ARIZONA WATER: USES AND SOURCES
PAST, PRESENT, AND FUTURE

by

SENATOR LUCY DAVIDSON

It is becoming, everyday, more apparent, to most of us, in this, the last quarter of the 20th Century, that the old truisms and cherished bromides which nourished this country in its youth, are everywhere subject to question.

When I was a child, we all knew that bigger was better--whether it was toothpaste, loaves of bread, or cities. We used to believe (and were encouraged to do so) that "The more you use, the cheaper it will be"--whether it was hamburger, or water and electricity. We had abundant folklore to sustain our belief that "Nature could be tamed; that man must seek to conquer the elements". The size and wealth of our continent fostered the belief that our resources were infinite--limitless. We knew, if we tried, we could put a man on the moon. And we did!

Now, in the last quarter of the 20th Century, having worshipped technology and glor ied in its fruits, we are facing up to the problems we have created for ourselves. We are facing up to our profligate past as we move into an era of scarcity. Some, amongst us, are seeing the values of living in harmony with nature, of hesitating before we disturb the delicate balance. Building dams and diverting rivers had its day, but even the Bureau of Reclamation and the Corps of Engineers must face new realities. Kapairowitz may not be the ultimate solution. A few short decades ago, we were making deserts bloom and creating lush gardens among the sage and cactus. Today, we are facing up to declining water tables, alarming overdrafts, degradation of water quality, and the need for revisions in our water law.

The changes that came to Arizona following World War II (and the development of evaporative cooling) include, not just the creation of a profitable agricultural economy subsidized, in part, by the federal government, but in three swift decades, a further change from a rural society to a largely urban one. Arizona's population today is not in farming communities. In 1976, as all of you know, two rapidly growing metropolitan centers dominate the state and their water needs can no longer be ignored by a reluctant legislature.

In the early 1900's, the mighty Colorado was tamed and the Imperial Valley saw thousands of acres brought into cultivation. The years that followed witnessed what might be called a second California Gold Rush. When the rampaging river spread silt along its banks, a flood control plan was developed. Dams were built, interstate compacts signed, and the semi-arid Colorado region was divided into the upper and lower basin states. Many other agreements 1/ and projects developed over the years, but it is not our purpose to elaborate them here. Except for one: a "flight of fancy", known as the Central Arizona Project, had been cluttering up the desks and filing cabinets of Congressional leaders for two decades.

There were many objections to the project--most of them from California. Arizona filed suit against her neighbor to the west; other staes got into the act, and 340 witnesses were eventually heard. The final decree came in 1964. After fifteen years of legal battle, many involved egos and political reputations, and so much testimony to the effect that C.A.P. would solve all our water problems, it is easy to see that the idea could not be easily abandoned. Even with abundant evidence that the Colorado cannot possibly meet the demands! Also, building dams and channeling rivers creates jobs. New jobs are the lifeblood of politics. Page doesn't want to be told there will be no dam and politicians fight to keep the dollars flowing to their own balliwick. This is just one more fact of life. The big picture, the overall good of all the people is not always popular politics.

In last year's address before this body, I note that Wesley Steiner stated that the longtime yield of the states "remaining entitlement" to Colorado River water is "on the order of 1.3 million acre feet per year. And in 1969 (and 1970) seventy agencies expressed interest in contracting for 5,400,000 acre feet or 4½ times the available supply". In addition to this, Steiner pointed out that the Secretary of the Interior would "...make his own allocations to the five central Arizona Indian reservations." The specific amount is currently in litigation. With just these limited facts (supplied by the head of the Arizona Water Commission), it is evident that the Colorado River and the C.A.P. cannot pull off the miracle required.

Steiner also talked, last year, "of equalizing the groundwater decline" in our state. How can we possibly do this, I would like to ask you, if we do not know how much water is being withdawn? Without measurement, the best we can do is guesstimate. How can we equalize groundwater decline if farmers can continue to enlarge and deepen existing wells as they now do, and, if, in critical areas, they can change their cropping pattern and produce two or three crops a year, where formerly they produced only one? These conditions came about because our state grew like Topsy, rapidly, and without a plan. An agricultural state responded to the needs of the farmers and the body of law, created through years of court decision, protected these needs and

1/ August, 1921--known as the Colorado River Compact Commission. 7½ million acre feet per year in perpetuity to each basin.

buttressed them. Today, all over the state, our water supplies are dwindling and urban interests have come alive and are clamoring to be heard.

In central Arizona, two counties are suffering from excessive groundwater withdrawals. One of them is urban. Yet in this county, Pima, 70% of our pumpage goes to agriculture and, of the consumptive water use in our county, agriculture accounts for 80% (Avra Valley and Sahuarita). In Pinal County, the groundwater overdrafting is most severe (90% of Pinal's consumptive use is for agriculture).

The urgent question facing our state, which I pose to you today, is how do we lessen the demands on our groundwater supplies? Three answers have been suggested. One answer lies in new construction, more concrete-lined ditches (i.e., C.A.P.--but C.A.P. will only preserve groundwater, if there is a corresponding lessening in pumpage equal to the water imported, which some individuals frequently forget is a basic stipulation in the federal contract). A second answer is through legal means. Currently languishing in the legislature are four bills which would have an impact on groundwater withdrawal. However, the liklihood of their passage this year is slim. (Senator Farr will elaborate upon these bills--I will merely state that they have to do with measurement, with paying for what we use, and with giving each county power over its own water management). The first of these bills introduced in both the House and Senate, has, in a somewhat diluted fashion, made unexpected headway in the House under the able direction of Representative Cauthorn. What will happen now, in the agriculturally-dominated Senate, is anybody's guess.

Of course, there are other obvious solutions--very touchy politically. One of them is to phase out all farming. Let the cities spread and industry take over. This would save our groundwater, but aside from the politics of the matter, I don't believe most of us would prefer acres of asphalt to fields of lettuce and pecans. In addition to the food they produce and the fibre, there is an aesthetic good that we derive from farmland. It rests the eyes, restores the soul, and frames our cities with a belt of green. However, we could eliminate through intelligent planning, the crops which are water-intensive (like alfalfa--most thirsty, at no economic loss to the state) and grow crops which are of highest value and use our water most efficiently.

Another way to curtail the mining of groundwater is a method Pima has already begun and shall do more of in the future; namely, recycling of effluent. As you know, the Bureau of Mines is researching the possibility and Tucson has started using effluent on Randolph Golf Course.

Another factor we must not omit concerns Indian water rights. Litigation in this area, at present moving slowly through the courts, is apt to reform Arizona's water law far faster than the heavily-weighted legislature will.

Interestingly enough, events beyond our control frequently alter lives as well as legislation. And the newest element in the water equation is spelled "energy". Due to the newly- realized energy shortage (energy meaning natural gas, on which our farmers have so heavily relied to fuel their pumps; energy, meaning oil, increasingly scarce in supply and expensive; energy meaning electricity, escalating in cost every day), farmers will very likely be forced to think of alternatives to heavy water pumping in the years ahead. Either they will move to sprinkler and drip irrigation (a desirable, water-conserving alternative to the currently practiced flooding technique, so wasteful in terms of evaporation) or they will move themselves to where the water <u>is</u> rather than pay the cost of bringing it where it's <u>not</u>. Events have caught up with changing philosophies and the free ride for Arizona farmers, I would guess, is at an end.

Parenthetically, also, let me add that the inevitable, but enormously-increasing cost of water to municipalities such as Tucson is bound to put heavier and heavier pressure upon the legislature. Representatives will be elected to both Houses who truly represent the people who pay the taxes--not just the traditional vested interests.

In closing, I want to direct a plea to you members of the scientific community, to you scientists who made it possible for man to accomplish so many big and small miracles in the past through your knowledge and expertise. You, who taught man how to channelize rivers, build dams, rotate crops, fertilize the soil, gather rocks from the surface of the moon, walk in space, and live under the sea; today, there is a new job for you. We sho are the plodders and the politicians need new thinking and new directions and we look to you men and women of science. We need more effective ways of measuring the resources we have on this planet, more effective ways of predicting the effect of our use of our resources.

If we are to husband our water and yet have sufficient energy, we need to move swiftly into the solar field. Other alternatives demand more water than we can spare; or they possess hazards we do not fully understand. The scientists must point the directions so the politicians can pick up the challenge. Together, we have new worlds to conquer.