

ARIZONA WATERSHED SYMPOSIA: A FORUM FOR REPORTING EARLY WATERSHED MANAGEMENT ACTIVITIES

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The role of the Arizona Water Resources Committee and the goal of the Arizona Watershed Program in the early watershed management activities of the state are presented in the introduction of this paper to place its contents in perspective. The Arizona Watershed Resources Committee was a “citizen’s advisory committee” that was formed in 1956 to assist in implementing the recommendations made in historic Barr Report to increase water yields and enhance the other natural resources found on the watersheds in the Salt and Verde River Basins of north-central Arizona (Fox et al. 2000). The Barr Report had been released to the public in the form of a short summary publication (Part I) and a more detailed and comprehensive document (Part II), both with the intriguing title of “Recovering Rainfall - More Water for Irrigation,” in the fall of 1956 (Barr 1956a, 1956b, respectively). Contents of the report supported the belief of members of the Arizona Water Resources Committee and many other people that the state’s watersheds were in “bad shape” while providing what was called a “scientific basis” for improving these conditions by more intensive watershed management to primarily increase streamflow volumes.

The Arizona Watershed Program was a collaborative initiative of the Arizona Water Resources Committee, the Watershed Management Division of the Arizona State Land Department, and the U.S. Forest Service and their cooperators to investigate the effects of vegetative management practices on the hydrologic processes affecting water yields and incorporate the findings obtained into watershed management practices (Fox et al. 2000). It was planned that this general goal would be met by three “highly integrated” programs – a research program, an action program, and a public relations program. Findings of the research and action programs have been reported by Ffolliott and Thorud (1974, 1975), Hibbert (1979), Baker and Ffolliott (1998), Baker (1999), Neary et al. (2002, 2008), DeBano et al. (2004), Solomon and Schmidt (1981), and others. A main component of the public relations program – the Arizona Watershed Symposia – is the focus of this paper.

ARIZONA WATERSHED SYMPOSIA

Throughout the life of the Arizona Water Resources Committee, the annual Arizona Watershed Symposia, later to become the Arizona Water Symposia, was a forum for reporting research findings, the status of watershed management practices,

and proposed water- and watershed-related policies. Co-sponsored by the Committee and the Watershed Management Division of the State Land Department, the proceedings of these symposia were distributed throughout the state and southwestern region starting in 1957 and continuing more-or-less uninterrupted into the early 1990s. Some of the highlights of these symposia are summarized below.

The First Symposium

The first symposium, simply titled the “Arizona Watershed Program,” was in Phoenix on September 2, 1957. Governor Ernest McFarland welcomed the attendees with a keynote address by Rich Johnson, the Vice President of the Arizona Water Resources Committee, on the background, organizational structure, and planned activities of the Committee following. The remainder of the day consisted of presentations on the ongoing watershed research and management programs of federal and state agencies and private cooperators and their roles in the Arizona Watershed Program. Approaches to obtaining financial support for this Program were outlined by Bud Cooper, a rancher, a farmer, a Vice President with the Valley National Bank, and Chairman of Finances for the Arizona Water Resources Committee. Kel Fox, the Secretary-Treasurer of the Committee, offered recommendations for alleviating the known gaps in the state’s watershed research and management programs. The symposium concluded with a question-and-answer session where varying viewpoints relative to the goals of the Arizona Watershed Program were offered.

Highlights of Following Symposia

The symposia were structured around themes that reflected the interests and concerns of their sponsors in the following years. For example, the second symposium in 1958 focused on possible “economic approaches” for supporting the Arizona Watershed Program. Walt Hopkins, the Chief of the Division of Watershed Management Research for the California Forest and Range Experiment Station of the U.S. Forest Service, outlined the “cooperative financing” of watershed management projects in California. Funding of the activities of the Arizona Watershed Program with an approach that was similar to that found in California was considered by R. E. Seltzer, the Head of the Department of Agricultural Economics at the University of Arizona. Papers on the uses of the potential increases in the state’s water resources from the perspectives of

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reclamation, irrigation, farming, home and industry uses, mining activities, and livestock interests were also presented.

Progress in improving watershed management in the state was the theme of the third symposium. Presentations were made on the multiple-use goals embedded in the Arizona Watershed Program; the status of watershed-related research and management programs in the state; and the potential uses of additional water that might be derived from upstream watersheds. As a capstone to the symposium, Bud Cooper, representing the viewpoints of the Arizona Water Resources Committee, spoke on the importance of the Arizona Watershed Program to the state from the present and anticipated future perspectives.

The scope of the symposia broadened in 1960. In addition to further considering the feasibility of implementing vegetative treatments on watershed landscapes to increase streamflow volumes, the conservation of anticipated increased water as it flow downstream was spotlighted. In his greeting of the attendees, Kel Fox emphasized that making the best possible use of "every gallon" of water irrespective of where the water is located was the "main challenge" to be confronted at the time. In confronting this challenge, presentations followed on such diverse topics as determining the consumption of water by the exotic saltcedar trees growing within the state's riparian corridors; the effects of applying herbicides on infiltration rates and deep-seepage of surface water; forecasting streamflow volumes with information obtained from snow surveys by the Soil Conservation Service (now the Natural Resources Conservation Service); and the possibilities of increasing streamflow volumes by cloud seeding to increase snowfall.

The Fifth Annual Symposium reviewed the "modern techniques" applied in watershed management at the time with contributions by representatives of public agencies and the private sector on these techniques. However, it was pointed out by Rich Johnson, the program's chair, that "modern" is a tricky word because knowledge and applications of technologies are constantly changing to make today's methods obsolete tomorrow. Among the topics considered by other speakers were the techniques, methodologies, and operational protocols that were applied in erosion control, water conservation, flood control, and wastewater disposal.

Speakers updated the attendees to the symposium in 1962 on the efforts underway in the Arizona Watershed Program to act on the recommendations made in the Barr Report and reported in earlier symposia. The information presented by watershed hydrologists, range conservationists, forest managers, and soil scientists helped to form a "knowledge-base" for the managers of watershed landscapes in the state. Of particular interest to the

attendees were discussions on the effects of "silvicultural thinning operations" in ponderosa pine forests and controlled burning treatments in chaparral shrublands on the streamflows originating in these two vegetative types.

The following year "Water Conservation from Mountains to Deserts" was the symposium's general theme. Speakers reported on the status of watershed management practices concerned with the sustainability of the existing water flows from upstream watersheds and increasing these flows where it was considered feasible. The importance of the close relationship of the Arizona Watershed Program to the proposed Central Arizona Project was also stressed. It was felt necessary that this linkage must be maintained to obtain the additional water that was needed to accommodate the present and future populations of people in the state.

A historic agreement between the Salt River Project and the U.S. Forest Service to "rehabilitate degraded watersheds in the Salt and Verde River Basins" was signed by the involved partners on June 15, 1964. This rehabilitation program was planned to focus mostly on converting the overstories on 6 million acres of pinyon-juniper woodlands and chaparral shrublands to herbaceous covers comprised of less water-demanding herbaceous plants to increase water yields and forage production. A period of 25 years with an expenditure of nearly 75 million dollars in Salt River Project and federal funds was envisioned in the program. It was fitting, therefore, that the participants in the symposium of that year considered the possible implications of this agreement on water, timber, forage, wildlife habitats, and recreational opportunities. Kel Fox summarized the key points in the agreement and distributed draft-copies of its more salient aspects of the agreement to the attendees. It was also suggested by Fox that while the Arizona Watershed Program had emphasized research to date, it might be time that the "research findings" obtained be extrapolated into action programs where possible.

The annual symposia for the next 25 years served as a continuing forum in which "milestone events" of the Arizona Watershed Program were reported. For example, the symposium of 1965 was noteworthy in that Harry Brown, a research hydrologist with the U.S. Forest Service, reported on the preliminary results of the first vegetative treatment imposed on the Beaver Creek watersheds to increase streamflow volumes. The treatment implemented consisted mostly of a cabling of the overstory of a Utah juniper-dominated watershed to convert the watershed to a cover of lower water-using herbaceous plants. This conversion was similar to a practice of improving rangeland conditions by eliminating competing overstories to increase the production of forage species. Updated results of the

vegetative manipulations to increase streamflows from the chaparral shrublands on the Three-Bar Experimental Watersheds and the mixed-conifer forests on the Workman Creek Experimental Watershed were also presented. A water-yield improvement treatment representing the initial step in converting the uneven-aged structure of the ponderosa pine forest on a Castle Creek watershed in the White Mountains to what was thought at the time to be a more productive even-aged form of stand management was also outlined.

As the Arizona Watershed Program entered its second decade, Hal Wilm, a member of Barr's team of watershed management specialists 10 years earlier, reviewed the accomplishments of the Program from his perspective as the featured speaker in the 1966 symposium. Wilm compared the ideas presented in the Barr Report with what had been learned since. He noted "an astonishing evolution of activity not only in research but in the administration of public (watershed) lands" in the intervening 10 years. In his capacity of Associate Director of the newly formed Water Resources Council at the national level, Wilm also commented on the Council's main role in fostering closer cooperation among federal and state agencies and private entities and promoting "responsible collaborative actions" in water resources development and management such as envisioned in Arizona.

A special part of the 1967 symposium was the presentation of the University of Arizona's Alumni Association's Public Service Award to Obed Lassen, the Commissioner of the State Land Department, by Governor Jack Williams. Much of the symposium itself was centered on a panel discussion on the action programs underway on the state's watersheds. One of the panelists was Bill Warskow, a watershed specialist with the Salt River Project, who presented a progress report on the agreement between the Salt River Project and U.S. Forest Service to "rehabilitate" watersheds in the Salt and Verde River Basins. Warskow reported that through June 1, 1967 in excess of 27,000 acres of pinyon-juniper woodlands and almost 12,500 acres of chaparral shrublands had been converted to herbaceous plants in this effort. He also indicated that the conversion of additional acreages was planned in the coming years.

The Pacific Southwest Water Yield Improvement Act was introduced to the attendees of the 1968 symposium by Kel Fox who had helped to draft the bill. Providing financial support for increasing water yields by vegetative management practices was the Act's primary intent. Fox then chaired a panel of speakers who discussed the importance of this proposed legislation to the state. Copies of the draft legislation were made available to the attendees with the draft also published in the appendix of the 1968 symposium proceedings. (To the best of Fox's later recollection, field hearings

were never scheduled by the U.S. Congress to debate the merits of the bill. It was likely that the widespread and mostly negative publicity related to what had become known as the "Globe incident" contributed to the lack of congressional action.) Defining issues pertaining to the status of watershed management activities in the state were also summarized by speakers at the symposium of that year.

The Globe incident took place the first week of June in 1969 when a helicopter hired by the U.S. Forest Service sprayed herbicides on a stand of chaparral shrubs in the Pinal Mountains. The objective of the spraying treatment was to reduce the densities of the shrubs to (hopefully) increase streamflow volumes. The basis for this treatment was the earlier research results reported at the 1965 symposium on the effects of controlling the chaparral shrublands on the Three-Bar Experimental Watersheds for water-yield improvement purposes. Unfortunately, unpredicted wind patterns blew some of the herbicides from the area targeted for spraying into the nearby Town of Globe and onto some of its residents. These residents later claimed that they had suffered from nausea, vomiting, and diarrhea among other ailments because of their exposure to the herbicides (Shoecraft 1971). The more vocal of the residents formally protested the use of herbicides for water-yield improvement, or any other purposes for that matter, and later filed a series of lawsuits claiming negligence on the part of the parties involved in the spraying treatment. After repeated postponements, most of these lawsuits were settled out of court or the claims had lapsed. However, the negative publicity evolving from this incident eventually led to limiting the spraying of herbicides for almost any purpose in the state.

Linkages between managing watersheds for increased streamflow volumes while sustaining timber production, livestock grazing, wildlife populations, and aesthetic values on the watersheds were summarized by a series of speakers in the symposium of 1969. These presentations followed a keynote address by Wes Steiner, the State Water Engineer who later became the Executive Director of the Arizona Interstate Water Commission, on the availability of the water resources in the state. Steiner placed these water resources into a long-term perspective relative to the future population growth and the recently authorized Central Arizona Project. He also stressed the importance of maintaining the level of financial support that was considered necessary for water-resource planning at the state level.

Kel Fox had become the President of the Arizona Water Resources Committee by the time of the 1970 symposium succeeding as he put it his "three distinguished predecessors" who were Lewis Douglas, a Tucson banker, a former Ambassador to the Court of St. James, and a onetime U.S. Con-

gressman; Rich Johnson, who was considered by many people to be “Mr. Central Arizona Water Project” because of his many efforts to obtain its authorization; and Bud Cooper, his immediate predecessor and long-time colleague. The symposium theme that year was “Environmental Considerations in Watershed Planning,” a topic that reflected the growing interest of the members of the Committee and the participants in the Arizona Watershed Program to better incorporate “environmental values” into more holistic planning of watershed management practices. A presentation of general interest was that made by George Proctor, the Assistant Southwestern Regional Forester, who outlined a newly established “chaparral management policy” of the U. S. Forest Service. Formulation of this policy was deemed necessary to counter the adversity confronted by the Forest Service as a consequence of the Globe incident in the previous year.

A New Co-Sponsor

The Arizona Water Commission, established by the State legislature in 1971 as a re-organization of the Arizona Interstate Stream Committee, replaced the Watershed Management Division of the State Land Department as the co-sponsor of the annual symposia with the Arizona Water Resources Committee in 1971. In his introductory comments to the attendees of the symposium of that year, Kel Fox reported on the recent action taken by the U.S. Congress in designating the research and application program on the ecosystem-based, multiple-benefits of integrated watershed management underway on Beaver Creek as a “national rather than a regional program” in scope. This designation brought increased notoriety to the activities and accomplishments of the Arizona Watershed Program on the national-level.

Speakers at the 1972 symposium underscored the many benefits in addition to water that are derived from the state’s watershed landscapes. An emphasis was placed on the non-market benefits obtained such as wildlife habitats, recreational opportunities, and scenic values. However, assigning economic values to these and other non-market resources was recognized as a difficult although necessary task to comprehensively evaluate ongoing and proposed watershed management practices, projects, and programs. Therefore, the core of the symposium consisted of a series of presentations by resource economists, policy makers, and administrators on alternative approaches to resolving this dilemma.

Applications of controlled fire in managing the state's watersheds were explored in the 1973 symposium. Long-time interests of the members of the Arizona Water Resources Committee on the use of fire and its possible role in watershed management were reflected by selecting this theme. (Committee

members had been participants on the Southwest Interagency Fire Committee since the formation of the latter.) Of particular interest to the attendees was a presentation by Harold Biswell, a fire specialist and another member of Barr's team of watershed management specialists, in which he reported on the problems of smoke and air pollution encountered in burning forest, woodland, and rangeland ecosystems in California; and that it was likely that such problems would also be encountered with applications of controlled fire in Arizona.

The 1974 symposium was a forum where the key findings of the preceding 18 years of watershed-related research in Arizona were presented. A panel of U.S. Forest Service and University of Arizona researchers reported on the results obtained on watershed-related experiments in the mixed conifer and ponderosa pine forests, the pinyon-juniper woodlands, the chaparral shrublands, and the semi-desert ecosystems. This symposium was also where what was to become the controversial Thorud-Ffolliott Report was unveiled. The controversy surrounding this report, coupled with that of the aforementioned Globe incident, was considered by many supporters of the Arizona Watershed Program as “serious setbacks” to the Program's progress.

(At the request of the Arizona Water Resources Committee, a report to update the findings of the Barr Report issued 15 years earlier was prepared by Dave Thorud, the Head the Department of Watershed at the University of Arizona, and the author of this paper, who was a member of Thorud's faculty at the time. The purpose of this report, to be titled “Water Yield Improvement by Vegetative Management: Focus on Arizona,” was to assemble, review, and summarize the relevant information that had been obtained by watershed researchers and managers since the release of the Barr Report in 1956 (Ffolliott and Thorud 1975). A shorter summary of the report, titled “Vegetation Management for Increased Water Yield in Arizona,” was made available to the public on the evening before the 1974 symposium (Ffolliott and Thorud 1974). The more detailed report consisted of a comprehensive summary of the knowledge obtained in the Arizona Watershed Program to the time; and a discussion on “theoretical maximums” in water yield-improvement that “might” be obtained by imposing “hypothetical” vegetative management practices in the mixed-conifer and ponderosa pine forests and the chaparral shrublands of the state. [It had been determined from the research results summarized in the first part of the report that these three vegetative types represented the greatest potentials for increasing water yields.] The second part of the report, which was included at the request of the Arizona Water Resources Committee, was presented within a framework of the necessary and, the

authors thought, carefully framed assumptions and constraints in its interpretation. But, Bill Hurst, the Southwestern Regional Forester of the U.S. Forest Service and the luncheon speaker at the 1974 symposium, took exception to this part of the report.

Hurst interpreted the second part of the report as making a recommendation that a “massive vegetation removal program” could produce “significant amounts” of additional water in the state. However, such a recommendation was never made by either the authors of the Thorud-Ffolliott Report, the members of the Water Resources Committee, or other stakeholders with “keen interests” in the management of Arizona's watersheds. Hurst also challenged this part of the report by stating that it had failed to give “adequate consideration” to the other benefits that can be obtained from watershed landscapes. But, this statement ignored the point that was made repeatedly throughout the report that comprehensive evaluations of all of the market and non-market watershed-base commodities and amenities must be thoroughly embedded into the planning of any action program that might be proposed for implementation on Arizona's watersheds. Hurst rightly stated that such a vegetative removal program would result in “major and mostly adverse impacts” on environmental values. While he was correct in making this statement, once again, such an action program was never considered by the authors of the report. Furthermore, an action program of this “extreme magnitude” would never be endorsed by anyone in the state with watershed-management interests.

The members of the Arizona Water Resources Committee were “thunderstruck by the negative reception” that the Thorud-Ffolliott Report received from Hurst, who had been a member of the Steering Committee that had helped to guide preparation of the report. Critical newspaper articles relating to the Report that were largely in support of the comments that Hurst had made in his luncheon speech continued to be distributed throughout the state and the southwestern region for days, weeks, and even months. However, several months after Hurst's luncheon remarks, Pete Cowgill, the Outdoor Editor for the Tucson Daily Star, requested a meeting with Ffolliott in the latter's office on the campus of the University of Arizona to place the Thorud-Ffolliott Report into “a proper perspective.” [It should be mentioned that Cowgill was the only newspaper reporter that ever asked to meet with either Thorud or Ffolliott to discuss the contents of their report.] After exhausting his long list of questions for Ffolliott to answer, Cowgill decided to write still another newspaper account of the Thorud-Ffolliott Report but this time from a different perspective. Cowgill's follow-up article was published in the Sunday edition of the Arizona Daily Star on May 18, 1975 under a bold headline stating that “NO ONE

IS TELLING US TO CUT DOWN ALL THE TREES” – and certainly neither Thorud nor Ffolliott in their report. Cowgill's article also included a statement that the report had not recommended the extreme vegetative management practices that had been suggested by Hurst and that, in fact, the Thorud-Ffolliott Report did not make any recommendations for action programs at all.)

John McGuire, the Chief of the U.S. Forest Service, presented a keynote paper on “managing the national forests in the Southwest for water and related multiple benefits” at the symposium of the following year. The Arizona Water Resources Committee had invited McGuire to make this presentation largely as a response to the controversy sparked by Hurst's comments on the Thorud-Ffolliott Report the year before. McGuire's remarks were considered by the Committee as helpful in “settling the waters” following Hurst's remarks. The status of Phase I of the developing Arizona State Water Plan was also summarized in the 1975 symposium by Tom Clark, the Deputy Director of the Arizona Water Commission. Clark indicated that Phase II of the Plan would be presented by Wes Steiner in the following year's symposium.

A focus of the 1976 symposium was placed on the state's critical groundwater resources. As the keynote presentation addressing this theme, Phil Briggs, the Chief Hydrologist of the Arizona Water Commission, reviewed the state's groundwater resource and the management opportunities relating to this critical resources. Another symposium speaker, Jean Hassell, who had replaced Bill Hurst as the Southwestern Regional Forester of the U.S. Forest Service in 1976, reinforced the Forest Service's long-standing commitment to “its continuing responsibilities of maintaining and improving watershed conditions on national forests landscapes while providing a mixture of resource outputs that meet the spirit of the multiple use and sustained yields concepts.” Wes Steiner updated the attendees on the conceptual development and framework of Phase II of the Arizona State Water Plan as promised by Tom Clark the year before.

The 1977 symposium was held in Tucson, the only time in its history that the venue of the symposium was “the Old Pueblo” and not Phoenix. The symposium was structured as one of the technical sessions of the 13th Annual American Water Resources Conference. Hanna Cortner and Mary Barry, a faculty member and graduate student in the School of Renewable Natural Resources at the University of Arizona, respectively, presented a historical perspective on the purpose, structure, and functioning of the Arizona Water Resources Committee in supporting the activities of the Arizona Watershed Program. Ron Hibbert, a research hydrologist with the U.S. Forest Service, summarized his study of the potentials for increasing water yields in the larger Colorado River Basin through varying veg-

etative management practices. Hibbert's estimates were based largely on the findings obtained through the research efforts of the Arizona Watershed Program.

(Hibbert estimated that the flow of water from watersheds in the Colorado River could be increased by as much as 6 million acre-feet with 4 million acre-feet from the Upper Basin and 2 million acre-feet from the Lower Basin including Arizona [Hibbert 1979]. In deriving these estimates, Hibbert stipulated that all of the forests, woodlands, and shrublands within the respective basins that he deemed physically, economically, and socially suitable for increasing streamflow volumes would be managed for this purpose. Hibbert also compared his estimates to the 1960 U.S. Senate Select Committee's estimates for the general southwestern region and the "theoretical maximum" that would be obtained by implementing the "hypothetical" vegetative management practices presented in the Thorud-Ffolliott Report. As one might have expected, comparisons among these estimates were inconsistent in magnitude because of the differing analytical frameworks involved in their derivation.)

A New Title

The annual symposia were re-titled the "Arizona Water Symposia" in 1978 to better reflect the increasing importance of obtaining greater increased public involvement in the formulation, implementation, and compliance of the state's water policies. A case study to generate increased public input into watershed management, the Battle Flat Chaparral Study, was outlined in the symposium by Dick Krebill and Dave Tackle, both of whom were Assistant Directors of the Rocky Mountain Forest and Range Experiment Station of the U.S. Forest Service. The "technical purpose" of this study, located near Prescott, was to further investigate the possibilities of increasing water yields from the chaparral shrublands of the state. (It should be noted, however, that the Battle Flat study was terminated before satisfying its purpose largely because of the lingering controversy surrounding the earlier Globe incident.) Wes Steiner presented a status report on Phase III, and the final phase, of the Arizona Water Plan to the attendees of the symposium. Additionally, Steiner summarized on-going studies for the improved management and better conservation of the state's groundwater resources.

In a continuing recognition of the importance of the state's groundwater resources, Larry Linser, who later became the Chief of Planning for the Arizona Department of Water Resources, introduced the idea of delineating "groundwater management areas" in those parts of the state with "significant groundwater resources" to attendees of the 1979 symposium. (These areas became known as "Active Management Areas" later.) Linster also

stressed that the Groundwater Management Study Commission, who had been charged with proposing a comprehensive groundwater management program for the state, had "only adopted concepts" because specific legislation to establish the recommended groundwater management practices had not been written.

The Arizona Department of Water Resources, the creation of which was authorized by the State Legislature through the Groundwater Management Act of 1980, joined the Arizona Water Resources Committee in sponsoring the annual symposia in 1980, replacing the Arizona Water Commission. A key presentation in the symposium of that year was that made by Keith Shea, an Associate Deputy Chief of the U.S. Forest Service, on the critical roles of forests, woodlands, and shrublands in the "water chain" extending from upstream watersheds to downstream points of use. Shea's remarks were structured largely in relation to the study by Ron Hibbert on estimated response of streamflows to vegetative management practices in the Colorado River Basin that was presented in the 1977 symposium.

The Final Years

Technical, socio-economic, and political issues of relevance to the Arizona Watershed Program continued to be updated at the annual symposia throughout the 1980s. For example, the importance of hydrologic, environmental, and institutional linkages of water flowing from upstream watersheds to downstream points was highlighted throughout the decade. Sustaining or, when feasible, augmenting the water resources in the state within a "multiple use" framework and then conserving of these resources through educational programs and more efficient strategies for downstream water-use were also stressed. However, in spite of the continuing importance in these issues, interest in the Arizona Water Symposia began to wane by the early 1990s for a variety of reasons.

One reason for the declining interest in the symposia was a general "winding down" of the Arizona Watershed Program toward the end of the decade. The Arizona Water Resources Committee concluded that there was "relatively little new to report" because of the curtailment or termination of most of the water-yield improvement experiments in the state. Another reason was the increasing and, in the opinion of the Committee, rightful emphasis placed on the growing "environmental movement" throughout the state at this time. More managerial effort was paid to the nonconsumptive benefits of the natural resources on watershed landscapes such as wildlife habitats, outdoor recreation, and aesthetic values with attempting to increase streamflow volumes no longer a "central focus" of watershed management. The increasing number of other symposia, conferences, and other meetings throughout the state on a

wide-range of watershed- and water-related issues was likely another reason for the declining interest in the Arizona Water Symposia.

However, the “defining factor” that impacted on continuing the Arizona Water Symposia relates to the Arizona Water Resources Committee itself. Terry Hudgins, an employee of the Arizona Public Service Company who had become the President of the Arizona Water Resources Committee in 1986, notified the Committee in a letter dated September 1, 1993 of his desire to step-down as its president. Hudgins felt that his “job-related responsibilities” had evolved to where he “no longer had time to devote” to the Committee's activities. Upon reflecting on Hudgins's letter, Kel Fox suggested in a follow-up letter to the Committee dated September 14, 1993 that the time might have come to “phase out” the Committee's long-standing involvement in the state's watershed management activities. It had become Fox's belief that most of the Committee's goals in supporting the Arizona Watershed Program had been satisfied.

Following their receipt of Fox's letter, it became the consensus of the Committee members that he (Fox) was “largely correct in his perception” that the need to continue the Committee's role in supporting the watershed management programs in the state had (in fact) probably passed. It was generally agreed, therefore, that the Committee would terminate its existence at the end of 1993 – nearly 36 years after its establishment. The annual Arizona Water Symposium also ended its existence with the Committee's termination, primarily because of this loss of its long-time and primary sponsor.

SUMMARY

The Arizona Watershed Symposia, later the Arizona Water Symposia, were a main public relations outlet of the Arizona Watershed Program. These symposia served as a forum for the continuing presentation of information on the research results, management practices, and policy reforms relating to the Program from the late 1950s into the early 1990s. Furthermore, the published proceedings of the symposia represented an indispensable accounting and, importantly, a permanent record of the activities and accomplishments of the Program throughout its formal existence. As such, these proceedings have become “keystone references” to help people place the Arizona Water Resources Committee and the Arizona Watershed Program into a proper historical perspective of the early watershed management activities in the state.

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