Minutes of the 70-4 Meeting  
Vegetation Management Subcommittee  
Pacific Southwest Interagency Committee  
December 2, 1970

I. Introduction: The 70-4 meeting of the Vegetation Management Subcommittee was called to order at 9:00 a.m. by E. B. Hollingsworth, Chairman. The meeting was held at the Hotel Riviera, Las Vegas, Nevada.

II. Members or Alternates Present:

<table>
<thead>
<tr>
<th>Names</th>
<th>Office</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. B. Hollingsworth</td>
<td>Agric. Res. Service</td>
<td>Los Lunas, New Mex.</td>
</tr>
<tr>
<td>N. E. Noble</td>
<td>Bur. Land Mgmt.</td>
<td>Denver, Colorado</td>
</tr>
<tr>
<td>J. S. Horton</td>
<td>U.S. Forest Service</td>
<td>Tempe, Arizona</td>
</tr>
<tr>
<td>P. R. Leger</td>
<td>U.S. Forest Service</td>
<td>San Francisco, Calif.</td>
</tr>
<tr>
<td>J. G. Koogler</td>
<td>State Engr. Office</td>
<td>Santa Fe, New Mex.</td>
</tr>
<tr>
<td>A. V. Potter</td>
<td>Fisheries and Wildlf.</td>
<td>Los Angeles, Calif.</td>
</tr>
<tr>
<td>R. C. Culler</td>
<td>Corps of Engineers</td>
<td>Tucson, Arizona</td>
</tr>
<tr>
<td></td>
<td>U.S. Geol. Survey</td>
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</table>

For the first time in several years there were no visitors present.

Minutes of the 70-3 meeting were not read, but corrections were requested from the members present. Mr. Koogler requested additional information on the methods of seeding as described on page 6 of the minutes. The Secretary contacted Mr. Farrell, Bureau of Indian Affairs, Phoenix, who provided the following: About 3,000 acres on the Cibecue Creek watershed were seeded by use of a cyclone blower seeder mounted on a crawler tractor. This method required very careful operation to obtain uniform seed distribution. Aerial seeding provided a better method of application.

III. Agency Reports

The customary agency reports were present during the norming and early afternoon. With most of a day and somewhat less than normal attendance, we had more time to discuss each agency report.

A. Federal

1. Department of Agriculture

a. Agriculture Research Service  
E. B. Hollingsworth present a report, Att. No. 1
b. Soil Conservation Service - No report.

c. Forest Service


2. Administration - P. R. Leger presented a report, Att. No. 3.

2. Department of Defense


3. Department of the Interior

a. Bureau of Reclamation - A report prepared by O. J. Lowry was presented by C. W. Bowser, Att. No. 5.


c. Bureau of Indian Affairs - No report.

d. Geological Survey -

R. C. Culler reported that he had described the activities of the Subcommittee to Dr. R. N. Colwell, Forestry Remote Sensing Laboratory, University of California, Berkeley; Dr. Charles E. Poulton, Professor of Range Ecology, Oregon State University; and Dr. W. D. Carter, Chairman, Mineral and Land Resources Working Group, EROS Program, Geological Survey, who are experienced in the use of remote sensing for vegetation studies. Copies of the minutes of the 70-3 Meeting of the subcommit and a copy of the objectives and activities were mailed to them. The assistance of these gentlemen would be helpful in implementing the Survey and Analysis activities of the Subcommittee.

A letter dated November 20, 1970 from R. E. Moore, Manager of Irrigation, Salt River Project, Phoenix, Arizona was presented to the Subcommittee. This letter included a statement regarding the interest and requirements of the Watershed Division, Salt River Project with regard to remote sensing. The Chairman suggested that this letter be included in the minutes as a report from the State of Arizona, see Att. No. 7.

Copies of the following reports were presented to the Subcommittee members:


e. Bureau of Land Management - M. E. Noble reported that vegetation management by the BLM was being drastically curtailed due to the popular antagonism toward any changes in ecology. Chemical treatment has been eliminated and mechanical operations have been minimized. Statements complying with the Environmental Policy Act of 1968 are required for all projects. A complete reorientation of the Bureaus outlook with regard to all significant ecological changes is being made. Research proposals are now directed toward modeling watershed procedures to single activity orientation. Water quality standards are being developed for the land management of watersheds.

f. Federal Water Pollution Control Administration - No report.

B. States

1. Arizona - A report was submitted in the form of a letter to the Secretary by R. E. Moore, Att. No. 7.

2. New Mexico - J. G. Koogler reported that the Ad Hoc Committees on Regulations Regarding Subdivisions, and Land Use in New Mexico would be combined into one committee covering all phases of land use. The tremendous changes in land use now being planned will have important effects on the ecology. One million acres of land in the Rio Grande basin is being subdivided to provide housing for 2,000,000 people. Most of the land is being sold for speculative purposes only and 85 percent may never be used. Adequate control of land use is required to prevent serious disturbance of the ecology.

V. Business Items:

A. In line with the new title and revised objectives and proposed activities of our subcommittee, two task forces were appointed. A task force on Survey and Analysis will be chaired by R. C. Culler of Geological Survey. Other members will be P. C. Quimby, Jr. of the Agricultural Research Service and Arthur Potter of the U.S. Corp of Engineers. The group will inventory the geographic extent and condition of vegetative types and identify their relationship to climate, soil, water, animals, and man. The task force on Socio-economics will be chaired by Phil Briggs of the Arizona Interstate Stream Commission with Jack Koogler of the New Mexico State Engineers Office and representatives from the Bureau of Reclamation and the Soil Conservation Service as members. This group will assess the benefits and costs and evaluate alternatives for managing vegetation. Mr. Jerry Horton of the Forest Service at Tempe, Arizona will be an ex-officio member of each task force.

B. The Chairman reported that the change in name from Phreatophyte Technical Subcommittee to Vegetation Management Technical Subcommittee had been formally approved by the Executive Subcommittee.

C. The 71-1 meeting will be in San Diego, California March 16 and 17. The meeting was turned over to Mr. Mitchell "Red" Sheldon of the Bureau of Sport Fisheries and Wildlife, USDI who will be Chairman for 1971. He adjourned the meeting at 3:30 p.m.

Richard C. Culler
Secretary
Agricultural Research Service Research Report
to the 70-4 Phreatophyte Subcommittee

By
E. B. Hollingsworth

Saltcedar is notoriously famous for its resistance to control by herbicide applied to the foliage. In searching for a method of applying herbicides to the roots of saltcedar, a standard root plow was adapted for subsurface placement of liquid materials.

A small root plow with a four foot blade was mounted on a model 1010 John Deere crawler tractor for use on small plots. A larger root plow with an eight foot blade was mounted on a 9-7 tractor for use on larger areas and on larger plants. The blade on each plow was equipped with a spray boom along the trailing edge from which solutions of herbicide could be applied as the roots were severed at a selected depth below the surface. The angle of the plow was set to operate with a minimum of disturbance to the surface soil.

Tables 1 and 2 show typical response of saltcedar in 1970 following Chem-plow treatment. Materials like 2,4-D which have little effect as a foliar spray are actively absorbed through the roots. Plants in an untreated strip of only a few inches in width between plowed swaths are not severely affected. This emphasizes the need for the root cutting as well as herbicide placement. When the deep tap root is severed the plant is forced to immediately absorb moisture and nutrients from the herbicide zone. This is important with short-lived herbicides. With more persistent materials the plant may eventually absorb enough herbicide to kill it even if the tap root is not severed. The phenoxy materials and picloram were less damaging to the grass species present. Deep placement of selective herbicides plus a minimum of soil disturbance provides for better grass survival and establishment.
Table 1 - The response of saltcedar to herbicides applied in a 40-inch wide band 12-18 inches below the soil surface with a root plow which also severed the root system. The control figures, obtained 5 months after treatment, apply to the 40-inch wide treated area and not the unplowed strips between treatments.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Percent Control</th>
<th>Grass Clubsh %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4,5-T (N-salt)</td>
<td>15</td>
<td>93</td>
<td>6</td>
</tr>
<tr>
<td>Tordon 212</td>
<td>0</td>
<td>98</td>
<td>8</td>
</tr>
<tr>
<td>Fenuron</td>
<td>12</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Monuron</td>
<td>12</td>
<td>78</td>
<td>0</td>
</tr>
<tr>
<td>Diuron</td>
<td>12</td>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>Dicamba</td>
<td>10</td>
<td>93</td>
<td>6</td>
</tr>
<tr>
<td>2,4-D Amine plus</td>
<td>10</td>
<td>94</td>
<td>8</td>
</tr>
<tr>
<td>2,4-D ester</td>
<td>10</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Plowed Only</td>
<td>-</td>
<td>15</td>
<td>6</td>
</tr>
</tbody>
</table>

1/ Native saltgrass 0-10 rating with 0 = all dead and 10 = no effect.

Table 2 - The response of saltcedar to herbicides applied in an eight foot wide band 18-24 inches below the soil surface with a root plow which also severed the root system. The control figures, obtained 16 months after treatment, apply to the treated band and not to the unplowed strips between treatments.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Percent Control</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D Amine</td>
<td>3</td>
<td>80</td>
<td>60% grass kill. 40% of uncut plants showing leaf tip injury.</td>
</tr>
<tr>
<td>Tordon 155</td>
<td>4</td>
<td>75</td>
<td>50% grass kill. Some leaf tip injury to uncut plants.</td>
</tr>
<tr>
<td>Dicamba</td>
<td>8</td>
<td>90</td>
<td>All grass dead. Plants in uncut strip showing dicamba symptoms.</td>
</tr>
<tr>
<td>Monuron</td>
<td>5</td>
<td>90</td>
<td>All grass dead. Obvious herbicide response in uncut plants.</td>
</tr>
<tr>
<td>Diuron</td>
<td>5</td>
<td>90</td>
<td>All grass dead. Obvious herbicide response in uncut plants.</td>
</tr>
</tbody>
</table>
U. S. FOREST SERVICE RESEARCH REPORT

By

J. S. Horton

The Abstract Bibliography on Evapotranspiration which had been prepared originally as a report for the Bureau of Reclamation has been carefully edited and sent to Washington for printing as a Miscellaneous Publication of the U. S. Department of Agriculture. It is hoped that no further editing will be needed and that it will be printed in the very near future.

Inasmuch as the Subcommittee has now widened its scope of activity and has changed its name to the Vegetation Management Subcommittee, reports of the research being done by the Rocky Mountain Forest and Range Experiment Station in chaparral and pine-fir watersheds will be presented in more detail in the future.
During the last part of September and early October, brush fires in Southern California devastated 190,000 acres of National Forest land on five National Forest, and 357,000 acres of privately owned land. Then during November, the Big Bear fire on the San Bernadino National Forest burned over 55,000 acres, of which 46,500 acres were National Forest land.

Through a coordinated effort between the U.S. Forest Service and the California Division of Forestry, 189,000 acres of National Forest, and 220,000 acres of privately owned land has been, or will soon be seeded to grass.

Funds for seeding privately owned lands were provided by the Office of Emergency Planning. The rehabilitation job on National Forest Land has been or will be done with regularly appropriated funds.

Although the seeding of the privately owned lands was accomplished using annual ryegrass exclusively, the Forest Service seeded their lands with a mixture of perennial grasses, thereby deviating from their long time exclusive use of annual ryegrasses. The use of perennial grasses where suitable was done for two reasons. Perennial grasses are more suitable in higher elevations for providing ground cover and holding soil. In lower elevations, the use of perennials in both aerial applications and by drilling, is the first step in our attempt to replace highly flammable brush with less flammable perennial grasses. On the Cleveland National Forest, near San Diego, 5,400 acres of the Laguna and the Boulder burns will be drilled using perennials. The decision was made to do this, although there is no assurance of funds for maintenance of these areas. Lack of maintenance funds or denial of permission to use herbicides for maintenance, could defeat this program.
Gila River Channel Improvement - upper end of Safford Valley to San Carlos Indian Reservation, Graham County, Arizona. Contract was awarded on 20 May 1970 to Hancock and Kelly Construction Co. of Bullhead City, Arizona to clear 3100 acres (600-foot wide floodway) for $159,000. Injunction was granted to halt clearing at the request of conservation groups on the basis that the Corps had not complied with National Environmental Policy Act which requires preparation of Environmental Statement. Gila Valley irrigation District subsequently requested and was granted permission to intervene in the case as a party defendant along with the Government. Case was appealed to 9th Circuit Court of Appeals. Expect ruling on appeal early in calendar year 1971.

Gila River channel improvement downstream from Painted Rock Reservoir-Texas Hill to Dome Crossing, Yuma County, Arizona. Preparing definite project studies. Planning is being coordinated with USBSFW and Arizona Game and Fish Department. Final ecological studies that are being prepared under contract with the University of Arizona at Tucson are expected in mid-December. These will be used in preparation of environmental statement.
Herbicide treatments on 0.1-acre test plots of saltcedar made in September 1969 were reevaluated in September 1970. A foliar applied mixture of picloram, 2,4-D triisopropyl amine, and a silvex ester at 0.25, 0.5, and 5.0 pounds, respectively, per acre were the most effective of 13 herbicides and herbicide mixtures included in the test. In September 1970, further herbicide tests were made cooperatively with Region 7 on 0.05-acre saltcedar plots located along the Arkansas River near Pueblo, Colorado.

Greenhouse herbicide evaluation on saltcedar is continuing. Fifty-one herbicides and herbicide mixtures were evaluated during the year. In addition to picloram and silvex, the herbicide fenac was equally effective. The addition of spray thickening agents increased herbicidal effectiveness under the conditions of these tests.

Region 2-Sacramento

Research Agreement No. 14-06-200-2894A with the University of Nevada, for studies of systemic herbicide translocation in saltcedar as affected by phenological stage and environmental conditions using C-14 labeled materials, expired June 30, 1970. The final report will be submitted within 1 year.

An abstract of a thesis entitled "Factors Affecting Control of Saltcedar," prepared by Mr. Richard Messinger, graduate student at the University of Nevada, is as follows:

ABSTRACT
"Factors Affecting Control of Saltcedar"
by Richard Messinger

Field and greenhouse experiments have shown that mixtures of silvex and picloram are synergistic toward saltcedar. Mixtures which contain 10-20 percent picloram are the most effective, and their activity is through the foliage.

* Presented for Mr. Lowry by Curtis W. Bowser, Bureau of Reclamation, Region 3, Boulder City, Nevada.
Field trials have shown that oil is superior to water as a carrier and that immature saltcedar is easier to control than mature saltcedar. Other promising herbicide mixtures did not control saltcedar. Soil-applied herbicides show promise.

Genetic differences and root temperatures may affect the response of saltcedar to systemic herbicides and should be studied further. Saltcedar is very difficult to autograph because of its leaf form and because its foliage shatters and will not remoisten following freeze-drying.

Mixtures of silvex and picloram could provide an economical method for controlling saltcedar.

Region 3-Boulder City

There was very little work during 1970 on vegetation management in Region 3. All of the cooperative studies on use of water by phreatophytes have been concluded. The only field activities were limited mechanical suppression of vegetation in the flood plain of the Colorado River near Yuma, Arizona, and preliminary mapping of vegetation in the vicinity of the proposed Hooker Dam on the Gila River. Considerable interest was expressed during the year by individuals and organizations in our future plans for removing vegetation from flood plains for flood control and water salvage.

Region 5-Amarillo

Pecos River Basin Water Salvage Project

Removal of woody plants under specifications No. 500C-287 was begun in October 1970 by Armstrong and Armstrong. The contract price is $159,720 for removal of brush from approximately 30 river miles of flood plain.

Specifications for an area above Alamogordo Dam and downstream about 20 miles were issued in November.

The following brush regrowth control work on this project was accomplished through November:

- Chopping: 16,200 acres
- Mowing: 2,555 acres
- Spraying: 5,908 acres
- Test plots sprayed: 115 acres
- Test plots-Chem-cut: 52 acres
Rio Grande - Caballo

Cooperative vegetation control with the State of New Mexico is being continued. Under this program, the following has been accomplished during calendar year 1970:

- Chem-cut (4 pounds of 2,4,5-TP per acre) 473 acres
- Rotary mower 590 acres
- Chopper 114 acres
- Clearing 20 acres

Rio Grande Floodway and Bernardo

During the calendar year 1970, the following listed acres of vegetation have been controlled:

- Aerial spray 1,780 acres
- Ground spraying 1,005 acres
- Mowing 3,400 acres
- Root plow 3,370 acres

Bernardo Study Area

The water supply pump failed in the latter part of December 1969, and the tanks were not operated during the period January through March 23, 1970.

All of the Russian olive planted in Tanks 1 and 2 during June and July 1969 died and were replaced in May 1970. The plants were sprinkler irrigated during the 1970 growing season, and about 80 percent in both tanks survived.

Vegetative density surveys in the saltcedar tanks were made in July and September.

Solutions of sodium chloride in concentration of about 6,000 parts per million were added to Tanks 3 and 4 to increase the salt concentrations and to maintain the water table at the desired level. Periodic water samples were taken in these tanks to determine the salinity of the ground water. These samples showed that the salinity increases with depth. Samples taken July 28, 1970, in Tank 4 varied from 2,360 at the top of the water table to 5,950 parts per million at the
bottom of the tank. In Tank 3, the concentration varied from 1,770 at the top to 3,540 parts per million at the bottom. The salt concentrations have shown no noticeable effect on consumptive use by saltcedar in these tanks during the past growing season.

Preliminary computations of consumptive use and evaporation were made and are shown on the attached table. This table also shows the depth to water in each tank, vegetative densities, precipitation, temperature, and pertinent information.

The practice of rotating Bureau of Reclamation personnel on the Subcommittee will be continued in 1971. The Bureau's representative next year will be from the Region 2 office in Sacramento.
## PRELIMINARY

**Bernardo Evapotranspirometers, summary of consumptive use**

| Date        | Mean temp. (°F) | Precip. (feet) | Consumptive use in feet, including precipitation | Tank No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|-----------------|----------------|------------------------------------------------|----------|---|---|---|---|---|---|---|---|---|---|----|
| 170:        |                 |                |                                                |          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| January-----| 33              | .0050          | 1/                                          |          |   |   |   |   |   |   |   |   |   | .1324 |
| February----| 40              | .0217          | 1/                                          |          |   |   |   |   |   |   |   |   |   | .1325 |
| March-------| 43              | .0333          | 1/                                          |          |   |   |   |   |   |   |   |   |   | .1996 |
| April-------| 50              | .0042          | .00233/                                     |          |   |   |   |   |   |   |   |   |   | .04622/ |
| May---------| 62              | .0050          | .05704/                                     |          |   |   |   |   |   |   |   |   |   | .20462/ |
| June--------| 68              | .0208          | .0323                                       |          |   |   |   |   |   |   |   |   |   | .1702 |
| July--------| 75              | .1853          | .0265                                       |          |   |   |   |   |   |   |   |   |   | .1827 |
| August------| 73              | .1325          | .1059                                       |          |   |   |   |   |   |   |   |   |   | .1897 |
| September---| 64              | .0292          | .3058                                       |          |   |   |   |   |   |   |   |   |   | .3024 |
| October-----| 50              | .0783          | .3810                                       |          |   |   |   |   |   |   |   |   |   | .3524 |
| November----|                 |                |                                             |          | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| December----|                 |                |                                             |          | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

| Totals      |                 |                |                                             |          | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
|-------------|-----------------|----------------|------------------------------------------------|----------|---|---|---|---|---|---|---|---|---|---|----|

**NOTE:**

- Tanks 1 and 2, planted to Russian olive.
- Tanks 3 and 4, saltcedar; water supply - sodium chloride mix of approximately 6,000 p.p.m. pumped into tanks.
- Tanks 5 and 6, saltcedar, normal operation.
- Tanks 7, 9, and 10, bare ground evaporation.
- Tank 8, planted to salt grass.

/No water supply, tanks idle.
/3-24 to 3-31.
/4-29 to 4-30.
/4-15 to 4-30.
/4-24 to 4-30.
/4-1 to 4-17 & 4-22 to 4-30, tanks flooded 4-18 to 4-21.
/7-9-70.
/9-9-70.
Mitigation dredging of about 90A in Cibola Lake, Cibola NWR, has been completed by Bureau of Reclamation. This habitat improvement was planned to mitigate wildlife losses on the refuge suffered by the channelization of the Colorado River. Meandering (but selected) 200 feet wide by 12-14 feet deep areas were dredged to improve the fishery and waterfowl use areas. Control structures are presently being installed to regulate water levels in the lake.

Ecological maping of Colorado River backwaters in Arizona and California continues on Havasu NWR. Interior diking of Topock Marsh to reduce surface acreage to improve water quality and reduce evapotranspiration, in an attempt to restrict water consumption to the decreed right, also continued.

Division of River Basins Studies coordinated program planning with Arizona and California Game and Fish Departments on the wildlife mitigation dredging of Oxbow Lake in California to improve the fishery and public use.

Development of Leota Bottoms, Ouray NWR, Utah, has been completed and the area was flooded and managed for migrating waterfowl. Construction has begun in Sheppard Bottom at the refuge for the same purpose. Both areas are old backwaters along the Green River near Vernal.

Operation and maintenance plans for 1971 were formulated for the Pecos River salt cedar controlled areas on Bitter Lake NWR, New Mexico. Herbicidal treatment will be reduced considerably because of successful control resulting from the past programs. The Salt Cedar - Dove Study conducted by New Mexico Game and Fish and financed by U.S.B.R. concluded the first year of field work. The study was designed to investigate the relationship of salt cedars and mourning dove nesting along the Pecos River.

The 1971 chemical control programs for Region 2 national wildlife refuges, designed to control phreatophyte, hydrophyte, and cropland weeds, were formulated and submitted for FCPC approval.
Mr. Richard C. Culler
U.S. Geological Survey
Water Resources Division
P.O. Box 4070
Tucson, Arizona 85717

Dear Dick:

I have the notice for the 70-4 Meeting in Las Vegas, and a quick look at my schedule tells me that I will not be able to meet with you and the members of the V-M-T Subcommittee. Please extend my personal best wishes to each and every one of our members and guests.

With reference to your September 30 letter and enclosures on the Remote Sensing Capabilities statements by Colwell and Draeger, I have reviewed this matter with the Watershed Division and they have subsequently attended a meeting relative to this subject in Tucson.

Generally we are very favorable to the attempts being made by NASA and would only add the following comments for consideration in either of their photography efforts.

1. With respect to the metropolitan areas in both Maricopa and Pima counties, we would hope that two things might be available:

   a. photography for discovery of plant diseases or insect infestations on all Arizona-grown field crops, and

   b. long period (year to year) changes in the agricultural versus urban patterns in sufficient detail to compute acreage variance.
2. With respect to the watershed area, we would find these surveys helpful in both pre-planning and post-execution work. Pre-planning photographs of a quality to reveal vegetative types and soil conditions would save innumerable man hours of ground survey. Post-treatment photographs would provide close control of both total acreages treated and those requiring re-treatment or extensive maintenance.

In addition, the inventorying of the winter snow pack as to its aerial extent is another highly valuable possibility as far as we are concerned.

It is hoped that such photography might reveal the preference of either purposeful or accidental addition of chemical compounds to the natural water supply. Certainly we would hope that it would detect vegetative effects of drift and degree of actual on-target herbicide applications.

3. While the foregoing sets forth our hopes for this program, we find three apparent major limitations. The systems described thus far are surface only in their ability to scan the soils and geology. Thus no evaluation of soil moisture or soil type appears to be possible at this time. Insofar as this information is useful in productive agriculture, this means that the wilting point will only be noticeable at the permanent wilting point. Finally, vegetation will mask both the productive agriculture and, on the watershed, any meaningful readings directly from the soil surface.

At this point we are not well enough informed to have a feeling for whether our hopes are possible or our understanding of the limitations are real. I trust that the deliberations of our committee will both add to our
understanding and act to implement the program if it meets sufficient needs.

Again, best wishes and Season's greetings to the Subcommittee.

Very truly yours,

SALT RIVER VALLEY WATER USERS' ASSOCIATION

ROBERT E. MOORE
Manager of Irrigation

jp
REPORT OF THE LIBRARY TASK FORCE

By

J. S. Horton

Following completion of the Abstract Bibliography on Evapotranspiration, the Phreatophyte Library is being reorganized, and inventoried. The proposed plans for the future are as follows:

1. The items in the Phreatophyte Library were listed in 1965 with a supplement in 1969. The 1965 list is approaching exhaustion but there are many copies of the supplement. Sometime in the near future, a new list will be issued but it would not duplicate any of the items included in the Evapotranspiration Bibliography but instead would cover only those on ecology, taxonomy, and physiology of phreatophytes and items on evapotranspiration which have been received since the assembly of the Bibliography.

2. In spite of the change in objectives of the Subcommittee and the widening of the scope of its activity, it is proposed that the Phreatophyte Library be maintained as a unit and no attempt made to widen its scope. The literature available on watershed and other vegetation management activities is well documented in numerous libraries and it is suggested that we continue our library efforts only in regard to the phreatophyte and riparian zones.

3. The correspondence and reports of the Phreatophyte Subcommittee have been prepared for filing at the permanent Federal Records Center in Denver. These have been inventoried and can be obtained whenever needed. The present plans are to keep the last five years at Tempe and, at intervals, send the material up to the Record Center. There are, however, many thin files in some of the past years and if any members of the Subcommittee have files that could or should be incorporated in the folders I would appreciate receiving them. Also, if you have any extra copies pertinent to office reports, surveys, etc., I would also appreciate receiving them for filing in the Phreatophyte Library.

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