Kanuti NWR Trip Report FY07-02
Quasi-Breeding Bird Survey on South Fork Koyukuk

Purpose:	Conduct impromptu quasi-Breeding Bird Survey of lower South Fork Koyukuk River
Location:	South Fork Koyukuk River
Dates:	June 23-24, 2007
Participants:	Christopher Harwood, Shari Boyd
Author:	Christopher M. Harwood
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Summary:
Wildlife Biologist Harwood and Volunteer Boyd conducted an impromptu quasi-Breeding Bird Survey (38 points) by inflatable kayak along the lower South Fork Koyukuk River in Kanuti National Wildlife Refuge on June 23-24, 2007. We recorded 741 individuals of 45 species. In addition to expected high detections for riparian songbirds like Alder Flycatcher and Northern Waterthrush, there were relatively high detections for Solitary Sandpiper and Red-tailed "Harlan's" Hawk.

Introduction:
As part of the Kanuti National Wildlife Refuge's (NWR) continuing refuge-wide inventory of its terrestrial biological resources (INVE), Refuge personnel conducted vegetation surveys at two INVE mini-grids situated along the South Fork Koyukuk River in August 2006. Bird surveys at these two mini-grids were scheduled for June 2007. On June 16, 2007, Wildlife Biologist Harwood and Volunteer Boyd put in at the Jim River crossing at the Dalton Highway, *en route* to the South Fork Koyukuk River and the two INVE plots located thereof. The bird survey of the first mini-grid ("Jim River" plot) was completed as scheduled (results in separate report); however, an attempt to survey the second mini-grid ("South Fork" plot) was aborted. It was then decided to salvage/optimize the opportunity by conducting an impromptu quasi-Breeding Bird Survey (BBS) of the lower South Fork Koyukuk River in the field time remaining.

Study Area and Method:
We located the first point of the "route" at the gravel bar used as camp for accessing the "South Fork" INVE mini-grid (Fig. 1). Prospective count points were then coarsely plotted on a map approximately 0.5 river-miles from its nearest neighbor on generally opposite sides of the river, but were adjusted for proper length while surveying using a GPS. Point counts were to be conducted between approximately 03:00 and 09:00 to optimize detections. Unlike those of official BBSs, point counts were five minutes long (versus three) to balance the greater traveling time required between points (by inflatable kayak rather than motorized boat). Two mornings were available for surveying/floating before reaching the confluence with the main stem Koyukuk River.

Results:
We were able to survey 18 points (Fig. 1) on June 23 from 03:36 – 09:05. We continued floating an additional two hours without surveying before reaching point #19, where we camped. On June 24, we surveyed another 20 points from 02:51 – 08:46. Select species of interest detected before or after official point counts were also recorded and sometimes mapped. We recorded detections of 741 individuals of 45 species during 38 official point counts (Table 1). An additional 12 species not detected during official points counts (INVE or quasi-BBS) were detected along the river inside the Kanuti NWR boundary (Table 2).

Points of Interest

1) The unexpected and unfortunate necessity to postpone the bird survey of the "South Fork" mini-grid provided an opportunity to survey the riparian corridor of the lower South Fork Koyukuk River. This is ostensibly the first time refuge personnel have conducted a relatively rigorous bird survey of this area.

2) The relatively high number of detections (10 on 38 point counts; 7 detected during the survey between points; others recorded upriver and downriver of route; Fig. 2) of Solitary Sandpipers encountered during the floating and/or surveying of the lower South Fork River was noteworthy to this observer. Of particular interest was the detectability of this species late in June. Surveys dedicated to maximizing shorebird detections are timed for activity (singing, flight displays, etc.) early in the breeding cycle. The relative flurry of activity (including singing, but not flight displays) documented here may coincide with the local hatching period (B. McCaffery pers. comm., L. Tibbitts pers. comm.). To what degree this species could be reliably detected at this site at a similar time in other years is unknown. Similarly timed BBSs, conducted by this observer on the lower Yukon and Kuskokwim river watersheds, showed a positive correlation between detections for this species and increasing Julian date in June (McCaffery and Harwood 2004), but the influence of other route characteristics (e.g., habitat quality) was not explored.

Solitary Sandpipers are one of the least studied shorebirds on the continent. Perhaps the species account (Moskoff 1995) from the Bird of North America series best sums up priorities for research:

> "As is clear from this account, much remains to be learned about this species, especially about its breeding biology. The task is complicated by the difficulty of gaining access to breeding habitat and finding nests. It is almost easier to focus on what *is* known about the Solitary Sandpiper: its early reproductive behavior (Oring 1973), vocalizations (Oring 1968), and to a lesser extent, migration (International Shorebird Survey data). In essence, future research should focus on everything but the three areas that have been studied to date."

While this year's survey of the lower South Fork Koyukuk suggests a possibly promising area for future research, it would behoove us to further investigate bird numbers and detectability, including earlier in the breeding season. Given the small sample size which comprises what is known about the species' breeding biology (including early reproductive behavior), the possibility of this area as a viable, productive study site could constitute a substantial contribution from the Refuge in the study of this species. Furthermore, the fact that this species uses Rusty Blackbird nests (among several other large passerines) offers a nexus to a troubled species for which current interest is particularly high.

3) Two Red-tailed "Harlan's" Hawk nests were documented during the survey (Points #6 and #16). Alarm-calling behavior in several other birds suggests that other pairs may have been nesting locally as well. One flock of three soaring birds was documented incidentally at point #19.

4) Because of the time and effort invested in reaching count points by inflatable kayak (averaged 13 min actively paddling between points, versus typically 3-4 min by motor boat) and the possibility that this river stretch may not be surveyed rigorously again in the foreseeable future, 5-minute point counts seemed to best balance optimizing detections per point, while allowing sufficient time for greater coverage. Ten-minute point counts (INVE style) would have reduced the span of river covered, while 3-minute (BBS style) would have been perhaps physically prohibitive. This river is a candidate for a BBS route, though probably only in early June because of likely chronically low water levels later on.

Literature Cited:

McCaffery, B. J. and C. M. Harwood. 2004. Species at risk: Solitary Sandpiper **(***Tringa solitaria***).** Summary of ecology, abundance, and population trends in North America. Unpublished U.S. Fisha and Wildlife Service Poster. Tenth Alaska Bird Conference, Anchorage, AK.

Moskoff, W. 1995. Solitary Sandpiper (*Tringa solitaria*). *In* The Birds of North America, No. 156 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.

Oring, L. W.. 1968. Vocalizations of the Green and Solitary Sandpipers. Wilson Bull. 80: 395–420.

Oring, L. W.. 1973. Solitary Sandpiper early reproductive behavior. Auk 90: 652–663.

Table 1. Total numbers of individuals and stops for species detected on 38 point counts of a quasi-Breeding Bird Survey of the lower South Fork Koyukuk River, Kanuti NWR, June 23-24, 2007.

Species	**Total Individuals**	**Total Stops**
Canada Goose	5	3
American Wigeon	18	3
Northern Shoveler	1	1
Green-winged Teal	3	2
Red-breasted Merganser	12	5
Red-tailed Hawk	9	8
Semipalmated Plover	10	9
Lesser Yellowlegs	19	12
Solitary Sandpiper	10	10
Spotted Sandpiper	22	18
Least Sandpiper	1	1
Wilson's Snipe	30	26
Mew Gull	5	4
Herring Gull	2	1
Glaucous-winged Gull	2	2
Glaucous Gull	1	1
Belted Kingfisher	3	3
Am. Three-toed Woodpecker	3	3
Olive-sided Flycatcher	7	6
Western Wood-Pewee	2	2
Alder Flycatcher	93	34
Gray Jay	6	6
Common Raven	5	5
Bank Swallow	19	10
Boreal Chickadee	7	7
Ruby-crowned Kinglet	4	4
Gray-cheeked Thrush	6	3
Swainson's Thrush	104	36
American Robin	14	11
Varied Thrush	1	1
Bohemian Waxwing	3	3
Orange-crowned Warbler	20	18
Yellow Warbler	17	10
Yellow-rumped Warbler	31	18
Blackpoll Warbler	2	2
Northern Waterthrush	103	35
Wilson's Warbler	4	2
Fox Sparrow	20	15
Lincoln's Sparrow	8	6
White-crowned Sparrow	23	15
Dark-eyed Junco	62	26
Rusty Blackbird	4	3
Pine Grosbeak	2	2
White-winged Crossbill	4	4
Common Redpoll	21	15

Table 2. Additional species detected incidentally to official point count surveys (INVE and quasi-Breeding Bird Survey), Lower South Fork Koyukuk River, Kanuti NWR, June 18-24, 2007.

Greater White-fronted Goose
Mallard
Common Goldeneye
Bald Eagle
Northern Harrier
Sharp-shinned Hawk
Golden Eagle
Peregrine Falcon
Bonaparte's Gull
Downy Woodpecker
Northern Flicker
Arctic Warbler

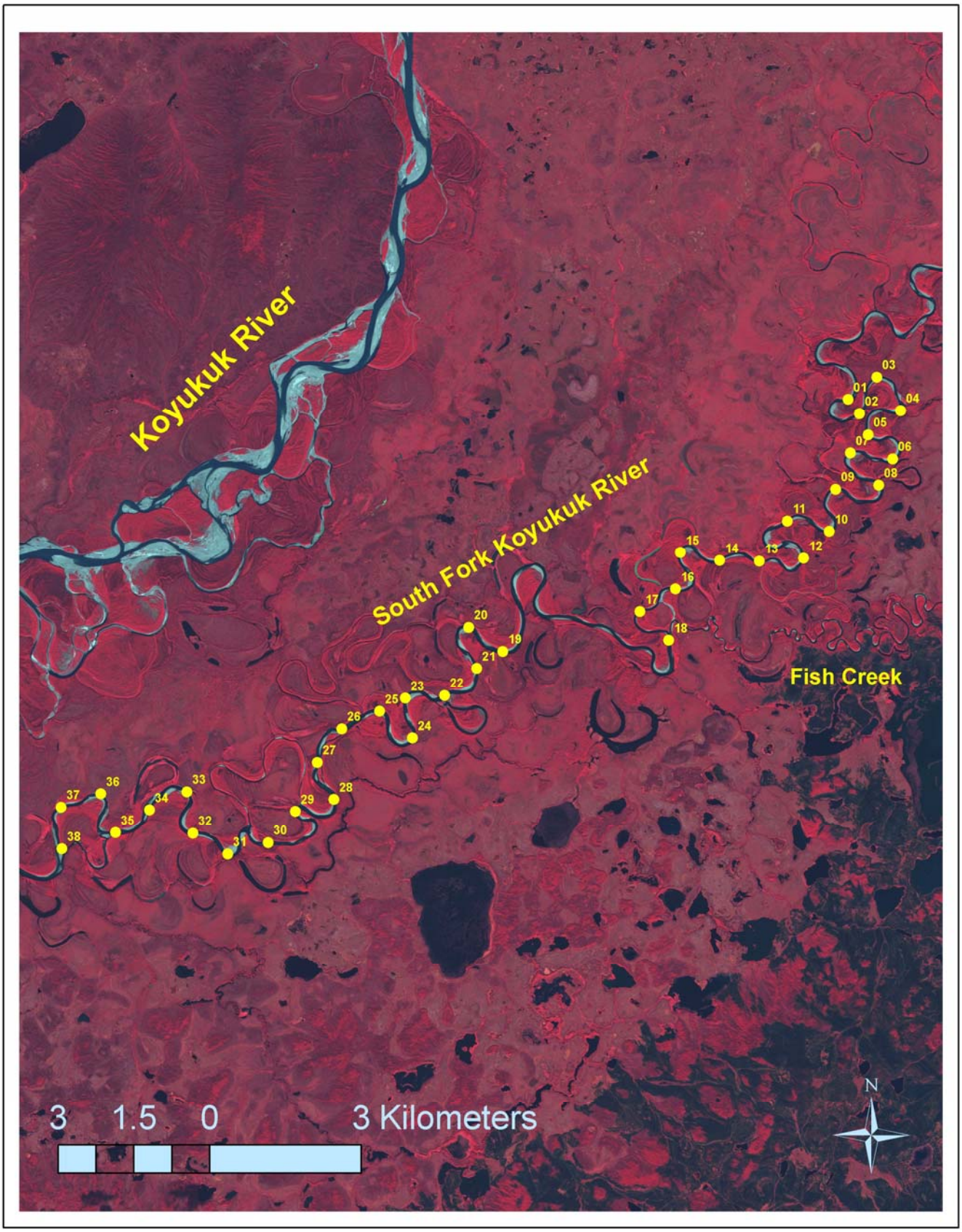

Figure 1. Location of 38 count points on quasi Breeding Bird Survey route, lower South Fork Koyukuk River, Kanuti NWR, Alaska, June 23-24, 2007.

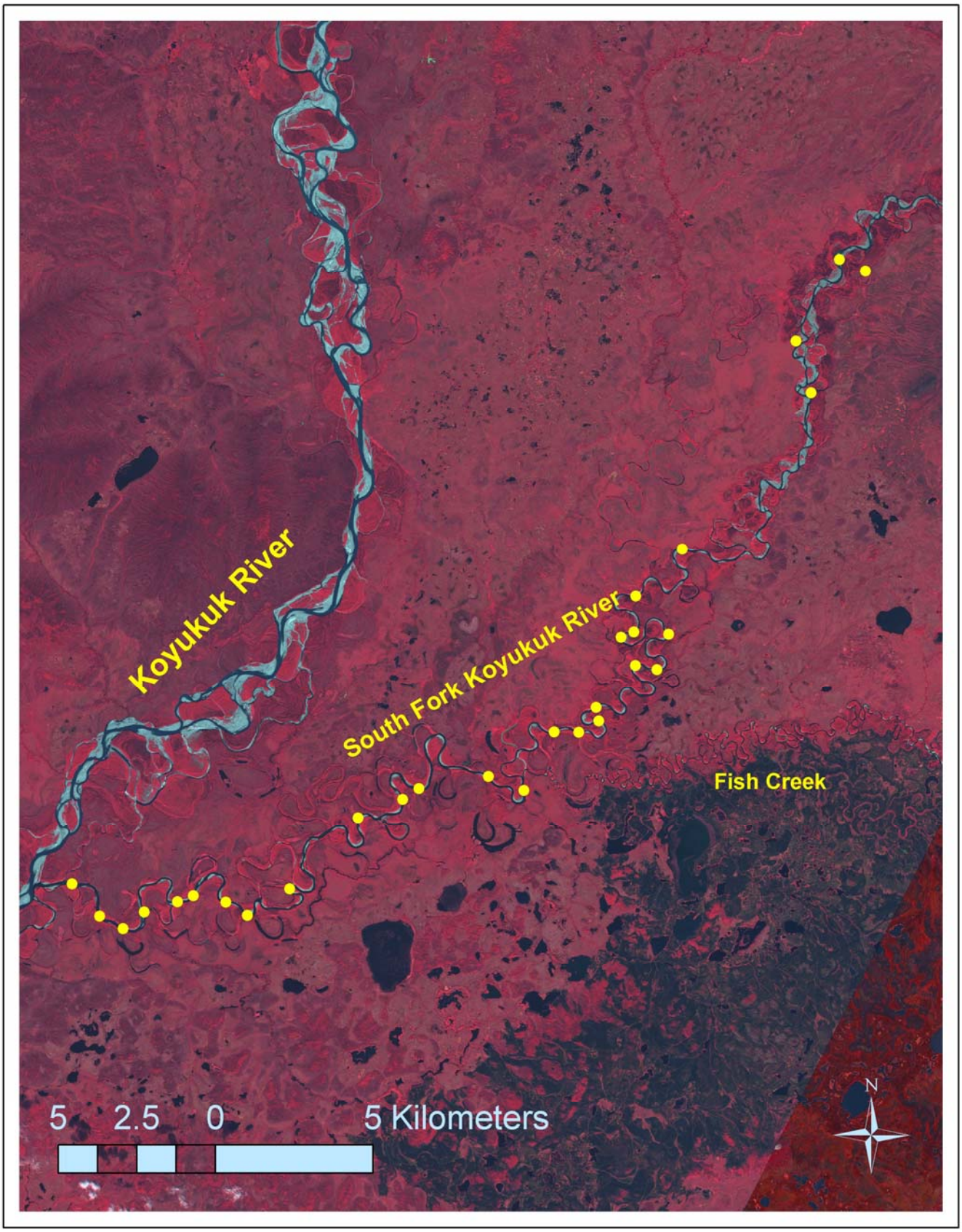

Figure 2. Location of Solitary Sandpiper detections, lower South Fork Koyukuk River, Kanuti NWR, Alaska, June 18-24, 2007.