

9 March 1990 C.S. to Ivie Lake + Ranch House

Left 12:30pm; arrived 6:30pm; truck acted up from Hearne to dam site, must get it fixed soon. - Found two Trachemys scripta DOR.; 7.6 mi E (♀) and 7.2 mi E ♂? South Permula, on Hwy 84. at Colorado River bridge on Hwy 45, DOR Pituophis melanoleucus ♀ Ju, LOA 566 mm; tail 64 mm.; 25 mi E. Doole, ♂ Sceloporus undulatus under rock; Arrived house just at dusk; trailer house in place, but not leveled; ate hamburger helper at 8:00pm; Jerry Smith came over for hour; 9-10 pm, Brian + I chased 21 Hyla (Pseudacris) clemisi in pond (rainpool) 1.8 mi S. of Ranch house; air temp. 18°C. In sack by 2300 hrs.

10 March Away by 0830 hrs; met Jerry Smith at office + he went with us to Turkey Bend + To Tickle Crossing. We shocked fish at Turkey Bend from 915 to 1030 hrs, again 1345-1430 hrs; Tickle at 1100-1200 hrs, and at 1300-1340 hrs; We learned to use catch net (10ft) ± 3m from probes; + it worked much better than dip nets; 1 + 2 pass thru at Tickle yielded

	1st		2nd	
	#	wt. (g)	#	wt. (g)
<u>N. lutrensis</u>	187	218	120	149
<u>P. vigilix</u>	26	55	14	45
<u>P. premelas</u>	1	0.6	0	-
<u>P. macrolepidus</u>	1	6	0	-
<u>L. humilis</u>	14	119	5	32
<u>L. megalotus</u>	1	62	0	-
<u>N. venustus</u>	1	0.4	3	11

10 MARCH
cont.

The 1st + 2nd pass thru at Turkey Bend yielded

	1st #	wt. (g)	2nd #	weight (g)
<u>N. lutrensis</u>	13	15	23	60
<u>P. vipalix</u>	0	-	2	1.5
<u>G. affinis</u>	1	0.4	0	-
<u>M. berryllina</u>	0	-	1	0.4

There seems to be a strong effect from the Late summer fish kill in 1989. We found 3 N.h. 1's under or partially under stones at Lower T. Bend riffle; 2♂, 1♀, none were pitted (see data sheet); We also found the large adult ♀ N.h. (Trans # 151,577) out at Tickle 1330 hrs; on top of witch grass clump in den site. Brian took nestlings on her at 1130 + 1330 hrs (see data sheet); Upon return to house, we preserved Pseudacris clarkii from last night (21) and implanted new transmitter L-PB-1220-LD Freq. 150.861 (41 pulse rate) in Crotalus atrox at we overwintered in closet of house from December removal of Den. The Ad ♀ Nh at Tickle had pulse of 78.3, A 22.1, W 19.4 at 1100 hrs; + Pulse 74.2 at 1255 hrs, while basking in grass on cloudy day. (grass = Panicum virgatum)

11 March Away by 0800, drove to Turkey Bend + released 3 N.h. at Lower riffle, drove to upper riffle + found 4 Nh #2, one was 172 SVL + marked. Cost us an hour to drive across face of dam; rained during night; we tried to reach Leaky crossing, but began raining - rained hard for 1.5 hrs; ate at Rozzles place; tracked ♀ at Tickle, she moved about 50m downstream + crossed over into grass. She was coiled in grass on bank in sunlight



11 March cont. by 1445 hrs, sun appeared & we checked out Leaday crossing, found 3 #2 Nh at upper end of riffle opposite the island. Brian went downstream & saw nothing. Back to house by 1630 hrs.

12 March: Met Okla at G. Blair's house at 0830 hrs; LEFT our vehicle at upper end of ranch & Okla drove us to Hwy 83 bridge in Ballinger. We began our walk to Blair's, via river at 0910am. Arrived Blair's 1515 hrs. We found only one (excellent) riffle along route, 4 mi in; 6 #2 Nh almost immediately found under stones. There were several small bedrock extensions across river in various areas, & much along some banks, but no juvenile habitat. I make photos of each possible site for Nh, but only one looked decent. Found a C. collaris under stone & two turtle shells (T. scripta, P. texana) nr the 4 mile mark. Crotaphytus got away near Blair's, turtle shells brought to ranch. We read ♀ at Tickle going & coming. On return, Brian noticed N.h. feeding at bridge, & I saw a #2 Nh. also feeding. I caught the larger individual (male) 530 SVL, 188 tail 86g wt, and pitted it. We also smeared cloaca area for sperm; stained slide & read slide upon return to ranch (many sperm). Jim Mueller, Ben Sims (brother of Bill Sims) & Mike ... came by to see electronic gear, Martin arrived 2100 hrs. In sick by 2200 hrs. Very long & tiring walk on river today!

13 MARCH House to Gerald Blair Ranch + return: 0800-1730 hrs;
Picked up pulse of Tickle ♀ Nh. going + coming. Started
snake survey ± 0915 hrs; finished 1630 hrs; found 33
snakes (missed ± 6); 31 Nh, 1 Ne, 1 Tp., a few were
recaptures; we picked up 13 at Shute (st 0-8);
7 (1 Tp) in monitoring site above falls; + 13 Nh (1 Ne)
below falls. Many contained food + most had some
stomach food; sampled 3 Nh, + 1 Ne for food
items; Long hard day. We pitted all snakes except
Tp, + it was \$600. We also brought back 495 SVL ♂
Nh, + 710 SVL ♂ Ne for transmitters. We took cloacal
smears on two Nh ♂, + one Nh juv. ♀ (40 SVL). Both
males with lots of sperm. After return to house,
Brian tracked ♂ C. streps to brushpile. Mary + I
began packing up house + Lab for move to trailer
house + small house behind ranch house. We finished
at 2230 hrs. Mary, then I showered for last time
in house. Dale will probably move us by 1 April.
He is moving into house soon. Must remember to
bring home turtle shells + ♀ S. undulatus taken
on walk on 12 March; nr. Blair's upper ranch
road + hi B/E. Picked up I. macleanus 1.2 mi N. 12 mi Bridge turnoff.

14 March House to Office to College Station;
To dam by 0830, talked with Orla, Jerry; back to house,
talked with Ed; he will see that our needs are cared
for. Drove home, arriving ± 1445 hrs., truck still
spitting! Took into Dodge dealer + will pick up
tomorrow. Hard rain preceded us home; NOR re. Fluorescens
13.8 mi SE Gatesville on Hwy 36.

28 March College Station - Ivie Lake

Left C.S. 1415 hrs., arrived front gate (256 mi)
1920 hrs., drove direct to trailer (visitors) because
there was a 61 lock on gate, not a 62 as indicated
by Okla on telephone. Spent some time unloading,
& looking for Brian. As it turned out, he arrived
at 1830 hrs; there was a 62 lock & he could not
get in. He drove to Ranch house but couldn't find
anyone; Jerry Smith found him there and sent
him across dam to trailer. Set up in trailer and
I was in sack by 2130 hrs.

29 March

Lake Ivie to Ranch house to pick up equipment and
lock at trailer home & house. Arrived Tickle 1040
hrs; Air 22°C, W 17°C, Pulse 90.4. Looked to find
Large ♀; - found transmitter in water. The transmitter
has many teeth marks (mammal); so the 700+mm
SVL ♀ was eaten by a mammal. Drove to Rosalie's
for drinks, to Leadey for snakes. Saw several in
trees along right bank, did not catch any; found two
adult ♂ & 1 ♀ on LEFT bank; ♂ in grass along
bank; ♀ 2 below rock. Took wt, length & mark #
436 & 302? Ate at Leadey; tried to get to Blair's
before rain, but didn't make it. Rained hard at
Blair's, came back via Bechtel-83-2129 (16. mi from
stop sign to beginning of dirt off 2129. Rained, hail,
just made it to Okla's office & rained again for
45 min; ± 0.55 inches. Talked to Ed, Okla; fixed
supper, & wind now from north. Perhaps new front
has arrived. Make arrangements to met J. Mueller at
Trailer (new) 0800 Saturday morning.

30 MARCH Hdq. trailer to Ranch House - arrived house after all night rain & drizzle. Very muddy, made trail of tin, cardboard & wood between trailer & small house. We moved beds, couches, & boxes to small house; rained off & on. Tracked rattlesnake, found it several hundred meters from last place signal was heard. Drove to Blair's & caught 8 snakes, 1 was accidentally killed while moving large rock - preserved this pm. Returned to Hdq. trailer by 1730 hrs. Miserable day of cold wind, rain, & no snake activity. Four snakes were taken in same hole under several layers of rocks on left bank of shute at Blair's. All apparently gone in because of bad weather.

31 MARCH Hdq. trailer - Ranch house - Blair's - 0800 Left for Ranch house, moved transmitter gear to trailer closet also moved surgical supplies & all radio gear. Met J. Mueller who gave me part of thesis to read. Left 0945 for Blair's, cloudy all day; caught 10 N.h. (1-F = 480mm), 1 TP, & 2 N.h., both MR adults, F 900SUL with 1.807 Freq, Temp sensitive, & M = 788SUL, with 1.112 Freq, temp sensitive. Transmitters implanted about 1900 hrs to 1940 hrs, Brian will return them to Blair's tomorrow. Jerry Smith took Dylan & drove to Locke to buy supper & bring back to trailer - We thanked him profusely!! OF 10 N.h., 5 were recaptives. To date for trip, we have handled 24 snakes. Weather has been loopy, clouds & rain. Hope it warms tomorrow. Also one G. versa A shell from waterfall; Bryan caught ♀ G. v. but we released it. DAYLIGHT SAVINGS TIME Manaña!

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6 May 1990 - Abilene to Concho W.S. site

Left Abilene 1215 hrs; arrived OKLA's house \pm 1330 hrs; Ate Sunday Lunch with he, Nancy + kids; Drove to site by 1630 hrs; having stopped in Ballinger for groceries. Met Dale at house; he indicated that we would have the guard shack for storage, whenever they had the time to move it. Also met Delbert , + Mike ; the students working for Jack; they haven't had much luck because of weather; installed telephone in trailer + made many nail holes to hang gear.

7 May 1990. Lake Ivie Dam to Leaday + return

Made run (by boat) from dam to Turkey Bend + Leaday. Water at least 15' over Leaday Crossing. \pm 100 m wide. Saw 7 snakes (6 Nh, 1 Nr), + caught 3 Nh ♀. 1255 hr; 498-150-69g, sperm +; 1320 hr; 460-139-46g, sperm +; [RC=419] 1340 hr 515-151-84g, sperm +. Rescued two fox squirrels from flooded tree tops on return; Mary tried to capture adult ♀ in tree top; but boat moved while she held branch + she fell in - Big Splash! We had a big Laugh once she managed to get back into boat. Made run to Landing so she wouldn't be too cold. Returned to house by 1700 hrs. Boat seat (Driver) has two holes in it, trailer hitch is bent, + motor has been used badly while I've been away!! Perhaps I should complain to Ivie!

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10 May CS - Concho W.S. site

Arrived 1830 hrs., set up computer, parallel cable not in box, can't install printer. Brian + Jim arrived 2100 hrs; Jim to home, Brian to trailer. I started data entry into computer for 1990 water snake data.

12 May Trailer to Blairs + return

River up, cannot cross safely with radio gear. Brian + I read all snakes but 1092 + 1330. I cross over + find 1092 on bank sunning at stake 30 RB; but transmitter not working. Captured + returned to Lab for transmitter replacement (1.287). Worked Tickle + found Nh basking 3m up tree on top of Large Nr; also two juv. E.o. in same tree. caught 2 Nh + 1 Nr here. Make cloacal smears at truck! Returned home 1730 hrs.

11 May Trailer to Okla's office + return

Boating on Turkey Bend + Leaday sides. Forgot paddles, returned to trailer for them. Spent entire day searching trees for N.h. at the two sites. Finally caught 6 Nh, 1 Ne, 1 Nr; 3 of Nh pitted 1 at Leaday, 2 at Turkey bend. all very near their original capture sites, but lateral to trees on bank. Original + present data:

232-67-6.9	10/8/88, now	426-75+-41.0	662624
314-99-16.0	5/30/89, now	460-118+-62.0	665876
410-137-47.5	5/16/89, now	469-159-55.0	# 273

Returned to trailer ± 1730 hrs; tough day with wind blowing. Ray showed up ± 1800 hrs.

13 May Trailer to Blairs

Spit crew this morning; Mary + I worked with Delbert Hutch + Mike Rowe (students from BYU). We caught 11 Nh (7 RC), 4 TP, + 1 Nr at abandoned site above house. Met with Roy + Brian at 1230 pm, other BYU crew to Hwy 83 site, we stayed + worked site 2. Set out 19 minnow traps, + caught 3 Nh, 2 Ne 3 Nr by hand + traps. Made slides of cloacal smears - All ♂♂ had many sperm; one Nh[♀] 420 SVL, appeared to have sperm in cloaca. Returned to house by 1530 hrs. I fixed vegie dish for tomorrow, + we ate Roy's dish (Cabbage +) tonight. Entered today's data this pm into data base, transmitted ♂ Nh to be released tomorrow.

Trailer to Blairs -

14-18 May

Every day, leave about 9:00 am + arrive 10 am; run traps, radio telemetry; + movements. Had to go into Ballinger once for groceries, + once to buy traps, + compasses. We caught record sized N. h. ♀ on May 16; SVL 812, Tail 222, wt. 268.0g, PIT # 7F7E 57590F. During this period, we caught 67 Nh, 13 Nr, 2 TP, 17 Ne. 33 of Nh = recaps.

19 May Dedication of Dam + return home

24 May Return to study site:

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25 May - 2 June - study site, back & forth between Blair's and trailer. Nothing eventful, 7 gravid females located and palpated during period; 10, 2, 12, 21, 12, 7, 8 = 11.3 emb. Made one run to Lake Spence to check on Martin and Chance; pointed out some places they needed to be working. Returned home on 2 June to set up oral exam from Jim Mueller.

3 June site to C.S.; uneventful trip, no herps; remained C.S. until 9 June.

9 June C.S. to study site. w/Dylan + Mary. Arrived at 2 pm. did little this day.

10 June Study site

We drove from site to Blair's, via Tickle, & found an adult ♀ + ♂ at Tickle, ♀ gravid = 7 emb., at SVL 560 mm., also recap! 3 NA + 12 Nh at Blair's; (B-0) 1 Nh at B-1, + 4 Nh at B-2. also 1 Gravid Nh w/14-28 embryos.

11 June Study site:

To Blair's, 4 Nh in traps; all RC; 1 Nn; drove to Paint Rock Park & found small Nh under stone; drove to Methodist Fish camp & Bryan gave talk to group on Concho study.

12 June Study site

To Blair's Late, for all-night run on transmitted snakes. 1845 hrs.; first stopped at Blair-0 + ran traps; 6 Nh + 2 Ne in traps. Roy found one Nh ♀ with Polydictus olivaris in mouth. Po weight 21g. + TL = 137 mm. Nh: 623 SVL + 154g. Mary, Dylan + I returned to site at midnight, after helping Amy, Mary, Roy. + Brian set up tents. The ♀ Nh with Food item was also gravid, with 15 embryos.

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13 June: Study Site

To Blair's, read transmitted snakes & pulled traps from B-O site, only 3 Nh & 4 Ne in traps, 1 Nh ♀ gravid with 11 embryos; SUL 565, 121g.

14 June Study Site

To Blair's, checked riffle rocks after monitoring run & found 3 Nh & 2 Ne, 1 Nr under rocks. 4 of 6 RC.

Brian left this PM for NY, flying from Austin, TX.

14 June Study Site

To Moonen, Blair's, ELM (Upper & Lower), to check on population growth of old marked individuals. Moonen yielded 5 Nh (4 RC) + 2 Nr (1 RC); 1 large 556 SUL ♂ unmarked & in tree in cove. 1 Nh ♀, 557 SUL, had a injury at midbody & was not gravid. ELM Creek yielded 18 snakes; 5 RC; 9 Nh, 6 Ne, 3 Nr. One Nh had moved from lower ELM to Upper ELM = ♂ OE2476, orig. marked 6/8/88 at 347 SUL, tail 111, wt. 25.9, now 501 SUL, tail 110+; wt. 65g; RC Ne ♀ # 30 orig. marked 6/6/88; at SUL 255, tail 71, 12.8g., now 436 SUL, 144 tail 43.2g. Read transmitted snakes; *Amy dunked receiver, & must send to Telonics for repair.

15 June Site

To Blair's, Rain on Antelope Creek brought river up about one foot, extremely hot & humid day. Stopped at Tickle & set 13 traps; caught 2 Nh fishing; one ♂ = 547 SUL, wt 108g. RC. Read transmitted snakes, still cannot find Nh ♂ 1808.

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16 June study site

BAD DAY - flat on Ram when we got up this morning, Jack fell from under Ram + bent top of Jack + rod, finally got Dale's high lift jack + changed tire. Drove to Tickle + pulled traps. Caught small Nh ♂ (334 SVL) foraging above bridge, Food item = N. lutrensis in mouth traps contained 1 Nh, 2 Ne + 1 Nr. (3 Rc's). Drove to Ballinger + S. tire fix, LEFT spare on + drove to Blairs. Found all snakes except 1808. On road out, spare blowout - Back to Ballinger + bought new tire from Nick's Texaco for \$75.00. To DP for treat + then home. read S.c. at 3:30pm ± 100°F; rested (women) until 6:00pm; made run to below Freeze Dam, an old site where we worked a few times last year. Water very cold compared to Colorado Above Dam. Between 1900-1925, we collected + pitted 8 Nh, + marked 2 Ne + 4 Nr. The Nh's were clustered under rock shading where the sun had raised the temp. below the rocks. Two of the ♀ Nh were gravid; #312 F, 517 SVL, wt. 114, had 9 emb., + #4963, 553 SVL, wt. 142, had 11 emb., one male was very large, 576 SVL, tail 178+, + wt. 128g. Returned to site by 2:05 hrs; + supper by 2:20 hrs. very long day!

17 June Site to Blairs "Father's Day"

Rattlesnake (S.c.) had moved 6m N. of burrow under Tickle tongue bush, Arrived Blairs + read all transmitted snakes except 1808 who has been missing for a week. Transmitter probably bad.

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17 June (cont.) Walked to end of site (850m) + found unmarked Nh + marked Ne (#306). Walked to curve in river by Carlos Martin's house, + found 1 Ne, 1 Nr, + 1 TP. Returned to falls + then to trailer by 1530 hrs. Chance + male friend (vol.) was there. They went to eat, while Roy + I made data sheets + entered some into computer. Mary + I fixed chicken Casserole supper; drove Chance + Mark to office + for Xeroxing of data. Jerry came over for visit + made arrowhead for crew. Martin + Heather showed up at 10:00. Talked short while + they drove to Spence, with Chance leaving early.

18 June Site to Blairs.

Checked S.c., moved \pm 40cm; checked all transmitted snakes; all present except 1.808, who has been missing? for 7 days (Bad transmitter?). Left Blairs at noon to buy groceries + bingo - another flat tire - the 3rd in 3 days. Returned to house at 1430 hrs, + drove to pipeline crossing route below dam at 1700 hrs. No snakes! riffle muddy + much algae. Brian + Mary show up at 1830 + 2100 hrs. Talked about data + how to reduce # of rec. of growth data. Only found "9 snakes today. 4 Nh, 3 unmarked; 3 Ne, 3 Nr, + 2 TP.

19 June Site to Blairs Worked Trickle, at 1330-1345, 2 Nh; one gravid with 8 Embryos, Truck giving me problems Fuel filter hose Leaking, carburetor acc. pump Leaking. Blairs yielded 2 Nh, 1 TP.

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19 June
(Cont)

Drove to Jerry Hovorak's house at 6:30pm; 1mi below Paint Rock Park. Talked with him + wife + checked rattle at mouth of Hog Creek. 3Nh, 2Ne, 1Nr. Truck quit again. Will have to run to Abilene in morning.

20-24 June - Abilene on 20th; 124⁰⁰ Gov Carburetor overhaul; met J. pm on 21st; Morning of 22, Drove to C.S. Checked mail, did business; Drove to Huntsville morning of 23rd; picked up U-haul truck; moved mam's furniture with Mary, J., + Bill Walden's help. Drove to Abilene at 1430 hrs arrived 2230 hrs. Morning of 24th, unloaded furniture + set up Mam's house, Lunch at Shirley's at 1430 hrs; on road to site by 1600 hrs; arrived site at 1800 hrs. Brian, Mary, Amy, Mark, Chance + Martin seen at Concho King, they are on way to Blairs. Checked turtle tank; 1 T. muticus ♂ missing from tank.

25 June. Site to Blairs:

Brian + crew to Blairs at 1830hrs; Mary + I drove Martin, Mark + Chance to Hovorak's rattle. We found 1 Nr ♂ adult, + a M. flegellum ♂ in a willow tree over water. Caught it; it had 48 ♀ C. constructor in stomach = 54.0g., 514 sub, Tail 117+; swallowed head first. Drove to Tickle to meet Brian, Martin + crew to Elm Creek. Found 1 Ne A.F. at Tickle; back to house by 1030 hrs. Roy was there, just returned. Martin returned about 0230 hrs; Found 16 snakes at upper + Lower Elm; 7Nh, 9Ne; only 1Nh + 1Ne are RC's.

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26 June Site - Blair's - San Angelo - Preece Dam

Found all telemetered snakes except 1808; drove to San Angelo for groceries & visit to Angelo State. Back by 1400 hrs; E fixed supper, found 3 snakes below dam, 1Nh, 1Ne, 1Nr. Martin & Roy drove to Colorado River sites below Bronte. Temps: 108.5°F at house; (= 42.5°C, (low = 27.5°C ^{8:45m} 6/27); Roy & Martin found 2Nh, 1Nr at Lloyd's, & 1Nr, 1Ne at the Cervinka Dam. Earlier at Blair's we found 1Ne, 1Nr, 2Tp, & 1Rc Nh.

27 June Brian + crew to Blair's, Dixon + OKLA to Lake

Mary, OKLA & I surveyed Turkey Bend & Leaday areas of Lake Basin. We observed 2 gravid female Nh. at Leaday site, but failed to catch them. Returned to Hdq. by 1400 hrs. Brian's crew were in, rattlesnakes had moved, but other snakes moved little. Drove to 2.5 mi E. FM 503 (Smith loc.) to look at riffle, at 1830 hrs. Searched upper & lower riffles (above & below mouth of Panther Cr.). We found 3Nh + 1Ne below, and 8Nh. above - all pitted except 3; we ran out of pits. back to Hdq. by 2230 hrs. High's & Lows yesterday were 42° + 27°C respectively.

28 June Office - Blair's

Spent few hrs at office, xeroxed, drove to Blair's from 2000 - 2230 hrs., Left Brian, Roy, Amy & Mary to do all-night monitoring session. Searched B-O For T.m., but found none.

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29 June Site to Blair's - Tickle

Found all monitored animals at study site (Blair's)
Drove to Bellinger at 1130 to have tire repaired,
to DQ + then to Tickle + found 6 snakes, 3 Nh,
1 Ne + 2 TP.

30 June Site to Blair's, then to Egan Dairy, where we
search Dam + rife for snakes. found Ne,
Nr. + 1 gravid Nh. 578 sul with 7 Embryos.
Returned to house at midnight.

1 July To Blair's

Ran monitoring run for snakes, found all,
Traps contained 7 snakes. All RC but 1 Ne.
Could not find C. stros on first morning pass.
We stopped on way back from Blair's + found
that the C. stros had returned to Location #1.
some 330m (Airline). Spent remainder of Afternoon
preparing for trip to Abilene, Grantfield, + points
west.

2 July