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FI/DM/STA

# forest insect & disease management methods application group

2810 Chiles Rd. ■ Davis, Ca. 95616

August 1976

## NEWSLETTER

The purpose of the Forest Insect and Disease Management/Methods Application Group (FI&DM/MAG) Newsletter is to inform our associates, on an informal basis, of activities in which MAG is involved and of significant accomplishments resulting from these activities. We plan to issue three to four Newsletters per year as needed. As an organization, MAG is dedicated to a continual exchange of information with Federal, State, and local governmental units, academic institutions, and private industry.

The Newsletter also will make available information on improved survey techniques, evaluation methods, and forest pest management technology in general. If you have developed techniques that could make our jobs easier, or results more valid, and wish to share them with other specialists, we encourage you to submit them. Your suggestions and comments will be appropriately accredited.

Publication of this first Newsletter is timely since we are now fully operational. All of the staff specialists have been selected and are on board. We have even progressed to the point where one zealous entomologist saw fit to design a banner for MAG.

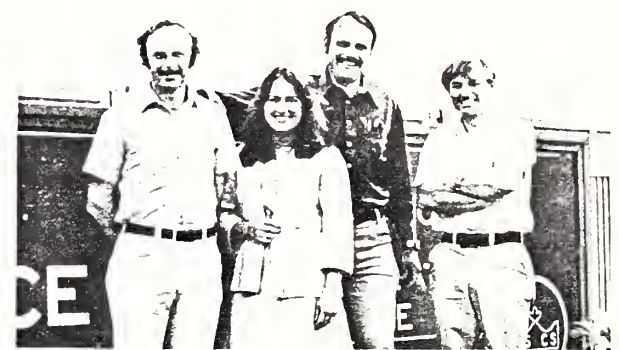
During the first months of existence, those on board were involved primarily in getting the unit established, purchasing furniture and equipment, recruiting staff, establishing administrative procedures, and preparing work plans. Establishing a brand new unit such as MAG can be a unique and rewarding experience, and many fine people were instrumental in getting us started.

This Newsletter covers activities by the MAG staff up to June 1, 1976.

## THE MAG STAFF

MAG is now fully staffed, and since a number of the specialists have come from outside the Forest Service, it seems appropriate to introduce them and describe their backgrounds.

BILL CIESLA, Group Leader, came to MAG from Region 1, Missoula, MT, where he was Staff Director for Forest Environmental Protection. Bill received his academic training at the State University, College of Environmental Sciences and Forestry at Syracuse University. He has been with the Forest Service since 1959, having held assignments in the Southeastern and Western United States. He has been involved in designing survey and biological evaluation techniques and conducting pilot projects with promising insecticides to control forest defoliators.



*Ray Luebbe, Lynne Whitcombe, Bill Ciesla and Jack Barry*

JACK BARRY, Pilot Project Specialist, was a research biologist working as Plans Officer and Test Director with the U.S. Army Desert Test Center and Dugway Proving Ground in Utah, where he was involved in research and development of biological and chemical agents and dissemination systems. From 1971 to 1976, prior to joining MAG, Jack was the U.S. Army project leader supporting Forest Service FI&DM and Missoula Equipment Development Center (MEDC) activities in Region 1. Under the cooperative agreement, the Army supported the Forest Service by providing meteorological information and spray deposit sampling and assessment to pilot projects.

DAVE DRUMMOND, Plant Pathologist, came to MAG from the Ontario Ministry of the Environment where he was involved in field surveys and research on the effects of air pollutants to vegetation. Prior to that, he was on the staff of the Center for Air Environmental Studies at Pennsylvania State University. The research project at Penn State was aimed at evaluating the effect of oxidant pollution on northeastern forest tree species. Dave received a Ph.D. at Penn State after completing a B.S. and M.S. in the School of Forestry at the University of Missouri in 1966.

DAVE GRIMBLE, Survey Entomologist, reported to MAG in May from the Applied Forestry Research Institute, SUNY College of Environmental Science and Forestry in Syracuse, New York. His experience includes survey and control of forest defoliators such as the saddled prominent and gypsy moth, and surveys of insect parasites.

BILL KLEIN, Survey Improvement Specialist, transferred to MAG from Region 4, Ogden, Utah, where he was in charge of the Region's Forest Insect Detection and Evaluation activities. Bill pioneered in the use of 35mm aerial photography in estimating losses due to mountain pine beetle in the Intermountain Region and he will be active in implementing use of aerial photography for forest insect surveys.



*Dave Grimble, Eleanor Franz, Pam Elam, Dave Drummond, Bob Young and Bill Klein.*

RAY LUEBBE, Mathematical Statistician, was with the National Oceanic and Atmospheric Administration in Washington D.C. for 5 years before joining MAG. Ray has application and teaching experience in mathematics and computer systems. Since joining MAG he has been involved in field consultation regarding sampling design and has provided statistical analyses of spray deposit and biological field data.

BOB YOUNG, Biometrician, received his academic training at the University of California, Davis and worked as a statistician specializing in crop forecasting for the USDA Statistical Reporting Service prior to joining MAG. With SRS, Bob held assignments in New Mexico, Iowa, Washington D.C., and California, plus two short-term foreign assignments in Thailand and South Vietnam.

ELEANOR FRANZ, Administrative Technician, recently joined MAG from Region 5 Engineering Staff, Construction and Maintenance Unit, stationed at Geotechnical Materials and Engineering in Pleasant Hill, California. Eleanor started her Forest Service career as a clerk-typist on the Mt. Baldy District of the Angeles National Forest in 1964.

PAM ELAM, Clerk Dictating Machine Transcriber, also came from Region 5 Engineering Staff, Construction and Maintenance Unit in San Francisco and has been with MAG since September 1975. Her Forest Service background includes positions as timber clerk and receptionist on the Groveland and Summit Ranger Districts and as payroll clerk for the Mi-Wok District, all on the Stanislaus National Forest.

LYNNE, WHITCOMBE, Clerk-Typist for the MAG unit, is looking forward to a position in her field, having completed a B.A. in Biological Science at California State University, San Jose. Previously, she performed duties as a Forestry Technician supporting research activities in strip mine reclamation for the Northeastern Forest Experiment Station, Berea, Kentucky.

#### USE OF LARGE AIRCRAFT FOR FOREST SPRAYING

Extensive areas of spruce-fir forests in northern Maine infested by spruce budworm have led workers involved in management of these infestations to seek more efficient systems for applying pesticides to extensive areas of relatively gentle, rolling terrain. Large, four-engine aircraft have been used to some extent in eastern Canada, particularly Quebec, and as early as August 1975 (the time MAG was first established), the Maine Forest Service and the Northeastern Area, State and Private Forestry, requested MAG to assist in evaluation of four-engine aircraft for treatment of the Maine spruce budworm infestation in 1976.

Bill Ciesla and Jack Barry observed a DC-7 aircraft in August 1975, and conducted field characterizations in the Mohave desert of this aircraft in January. They found the DC-7 capable of producing swath widths, containing droplet densities of 20 drops/cm<sup>2</sup>, up to 3,700 ft. under crosswind conditions. Later, two

four-engine aircraft, a C-54 (DC-4) and a Lockheed Constellation, were characterized in Arizona. It was found that swath widths of high flying large aircraft can be influenced considerably by local meteorological conditions, much more so than smaller aircraft which tend to fly closer to tree top level. Swath widths in the Arizona trials varied from 300 ft. in in-wind trials to 2,100 ft. in crosswind trials. However, positive sample cards were observed over 1 mile on some trials.

#### SPRAY DEPOSIT ASSESSMENT WORKSHOP

Assessment of aerial spray deposits is an integral part of maintaining quality control of aerial application of insecticides to suppress forest insects in research field experiments and pilot and operational control projects. In order to develop specific recommendations concerning samples, dyes, analytical procedures, etc., for assessment of spray deposits for projects coming up in the 1976 field season, FI&DM/MAG joined forces with the USDA Expanded Tussock Moth and Gypsy Moth Programs and co-sponsored a spray deposit assessment workshop in Davis, CA on March 16-18, 1976. The workshop was attended by approximately 30 experts in this field representing the Forest Service, APHIS, several universities, private industry, and Canada. A Proceedings has been published and is available from either of the three co-sponsors upon request. A formal instruction manual outlining alternative assessment techniques is being prepared with a publication target date of April 1977.

#### FI&DM IMPACT WORKSHOP

A workshop on impacts of forest insects and diseases was sponsored by FI&DM in Albuquerque, New Mexico, April 27-29, 1976. Purpose of the

workshop was to review progress made in collection of loss data resulting from National assignments and to recommend direction for future work. Representatives from Regions and Areas described methods designed to gather data on losses caused by fusiform rust, scleroderis canker, spruce beetle, mountain pine beetle, gypsy moth and other major insects and diseases. Recommendations for future action included definition of loss data requirements at the National and Region/Area level, design and implementation of a National Insect and Disease Data Base System and a cataloging of methods for gathering loss data by specific insects and diseases.

#### COMPUTERIZED MAPPING

Several Regions have expressed interest in the use of computerized mapping systems for summarization, display, and storage of forest insect and disease survey data. Computerized mapping offers several advantages over systems currently in use; it provides a systematic means of summarizing data, permitting regional, state-wide, forest, or even national summaries; it provides for more rapidly getting survey data back to the land manager by eliminating costly, time consuming hand computation of acreages or numbers of infested trees and hand preparation of survey maps; and with proper handling of the data, it would allow for preparation of composite maps of a given outbreak over a period of years, producing historical records of insect and disease activity which might in the future delineate chronic problem areas.

A number of mapping systems have been developed within the Forest Service, but in a recently published report, the Systems Development Action Planning Team (SDAPT) recommended a temporary moratorium on further development of these systems.

This was done to permit a thorough evaluation of alternative systems in order to identify which would best meet the needs of the Forest Service and be supported and maintained on a National basis. This evaluation was conducted by a special team under the leadership of Jim Hogan, Region 2, Denver, Colorado, Engineering Staff, who presented the results of his study team's effort and recommendations at the FI&DM Impact Workshop in Albuquerque.

MAG is working closely with appropriate Forest Service Systems Management Specialists at the National level to make FI&DM needs in computerized mapping known. When a national direction for Forest Service support of computerized mapping systems is defined, MAG will work with field units to identify the systems or system most suitable to FI&DM applications.

#### EVALUATION OF REGION 5 PEST DAMAGE INVENTORY (PDI)

Dave Drummond and Ray Luebbe accompanied Region 5 FI&DM personnel - Jim Byler, Dick Smith and Ed Wood - to the Klamath National Forest in northern California, to observe the application of the Pest Damage Inventory (PDI), a system for measuring tree mortality developed by Region 5 personnel. Ed Wood demonstrated both the photo interpretation and the data collection systems used for the PDI. All were briefed on the procedures developed by Region 5 for their Timber Management compartment exams. One of the objectives of the trip was to determine areas of compatibility between the two systems so that compartment exams may be used to provide disease and impact data.

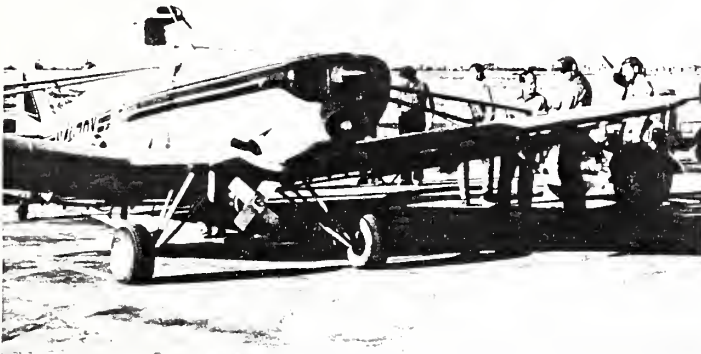
Douglas-fir mortality on the Salmon River District of the Klamath National Forest was also visited by MAG, Region 5 FI&DM, and Klamath Supervisor's Office personnel.

## AIRCRAFT CALIBRATION TRAINING

Responding to a request from R-6 in Portland, Oregon, MAG designed and conducted a 2 day training session on calibration and characterization of aircraft for aerial applications on May 11-12, 1976. Purpose of the session was to train spray operation officers for a 350,000 acre spruce budworm control program in portions of Washington and Oregon. Six students attended the session. Instructors included Tony Jasumback, MEDC, and George Markin, PSW, as well as MAG specialists. The course included classroom work and field exercises on determining flow rates and swath widths of spray aircraft. The field exercise was conducted at the air strip of Medlock Dusters of Woodland, California, with a Piper-Pawnee aircraft. This type of training is available to Regions and Areas upon request.



*Tony Jasumback (MEDC) showing Don Lucht (R-3) procedure for calibrating spray aircraft.*



*Students examine spray aircraft during field exercise in calibration and characterization.*

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