

# Market Quota System: The Ultimate In Public Resource Management

Steven J. Scannell  
President & scallop fisherman,  
Environmental Fisherman's Corporation (fisheries & aquaculture R&D)  
5 Mizzenmast Rd. Nantucket Ma. 02554  
(508) 228-0390 scannell@nantucket.net

The Market Quota System (MQS) is a free market style public resource tool. It can be applied to any public resource, such as fisheries, forestry, minerals, and even such things as airport runway scheduling slots, or taxi licenses etc. Any time that a public resource is sought after by private interests, the Market Quota System should be used. This discussion of the Market Quota System is as it relates to fisheries management for this IIFET 2000 conference.

## 1. UNDERSTANDING THE ROOT OF THE PROBLEM

Currently fisheries management is not an art, but an unsavory collection of out dated political interest groups and their distasteful agendas. Science and professionalism play second fiddle to this sad performance. Our fisheries systems worldwide are the result of patchwork efforts and have evolved into disconnected and hence ineffective non-systems. I offer the MQS as the ultimate in public resource management because it is a true system to replace an argument, and because the MQS machine is as non-political as a system can be and further it was designed as such to fix our management problems.

The common assumption, that fishermen and the fishing industry in general, despite their obvious conflicts of interest, can effectively participate in fisheries decisions, is at the heart of our public resource management problem. Most fishermen think in terms of fishing income, and not in terms of public resource management. These two things are altogether different, but yet we mix them up as if they are singular. This is America's main misapprehension, and Nantucket's too. It is the root of the problem. Fishermen make bad fisheries managers. While this kind of a broad-brush generalization, is politically incorrect, it is never the less true. From my standpoint, the wiser fishermen, who are the exceptions to this rule, are somehow lost in the shuffle of a consensus style of fisheries management that has proven its failure tremendously.

America, and the governments of the world have been mixing fishermen together with vote seeking political people and their appointees. They work on the problems. We know the results. Concepts as simple as the differentiation between fishing effort issues and fishing access issues are jaundiced and muddled together, in order to advantage fishermen, while masking the true identity of distinct and solvable problems, such as habitat destruction and species depletion. There is too much

subterfuge. This situation cries out for a systems change of a profound and fundamental nature.

The marine science that is practiced under this cloud of politics and special interest, is compromised by the motivations of the two, and can seem to be rubber stampish in nature. The fact that marine scientists can't seem to overcome this problem is unto itself a very interesting problem. This degradation and fragmentation of scientists, created by political pressure, continues to cause a professional demoralization, not to mention environmental and economic value of epoch proportions flushed down the political toilet. We as a nation, and the community of nations, have diminished their precious value, and it's high time we stopped doing that.

### 1.1 Who Can Solve The Fisheries Crisis?

I'm a small time fisherman and laborer. I have been exposed to fisheries problems from all angles. I've worked on plenty of different fishing boats including my own, and have worked with marine scientists at the Nantucket Marine Laboratory. I have dealt with the issues as an elected official, and through our town government process, which includes the unique and effective town meeting style of government. I have designed a system, which I naturally enough hold in my own high esteem, but I can't solve the crisis. That is for us all to do through the democratic processes. Let's work on this system to either throw it in the trash, or fine-tune it into something that will work. We really do need to get this job done.

### 1.2 The Theory And Philosophy Underlying The MQS

I have been advocating, for over ten years, an open access market style fisheries system that I call the Market Quota System (MQS). This new system, will if implemented, auction off fishing rights by the pound. Commercial and recreational fishermen would both be regulated under this system, using the same set of rules. The total allowable catch (TAC) will be figured, by the poundage of a species and its season. Then it will be put on the auction block.

Using the distribution mechanism as a regulatory vehicle, monetary incentives will be awarded to environmental and socio-economic things that are good and monetary penalties will be issued to things that are not good.

Using the Market Quota System public assets (fishing rights) will be sold, resulting in a tax or user fee, which will bring in revenues. All of this money, also with additional tax monies, will then be channeled back into the resource, creating in effect, a continuous cash flow fisheries management system. Public MQS funding may help multiple community enterprise ocean accounts for fisheries related projects. Then a working relationship between public and private entities could evolve into a co-operative and efficient system of public resource management.

Using our public resource wealth to create more wealth is a good thing. It is like the farmer using his harvest money to reinvest in yet a better harvest. The MQS is basic capitalism applied to the assets of the public. The Market Quota System does not violate peoples' lives. It is an equal opportunity based system.

## **2. THE MECHANICS OF THE MQS**

The MQS poundage quota auction will be accessible by computer. The auction could be ongoing, 24 hrs. a day 7 days a week. Also, the government could release quota to the auction on the same ongoing basis. For seasonal fisheries this quota release would be designed using multiple factors such as biology and market conditions etc.

The quota purchases could only be small, and would be transferable. Auction caps would prevent hoarding and monopoly attempts. A built in depreciation of quota coupons after a certain elapsed time period, would curb speculation, which would be disruptive to the allocation process. At the time the fish are landed the coupons will be cashed in as the fish are weighed up.

An optional attachment to the main computer auction could also handle private quota coupon transactions. Your local bait and tackle shop would likely deal in quota, as would fish buyers, fishing supply companies, fishing cooperatives, and fishermen's associations.

Environmental penalties and incentive discounts for various fishing methods will be assessed through the auction. These will be based on percentage formulae and will be fixed to the poundage landed. Optionally these penalties and discounts can be administered during the fish-landing phase when the coupons are cashed in. So for instance two boats land their fish at the dock. One boat is a hard bottom dragger. The other boat is a big jig boat

with forty jigging machines. They both land 20,000 lbs. of cod. The jig boat gets a discount at the auction worth twenty five percent of the coupon value. The hard bottom dragger has to pay a ten percent additional fee.

Also the socio economic penalties and discounts can be handled in this same way. A small town that has lost its industry of the past to limited entry and consolidation and environmental habitat loss will have a certain number of tax credits applied to local fishing boats. Big fishing ports should not get a penalty though, because that would not be fair. This will effectively relocate boats back where they were and back to where they belong. The logistical value of local fresh fish is a bonus with this too.

Optionally, the auction mechanism could be set aside, and a Value Price fee set in place as a substitution. The fee could approximate the market value of the quota, or it could be something of a taxpayer privilege. MQS fees can be set as a percentage of the board price of a boats catch, or fixed to the dollar. The structure of the fee can be shaped to fit the existing fishery circumstance, in real time. As long as the publics open access is not being denied, this will work effectively, for all fishermen. And if the auction mechanism is still an option too, a kind of a market element will be present.

There are different ways that a poundage quota auction can work. One way is to have the poundage limited by dollars as well. That is to say a boat would have a dollar income cap. In other words kind of like a car warranteee five years or fifty thousand miles, whichever comes first. So the boat can bid on poundage, but the dollar ceiling for the boat could be for instance \$ 6,000,000.00 for a 250 foot factory trawler.

Or the MQS auction could be structured to take a percentage of the board price of the landed stock. Landed stock values would be discounted by species and size. The simplicity of a system like this is a selling point. And caps can also be structured with sliding scales. By this I mean as a boats catch for the year goes up, so does a cap tax.

### **2.1 MQS Effects On The Fishing Business**

The quota coupon would become another expense of doing business, such as fuel and insurance. This system would transform fishing rights from a political plum commodity item, into a standard market commodity item. And the commercial fishing industry will save money in political spending for regulatory capture profits. Actual fishermen who work will possibly be involved with aquaculture as well as harvesting. There will be room for companies who would like to contract with the government, and I think fishing companies will do well in this respect, with public aquaculture.

## 2.2 MQS and the Current System

The implementation of a market quota system would end license leasing, as a system for securing fishing rights, along with their unjustified windfalls of profit from a supposedly public resource. The Market Quota System, being an open entry system, will, if implemented end the era of Limited Entry.

## 2.3 The MQS as a Vehicle For Subsidies

Using the MQS fishermen can be subsidized to shift over to environmentally productive methods of fishing. For instance a scalloper could be de-rigged for dredging and get a robotic picker. Or a hard bottom trawler could be converted to being a charter head boat. The options need to materialize, and the government is solely capable of providing the carrot and stick to do so. Penalties paid could count towards subsidies gotten for a phase down of destructive fishing capacity.

Also, the MQS mechanism can facilitate subsidies for the purposes of giving the ocean a very much-needed rest. The best way that I can think of to do this is to phase up public aquaculture, creating meaningful and sensible work for fishermen as they are forced to tie up for longer periods of time than they would prefer. It has been my experience that fishermen make the best aquaculture workers. Aquaculture work can be long and hard. Therefore, this is a marriage made in heaven, from what I have seen. Aqua culture production if left to regular workers will be comparatively unproductive, based on what I have experienced.

## 3. THE COHESIVE SYSTEM AND THE MQS

The MQS is a system that can handle multiple tasks simultaneously. It is an economic tool that will allow growth and expansion, while harmoniously handling a bad fisheries allocation situation. Primarily, I look at this system as an environmental tool. The MQS represents a comprehensive systems approach to fisheries management. It is truly a system in every sense of the word, in that it performs tasks of economic, social, and environmental import. So then the MQS is the ultimate in public resource management. Or rather it is the ultimate tool, and in the hands of honest and skilled managers it will do very well.

### 3.1 A Short Comparative Analysis of The MQS And The ITQ

The MQS is in no way a relative of the ITQ, or IFQ quota allocation programs. The MQS is based on equal opportunity, and does not divide fishermen into classes, as does ITQ. The MQS is based not on a give away of public

resources, as with an ITQ program, but rather their sale in a free market. The ITQ mechanism is essentially just an allocation scheme, that has been proven to have many debilitating environmental and socio-economic faults, but the Market Quota System is a comprehensive environmental and socio-economic system, with no faults to speak of, other than that fishermen (the privileged commercial fishermen) do not want to pay for a resource that they have previously gotten for free. And that fault doesn't count, as it is irrelevant to what will work effectively, to provide the public with what it should have, which is conscientious and professional fisheries, and public resource management.

The Individual Transferable Quota program is nothing much more than a continuation on the absurd theme of limited entry as a base (ostensibly) for conservation. But actually seems more to be a get rich quick scheme being peddled by businessmen who care more about their own situations than they do about the public trust. Limited entry has been debunked, by virtue of continued environmental degradation, but the system has become an established cast in stone thing. Limited entry was sold as an "any port in a storm" solution to over-fishing. And now we are being fed more poison, in the form of ITQ, as a cure.

The MQS skillfully separates and distinguishes between access and effort issues, because it is based in a full cost accounting strategy. The ITQ carelessly mixes access issues with effort issues, because it is based on misguided emotional sentiment, and political corruption. When will we be smart enough to separate access issues from effort issues? Aren't they two different things?

### 3.2 Value Pricing And The MQS

Value pricing is the fixing of a price to both positive and negative values in fisheries. Fred Jennings Ph.D., of Fish Folk fame describes the theory better than I can, as he taught me the term for what I wasn't articulating too well. Value pricing relates both to the auction and to the environmental and socio-economic penalties and incentives.

The value gotten from a given resource at the MQS auction is a market value (or close to it). It may not be a purely market value, because caps will be imposed on big bids, and consolidations of interest. There are positive and negative monetary values attached to factors that are good or bad. Market value pricing is set competitively at auction for fishing rights, but not for positive and negative values associated with environmental and socio-economic factors. Artificial value pricing is that which is "set" according to estimates of various kinds. I would suppose that we could engineer a market price for environmental negatives, but I do not know exactly how. The VP

strategy is important to a comprehensive system and central at the core. Quota allocations may best, in many fisheries, be set by the market, but putting a price on other things, such as socio-economic and environmental considerations can't be done by the market. It must be done by approximation of value.

The VP is what attaches to factors that we either like or don't like. Again the VP formula inputs will vary between social and environmental etc.

#### 4. BOOTING UP THE NEW SYSTEM

I think that phasing in these negative prices on environmental habitat destruction, for instance, would be wiser, and less of a shock to our present system. If boats using destructive gear had to pay the market value for the losses they incur, they would be forced to tie up. It's important to envision the phase in of a new system.

The Market Quota System distribution mechanism is primarily a poundage quota auction, with a secondary approach being an artificial, or non-market, quota price setting that may approximate the fair market value gotten at an auction. This could be 20% of the board price of the catch. This secondary VP approach may be used 90% of the time, but it is still a secondary approach because the integrity of the artificially set price is kept in check by the possibility of an auction. This price setting is more convenient than an auction. My preference for a setting of quota value is an auction. But the auction can be waived, in favor of a more expedient set price. A set price can be used fairly only when there is an equal opportunity to secure the quota.

##### 4.1 Catch Limits And The MQS

Per boat catch limits, as we have for our Nantucket Bay scallops, ration the catch out over time, which is also good for the seafood economy market aspects. Catch limits are fair and will work with any system. Catch limits work well with the MQS-VP too.

##### 4.2 The Fishing Rights Value And The MQS

These can consume vast amounts of time and energy sorting out who has rights and who doesn't. Squabbling over rights has got to be one of the biggest single wastes of money in fisheries. The moral justifications for giving away fishing rights to some and not to others does not hold water. They need to be auctioned. The auction is a self-tending system of pricing. A good manager could use the MQS-VP strategy to equitably distribute fishing rights to commercial and recreational fishermen.

##### 4.3 Habitat Value And The MQS

The single most effective Market Quota System instrument is that of the environmental incentives and penalties. These will count as a real factor in lowering the trade deficit. Fish habitat is a continually producing fish factory. And this MQS production dividend is not a one shot deal. Habitat building is like having money in the bank. The ability to take fish from the ocean with out depleting stocks will be enormously helped by having solid habitats as a foundation for seafood production. This I just can't stress enough. It is the single largest factor by far in considering the Market Quota System for our fisheries.

Here is where we have gone wrong. We have not really gotten a handle on how to value habitat, hence when we destroy habitat with no compensation we assign zero value to it. Not a good idea economically.

A good manager could use the VP strategy to trend down habitat destruction. This is achieved by putting a negative "market style" value on habitat destruction. So basically when a boat lands its catch it pays for any destruction that it did in catching the fish.

##### 4.4 Stock Value And The MQS

Why do we fish stocks that are well under their normal ranges of population? These fish have a very high brood stock value, from a public resource perspective. Currently fisheries management philosophies are disconnected from public resource values but very connected to business and political values. This doesn't work well in producing seafood wealth from a public perspective.

A good manager will use the VP strategy to put a value on various species of fish and also to grade their value too according to their individual size. Populations of fish that are low will need to be rebuilt. The VP for catching fish, that should be considered to be rare, will be high. This is a reflective value and not any kind of a punitive, or emotional value. It is a full cost accounting approach.

When a boat lands its catch the species that are in a state of decline are valued higher than those that are abundant. The fisherman will be taxed greatly for landing some small or rare fish, but not penalized out of pocket. At least the resource will be used and not thrown overboard. It is sensible for a manager to allow a fisherman to come in with what he has inadvertently killed, instead of throwing it overboard. So the good manager will use the VP strategy to discourage fishing on stocks that are in trouble.

#### 4.5 High Grading And Discarding And The MQS

High grading and discarding will end with the MQS. It should end any way and has not one thing to do with the MQS. But my opinion is that it should end. Fish that are landed will not count against a fisherman. Not so with other systems. This is achieved by using dollar catch limits instead of poundage and size limits. High grading and any dumping of products with value should be outlawed. Of course this refers to basically dead fish and not to survivable juvenile fish.

As far as dragging goes, big nets kill more than little ones. Fish get crushed in giant cod ends. But small draggers can haul back and sort fish effectively with much less discard mortality. Fishermen can be trusted and must be trusted to judge the difference. The bigger the net, depending on style too, the potentially higher VP penalty charge for fishing gear.

#### 5. MQS AND THE INTERNATIONAL VALUE

International government can use a system that quantifies national biological values, and international biological values. Countries need an accountable system to avoid their own race for fish. Bordering countries need a value attached to each country's habitat and stock holdings. This levels the field, and can facilitate international camaraderie in settling fish stock ownership questions.

The international fisheries manager will use data to arrive at allocations for every nation. And international wealth gathered in the ocean can be taxed internationally.....if we co-operate.

The Market Quota System is the ultimate best way to manage international fisheries. The control needed to do fisheries management can be rationalized internationally only through a fair and open system. The MQS is fair and open to all nations, both land-locked and coastal. International taxes and management would be the responsibility of the UN, I assume.

##### 5.1 Neighbor Nation Value And The MQS

Here again with a situation of allocation questions two countries, or more, can come to an agreement through a rational allocation system. The MQS TAC can be based on the biological holdings of each nation. And distribution of that TAC can reflect the ratio of each holding. For instance there is a common population of cod that straddles Canada and the U. S. Let's just say for arguments sake that Canada holds 43% and the U.S. holds the other 57%. The allocation of cod from this population would be the same. I'm simplifying something that is very complex and that will never be perfected. But the price of

not coming to an agreement is an international race for the fish. Of course this puts both at a loss.

So instead of rushing in to reap a harvest, two countries can co-operate to build up their common asset of fish stocks. And if one country makes investments in habitat, and that habitat can carry more stock, then the ratio changes and that country gets a bigger allocation. Basing the allocation on the biological holdings is subject to third party judgments, obviously because each country will be biased. But measurement tools will be common to each territory, so it should be a matter of quantification and not of opinion. They are both mindful that when a harvest comes it will be allocated as per the system, fairly.

And both countries can involve themselves in a relationship with investment money, tied to a public aquaculture investment. The investment can tie into the MQS. The MQS vehicle is both co-operative and competitive. Aquaculture production will count towards investment and not just quantities of money spent. Spending does not necessarily relate to production. But the quantification of kelp or cod or halibut production would count on a piece meal basis. Joint R&D projects can have new meaning.

I just came from the fish market, one minute ago, I spent over fifteen dollars on a fillet of cod-- eight dollars and some cents a pound. Why? Basically, because neither the U.S. nor Canada wants to get short-changed. Ironic.

The opposite of our current system is the Market Quota System where by the U.S. and Canada work together. Then the price of codfish will come down to where you don't need to take out a loan to buy it.

#### 6. SOCIETAL VALUES AND THE MQS

Social value.....what is it when it comes to fisheries management? Well, do we want a couple of corporations in forceful control of fish stocks and the habitat? Or do we want smallish mom and pop fishing boats doing the fishing? I'm for the mom and pop operations. And I'm for freedom and equal opportunity. That is a social value that I personally place on fisheries management. Quality of life issues have been stepped on by fisheries regulators and establishment hacks, in favor of the big destructive companies with the big destructive boats. Future fishermen have nothing. Everything is being doled out to greedy private interests.

Socio-economic reasoning that tends to favor, using the auction or VP, traditional fishing villages, can, and I think should be used. We can subsidize them back into existence as viable ports.

Also we cannot ignore, and must put a dollar price on social displacement. When we lose valuable fishing communities to consolidation, and habitat destruction, we must as economists, put a dollar price on that. And we have to put a dollar price on the windfall profits gotten by fishing concerns at the expense of the small commercial fisherman and his community. This lack of simple accounting is only the result of a lack of dependence on real financial figures, which is sad, considering the talent on hand. I feel that the dollar values lost outnumber the dollar values gotten by regulatory capture, by ratios of one thousand to one. What was it worth for me to be shut out of the fisheries by limited entry? I am one of thousands. The fisheries were my chosen field. Let's put a dollar price on my loss.

When social policy robs rights from some and gives those rights to others, it is so easy to only see one side of the issue. We can't allow that. One group has economic power. Another does not. Fairness must be a foundation for regulations if we are to have economic efficiency and social harmony.

A good fisheries manager can help to facilitate societies wishes through the use of MQS mechanisms. The auction can favor individuals and companies through incentives at the MQS auction who are working in public aquaculture. An employee owned fishing company might qualify for a discount at the auction. My personal values and choices here will be made known to my representatives in government, so they can act accordingly. Unfortunately, I am dependent on their integrity, and have no money or votes to trade with them.

## **7. THE MQS AND THE PUBLIC AQUACULTURE VALUE.**

The biggest value with aquaculture is that it provides a crew with higher level of practical knowledge. This crew is needed to do fisheries management, and are far more valuable than pencil pushing bean counting bureaucrats. They know and are of the animals. Bean counters know and are of the political realm. The second biggest value is the actual increases in production that public aquaculture can achieve for the wild harvest.

The MQS mechanism can handle both the funding and the co-ordination of many public aquaculture projects (especially the simple projects). These public aquaculture projects would be very productive, if done correctly. They would not be "make work" in nature. With trial and error this public aquaculture approach will be very advantageous to the environment and to the scientist, manager, fisherman, and seafood consumer. The state of aquaculture technology is ready. Public aquaculture is the most efficient form of aquaculture. This is true essentially

because it is limited to seed production, as Mother Nature can do the rest. And by using the MQS we can unleash this available technology to work for the common good. Existing R&D aquaculture "recipes" can be properly scaled up to make a real impact on fisheries production.

Public aquaculture will dwarf and swallow up some private aquaculture operations, now existing unnaturally, not paying their own pollution freight. The ongoing research that the NMFS has been doing for years, at the Milford Connecticut aquaculture Laboratory, can now, with the MQS, pay enormous dividends. But wishing won't make it so. We have to make it happen.

Using the Market Quota System user fee income to fund public aquaculture projects will have a snowball effect on our seafood production. Aquaculture production can include artificial reef building, and planting vegetation. When the carrying capacity of the habitat is increased, production will naturally go up.

We on Nantucket do practice slight and narrow amounts of aquaculture with our fisheries. But since the money isn't there..... the effort is only a token symbol of our great care and concern. We do not connect the lucrative Nantucket bay scallop landings with an investment in aquaculture. Why? Fishermen prefer to take for free. Nantucket does not understand that it needs a fisheries management system that is inclusive of aquaculture. We are happy to accept defeat after defeat, as catches decline. We are no different than the NMFS. We have social policy hang ups that preclude achievement using the Market Quota System. Our fishermen are preordained with the rights to always take from the ocean for free. So with this attitude in the way of a MQS, even despite repeated failures, it is an up hill debate. This is only because of the wide spread hang-ups about taking for free. A public aquaculture philosophy must displace this hang up, if the MQS is to have a chance as a system. These O take for free hang-ups are coupled with the attitude that fishermen have a right to their own personal environmentally destructive fishing habits. These are all public dysfunctions that are rooted in some kind of guilt. These emotional problems result in a sheepishness of control of public assets. Getting it figured out is hard. I am trying to comprehend these things.

Federal, state and local governments have a private aquaculture philosophy. We do not have a public aquaculture philosophy. We do not even have a team of people that can understand the basic economic elements of public aquaculture. So we go without the values that aquaculture brings. This situation is what is stopping production. With the MQS and the use of matching funds from State and Federal Government the Municipality of Nantucket could pave the way for future fishermen. Because wealth needs to be created, using a system. It is

not something that will spontaneously occur. There is an enormous potential to rebuild the marine environment. And by this I mean to recreate the natural productivity of the ocean, using good fisheries management and good aquaculture, public aquaculture.

To me, there are two different types of aquaculture that have evolved. One is private aquaculture. The other is enhancement, or as I call it “public aquaculture”.

The nature of private aquaculture is that it raises up animals to a marketable size for sale on the market. This usually entails densely packing the animals. Also usually the fecal matter is a source of trouble. Genetic troubles are also becoming apparent as the science of aquaculture becomes a public issue. These private aquaculture companies don't pay for their various impacts, any more than does a dragger pay for discarded fish. The MQS can change that by taxing aquaculture pollution, and putting that money back into fisheries and public aquaculture infrastructure. This thinking does not need to be structured within the MQS system, but it would be advantageous to do so.

The nature of public aquaculture as opposed to private is to raise up animals to a survivable size, (and plants too, such as kelp and eel grass). Genetically, public aquaculture tries to replicate nature. The animals in captivity at such a small size do not produce much feces. The aim of public aquaculture is to enhance and rebuild eco-systems that are essentially broken, and down for the count. But this philosophy of public aquaculture cannot stop at seeding practices, as has “enhancement”. It has to be holistic and inclusive of all aspects of cultivation. And the cultivation has to be reasonably within the bounds of a naturally productive environment. Taking care of the habitat, dedication to keeping things in balance, that is what it's all about. This will put natural environmental production on a level of the natural environment that we of this age have never witnessed. We can then draw carefully from that.

The problem with public aquaculture is the absence of the Market Quota System. There is no vehicle to take a reasonable share of the fisheries income and put it right back into fisheries production through aquaculture. With the introduction of the Market Quota System the aquaculture investments that we make, along with prudent fisheries controls, will snow ball. Seafood will be landed in great tonnage. Our approach to aquaculture here on the east coast is small in scale. We use Chinese gear that is very labor intensive. And our philosophy is narrowly involved in seeding. Fisheries management and aquaculture live separate and distinct lives. The MQS rather dovetails the best of both aspects together.

With the Market Quota System we modernize our philosophy and use a highly capitalized and mechanized aquaculture processes. This will dawn a new era. The public aquaculture industry will far exceed in efficiency the private aquaculture sector. Harvesting will remain the fisherman's job. Fishermen will never again go wanting for work on the water. Seafood production with this system will be awesome. Seafood will be landed in great tonnage.

## 8. CONCLUSION

I think that the Market Quota System is the ultimate in public resource management, but the only way to really learn about the MQS is to try it out on a pilot basis.

Basically all the MQS is, is free enterprise adapted to work as a government tool. Does the free enterprise system impress you? Think of the MQS as the business mans approach to environmentalism. I have often thought that the MQS would be the banker's or the accountant's choice of systems, but I'm just a fisherman and laborer.