

GOALS AND DUTIES
OF THE BIOMETRICS AND DATA SYSTEMS SUPPORT SECTIONS
FOR COMMERCIAL FISHERIES, SOUTHEAST REGION,
AS ESTABLISHED IN 1991



by

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PREFACE

This document was started in 1989 with the new organization of the biometric and data systems sections within Region I Commercial Fisheries. The current form, published here, was completed in August 1991 and used to help solidify the direction of the new sections and define the job descriptions of those working in the sections. The job descriptions were written in conjunction with the PDQ's being developed at that time. In 1989, the Biometrics Section started with three Biometrician II's and two Biometrician I's under the Biometrician III. By 1991 this had changed to four Biometrician II's and no Biometrician I's. This was due in part to the desire to promote one of the current Biometrician I's to a II to reflect the work and demands on his ability and in part to budget cuts. The job description of the Biometrician I was left in the report, however, since upon filling a new position the incumbent might start at a I level depending on qualifications and then work up to a II after a year or more of experience.

Since 1991, the general organization, goals, and work load of the two sections have not changed; there have been only minor changes in the organizational placement of the fish ticket. Now, with the merger of FRED and Commercial Fisheries, reorganization of the Regional office is being discussed to handle the combined responsibilities of the two areas: Management and Development. I felt it was important to get this historical picture of these two important sections published in an ADF&G series so that it may be consulted and referenced in developing ideas and plans for these two sections to meet the increased demands of the new combined division.

Norma Jean Sands
Douglas, Alaska
July 1993

INTRODUCTION

In 1989 under the direction of our new Regional Supervisor, Scott Marshall, the biometricians and analyst/programmers of Region I Commercial Fisheries were reorganized into one technical support group under the supervision of the senior biometrician, rather than having each biometrician assigned to a different research supervisor. The aim of this reorganization was to provide more flexibility in the assignments to each biometrician and analyst/programmer such that they could be assigned tasks best fitted to their specialties and background and to ensure that all projects in the region had accessibility to biometric and computer support. During the ensuing two years, there have been several changes in the staff organization within this group reflecting changing job activities of the incumbents and additional responsibilities within the Region. One of the Biometrician I's (PCN 1338) that was working on database programming was reclassified as an analyst/programmer to reflect his activities in computer and programming support rather than statistical analysis. Another Biometrician I (PCN 1015) is currently being reclassified to a Biometrician II level to reflect his increased responsibilities. The third Biometrician I position (PCN 1873) was converted in 1990 to a Fisheries Biologist to head our newly developing otolith lab.

The Biometrician III (PCN 1276) supervises both the Biometrics Section and the Data Systems Section. The current organizational structure is shown in Figure 1. Although the biometricians are organized within a biometrics unit, in practice they are well integrated within the various projects and are budgeted under those projects. Two of the biometricians are funded by U.S./Canada Salmon Treaty monies (federal grant) and work with salmon issues and two are funded by State funds and work with groundfish/herring and shellfish projects. The senior biometrician is split funded (50:50) between State and federal funds and works on a wide range of biometric problems as well as supervise the biometrics and data sharing sections.

The data sharing section is also split funded between U.S./Canada and State funds with a majority of the funding coming from U.S./Canada funds. Working with Washington, Oregon, and Canada on U.S./Canada salmon related issues requires a fair amount of electronic sharing of data and information including catch and tag-recovery data in prescribed standard formats. Therefore, U.S./Canada funds have supported a growth in our computer capabilities including local and area-wide networks, database development, and electronic storage capabilities. General funds supports most of our fish ticket entry, editing, and coordination activities.

BIOMETRICS SECTION

Goal

The goal of the biometrics section in Region I is the correct and efficient collection, analysis, and reporting of all data used in the management of Southeast Alaska's commercial fisheries. All Project Operational Plans (POP's) and Management Operational Plans (MOP's) that require sampling or survey design, statistical analysis, or modelling will have a biometrician associated with the project. Members of the biometric staff are extensively cross trained in biology, population dynamics, sampling design, and statistics. Biometricians become an integral part of management and research projects, working together with fisheries biologist in designing programs, writing operational plans, collecting data from the field, analyzing data, and writing up the results in publishable format.

Organization

The biometrics section consists of a Senior Biometrician (Biometrician III PCN 1276) and four junior Biometrician (PCN's 1695, 1357, 1257, and 1015). The Senior Biometrician supervises each of the junior Biometrician and is, in turn, supervised by the Fisheries Scientist I (PCN 1091). The Fisheries Scientist, being so trained, may also provide biometric support to the Region. However, all biometric requests should go through the Senior Biometrician, with recourse to the Fisheries Scientist if anyone feels they are not getting the support they need.

The four areas covered by the junior biometricians are: 1) shellfish and miscellaneous species, 2) groundfish and herring, 3) northern boundary and transboundary salmon, and 4) coast-wide chinook salmon. The first two positions are funded by the State, the last two by U.S./Canada monies. The senior biometrician works on non-U.S./Canada salmon and on any other area where additional help is needed.

Periodic biometric meetings are held such that work loads can be compared and any difficult statistical problems may be aired and ideas discussed. Biometricians are encouraged to develop new approaches to sampling and parameter estimation problems that occur in the Region and to publish any new approaches or techniques that they develop.

Scope of Duties

In pursuit of their goal, the Biometrics Section shall perform the following duties:

Project Participation

- 1) Work with the appropriate fisheries managers and researchers to prepare all Regional MOP's. MOP's are written on a periodic basis, being updated as significant changes in management of a particular fisheries occur.
- 2) Work with the appropriate fisheries managers and researchers to prepare all Regional POP's. The biometrician should help develop the sampling and analytical techniques to be used. POP's are written on an annual basis. Methods should be reviewed each year for continuing projects to see when changes are warranted.
- 3) Actively participate in some phases of the field sampling with a view of identifying practical problems that arise in the field and correcting them.
- 4) Participate in the analysis and write up of data from each project being conducted in the Region. Encourage using new or different state-of-the-art methodologies, when available, for analyzing the data. Provide techniques for viewing the data to look for errors and outliers.

Peer Review

- 5) Review all MOP's and POP's written within the Region. This is the responsibility of the senior biometrician, but particular plans may be assigned to another biometrician who is not one of the original authors. Projects that are rejected by the Senior Biometrician are not funded except by specific policy waiver from the Regional Supervisor.
- 6) Review, with an emphasis on validity of statistical techniques, all research reports from Region I and occasional reports from other U.S. agencies or Canada dealing with US/Canada Treaty research programs or other pertinent programs.

Statistical Consulting and Analysis

- 7) Outside of the operational planning process, provide general biometric and technical support for area managers and research project leaders on special problems that may come up from such sources as the Board of Fish or the Pacific Salmon Commission.
- 8) Work with the analyst/programmers and biologists to develop systems/models for data analysis utilizing programming (Fortran), spread sheets, and statistical and graphic software packages for general use by Southeast Regional staff.

Applied Quantitative Research

- 9) Develop mathematical and statistical approaches that permit quantitative estimation of the contribution various stocks or tag groups make to Alaskan fishery's catches. Determine formulas for variances and other statistics around estimated parameters. Publish any new developments.
- 10) Analyze the impact of present and proposed regulations from the Board of Fisheries or the US/Canada Treaty in cooperation with managers, biologists, and/or other biometricians. Develop new ideas for in-season management models to meet stock conservation and harvest allocation objectives.

Technical Team Participation

- 11) Provide members to ad hoc work groups and technical committees formed between divisions and agencies and within the Pacific Salmon Commission. Duties of membership by a biometrician entail attending the meetings, providing statistical consulting and analysis, and developing mathematical and statistical approaches to problems being tackled by the group or committee.
- 12) Present the results of research and analysis at public, professional society, and interagency meetings, at hearings, at meetings of the Board of Fisheries, and at Pacific Salmon Commission meetings.

Instruction

- 13) Provide short courses related to biometrics and population dynamics to Southeast Regional staff.

Individual Duties

Biometrician III:

Main Purpose. Through direct participation and supervision of the Biometric and Data Systems Sections, provide biometric and data processing support to management and research activities in the Southeast Region, Division of Commercial Fisheries.

- 20% Supervision of the Biometrics Section. Supervise, direct, and assist six regional biometricians in providing biometric support to technical and policy personnel responsible for management of Southeast Region fisheries. Assign biometric support of fisheries management and research activities in the Region to the various biometricians as best fit their individual expertise. Maintain the budget for the Biometrics Section.
- 20% Supervision of the Data Systems Section. Directly supervise the senior analyst programmer and indirectly the staff under the senior analyst programmer in coordinating computer hardware and software acquisition and maintenance and in providing data processing support to technical and policy personnel responsible for management of Southeast Region fisheries. Oversee the senior analyst programmer in maintaining the budget for the Data Systems Section.
- 12% Supervision of Project Review. Supervise the Biometrics Section in the review and editing of all project operational plans (POPs) involving data collection and analysis for stock assessment projects in the Southeast Region. The Biometrician III is responsible for giving approval and signing all such POP's. Approval is given to POP's that meet policy standards for accuracy and precision, methodology, and reporting.
- 10% Statistical Consulting and Analysis. Provide general biometric and technical support for regional managers and research project leaders on such topics as experimental, sampling and survey design, variance determination, spawner-recruit models, maximum sustainable yield models, estimating the population size of fish and shellfish stocks, and simulating fishery's management regimes. Analyze, using state-of-the-art methodologies, data collected by projects with complex sampling, survey or experimental designs and provide the estimates, derivations or results of test to project leaders and others.
- 10% Applied Quantitative Research. Develop mathematical and statistical approaches that permit quantitative estimation of the contribution various stocks or marked groups make to Alaskan fishery's catches. Determine formulas for variances and other statistics around estimated parameters. Analyze the impact of present and proposed fisheries regulations in cooperation with managers, biologists, and/or other biometricians. Develop new ideas for in-season management models to meet stock conservation and harvest allocation objectives.

- 10% Technical Team Participation. Be involved in ad hoc work groups and technical committees formed between divisions and agencies and within the Pacific Salmon Commission, including attending the meetings, providing statistical consulting and analysis, and developing mathematical and statistical approaches to problems being tackled by the group. Be a voting member of the Divisions Scientific Program Review Committee.
- 10% Writing Reports and Review. Write all or parts of reports and manuscripts in cooperation with project leaders for projects worked on. Write up any new techniques or estimation procedures developed. Conduct peer reviews, with an emphasis on validity of statistical techniques, on research reports from Region I and occasional reports from Canada and other U.S. agencies dealing with US/Canada Treaty research programs or other pertinent programs.
- 4% Public Presentations. Outside of technical team participation, present the results of research and analysis at public, professional society, and interagency meetings, at hearings, at meetings of the Board of Fisheries, and at Pacific Salmon Commission meetings.
- 2% Short Courses. Provide short courses related to biometrics, population dynamics, and use of specific computer programs to Southeast Region staff.
- 2% Field Activities. Participate in field project activities related to stock assessment to ensure proper sampling practices and identify any problems that may occur.

Biometrician II:

Main Purpose. Provide biometric support for the Southeast Regional fisheries management and research programs; develop, review, and approve analytical stock assessment methods used by the Southeast Region management and research staff.

- 40% Statistical Consulting and Analysis. Provide general biometric and technical support for regional managers and research project leaders on such topics as experimental, sampling and survey design, variance determination, spawner recruit models, maximum sustainable yield models, estimating run strength, simulating fishery's management regimes. Develop systems/models for data analysis utilizing programming (Fortran), spread sheets, and statistical and graphic software packages for use by Southeast Regional biologist and managers. Analyze, using state-of-the-art methodologies, data collected by projects with complex sampling, survey or experimental designs and provide the estimates, derivations or results of test to project leaders and others.
- 24% Applied Quantitative Research. Develop mathematical and statistical approaches that permit quantitative estimation of the contribution various stocks or tag groups make to Alaskan fishery's catches. Determine formulas for variances and other statistics around estimated

parameters. Analyze the impact of present and proposed regulations from the Board of Fisheries or the US/Canada Treaty in cooperation with managers, biologists, and/or other biometricians. Develop new ideas for in-season management models to meet stock conservation and harvest allocation objectives.

- 10% Writing Reports. Write all or parts of reports and manuscripts in cooperation with project leaders for projects with complex analyses. Write up any new techniques or estimation procedures developed.
- 10% Project and Report Review. Review, edit, and change, if necessary, Regional project operational plans as assigned by the Senior Biometrician (these usually involve those projects the Biometrician II is assigned to work with) and make recommendations to accept or reject the final plans. Conduct peer reviews, with an emphasis on validity of statistical techniques, on research reports from Region I and occasional reports from Canada and other U.S. agencies dealing with US/Canada Treaty research programs or other pertinent programs.
- 10% Technical Team Participation. Be involved in ad hoc work groups and technical committees formed between divisions and agencies and within the Pacific Salmon Commission, including attending the meetings, providing statistical consulting and analysis, and developing mathematical and statistical approaches to problems being tackled by the group.
- 2% Participate in field project activities related to stock assessment to ensure proper sampling practices and identify any problems that may occur.
- 2% Outside of technical team participation, present the results of research and analysis at public, professional society, and interagency meetings, at hearings, at meetings of the Board of Fisheries, and at Pacific Salmon Commission meetings.
- 2% Provide short courses related to biometrics, population dynamics, and use of specific computer programs to Southeast Region staff.

Biometrician I:

Main Purpose. Under supervision of the Biometrician III, provide biometric support for selected Southeast Regional fisheries management and research programs; develop, review, and approve analytical stock assessment methods used by the Southeast Region management and research staff.

- 50% Statistical Consulting and Analysis. Provide general biometric and technical support for regional managers and research project leaders on such topics as experimental, sampling and survey design, variance determination, spawner recruit models, maximum sustainable yield models, estimating run strength, simulating fishery's management regimes. Develop systems/models for data analysis utilizing programming (Fortran), spread sheets, and statistical

and graphic software packages for use by Southeast Regional biologist and managers. Analyze, using state-of-the-art methodologies, data collected by projects with complex sampling, survey or experimental designs and provide the estimates, derivations or results of test to project leaders and others.

- 15% Writing Reports. Write all or parts of reports and manuscripts in cooperation with project leaders for projects with complex analyses. Write up any new techniques or estimation procedures developed.
- 15% Project and Report Review. Review, edit, and change, if necessary, Regional project operational plans as assigned by the Senior Biometrician (these usually involve those projects the Biometrician II is assigned to work with) and make recommendations to accept or reject the final plans. Conduct peer reviews, with an emphasis on validity of statistical techniques, on research reports from Region I and occasional reports from Canada and other U.S. agencies dealing with US/Canada Treaty research programs or other pertinent programs.
- 10% Technical Team Participation. As assigned, be involved in ad hoc work groups and technical committees formed between divisions and agencies and within the Pacific Salmon Commission, including attending the meetings, providing statistical consulting and analysis, and developing mathematical and statistical approaches to problems being tackled by the group.
- 5% Participate in field project activities related to stock assessment to ensure proper sampling practices and identify any problems that may occur.
- 3% Provide short courses related to biometrics, population dynamics, and use of specific computer programs to Southeast Region staff.
- 2% Outside of technical team participation, present the results of research and analysis at public, professional society, and interagency meetings, at hearings, at meetings of the Board of Fisheries, and at Pacific Salmon Commission meetings.

DATA SYSTEMS SECTION

Goal

The goal of the data systems section in Region I is to provide up-to-date data processing support that makes the work of the fisheries management and research staff more efficient. This support includes purchase and inventory of computer hardware and commercial software, development of user friendly

access to computer and data processing systems, maintenance of local and wide area networks, and compilation of a documentation system for applications developed within the Section.

Organization

The Data Systems Section is headed by an Analyst/Programmer IV (PCN 1251) who is supervised by the Biometrician III (PCN 1276). The Analyst/Programmer IV supervises an Analyst/Programmer III and II (PCN's 1460 & 1340) who sit in the Regional office in Douglas and jointly supervises an Analyst/Programmer II (PCN 1821) who sits in the Sitka area office. The Analyst/Programmer III supervises a Data Processing Clerk III (PCN 1619) who in turn supervises a Data Processing Clerk II (PCN 1290).

Scope of Duties

In pursuit of their goal, the Data Systems Section shall perform the following duties:

User Support

- 1) Provide user support, including installation, configuration, use, and trouble shooting, for the Regions's VAX computer, PC computers, area networks, and approved software.
- 2) Provide programming assistance to the Region's staff, test programs for Regional application, debug and modify existing Regional computer programs when necessary.
- 3) Provide short courses for the Southeast Region staff related to software application and use of specific computer programs.

Application Development

- 4) Develop applications, programs, and user friendly interfaces to be used by the Region's staff for retrieving data, processing the data with Region supported software, and reporting information using graphics systems and postscript printers.
- 5) Work with the Biometrics Section on development and integration of data base systems for the Region. Develop interface systems for data base entry and retrieval based on user's needs, utilizing the Regions standard data base program INGRES.

Systems Maintenance

- 6) Coordinate the maintenance of the Region's various **data base** systems, including catch, escapement, age-weight length, etc.
- 7) Maintain the **fish ticket** system for the Region. Coordinate the handling, processing and verifying of all fish tickets in the Southeast Region. Generate reports as needed from the fish ticket system. Provide the edited data to the Divisions computer system at Headquarters on a regular basis.
- 8) Perform maintenance and upgrades to existing hardware, software and applications for the office **personal computers** based on user suggestions and needed performance improvements.
- 9) Manage operations for the Region's **VAX computer system**, including PC and printer hook-ups, directory management, accounts, and back-ups.
- 10) Develop and maintain the Region's Local and Wide **Area Networks**.

Resource Management

- 11) Maintain an inventory over computer hardware and software purchased by the Region.
- 12) Review computer needs of the Region and coordinate the purchasing of hardware and software. Evaluate products and recommend appropriate hardware, software, and training.
- 13) Assist senior staff in developing standards and data processing plans for the Region including quality control plans, data relationships, formats and coding.
- 14) Coordinate data exchange with other agencies.

Reporting

- 15) Document applications and use of software specifically designed by the section for Region I's use through the use of technical notes. Technical notes should be short, concise, and produced in a timely fashion.

Individual Duties

Analyst/Programmer IV:

Main Purpose. Through supervision of the Data Systems Section, provide up-to-date data processing support for the Southeast Region that makes the work of the fisheries management and research staff more efficient. This support includes purchase and inventory of computer hardware and commercial software, development of user friendly access to computer and data processing systems, maintenance of local and wide area networks, and compilation of a documentation system for applications developed within the Section.

- 40% Supervision. Supervise the analyst/programmers and data processing clerks in providing computer user support and data system development and maintenance for the Region.
- 20% User Support. Coordinate short training courses by the section for the Regional staff on use of computers, computer programs, and applications developed by the section.
- 10% Application Development. Coordinate and assign application development projects within the section.
- 10% Systems Maintenance. Coordinate the maintenance of the Region's various data base systems, including catch, escapement, age-weight length, etc. Supervise the process of converting existing data bases to INGRES. Manage operations for the Region's VAX computer system, including PC and printer hook-ups, directory management, accounts, and back-ups. Supervise development and maintenance of the Region's Local and Wide Area Networks.
- 10% Resource Management. Maintain an inventory over computer hardware and software purchased by the Region. Review computer needs of the Region and coordinate the purchasing of hardware and software. Evaluate products and recommend appropriate hardware, software, and training. Assist senior staff in developing standards and data processing plans for the Region including quality control plans, data relationships, formats and coding. Coordinate data exchange with other agencies.
- 10% Reporting. Provide documentation of applications and use of software specifically designed by the section for Region I's use.

Analyst/Programmer III:

Main Purpose. Supervise the fish ticket program for the Region. Help provide user support and application development for data processing in the Region. Coordinate integration of data base systems on INGRES for the Region.

- 25% Supervision. Supervise the fish ticket program for the Region.
- 25% User Support. Provide user support, including installation, configuration, use, and trouble shooting, for the Regions's VAX computer, PC computers, area networks, and approved software. Provide programming assistance to the Region's staff, test programs for Regional application, debug and modify existing Regional computer programs when necessary. Help prepare short courses for the Southeast Region staff related to software application and use of specific computer programs.
- 25% Application Development. Work with the Biometrics Section on development and integration of data base systems on INGRES for the Region. Develop interface systems for data base entry and retrieval based on user's needs, utilizing the Regions standard data base program INGRES. Help develop other applications, programs, and user friendly interfaces to be used by the Region's staff for retrieving data, processing the data with Region supported software, and reporting information using graphics systems and postscript printers.
- 10% Resource Management. Maintain an inventory over computer hardware and software purchased by the Region.
- 10% Reporting. Document, through the use of technical notes, applications and use of software specifically designed for Region I's use. Technical notes should be short, concise, and produced in a timely fashion.
- 5% Other. Provide help in other areas covered by the Data Systems Section as assigned by the Analyst/Programmer IV.

Analyst/Programmer II:

Main Purpose. Provide user support for maintenance of hardware and software used in the Region, including area network systems.

- 30% User Support. Provide user support, including installation, configuration, use, and trouble shooting, for the Regions's VAX computer, PC computers, area networks, and approved software. Help prepare short courses for the Southeast Region staff related to software application and use of specific computer programs.
- 30% Application Development. Help develop other applications, programs, and user friendly interfaces to be used by the Region's staff for retrieving data, processing the data with Region supported software, and reporting information using graphics systems and postscript printers.

- 20% Systems Maintenance. Perform maintenance and upgrades to existing hardware, software and applications for the office personal computers based on user suggestions and needed performance improvements.
- 10% Reporting. Document, through the use of technical notes, applications and use of software specifically designed for Region I's use. Technical notes should be short, concise, and produced in a timely fashion.
- 10% Other. Provide help in other areas covered by the Data Systems Section as assigned by the Analyst/Programmer IV.

Data Processing Clerk III:

Main Purpose. Coordinate the fish ticket system for the Region, including the handling, processing and verifying of all fish tickets in the Southeast Region. Generate reports as needed from the fish ticket system. Provide the edited data to the Divisions computer system at Headquarters on a regular basis. Supervise a data processing clerk who enters the fish ticket data.

Data Processing Clerk II:

Main Purpose. Key punch fish ticket data into the computer system. Key punch other Regional data as time permits.

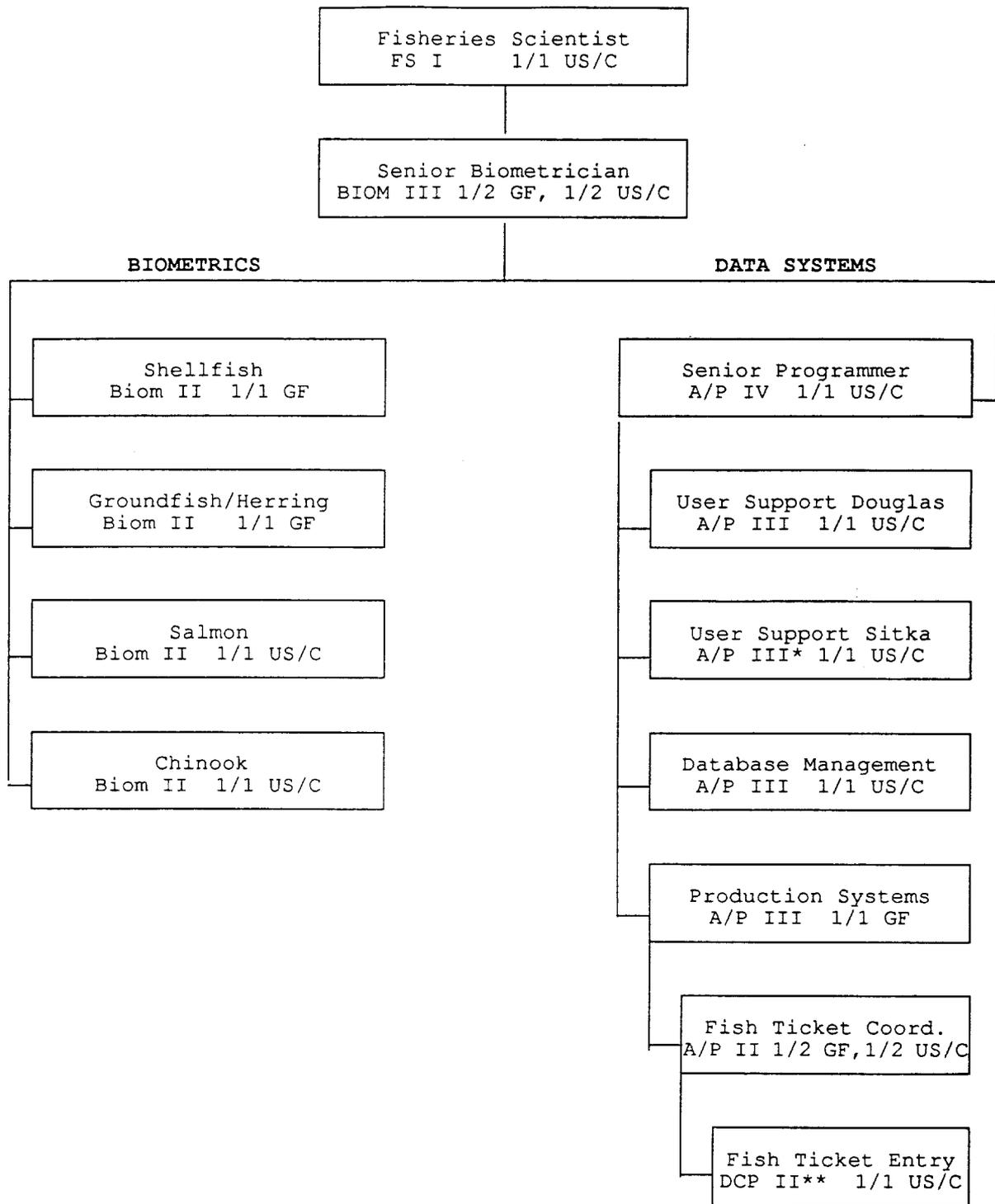


Figure 1. Organizational chart for the Biometrics and Data Systems sections of Region I, Commercial Fisheries. GF indicates General Funding, US/C indicates U.S./Canada federal funding. * This position works half time for data systems and half time for chinook research. ** This is a seasonal position, 6 months.

APPENDIX

Duties of Fisheries Scientist:

Main Purpose. Coordinate US/Canada Treaty related projects within the Southeast Region and between the Southeast Region and other agencies. Have responsibility of assuring the technical adequacy of all fisheries projects and reports which fulfill the obligations of the State of Alaska in the Pacific Salmon Treaty and assuring representation by the State on teams, committees, work groups and panels for arbitration to technical questions germane to Treaty obligations.

Supervise the Salmon Research Supervisor and the Senior Biometrician, coordinating activities of these two groups with needs of Southeast Region fisheries management and with obligations by the Southeast Region to the Pacific Salmon Treaty.

33% Professional Representation. Serve on or designate someone to serve on the following U.S./Canada technical committees and work groups:

1. Chinook Technical Committee
2. Transboundary Technical Committee
3. Northern Boundary Technical Committee
4. Coho Technical Committee (Northern Section)
5. Data Sharing Technical Committee
6. Research and Statistics Work Group

Represent the State and/or Pacific Salmon Commission technical committees before the Northern, Southern, or Fraser River Panels and the Pacific Salmon Commission during arbitration of technical questions germane to our Treaty obligations.

Represent or designate someone to represent the State on the U.S./Canada Technical Dispute Settlement Board during arbitration of technical questions relating to our Treaty obligations.

On occasion, appear before the following bodies to report and evaluate technical information bearing on conflicts in jurisdiction:

1. North Pacific fishery Management Council
2. Pacific Marine fisheries commission
3. International North Pacific Fisheries Commission
4. Alaska Board of Fisheries and Advisory Committees

12% Supervision. Supervise the Salmon Research Supervisor and the Senior Biometrician and make sure that their sections, Salmon Research, Biometrics, and Data Systems are functioning efficiently. Monitor and stimulate the timely reporting and documenting of accomplished work by members of these three Sections.

12% Project Review. In conjunction with the Senior Biometrician, review and determine approval for all project operational plans involving expenditure of U.S./Canada Treaty monies. Review the reports resulting from these projects in view of their providing the information needed to meet our Treaty obligations. Be highly knowledgeable in the research and management projects of Region

I to insure that duplications of expenditures and effort are avoided and that the proper emphasis and balance of the Regional and U.S./Canada programs are maintained.

16% Reports. Assemble, edit, and direct to publication the following reports as required by the Treaty:

1. Annual report on conduct of Alaska fisheries.
2. Annual proposal for Alaska fishing regimes, including preseason forecasts of run strength, escapement goals, estimated total allowable catch, interrelationships between stocks, and management intentions.

Provide information on Alaska enhancement programs for the annual report on all U.S. enhancement activities required by the Treaty process. Monitor the Regions contributions to technical committee annual reports.

Write up one's own research results and aid in writing up final reports for projects involved with. See that these reports are published in the Division reporting system.

10% Administration. Perform general administrative duties related to supervision, attend staff meetings, and perform other administrative duties as assigned by the Regional Supervisor.

10% Statistical Consulting and Applied Quantitative Research. Provide some biometric and technical support for regional managers and research project leaders working on U.S./Canada projects such as salmon stock assessment, determination of harvest rates on specific stocks by Alaska and Canada, development of management models, determining the impact of present and proposed regulations from the US/Canada Treaty, etc.

6% Budget Preparation. Be responsible for preparation of the U.S./Canada research program budget.

3% Data Exchange. Implement and coordinate data communications between the State and Canada and between the State and other States' agencies concerning the timely exchange of data required by the Treaty process.

2% Field Activities. Visit sites where research projects are underway, note how well activity follows the operational plan for the project, look for logistical constraints, redirect, if necessary, the research activities and available resources to maintain the technical quality of the results.

2% Training. Attend training courses and workshops pertinent to the job.

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