MEMORANDUM

TO: Council, SSC, and AP Members

FROM: Jim H. Branson, Executive Director

DATE: July 19, 1980

SUBJECT: Salmon Fishery Management Plan

ACTION REQUIRED

Council decision on a requirement for a limited entry system for both hand and power trollers in FCZ. Info: Update on the chinook catch and progress of the FMP for 1981.

BACKGROUND

The troll season in Alaska closed July 15th for 10 days and will open again on July 25th. This is the 10-day closure provided for in the FMP and state regulations if coho run strength was not unusually strong.

The chinook catch to date is well under that of 1978 and 1979, and will probably reach the low end of the OY range, i.e., 280,000 fish this year.

The contractors, Natural Resources Consultants, Inc., represented by Frank Fukuhara and Mike Fredin, met with the Salmon Plan Development Team in Seattle on July 16th and 17th to review available data, identify data sources and make writing assignments. A copy of the background paper developed by the contractors for that meeting is attachment (a) for this agenda item. There is a great deal to be done by the last week in August when the draft sections will have to be assembled by the contractors so that a first draft will be available for Council and SSC review by September 5th.

The state Court did not grant an injunction to the Hand Trollers in their suit against the State of Alaska. They are still prohibited by state law from fishing off shore. The case will probably not come to trial until late this fall. A final decision by the Department of Commerce to intervene on the side of the Hand Trollers has apparently not been made, contrary to earlier information received from GC-F. In the meantime, I believe it would be desirable to prepare an amendment to the FMP providing for limited entry to both power and hand trollers in the FCZ, based on past participation in the fishery. That amendment should be available in time for the contractors to include it in the revised FMP to be considered by the Council in September and the public following that meeting.

NATURAL RESOURCES CONSULTANTS

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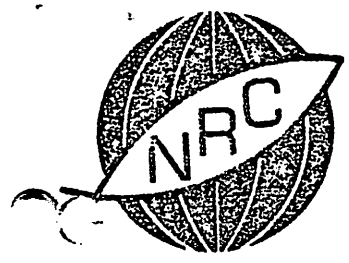
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July 3, 1980

TO: Members, PDT, SE Alaska Offshore Salmon Troll
           Fishery FMP

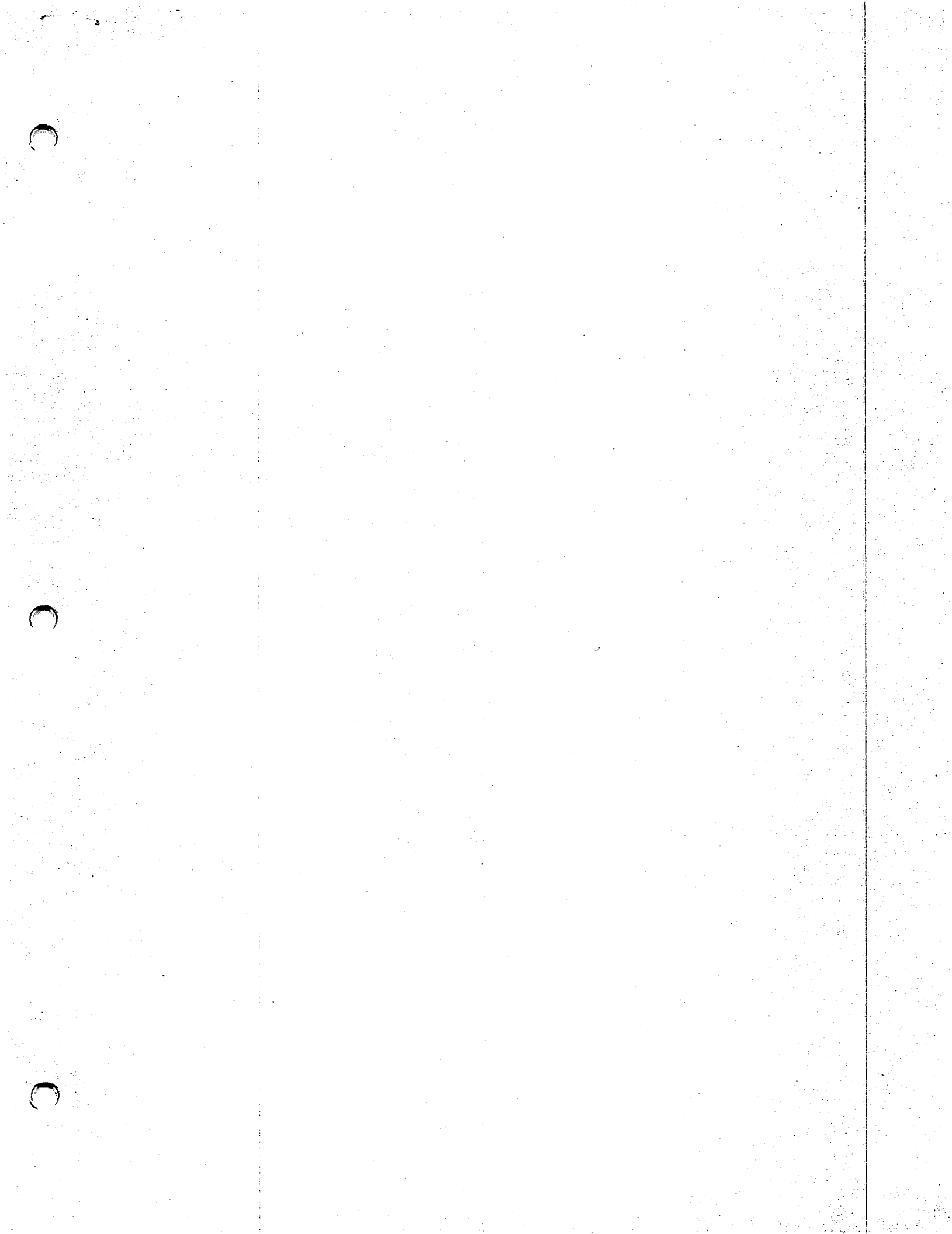FROM: R.A. Fredin and F.M. Fukuhara, Consultants
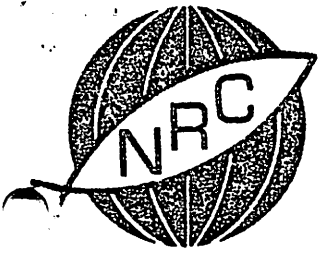
SUBJECT: REVISIONS TO SE ALASKA OFFSHORE SALMON TROLL
           FISHERY FMP

We have reviewed the subject FMP (December 1, 1978),
the amendment package (February 22, 1980) and comments on
the FMP by various reviewers. We have also examined most
but not all of the many background documents which were
sent to us at our request by Mr. George Utermohle.

The documents which George provided so punctually have
been valuable in answering a number of questions we had of
the FMP pertaining to the biology of coho and chinook
stocks of SE Alaska. It also provides us with a better
understanding of the relationships between the offshore
troll fishery, the coastal, inshore troll fisheries and the
inshore net fisheries. Although we are still studying
that information and anticipate having additional comments,
we are now prepared to suggest some revisions to the FMP.
Our comments and suggestions are attached.

These comments are the first cut at revision and we
circulate them at this time for your reactions. We also have
further thoughts on drafting assignments and procedures which
we feel can best be communicated directly rather than in
writing. So that we can thoroughly discuss the task of
revising the FMP, we suggest a meeting in Seattle on July 16
and 17, 1980. If these dates are not convenient for you,
please suggest your preferences.

COMMENTS ON
FISHERY MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT
FOR THE HIGH SEAS SALMON FISHERY
OFF THE COAST OF ALASKA
EAST OF 175° EAST LONGITUDE

General Comment

We suggest that the SE Alaska Troll Fishery FMP be reorganized using the Table of Contents of the Washington-California Troll Fishery FMP (attached – see page 28).

Immediately following the Introduction there should be a discussion of the cycle of events associated with rational management of salmon resources. This would include a diagrammatic model of the sequence of decisions required from the underlying biological theory and conceptual production model through each of the administrative and practical management decisions.

In the absence of a generalized model, it is difficult to see how we communicate:

What is a rational management regime and what are its requirements?

Can such a regime be achieved without excessive monetary and manpower costs?

At what cost do we wish to place salmon management on a scientific basis?

How do we get there from the current state of affairs? In what time frame?

What are the alternatives to managing on the basis of scientific principles, methods and data?
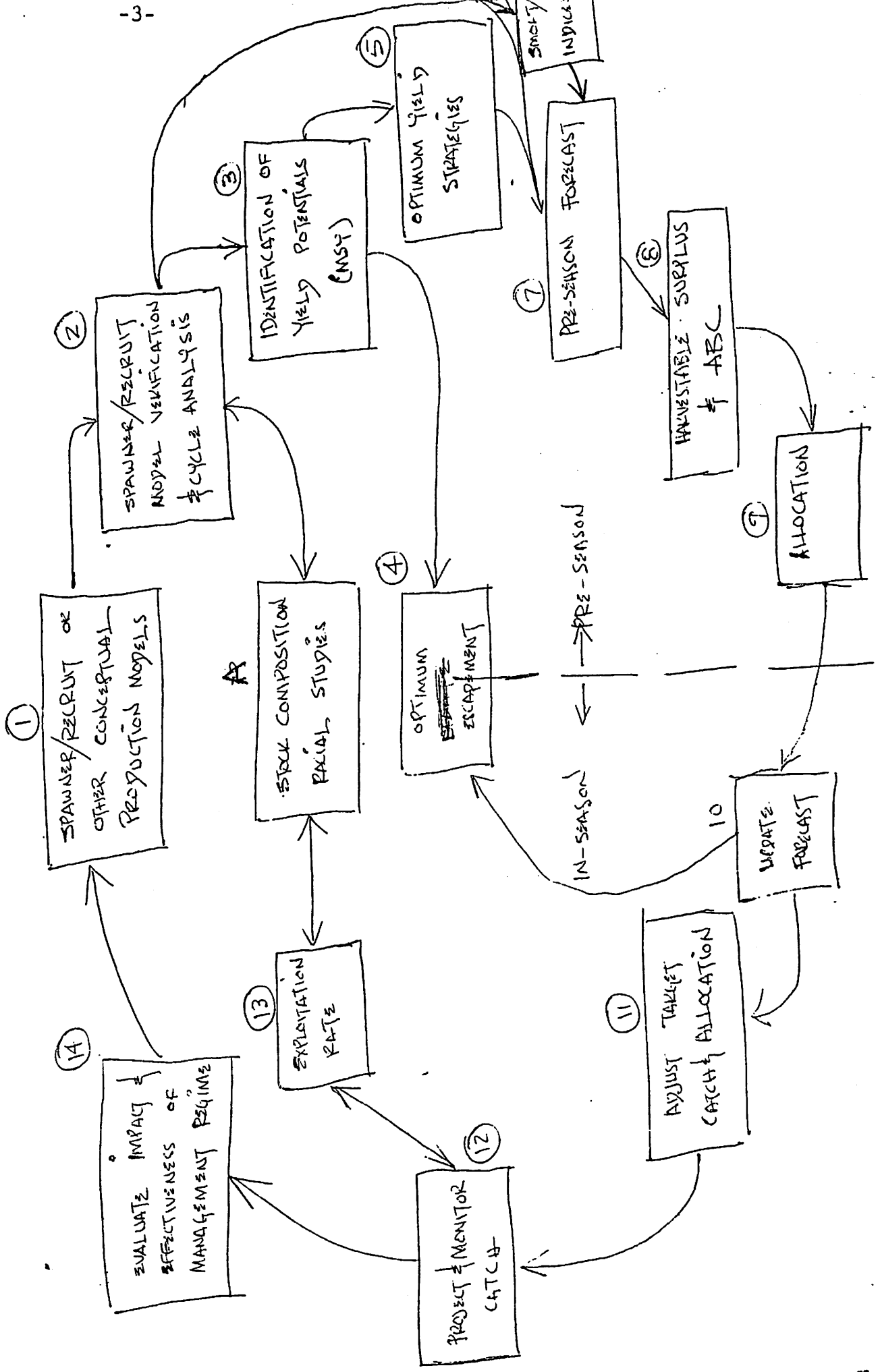
The model will be useful in that:

1) the essential elements of a management regime and their interactions can be seen synoptically;

2) it helps to systematize the identification of problems;

3) it serves as a reference against which the present management regime and state of knowledge can be measured, thereby serving as an aid to improving current methods; and

4) it serves as a basis for developing system models which will define information gaps and assist in prioritizing activity and data collection.

An example of such a model and an outline of suggested commentary follows (Figures 1 and 2).

The diagrammatic model describes a rudimentary system for managing salmon resources which can be expanded in dimension (species, geography and stocks) and detail (quantitative subsystem models for the fishery, biology and socio-economic decision-

Figure 1.

Decision Points in Management of Salmon Fishery

1. Spawner/Recruit or other Conceptual Production Models

2. Spawner/Recruit Model Verification & Cycle Analysis

3. Identification of Yield Potentials (MSY)

5. Optimum Yield Strategies

Smolt Indices

7. Pre-season Forecast

6. Harvestable Surplus = ABC

A. Stock Composition Racial Studies

4. Optimum Escapement

Pre-season

In-season

Allocation

10. Update Forecast

11. Adjust Target Catch & Allocation

13. Exploitation Rate

12. Project & Monitor Catch

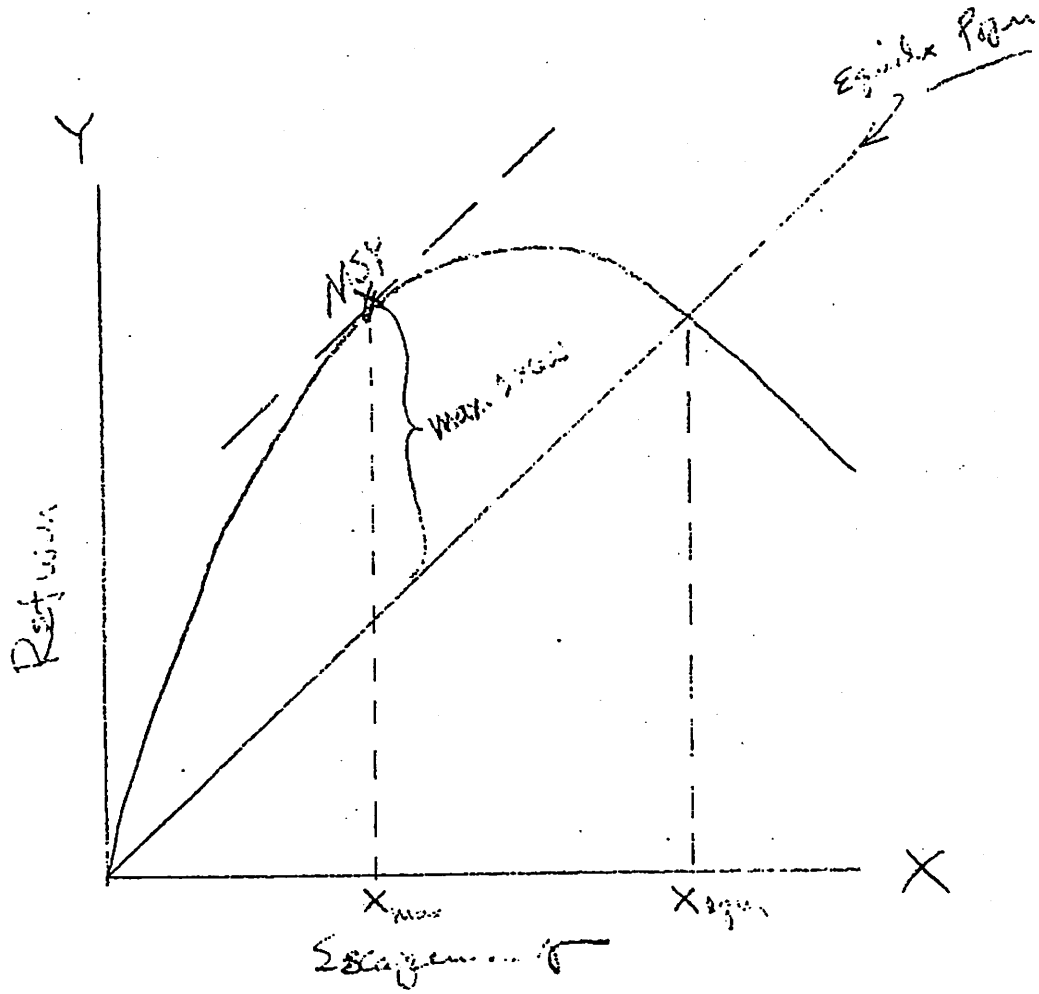14. Evaluate Impact & Effectiveness of Management Regimes

Figure 2.

making processes, etc.). For immediate purposes of our FMP, however, the model accomplishes the following:

a. Describes to the reader the principal decision points and their inter-relationships.

b. By specifying the necessary decision points it assists in formulating pertinent questions and identifying the information and data necessary to provide answers. Also assists in identifying the necessary administrative and regulatory activities.

c. The synoptic and sequential array of decision points provides perspective in identifying data gaps and prioritization of information collection or activities.

d. Assists in defining some minimum requirements and data needed for rationally managing salmon (the criteria for "adequacy or inadequacy" presumably dependent on the demands for accuracy and precision of the various estimates which are the basis for decision-making).

e. Gives perspective to the current state of affairs in salmon management and provides a format for developing a "road map" for getting from "here" to d. above.

Items 1, 2, 3, and 4 on the diagram are closely interrelated.

(1. Conceptual model. An underlying assumption in most salmon management is that there is a relationship between the numbers of spawners and returning progeny such that in the absence of fishing, maximum production occurs at a spawning

stock size below the level producing equilibrium production. Production curves describing these relationships represent a range of potential yields and are of the type described by Ricker (1954) or Bevertaon and Holt (1957). The point on this curve at which production most greatly exceeds replacement is MSY, the circumstance producing the greatest long term yield. If the objective of management is to maximize long term biological yield, the spawning stock which produces the largest return (numbers on weight) is the optimum escapement.

Although intuitively reasonable, the application of the model to empirical data has failed to demonstrate very close relationships between the numbers of spawners and returns. Failure to empirically verify the Spawner/Recruit Theory for salmon populations may be attributed to the inappropriateness of the model or to insufficiencies in the input, empirical data.

Except for very small and perhaps very large stock sizes there may not be a very close relationship between the numbers of spawners and returning progeny. Such a relationship even if it existed at all ranges of population size may be totally obscured by the overriding effects of varying rates of survival.

On the other hand, the model may be appropriate with the lack of relationship reflecting the gross inaccuracies in critical population parameters and other estimates utilized in

empirical verification and applications of the model. Reliable data on escapements are available from very few salmon streams. Because most salmon stocks are subjected to a succession of fisheries, it is virtually impossible to obtain precise estimates of the catch from any stock. In addition, other losses to potential yield resulting from fishing ("shakers," "dropouts," etc.) or from exploiting salmon prior to their attainment of full growth have not been satisfactorily evaluated for individual stocks, river systems or management units.

The problems associated with satisfactorily verifying the applicability of the Spawner/Recruit Theory to salmon population production are formidable. Obtaining basic biological information, escapement estimates and fishery statistics is extremely complicated. One gets a hint of the scale of the problem when we consider that there are 2000 or more rivers inhabited by salmon in SE Alaska alone. Each of these systems supports more than one species of salmon each of which is composed of a number of stocks. The problems are further complicated by the complexity and scope of migration routes which subject most stocks of salmon to gauntlet fisheries and the associated technical problems of identifying and enumerating populations. Not likely that the theory can ever be satisfactorily verified at least at reasonable cost in terms of monetary and manpower resources.

In spite of its shortcomings, the theory provides a means by which certain functional properties of salmon population productivity can be quantified. Such information, interpreted in the light of biological and fisheries information (and intuition) is useful in the management of salmon resources. In view of the fact that there is no alternative theory, the Spawner/Recruit model represents the state of the science as a basic population and management technique. Therefore, refinement of the model and improvement of the input data seems to be the only alternative.

Inherent in the Stock/Recruitment Theory is the assumption that in a mixed stock fishery, taking maximum long term yield will result in the extinction of the weaker stocks (Paulik, Hourston and Larkin, 1967). This has obvious implications to the management of the troll fisheries which exploit not only mixed stocks of chinook and coho but also the species mix of coho and chinook and other species.

An emerging problem in this regard concerns the fisheries on mixed stocks of hatchery and wild salmon. In this circumstance, the Spawner/Return relationship in hatchery (or otherwise enhanced populations) stock will be considerably greater then for wild stocks. This survival advantage and the overwhelming numerical advantage which enhanced stocks can be expected to enjoy would place in jeopardy the continued survival of wild stocks in mixed stock fisheries if the resource was managed for

long term maximum yield. If, therefore, the objective is to obtain MSY, this would be in effect a policy for eradicating wild stocks. Alternatively, manage for the MSY of wild stocks and seriously under-exploit hatchery stocks.

(5) Optimum Yield Strategies. Concerning OY, the FCMA requires consideration of "greatest overall benefits to the Nation and relevant economic social and ecological factors." To evaluate these factors, it seems appropriate to analyze certain salmon fishing activities which bear on these matters.

In practice, Optimum Yield in salmon fisheries may not be a deliberate adjustment of ABC for socio-economic reasons but simply the sum of catches by or allocation of salmon to the various user groups and gear types. Whether OY is the basis for or consequence of allocations, the two elements are intrinsically linked and most considerations applying to one, apply to the other. Some relevant considerations are:

1. Economic benefits and returns of each type of fishery

    a. Commercial (by gear type)

    b. Recreational

    c. Treaty Indians*

2. Economic and biological costs of each mode of fishing

    a. Fixed and incrementally variable costs

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*Does not apply to this FMP but must be considered in Coastwide Plan outline.

b. Losses to potential yield (in numbers and pounds of fish and dollars)

    i. Shakers and Dropouts

    ii. Population dynamics considerations (loss from taking fish before attainment of maximum size).

3. Social benefits and costs

4. Energy efficiency

Define objectives, analytical procedures and data requirements for the above considerations.

.7 Pre-season forecast. Any orderly salmon management regime requires a pre-season forecast derived from:

    1. Spawner/Return cycle analysis.

    2. Fry-Smolt/Return analysis

    3. Ocean abundance indices

    4. Others

Discuss procedures, data necessary, state of affairs.

.8 Harvestable surplus and ABC. Although definitions are fairly straight-forward, what it is that is finally allocated (OY? ABC? DAH?) is not entirely clear.

.9 Allocation. Allocation is probably the most contentious aspect of the salmon management process in that the bases for these decisions are political, social and economic. Need

criteria and formalized procedure for allocation, particularly for stocks which are exploited in more than one political jurisdiction (US/Canada) or more than one management jurisdiction (Alaska/Washington-California, FCZ/State).

1. Allocation criteria

    a. Legal mandates

        i. Boldt and Belloni decisions

        ii. US/Canadian agreement on interceptions

    b. Four factors considered in OY determination

    c. Historical precedents

    d. Public input process

        i. Alaska Board of Fish & Game

        ii. NPFMC or joint NPFMC/PFMC

10. **In-season Forecast.** Necessary to update pre-season forecast because of inaccuracies in forecast methods and/or from unpredictability and variability in salmon behavior and ocean survival.

1. Test fishing

2. Analyze catch and cpue of fishery

3. Hindcast (relationship of ocean abundance indicators to predicted and observed strength of runs).

11 In-season catch and allocation adjustments.

    1. Criteria

    2. Procedure

        a. Administrative

        b. Regulatory and enforcement

12 Projection and monitoring of catch.

    1. Catch monitoring procedure (real-time monitoring of catch, effort and cpue trends)

    2. Methods for projecting catch

13 Exploitation rates. Requires collating information and analysis from 12 and (A) Discuss procedure.

14 Evaluation of impact and effectiveness of management measures. Discuss for each item in management cycle.

(A) Stock Composition and exploitation rates. These items are fundamental to stock assessment and fisheries analysis.

    1. Time and space variability in the distribution of stocks. (Do stocks have a systematic time/area distribution?)

    2. Magnitude of annual variations in stock composition of troll fishery landings.

    3. Stock identification techniques and methods for estimating exploitation rates.

        a. Tagging and marking (need to design experiments to answer questions relating to stock composition and

exploitation rates, i.e., more representative tagging
and recovery effort).

      b.   Racial studies

          i.   Morphometrics

          ii.   Age composition and scale patterns

          iii. Electrophoretic, chromatographic approaches

      c.   Analysis of catch data

Specific Comments

p. 1-6   The management objectives should be restated as
S. 2.1   necessary to conform with guidelines from NPFMC members.
The following are suggested.

1.   Obtain spawning escapements needed to rebuild the
SE Alaska populations of chinook salmon and to
maintain the SE Alaska stocks of coho salmon at
levels producing maximum harvestable numbers of fish.

2.   Coordinate the regulation of the salmon troll fishery
in the FCA with the regulation of other fisheries
for coho and chinook salmon in SE Alaska.

3.   Control the interceptions of coho and chinook
salmon of non-Alaskan origin to ensure compliance
with a) US-Canadian fisheries agreements, b) Indian
Treaty obligations*, and c) any other resource-sharing
obligations.

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*Boldt and Belloni decisions do not apply in SE Alaska troll fishery.

4. Control the expansion of the salmon troll fishery in the FCZ.

5. Avoid major disruptions of social and economic structures attendant to long-standing, historical fisheries for coho and chinook salmon in SE Alaska.

6. Promote the development of a coast-wide fishery management plan for chinook salmon.

p. 6-8
S. 2.2

Items D and E belong in the sections describing fishing areas and methods.

p. 4-10
S. 3.1

Item D of Section 2.2 could be added to this paragraph. A figure showing the offshore, coastal and inshore areas such as shown on pp. 55 and 56 should be presented here.

p. 6
S. 10

Can't we deal only with coho and chinook off and in SE Alaska and not clutter up the FMP with other species and areas? Also, areas and stocks should be treated separately. Also, discuss coho and chinook separately under stocks involved.

p. 6-10
S. 3.1

For coho, the occurrence of fish of Canadian origin in the offshore troll catch (and in catches from other areas and fisheries in SE Alaska) should be mentioned. For chinook, the list of fish of non-Alaskan origin present in the offshore troll fishing area (and elsewhere in

SE Alaska) should be expanded. A complete listing of all stocks known to contribute to catches in SE Alaska would put into perspective the complexity of the problems involved in managing not only the offshore troll fishery but all the other fisheries that harvest chinooks in SE Alaska.

Can't the matter of origins of stocks in the SE Alaska fisheries be dealt with entirely in this section and not be taken up again in Sect. 4.2, p. 22?

In connection with stocks of coho and chinook involved in the offshore troll and other fisheries of SE Alaska, we should present certain information drawn from reports of the US/Canada Technical Committee on Salmon Interceptions. Specifically, we should include the percentages of coho and chinook salmon bound for a) British Columbia coastal rivers, b) Canadian sections of rivers which drain to the sea through SE Alaska, and c) Washington-Oregon rivers in catches in various fisheries and areas in SE Alaska. We should also have diagrams showing the flow of coho and chinook through the different fisheries in SE Alaska - offshore troll, coastal troll, inshore troll, and inside net and sport fisheries.

p. 11
S. 3.2.1.1   Can we give percentages of catches taken by the various types of fisheries (over the past 10 years, say)?

p. 11-12
S. 3.2.1.2

We should be more specific in describing the key phases in the development of the troll fishery. Over what years did the fishery move from inshore waters to coastal and offshore areas? When did the fishery on the Fairweather Grounds become established?

With regard to fishing effort, can we put together a table that would show changes in the numbers of vessels in the inshore, coastal and offshore trolling areas?

p. 12
S. 3.2.1.3

Catch trends for coho and chinook should be reviewed in separate Sections. Suggest we deal only with SE and not bring in state-wide totals.

In addition to the long-term data (1910 or 1920 to date) on annual -atches by troll and all gear types combined for SE Alaska as a whole, we should have a table (one that would replace Tables 1-3 on pp. 13 and 14) giving the annual catches of coho and chinook by gear type for the offshore, coastal and inshore areas back to 1967. If I remember correctly, the US/Canada Technical Committee's estimates of salmon interceptions extend back to 1967. Format of the table might be as follows:

		Troll				Gillnet	Seine	Total
Year	Species	Offshore	Coastal	Inshore	Total	etc.	etc.	all areas
		No. of fish	Lbs. of fish	etc.	etc.	etc.			& gear
								No. Lbs.

(How far back can troll catches be separated into HAND and POWER?)

The data contained in such a table would provide a comprehensive overview of the various components of the commercial fishery for coho and chinook in SE Alaska. Sport fishery catch trends should also be included in this discussion.

p. 2-3,   Information on vessel clases would be easier to follow
p. 16
S. 3.2.1.4 if given in an in-text table.

A table of fisheries statistics for Canadian trollers off SE Alaska would be useful.

p. 17   Should mention limited entry.
S. 3.3.2.1
S. 3.3.2.2 Some data or references should be presented to indicate
p. 18
P. 1   what sort of growth potential remains. We should also say something about the year-round inside troll fishery with respect to the matter of growth potential.

The matter of gorwth potential should be taken up for coho too even though the season is much shorter than that for chinook. Here are some data for 1978 (when 1.7 million coho were caught in SE Alaska). (See Figure 3.) There was about a 65% increase in the average weight of troll-caught coho during the three month season, an increase that warrants mention.

Another bit of information that we might wish to touch

| Week No. | HAND TROLL | | POWER TROLL | |
	Catch (1000's of Fish)	Ave. Wt. (lbs.)	Catch (1000's of Fish)	Ave.Wt. (lbs.)
25	5	4.44	11	4.72
26	10	4.86	29	4.88
27	22	5.07	42	5.05
28	29	5.17	59	5.25
29	29	5.28	55	5.53
30	24	5.64	62	5.80
31	25	5.94	96	6.08
32	37	6.41	79	6.51
33	46	6.62	90	6.72
34	43	6.81	72	6.80
35	38	6.96	58	7.04
36	30	7.28	39	7.29
37	15	7.62	20	7.24
38	4	7.69	7	7.74
Season Total*	379	6.23	722	6.20

*Includes minor catches prior to Week 25 and after Week 38.

Figure 3.

upon involves comparisons of average weights of troll-
caught vs. net-caught coho in SE Alaska. Here are
averages for 1978.

Gear	Coho Catch	Av. Weight in lbs./fish
Hand troll	379,000	6.23
Power troll	722,000	6.20
Purse seine	245,000	6.17
Drift gillnet	223,000	8.11
Set gillnet	140,000	9.19

A comparison of the average weights of gillnet-caught
vs. troll-caught coho indicates about a 35% differential.
This seems worth mentioning from the standpoint of the
relative waste of the resource by different gear types
which must of course be considered in the light of the
relative values of the products produced.

p. 18
S. 3.3.2.2
How effectively is the 4 line limit enforced? For that
matter, the 6 line limit?

Except in the most desperate of circumstances, limited
entry of itself does not promote conservation or sustained
yield. It is possible to limit catch which is more
directly related to conservation without limited
entry. Limited entry promotes more orderly conduct of
the fishery and economic efficiency.

p. 18
S. 3.3.4
It is not clear to me what period of time is being referred
to in the second sentence. Catch data given in Appendix
Table AI-3 provide the following break-out of chinook

catches by trollers during 1971-76:

	Catch---thousands of fish			
Year	Offshore	Coastal	Inshore	Total
1971	18	186	75	279
1972	27	101	76	204*
1973	84	101	122	307
1974	46	146	128	320
1975	40	115	104	259*
1976	29	74	101	204

Are we talking about the crop-off in inshore catches
in 1975-76 from the 1973-74 level? Or the drop in
coastal troll catches after 1971? The increase in the
offshore troll catch in 1973? In any event, here is where
a table of catch data such as I suggested in connection
with Section 3.3.2.2 would be useful for reference purposes.

p. 18-19   To what extent did shaker mortality reduce the benefits
S. 3.3.4
of the 26-inch minimum size limit? The 28-inch limit?

What data do we have on catches of "shakers"? Are

shakers "inadvertently" caught?

The paragraph on the history of size restrictions does

not belong in this section.

p. 20-21   Do we need to review the life history of species other
S. 4.1
than coho and chinook?

p. 22   Can't the information in this paragraph be incorporated
S. 4.2
P. 2   in the section headed Areas and Stocks Involved?

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*These totals do not agree with the totals shown in Table AI-3.
Neither do the coho catches given for individual areas for 1972
and 1975 check with the totals shown in the table. Are the figures
given in Table AI-3 correct?

p. 23
S. 414
P. 2

Where is the information on age composition, mark-recoveries, etc., for the SE troll fishery summarized (or stored)? What kinds of information are available for other coho and chinook fisheries in SE?

p. 24
S. 4.5
P. 1

Have poor logging practices, urbanization and industrial pollution caused a loss of spawning and rearing habitat? If so, to what extent?

The second sentence mentions "continued misuse." What kind of misuse?

p. 26
S. 4.7
P. 2

What do the data on shaker abundance show? Any trends in numbers caught?

Regarding age and size (length?) frequency data: What fraction of the troll catch is composed of immatures? What differences are there between age composition of chinooks taken in the offshore troll fishery and coastal or inshore troll fisheries or the inside net fishery? Regarding the contribution of non-Alaskan chinooks to the SE troll fishery: What are the estimates for the offshore area, the coastal area and the inshore area? Are the estimates for the offshore area the same as those to be deduced from the reports of the US/Canada Technical Committee on Salmon Interceptions, that is, about 35% being of Canadian origin and 65% Washington-Oregon origin?

p. 26
S. 4.8

What data are being referred to in the underlined statement? Can the various fisheries on SE chinooks be ranked according to their roles in the overharvest? Is there a report on the relation between fishing and population decline?

p. 27
S. 4.8

We will want to modify this paragraph in light of SE coho catches in 1977 (945,000 fish), 1978 (1.7 million fish) and 1979 (about 1.3 million fish).

p. 27
S. 4.8.1
P. 2

What is the nature of the restrictions on terminal fisheries? What is considered to be the proper balance between total catches and escapement for chinooks and coho originating in SE? To what extent has the balance been achieved?

p. 28-31
S. 4.8.2

Table 4 indicates that the mid-point for the chinook MSY range in SE is 306 thousand fish. Shouldn't it be the same as the average annual catch during 1953-77, i.e., approximately 315 thousand? And wasn't the average annual catch of coho in SE during 1953-77 approximately 1.094 million fish rather than the 1.037 million indicated in Table 4?

Table 5 shows the mid-point of the ABC range for SE chinooks to be 303 thousand fish. This compares with the MSY (mid-point) of 306 thousand indicated in Table 4 and the average annual catch of 315 thousand fish during

1954-77. Regardless of which of these two values is
used to represent the midpoint of the MSY range, it is
puzzling to me that, in view of the emphasis on the
depressed condition of wild stocks of chinooks in
SE, the ABC is not substantially less than MSY. There
seems to be an inconsistency here.

The situation with respect to MSY and ABC for the chinook
fishery in SE becomes more paradoxical if the point
estimates for MSY and ABC are based on catches during
1955-79 and 1973-79, respectively: MSY = 320 thousand
fish and ABC = 327 thousand fish. Would such an ABC
level be seriously considered in light of the concern
that has been expressed over the condition of SE chinook
stocks?

p. 27   I fail to see how one calculates an MSY for the troll
S. 5.4.8.1
          fishery unless it was the only fishery exploiting a
stock. The catch of a troll fishery is the sum of its
share of the catch from a multitude of stocks. From
the standpoint of the stock, the troll fishery is only
one of several sources of fishing mortality. We ought
to clearly state that what pertains to the troll fishery
is some allocation (intentional or not) and any
attempt to construe such allocations as MSY just to
satisfy procedural requirements can only be done by
severely distorting the accepted definition of the term.

p. 30
S. 4.9

The matter of reversing the severely depressed status of SE chinook should be reflected in the management objectives of the FMP. Shouldn't we also mention what steps have been taken toward improving the condition of the native stocks?

p. 30
S. 4.9

Some mention of enhancement vs. wild stocks and consequences to wild stocks if long term MSY of the total resource is sought. Some mention of alternatives such as managing for protection of the wild stocks in which case under harvest of hatchery stocks will be the consequence (at least for some fisheries).

p. 34
S. 6.0
P. 1

Dont' understand what the last sentence of this paragraph is all about.

P. 2

The OY's (Table 6) are identical to the ABC's (Table 5). Is it correct to say that the ABC's were modified for economic and social considerations, or did the modifications cancel out (i.e., sum = 0)?
OY discussions should include some mention of the relative social/economic impacts of the various SE Alaskan salmon fisheries (e.g., impact and feasibility of restricting or terminating to achieve conservation goals, the inside net fisheries rather than the offshore troll fishery). Relative returns vs. costs (monetary and in terms of resource utilization), and energy efficiency seem

to be lgeitimate OY considerations. Regarding socio-economic impacts, George Rogers has compiled and organized certain census materials on employment in Alaska. Further information on the subject is expected in July or August.

S. 8.2
P. 3
Why not state at the outset of the FMP that no fishery west of Cape Suckling will be discussed?

S. 8.3
P. 2
Since limited entry in itself does not necessarily prevent an increase in effective fishing effort, isn't something more needed to curtail expansion or specifically the rate of exploitation. Actually, although the intent of limited entry may be to facilitate more effective conservation, in fact, limited entry brings order to and increases the efficiency of the fishery. Ultimately for conservation it is necessary to limit catch (by whatever direct or indirect means) whether or not limited entry pertains.

p. 40
S. 8.3.1.1
Rationale
P. 1
A table or figure showing intraseasonal distribution of fishing effort in the offshore troll fishery would be helpful.

p. 40
S. 8.3.1.1.A
Rationale
P. 3
The fact that fishing is not keyed to specific stocks is the guts of the problem we face in managing the fishery.

p. 41
S. 8.3.1.1.A
Rationale
P. 7
Couldn't opening dates for the chinook season be based on factors other than ability to forecast run sizes?

Have mid-season closures even been established during the season?

p. 41
S. 8.3.1.1.A
Rationale
P. 8
Why does the "ideal conduct" of the offshore fishery require uniform regulations for seasons and areas for the FCZ and State waters? Don't we have different seasons for some fishery categories?

p. 42
S. 8.3.1.1.B
Rationale
P. 3
What does the State consider adequate escapement for coho and chinook to be? How is it determined? How is it being achieved?

p. 47
P. 4
Only a half a dozen power trollers fished in the FCZ in 1977? How many in other years?

p. 48
S. 8.3.1.4
P. 1
To what extent have in-season adjustments been made for the troll fishery in the FCZ in past years? In other fisheries catching coho and chinook in SE?

p. 49
S. 8.3.1.5
P. 1.1-
1.7
How is the rate of harvest measured? Who decides what the preseason expectations are? How are they determined? What kind of general information on stock conditions is obtained? What does the information pertaining to OY for stocks within an area consist of? What are the "other factors" necessary for management of the offshore troll fishery?

p. 52-53
S. 8.3.3.1
Update as necessary.

p. 55-56 I cannot locate on this chart some of the areas listed
S. 8.5.2 in Table 12 or Table AI-3.

p. 53 Here are some of the data/information needs as I see
S. 8.6 them up to this point:

1. Annual catch by gear type by area for all components of the SE Alaska coho and chinook fishery, going back to 1967 (or earlier, if possible).

2. For each component of the fishery, estimates of catches according to area of stock origin - SE, British Columbia, Washington, Oregon, and California.

3. Escapements in SE, and escapement requirements.

4. A description of the flow of fish (migration routes and timing) through the various components of the fishery in SE and thence to streams of origin.

5. Composition of catches with respect to maturity and age.

6. Ocean growth rates and natural mortality.

7. Indicators of run sizes - preseason and intra-seasonally.

8. Shaker losses and other non-catch losses.

9. A description of the steps involved in the present system of managing the coho and chinook fisheries in SE (a la Bristol Bay sockeye). This will be tied in with number 4.

Washington-California Troll Fishery FMP - ATTACHMENT

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Table of Contents

F+N

ADF+G

Bill will do non-alaskan streams

ADF+G

Bill Robinson

SE — Canadian — ocean

Pacific plan
156-158 outline
use.—

Nelle or Heandon F&M

ask Bob Gonzales about inshore work for Chinook.

MSF probably / ADF&G / Can we get any help from NMFS /

a. Alaska — offshore HT & PT limited entry.—

probably should put in perspective as 5% of total catch (or less)

ADF+G
Talk to Deb Merriott

use current material.

ADF+G do draft

consult do Tell 11.0 is finished.