

1989 Study
of
River Otters
in
Southeast Utah

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Introduction

The purpose of this study was to update river otter presence on the Colorado River in southeast Utah by:

- (1) Searching for otter sign, &
- (2) Monitoring the activity of any otters encountered.

The primary fieldwork occurred during all or part of the 17 days of Jan. 9-12, 23-26, & 30-31; Feb. 1, 6, 9, 15 & 27; Mar. 6 & 9. Thereafter I occasionally checked certain activity/latrine sites for new sign through Oct. 7 while enroute to and from other projects. Total time dedicated to river otter fieldwork only, was 146 hours, including travel time.

Extensive searching while there was adequate snow cover was made from Jug Handle Arch (RM50.3) up to the upper part of Westwater Canyon (RM122.05), from Jan. 9 thru Feb. 15. I concluded that there were two separate pairs present during that period, at least one of which was a mated pair.

In addition to my own observations, others later made sightings of otters or their sign, the more relevant of which are also recorded here.

By Jan. 9 ice cover on the river (Map 1) was already exceeding last winter's max-ice conditions in late January. An extended cold snap beginning about Jan. 12 almost completely froze the river surface and delayed ice-out until about Mar. 4, compared to about Feb. 25 last year.

Results

The first pair was found and seen at a bank den/activity area on the west shore at RM91.9 just above the mouth of Bull Canyon. These otters are hereafter referred to as the BC (for Bull Canyon) pair, with this site called A1-89 (A=activity area/center), as shown on Map 4.

The second pair was never actually seen. Monitoring their movements by tracking during four consecutive days, I was able to determine that there were two otters whose activity centered around RM99.7 between the mouths of Marble & Little Hole canyons. These otters are hereafter referred to as the WW (for Westwater) pair. They had two apparent activity centers: A3-89 (RM99.6) and A4-89 (RM188.35), as shown on Map 8.

The BC Pair

This pair remained at the A1-89 site at least during the period of January 11-24. Shortly after a new snowfall on Jan. 24, they began traveling upstream. I never caught up to them, but as I followed their tracks upstream I encountered a major activity area/latrine site (A2-89 on Map 6) at RM100.6 which contained at least 21 watery type otter scats, all of which were full of carp scales, on top of the ice.

They appeared to have remained at A2-89 for at least 3 days, then continued upstream. I reached my farthest tracking point upstream just above the Cisco landing on Feb. 1, where otter tracks entered a long lead in the ice at RM110.75, heading towards the lower end of Westwater Canyon.

I next checked this same spot at 1020 on Feb. 6, 2 days after at least 4" of new snow. Two sets of otter tracks only hours old headed downstream. They remained at various spots between here and McGraw Bottom (at RM98.9) at least thru Feb. 15, after which their location was unknown.

I actually saw the pair only while I monitored them on Jan. 12 during 0830-1115 & 1325-1600 from two viewpoints at which the temperature range was 2° to 15°F. During this period one or both otters were out of their den at A1-89 almost continuously.

As with last year's pair, one appeared to be slightly smaller (tho less so), and much more active, than the other. However their size difference this year was so slight that I often could not see it, including when they copulated at about 1730.

Leonard Lee Rue (1981) says that during the breeding season first-estrus females are bred first, and older females are bred within a day or so of giving birth. Then there is about 10 months delayed implantation, and 63 days gestation (Griess 1987).

Liers (1951) says that N.Am. river otters normally reach sexual maturity at two years of age, but, although females can breed successfully at two years, males are seldom successful breeders until 5 to 7 years old.

Results

The BC Pair (cont'd)

The fact that both the male and female began traveling about two weeks after I observed the copulation suggests that the female was in her first estrus. However, it may also be that last year she was sexually mature but bred with an unsuccessful male.

Assuming this female has already developed a strong site attachment, perhaps next February or March she can be found staying at either the A1-89 or A2-89 activity center to raise a litter.

The WW Pair

Since otters are generally solitary except for family groups, the presence of two otters together here for at least four days suggests that they are either siblings dispersing together or a mated pair. Reported sightings of otters or their sign in Westwater Canyon last year (Maribel Loveridge & Miles Moretti, pers. comm.) increases the chance that these two are a mated pair now.

Additional Sighting Reports by Others

- (1) On 4-12: tracks, the description of which sounded like otter to me, were found in Cataract Canyon of Canyonlands N. Park near RM207.
- (2) On 7-13: Bill Riggs watched four otters playing together for 1½ hours at about RM79 just below the Castle Valley turnoff along the Colorado River (Map 2), after which they swam downstream.
- (3) On about 9-23: otter tracks (w/webbing) were seen along the Green River at about RM12 in Canyonlands N. Park.
- (4) On about 9-25: fresh otter scat was found along the Colorado River at about RM94.0 (Map 5), just below the Dewey bridge, but none were at last year's ABL site (Map 1, RM69.65) which was also checked.
- (5) On 10-6: three otters were seen clearly, proceeding upstream along the Colorado River at RM86.6 (Map 3) by a couple from their house nearby.

Summary & Comments

I determined that from Jan. 9 to Feb. 15 there were two separate pairs of otters on the Colorado River between RM50.3 & RM122.05. The lower (Bull Canyon) pair was possibly the same pair I found and monitored the previous winter around RM12. Though the female did not raise young this year, the pair was seen to copulate, and thus she may raise young next year. Shortly after I witnessed the copulation this pair traveled upstream to Westwater Canyon where the upper (Westwater) pair was. Although this second pair was not monitored after Jan. 26, reliable reports of otters and their scat in Westwater Canyon last year increase the chance that this area is an established otter territory and a litter may have been raised there this year.

There were additional probable otter tracks near RM207 in Cataract Canyon, Canyonlands N. Park on April 12; four otters seen near Castle Valley on July 12; three otters seen about 6½ miles farther upstream on Oct. 6; probable otter tracks along the Green River at about RM12 in Canyonlands N. Park on Sept. 23; and fresh otter scat on the Colorado River just below the Dewey bridge (RM94) on about Sept. 25.

Although otters are territorial, Zackheim (1982) reports Melquist (1981) as determining that otters do not have exclusive territories, that more than one family group often shares the same general home range, and that these family groups spend most of their time at any of several activity centers within their range.

I assume that the word "several" refers to the combined number of activity centers used by all the groups, and not meaning several centers per group. It is also not clear whether this "sharing" equals occupying the same spot at the same time or at different times, and whether or not Melquist's otters (in wc Idaho) were of above average density.

Griess (1987) reports Melquist and Hornocker (1983) as determining that otters in Idaho develop a strong site attachment. In her own ten month study in Tennessee of 8 reintroduced otters of unknown ages (4 male & 4 female), Griess (1987) found that 7 out of 8 otters established home ranges that overlapped with another's home range, and that the otters did travel through large sections of adjoining ranges.

Griess goes on to say that for those 8 otters there was little social interaction found during the times each otter was located by radio telemetry. The times 2 or more otters were located together ranged from 0% (of 62 locations) for one otter to 22.2% (of 45 locations) for another (number of found locations per each of the 8 otters ranged from 45 to 120). 97% of the interactions were between a male and a female. None of the females had given birth yet; otherwise the basic social group would have been the family group of the female and her offspring.

Griess found that throughout her study the otters had certain preferred areas, called activity centers. All were near long, deep pools and appropriate den sites, and were at least 1.5km from the hiking trail that bordered the creek. One otter had no center, 2 had 2, and 5 had one. Often two otters

Summary & Comments

used the same activity center simultaneously, but 65% or more of any otter's visits to a shared activity center would be alone.

Rue (1981) states that when a litter of young are two months old the female leaves the den with them (this might be anywhere from April thru June in our area) and begins a typical nomadic lifestyle. He also says that most young remain with the mother (and possibly father) thru winter as a family group, then drift off on their own before the mother gives birth again (which I can presently only estimate as sometime from February thru April in our area).

Below are some distances between various sighting points of this year. For comparison, these are followed by some known records of dispersal distances and home range lengths.

1. BC Pair at A1-89 (RM92)A. Went up to ~~S~~RM111 — 19mi/30.4km

B. & psbly to WW pr

at about RM119 — 27mi/35.2km

C. To the 3 at RM87 — 5mi/8.0km

D. To the 4 at RM79 — 13mi/20.8km

E. To ABL at RM70 — 22mi/35.2km

F. To tracks at

(1) Cat.C. RM207 — 101mi/161.6km

(2) Green R. RM12 — 104mi/166.4km

24-32mi

38.4-43.2km

32-50mi

51.2-56.0km

41-49mi

65.6-70.4km

2. WW Pair at A4-89 (RM118)

A. To the 3 at RM87 — 32mi/51.2km

B. To the 4 at RM79 — 40mi/64.0km

3. Mouth of Dolores River (RM96)

A. To Cat.C. RM207 — 105mi/168.0km

B. To Green R. RM12 — 108mi/172.8km

Dispersal Distances

Griess (1987) 8.4-39.2 km (for 8 otters unk. age)

Melquist & Hornocker (1983)* approached 200 km (for young otters)

<u>Home Range Lengths (in km)</u>	<u>All</u>	<u>Male (av.)</u>	<u>Female (av.)</u>	<u>All (av.)</u>
Griess (1987)	8.8-23.5			15.0
Melquist & Horn. (1983)	8-78*	(adults) 50	(adults) 44.3	
Erickson (1984)		40.3	24.0	
Mack (1985)*	5-71			

* As reported in Bich (1988); all other data as reported in Griess (1987).

Summary & Comments

Since no prior intensive studies have been done on otters using the Colorado/Green rivers system in southeast Utah, average home range and dispersal distances are still speculative. In fact it is still not conclusive that any otters here have established territories (tho probably the BC & WW pairs have), and are not simply dispersing otters from Colorado's reintroduced population or their offspring. It is even possible that the BC pair are actually offspring of the WW pair.

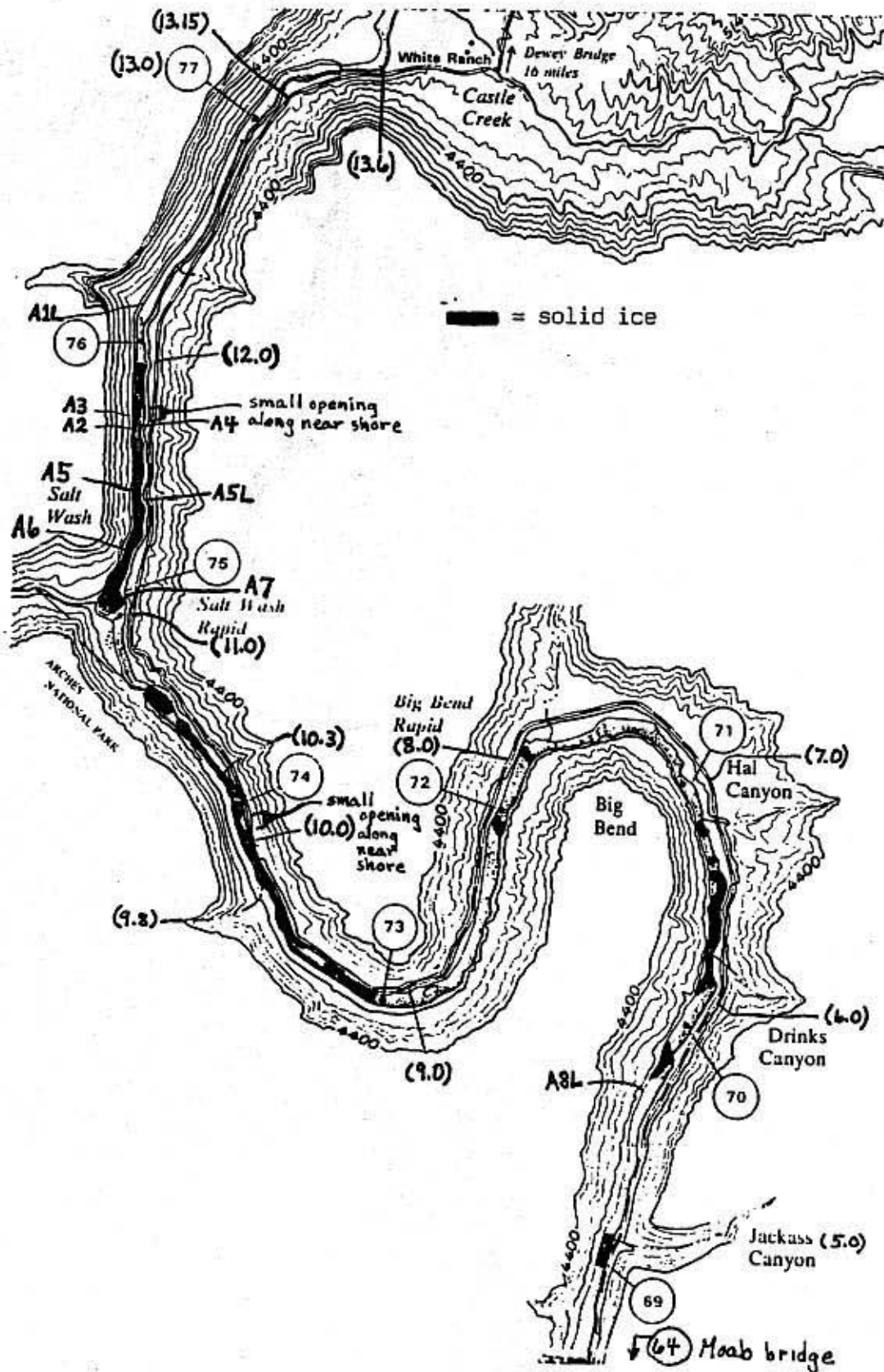
Considering everything stated thus far, the home range of one or both of the BC pair could possibly range from RM119 to RM70 (70.4 km), and thus be responsible for all or most of the ABL scats. But since they had no young, even if one or both were part of the 3- and 4-otter sightings, there had to be additional otters among those two sightings.

It is possible that the WW pair would have that long a home range (up to 64 km), but it is unlikely that their established home range would extend that far into the BC pair's home range. It is also possible that they were the WW pair's recent offspring dispersing, but that's also unlikely since the offspring commonly remain with their mother (& maybe father, too) through the winter and disperse about February to April.

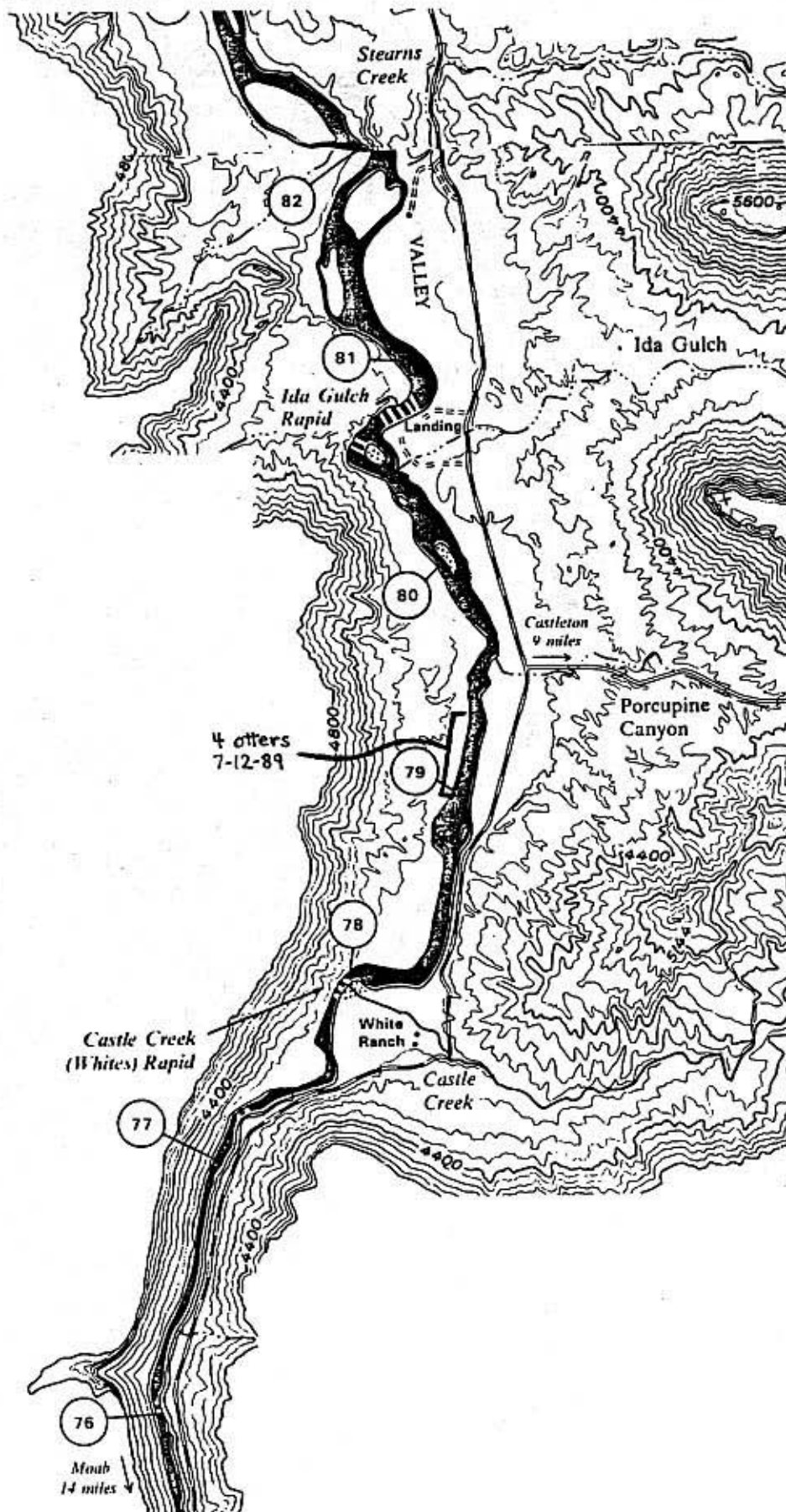
If the Cataract Canyon and Green River tracks were in fact made by otters, they were likely too far away to be within even the BC male's home range. They were likely the result of dispersing otters in some way related to the Colorado state reintroductions.

Before the April 12 track sighting in Cataract Canyon, I had told my supervisor Miles Moretti that 15 days might be adequate to determine if and where the BC and WW pairs are present again this approaching late winter/early spring. However, a search for possible additional otters in the Canyonlands N. Park areas could easily double that time due to their remoteness. Such might be the time needed for the Green River section alone, which is the most easily accessible. The Colorado River sections above and below the Confluence would be most advantageously covered by an aerial survey specifically for that purpose when snow conditions were adequate for good tracks.

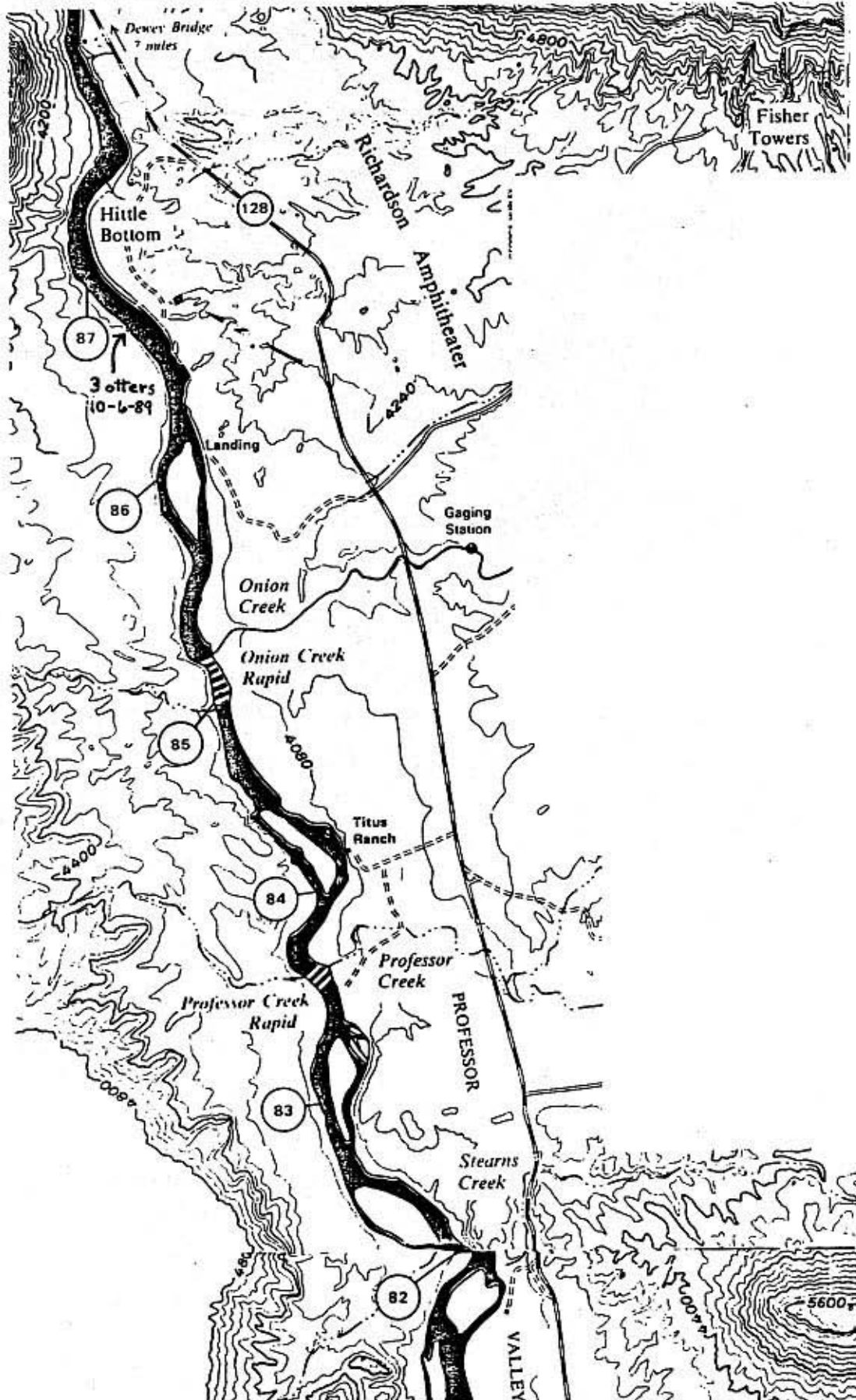
Map 1. Jan. 9, 1989 Ice Conditions along RM69-78; A1L, A5L & A8L shown



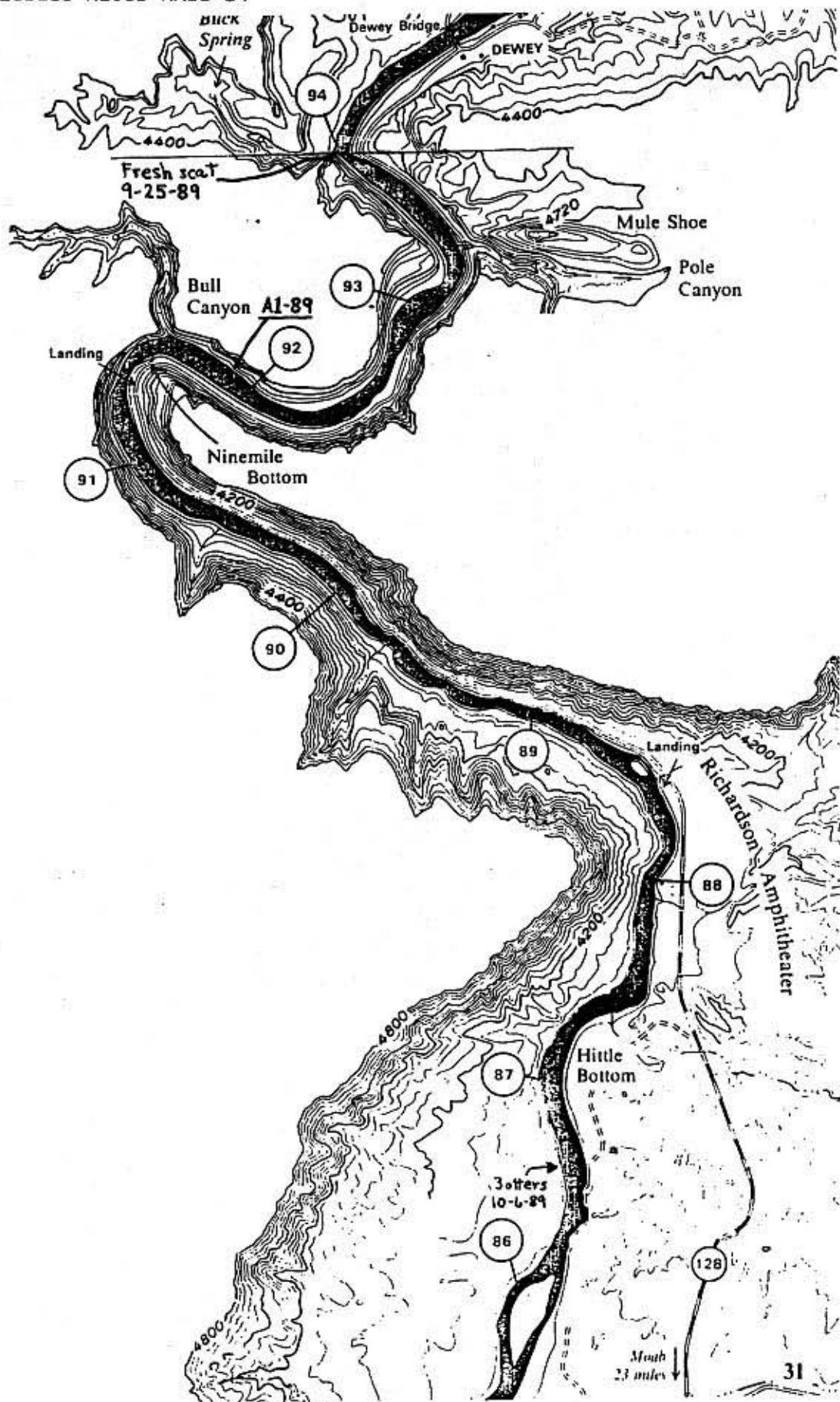
Map 2. Colorado River RM76-82



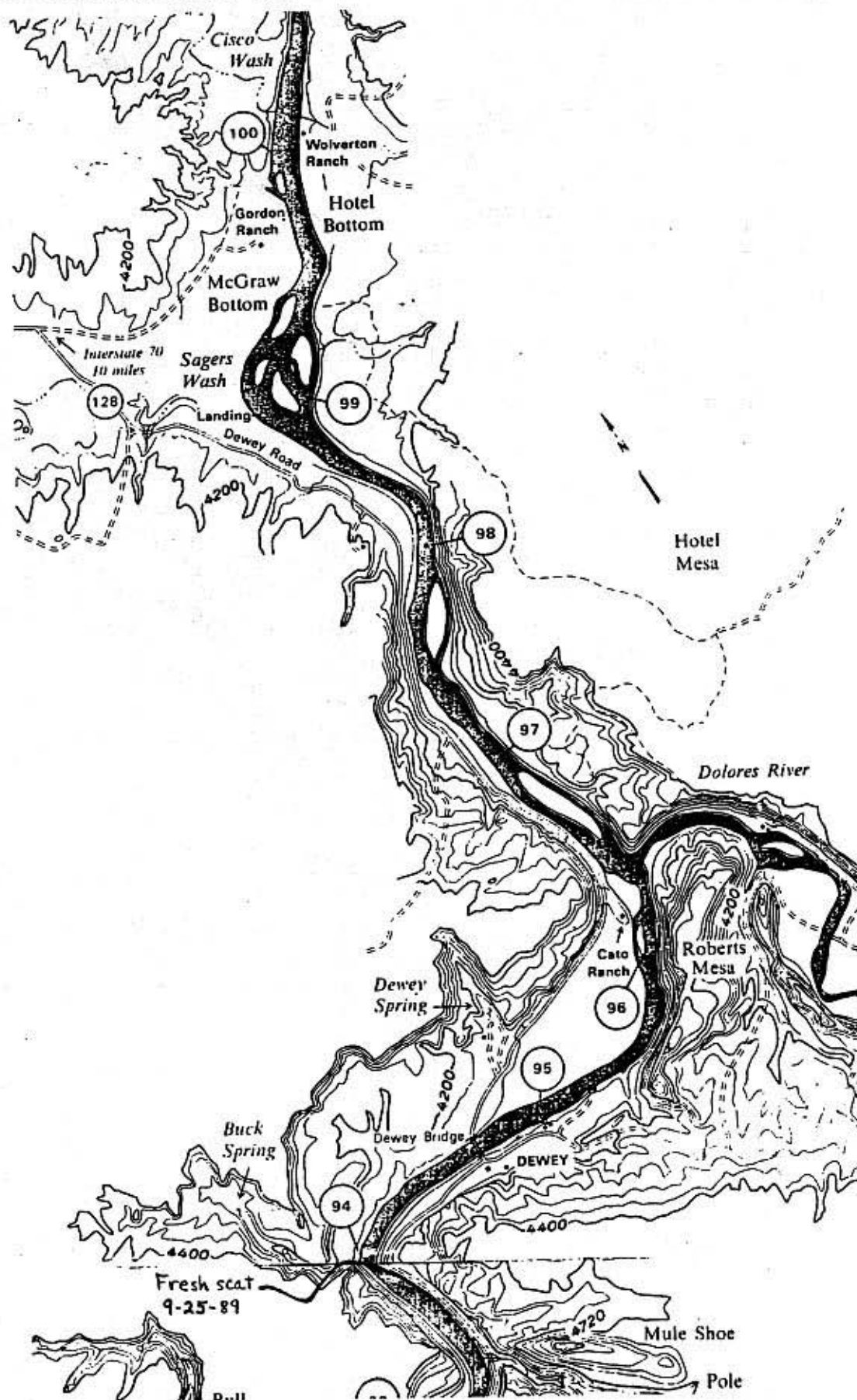
Map 3. Colorado River RM82-88



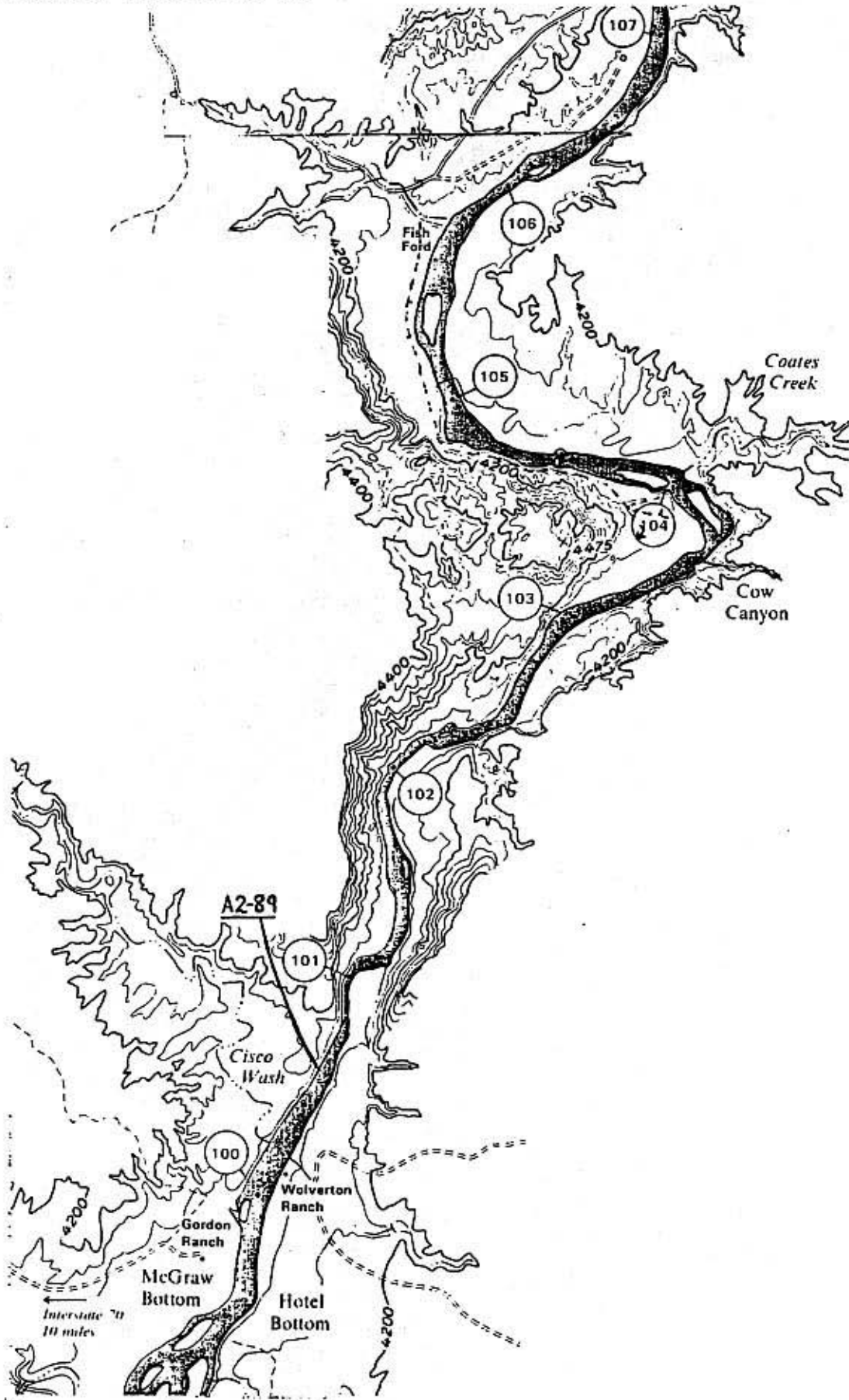
Map 4. Colorado River RM86-94



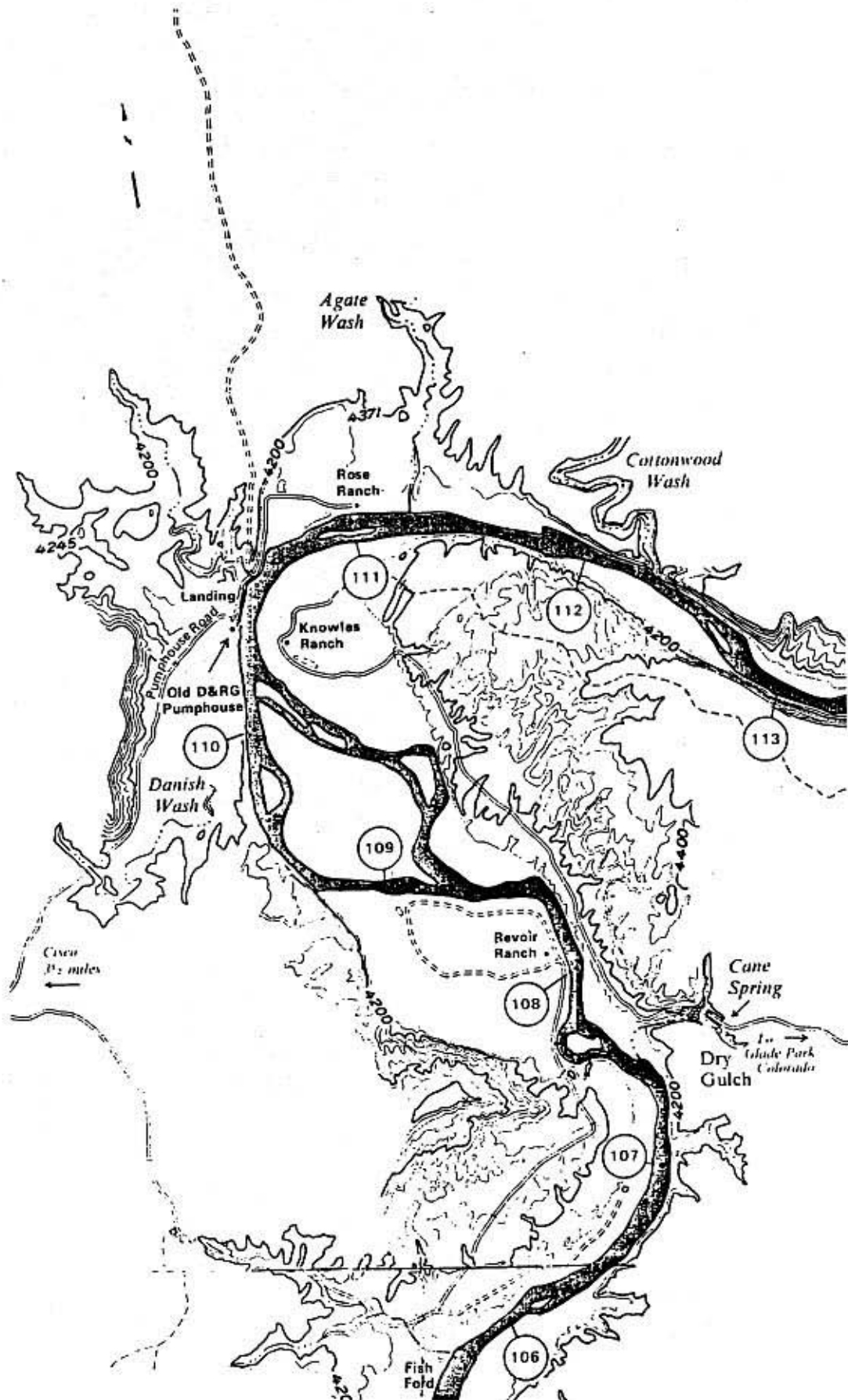
Map 5. Colorado River RM94-100



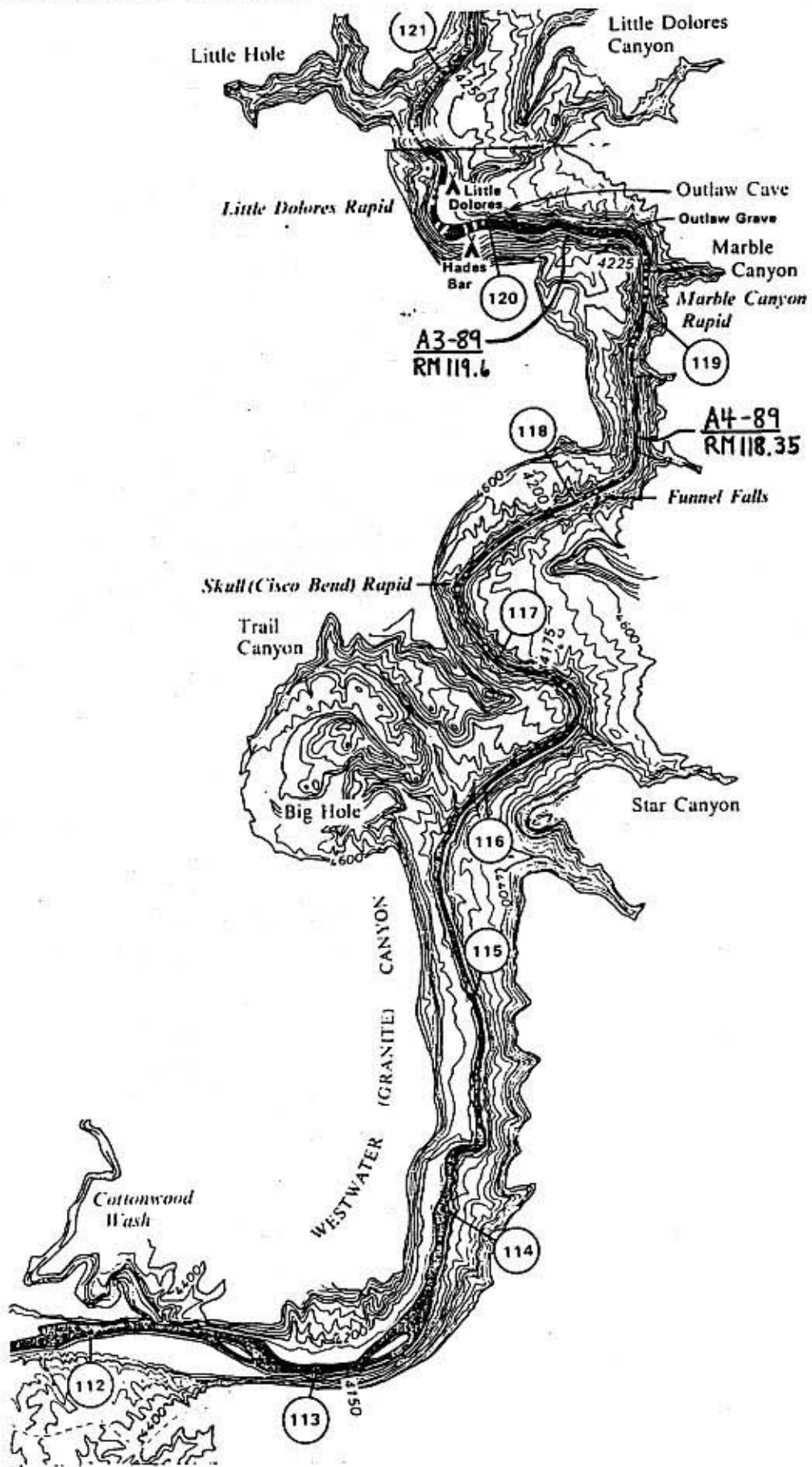
Map 6. Colorado River RM100-107



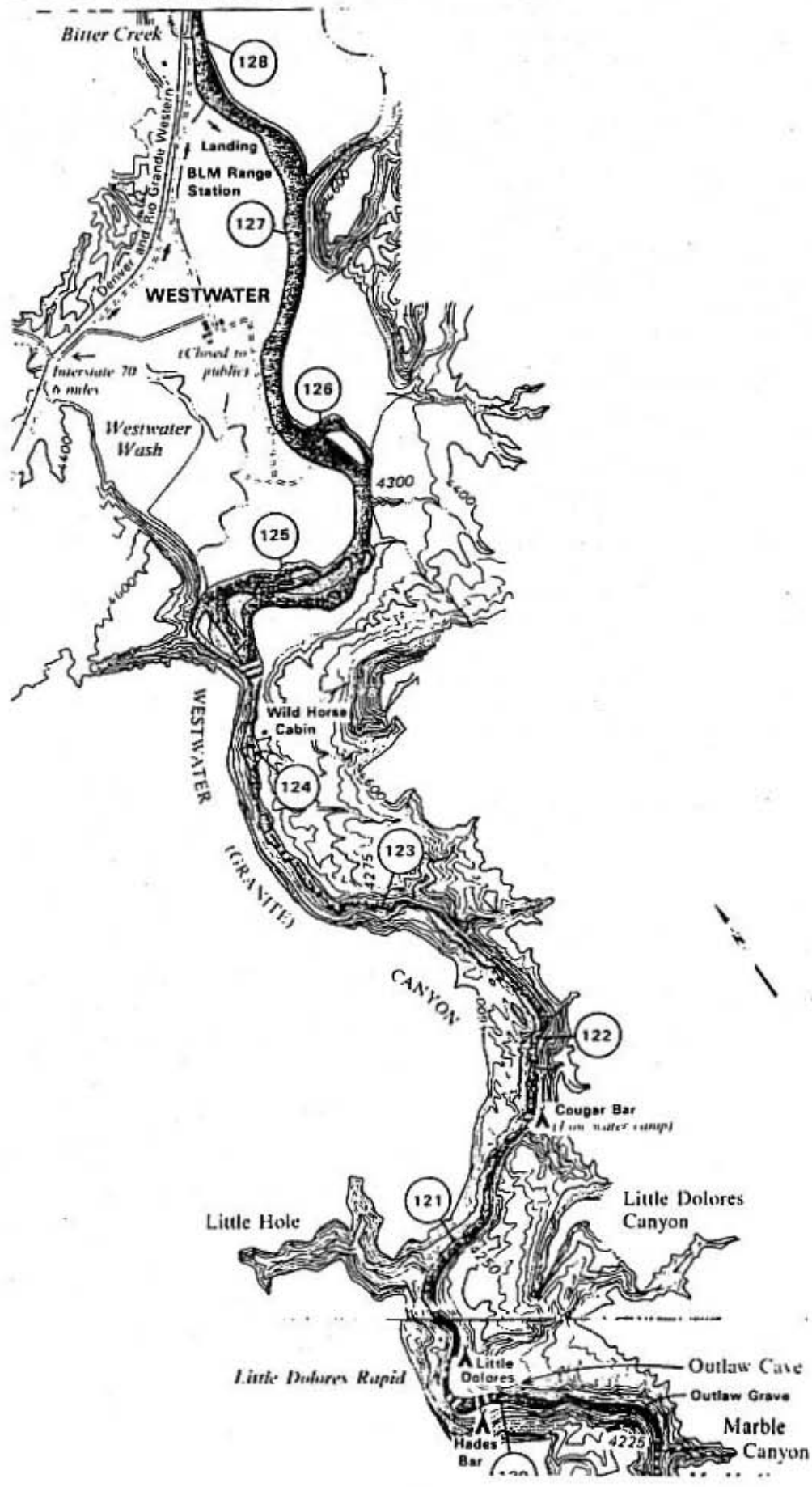
Map 7. Colorado River RM106-113



Map 8. Colorado River RM112-121



Map 9. Colorado River RM120-128



1-9 to 1-11 - Checked from Jug Handle Arch (RM50.3) up to McGraw Bottom area (RM99.0). Other than one months-old scat at RM84.8 (old snow probably covered others elsewhere), no sign was found except for many fresh tracks & unfrozen fishhead (carp species) on fresh snow, still falling, between RM92.0 & 92.25. Fishhead was collected & identified at the Price office. The river is already about as frozen over as it was at max freezeup last winter. The opening where the tracks & fishhead were found begins just above Bull Canyon mouth & is wide for most of its .75 mile length.

1-12 - Monitor the otters (2 present) most of the day.

0830-1115: See one otter at 0842 & many times after that, but most of the time it is up on shore under brush out of sight due to my angle of sight. Still there when I descended for lunch, warmth & a better view, it appears that one or both otters were out the entire time.

1325-1600: At 1330 I find two otters at the apparent den/activity area at RM91.9, where they remained active almost continuously during the 2hrs+12min. period of 1330-1542 (visible for 1+40). Mostly, one layed curled up dog fashion in the same spot, except when the other attacked it frequently in play along with much allogrooming. The other one, when not playing, was always wandering along the shore & ice, swimming, diving, & eating (many items, each so small that they fit completely inside its mouth).

Defecation was seen to occur only once (at 1413), when both climbed to the top of the 10ft-high bank where one defecated after the other at a small flat open area among brush.

During one almost nonstop heavy play period of 17 minutes (1525-1542), they were seriously copulating for ten seconds on the open ice, during which the female layed perfectly still while the male made slow, steady strokes.

1-13 - Colorado River bald eagle flight count: Definite otter tracks in Westwater Canyon at about RM119.8 (river was out of view through the remainder of the canyon), possible tracks somewhere between Fish Ford (RM 105.7) & Hotel Bottom (RM99.8), & at the Bull Canyon site where the opening was completely frozen except for a 50yd-long narrow opening at the den site of yesterday.

1-23 to 1-26: Check Westwater Canyon: (On 2-24 2" new snow from 0430 to 2130) During & before the snow, I find from RM116.9 (can't see below there) up to RM120.85 (mouth of Little Hole C.) a continuous line of two sets of tracks (indicating direct travel upstream) plus many activity areas.

On 1-25, on the new snow (all previous tracks completely covered), new tracks heading upstream from RM118.3 to at least RM120.2, w/concentrated activity areas at RM118.35 e. side, & RM119.6 area on w. side, both of which were also the primary track concentrations before the snow.

On 1-26, tracks from the latest activity period were made only above RM119.25 (the hidden bend above Marble C.) up to RM119.9, & possibly continuing beyond Little Hole C., where tracks that I could not age occur. However, a fresh area of blood spots at RM119.6 & bald eagle activity (including chasing) between the blood & the hidden bend area hint at the otters being there somewhere out of my sight; most of the eagle activity is also hidden from my view. There are concentrated otter tracks at the blood spots.

- 1-30 - Check Bull C. Otters: They moved. Tracks on top of the new snow of 1-24 go no farther downstream than RM91.8 but go upstream to at least RM96.3 (mouth of Dolores River), & possibly up to at least the lower end of McGraw Bottom at RM98.9, but if so, the extreme warmth of the past two days (in the low 40's) has deformed them to the point where I need to get to them to be sure.
- 1-31 - Check upstream for Bull C. pair: I find tracks all the length checked from RM100.5 up to RM102.45 on top of the snow of 1-24 (I can also see a few older very deformed tracks, probably what I saw on the bald eagle flight of 1-13). I also find a major activity area of about 100 yards length along the west side, centering at RM100.6 where heavy use has almost completely packed down the snow in an area 20x8yds & with otter trails radiating out from it. On the packed area I could separate at least 21 otter scats (watery type), though the total is likely higher. All of these scats plus another one 50yds downstream contain the large scales of carp, usually in large quantity (scales commonly more than 1cm wide). They were probably here for at least three evening or day active periods, but large frost crystals in the trails (at 0939) suggest they were not here the previous evening. The shore habitat is the standard brushy silt bank, upon which otter tracks (but no other sign) were common within 15yds of the shoreline & occasionally went up another 10yds (20yds from the top of the hill) among open scattered boulders. The silt bank is the dominant shoreline habitat on both sides up to Westwater C. & downstream for many miles.
- There was another activity area along the west bank at RM101.0, but of only moderate use & w/no visible scats, where a number of shoreline openings occur.
- Tracks not searched for beyond where they enter a lead at RM102.45.
- 2-1 - Check Fish Ford/Cisco landing for Bull C. pair: Checked RM105.85, where I found tracks & at least 2 scats. Checked head of long lead at RM110.65 (.2 mi. above Cisco landing), where tracks exited & then entered the next long lead .1 mi. farther. Not checked beyond.
- 2-6 - Check same area again: (On 2-4, at least 4" of new snow along river, plus drifts to 3ft). Two sets of tracks only hours old enter the lead at RM110.65 from the lead above it, & exit its lower end at RM109.5 where they directly enter the next lead at 100yds. No tracks from Fish Ford upstream to 106.25, so the otters are along the ranch property in between.
- 2-9 - Check same area again: No additional tracks at Cisco landing & the head of the lead there. At Fish Ford at the head of the lead at RM105.9 are two otter trails less than 2 days old w/prints heading downstream & into the lead. Occasional tracks exit the far side (east) of the lead, but there were no tracks below the lower end of the lead where I crossed on solid ice (RM105.4).

- 2-15 - Short search for the Bull C. pair: (0700-0800) No tracks or other sign from Bull C. up to McGraw Bottom, nor at the head of the upper lead at Fish Ford, where the tracks of the person making the ice holes on about 2-8 are still very obvious. No other spots checked due to a broken radiator hose. Otters still btwn RM105.9 & RM98.9. Since the 4" of snow on 2-4, $\frac{1}{2}$ -1" fell on 2-12. Snow cover above Bull C. still about 4-6", but downstream it becomes more melted as one approaches Moab to the point where exposed slopes are completely bare & shaded slopes are patchy. Though some leads have enlarged over the faster waters, there is still little change in ice cover; e.g., the river channel from Hwy128 MMS.0 ^{down to the bridge} was continuously open last winter, but now it is still frozen over more than open, as it has been since the freezeup of about 1-13; & there are still none of the ice flows associated with the beginning of breakup.
- 2-27 - Search for the Bull C. Pair: (0830-0950) Nothing at Fish Ford area from RM106.2 down to 104.55, but hard ice surface w/no snow left on it makes it impossible to see tracks, & the ice is so dirty that scat would be difficult to distinguish from debris. Extent of ice only slightly decreased here.
(1020-1220) Nothing at Cisco landing area from RM110.8-109.0; a channel is open from RM110.6 to 108.4.
(1450-1520) Nothing above McGraw Btm from RM100.2 up to 102.2. At the activity site of 1-31-89 at RM100.6, all tracks are completely gone, & the scats are now holes of water, each containing a mass of fish scales on top of a thin layer of dark sediment. Channel now continuously open, whereas on 1-31 it was mostly closed above 100.5. On return down the river road, I found no sign while checking numerous spots from the Bull C. area down to Hittle Btm & also last year's A8L area at RM69.6. The channel is continuously open from RM89.0 down to the Moab bridge (RM 64.0) except for a 50yd section at RM70.3. Above there, the RM89.0-91.1 section is mostly closed, the RM92.0-93.2 section is partially closed but w/mostly only narrow openings, the RM96.5-97.0 section is mostly closed, & the RM98.0-100.0 section is mostly open but w/narrow openings. Then it is open up to RM100.5, above which only the areas stated above were checked.
- 3-1 - Checked last year's A1L site (RM76.15): at 0725, nothing. The RM70.3 ice gone at 0710, RM89.0-91.1 section mostly open, RM92.0-93.2 section mostly open, RM96.5-97.0 section has a .2 mile closed area, & RM98.0-100.0 section is mostly open (still w/some but fewer narrow openings).
- 3-2 - Ice conditions: RM89.0-91.1: partly closed; RM92.0-93.2: all open; RM96.5-97.0: closed only for .05 mile; RM98.0-100.0: closed above & below McGraw Btm.
- 3-6 - Find new scat at A8L; nothing at other spots: (0630-0830) At 0750 I see at least one new scat at A8L (see 3-9); nothing at RM74.15, & latrine boulders completely clean at A9L, A5L, & A1L.

- 3-9 - Canoe trip verifies scat & tracks at A8L: About 6 scats, all months old except 1 or 2 made after the last heavy rain of 3-3, including the one seen on 3-6 & the tracks, indicating they were left on the 4th, 5th or early on the 6th. No tracks elsewhere along the shoreline indicate they were here only for a short time & then moved on; the tracks are on the silt at the bottom edge of the boulder where access to the boulder surface occurs. All scat removed.
- 3-14 - Nothing at A8L (0700) & A1L (0715).
- 3-23 - New scat at A8L: at 0930; 4 scats, at least 2 of which are definitely otter, & probably the other 2 as well; scoped from the road.
- 4-12 - Probable tracks in Canyonlands N.P.: Seen on a fish survey float trip by Miles Moretti & others near RM207 at a camp on the west side across from the unnamed canyon about 2 miles below Y & Cross canyons. From Miles' description they sounded like probable otter tracks in silt.
- 4-18 - New scat at A8L: (0830) It seems that heavy long rains of 4-2 have washed away all of the 3-23 scats, with different & dark scats at two of those locations (also different shapes), plus elsewhere is an older appearing deposit of very dry & small broken segments which are also probably otter scat, dried by the warm temp.'s since the rain (many highs in the mid-80's).
- 5-1 - New scat & tracks at A8L: (0715) At least 4 additions; 2 look fresh, but the other 2 are only rings remaining, with the central contents missing (only precip. was a trace of rain on 28th & 29th, not likely to wash scat away). Since 4-18, the river had risen about 1½ft, & I'm told it had dropped that same amount very quickly about two days ago. The otter tracks, complete w/tail drags, were made in the still fresh mud. Tho not witnessing the riverdrop myself, I would still say the otters were here within the past four days. Nothing at A1L;0755.
- 5-25 - New scat at A8L: (1215) 6 new scats, tho only 2 or 3 are possibly less than 2 wks old. All previous scats are washed off by heavy rains the evening of 5-13 (.03") & on 5-14 (.13"), plus a short heavy rain on 5-16 (trace); some of the new scats appear to have been fresh enough then to hold up in the rain.
- 7-12 - 4 otters seen; new scat at A8L: At 1100 at least 4 new scats of unknown age at A8L. On 7-13 Brett Johnson (Moab UDWR) told me that on this day someone had seen four otters during the day just above the White Ranch (which is about RM77.8) on the Colorado River. The man watched them for about 1½ hrs, after which they all swam down stream out of view. He said that they were obviously otters (not beavers), doing a lot of playing together.
- 8-10 - Nothing at A8L: Checked at 1700. Very heavy rains on 7-28 (.22").

- About 9-23 - Otter tracks, Green River ~ RM12: While on a fish trip, Miles Moretti & others found otter & opossum tracks on the Maze side. Even the webbing was visible on the otter tracks. Note: Opossums have been known to be along the river by the town of Green River for a few years now. One recently collected was positively identified by UOWR personnel.
- About 9-25 - Fresh scat at Col. R. RM94.0: While on a fish trip, Miles & others found fresh otter scat at about RM94.0 (just below Dewey bridge) on the w. side on a shelf under an overhang where the first bend going left begins (heading downstream), but before the major part of the bend. The shelf is above a small section of shoreline at the river-level. Miles had found scat (old) here this spring also, while on a fish trip.
- 10-6 - 3 otters seen at RM86.6 on Col. R.: (0800) Ron & Linda Johnson saw 3 otters heading upstream from below Hittle Bottom adjacent to their house on the bluff above this point. The Johnsons easily identified them as otters by their activity on the far shore & by their active undulating swimming pattern, all quite obviously different from beavers to them. This is their first otter sighting on the river.
- 10-7 - Nothing at A8L (0945) & A1L (1220).

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a. Data as reported in Griess (1987) on p. 40.
b. Asterisked data only is as reported in Bich (1988).
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