

# Distribution of Couch's spadefoot toad in California

(preliminary report)

by Mark A. Dimmitt

May 10, 1977

## Introduction

Couch's spadefoot toad (Scaphiopus couchi) is native to the Chihuahuan and Sonoran Deserts, and extends westward to the extremely arid desert of south-eastern California. It spends most of the year in underground dormancy, emerging only for brief periods following warm season rains. Because it is also very secretive, it is rarely encountered. To date only two localities in California have been reported in the literature; one site in Chemehuevi Wash about 15 miles north of Vidal Junction (Tinkham, 1962), and several sites near Glamis (Mayhew, 1962).

The wet summer of 1976 provided excellent opportunities to search for additional sites.

## Methods

There were several periods of thunderstorm activity from July to October 1976. When possible, trips were made to the study area on evenings immediately following storms to look for toads on roads and to listen for choruses.

For up to 10 days following storms temporary ponds were examined for eggs, tadpoles, or toadlets. When these were found, specimens were taken for positive identification.

## Results and Discussion

Figure 1 shows all known breeding sites of Couch's spadefoot in California. The distribution tends to follow roads for two reasons: (1) road construction creates temporary ponds (borrow pits and damming of small drainages); (2) heavy flash floods impair travel on back roads.

This toad is common in the area east of the Algodones Dunes and between the Palo Verde Mountains and the Mexican border. There are numerous ponds along Highway 78 and Ogilby Road (Fig. 2), as well as natural ones off the road. Spadefoots bred in nearly every observed pond in this area. It is sound to assume that they occur eastward to the river; the topography is suitable for pond formation.

Several new sites were found north and west of Blythe. The site on Chuckwalla Road 25 miles west of Blythe (Fig. 3) is probably near the western limit. Ponds near Desert Center and on Red Cloud road were checked several times under appropriate conditions and no spadefoots were found. The sites near Midland 20 miles north of Blythe were unexpected because of the barren habitat. Both are apparently natural scour-depressions in washes just east of the Blythe Midland road. The washes are narrow, and are surrounded by sparsely vegetated desert pavement (Figs. 4 & 5).

No new sites were found near Tinkham's north of Vidal Junction. We expected to find spadefoots in and around the Whipple Mountains, since this area receives summer rain more frequently than area to the southwest where toads were found. This area was visited only twice; we may have missed them.

#### Recommendations for further surveys

Distributional limits and ecological limitations are of interest to ecologists. The western limit of Couch's spadefoot is determined by the frequency of summer rains which provide the necessary conditions for both feeding and reproduction. There are three areas which I feel are most likely to support marginal populations (Fig. 1).

1. Whipple Mountains, Chemehuevi Valley north to about Needles, and perhaps west to the Turtle Mountains. This area seems to be in a summer storm pathway. Needles and the Whipples receive summer rain with fair regularity; the amount and dependability decrease sharply west of the Colorado River.
2. The Palen Mountains and surrounding bajadas are a short distance northwest of the Chuckwalla road site. The Palens and their bajadas are rugged and rocky, and thus probably have temporary ponds. The washes flow through sand dunes on the west side of the Palens; there may be another "Algodones" situation here (see Mayhew, 1965). Access is extremely difficult; there are virtually no roads in the area.
3. The Chuckwalla Bench is an elevated (ca. 2000') bench surrounded by the Chuckwalla, Chocolate, and Orocopia Mountains. The bench is between the spadefoot sites in the northern Algodones Dunes and Chuckwalla road, and because of the local topography, is probably conducive to convection storm development. Access on the dirt roads is difficult after floods.

#### Acknowledgements

Several other people participated in the field work, especially Tim Shields, Paul Mack and L. (Hap) Ritter. I want to thank Ike and Charlotte Harris of Glamis and several Bureau of Land Management desert rangers and resource specialists who kept us informed about the occurrence of thunderstorms. Special appreciation is due to Hurricane Kathleen for her generous contribution to this project.

### Literature Cited

Mayhew, W. W. 1962. Scaphiopus couchi in California's Colorado Desert. Herp. 18:153-61.

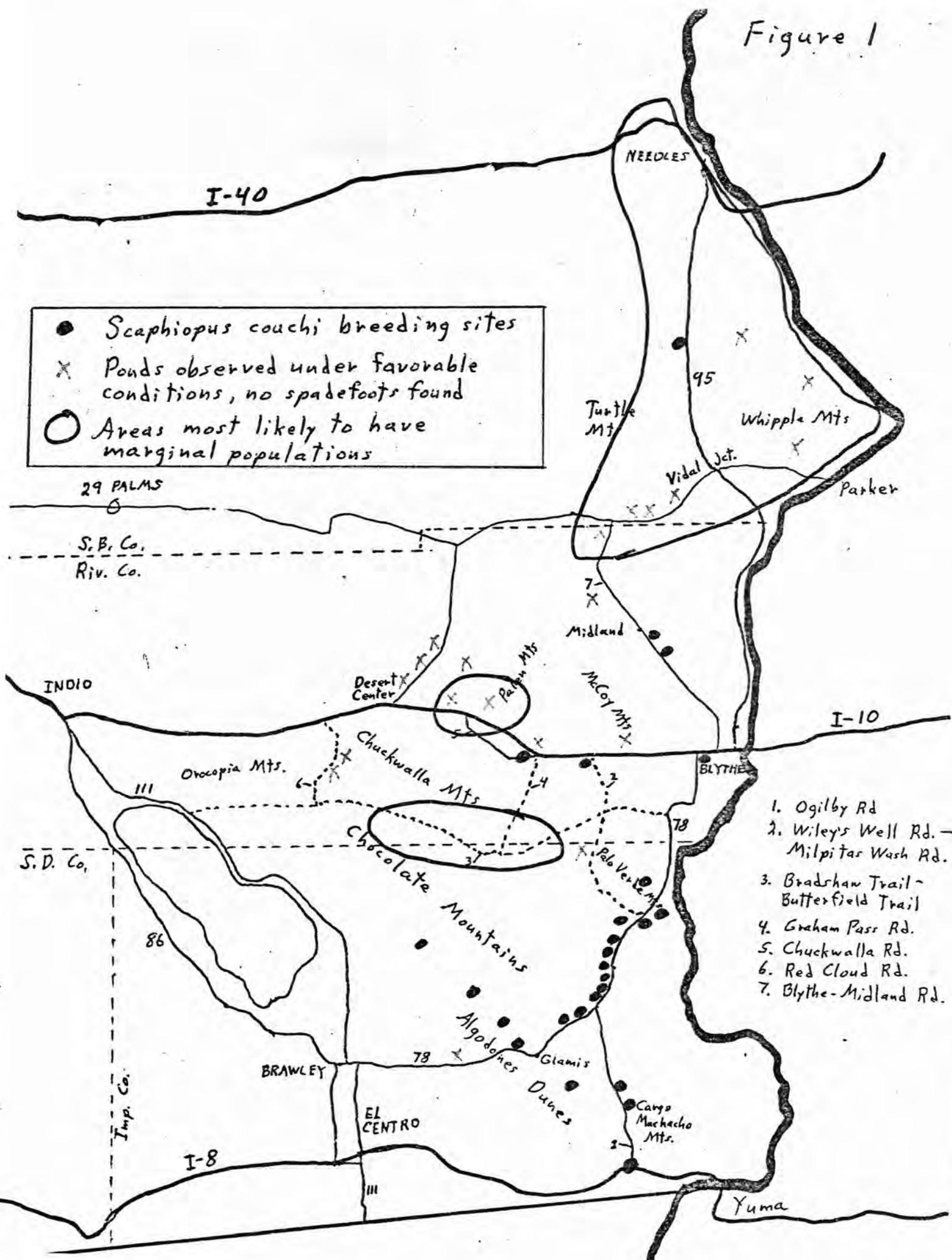
\_\_\_\_\_ 1965. Adaptations of the amphibian, Scaphiopus couchi, to desert conditions. Am. Mid. Nat. 74:95-109.

Tinkham, E. R. 1962. Notes on the occurrence of Scaphiopus couchi in California. Herp. 18:204.

This BLM report is filed in Riverside District Office under C-062, 6500 and 1792 Sundesert, dated 5/10/77.

Figure 1

- *Scaphiopus couchi* breeding sites
- X Ponds observed under favorable conditions, no spadefoots found
- Areas most likely to have marginal populations



1. Ogilby Rd
2. Wiley's Well Rd. - Milpitar Wash Rd.
3. Bradshaw Trail - Butterfield Trail
4. Graham Pass Rd.
5. Chuckwalla Rd.
6. Red Cloud Rd.
7. Blythe-Midland Rd.

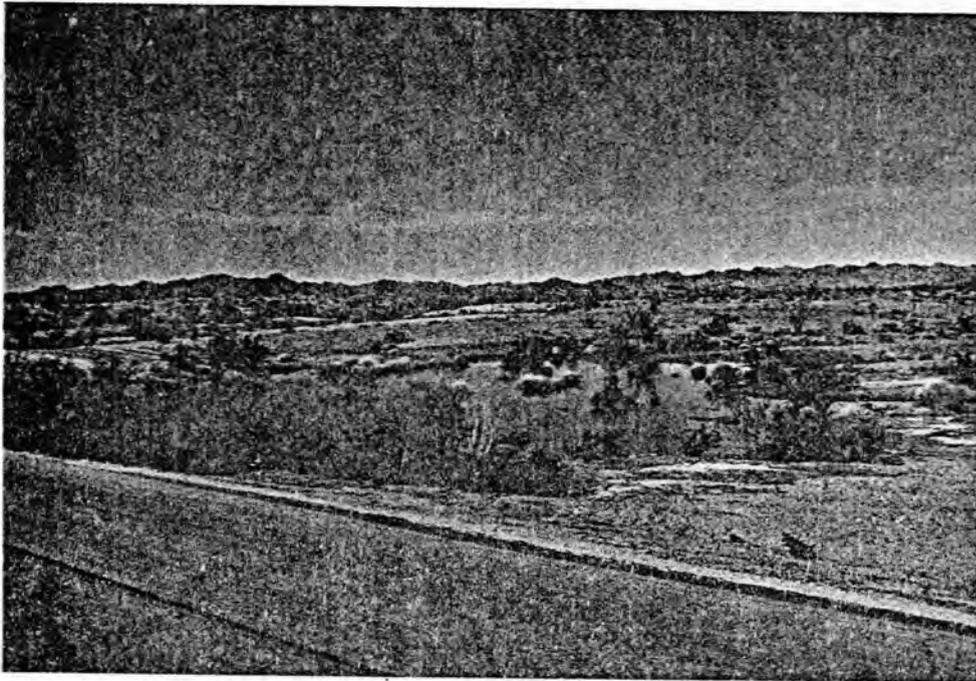


Figure 2. Representative breeding site of Couch's spadefoot toad in California. Many such temporary pools have been created by road construction. At this site, Highway 78 blocks a small drainage near Peter Kane Mountain. View is southwestward toward the Chocolate Mts. Early October, 1976.

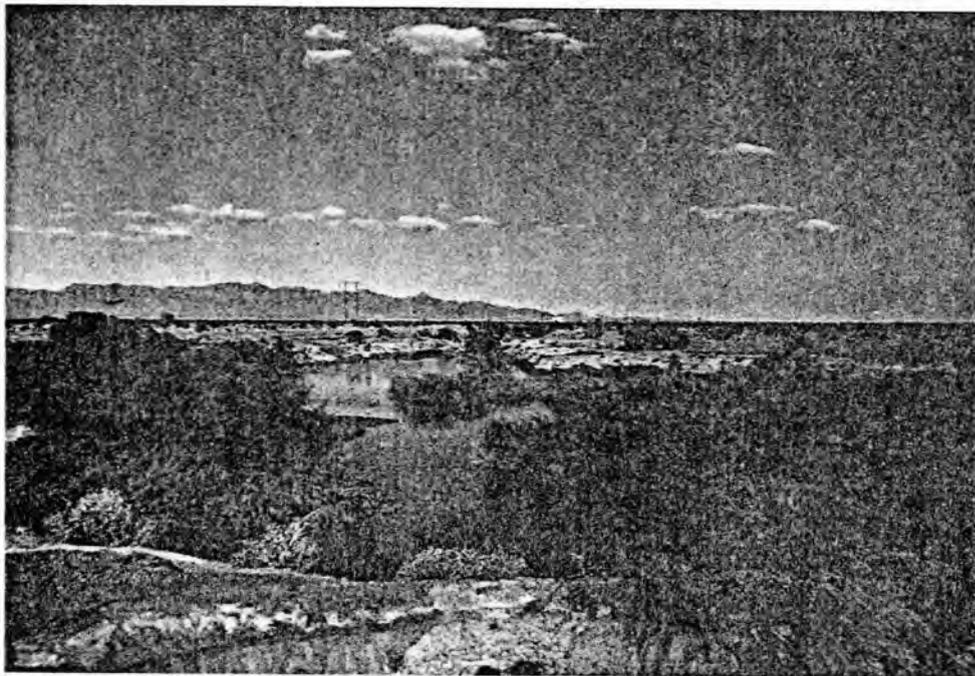


Figure 3. Couch's spadefoot breeding site 25 miles west of Blythe. The pond is in a borrow pit 1.4 miles west of Interstate 10 on the south side of Chuckwalla Road. View northeastward toward McCoy Mountains. September 16, 1976.

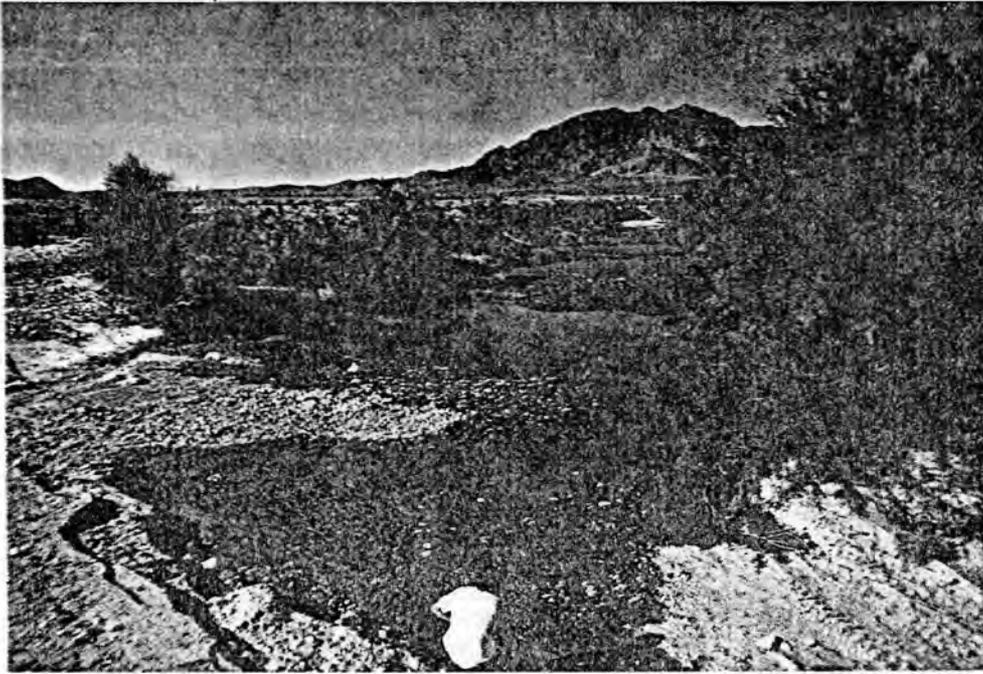


Figure 4. Couch's spadefoot breeding site near Midland. The pond is a natural scour-depression in a wash. Man in foreground is on edge of Blythe-Midland Rd. (washed out by flood). View eastward toward Big Maria Mountains. Early October, 1976.

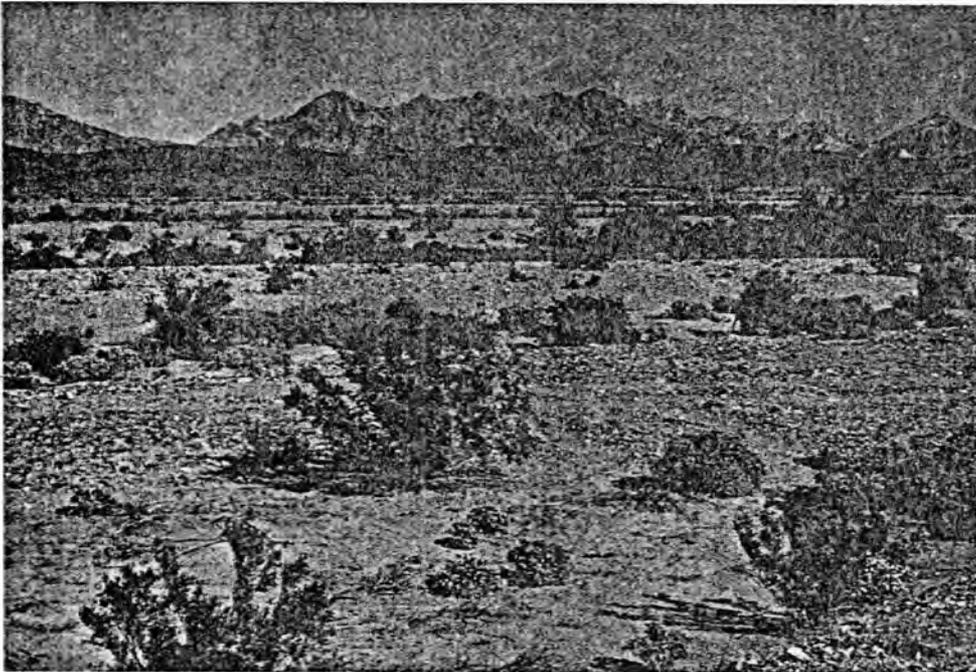


Figure 5. Habitat of pond in Fig. 4. Pond is in thicket in right midground. Surrounding land is sparsely vegetated desert pavement. Early October, 1976.

## Vertebrate Species Distribution Data

SCIENTIFIC NAME Scaphiopus couchi

	DATE	LOCALITY	T	R	S	½S	ELEV	HABITAT	#	AGE	SEX	AUTHORITY
13	7-30-76	PALO VERDE MTHS HWY 78	10S	21E	11	SW	310	DESERT DRY WASH WOODLAND VERNAL POOL	APPROX 600	EMBRYOS		LR
13	7-30-76	"	10S	21E	15	NE	310	"	60	½" TADPOLES		LR
13	7-30-76	ROADSIDE HWY 78	10S	21E	29	SE	270	VERNAL POOL CREOSOTE BUSH SCRUB	1000+	¾ TADPOLES		LR
13	7-30-76	"	10S	21E	32	NW	270	"	"	"		LR
13	7-30-76	"	10S	21E	31	NE	270	"	"	"		LR
13	9-9-76	Cibola Road Hwy 78	10S	21E	11	SW	300	Roadside Pool	25+	Tadpoles		AS
53	10-5-76	WASH BIG MARIJA MTS.	4S	21E	10 15	NW	800	DESERT DRY WASH WOODLAND	100+	TADPOLES YOUNG TONDS		LR, PM
28	9-27-76	borrow pit near east end Chubasco Rd.	7S	19E	3	—	400	Creosote Bush Scrub	Tadpoles			"
32	10-8-72	BT 795	9S	20E	7	SW	765	ROCKY PALO VERDE	3	—	—	WV
34	9-18-76	IMPERIAL GABLES	11S	20E	16		1100	CREOSOTE GRAVEL	2000+	TADPOLES		TS
32	9-18-76	N. OF MILPITAS WASH	10S	21E			600	CREOSOTE GRAVEL	100+	SMALL TADPS	—	TS
34	9-11-76	IMPERIAL GABLES	12S	20E	9		1080	CREOSOTE BUSH SCRUB	200+	EGGS	—	TS
32	9-11-76	S OF MILPITAS WASH RD.	11S	20E			560	"	200+	—	—	TS
32	9-10-76	MILPITAS WASH	11S	21E			500	DESERT WASH	40+	—	—	TS
34	7-24-76	N. OF IMPERIAL GABLES RD.	12S	20E	4		1050	CREOSOTE SCRUB WASH	400	100 EGGS, 300 F.	—	TS
32	9-18-76	S. N. S OF COY HOLLOW	9S	20E			760	CREOSOTE VOLCANIC ROCK		—	—	TS
34	7-25-76	N OF IMPERIAL GABLES RD.	12S	20E	4		1050	CREOSOTE SCRUB WASH	15	—	—	TS
31	7-23-76	OGILBY	15S	20E	35		356	PUDDLIC	9	—	♂	MD
105	10-7-76	BIG MARIJA MTHS.	4S	21E	25		750	DRYED SAND POND	100+	—	—	MD.
53	10-7-76	MIDLAND	4S	21E	15	NW	800	LARGE POND	1000	—	—	MD
19	10-8-76	GLANIS	13S	18E	34		270	SAND + LAKE	MAJ	—	—	MD
19	11-12-76	GLANIS	13S	18E	34		270	"	11	juv.	—	KF

