



Klamath Fishery Management Council

Working to Restore Anadromous Fish in the Klamath River Basin
P.O. Box 1006, Yreka, California 96097

January 26, 1990

California Commercial Salmon
Fishing Industry
California Department of
Fish and Game
California Offshore Sport Fishery
Hoopa Valley Business Council
Klamath In-River Sport Fishery
National Marine Fisheries Service
Non-Hoopa Indian Representative
Oregon Commercial Salmon
Fishing Industry
Oregon Department of
Wildlife
Fishery Management
Council
U.S. Department of the Interior

Memorandum

TO: Klamath Fishery Management Council
FROM: Ron Iverson *RJ*
SUBJECT: Draft minutes of the Management Council
meeting held 4-6 January, 1990.

Attached for your review are minutes of the subject meeting held in La Jolla, California. Included are several handouts provided at the meeting.

Enclosures

NOTES ON THE MEETING OF THE KLAMATH FISHERY MANAGEMENT COUNCIL

HELD 4-6 JANUARY 1990

IN LA JOLLA, CALIFORNIA

4 January

Call to order

The meeting was convened at 9 a.m. by Vice Chair Sue Masten, with a quorum present (see attendance roster, Attachment 1). Gary Smith represented National Marine Fisheries Service, in Charlie Fullerton's absence.

Correction/approval of minutes and agenda

Minutes of the previous meeting were approved as drafted. A report on 1989 fall chinook harvest was added to today's agenda, provided by Mel Odemar. Highlights included:

- o Klamath in-river fall chinook run was estimated at 122,000 adults...smallest since 1985.
- o Hatcheries got needed spawning escapements, but egg survival at Iron Gate has been poor.
- o California ocean chinook landings were 521,000, compared with 1.4 million in 1988 and a 10-year average of 660,000. Also taken were 42,000 coho and a few pinks...ex vessel value was \$13 million.

The meeting agenda is provided as Attachment 2.

Overview of the planning system (Mackett)

Dave reviewed the objectives of the meeting:

- o Reach a common understanding of the responsibilities and duties of the Council with respect to planning.
- o Divide issues into fundamental and symptomatic groups.
- o Identify and structure goals and objectives, displaying how they relate to one another.

Dave said that the first two objectives would occupy most of today. He provided a flow chart of the planning system (Attachment 3), in which the issue-structuring step is the fourth box from the left. Dave also provided an

example of his planning system as applied to the albacore fishery (Attachment 4). The main product of that planning effort is the set of options, or actions, considered, including those actually implemented (Figure 4 of Attachment 4).

Comments on planning process:

- o Q: Are options prioritized? A: (Mackett) In the albacore example, all options had equal priority.
- o Maybe goals and options should be grouped...for example, a group having to do with technical data needs, and a group related to political/public involvement.
- o Klamath Task Force planning is roughly at the same stage as Klamath Council...we need to coordinate with them, somehow.

Review of Congressional mandate: responsibilities and duties (Gary Smith)

Gary provided Attachment 5, which displays portions of the Klamath Act relating to planning responsibilities of the Klamath Council. Gary noted the requirement for Council harvest planning to be consistent with goals of the Klamath Restoration Program. Those goals were drafted by a subcommittee of the Klamath Task Force (Attachment 6), although these goals may be amended in the ongoing Task Force planning process.

Comments on Council responsibilities included:

- o Question as to whether the Council can delete some species and harvests from its planning.
- o Question as to what is intended by the Klamath Act's direction to "take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches;..." (Section 460ss-2(b)(2)(C)). It was suggested legislative history be reviewed to determine intent of this language.

- o Question as to whether the Klamath Act requirement for public hearings on its harvest management recommendations (Section 460ss-2(b)(1)(C)) is met by the Council's open meetings with provision for public comment. It may be that the specific harvest plan or regulation to be reviewed should be identified in the Federal Register notice of the upcoming Council meeting. This was identified as a point needing legal clarification.

- o Proceedings of the Klamath Council don't meet all requirements of the Federal Advisory Committee Act, which would require all recommendations to be made to the Secretary of the Interior...but this is not a problem.

- o Discussion of the meaning of "long-term" plan and policy. This could refer to the 20 year period of the Klamath Restoration Program, or perhaps some shorter planning horizon set by the Klamath Council, with reviews and updates at established intervals.
- o Discussion of the meaning of "...harvesting that affects or may affect"...Klamath fish populations (Section 460ss-2(b)(1)). The Council agreed that, eventually, a list of fisheries that significantly affect Klamath anadromous stocks can be compiled. The Council would concern itself with those fisheries, and not with others. The Council would also identify those anadromous stocks that are of concern. Harvest of other stocks could proceed without Council review.
- o Discussion of the Council's charge to ..."make recommendations, that must be consistent with the goals of the [Restoration] program..." (Section 460ss-2(b)(1)(B)). A potential conflict was identified between a restoration program that calls for protection of natural stocks and a harvest plan that may rely on hatchery production. An explanation of the present draft goals of the Program (Attachment 6) was offered as follows: Goal 1 refers to increasing habitat, rearing, and smolt outmigration; Goal 2 says artificial propagation is sustaining fisheries, so should be maintained - including small-scale bioenhancement; Goal 3 refers to land use and water development activities; and Goal 4 recognizes there is no hope for restoration without concurrence of the public.
- o It was decided that a working list of Klamath anadromous fish populations would include, in addition to the six stocks identified in Attachment 5, lamprey, green and white sturgeon, eulachon, striped bass, summer and fall run steelhead, and half-pounder steelhead. Chum and pink salmon could be added, if there are self-sustaining Klamath stocks of these species.
- o Discussion of the Council's charge to ..."make recommendations"...(Section 460ss-2(b)(1)(B)) included:
 - oo Council recommendations needn't be limited to harvest regulations, but could include anything that affects harvest, such as water regulation.
 - oo Council recommendations need not be limited to the list of management agencies identified in the Klamath Act; other agencies can be advised, as well.
 - oo The Council's task of commenting on "regulations for harvesting" or "harvesting regulations" should be interpreted broadly to include all aspects of harvest plans, not just the regulations themselves.

- o Discussion of the need for Council recommendations to be ... "consistent...with the standards"...of Section 460ss-2(b)(2) of the Klamath Act, reproduced on the last page of Attachment 5, included:
 - oo Whether "natural anadromous fish populations" refers to naturally-spawning fish, or fish with no hatchery ancestry. The Task Force should address this.
- o Responses to Dave Mackett's question on the scope of the Council responsibility to develop a plan and policy included:
 - oo Responsibility is broad...Council can comment on anything that may affect its harvest plan.
 - oo Council should complete review of harvest plans in a timely manner, so fisheries aren't impacted as was the 1989 spring chinook net fishery. PFMC time schedule is a constraint.
 - oo Having only advisory and not regulatory authority, the Council can't stop a fishery from proceeding.

Review of generation of issues - from previous meeting (Mackett)

Dave distributed an edited list of the issues identified at the last Council meeting (Attachment 7). Having determined that the edited list was acceptable to the Council, Dave asked for any additional issues. Issues identified were:

- o (Masten) Need to determine or estimate presently unaccounted harvest, including incidental takes in trawl or other fisheries, illegal harvests, "ocean subsistence", and fish used for bartering.

Structuring of issues, using interpretive structural modeling (ISM) technique

Mackett posed a new trigger question: In the context of designing a harvest management system for the Klamath River basin, does issue x aggravate issue y? Dave substituted various issues for x and y. In the discussion below, issues will be referred to by numbers assigned in Attachment 7.

Does issue 3 aggravate issue 9?

Discussion:

- o Yes. Efforts to restore Klamath chinook have led to a harvest rate management scheme that allows excess escapement and harms the ocean fishery.
- o Lack of commitment to restoration keeps us fighting over a small, inadequate number of fish.
- o Consensus: yes.

Does issue 9 aggravate issue 3?

- o Perception of unfair allocation has led to reduced support for restoration.
- o Consensus: yes.

Does issue 3 aggravate issue 5? Consensus: no.

Does issue 5 aggravate issue 3?

- o If we understood each other's goals and needs, commitment to enhancement would be increased.
- o Understanding of other's needs runs thin when fish get scarce...our own needs become dominant, then.
- o Consensus: yes.

Does issue 3 aggravate issue 4? Consensus: no

Does issue 4 aggravate issue 3?

- o Yes. If we don't know basin carrying capacity, we are left with managing stocks in their present depleted state.
- o Two conflicting perceptions here: perception of fish wasted in excess escapement, and perception of insufficient emphasis on preserving natural stocks.
- o Harvest rate management is an experiment to determine carrying capacity...and it is hard to get harvesters to support an experiment unless they see a long-term payoff in increased harvest.
- o Consensus: yes.

Does issue 5 aggravate issue 4? Consensus: no.

Does issue 4 aggravate issue 5?

- o Yes, because the definition of "needs" will vary depending on perceptions of what harvests are possible. When we don't know the production potential, people set their "needs" high, to avoid selling themselves short.
- o Consensus: yes.

Does issue 6 aggravate issue 4? Consensus: no.

Does issue 3 aggravate issue 6? Consensus: yes.

Does issue 6 aggravate issue 3? Consensus: yes.

Does issue 3 aggravate issue 7? Consensus: no.

Does issue 5 aggravate issue 7?

- o No. Understanding of needs doesn't provide technical information on management components.
- o Yes. We need to resolve user group needs before we can write specifications for the harvest plan. Example: boundaries of the KMZ are components of the management system, but these have been shifted through political disputes between users.
- o The original harvest plan (the 5-year allocation agreement) only got settled when user needs were identified.
- o Consensus: yes.

Does issue 7 aggravate issue 5?

- o Yes. For example, the decision on whether to consider upriver fisheries in the plan would affect the need to understand needs of upriver harvesters.
- o No. We could disagree on plan components, while still agreeing on needs.
- o Confusion over whether the Council should be concerned with spring chinook led to lack of understanding of what user group needs for that stock might be.
- o Consensus: yes.

Does issue 8 aggravate issue 4? Consensus: no.

Does issue 3 aggravate issue 8? Consensus: yes.

Does issue 8 aggravate issue 3?

- o Yes. Over the last two years, the ocean harvesters have sought to get escapement reduced.
- o Consensus: yes.

Does issue 3 aggravate issue 11?

- o No. We can make a technical determination of productivity, regardless of commitment to restoration.
- o Consensus: no.

Does issue 11 aggravate issue 3?

- o Yes. One reason for the "waning commitment" is the perception that biologists are too conservative in raising the estimate of alpha to consider hatchery stocks.
- o Consensus: yes.

Does issue 5 aggravate issue 11? Consensus: no.

Does issue 11 aggravate issue 5?

- o No. One is a political, one a technical issue.
- o Yes. Lack of information on productive capacity causes people to exaggerate their claimed needs.
- o Better agreement on technical estimates will help resolve many other conflicts.
- o Consensus: no.

Does issue 4 aggravate issue 11?

- o The need to estimate MSY is what drives us to estimate hatchery and natural productivity.
- o The two issues mean about the same thing, except 11 is refined into hatchery and natural.
- o To determine MSY for the basin, we need to be able to treat hatchery and natural stocks separately.
- o Wrong - MSY doesn't really apply to hatchery production, since a hatchery has only one value on the x axis of a stock/recruit relation.
- o Consensus: no.

Does issue 14 aggravate issue 4? Consensus: no.

Does issue 3 aggravate issue 14?

- o Yes. If we don't commit to restoration, the long-term effect is less abundance to share.
- o Issue 14 refers to sharing of unexpected abundance, as seen in the 1986-88 chinook runs.
- o Consensus: no.

Does issue 14 aggravate issue 3? Consensus: yes.

Does issue 5 aggravate issue 14?

- o Yes. Lack of clearly stated goals makes it hard to create a sharing process...each group claims their needs are unmet while the other guy is harvesting a bonanza.
- o No. The need for a sharing mechanism is there regardless of whether needs are understood.
- o Consensus: no.

Does issue 14 aggravate issue 5?

- o There is a link. When fall chinook became available in abundance, it appeared the record 1988 troll harvest had become a "minimum" need, even though the allocation formula of the 5-year agreement was violated in favor of the ocean harvest. Abundant chinook brought our agreement on sharing to an end.
- o In the context of designing a harvest plan, there should be no linkage of these issues, even though there has been, historically.
- o Consensus: no.

Does issue 4 aggravate issue 14?

- o No. We need a process for sharing abundance regardless of level of MSY.
- o Yes. Our method of estimating MSY is harvest rate management, which causes us to forego harvest in years of abundance...leading to overescapement.
- o Yes. Lacking good estimates of MSY, we are required to manage conservatively, meaning we will have excess escapements in some years.
- o Consensus: yes.

All issues that got at least one vote as first priority have now been addressed.

Does issue 11 aggravate issue 14?

- o Yes. Lack of biological information leads to underutilization in abundant years. Better information on productive capacity would lead to better stock size projections, and fewer years of unforeseen abundance.
- o Consensus: no.

Does issue 15 aggravate issue 4? Consensus: no.

Does issue 15 aggravate issue 5? Consensus: yes.

Does issue 5 aggravate issue 15? Consensus: yes.

Does issue 17 aggravate issue 4?

- o There is no latitude in current harvest rate management to consider socioeconomic factors, but that may change if the PCFFA lawsuit over Amendment 9 is successful.
- o Consensus: no.

Does issue 17 aggravate issue 5? Consensus: yes.

Does issue 5 aggravate issue 17? Consensus: yes.

Does issue 18 aggravate issue 4? Consensus: yes.

Does issue 4 aggravate issue 18? Consensus: no.

Does issue 18 aggravate issue 11? Consensus: no.

Does issue 21 aggravate issue 18?

- o Yes...we need public support in order to manage...to carry out the plan.
- o Don't see why we have issue 21...public participation is a given...everything we do is in public.
- o Consensus: no

Does issue 21 aggravate issue 11? Consensus: no.

Does issue 5 aggravate issue 21? Consensus: no.

Does issue 21 aggravate issue 3?

- o Many people feel the public is not involved enough in Klamath fish management, and this detracts from commitment to restoration.
- o Consensus: no.

Does issue 4 aggravate issue 21? Consensus: no.

Does issue 11 aggravate issue 21? Consensus: no.

Does issue 18 aggravate issue 21? Consensus: no.

Does issue 23 aggravate issue 18? Consensus: no.

Does issue 23 aggravate issue 4? Consensus: yes.

Does issue 4 aggravate issue 23? Consensus: yes.

Does issue 24 aggravate issue 18?

o No. Issue 18 is technical...plan elements would be the same regardless of level of trust.

o Consensus: no

Does issue 24 aggravate issue 23? Consensus: no.

Does issue 24 aggravate issue 5? Consensus: yes.

Does issue 7 aggravate issue 24?

o Yes. For instance, failure to decide on including the spring run in the Council's area of concern detracted from mutual trust.

o Consensus: yes.

Does issue 26 aggravate issue 18? Consensus: no.

Does issue 26 aggravate issue 4?

o A "viable" KMZ fishery could mean one that would provide a living for trollers from KMZ ports.

o Consensus: no.

Does issue 26 aggravate issue 7? Consensus: yes.

Does issue 5 aggravate issue 26? Consensus: yes.

Does issue 27 aggravate issue 18? Consensus: no.

Does issue 27 aggravate issue 4? Consensus: no.

Does issue 27 aggravate issue 5?

o Could be some linkage...providing for contingencies like weather would contribute to satisfying needs of trollers.

o Special provisions for ceremonial fisheries might be an example of a link between these issues.

o Consensus: no.

Does issue 5 aggravate issue 27? Consensus: no.

Does issue 3 aggravate issue 27?

- o Yes. Lack of commitment to restoration leads us to take fish from spawning escapement, rather than going to the work of planning for contingencies while adhering to the harvest rate concept. An example: the pressure to reduce escapement in drought years.
- o Consensus: yes.

Does issue 27 aggravate issue 3? Consensus: yes.

Does issue 27 aggravate issue 28? Consensus: no.

Does issue 28 aggravate issue 18? Consensus: yes.

Does issue 18 aggravate issue 28? Consensus: no.

Does issue 28 aggravate issue 11? Consensus: no.

Does issue 28 aggravate issue 21? Consensus: yes.

Does issue 29 aggravate issue 28? Consensus: no.

Does issue 29 aggravate issue 18? Consensus: yes.

Does issue 28 aggravate issue 29? Consensus: yes.

Does issue 18 aggravate issue 29? Consensus: yes.

Does issue 32 aggravate issue 28?

- o The appearance of an increasing Klamath chinook resource leading to decreased ocean fishing opportunity leads to public confusion as to what the Klamath Council's rationale is.
- o Consensus: no.

Does issue 32 aggravate issue 18? Consensus: no.

Does issue 32 aggravate issue 23?

- o Yes. Trollers seem to argue that Klamath chinook stocks should be reduced, in order to reduce their contribution rate.
- o No. Issue 23 is purely technical.
- o Consensus: no.

Does issue 5 aggravate issue 32? Consensus: yes.

Does issue 32 aggravate issue 5? Consensus: yes.

Does issue 34 aggravate issue 23? Consensus: no.

Does issue 34 aggravate issue 28? Consensus: no.

Does issue 34 aggravate issue 18?

- o Yes. Example: the need to monitor/evaluate might cause us to exclude a species from management, because monitoring of that element might be too expensive, technically difficult, or whatever.
- o Consensus: yes.

Does issue 18 aggravate issue 34? Consensus: yes.

Does issue 37 aggravate issue 28? Consensus: yes.

Does issue 28 aggravate issue 37?

- o Yes. Confusion on why we are here aggravates lack of understanding of our management roles.
- o Consensus: yes.

Does issue 44 aggravate issue 28? Consensus: no.

Does issue 44 aggravate issue 18? Consensus: yes.

Does issue 18 aggravate issue 44? Consensus: yes.

Does issue 47 aggravate issue 28? Consensus: no.

Does issue 47 aggravate issue 18? Consensus: no.

Does issue 5 aggravate issue 47? Consensus: yes.

Does issue 47 aggravate issue 5?

- o Yes. If you can't develop an agreement that people subscribe to, their disclosure of goals will be less open.
- o Consensus: yes.

Does issue 50 aggravate issue 28? Consensus: no.

Does issue 50 aggravate issue 18?

- o Yes. Data needs will in part define how harvests are managed. Example: Inseason management changes are constrained by lack of data.
- o No, but there is a linkage in the reverse order.

- o Yes. We have to define data needs before we decide to include a species, fishery, or geographic area in the plan...because data may not be available to permit management of that element.
- o Consensus: yes.

Does issue 18 aggravate issue 50?

- o Yes. It is hard to know data needs without knowing what the parts of the plan will be.
- o Consensus: yes.

Does issue 57 aggravate issue 18? Consensus: no.

Does issue 5 aggravate issue 57?

- o No. Lack of understanding of other's goals shouldn't make it harder to agree on a planning process.
- o Consensus: yes.

Does issue 57 aggravate issue 5? Consensus: yes.

This concludes structuring of issues.

5 January

Review of preliminary issue structure

Mackett distributed a preliminary issue structure drawn from yesterday's discussion (Attachment 8). In this figure, issues to the left aggravate issues to their right. Within a boxed cluster, issues are mutually aggravating. Fundamental issues are generally to the left, and symptomatic issues to the right. Issue 3, at the far right, is an ultimate issue: it will be resolved by resolution of the fundamental issues.

Comments on the issue structure:

- o Unclear why issue 11 should stand alone...it could be grouped with other technical issues 4 and 23.
- o Issue 27 doesn't seem to belong at the right...could be grouped with other bio-data issues.

- o Structure seems to make sense... "understanding" issues are to the left, then technical issues, then the largest cluster are more sociopolitical.
- o Issues 9 and 27 don't seem to belong with 3, 6, 8.
- o Q: Attachment 8 displays about half of the 59 issues. What about the rest? A: (Mackett) There are five more issues that got votes as high priority, and we could include those. The other 20 or so could be handled by a special work session, a subcommittee, or just written off.

Mackett then brought forward the remaining five "priority" issues:

Issue 36 comments:

- o Place in the second cluster from the left.
- o No, not a technical issue... more of a public perception of inadequate law enforcement.
- o Combine it with issue 37.
- o Put in the big cluster starting with issue 5.
- o Consensus: Put it in the big cluster.

Issue 38 comments:

- o This is an ultimate issue... place it to the right.
- o No - place in the large cluster of sociopolitical issues.
- o Place in second cluster... technical issues.
- o A guiding principle - place it to the left.
- o Consensus: place issue 38 in the big cluster beginning with issue 5.

Issue 41 comments:

- o Consensus: group in second box from left.

Issue 42 comments:

- o Resembles issue 14... place it at the right hand... and maybe move 14 over there, too.
- o But 42 aggravates 47 -- if agreements are too flexible, they don't amount to anything.
- o Consensus: Place in the largest cluster.

Issue 49 comments:

- o Consensus: Let's drop it.

Issue 59 comments:

- o The need to determine unaccounted harvest.
- o Consensus: Place in second cluster from the left, with other data issues.

Next, Mackett asked if there should be any rearrangement of issues as displayed in Attachment 8.

- o Move issue 27 from the righthand cluster...group it with other data issues.
- o Issue 27 belongs with issue 42...both have to do with the need for flexibility in the plan.
- o Group 27 with 14, which deals with deviations from predicted abundance. (Mackett: remember, we are not grouping issues by similarity, but by interaction).
- o Consensus: Put 27 in the biggest cluster, with issue 5.
- o Consensus: Issue 11 should be grouped with 4 and 23.
- o Move issue 26 to the right hand cluster.
- o Consensus: Leave 26 in the large cluster.

(Mackett): This completes revision of the preliminary issues structure. A revised structure will be provided (Attachment 9).

Generation and clarification of goals and objectives

Dave displayed a trigger question: In the context of designing the KFMC's harvest management system, what desirable (and important) goals and objectives should the system accomplish?

(Mackett): We will adhere to the usual definitions: goals are at a higher level than objectives, and typically not intended to be fully met. Activities are at a lower level than objectives...require energy, work, investment to accomplish. In today's goal-writing exercise, focus on the desired future...don't be distracted by how to accomplish it. Each goal should encompass one idea; minimize use of "and" in goals. The goal statement should be a sentence: verb plus qualifier.

First, define "harvest management system".

- o A process to allocate target stocks.
- o A mechanism to rebuild runs to provide MSY...to provide stable fisheries for all users...to minimize variability in abundance.
- o A system that emphasizes sharing of enhanced harvests.
- o First, a regulatory system to protect the health of the resource. Second, an allocation of harvestable fish.
- o A system of goals, objectives, and criteria for sustaining and allocating the resource.
- o Should include an inventory of resources we now have.
- o A statement of the biological and socioeconomic needs of the resource and the users, and a mechanism to meet those needs.

The Council then stated goals for the harvest management system. These are displayed in Attachment 10. The next step was clarification of these goals. Clarifying comments included:

Goal 1 (Warrens): Goal is intended to include natural and hatchery stocks.

Goal 2 (Marshall): Accountability refers to good-faith adherence to allocations or other agreements.

Goal 3 (Odemar): Definition of "equitable" includes acceptable to all users.

Goal 4 (Bostwick): I refer to meeting needs without dipping into spawning escapement.

Goal 5 (Masten): Responding to a question as to why this is a Council, rather than a Task Force responsibility, Sue said that having an estimate of carrying capacity gives the Council a meaningful estimate of what spawning escapement to manage for.

Goal 6 (Wilkinson): Feel we should avoid a goal of maximum fish abundance, because this implies big hatchery programs.

Goal 9 (Bingham): I refer to the ocean fishery generally, not just the KMZ. "Viable" refers to ability of trollers to make a living.

- o Would a certain level of total ex-vessel income constitute viability, or do we have to provide a living to all who want to enter the troll fishery? (Bingham): I was referring to reasonable access to stocks, particularly Rogue and Sacramento, in order to provide a reasonable total economic return to the troll fleet. We are concerned about special provisions for hobby fishers, as we had last year in the

KMZ...not sure this is justified. We foresee the California troll fleet being reduced in size.

- o Would you grant the same "viability" to inriver fisheries? (Bingham): Yes.
- o Concerned that trollers definition of "viable" seems to refer only to themselves - excluding part time day boat harvesters...yet the day boats were a big part of the KMZ fishery last year, and the KMZ ports claim that this fleet is important to the local economy. (Bingham): I agree that ocean fishery viability goes beyond the big-boat troll fleet...it includes the recreational fishery, too. I intended goal 9 to be broad.
- 0 Seems like if we have a large troll fleet fishing offshore and earning a large ex-vessel income, that is evidence of a viable ocean fishery, no matter how loud the complaints. There was plenty of complaining by the troll industry, even in the record catch year of 1988.

Goal 12 (Marshall): By equity I refer to fairness, and addressing minimum needs.

Goal 13 (Odemar):

- o Concerned about "optimal": do you mean maximum, or optimal balance between species, or an optimal combination of biological and economic values? (Odemar): I don't mean "maximum"...my meaning includes some optimal mix of hatchery and natural fish...I accept that this will include natural stocks that are smaller than they would be if there were no hatcheries in the basin.

Goal 14 (Bostwick): I refer to the fact that some agencies have never sent their proposed plans or regulations to us for review. Maybe we should request this, and establish a reasonable time frame.

Goal 15 (Masten): My intent was to have a factor in our plan that insures adequate escapement, and that provides for increased escapement as restoration proceeds.

Goal 16 (Wilkinson): I think that poor estimates of spawning escapement have harmed management, because they carry forward into inaccurate estimates of ocean stock size.

Goal 17 (Martin): I refer to the public's ownership of the fishery resource. We should remember these are public resources, and not the property of user groups.

Goal 18 (Reed): The Klamath Act has cost efficiency language, and I think this encourages us to minimize onerous or confusing harvest regulations, and unnecessary interference in people's lives.

Goal 21 (Warrens): I recognize this is a goal for the Task Force, but our plan can't succeed unless it gets done, so I think we should review the Task Force plan to insure this is addressed.

Goal 23 (Marshall)

- o Do you refer to setting up an orderly decision making process whereby we can test each decision against a previously agreed-upon goal, with less arbitrary bargaining? (Marshall): Correct.

Goal 24 (Bostwick): I am thinking of the skeptical view of the troll industry towards Klamath biological data...we need to educate and develop trust.

Goal 25 (Masten): My intent includes setting criteria for levels of accuracy we can live with, developing a plan and system for identifying data needs...and note that cost shouldn't always be the first consideration in deciding whether to collect information.

Goal 26 (Reed): This is a Republican version of goal 25. Let's not get in a position of depending on data we have no chance of collecting...but if we have a critical information need, we can use that as justification for getting funding to collect it.

Goal 27 (Bingham): I refer to the need to eventually move from harvest rate management to a numerical range of escapement goals.

Goal 28 (Warrens): I refer to the need to get the public to see the big picture of restoration needs, and to get them to buy in.

Goal 30 (Bostwick): I refer to a need to adjust harvests when stock abundance predictions are high or low.

- o We can't do this...we lack information to make inseason adjustments.
- o Still a valid goal, even though we can't implement it yet.

Goal 31 (Martin)

- o There could be a conflict between our plan and some prior mitigation requirement. (Martin): Agree...but mitigation requirements can be updated.

Goal 32 (Reed): I mean that our decision making process should square with the real world of harvest schedules and the like, and should be predictable... repeated yearly, so people know what to expect.

Goal 36 (Martin): I mean we should think in the long-term, consider the biology of each stock.

Goal 37 (Warrens): By historical, I refer to pre-dam levels of abundance.

- o What if MSY is different today from historic times? (Warrens): That could be, but I suspect productive potential of the basin could be made to approach historic levels.

Goal 38 (Marshall): I refer to economic viability, to maintaining traditional seasons, and to harvesting all stocks.

Goal 39 (Martin): I refer to things like identifying minimum effective population sizes for various stocks, defining allowable impacts of hatchery on natural fish, managing genetics of hatchery fish...

(Mackett): We have now stated and clarified goals. Next step is to vote on significance. Let's rank the highest-priority goals (results of ranking are displayed below):

<u>Goal</u>	<u>Rank</u>
1	1,1,1,1,2
2	
3	2,5,3
4	3
5	
6	1
7	5,3
8	1
9	1
10	1,2,2,4
11	2,2
12	3
13	4,1,4
14	4
15	

<u>Goal</u>	<u>Rank</u>
16	2
17	2
18	3, 5
19	2, 2, 3
20	4, 2
21	
22	
23	4
24	
25	
26	5, 4, 5
27	4
28	3, 5, 4
29	3
30	
31	5
32	3, 4, 3
33	
34	
35	
36	
37	
38	1
39	5

Structuring of goals and objectives, using ISM

Mackett: We will prepare a preliminary goals structure, starting with goals that received votes for #1 ranking. Our new trigger question: In the context of establishing a harvest management system for the Klamath River basin, will the achievement of (or substantial progress toward) goal X significantly support the achievement of goal Y?

Discussion of goal interactions included the following:

Will achievement of goal 1 support achievement of goal 6?

- o Not necessarily...MSY level of abundance may not be best for natural stocks.
- o Yes. MSY level of stock abundance would surely mean we would at least have self-sustaining natural populations.
- o Consensus: yes.

Will achievement of goal 1 support achievement of goal 8? Consensus: no.

Will achievement of goal 8 support achievement of goal 1?

- o Two ways of stating the same goal.
- o Consensus: yes.

Will achievement of goal 1 support achievement of goal 9?

- o The ocean fishery wouldn't necessarily get the additional fish made available by enhanced productivity.
- o Consensus: yes.

Will achievement of goal 9 support achievement of goal 1?

- o Yes. A viable troll industry would be more willing to support Klamath restoration projects. Troll industry might put up to 1/4 of its economic return back into restoration.
- o Disagree...we have had strong ocean fisheries in recent years, but no significant contribution to Klamath restoration
- o A bigger offshore fishery could make it more difficult to reach MSY.
- o No direct link, but an indirect link through increased public support for restoration.
- o Consensus: no.

Will achievement of goal 9 support achievement of goal 10? Consensus: no.

Will achievement of goal 10 support achievement of goal 8?

- o Again, a weak link, through public support.
- o A strong, direct link
- o Consensus: yes.

Will achievement of goal 8 support achievement of goal 10?

- o No. Goal 10 provides a process to achieve 8...but no reverse link.
- o Yes. Success in 8 makes achieving 10 easier.
- o Consensus: yes.

Will achievement of goal 13 support achievement of goal 8? Consensus: yes.

Will achievement of goal 8 support achievement of goal 13?

- o These amount to the same goal.
- o Building the resource will reduce the temptation to dip into natural spawning escapement to provide harvest.
- o Consensus: yes.

Will achievement of goal 38 support achievement of goal 8? Consensus: no.

Will achievement of goal 8 support achievement of goal 38? Consensus: yes.

Will achievement of goal 38 support achievement of goal 1?

- o If escapement to the river is excessive, a vigorous river fishery could harvest it down to more productive levels.
- o Consensus: no.

Will achievement of goal 1 support achievement of goal 30? Consensus: yes.

Will achievement of goal 9 support achievement of goal 30?

- o No. Harvest capacity of the ocean fishery has prevented the river fisheries from sharing abundance.
- o Yes. Satisfying the needs of one fishery tends to satisfy the needs of others...politically.

- o Again, the link is only indirect, through increased public acceptance.
- o No positive link. Historically, the two fisheries have gone to PFMC to battle over fish.
- o Consensus: yes.

Will achievement of goal 38 support achievement of goal 9?

- o Yes. Viability of one fishery leads to viability of others.
- o No. Historic record is that "viability" of ocean fishery has been achieved by winning the allocation fight in PFMC, making inriver harvesters unhappy.
- o That has been the case, but we are talking about goals to be worked toward...even though they have not been attained in the past.
- o Let's drop "viable" from goals...maybe substitute something about appropriate balance of harvests.
- o When the 5-year agreement was signed, it was expected to produce viable fisheries for all, so viability was a respectable concept, at least then.
- o Consensus: yes.

Will achievement of goal 19 support achievement of goal 8? Consensus: yes.

Will achievement of goal 8 support achievement of goal 19? Consensus: yes.

Will achievement of goal 3 support achievement of goal 8?

- o Again, a link through increased public support, but no direct link.
- o Maybe a negative link. Consider the "Oregon" proposal - at PFMC last year - to cut escapement to provide equitable harvest in the KMZ.
- o Consensus: no.

Will achievement of goal 8 support achievement of goal 3? Consensus: yes.

Will achievement of goal 9 support achievement of goal 3? Consensus: no.

Will achievement of goal 3 support achievement of goal 1?

- o No. Goal 3 doesn't deal with spawning escapement.
- o Yes, on the assumption that equitable sharing won't dip into escapement, as it should not under harvest rate management.

- o As we just discussed, we were ready - in 1989 - to dip into escapement to provide equitable harvest.
- o Consensus: no.

Will achievement of goal 1 support achievement of goal 3? Consensus: yes.

Will achievement of goal 3 support achievement of goal 9?

- o Yes. One aspect of viability is sustainable harvest share through time. If the ocean fishery gets an inequitably large share, experience shows that can't be sustained...will be attacked politically.
- o Agree. If ocean users feel their share is equitable, they are likely to be more flexible in their definition of "viable".
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 8?

- o Yes. We won't get restoration without public support and understanding.
- o Link is indirect.
- o Consensus: yes.

Will achievement of goal 8 support achievement of goal 32?

- o Yes. Achieving restoration will make the management process easier.
- o Consensus: no.

It was decided to complete goal structuring tomorrow, and turn to other KFMC business.

Discussion of next meeting

Dates of 5-6 February were selected, location to be Brookings. Letters to management agencies requesting reports on harvest monitoring and law enforcement were mailed 28 December.

Discussion turned to which of several proposed fisheries the Council should review in February. It was agreed that those fisheries planned to occur relatively early in 1990 should be reviewed at Brookings, and that harvest plan presentations would follow a format developed by the Arcata Fisheries Assistance Office (Attachment 11.) These would include proposed river spring chinook fisheries, and possibly an ocean spring chinook test fishery near the Klamath River mouth.

There was discussion as to whether environmental assessments are needed for proposed fisheries. Bureau of Indian Affairs prepared an EIS that was intended to deal with all anadromous fisheries.

Warrens asked that PFMC staff be given plenty of notice if their help is required in reviewing spring harvest plans.

Discussion turned to a March meeting. Dates of about 1-2 March were suggested, to provide time for fall chinook allocation agreement in advance of the PFMC meeting in Seattle on 5 March. Baracco said that all technical information needed for fall chinook harvest allocation will be available to the Klamath Council by the February meeting... no decisions need be held until March. Response was that, if allocation agreement should be reached in February, the March meeting can be devoted to planning.

The meeting adjourned at 5 p.m.

6 January

Structuring goals and objectives (continued)

Dave Mackett distributed a preliminary goals structure (Attachment 12) for the 10 goals discussed so far. Comments on Attachment 12:

- o I see three general types of goals: resource base, allocation, and public involvement. There is duplication, and some of the 10 goals are really objectives and tasks within other goals.
(Mackett): Correct, but let's complete structuring before we start eliminating goals.

Back to goal structuring:

Will achievement of goal 28 support achievement of goal 32? Consensus: no.

Will achievement of goal 28 support achievement of goal 8? Consensus: yes.

Will achievement of goal 8 support achievement of goal 28?

- o Raising the resource base will provide more resource to allocate.
- o A weak link
- o Consensus: no.

Will achievement of goal 32 support achievement of goal 28?

- o If the decision making process is illogical and poorly understood, this would inhibit coordinated management.
- o Consensus: yes

Will achievement of goal 26 support achievement of goal 32? Consensus: yes.
Will achievement of goal 32 support achievement of goal 26? Consensus: yes.
Will achievement of goal 11 support achievement of goal 32? Consensus: yes.
Will achievement of goal 32 support achievement of goal 11? Consensus: yes.
Will achievement of goal 20 support achievement of goal 32? Consensus: yes.
Will achievement of goal 32 support achievement of goal 20? Consensus: yes.
Will achievement of goal 7 support achievement of goal 32? Consensus: yes.
Will achievement of goal 32 support achievement of goal 7? Consensus: yes.
Will achievement of goal 18 support achievement of goal 32?

- o The reverse is a positive linkage
- o Consensus: no.

Will achievement of goal 8 support achievement of goal 18? Consensus: no.

Will achievement of goal 18 support achievement of goal 8? Consensus: no.

Will achievement of goal 32 support achievement of goal 18? Consensus: yes.

Will achievement of goal 18 support achievement of goal 3?

- o Yes. The present appearance of arbitrariness and illogic in our management system makes it hard to get agreement on sharing.
- o Agree, but the link seems to be through some intermediate public perception factor.
- o But the perception - or aggravation - factor is what makes these goals significantly linked.
- o (Reed): By management system (goal 18) I meant the regulatory framework that affects how harvesters conduct their business.
- o Consensus: no.

Will achievement of goal 18 support achievement of goal 9?

- o Yes. Achieving 18 will make life easier for ocean harvesters, contributing to the sense that their fishery is viable.
- o If we had a more orderly system to apply to the 1989 spring chinook river fishery, the fishery itself would have been more viable.

- o Another example: last-minute block closures imposed by PFMC detracted from viability of the troll fishery.
- o Consensus: yes.

Will achievement of goal 28 support achievement of goal 18?

- o A weak link...or perhaps 28 is a component of 18.
- o The "and" in 28 is a problem
- o Consensus: yes.

Will achievement of goal 16 support achievement of goal 32?

- o Yes. Achieving 16 would provide data needed for decision making.
- o Don't agree that 16 is a valid goal, because present estimate of spawner numbers is adequate....so getting more data on spawners won't significantly help decision making.
- o Goal 16 is more of an objective...speaks to a specific type of information to be gathered.
- o Consensus: no.

Will achievement of goal 16 support achievement of goal 28? Consensus: no.
16/28? no

Will achievement of goal 8 support achievement of goal 16? Consensus: no.

Will achievement of goal 16 support achievement of goal 8?

- o 16 would be a better goal if it referred to estimating natural production, rather than just estimating spawner numbers.
- o Disagree...the sample fraction of spawner estimates is too small.
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 16? Consensus: no.

Will achievement of goal 16 support achievement of goal 18? Consensus: no.

Will achievement of goal 17 support achievement of goal 7?

- o Enhancing public benefit should lead to more public support.
- o But just because public benefits are optimized doesn't mean the public will realize this and provide support...they may disagree.
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 17? Consensus: yes.

Will achievement of goal 4 support achievement of goal 20? Consensus: yes.

Will achievement of goal 32 support achievement of goal 4?

- o Yes. A logical decision process will tend to support fair allocation.
- o Consensus: yes.

Will achievement of goal 12 support achievement of goal 11?

- o Different ways of stating the same goal...or 11 may be an objective under 12.
- o Consensus: no.

Will achievement of goal 12 support achievement of goal 16? Consensus: no.

Will achievement of goal 8 support achievement of goal 12?

- o Yes...easier to have equity with lots of fish.
- o Not necessarily...we had an easier time sharing scarcity than the recent abundance.
- o Equity means something like each party achieving some of their objectives...and with abundance come more objectives, in addition to just meeting minimal needs.
- o But following this argument, equity is easiest to achieve with zero harvest...everybody gets exactly the same allocation then.
- o Consensus: yes.

Will achievement of goal 12 support achievement of goal 8? Consensus: no.

Will achievement of goal 12 support achievement of goal 1? Consensus: no.

Will achievement of goal 12 support achievement of goal 3? Consensus: yes.

Will achievement of goal 1 support achievement of goal 12? Consensus: yes.

Will achievement of goal 3 support achievement of goal 12? Consensus: yes.

Will achievement of goal 29 support achievement of goal 26?

- o Yes. Public awareness may encourage the public to provide needed data. This has been the case in the net fishery...and in the troll fishery.
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 29? Consensus: yes.

Will achievement of goal 14 support achievement of goal 26?

- o Better linkage for the converse

- o Consensus: no.

Will achievement of goal 14 support achievement of goal 16? Consensus: no.

Will achievement of goal 8 support achievement of goal 14? Consensus: no.

Will achievement of goal 32 support achievement of goal 14? Consensus: yes.

Will achievement of goal 14 support achievement of goal 8? Consensus: no.

Will achievement of goal 14 support achievement of goal 3?

- o Yes. Note spring chinook example from 1989.

- o No. Timely review by KFMC doesn't guarantee equity.

- o Consensus: yes

Will achievement of goal 14 support achievement of goal 1?

- o Yes, because timely review of harvest proposals would include a review of how the proposal provides for conservation.

- o Consensus: yes.

Will achievement of goal 16 support achievement of goal 14? Consensus: no.

Will achievement of goal 28 support achievement of goal 14?

- o Yes. Example: the coordinated state/tribal system for review of regulations has contributed to goal 14.

- o Consensus: yes.

Will achievement of goal 14 support achievement of goal 18? Consensus: yes.

Will achievement of goal 23 support achievement of goal 7?

- o The perception of conflict in KFMC and PFMC probably reduces public support.

- o Agree if by conflict we mean lack of respect for views of others, as opposed to honest disagreement.

- o Also lack of understanding of the views of others...hidden agendas....focus on personalities rather than issues...unrealistic expectations by each party as to what they can get, so that any compromise is always disappointing...unreasonable pressure from constituents on negotiators...lack of rules to fight fair, so that disagreement on one issue spills over, illogically, to others...feelings of betrayal where it is perceived that earlier agreements have been forgotten...absence of trust. All the above is a normal part of resource management, and needs to be worked on, managed around. Disagreements should not be suppressed, need to be aired.
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 23? Consensus: yes.

Will achievement of goal 27 support achievement of goal 20?

- o If goal 27 refers to a valid numerical range for escapement goals, derived from sufficient years of harvest rate management, there is support. If it refers to arbitrary numbers, then there is not.
- o (Bingham): In goal 27 I refer to a range of numbers that has sufficient biological support...am not advocating scrapping harvest rate management before the information is in.
- o Consensus: yes.

Will achievement of goal 32 support achievement of goal 27?

- o Yes. We want to estimate the escapement range through a logical process, including harvest rate management.
- o Goal 27 is defective.
- o Consensus: yes.

At this point, some additional goals were identified (see goals 40 and 41, Attachment 10).

Goal 40 (Martin): My point is that our management by harvest rate is a probing process intended to estimate MSY, and is not an end in itself.

- o Are you speaking of a new process to replace harvest rate management? (Martin): No, harvest rate management is the process for determining optimum escapement. This is a goal we have largely met.

Goal 41 (Masten)

- o Question as to whether it is intended to manage for a single ideal escapement number, or a range.

Mackett provided a second preliminary structure of goals 1-41 (Attachment 13). This concluded the preliminary structuring of goals.

Review and wrap-up

Dave asked for impressions of the meeting, and proposals as to what to do next. Discussion included:

- o Mackett's leadership has been important...would like him to stay involved in our planning.
- o Concerned that, after all this, we may still return to the old battles.
- o Let's stay with the planning process, regardless of problems that may arise in negotiating 1990 fisheries.
- o The positive dialogue has been helpful...Klamath Council spends too much time in negative conflict, which wears out our store of good will.
- o Planning model appears basically sound and applicable to Klamath. Some goals need more clarifying, so we can attach objectives and tasks to them.
- o Learned a lot, although I didn't like everything I learned.
- o Somewhat surprised at the high level of dissension after five year's of talk, but remain optimistic.
- o Surprised by the range of interpretations of the Klamath Act...thought there would be more common understanding of its provisions by now.
- o Klamath Council has an advantage, as compared with PFMC, in having focussed sets of issues and goals.
- o Let's take the time needed to achieve a quality plan.
- o Regarding a comment that we are throwing out earlier issues and goals and starting over, the goals we formulated today are really the first ones we have provided to the public.

Mackett said that the planning process seeks to identify consensus if it exists, to create one if it is absent, or to find ways to proceed without consensus.

Discussion of next meeting

Agenda of the February meeting will not include long-range planning, but a date will be set then for continuing the planning process. Planning would likely resume after the PFMC action on 1990 regulations, and after the troll season opening...probably about mid-May. Continuing use of the NMFS planning model will probably require that the group return to La Jolla, even though constituents have complained about the inaccessible location.

Comments were solicited on the harvest planning outline provided by Craig Tuss (Attachment 11). Bostwick suggested that socioeconomic considerations be added.

The meeting adjourned at noon.

ATTACHMENT 1

KLAMATH FISHERY MANAGEMENT COUNCIL

Attendance Roster, January 4-6, 1989 meeting in La Jolla, Calif.

Management Council Members

Nat Bingham	California Commercial Salmon Fishing Industry
Virginia Bostwick	Klamath In-River Sport Fishery
Gary Smith for Fullerton	National Marine Fisheries Service
Lyle Marshall	Hoopa Valley Business Council
James Martin	Oregon Department of Fish & Wildlife
Susan Masten	Non-Hoopa Indians Residing in Klamath Area
A.E. Naylor	California Department of Fish & Game
Mel Odemar (alternate)	
J. Lisle Reed	U.S. Department of the Interior
Frank Warrens	Pacific Fishery Management Council
Keith Wilkinson	Oregon Commercial Salmon Fishing Industry

Others Attending

Chuck Lane	Fish & Wildlife Service
Alan Baracco	California Dept of Fish & Game
Craig Tuss	Fish & Wildlife Service
Lila Coburn	Fish & Wildlife Service
Ronnie Pierce	Yurok Transition Team
Karole Overburg	Bureau of Indian Affairs
Del Robinson	Bureau of Indian Affairs

DRAFT AGENDA
KLAMATH FISHERY MANAGEMENT COUNCIL
MEETING OF 4-6 JANUARY 1990

4 January

9:00 a.m.	Call to order. Correction and approval of minutes and agenda.
9:15	Overview of planning system (Mackett).
9:30	Review of Congressional mandate: responsibilities and duties.
10:30	Break
10:45	Review of generation of issues - from previous meeting (Mackett).
11:00	Structuring of issues, using interpretive structural modeling (ISM) technique (group).
12:30	Lunch
1:45	Reconvene. Structuring of issues (continued).
3:00	Break
3:15	Reconvene. Structuring of issues (continued).
5:00	Adjourn

5 January

8:00 a.m.	Reconvene. Review of preliminary issue structure: identification of fundamental and symptomatic issues (group).
8:45	Generation and clarification of goals and objectives (intent) for a system to be designed to resolve the issues (group)...using nominal group technique.
9:30	Break
9:45	Reconvene. Goals and objectives (continued).
11:45	Lunch
1:00	Reconvene. Goals and objectives (continued).
2:30	Break

2:45 Reconvene. Public comment.
3:15 The system's intent: structuring of goals and objectives, using ISM. (group).
5:00 Adjourn

6 January

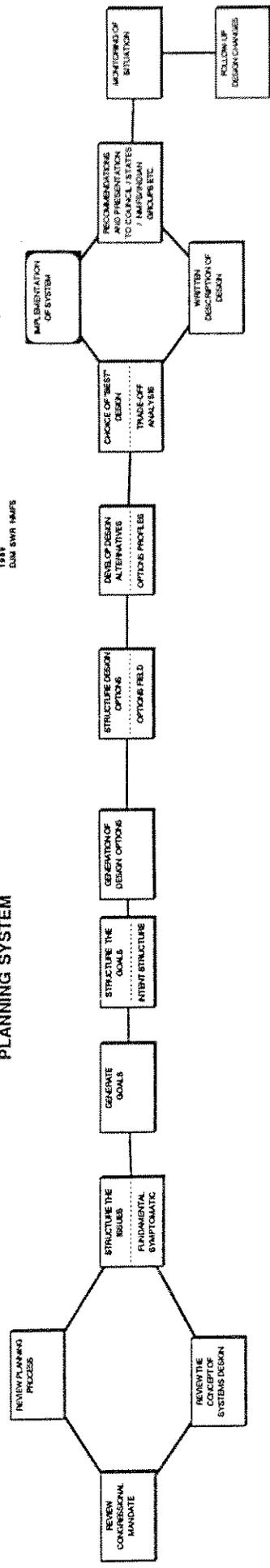
8:00 a.m. Reconvene. Structuring goals and objectives (continued).
9:30 Break
9:45 Reconvene. Structuring goals and objectives (continued).
11:00 Review of intent structure (group)
12:00 Break
12:15 Next steps and wrap-up (Mackett)
1:00 Adjourn

NOTE: If we get ahead of schedule, Dave has identified the following additional items to work on.

- o Begin the generation and clarification of options to be considered in the design of the management system.
- o Begin the structuring of those options.

DRAFT
NOVEMBER 20, 1989
REV. DECEMBER 27,
1989
DUM SWR 184FS

KLAMATH FISHERY MANAGEMENT COUNCIL PLANNING SYSTEM



Strategic Planning for Research and Management of the Albacore Tuna Fishery

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(Received 26 July 1984; revised 25 January 1985)

Key Words—Management; organizations; consensus; fisheries; planning; forecasting.

Abstract—The National Marine Fisheries Service (NMFS) employed the principles of interactive management, supported by consensus building techniques for facilitating meetings, to produce a strategic plan for research on and management of an important fishery. A technically oriented task force aided by a planner was assigned the task of facilitating the production of the plan; an important first step was the production of a probable future scenario of the fishery. Interested citizens, informed by the scenario, were invited to state their goals for the fishery and to list what they considered desirable future trends and events. An options field for the research and management strategy consisting of 17 design categories was produced by the task force and knowledgeable members of NMFS management. The pros and cons for including each option in the NMFS strategy were discussed in a meeting of NMFS Headquarters, Regional and Laboratory management. A set of options was chosen by consensus to represent the NMFS strategic plan for its research and management of the north Pacific albacore fishery.

INTRODUCTION

THIS PAPER presents a description of the process employed by the National Marine Fisheries Service (NMFS) to develop a strategic plan for its program of research and management for the U.S. north Pacific albacore fishery.

The National Marine Fisheries Service, an agency of the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), is responsible for conducting research and management programs for the nation's fisheries resources. Its mission includes ensuring the long-range viability of populations of marine fish to help sustain American fishermen's catches and consumer supplies at reasonable levels and prices.

An important U.S. fishery of concern to the NMFS is the north Pacific albacore tuna fishery. The north Pacific albacore is harvested primarily by the Japanese and American fishing fleets but Taiwanese and Canadians also participate in the fishery. The fish are caught as they migrate throughout the temperate north Pacific Ocean from the coast of Japan to the coast of North America.

Total catches of all countries have averaged 93,000 metric tons annually for the 10-year period 1971–1980. During the same period the U.S. portion of the annual catch has averaged 18,300 metric tons caught by approx. 900 small boats that fish along the U.S. west coast from Mexico to Washington state and as far west as Hawaii and Midway Island. At current ex-vessel prices (\$1300/ton), the average annual U.S. catch was worth \$23.8 million. Although there is a growing fresh fish market, presently, nearly all of the albacore that is caught is canned and sold as white meat tuna.

In addition to the domestic catch large quantities of foreign caught albacore are imported for canning; for example, during 1983 nearly 23,000 mt of north Pacific albacore were imported and canned by U.S. owned companies. The international north Pacific fishery currently yields about 42% of the U.S. canned supply of white meat tuna or nearly 10% of the entire supply of U.S. canned tuna. The north Pacific albacore fishery currently contributes over 100 million cans of tuna to the U.S. consumer annually [2].

NMFS faces several management and research problems concerning the albacore resource and fishery. First, the life history of the albacore is complex; for example, the species migrates in complicated patterns throughout the north Pacific. Second, the dynamics and interactions of the multinational tuna fisheries and the ebb and flow of world-wide economics can affect the intensity of U.S. fishing and thereby the levels of the resource. Superimposed on the already complex problem is the lack of adequate understanding of the effects of environmental elements.

Perhaps most importantly, recent analyses show that the average annual American catch has dropped to about 9000 mt—a situation that warrants increased attention and closer monitoring of the albacore fishery situation by NMFS.

With this background information in mind, the NMFS's Southwest Regional Office (SWR) and Southwest Fisheries Center (SWFC)—the NMFS offices responsible for fisheries management and research in the Southwestern Region of the U.S. respectively—decided in 1980 to increase their monitoring of and research on the albacore fishery. As a result of the need for increased monitoring and the growing complexity of the situation, it became clear that a comprehensive long-range plan for research and management of the albacore would be of benefit to both NMFS and its constituents.

Simultaneously, the SWFC was investigating better ways and means to evaluate, plan, and carry out its research programs. The SWFC installed an interactive planning and management system which integrated the results of normative, strategic and operational planning and put an emphasis on long-run efficiency through consensus building [4]. The key elements of the SWFC's interactive management approach are broad participation by constituents and staff in the planning and management of the Center's research objectives and programs and the formulation of ideals (normative planning) as a starting point for developing strategic and operational plans. Another important feature of the SWFC's system is the training and development of staff members as meeting facilitators skilled in the application of several interactive, consensus-building processes for conducting meetings.

The interactive management system was installed to help the Center approach important management and planning problems, especially those involving inter-disciplinary complexities of biology, economics, oceanography, sociology, domestic politics and international affairs. Subsequently, the SWR and SWFC began the planning for the albacore program based on this interactive planning and management process as it is described in this paper. The formation of the planning organization, the planning and meeting processes that were followed and examples of the intermediate and final results of the strategic planning are described.

THE BASES FOR EMPLOYING THE INTERACTIVE MANAGEMENT APPROACH

The interactive management approach used to develop the albacore strategic plan was applied to help NMFS solve an apparent planning and management dilemma. The dilemma arises when, on the one hand, management tries to overcome the well-known failure of homogeneous groups to solve problems adequately and, on the other hand, in trying to avoid groupthink, is faced with the problem of establishing heterogeneous and therefore poten-

tially more effective groups and getting them to work cooperatively and efficiently in solving problems and developing plans [6]. The trade-off is between quickly determined but deficient decisions and more deliberate but better decisions.

It is important to the long-range viability of an organization to solve this dilemma. A homogeneous group formed to study a problem and offer solutions deceptively appears efficient, because it predictably reaches decisions quickly, never mind if the decision or solution is based on a limited number of possibilities, ignores risks and drawbacks, avoids evaluation of minority opinions, neglects cost-benefit information, and selectively perceives outside criticism. These deficiencies of groupthink can lead to long-run inefficiencies or even disastrous results for the organization [6].

The interactive approach tries to avoid these problems by employing a group whose members collectively possess all the disciplines and points of view needed for better decisions and solutions. However, the operation of such a heterogeneous group presents another set of problems for management. The heterogeneous group's work may at first appear to be inefficient because more time is required for overcoming the shortcomings mentioned previously: more ideas are entertained, risks and drawbacks are discussed, minority opinions are evaluated, cost-benefit information is integrated and outside values and opinions are taken seriously. In addition, members may need time to learn each other's technical language and jargon. However, all of these actions contribute to increasing the probability of finding better solutions to complex problems and to making good decisions. One of the challenges to management then, is to find a means of making the work of heterogeneous groups efficient as well as effective. The SWFC and SWR attempted to do just that in undertaking the strategic planning program described in the following sections.

THE FORMATIVE STAGES

After the independent decisions to increase research activities related to the albacore fishery and to install an interactive planning and management system at the SWFC, the SWFC and SWR directors agreed that a comprehensive planning operation should be undertaken for the albacore program. Although other planning needs were also apparent, especially for the Pacific coast groundfish fishery, lack of experience in the new system and the relatively small number of trained facilitators on hand, made it prudent to undertake only one major planning activity at this stage, and the albacore fishery problem was chosen. It was further agreed that the Center's interactive management system

would serve as a model for the planning and that the joint planning endeavor would offer an opportunity to evaluate the effectiveness and efficiency of the interactive management system for planning involving a number of different people, responsibilities, disciplines and points-of-view.

The Directors of the SWFC and the SWR initiated the albacore strategic planning process by appointing a task force whose duty was first to facilitate the strategic planning and then to carry out operational planning and program execution. The task force was made up of scientists and technically oriented individuals all of whom were working on various aspects of albacore fishery research or management; the planning officer for the SWFC was assigned to assist the task force. The task force members were responsible for the content and technical aspects of the work while the planning officer was responsible for establishing and facilitating the planning processes employed by the task force.

The original task force was made up of three biologists, an oceanographer and a fishery management specialist. However, it was apparent after the first meeting that fishery economics and systems analysis expertise were also needed for proper planning, and individuals with these disciplines were added to the task force. The task force members were of very high caliber, nearly all with a Ph.D. degree and each one with several years of experience in his field. The task force members, besides representing a variety of disciplines, also represented five different organizational elements each of which was responsible for an aspect of current albacore research or management. Thus four SWFC Laboratories or Divisions and the SWR office were represented. The individuals on the task force had no previous experience working as a team although from time to time two or more had collaborated on

short-term research projects or in writing a scientific paper. Concurrently, with the strategic planning project, most of the SWFC task force members were also assigned to a technical committee which began to work towards its objective of building a computer-oriented model of the dynamics of the north Pacific albacore fishery.

THE PLANNING PROCESS

There were seven major steps in the development of the National Marine Fisheries Service's (NMFS) strategic plan for research and management of the north Pacific albacore fishery (Fig. 1):

1. An analysis of the current situation and the definition of issues that needed to be addressed.
2. The definition of probable trends and events in the fishery and its related entities.
3. The writing of a probable scenario incorporating the issues and projections of the current trends into the future.
4. The definition and structure of the constituents' desirable objectives for the fishery.
5. The definition of trends and events that would obtain if the desirable objectives were being achieved.
6. Development of an Options Field, i.e. the specification of the viable options that could be made a part of NMFS's strategy for meeting the objectives and a classification of the options into similar groups called design categories.
7. Selection of the best option(s) within each design category.

The features of each of these steps along with a description of the process used to accomplish them are provided in the following sections.

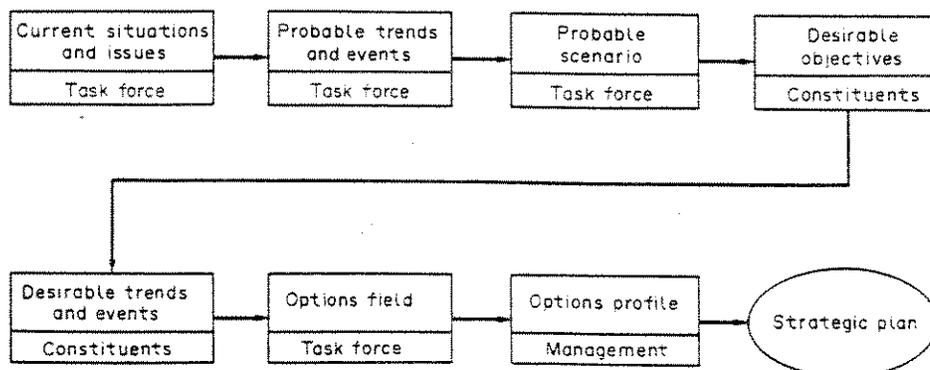


Fig. 1. The seven major steps in the development of the National Marine Fisheries Service's (NMFS) strategic plan for research and management of the north Pacific albacore fishery. The responsibility for the completion of the steps shifted among the task force, constituents and NMFS management.

ANALYSIS OF CURRENT SITUATION AND ISSUES

One of the first activities of the joint SWFC/SWR Task Force for Albacore Program Planning was to explore the issues involved with improving the situation in the north Pacific albacore fishery and to document the existing situation of the fishery and its related entities. At its first meeting the task force discussed the purpose and nature of its assignment and the overall status of the fishery. The group was engaged in a Nominal Group Technique (NGT) process to elicit the issues that the group felt needed to be addressed. The NGT process is a group decision-making process led by a meeting facilitator who usually does not have a personal stake in the outcome of the meeting. The NGT process [1] consists of the following four major steps:

1. Silent generation of ideas in writing in response to a pertinent question about the problem at hand.
2. Round-robin feedback from group members and recording of each idea.
3. Discussion and clarification of each idea.
4. Individual voting on priority ideas with the group decision derived through rank-ordering or rating.

The NGT question which the task force addressed was: "What issues (concerns) do you think will need to be addressed in planning and carrying out a program for research and management of albacore?"

In response to this trigger question, the group generated 58 issues which were classified into seven categories. Learning and team-building began very early in the discussion period of this first NGT process. As examples, it was agreed to standardize a number of technical terms and, as the issues were discussed, agreements and disagreements were voiced which allowed members to judge the extent to which colleagues understood or appreciated their particular insights or points of view. The generation, discussion, clarification and classification of these issues occupied the first day of the two-and-a-half day meeting.

Probable trends and events

After the issues were set forth and classified, the task force identified the current and probable trends in the fishery. A facilitated brain-storming session was employed to identify important trends in the fishery that would help to characterize the present and probable future situation in the fishery. Systematic discussions of each trend resulted in (1) consensus on the current and future direction and magnitude of the trend, based on the facts on hand, (2) an agreement that sufficient data were available to quantify the trend through subsequent analysis, or (3) that pure speculation was required. The facilitator

kept the group's discussion notes and graphs on a flip-chart. The group's work on trends took a full day.

Development of a probable scenario

After these discussions, task force members were assigned, on the basis of expertise and interest, the job of further analyzing some of the trends, making judgements about their future projections, and describing the trends and their probable effects in more detail. This work, which was actually the beginning of the development of the probable scenario, presented difficulties for some task force members. It is hard to identify exact causes, but the difficulties seemed to have stemmed from:

1. an uneasiness on behalf of some scientists in going outside of the scientific method and beyond the range of the data to speculate on the trends;
2. the lack of a clear precedent or model for the probable scenario; and
3. an insufficient initial explanation by the planning officer of how the scenario was to be used, accompanied by a possible fear that mere projections of trends for the probable scenario would somehow make their way into the scientific peer-review process and be misjudged as an individual's scientifically based forecast of what actually will happen.

When these difficulties were settled (through the provision of example scenarios from other planning problems and further explanations by the planning officer, coupled with strong support from upper management) the members did write a probable scenario of the future of the north Pacific albacore fishery to 1993 based on the projection of current trends. The scenario was divided into five interrelated sectors of the fishery and a chapter describing each sector was written. Albacore resources, international and domestic harvesting, domestic processing and consumption, research on the resource and fishery, and national policies and management comprised the five sectors.

A sub-committee of the task force reviewed the draft to assure that the probable scenario was internally consistent from chapter to chapter. The scenario revealed the possible problems and opportunities that the fishery might encounter in the future if current trends were allowed to continue uninterrupted. Thus it represented a picture of the status quo projected to the future.

The scenario was presented to constituents as part of the background information to prepare them for the long-range planning workshop. It helped focus the workshop participants' attention on the future of the fishery and helped them develop their ideas about a desirable or ideal future.

CONSTITUENTS' WORKSHOP ON LONG-RANGE PLANNING

A Workshop on Long-range Planning for the north Pacific albacore fishery was convened at the SWFC during June 1983. It was attended by a number of invited citizens who represented a cross-section of points of view or interests in the albacore fishery; commercial and recreational fishermen, cannery owners, boat owners, industry spokesmen and a State legislator were represented at the meeting. All the participants were individuals outside of the Federal government. As a result of the workshop, NMFS hoped to gain valuable information about what interested citizens would like to see happen in the north Pacific albacore fishery over the next decade; this information would help NMFS plan its programs. At the same time, it was hoped that the workshop participants would feel that they had contributed in a useful way toward improving their government and in helping to create the future they desired for a valuable fishery [3].

The constituents' long-range planning workshop was arranged by the task force and conducted by a facilitator contracted by the SWFC and SWR. One of the most important steps in arranging the workshop was deciding who was to be invited as a participant. The task force began to solve this problem in its first meeting by brainstorming to develop a list of attributes and specialized knowledge required to be represented at the meeting for the constituents' group to achieve a comprehensive overview of the fishery's problems and possible solutions. Thus, about 20 categories of specialized knowledge or experience were listed, e.g. long-range fishermen, boat owners, recreational fishermen, food processors, cannery owners, economic expertise, consumer requirements, financing, population dynamics, etc.

With the categories specified, a matrix was formed by listing names of individuals or organizations and checking-off the attributes possessed by the person or a representative from an organization. In some cases the people that were identified could represent two or more attributes.

The task force worked for approx. half a day to complete the list of categories and to identify the individuals. Afterwards, however, considerable time and effort was spent on logistics by support staff to invite the participants and make the other arrangements for the workshop. A group of 11 citizens representing all the required attributes was invited to attend the workshop on a volunteer basis; 10 actually attended. Travel expenses but no honoraria or fees were paid.

The two-and-a-half day workshop began with an overview of the probable scenario and a discussion of the problems in the fishery. An NGT session

produced a list and discussion of the constituents' desirable objectives for the albacore fishery. The NGT trigger question to elicit these objectives was: what are desirable goals and objectives for the future of the north Pacific albacore fishery? Following the NGT session the objectives were structured into a support relationship using Interpretive Structural Modeling (ISM) (Fig. 2).

ISM is a computer-assisted group learning process that culminates in the development of a structure displaying the relationships among the elements of an issue, problem, plan or project. The structure is developed in a meeting assisted by a skilled facilitator. The ISM methodology allows the structuring of a large set of elements, often involving a very large number of possible combinations and permutations, while the group considers at any one time only the relationship between two elements [7, 8]. Inferential logic is applied in the ISM computer program to reduce considerably the number of queries that need to be addressed.

As in the NGT process, a 'trigger' question is used in the ISM process to focus the discussion and to establish the relationship between pairs of elements. The question used in this case was: 'In the context of a desirable future for the north Pacific albacore fishery, will the achievement of objective X significantly support objective Y?'

When the objective statements are substituted for X and Y the question can only be answered with a yes or no. However, a great deal of discussion may ensue before the group can answer the question. The pairs of objectives that were considered were selected by the ISM computer program with the text of the objectives displayed on a large television screen. A typical question from this ISM session would be as follows: 'In the context of a desirable future for the north Pacific albacore fishery, will the achievement of the objective *improve forecasting of annual and geographic fluctuations in the fish stock* significantly support the objective *conduct research to improve efficiency of fishing methods of domestic fishermen*?'

With the support relationship among the objectives identified and displayed, the participants were then asked to describe what desirable trends and events one would experience in the future if indeed the objectives were being pursued. To accomplish this, the objectives were grouped into four major categories. Two categories were assigned to each of two sub-groups of workshop participants. Each sub-group was then engaged in an NGT and an idea writing session to produce a list of desirable trends and events for each category.

The workshop resulted in two major sets of information that formed the basis for further planning: (1) a set of desirable goals and objectives for the future of the albacore fishery from the

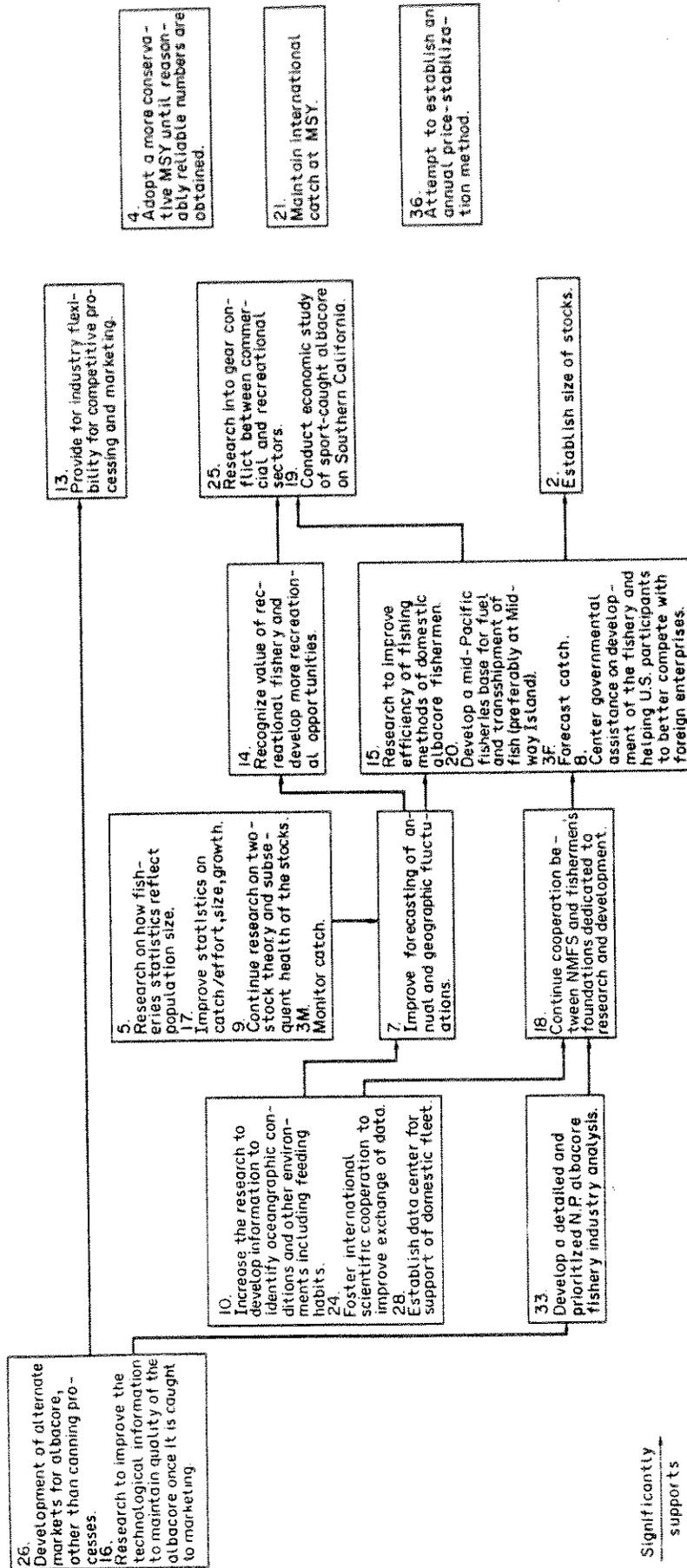


Fig. 2. Desirable goals and objectives for the future of the north Pacific albacore fishery.

constituents' point of view, and (2) a set of desirable trends and events that, if realized over the next 10 years, would indicate to the workshop participants that the desirable goals and objectives were actually being pursued and realized.

These sets of information, together with the information from the probable scenario and an examination of the issues, formed the basis for the options that were later developed for the design of the strategic plan for the NMFS albacore program. The participants in the workshop also completed an evaluation of the workshop itself. Their remarks made it clear that a large majority of the participants regarded the workshop as an efficient one and as being beneficial to both NMFS and themselves.

PREPARATION OF INFORMATION AND THE OPTIONS FIELD

Following the constituents' workshop, the task force combined the desirable trends and events developed by the constituents with the probable trends and events developed earlier by the task force. These trend statements, numbering about 130, were then grouped into 17 categories on the basis of similarities; duplicates were eliminated. The meaning and implications of the various trends were discussed during this process which was carried out in a facilitated ISM session. In this way, the task force members were able to learn a great deal about the citizens' requirements and desires and the inter-relationships among the trends and issues.

With the detailed trends and events classified, the SWFC senior staff was able to develop a set of options for the NMFS strategy. Option statements were formulated by consolidating individual detailed statements of desirable trends and events within each category. Table 1 shows a portion of this original set of options arrayed by category into what is called an Options Field. In this case, the options in each category are annotated by the original statements of desirable trends and events obtained from the constituents or from the probable scenario. This preliminary options field for guiding the design of the NMFS program for albacore research and management was used as a background document for the Directors' meeting on strategic planning for the NMFS Program for North Pacific Albacore Research and Management.

The NMFS Directors' meeting

A meeting attended by NMFS Directors was held for the purpose of establishing program objectives and selecting the options to form the NMFS strategic plan for albacore research and management. The objectives and strategy were to be established in light of the constituents' desirable goals and objectives,

and in support of these objectives to the extent that the NMFS mission and capabilities could accommodate them. The NMFS managers at the meeting were asked to:

- consider the issues and opportunities involved with the north Pacific albacore resources and fisheries;
- discuss the pros and cons of the possible and feasible options for resolving the issues or taking advantage of the opportunities;
- reach a consensus on the preferred options to be included in the long-range NMFS program for albacore research and management; and
- determine the roles and responsibilities of the various NMFS offices for carrying out the NMFS albacore program.

The participants were provided with background materials before the meeting, including reports on the fishery, a draft of the options field and the report of the constituents' workshop.

The meeting was facilitated by a professional, non-government facilitator, the same person who conducted the constituents' workshop. All of the options were displayed on a magnetic board visible at all times to the participants (Fig. 3). The participants first discussed the meaning of each of the options within each of the design categories, one at a time. SWFC and SWR technical staff from the albacore planning task force were available to answer questions and to explain the significance of options, issues or opportunities based on material from the constituents' workshop or based on known facts. After NMFS Directors were satisfied that the meanings of the options were understood, they reorganized the options field slightly by combining the four research categories into a single category and by adding a few additional options.

When the final options field was established, the group discussed the pros and cons of including each option in the NMFS strategy and selected those to be included in the NMFS albacore program. A combination of facilitated discussion and voting was used to arrive at a consensus for selecting or rejecting individual options for the strategy.

Because there were logical relationships among some of the options or categories, it was possible that selections of certain options in one category could eliminate choices in the remaining categories. Therefore, during the meeting, logically inconsistent options in the remaining categories were removed from consideration after the selections were made for a category. Only a few options were thus affected. From the Directors' point of view, the final choices in each of the design categories constituted the best alternative design of the NMFS albacore strategy (Fig. 4).

Table 1. The Options Field for three of the 17 original design categories. The options were developed by SWFC Management from the individual statements of desirable trends and events from the constituents (asterisked items) and some of the probable trends and events from the probable scenario (non-asterisked items)

4. FISHERY DEVELOPMENT	5. CENTRAL PACIFIC FISHERY BASE	6. NEW PRODUCTS
<ul style="list-style-type: none"> — Investigate potential for increasing: total catch, U.S. share of total catch, efficiency (lower costs) — Conduct gear research and development program — Conduct research program on fishing strategies — Continue cooperation with S-K projects 	<ul style="list-style-type: none"> — Promote development of Fishery Base — Monitor the State/industry efforts — Oppose development of base at Midway 	<ul style="list-style-type: none"> — Actively develop new albacore seafood products (utilization labs) — Assist industry through grants (e.g. S-K)
<ol style="list-style-type: none"> 1. Number of Japanese pole-and-line vessels declines. (PH) 2. Decrease in U.S. pole-and-line vessels. (PH) 3. U.S. vessels move farther west. (PH) 4. U.S. longline fleet increases. (PH) 5. Increase in gillnet vessels. (PH) 6. Increase in larger combination vessels. (PH) 7. Indirect constraints on albacore fishery determined. (I) 8. Fishing efficiency increases. (PH) 9. Determine if albacore fishery can be used to absorb fishing effort diverted from other U.S. fisheries. (I) 10*. Assistance for development of U.S. high seas longline and gillnet fleets through the use of S-K, AFRF, or other funds for charter vessels. (1DD) (2DD) (3DD) (6DD) 11*. Continue close communication and cooperation between government and industry for fishery development. (1DP) 12*. Establish SWFC and Navy assistance to obtain oceanographic and fishery data in support of longline and gillnet development. (1DD-6DD) 13*. R & D for domestic high-seas gillnet albacore fishery. (3DD) 14*. R & D for domestic high-seas longline fishery. (3DD) 15*. Continue R & D on new types of fishing gear. (14DR) 16*. Improve vessel and machinery designs. (19DD) 17*. Develop new materials for vessels and gear. (4DD) 18*. Develop an effective longer-lasting fish aggregation buoy (FAB). (37DD) 19*. Test fish aggregation devices with fishermen; government participation. (4DP) (5DP) 20*. Place aggregating devices in oceanic and mid-Pacific waters. (11DP) 21*. R & D on new methods for fishing albacore at depth. (12DD) 22*. Expand aquaculture research to assist commercial fisheries, e.g. baitfish culture in sea-holding pens. 23*. Engineer a breakthrough in rearing mullet for use as a baitfish. (10DD-40DD) 24*. Increase congressional support for fishery development. (29DD) 	<ol style="list-style-type: none"> 1. Infrastructure is required to develop a U.S. fishery in more distant fishing grounds. (I) 2*. Develop statistical data to show benefits of Midway base development. (11DD) 3*. Develop a plan for the necessary infrastructure in Hawaii to support the Midway Island fishing port. (20DD) 4*. Feasibility study to determine various economic development plans to use Midway Island as a fishing port. (15DD) 5*. Develop a Midway fishing base to increase fleet efficiency. (27DD) 6*. Assess level of proper government participation in developing Midway base. (28DD) 7*. Provide NMFS assistance for establishing Midway base. (11DD) 8*. State of Hawaii assistance for establishing Midway base. (11DD) 9*. U.S. Navy assistance for establishing Midway base. (11DD) 10*. Establish a fuel and transshipment base at Midway Island. (17DD) 11*. Establish a cooperative or association, to manage the Midway facility. (25DD) 12*. Develop a mothership operation at Midway if feasible. (29DD) 13*. Use of U.S. Navy mothballed fleet (refrigeration and cargo) for development of U.S. fishery. (30DD) 	<ol style="list-style-type: none"> 1. Canned tuna consumption at 93,000 tons by 1988; 104,000 tons by 1993. (PP) 2. Existing processing plants produce domestic demand through 1993. (PP) 3. Domestic retail demand for albacore in all product forms approaches 119,000 tons annually by 1993. (PP) 4. Increased industry R & D funds devoted to fresh-frozen and 'over the counter' items. (PP) 5*. Develop alternative albacore products. (11DA) 6*. Analysis of all possible ways of using albacore for the market. (11DA) 7*. Develop albacore sandwich spread. Develop sliced albacore (bologna-like). (14DA) 8*. Establish a fishery product development and utilization laboratory in Hawaii. (36DD) 9*. Establish a utilization lab outside of Hawaii. (12DA)

CONCLUDING REMARKS

The NMFS strategic plan developed for the north Pacific albacore fishery research and management—or more specifically the collective experience of the planning process—is already guiding the programming, budgeting and operations within NMFS. For example, the Southwest Fisheries Center and Southwest Regional Office are reviewing their albacore fishery-related operations, making better operational plans (some involving fishermen) and making program decisions based on the planning experience.

The strategic planning process also led to a great deal of learning by all of the people involved. The task force members learned many technical facts and scientific approaches from each other; they learned to trust each other more, and to work together more as a team. The task force also learned the explicit desires of the constituents and NMFS management. Thus the people who shared a common planning experience gained a common understanding of the albacore fishery situation and of NMFS goals and strategy for the fishery.

The citizens who were invited to participate in the long-range planning workshop also learned, as did a number of other constituents who later became

informed about the results of the planning. Recreational and commercial interests learned that they shared some explicit common goals and desires for the fishery and that they both could and should provide their thoughts to the NMFS planning process. NMFS management learned explicitly what the stakeholders desired for their fishery and, as importantly, what common desires were shared by the various components of the fishery—commercial and recreational alike. Everyone, including NMFS management, learned that it is always difficult to make judgments about the directions one should take to ensure a desirable future result, but that a systematic, open consensus-building approach, involving those who will be affected by the decisions is a worthwhile approach which minimizes confusion and improves the probability of making better decisions.

This approach used to develop the strategic plan has, in the author's opinion, helped overcome the apparent planning and management dilemma mentioned previously, i.e. the problems concerning the differences in results and operations between homogeneous and heterogeneous groups.

The approach taken here attempted to establish a heterogeneous group not only for the task force but also by the involvement of constituents, management and staff in the overall solution to the problem.

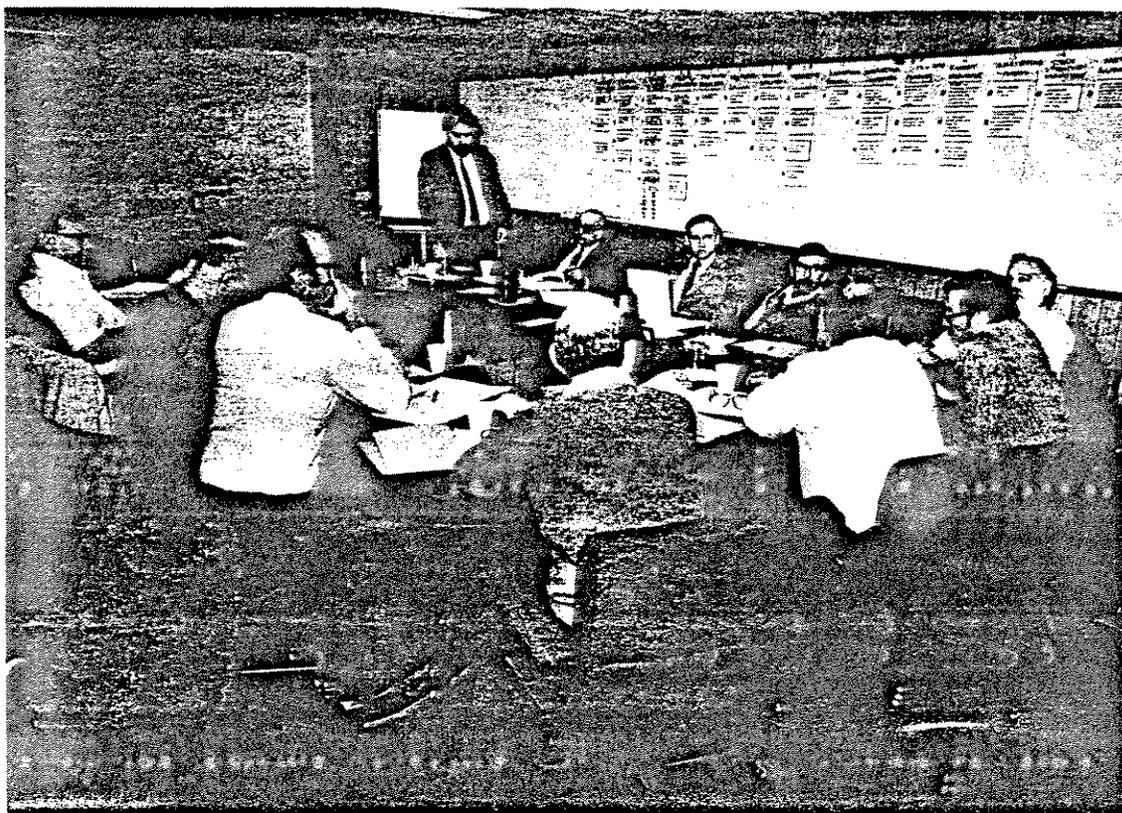


Fig. 3. National Marine Fisheries Service's top management met to select the options that were to be included in the Services Strategic Plan for the north Pacific albacore fishery.

The approach also employed ways and means of running meetings efficiently, consistent with dealing with the complexity and importance of the problem and the number and difficulty of the disciplines required to solve the problem. Unfortunately, it is difficult to judge, in any particular instance, how much better or worse an interactively derived decision might be, compared to a hurried decision made in some other mode of operation. What we do know is that over the long run, if the interactive approach is pursued, better decisions should result. Thus in the case of the strategic plan for the albacore fishery we have no absolute way of knowing how much better the result would be than if the decision were derived in the traditional manner. However, we believe that we have increased the probability that the solution is a good one.

Evidence for this assertion lies in the fact that the task force members, who are, at this stage, responsible for carrying out major portions of the plan, state that they share a common understanding of objectives and the overall program which they did not have before. This improved understanding coupled with a better appreciation of their co-workers' contributions allows them to coordinate their work much better. Inter-personal relationships among the task force members have improved also. NMFS management, though still having concerns about the future of the fishery and the resource, has a more relaxed and more confident attitude about the Service's ability to meet the research and management challenges that are before it. Overall, the SWFC and SWR staffs and management are pleased with the planning result. However, the overall implementation of the plan may have been improved if the NMFS Directors' meeting in addition to the assignment of responsibilities also included the development of a managerial monitoring and reporting system for better coordinating the albacore program among the Regional Offices, Research Centers and NMFS Headquarters.

Since the albacore program planning experience the SWFC especially has been inclined to employ the principles of interactive management in many other situations. Several more staff members have been trained in the principles of interactive management and the art of facilitation. The author is confident that as more experience with the methodology is gained and more successes are realized both the frequency of the application of interactive management techniques and the quality of the results will increase. A reinforcement to the commitment comes from the many favorable comments that are received about how the Center conducts its planning meetings from people outside the SWFC who have attended planning sessions organized by the Center. It is expected that this trend will continue.

Because a lot of time and energy are needed to design and install an interactive approach the traditional approach to solving problems seems at the present time to be on the path of least resistance for many managers and many organizations. Thus it seems likely that only the problems amenable to traditional or prescriptive solutions are adequately tackled and that important complex problems are either ignored or fitted with weak solutions in a great many instances. However, it is to be hoped that good experiences with the interactive management approach such as the one described here, will be of value to other managers and organizations and be an encouragement to them to apply it for solving those important and complex problems that seem to defy satisfactory solution through traditional approaches.

Acknowledgements—Dr. Izadore Barrett, Director of the Southwest Fisheries Center, created and maintained the environment which permitted the ideas and concepts of interactive planning and management to flourish and be successful. This kind, honest, capable man has dedicated his career to excellence in government and fishery science. Every day by deed and attitude he steers a steady course towards these goals; he is an example for us all.

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FINAL OPTIONS FIELD OPTIONS PROFILE FOR GUIDING THE DESIGN

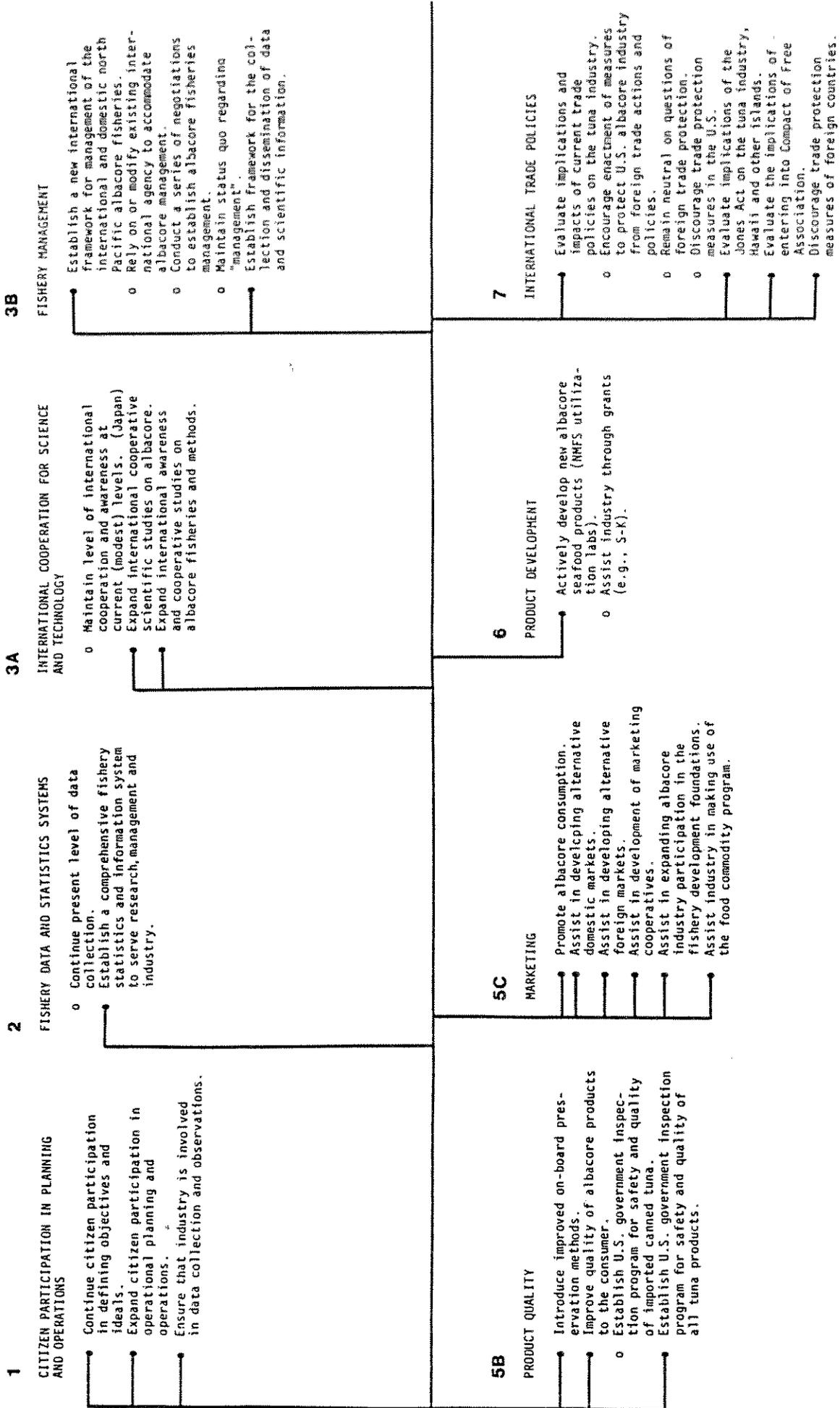
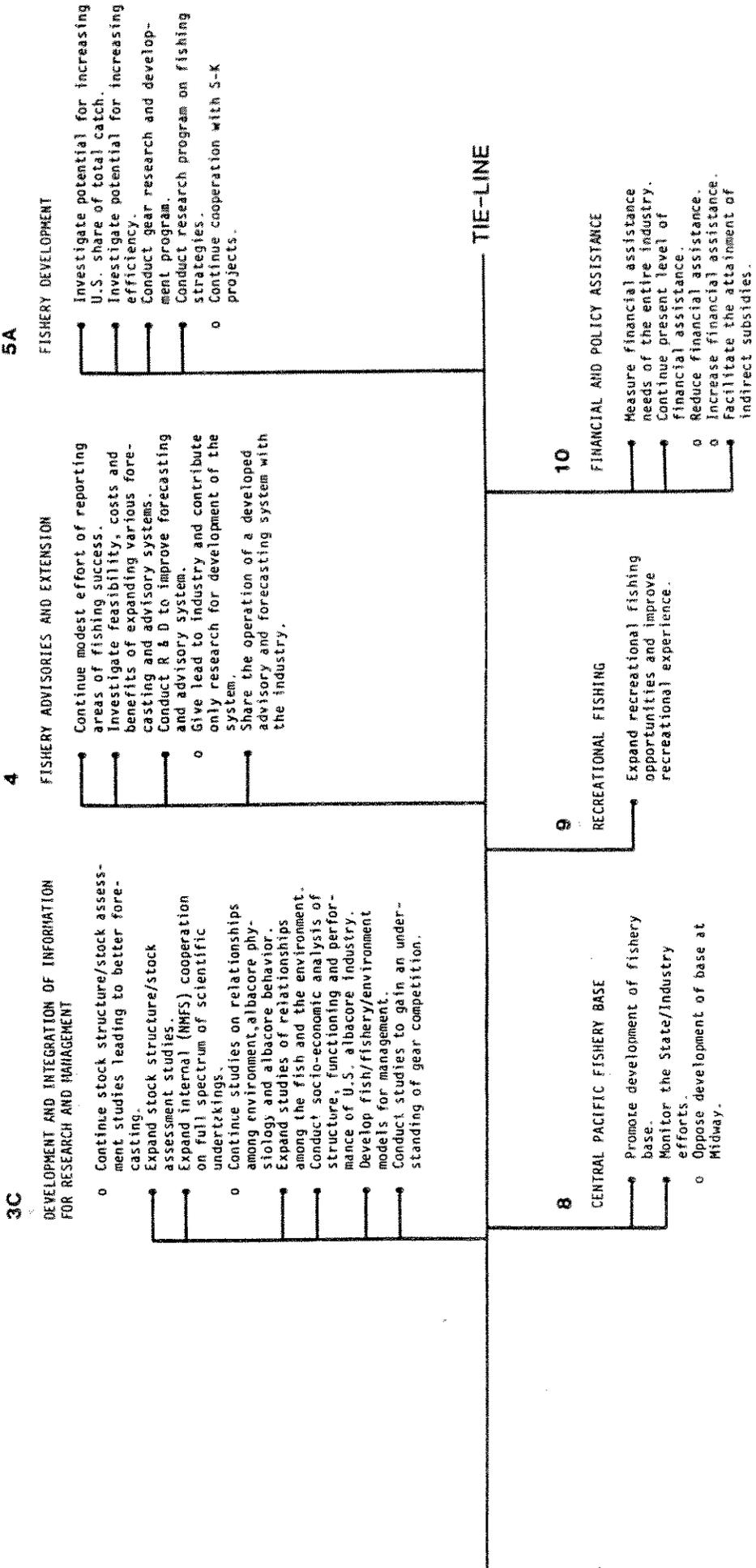


FIGURE 4
(Continued on next page)

THE NMFS PROGRAM FOR ALBACORE RESEARCH & MANAGEMENT



January 1984

FIGURE 4 (Continued from previous page.)

**KLAMATH FISHERY MANAGEMENT COUNCIL
FUNCTIONS**

**ESTABLISH A COMPREHENSIVE LONG-TERM
PLAN AND POLICY**

- FOR THE MANAGEMENT OF THE IN-RIVER AND OCEAN HARVESTING THAT AFFECTS OR MAY AFFECT KLAMATH AND TRINITY RIVER BASIN ANADROMOUS FISH POPULATIONS
- MUST BE CONSISTENT WITH THE GOALS OF THE RESTORATION "PROGRAM"

FOR THE MANAGEMENT OF THE IN-RIVER AND
OCEAN HARVESTING THAT AFFECTS OR MAY
AFFECT KLAMATH AND TRINITY RIVER BASIN
ANADROMOUS FISH POPULATIONS

- FALL CHINOOK
SPRING CHINOOK
COHO SALMON
- STEELHEAD
STURGEON
SHAD

**MUST BE CONSISTENT WITH THE GOALS OF THE
RESTORATION "PROGRAM"**

- 1. RESTORE PRODUCTION TO OPTIMUM LEVELS BY:
 - A) INCREASING SMOLTS PER NATURAL SPAWNER
 - B) IMPROVING SURVIVAL OF SMOLTS
- 2. DEVELOP & MAINTAIN ARTIFICIAL PRODUCTION PROGRAMS
- 3. COORDINATING AND REVIEWING PROJECTS THAT WOULD ADVERSELY IMPACT FISH PRODUCTION
- 4. INFO AND EDUCATION PROGRAM...ENCOURAGE COMMUNITY INVOLVEMENT

MAKE RECOMMENDATIONS

- RECOMMENDATIONS TO AGENCIES

CF&GC
PFMC
HVBC

ODF&W
USBIA

- CONSISTENT WITH LONG-TERM PLAN AND POLICY
- CONSISTENT WITH STANDARDS
- AT LEAST ANNUALLY
- PUBLIC HEARINGS ON REGULATIONS

RECOMMENDATIONS TO AGENCIES

CF&GC
PFMC

ODF&W
USBIA

HVBC

- CALIFORNIA FISH AND GAME COMMISSION REGARDING IN-RIVER AND OFFSHORE RECREATIONAL HARVESTING REGULATIONS
- OREGON DEPARTMENT OF FISH AND WILDLIFE REGARDING OFFSHORE RECREATIONAL HARVESTING REGULATIONS
- PACIFIC FISHERY MANAGEMENT COUNCIL REGARDING OCEAN HARVESTING REGULATIONS
- BUREAU OF INDIAN AFFAIRS REGARDING REGULATIONS FOR HARVESTING IN THE AREA BY NON-HOOPA INDIANS
- HOOPA VALLEY BUSINESS COUNCIL REGARDING REGULATIONS FOR HARVESTING IN THE AREA BY MEMBERS OF THE HOOPA INDIAN TRIBE

CONSISTENT WITH STANDARDS

- BEST SCIENTIFIC INFORMATION AVAILABLE
- MINIMIZE COSTS WHERE PRACTICABLE
- AVOID UNNECESSARY DUPLICATION OF REGULATIONS
- ACCOUNT AND ALLOW FOR VARIATION IN FISHERIES, FISHERY RESOURCES, AND CATCHES
- DESIGNED TO ACHIEVE AN ESCAPEMENT THAT PRESERVES OR STRENGTHENS THE VIABILITY OF THE AREA'S **NATURAL** ANADROMOUS FISH POPULATIONS

KLAMATH RIVER BASIN FISHERIES TASK FORCE

STATEMENT OF GOALS

Mission: This Task Force was established under the Klamath Basin Fish and Wildlife Restoration Act (P.L. 99-552) to assist the Secretary of the Interior to "...formulate, establish, and implement a 20-year program to restore the anadromous fish populations of the Area to optimum levels and to maintain such levels."

The Task Force proposes the following four goals for the 20-year restoration program.

Goal 1

Increase the production of smolts per natural spawner and improve the survival of smolts through the system by restoring and protecting the amount and quality of spawning and rearing habitat, including water quality and instream flows, to maximize the production of Klamath Basin anadromous species.

Goal 2

Develop and maintain artificial production programs to meet mitigation goals and production goals and to serve as an interim measure to accelerate rebuilding the natural populations.

Goal 3

Ensure the greatest possible benefit to anadromous fish stocks by coordinating all research, restoration and production projects throughout the Basin and by calling attention to activities that would adversely impact anadromous fish production and survival.

Goal 4

Build public support for continued protection and beneficial use of the Klamath Basin anadromous fish productivity through a program of information and education and by encouraging local community involvement in restoration projects.

Drafted November 3, 1988

Klamath Fishery Management Council
Planning Meeting
January 4 - 6, 1990

Issues for Development of Long-Range Plan for Harvest Management

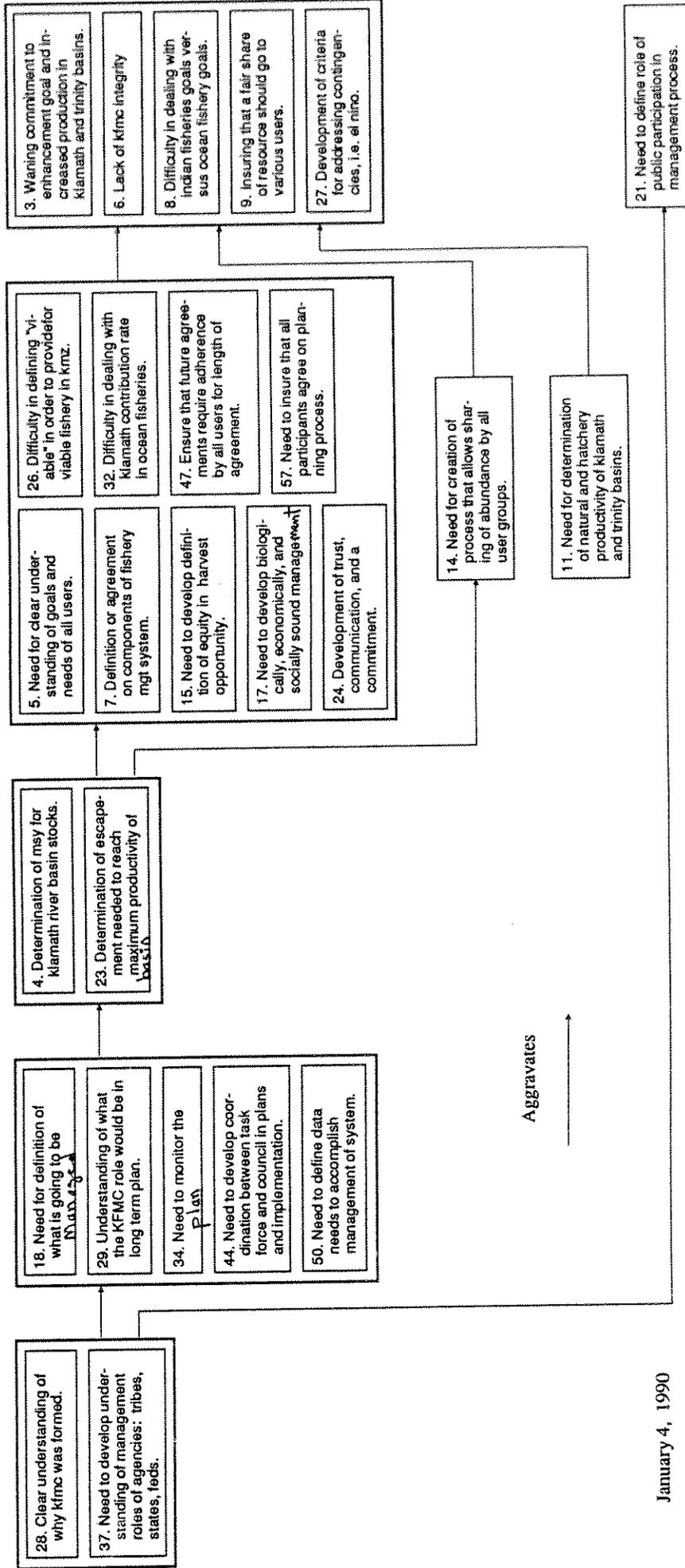
1. Need for reliable biological data ... is what we have good enough?
2. Lack of understanding of Indian fishing rights and acceptance of Indian fishery.
3. Waning commitment to enhancement goal and increased production in Klamath and Trinity basins.
4. Determination of MSY for Klamath River basin stocks.
5. Need for clear understanding of goals and needs of all users.
6. Lack of KFMC integrity.
7. Definition or agreement on components of fishery management system.
8. Difficulty in dealing with Indian fisheries goals versus ocean fishery goals.
9. Insuring that a fair share of resource should go to various users.
10. Lack of definition of resource limitations to achieving MSY.
11. Need for determination of natural and hatchery productivity of Klamath and Trinity basins.
12. Need for access to harvestable fish, Klamath stocks as well as mixed stocks.
13. Too much demand, not enough fish.
14. Need for creation of process that allows sharing of abundance by all user groups.

15. Need to develop definition of equity in harvest opportunity.
16. Need for water management program that maximizes fish production.
17. Need to develop biologically, economically, and socially sound management.
18. Need for definition of what is going to be managed.
19. Utilization of hatchery versus natural stocks in basin restoration plan.
20. What impacts on abundance will harvest rate management accomplish.
21. Need to define role of public participation in management process.
23. Determination of escapement needed to reach maximum productivity of basin.
24. Development of trust, communication, and a commitment.
26. Difficulty in defining "viable" in order to provide for viable fishery in KMZ.
27. Development of criteria for addressing contingencies, i.e. El Nino.
28. Clear understanding of why KFMC was formed.
29. Understanding of what the KFMC role would be in long term plan.
30. Need to define geographical scope of management.
31. Definition of roles and relationships of those who are going to manage.
32. Difficulty in dealing with Klamath contribution rate in ocean fisheries.

33. Influence of habitat restoration on abundance.
34. Need to monitor the plan.
35. Insuring that we determine socioeconomic needs of the resource users.
36. Need to develop role of enforcement agencies in protection of resource.
37. Need to develop understanding of management roles of agencies: tribes, states, Feds.
38. Insuring that fallout from allocation process doesn't render user groups incapable of working together in addressing outside threats to resource.
39. Refinement of current, and development of future management tools and methodologies.
40. Differing views of fair distribution of harvest.
41. Need for management and technician accountability.
42. Understanding how flexibility should be built into long range management scheme to provide for alteration of standards, guidelines and parameters.
44. Need to develop coordination between Task Force and Council in plans and implementation.
46. Need for evaluation of current agreement.
47. Ensure that future agreements require adherence by all users for length of agreement.
48. Need for improved interagency coordination.
49. Need to develop list of definitions for Council use.

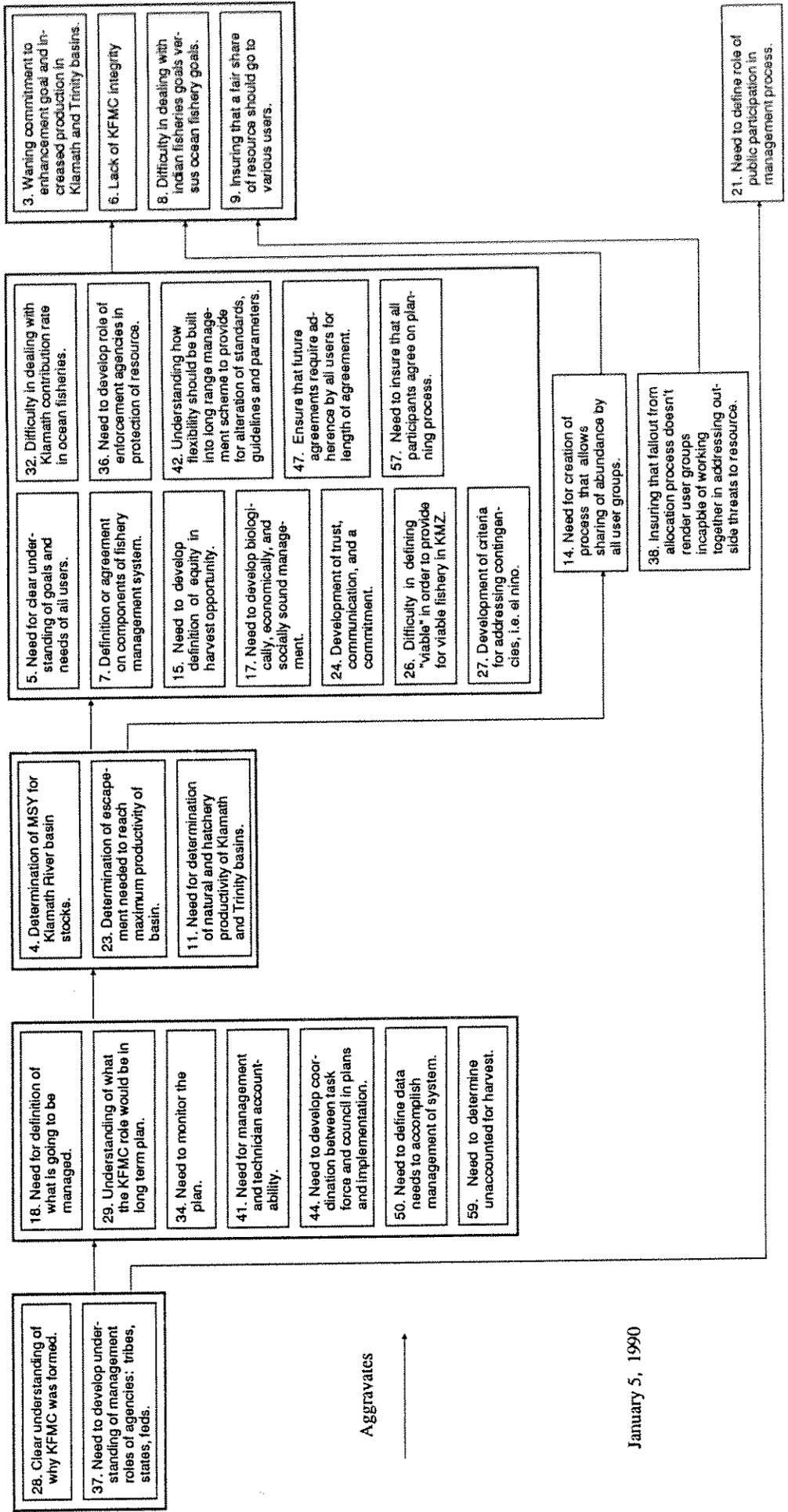
50. Need to define data needs to accomplish management of system.
51. Funding for all of this ... to implement the plan.
52. Need for in-season management tools for ocean users.
54. Determination of who would act as facilitator or lightning rod to get plan written.
55. Difference between perceived and actual needs.
56. Need to develop monitoring and data collection process on the river and offshore.
57. Need to insure that all participants agree on planning process.
58. Managing for natural stocks.

PRELIMINARY STRUCTURE OF ISSUES IN DESIGNING A HARVEST MANAGEMENT SYSTEM FOR THE KLAMATH RIVER BASIN



Aggravates →

PRELIMINARY STRUCTURE OF ISSUES IN DESIGNING A HARVEST MANAGEMENT SYSTEM FOR THE KLAMATH RIVER BASIN



**GOALS AND OBJECTIVES FOR THE KFMC'S
HARVEST MANAGEMENT SYSTEM**

January 5, 1990

1. To enhance the overall anadromous salmonid productivity within the Klamath Basin to MSY
2. To develop a system of accountability (management, production, compliance)
3. To achieve "equitable" share of resource amongst all user groups
4. To allocate the resources to meet the users' needs while restoring resources
5. To identify the maximum carrying capacity of the Klamath Basin
6. To work towards a natural self-sustaining level of abundance incorporating a hatchery supplement
7. To insure public participation, understanding and support of the production and harvest plan for anadromous stocks in the KB
8. To develop a fish and habitat resource base that will maximize the abundance of the natural stocks
9. To provide a "viable" ocean fishery
10. To manage a harvest allocation process to make annual recommendations on designated stocks which preserves or strengthens natural populations
11. To establish the necessary relationship between all users enabling an objective and equitable allocation process
12. To obtain equity of harvest

13. To ensure that harvest management policies are consistent with the maintenance of the natural anadromous populations at optimal levels
14. To review all agencies' regulations and have them in place in a timely manner
15. To protect the resource
16. To develop a more accurate inventory technique for natural adult spawners
17. To allocate annual production to optimize commercial, recreational and aesthetic benefits to the public
18. To provide an orderly efficient management system for each fishery group
19. To strengthen natural stocks
20. To restore integrity of KFMC to recommend equitable harvest allocations to all users
21. To assess habitat conditions
22. Prioritize a habitat improvement schedule
23. To minimize conflict
24. To develop a plan to approve and accept available data
25. To increase the data base
26. To provide the best data and information that can be achieved given institutional and budgetary constraints
27. To establish escapement goal range for the Klamath/Trinity Basin

28. To achieve coordinated management and enforcement of harvest allocation
29. To promote public awareness of conservation requirements and ethics necessary to achieve production goal
30. To develop an agreement for sharing high and low predictions
31. To use hatcheries to meet mitigation goals to supplement but not replace natural stocks
32. To establish a process for decision making that is logical, open and well-understood by the public
33. To achieve coordination between the Task Force and Council in implementing the restoration plan
34. To identify the stocks to be managed
35. To increase productivity of stocks to be managed
36. To ensure adequate escapement for each Klamath stock each year to ensure long-term production
37. To rebuild natural spawners to "historical" levels
38. To provide for a "viable" fishery in the River
39. To protect genetic resources for each stock in the Klamath Basin
40. Achieve MSY by establishing a process to determine optimum escapement levels for KB anadromous stocks
41. To determine MSY so an escapement goal range can be determined

KEY POINTS TO HAVE IN HARVEST PLANS FOR SPRING CHINOOK, COHO, AND LAMPREY.

1. Biological view of affected stock.
 - status of hatchery and natural component.
 - current harvest patterns, impacts.
 - concerns of sensitive stocks.
 - possible incidental impacts to other stocks, species, or fisheries.

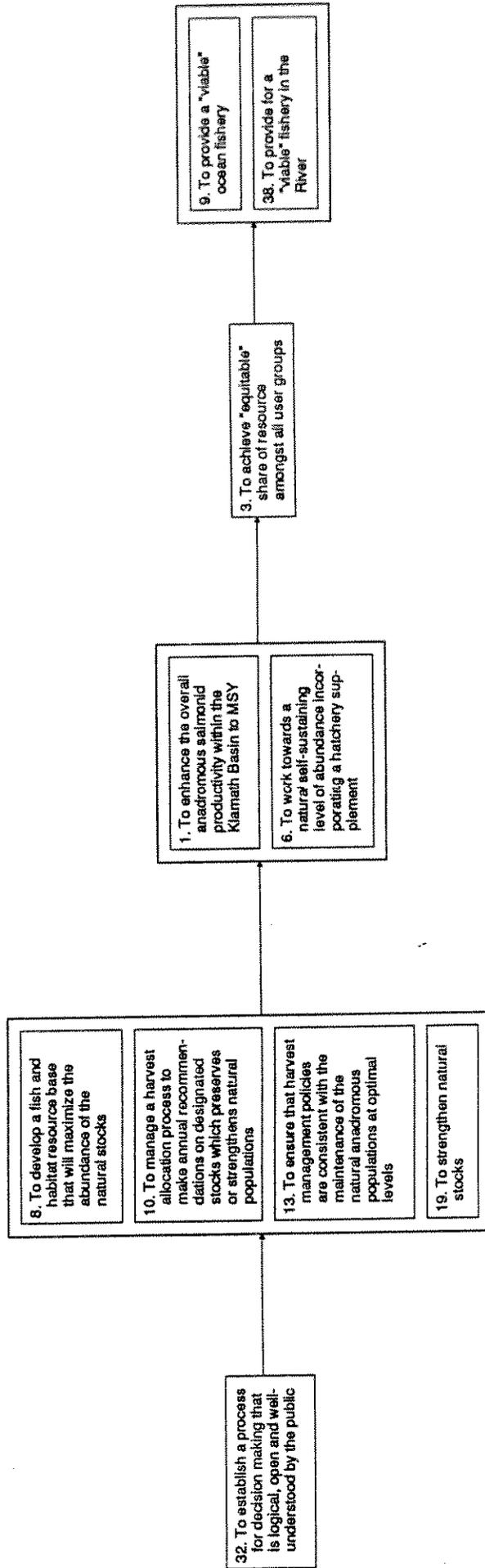
2. Harvest Plan.
 - time frame of fishery.
 - target of fishery.
 - gear allowed in fishery.
 - catch level expected.
 - expected impacts on other stocks.
 - regulations to reduce incidental impacts to other species, stocks.

3. How this plan addresses concerns stated in item 1 above.
 - any information available on fish vulnerability.
 - what the projected impacts will do to target stock.

4. Economic assessment for fishery.
 - potential value.

5. Monitoring effects and reporting guidelines.
 - how?
 - what?
 - when?

PRELIMINARY STRUCTURE OF GOALS FOR THE KFMC HARVEST MANAGEMENT SYSTEM



SIGNIFICANTLY SUPPORTS →

PRELIMINARY STRUCTURE OF GOALS FOR THE KPMC HARVEST MANAGEMENT SYSTEM

