

IDAHO CONSERVATION DATA CENTER

DISTRIBUTION AND STATUS OF HARLEQUIN DUCKS (HISTRIONICUS
HISTRIONICUS) ON THE NEZ PERCE NATIONAL FOREST, IDAHO

by

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Cooperative Challenge Cost Share Project
Nez Perce National Forest
Idaho Department of Fish and Game

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SUMMARY

Surveys were conducted for harlequin ducks on the Nez Perce National Forest in the Selway and South Fork of the Clearwater river drainages in May, July and August 1989. Posters requesting reports of harlequin duck observations were distributed to all river outfitters on the Selway and Salmon rivers, and posted widely throughout the area. One harlequin was observed on the Selway River at the mouth of Bear Creek and 12 reports were received of observations in the Selway and South Fork of the Clearwater drainages. No broods were observed. The South Fork of the Clearwater drainage may be the southwestern limit of the distribution of harlequin ducks in Idaho. Further surveys for breeding activity on the Nez Perce National Forest should include the upper Selway, upper sections of the South Fork of the Clearwater and tributaries to the main Salmon River.

INTRODUCTION

Harlequin ducks are small diving ducks that winter in coastal waters and breed on inland streams. There are two distinct populations of harlequins, a small and declining eastern population in northeastern North America, Iceland, Greenland, and Labrador, and a much larger population in western North America. The breeding range of the western population extends from northern Alaska south to central California along the Cascade and Sierra Nevada mountain ranges, east to the Rocky Mountains and south to northwestern Wyoming and includes the Idaho Panhandle and the western slopes of the Rocky Mountains in southeastern Idaho (Bellrose 1980) (Figure 1).

Harlequin ducks spend two to five months on their breeding grounds in Idaho, arriving in April or May and departing between June and September. Nesting activity begins in May and females incubate for 27 days between mid-May and mid- to late June (Wallen and Groves 1988, 1989). Most males leave nesting areas for the coast when the female starts to incubate. Pairs are most visible in April and May; broods are present in July, August and early September.

Compared to other North American ducks, relatively little is known about harlequins, particularly regarding their breeding ecology. Only three major investigations have been conducted on breeding areas in the western population, one each in Glacier National Park, south-central Alaska, and Grand Teton National

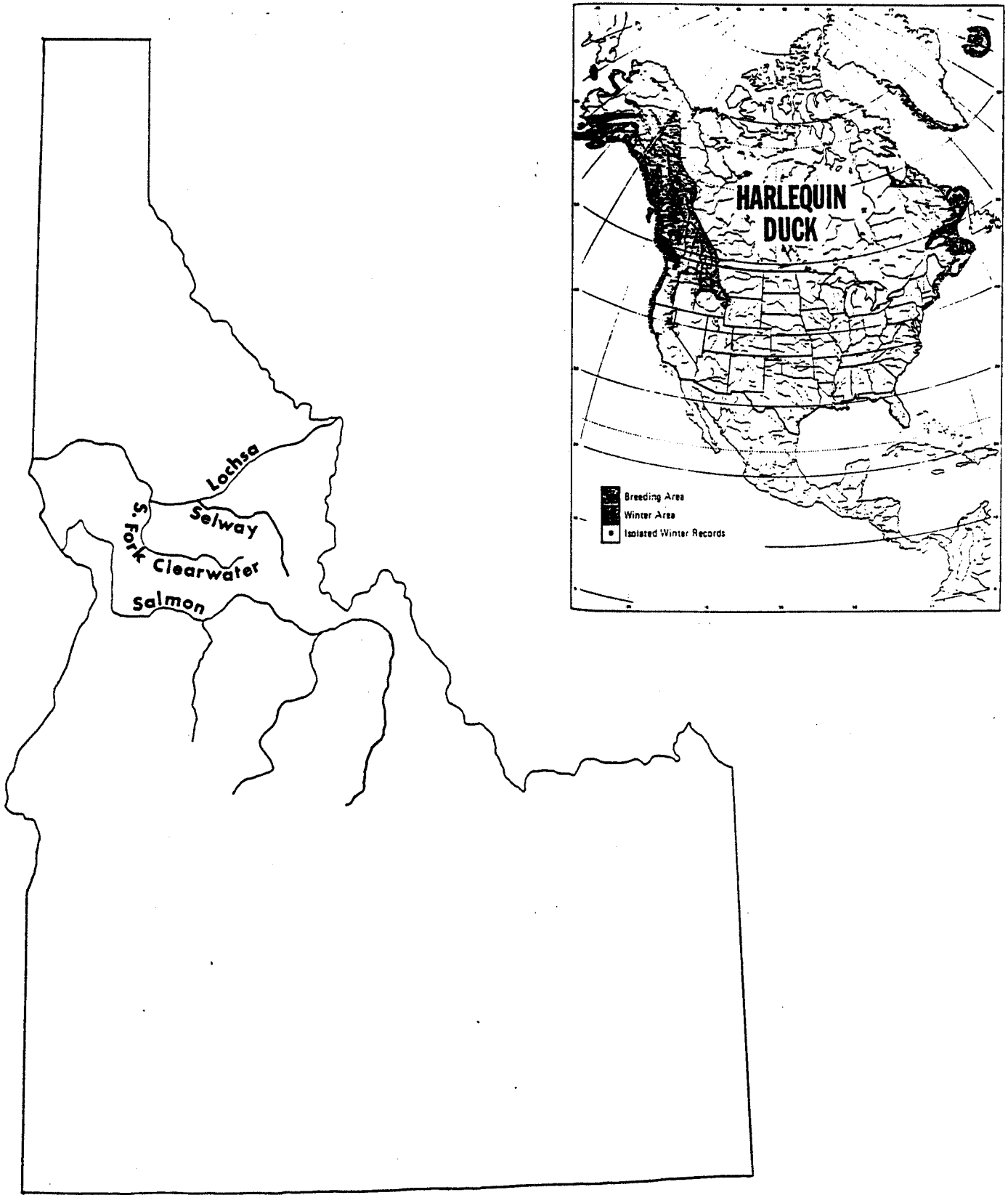


Figure 1. Distribution of harlequin ducks (from Bellrose 1980) and location of major streams in the survey area.

Park (Kuchel 1977, Dzinbal 1982, Wallen 1987). Harlequin breeding ecology has also been studied in Iceland (Bengston 1966, Bengston and Ulfstrand 1971, Bengston 1972).

Although Larrison et al. (1967) and Burleigh (1972) considered the harlequin duck uncommon in Idaho, prior to 1987 no intensive work had been done on the distribution or ecology of harlequin ducks in Idaho. In 1987 harlequin ducks were designated a "sensitive species" by Region 1 of the U.S. Forest Service and in 1989 became a "species of special concern" for the Idaho Department of Fish and Game. These actions were prompted by low population densities, the apparent need for undisturbed areas for nesting in the face of increasing development and recreational use on rivers, and anecdotal evidence which suggested harlequin ducks were declining in parts of their breeding range. During the spring and summer of 1987 and 1988 Wallen and Groves (1988, 1989) conducted extensive surveys of Idaho streams between the Lochsa River and the Canadian border and collected sightings from other observers in order to determine the distribution of harlequin ducks in northern Idaho. Broods were documented on eight drainages north of and including the Lochsa River (Wallen and Groves 1989). The present study is an extension of the survey to streams on the Nez Perce National Forest, south of the Lochsa River (Figure 1).

OBJECTIVES

The objectives of this work were to determine whether harlequin ducks are using streams south of the Lochsa River in the Nez Perce National Forest, and to document any breeding activity. This information is a prerequisite for any monitoring or habitat management for the species.

METHODS

Harlequin duck breeding habitat in Idaho has been identified as low gradient mountain streams, greater than 10 m wide with dense riparian vegetation and adequate water quality to support a healthy aquatic invertebrate population (Wallen and Groves 1989). Accordingly, surveys concentrated on streams meeting these criteria.

Surveys were conducted during May, July and August because these are the best times to observe harlequins in Idaho. May surveys were conducted by walking or driving along streambanks; during July and August lower water levels allowed walking in some streams. One survey of the Selway River was conducted by raft.

Posters (Appendix A) and information on the project were also distributed to all river outfitters on the Selway and Salmon Rivers and posted at stream access sites, trailheads, ranger stations and tourist facilities. I tried to verify all reports by contacting the observer and by returning to the sighting location.

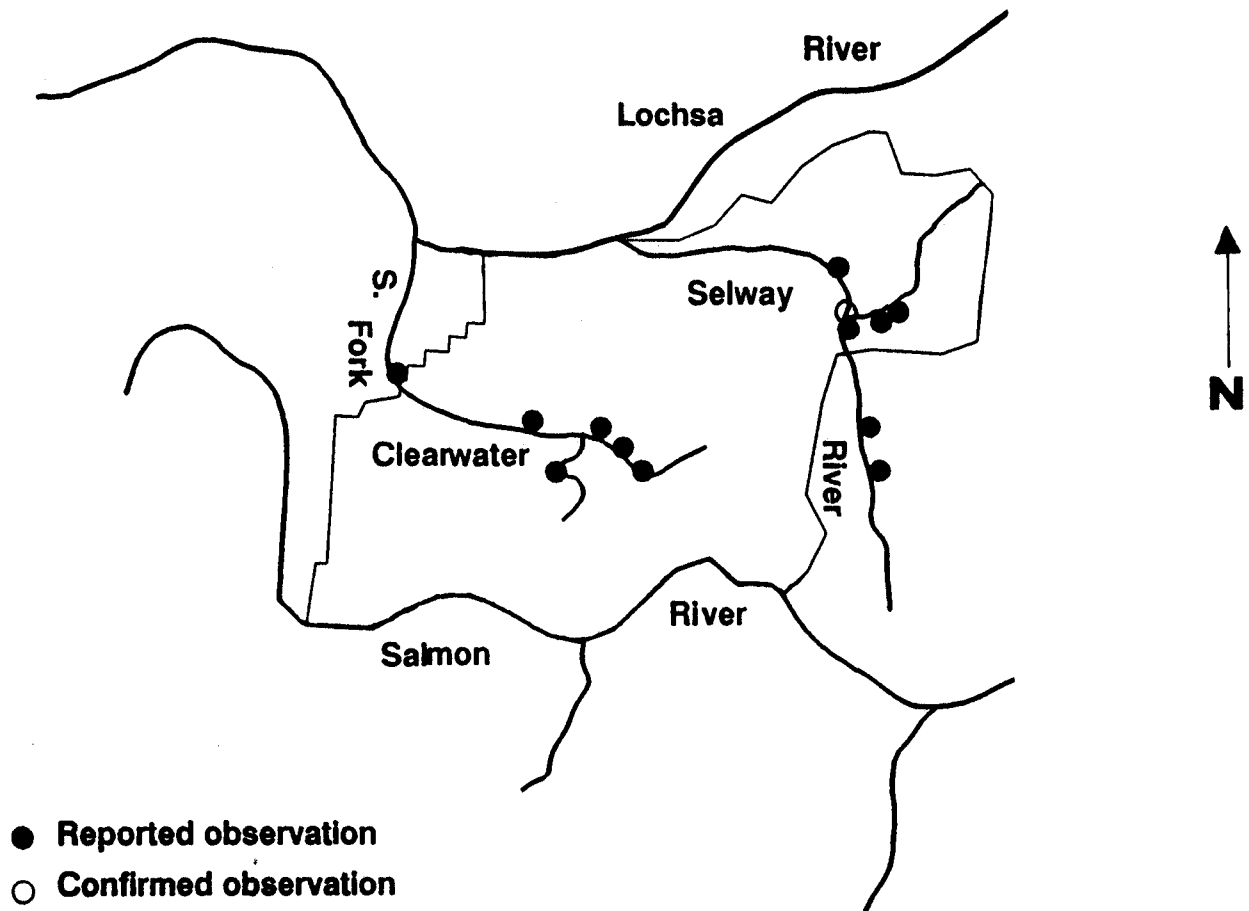


Figure 2. Location of harlequin duck observations collected on the Selway and S. Fork of the Clearwater River drainages during 1989.

RESULTS

Sections of fifteen streams were surveyed in the Selway River and the South Fork of the Clearwater River (SFCR) drainages on the Moose Creek, Fenn, Elk City, Red River and Clearwater Ranger Districts. Survey routes are depicted and described in Appendix B.

I received 12 sightings in response to the posters and saw one harlequin myself (Table 1). All sightings were in the Selway and SFCR drainages (Figure 2). No harlequins were seen on the Salmon River despite the large number of potential observers on the river. Although pairs were seen on both the Selway and the SFCR no broods were observed. Five of six observations in the SFCR drainage were in April and May. Observations in the Selway drainage occurred from late May through July.

Nesting habitat appeared to be limited and patchy. Much of the Selway drainage is steep and lacks shrubby riparian vegetation, islands and logjams, all of which can be important nesting habitat components (Kuchel 1977, Wallen 1987). Several streams in the SFCR drainage have a fairly gentle gradient but most of the aquatic and riparian environments observed in the SFCR drainage have been impacted by dredging, logging, roading and/or cattle grazing.

Table 1. Harlequin duck sightings on the South Fork of the Clearwater and Selway River Drainages 1989.

	Date	Stream	Observer	Observation
1.	16 April	Red River	Jeannine Rossa	Male flying upstream T28N R9E S31 NE1/4
2.	11 May	Red River	Jeannine Rossa	Male sitting on the edge of the river T28N R9E S31 NE1/4
3.	May	Red River	Donna LeClaire	Pair swimming in Johnson meadow T28N R9E S19
4.	May	Crooked River	Donna LeClaire	Pair swimming T28N R8E S11
5.	May	S. Fork	Donna LeClaire	Pair swimming 1 1/2 miles below Crooked River T29N R7E S26
6.	26 June	S. Fork	Ned Horner	Male and two females swimming 1/4 mile below Mill Creek T29N R4E S22 SE1/4
7.	21 May	Selway River	Jeff Streeter	Pair on gravel bar, 4 miles above Moose Cr. T32N R12E S25 NE1/4
8.	6 June	Bear Creek	Dan Gumber	Pair observed swimming 2 miles up Bear Creek T31N R13E S14 NE1/4
9.	26 June	Selway River	Doug Timms	Male flying upstream 1/4 mile below Bad Luck Creek T30N R13E S31 SW1/4
10.	3 July	Selway River	Mike McLeod	Male flying upstream 1 mile above Goat Creek T30N R13E S10 SW1/4

Table 1 cont'd. Harlequin duck sightings on the South Fork of the Clearwater and Selway River Drainages 1989.

Date	Stream	Observer	Observation
11. 17 July	Bear Creek	Mike McLeod	Male flying upstream 1 1/2 miles up Bear Creek T31N R3E S14 SW1/4
12. 18 July	Selway River	Mike McLeod	Male flying upstream 1/4 mile above Bear Creek T31N R13E S21 SW1/4
13. 22 July	Selway River	Frances Cassirer	Female feeding and standing on a rock at the mouth of Bear Creek T31N R13E S16 SW1/4

DISCUSSION

The dates of harlequin duck observations in the Selway drainage may represent human use patterns more than intensity or seasonality of use by the ducks. All reports were from rafters, who run the river during May, June and July. In the past harlequins have been observed by Forest Service trail crew personnel near Maiden Creek in April (A. Jackson, pers. comm.).

The number of people on the SFCR is probably more consistent throughout the spring and summer, so it may be that harlequins are only using the area during spring migration. However, since males are much more striking than females, females present later in the season may have been overlooked. Evidence for the use of the SFCR drainage during spring migration is provided by a May 1988 observation of a female on Crooked River who had previously been marked in Grand Teton National Park. She returned to Grand Teton and nested successfully later that summer. Sightings in April and early May may be migrants as may sightings of males in July.

CONCLUSIONS

Harlequin ducks were present but rare in the Selway and South Fork of the Clearwater drainages. Harlequins were not reported in the main Salmon River drainage. The South Fork of the Clearwater River may be the southwestern limit of the distribution of harlequin ducks in Idaho (except for occasional migrants passing through), although there was no evidence of

successful nesting south of the Lochsa River. Because of the size of the survey area and the difficulty of access in wilderness areas, I may have missed broods, or this may just have been a year when no harlequins bred successfully in this area. Even so, if breeding is occurring it is probably at very low levels.

RECOMMENDATIONS

1. Surveys of selected areas should continue on the Nez Perce National Forest. Any observations of broods or females in July or August would be particularly important.
2. The Selway drainage appears to be most likely to support a nesting population because it is relatively pristine and is adjacent to a stream with nesting birds on it (the Lochsa River). Monitoring for breeding activity should concentrate on the upper section of the drainage, at and above Moose Creek. The upper sections of tributaries may also provide suitable nesting habitat. Promising tributaries include Bear Creek, East Fork of Moose Creek, Running Creek and Meadow Creek. Cub Creek and upper sections of the North Fork of Moose Creek were not surveyed, but may contain nesting habitat.

3. No suitable nesting habitat was observed in the SFCR drainage. However, these streams do receive some use by harlequins. If any are nesting it would probably be in relatively pristine sections in the upper reaches of tributaries near the headwaters. Some of the larger tributaries originating south of the river, such as Ten-mile and Johns Creeks, may contain nesting habitat and should be inventoried in future surveys.
4. Although no harlequin ducks were reported on the main Salmon River, some of the larger tributaries on the Red River and Salmon River districts should be surveyed for harlequins in the future.
5. Use of the posters should continue. This was a very effective way of raising awareness and gathering information over a large area. All observers should be contacted verbally and probable sightings should be followed up as soon as possible on the ground.

ACKNOWLEDGEMENTS

Craig Groves initiated this survey, helped with the field work, and provided insights and encouragement. Thanks to all the Nez Perce National Forest personnel who helped with logistic support, including biologists Steve Blair and Steve Weaver, and Moose Creek district staff Dennis Dailey, Marc Childress and Mike Miller. Don Eschlinger expertly packed my gear in and out of Moose Creek, and Kim and Cliff Mitchell generously provided a place to stay in Elk City. Thanks to Barry Miller, Bob Anderson, Tom Simmons, Tom Kovalicky and Dave Fischer for a very enjoyable, and productive, raft trip on the Selway. Special thanks to Tony Wright of Running Creek ranch for surveying Running Creek and Bear Creek in May. Also, many thanks to all the people who looked for harlequin ducks on the Nez Perce forest this summer. This project was funded by the Nez Perce National Forest under the U.S. Forest Service Challenge Cost Share Program and the Idaho Department of Fish and Game, Nongame and Endangered Wildlife Program.

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APPENDIX A

Poster requesting reports of harlequin duck observations.

ATTENTION WILDLIFE WATCHERS

WE NEED SIGHTINGS OF HARLEQUIN DUCKS

WE NEED YOUR HELP

The Nongame and Endangered Wildlife Program of the Department of Fish and Game is surveying Idaho's mountain streams for harlequin ducks—one of the state's rarest and shyest wildlife species.

We need your help in locating these mountain ducks. Please turn in any sightings you make as soon as possible!

WHO TO CONTACT

Craig Groves
Nongame and Endangered
Wildlife Program
Idaho Dept. of Fish and
Game
Box 25
Boise ID 83707
(208) 334-3402

WHERE TO LOOK

Harlequins nest on forested, mountain streams usually 10 yards or greater in width. They prefer streams with good water quality, away from human disturbance, and with dense shrubs along the stream edge.

WHAT TO LOOK FOR

Harlequins are small ducks (16" in length). Males are blueish-gray with rusty sides and various shaped white patches on the head. Females are light brown with a distinct white spot behind the eye. Look for breeding pairs during May and June, and females with chicks during July and August.



APPENDIX B

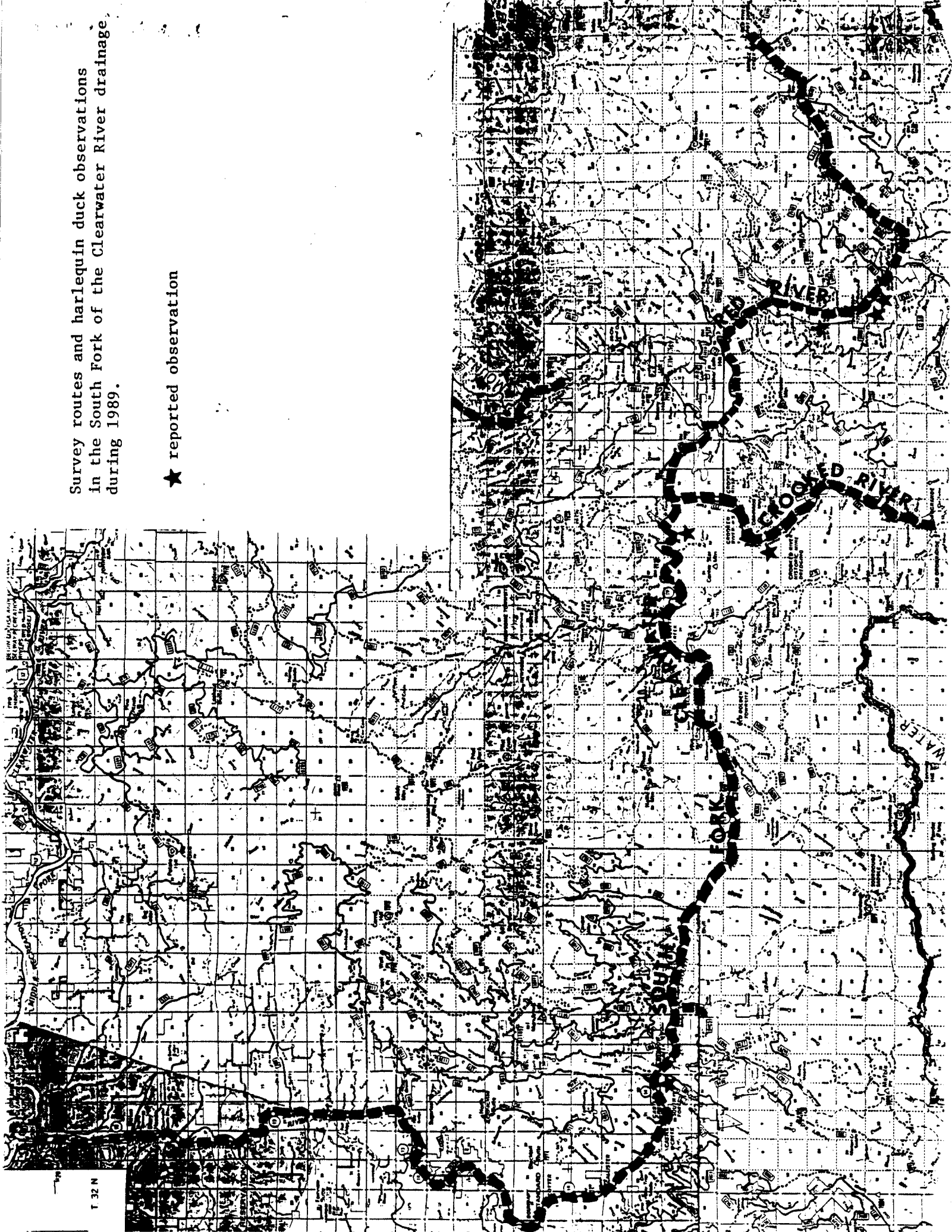
Survey routes and harlequin duck observations in the Selway and
South Fork of the Clearwater drainages, 1989.

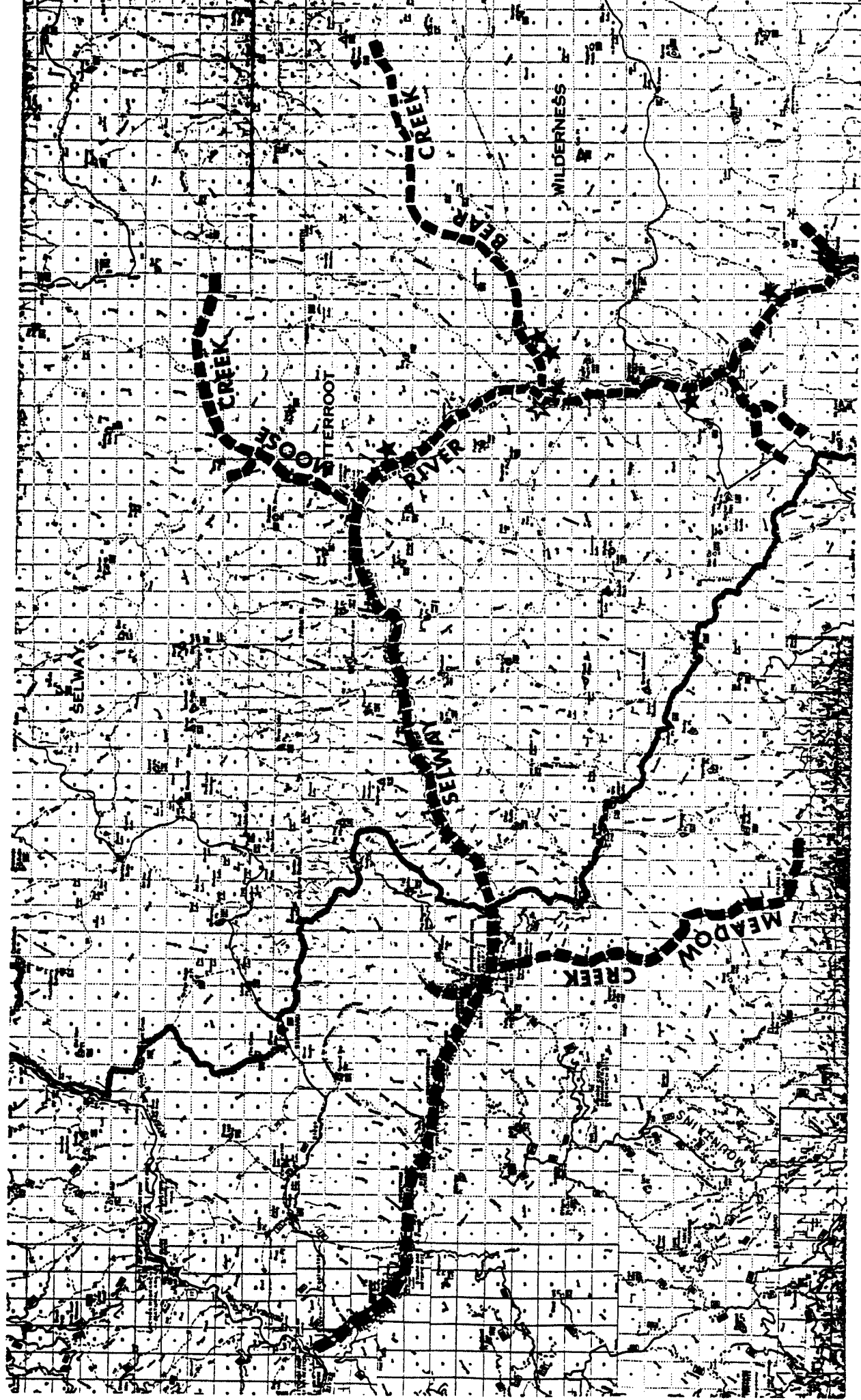
Appendix Table B. Stream sections south of the Lochsa River and dates surveyed during spring and summer 1989.

Stream	Dates	Surveyed from	Surveyed to
American River	11 May	T29N R8E S3 NE1/4	T30N R8E S21 SW1/4
Bear Creek	May	T31N R14E S16 SW1/4	T31N R14E S7 SE1/4
	23 July	T31N R14E S16 SW1/4	T31N R14E S7 SW1/4
	13-15 August	T32N R15E S14 SW1/4	T31N R14E S16 SW1/4
Crooked River	10 May	T28N R7E S25 NE1/4	T27N R7E S12 NW1/4
Eagle Creek	22 July	T30N R13E S29 NE1/4	T29N R13E S5 SE1/4
Gedney Creek	19 July	T31N R9E S3 NE1/4	T32N R9E S27 SE1/4
Johns Creek	27 July	T29N R5E S30 NW1/4	T29N R5E S31 SW1/4
Meadow Creek	12-13 May	T31N R9E S14 NE1/4	T29N R10E S25 SW1/4
Moose Creek	17-19 May	T32N R12E S2 SE1/4	T33N R12E S36 NE1/4
	24 July	T32N R12E S2 SE1/4	T33N R12E S36 NE1/4
E. Fork Moose	18 May	T33N R12E S36 NE1/4	T33N R14E S18 SE1/4
N. Fork Moose	19 May	T33N R14E S24 NW1/4	T33N R12E S36 NE1/4
Red River	11 May	T29N R8E S33 NE1/4	T28N R10E S3 SE1/4
	27 July	T29N R8E S33 NE1/4	T28N R9E S7 SE1/4
Running Creek	May	T30N R13E S28 NE1/4	T30N R13E S31 NW1/4
	22 July	T30N R13E S28 NE1/4	T30N R13E S29 NW1/4
Selway River	16-17 May	T32N R9E S11 NE1/4	T32N R12E S10 SE1/4
	19 July	T32N R7E S4 NW1/4	T32N R9E S11 NE1/4
	21-26 July	T29N R14E S9 SW1/4	T32N R9E S11 NE1/4
South Fork of the Clearwater	10 May	T30N R4E S9 NE1/4	T29N R8E S26 NW1/4
	17 July	T32N R4E S5 NE1/4	T29N R8E S26 NW1/4
Whitecap Creek	21 July	T29N R14E S9 SW1/4	T29N R14E S3 NE1/4

Survey routes and harlequin duck observations
in the South Fork of the Clearwater River drainage,
during 1989.

★ reported observation





Survey routes and harlequin duck observations in the Selway drainage during 1989.

★ reported observation

☆ confirmed observation

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