence is limited and the ultimate consequences are unclear, there is no question that fishing has some environmental impact. Anchoring disturbs reefs, longlines are whipped across the bottom by ocean currents, traps roll and tumble before settling into position, and trawl gear is purposely towed across the bottom. Regardless of the gear type employed, a smaller fleet operating efficiently will result in a smaller environmental impact. When fewer fishermen are allowed to harvest the same quota, they will be able to go to sea, catch their fish, and return to the dock with a minimum of fishing time and effort. Fishing has additional environmental impacts beyond the effects of gear contact on habitat. Diesel engines have significant exhaust emissions, there is always the chance of a fuel or hydraulic line breaking and causing an oil spill, gear is sometimes lost, and vessels occasionally sink releasing fuel and other substances into the ocean. An unprofitable and poorly maintained vessel increases the chance of an accident. An excessively large fleet increases the number of vessels that may have an accident. Too many inefficient vessels and too many accidents result in far too much environmental degradation.

A smaller fleet is a huge step toward rationalizing the fishery. The SSC discussion leaves no doubt that the groundfish fleet is too large for the sustainable yield of the fishery, both now and into the foreseeable future. After analyzing several methods of reducing the fleet they conclude, “Initial capacity reduction strategies (e.g., buyouts, mandated reductions) provide a first step. The second step is to address the fundamental cause, which requires that managers end the race for fish and provide incentives for industry to adjust capacity in response to changes in technology, markets and the resource.” (SSC, p. 95) In other words, without fundamental change in the way fisheries are managed the problems we solve today are likely to reappear in the future. Perhaps the most difficult obstacle to fundamental change is answering the question, “what happens to the people dependent on the fishery when harvests decline?” New management methods will not create more fish; they will simply reallocate existing harvests among current (or perhaps to new) participants. If there is not enough fish to go around under current management, there will not be enough fish to go around under reformed management either. By reducing the fleet so remaining vessels are profitable the issue of, “who survives in the fishery?” can be separated from the issue of, “what management reforms are necessary?” This is a critical first step in reforming fishery management.

## **Summary and Conclusion**

There is no doubt that West coast groundfish stocks are low, the groundfish fleet is too large, and that a disaster has occurred for the entire fishing community. From 1990 to 1997 the value of non-whiting groundfish landed on the West Coast averaged \$79 million. In 1999 it was \$46 million. This is more than a 40% reduction in revenue to a fleet that has essentially not changed. A fleet that was too large to begin with is now vastly overcapitalized. The SSC estimated that seven out of ten vessels are unnecessary to catch the current quotas. Most of these vessels are losing money, and fishermen’s incomes have plummeted. At the same time, management costs are high and may be headed higher. The National Marine Fisheries Service reports that they and the Pacific

States Marine Fishery Commission spend \$6 million dollars annually on West Coast groundfish. To accomplish their highest priority goals for current management they need an additional \$13 million. To accomplish their additional priorities requires \$3 million more. The three coastal states spend additional money managing groundfish. Current regulations result in the waste of about \$4.5 million of discarded fish. Fishing is unprofitable, so the costs of catching exceed the landed value of the catch. Fishing could also be safer and have a smaller impact on the environment. Summing up ALL the costs of fishing and managing West Coast groundfish and comparing it to the landed value of the fishery should give anyone serious questions about how the fishery is conducted. It is very clear that this fishery is a net drain on the treasury of the United States. It is also clear that the fishery does not provide a reasonable income for fishermen or fishing communities. Change is not only warranted, it should be required.

Revitalizing the groundfish industry, reducing management costs, and reducing waste requires a smaller fleet. Groundfish trawlers have long supported a buyback to reduce the number of participants in their fishery. This is an equitable solution to the capacity problem because those who must exit the fishery are compensated for leaving, and not forced out by new regulations. For many, a fishing vessel and the associated licenses represent their life savings and their family's only income. Their lives will be devastated if they are forced out of the fishery without compensation. This hardly seems to meet the lofty goal of minimizing "...economic and social impacts on fishing communities while protecting and rebuilding groundfish stocks" set out by ex-Commerce Secretary Daley. Those who remain in the fishery can pay part of the cost of reducing the fleet, because they will benefit as quotas are divided among fewer participants. But remaining fishermen cannot pay all the cost. The fishery has declined so far, and future prospects are so dim, that some government assistance is required.

The *Pacific Groundfish Buyback Proposal* describes a program that has been designed by fishermen to remove excess capacity from the groundfish fishery at the least cost. This *Proposal* will benefit,

The Nation because it will,

- Reduce management, monitoring and enforcement costs.
- Result in a profitable, tax-paying fishery.

Fishermen who remain because,

- Their additional revenues exceed their share of the cost of the program.
- The fishery will be safer.

Fishermen who leave because they are bought out and not starved out.

The environment because,

- Bycatch is reduced.
- Environmental impacts of gear and vessels are reduced.

Fishing communities because a profitable industry generates income throughout

the community.

The cost of the Pacific Groundfish Buyback is estimated at \$50 million. Half would be repaid by the fishing industry as a loan and half would come from the federal government. This is a large sum, but it is a one-time expenditure and is small when compared to the annual costs of the status quo. The Pacific *Groundfish Buyback Proposal* is not a subsidy; it is a solution for a community that has suffered a fishery failure for complex and unforeseeable reasons. The money required to restore a fishery that has failed is an investment in the future, because restoring an economically viable fishing industry will produce sustainable benefits for years to come.

**Appendix: The Value of Regulatory Induced Discards.**

Species	ABC	OY	Landings	Rate	Discards	Price	Value
Dover	9426	8955	8702	5	458	.354	357436
Sable	9692	7177	5570	25	619	1.464	1997485
Lingcod	700	163	146	25	49	.893	95810
Longspine Thd.	4531	3730	1563	9	155	.883	300920
Shortspine Thd.	1436	667	676	30	290	1.045	667446
Widow Rock	5750	3365	3793	16	607	.424	567281
Yellowtail Rock	3539	2439	2819	16	537	.448	530327
Canary Rock	356	103	53	16	10	.473	10527
POP	Rbldg	270	135	16	26	.44	24943
Chilipepper	3724	2000	399	16	76	.538	90142
Splitnose	820	615	41	16	8	.324	5578
					Total		\$4,647,896

ABC, OY, Landings, and Discards are in metric tons. The Discard Rate is a percentage. Price is in dollars per pound, and value is in dollars.

Discard rates are generally applied as percentages of shoreside landed catch for limited entry gears. At sea catches have permission to land overages, so they are observed directly and not discarded. No discard is assumed for recreational or open access landings, although clearly some regulatory induced discard does occur in these fisheries because they are managed with bag and trip limits similar in effect to the management measures in the limited entry fishery.

Sources:

Discard rates from PFMC 2000, p 27-28.

2000 OY's and landings from PSMFC January 17, 2001.

Landed prices from PSMFC 16 April, 2001.

Notes:

(1) Sablefish and thornyhead discard values are probably overestimates. Smaller, therefore less valuable, fish are most likely to be discarded. The average value of discards would therefore be lower than the average value of landings. Since I have no way to evaluate the magnitude of this effect, I simply applied the landed price to estimated discards.

(2) Lingcod discards are an underestimate because no discard factor is applied for the portion of the year when lingcod retention is prohibited.

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## Full Disclosure

I own two fishing vessels, one of which I operate full time. Both vessels participate in the groundfish, shrimp, and Dungeness crab fisheries. I was a member (as an economist) of the Pacific Fishery Management Council's Scientific and Statistical Committee from 1985-2000. I was a member of the subcommittee that authored the SSC report cited above. Of course, the opinions expressed here are solely my own (although I hope there are a few people out there who agree with me). I welcome any comments, questions, or suggestions regarding the claims made in this document. Please address them to:

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