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ANNUAL MEETING - JUNE 1956Standing Committee on Research and Statistics

Agenda Item 7: Collaboration with FAO Fisheries Division
concerning the plan for a "Survey of Aquatic Resources"
Report by FAO

In the field of international action for the improvement and development of fisheries, the roles, responsibilities and possible courses of action of ICNAF and of FAO may differ in important respects, yet the objectives of these bodies are the same and much of the field is shared in common. There is therefore abundant opportunity for collaboration and FAO is glad to record that which has taken place since the Commission's Fifth Meeting, to express its appreciation of the help received, and to refer to further collaboration which we hope will develop between the two bodies.

At the Fifth Meeting of the Commission, FAO presented a 'Note on the Fisheries Resources of the North West Atlantic' in which an account was given of the main lines along which the Organization was developing its plans for work in connection with the survey of living aquatic resources. In noting that paper, the Commission, on the recommendation of its Committee on Research and Statistics, agreed "that its member countries give any possible help to FAO in its realization of this important plan, and suggested that FAO should give needed advice as to the collection of statistics for population research and as to the analyses thereof, for instance by establishing personal contact between FAO and agencies in the separate countries through ICNAF." In its report to the Commission in connection with the FAO paper, the Committee also recommended "that the Commission inform FAO through appropriate channels that its members recognize the long range importance of research on marine ecological systems, and request that that organization collaborate with UNESCO and with the member countries of ICNAF in furthering such research by establishing factors to convert to a common standard quantities of material such as plankton, which is sampled for measures of biological productivity." In pursuance of these recommendations and in continuation of the programme, there has since been valuable collaboration, notably at the Biarritz meetings. The notes which follow are set out systematically with reference to our main lines of activity and refer in passing to the instances of collaboration with ICNAF.

1. Classification and terminology

FAO was very grateful for the assistance it received, at its meeting in Biarritz just before the ICNAF Committee meeting, from a group of consultants (most of whom were convenors for the ICNAF meeting) who examined, commented on and made recommendations about the draft Decimal Classification for our work on fisheries science, and also our bibliographic programme for fisheries biology.

Work is proceeding on the preparation of the fifth draft of the Classification and on the compilation of terms and definitions. An efficient and comprehensive classification and a stable terminology are, of course, indispensable to the resources survey. We trust that we may continue to receive advice and assistance from the Commission's Committee on Research and Statistics in this field of endeavour.

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2. Documentation

Our operations in searching, listing, annotating, abstracting and reviewing literature in the field of fisheries biology are developing satisfactorily. There have been many practical and methodological difficulties to overcome, some of which still persist. The total of periodicals under scrutiny exceeds 500. The basis to the storage of the references, annotations etc. is a slotted card by means of which it is hoped to be able to ensure speedy access to any group of references for which there might be a demand at any time. These operations contribute to the preparation of the Bibliographia Oceanographica which, as a consequence of the FAO assistance, will carry English titles and annotations, as from the volume for 1950. Our operations also make it possible for FAO more easily to accept requests for special bibliographies; an example is a request that the Indo-Pacific Fisheries Council has made to us to prepare special bibliographies for its symposia. We are further examining the means whereby we might systematically prepare and publish reviews of literature in fisheries biology.

The Organization trusts that the Commission will from time to time offer comment on these operations and advise us of any way in which we might be of assistance in this field.

3. Method and theory

The Organization was glad to be represented at and to participate in the Biarritz meeting of the Commission's Committee on Research and Statistics, and ventures to congratulate the Commission on the successful outcome of that meeting. The Commission may be interested to learn that during discussions of the same subject matter at the recent meeting of the Permanent Commission of the International Fisheries Convention (1946), a tentative suggestion was made that FAO should collaborate with the staff of the Fisheries Laboratory, Lowestoft, in the conduct of a training course in Fisheries Population Dynamics; we hope to be able to act on this suggestion. Also, as announced at the Biarritz Meeting, we have invited Mr. John Gulland to prepare a paper on sampling methods, and we believe that this document will be of assistance to fishery workers generally. The Commission will recognize that these actions will constitute a direct answer to the suggestion made by the Commission itself at the Fifth Meeting.

Suggestions were made at Biarritz that an examination should be made of the possibility of mechanizing some of the measuring operations in fisheries biology. The Organization is prepared to explore this question and hopes that it may have advice from the Committee on Research and Statistics on technical aspects of the proposal.

The recommendation made by the Committee on Research and Statistics at the Commission's Fifth Meeting, that FAO and UNESCO should collaborate in promoting work on conversion factors in plankton work, has been communicated to UNESCO and will be placed on the agenda of the next meeting of the UNESCO International Advisory Committee on Marine Sciences which we understand will probably be convened in November of this year. We will keep in touch with UNESCO on this question and give whatever help we can.

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4. Compilation and interpretation of facts

The Commission will remember that in the FAO note to the Fifth Meeting there were sections on the productivity of the ICNAF area, and on the present exploitation of its resources. We have not in the interval been able to develop this work further with respect to the ICNAF area, but we have been engaged on similar work for other regions, of which examples, in various forms, for the ICES, Mediterranean and Latin American areas, will be tabled for the Commission's information. We wish now to proceed with work for the ICNAF area and to have the Commission's advice and help in this matter. We propose to establish a more or less standard pattern for synoptic statements concerning each area; a draft of this pattern is given in the annex to this document and the Commission's views on this would be appreciated. It is intended that standard sheets conforming to such a pattern should be used in the systematic accumulation of data in our files and we are using a similar procedure to gather and sort material by species and by broad subjects.

Finally, we would refer the Commission again to the matters submitted in Section 5 (page 9) of the FAO Note to the Commission's Fifth Meeting¹⁾ and would be glad if there might be some discussion in the Committee on Research and Statistics of the practical arrangements whereby the Commission, and its constituent bodies, might collaborate with FAO in development of the synoptic statement. These might include arrangements for contributions by individual workers to the factual section (especially those dealing with species) collaboration between the secretariats of FAO and ICNAF in the compiling operations, and participation by the Commission's Committee on Research and Statistics in those sections of the synopsis in which interpretation of the assembled data will be attempted. It is hardly necessary for us to repeat that we do, and indeed must, rely upon the Commission as upon other regional bodies for the source material required in the task set us by our governing body.

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ANNEX I

Draft of pattern for regional studies

Introduction

Methods of work, origin of data etc.
General characterization of the area.

Delimitation of the area, bathymetry, meteorology.

Oceanography and ecology

Hydrography (water masses and currents; physico-chemical characteristics)
General ecology, including especially planktonology (account of faunistics and floristic subdivisions)
Distribution of nutrient materials and estimate of basic production
Zooplankton, benthos and estimates of secondary and later production
Fish: species, and biological production.

1) ICNAF Ann. Mt. 1955, Proc. No. 8, Section 5, p.8.

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ANNEX I (continued)

Current exploitation

Examination of statistics on current production and of evidence on the factors influencing this, and interpretation of this evidence insofar as it indicates the nature and magnitude of the economic stocks.

Conclusions

As to the productivity of the area, the intensity of current exploitation and possible modes and levels of future exploitation.

ANNEX II

Synopsis of data to be assembled in the
Species and Stocks Thesaurus

1. Identity

1.1 Taxonomy

Definition
Description

1.2 Nomenclature

Valid scientific name
Synonyms
Common names

1.3 General variability

Subspecific fragmentation (races, varieties, hybrids)
Genetic data (chromosome number, protein specificity)

2. Distribution

2.1 Delimitation of the total area of distribution and ecological characterization of this area

2.2 Differential distribution

Areas occupied by eggs, larvae and other junior stages: annual variations in these patterns, and seasonal variations for stages persisting over two or more seasons. Areas occupied by adult stages: seasonal and annual variations of these

2.3 Behaviouristic and ecological determinants of the general limits of distribution and of the variations of these limits and of differential distribution

3. Bionomics and life history

3.1 Reproduction

Sexuality (hermaphroditism, heterosexuality, intersexuality)
Maturity (age and size)
Mating (monogamous, polygamous, promiscuous)
Fertilization (internal, external)

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3.1 Reproduction (continued)

Fecundity

Relation of gonad size and egg number to body size and to age
Coefficient of fecundity

Spawning

Spawning seasons (beginning, end, peak)
number of spawnings per year, frequency
Spawning time of day
Induction of spawning

Spawning grounds

Coastal (surface, vegetation, shore, shoal, sand, shelter); bottom
Oceanic (surface, bottom)

Egg - structure, size, hatching type, parasites and predators

3.2 Larval history

Account of embryonic and juvenile life (prolarva, larva, postlarva, juvenile)

Feeding

Rates of: development and survival
Periods of: swimming, schooling, nursing
Parental care
Parasites and predators

3.3 Adult history

Longevity
Hardiness
Competitors
Predators
Parasites and diseases

3.4 Nutrition and growth

Feeding (time, place, manner, season)
Food (type, volume)
Relative and absolute growth

3.5 Behaviour

Migration and local movements
Schooling
Reproductive habits

3.6 Growth

Relative growth

4. Population

4.1 Structure

Sex ratio
Age composition
Size composition

4.2 Size and density

Average size
Changes in size
Average density
Changes in density

4.3 Natality

Natality
Natality rates

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- 4.4 Mortality, morbidity
 - Rates of mortality
 - Factors or conditions affecting mortality
 - Factors or conditions affecting morbidity
 - Relation of morbidity to mortality rates
- 4.5 Growth
 - Pattern and rate of growth
 - Relation of growth to feeding
 - Relation of growth to other activities and to various environmental factors
- 5. Exploitation
 - 5.1 Fishing areas
 - General geographic distribution
 - Geographical ranges
 - Latitudinal ranges
 - Depth ranges
 - 5.2 Fishing equipment
 - Fishing gear
 - Fishing boats
 - 5.3 Fishing seasons
 - General pattern of fishing season
 - Duration of fishing season
 - Dates of beginning, peak and end of season
 - Variation in time or duration of fishing season
 - Factors affecting fishing season
 - 5.4 Fisheries regulations
 - 5.5 Fish farming, transplanting and other intervention.

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