"Understanding the significance of springs, streams, and marshes to the total desert ecosystem, and their conservation, is the key to preserving the beauty and fascination of this vast region."

Dr. David Soltz
(from The Natural History of Native Fishes in the Death Valley System)

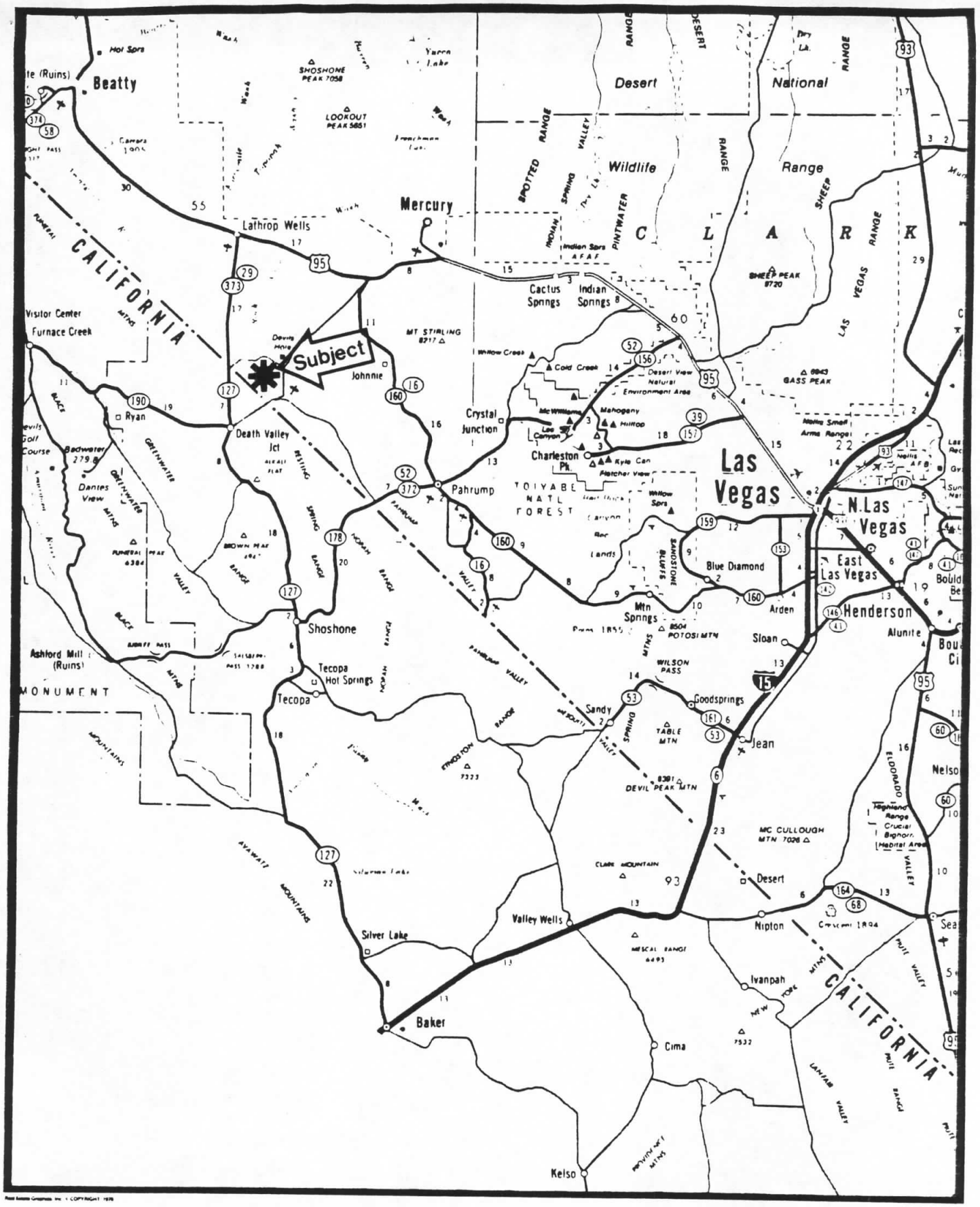
INTRODUCTION

Ash Meadows is an extensive and entire desert wetland ecosystem located 60 miles northwest of Las Vegas near Death Valley National Monument in Nye County, Nevada. As the largest oasis in the Mojave Desert, this region supports a number of unique desert habitat types, 12 major springs and their outflows, and over 20 species of fish, plants and invertebrates which are found nowhere else on earth. The rich plant and animal endemism of Ash Meadows is of considerable evolutionary significance and has attracted worldwide attention from leading natural scientists. As one of America's most important natural landmarks, the preservation of this remarkable oasis has been a top Nature Conservancy priority for more than ten years.

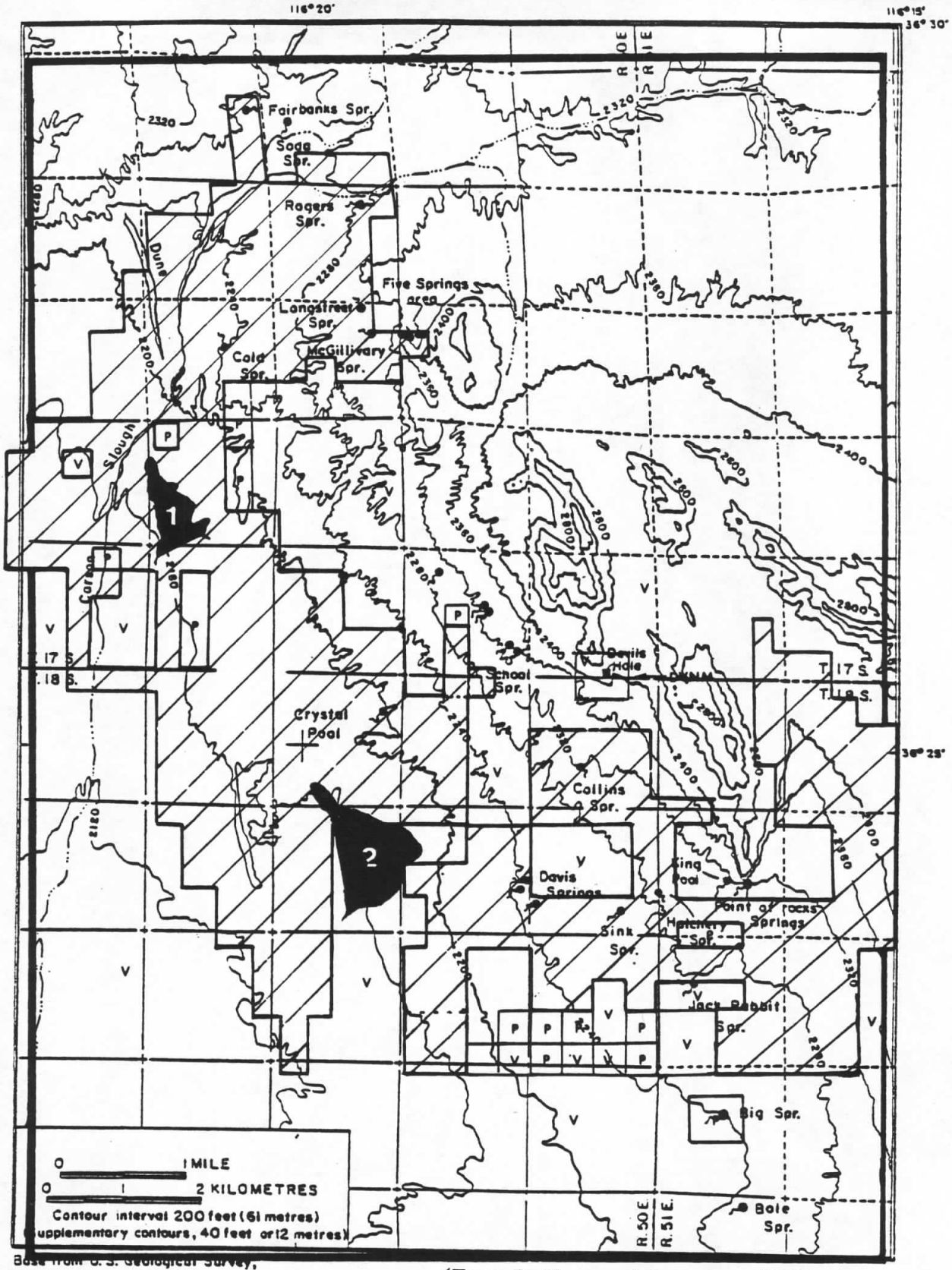
At no time in Ash Meadows' history has the viability of this impressive natural area been more threatened than now. Preferred Equities Corporation, a Las Vegas development concern, currently has approved plans for a 25,000 lot subdivision on 12,653 acres at the heart of the Ash Meadows Valley. Once completed and fully populated, Preferred Equities' development will virtually assure the extinction of the region's large numbers of already threatened fish, plant and invertebrate species.

After extensive negotiations, there is now hope for the preservation of Ash Meadows. The Nature Conservancy currently holds an option to purchase Preferred Equities' entire 12,653 acre holdings for resale to the U.S. Fish and Wildlife Service at a present value cost of $5,475,871. The terms of this transaction involve a $5,000,000 appropriation which has been secured by Senator Paul Laxalt, $500,000 in matching charitable funds which have been already raised by the Conservancy and a $1,000,000 loan which, by way of this proposal, The Nature Conservancy is requesting from the Richard King Mellon Foundation as a component of the Foundation's Natural Wetlands Program grant.

At Ash Meadows, The Nature Conservancy is on the verge of protecting one of our nation's most important--and most threatened--acquatic ecosystems. With the help of the Richard King Mellon Foundation, this unique natural area can be preserved for all time.



Location Map



(From Dudley and Larson, 1976)

Figure 5.1: Acetate Overlay Set of Ash Meadows and the Boundaries of the Proposed CalVada Lakes Development. V, public lands; P, private lands; 1, "north" lake; 2, Crystal Lake; DVNM, Devils Hole Death Valley National Monument.

The Region

At the base of southern Nevada's Spring Mountains, Ash Meadows lies in the Amargosa Valley near Death Valley National Monument 60 miles northwest of Las Vegas. Here in marked contrast to the aridity of surrounding lands, surfacing waters from a vast 4,500 square mile acquifer sustain 12 major spring systems, numerous spring seeps, and an extraordinary number of endemic plant and animal species. Ash Meadows is the largest oasis in the Mojave Desert. It is an expansive surface and subsurface hydrologic system which is the only acquatic habitat of its kind in the United States.

Ash Meadows' soils were formed thousands of years ago when alkaline deposits of an ancient Pleistocene lake bed became saturated with dissolved carbonates from the Amargosa Valley's vast underground water system. Soil conditions, a harsh climate (less than three inches average annual rainfall) and Ash Meadows' isolation are the environmental factors which have caused the region's plant and animal types to evolve into distinct species found nowhere else.

Among Ash Meadows' most unusual species are the region's desert fish. Because of their evolutionary significance, these have received worldwide attention from natural scientists and ichthyologists for over two decades. Ash Meadows is the only home for four especially rare species of

desert fish. Small populations of these tiny (0.5 to 1.0 inch long) Cyprinids have been isolated in individual springs in Ash Meadows since the last ice age, oftentimes in some of the most restricted animal habitats known to science. Like Darwin's finches, with which they are frequently compared, Ash Meadows' desert fish have evolved into distinct species in their respective springs which, in some instances, are no more than a few miles apart.

While some of Ash Meadows' springs and their outflows are protected on public land, the majority of the valley's land and its springs are private and unprotected from development. Public or private, the longevity of the very natural systems which have made Ash Meadows into an oasis depend on the viability of its underground acquifer. Pumping and agricultural development even several miles from a spring has been shown in the past to have damaging effects. The life cycles of desert fish species and the invertebrates on which they feed hinge on a delicate ecological and nutritional balance which water drawdown can disrupt.

The Threat

Unfortunately man's activity in Ash Meadows has jeopardized the region's wildlife species in the past and continues to present a real threat now. Increasing develop-

ment pressures have caused the extinction of one of Ash Meadows' desert fish, the Federal listing of four others and the proposed listing of seven rare plants (see Appendix A).

The reason for the U.S. Fish and Wildlife Service's most recent fish and plant listings is as troublesome as it is clear. Preferred Equities Corporation, a Las Vegas development concern, currently has approved plans for a 25,000 lot subdivision at the heart of Ash Meadows which, if implemented, would cause extreme damage to the valley's spring and groundwater systems. Over time this development would virtually assure the extinction of Ash Meadows' already rare fish, plant and invertebrate species.

Also of importance, Preferred Equities' proposed development would dash all hopes of reclaiming Carson Slough, a once productive waterfowl area in the northern portion of the valley which the State of Nevada has long been anxious to acquire for sporting and recreational purposes. Most simply, subdivision development and wildlife preservation have little chance of coexisting in Ash Meadows, especially considering that Preferred Equities' 12,653 acre property encompasses the vast majority of the private land in the valley and most all the region's major springs.

The Solution

After exhausting all possibilities for land exchanges, conservation easements and other protection alternatives, it is now clear that a direct purchase of Preferred Equities' Ash Meadows property is the area's only salvation. Fortunately, Senator Paul Laxalt and other members of the Nevada Congressional delegation have managed to obtain an emergency $5,000,000 appropriation for the purchase of Ash Meadows by the U.S. Fish and Wildlife Service. Senator Laxalt has also formally requested that The Nature Conservancy assist with negotiations.

Thanks to Senator Laxalt's $5,000,000 appropriation, the Conservancy has been able to secure an option on Preferred Equities' Ash Meadows property. Comprehensive land appraisals of the company's Ash Meadows holdings have ranged from $5,100,000 to $6,600,000. The Conservancy's option runs through December 12, 1983 and involves 1.) a cash payment to Preferred Equities of $5,500,000 and 2.) a $1,000,000, 5%, five-year loan made to the company at closing. The transaction is outlined as follows:

At closing on January 3, 1984

1.) T.N.C. pays $500,000 cash and loans P.E.C. $1,000,000 for five years at 5% per year.

The loan will be secured by a bank letter of credit acceptable to T.N.C.

2.) P.E.C. conveys 12,653 acres to T.N.C.

On March 31, 1984

1.) T.N.C. pays P.E.C. $2,500,000 cash.

On July 31, 1984

1.) T.N.C. pays P.E.C. $2,500,000 cash.

Because of the deferred schedule of payments to Preferred Equities, the total present cost to the Conservancy discounted as of December 31, 1983 is calculated as follows:

$1,000,000 loan at 5%	155,586
$ 500,000	500,000
$2,500,000 on 3/31/84	2,444,988
$2,500,000 on 7/31/84	2,375,297
Total present cost	5,475,871

Our Request

With the tremendous opportunity to protect Ash Meadows immediately at hand, the Conservancy is now seeking funding to make this transaction possible. A contribution of $500,000 has been requested from the Goodhill Foundation for the first payment required. As the agency which will end up owning and managing Ash Meadows, the U.S. Fish and Wildlife Service has cooperated with Senator Laxalt to secure the $5,000,000 balance.

Now, as a final and pivotal component of the proposed transaction, The Nature Conservancy needs, and respectfully requests, an interest-free, $1,000,000 five-year loan from the Richard King Mellon Foundation to help preserve Ash Meadows. We are on the verge of protecting one of our nation's most unique--and most threatened--acquatic ecosystems. A better opportunity to meet this exciting challenge may never exist.

APPENDIX A

LIVING ENDEMIC SPECIES OF ASH MEADOWS, NYE COUNTY, NEVADA

FISH

*#Warm Springs pupfish	Cyprinodon nevadensis pectoralis	B1
*#Devils Hole pupfish	Cyprinodon diabolis	A1
*#Ash Meadows pupfish	Cyprinodon nevadensis mionectes	B1
*Ash Meadows speckled dace	Rhinichthys osculus nevadensis	B2

INVERTEBRATES

+Point of Rocks Springs Naucorid	Ambrysus amargosus
+Ash Meadows Riffle Beetle	Stenelmis calidae calidae
+Point of Rocks Spring Snail	Fluminicola erythropoma
+11 Species of "Nevada Spring snail"	some in genus Tryonia, others in undescribed genus

PLANTS

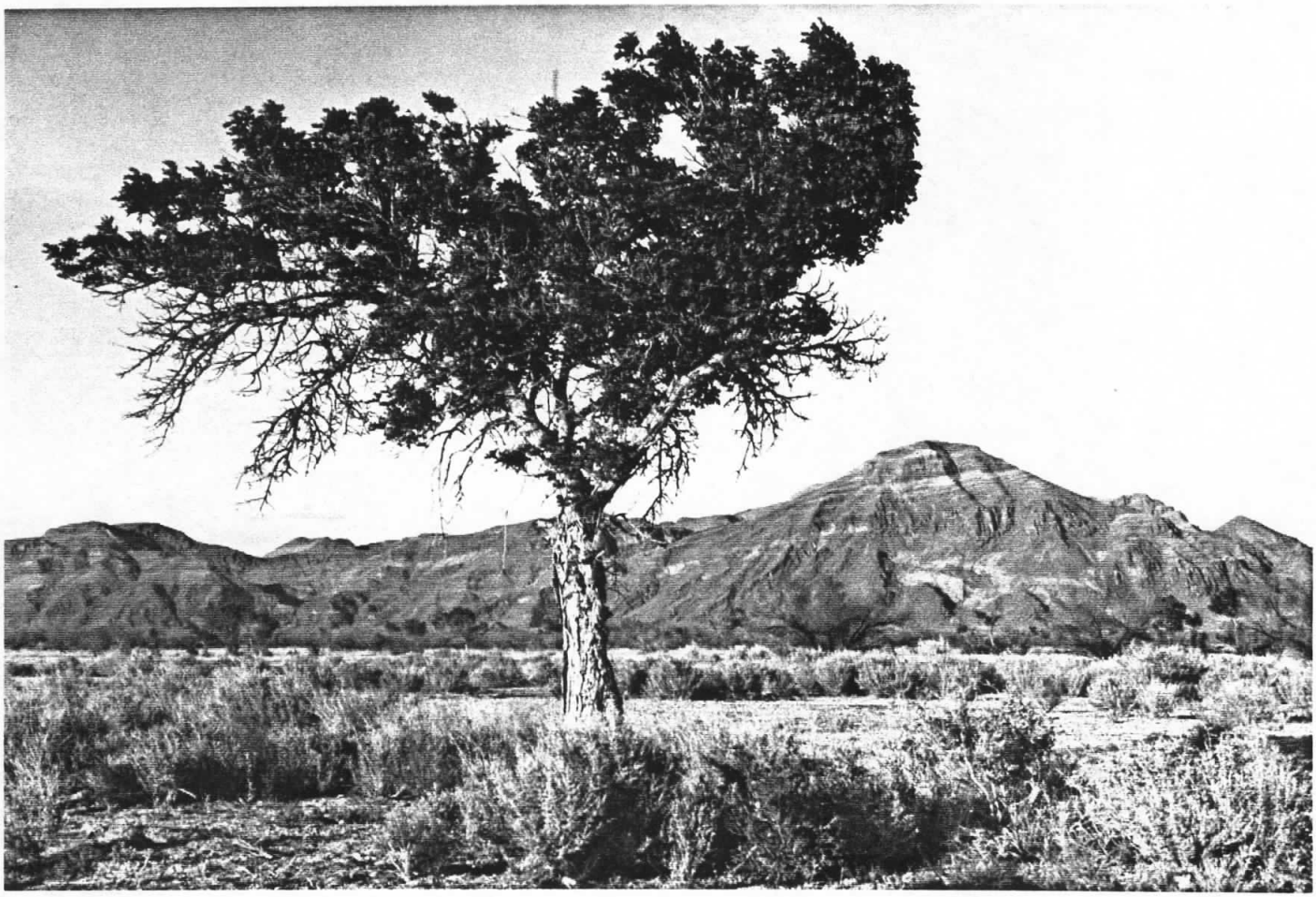
+Ash Meadows gumweed	Grindelia fraxino-pratensis	A2
+#Ash Meadows milkvetch	Astragalus phoenix	A2
#Amargosa niterwort (1)	Nitrophila mohavensis	A1
+#Ash Meadows blazing star	Mentzelia leucophylla	A1
+Ash Meadows ivesia	Ivesia eremica	A2
+Ash Meadows sun ray	Enceliopsis nudicaulis var. corrugata	B1
#Ash Meadows Centary	Centarium namophilum	A2

*currently listed on the Federal Endangered Species List

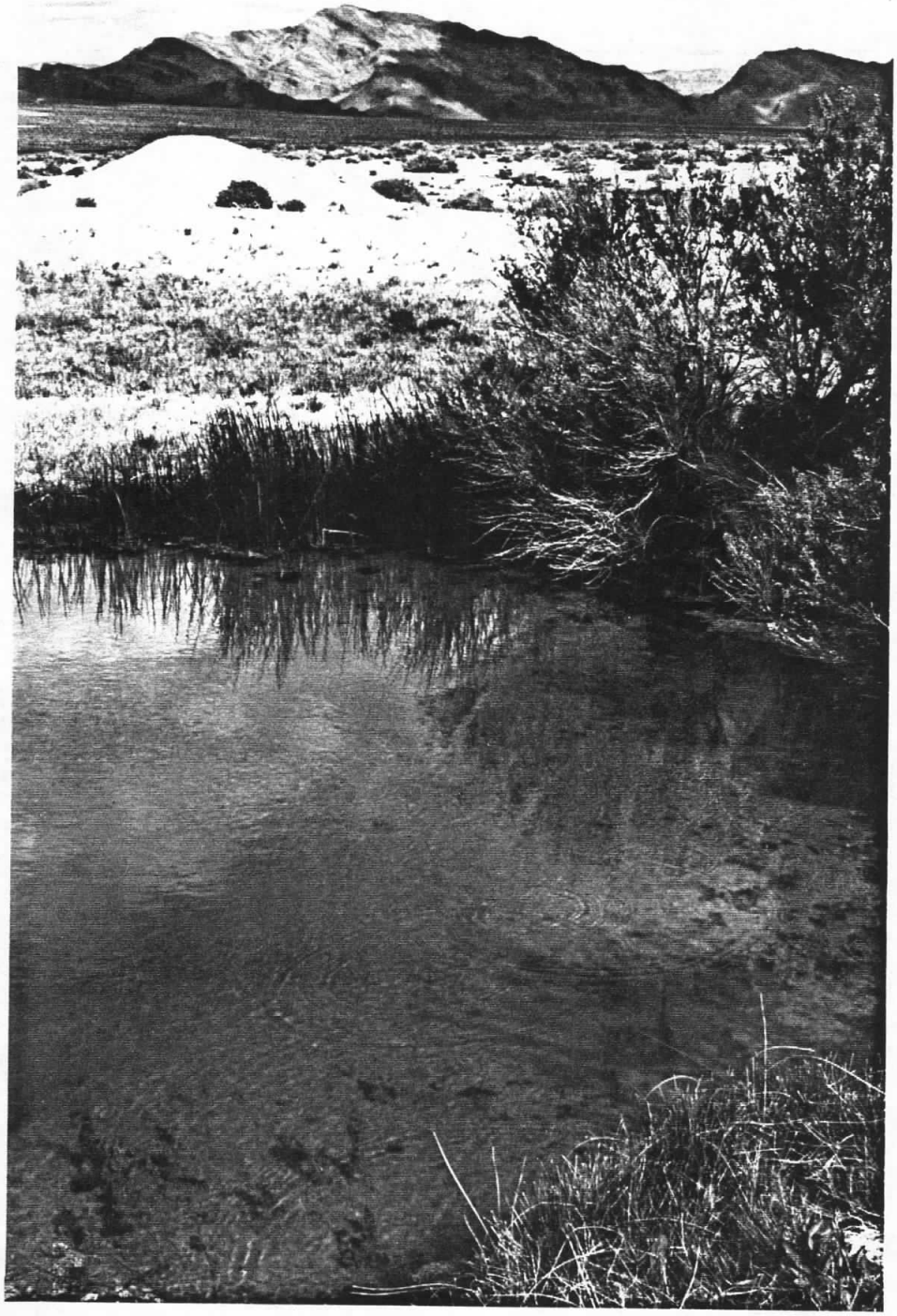
#currently listed on the Nevada State Endangered Species List

+endemic animals and plants under review for the Federal Endangered Species List (candidate species)

(1) this species is found at the California-Nevada state line



Ash Tree and Foothills in Eastern Ash Meadows--Endemic species have developed special adaptations to cope with Ash Meadows' aridity and harsh climate.



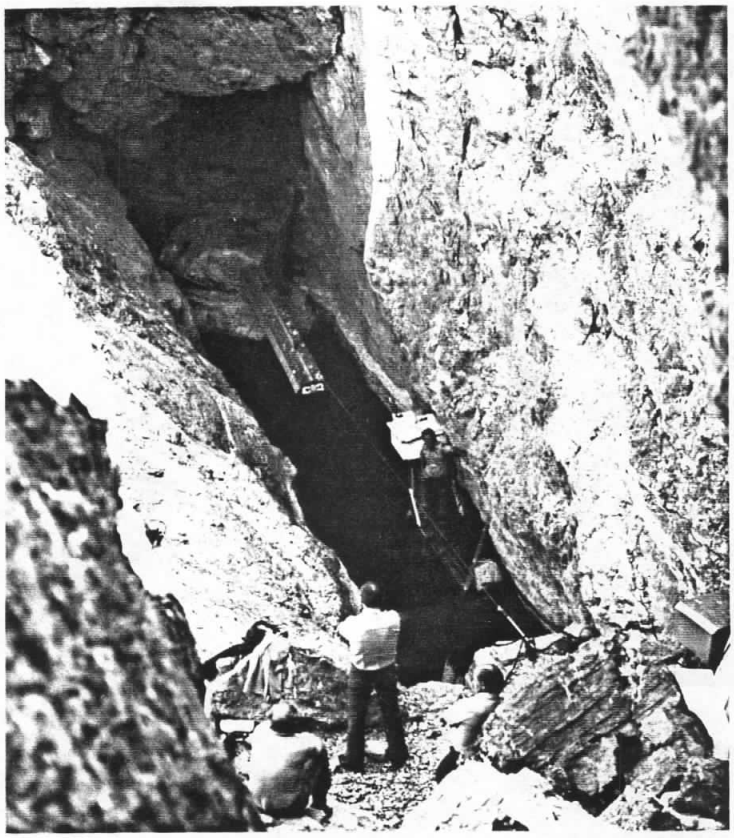
Jackrabbit Spring looking East--Components of a complete acquatic ecosystem, springs in Ash Meadows are tied to a vast 4,500 square mile underground acquifer.

Northern Ash Meadows--Ash Meadows' unique soils were formed by dissolved carbonates percolating through the alkaline substrate of an ancient lakebed.

Southern Ash Meadows looking towards Death Valley--
Spring outflows are important to the region's endemic plants and fish.

Warm Springs Pupfish (*Cyprinodon nevadensis pectoralis*)
--One of four Federally listed as endangered desert fish in Ash Meadows.

Big Spring--Ash Meadows' spring temperatures reach 91° and outflows can yield as much as 6 cu.ft./sec.



Devils Hole--A fluctuating population of less than 700 Devils Hole pupfish has survived in this water-filled limestone cavern for over 10,000 years.

Ash Meadows Gumweed (Grindelia fraxino-pratensis)--Found in moist swales and along spring outflows.

Ash Meadows Milkvetch (Astragalus phoenix)--A member of the pea family and one of the rarest plants in the western United States.

Ash Meadows Centary (Centarium namophilum)--A spring loving member of the gentian family.

Ash Meadows Sun Ray (Enceliopsis nudicaulis)--A sunflower which has adapted to Ash Meadows' harshest soils.